

**2019 ANNUAL GROUNDWATER
MONITORING REPORT
WESTSIDE BASIN
SAN FRANCISCO AND SAN MATEO COUNTIES,
CALIFORNIA**

**Prepared By:
San Francisco Public Utilities Commission**

**In Cooperation with the City of Daly City, the City of San Bruno, and the
California Water Service Company (South San Francisco District)**

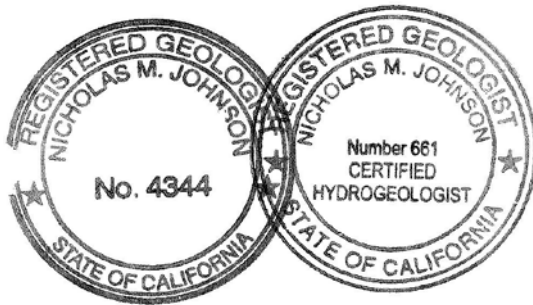
April 2020



April 30, 2020

ACKNOWLEDGEMENTS

The Westside Basin Annual Groundwater Monitoring Report for 2019 was prepared by the San Francisco Public Utilities Commission in cooperation with the City of Daly City, the City of San Bruno, and the California Water Service Company (South San Francisco District). This report summarizes the results of water level elevation monitoring, general groundwater quality sampling and analysis, and additional groundwater-related field activities conducted within the Westside Basin in 2019.



Nicholas Johnson
P.G. No. 4344 (Exp. 11/20)
C.Hg. No. 661 (Exp. 11/20)



Christopher Lyles
P.G. No. 9341 (Exp. 04/21)



Obiajulu Nzewi
P.G. No. 8466 (Exp. 06/20)

Electronic Distribution:

cc:

Tom Francis, BAWSCA
Ross Moilan, Cal Water
Mike Utz, Cal Water
Tom Piccolotti, City of Daly City
Gregory Krauss, City of Daly City
Jimmy Tan, City of San Bruno
Mark Reinhardt, City of San Bruno
Cheryl Prowell, DTSC
John Fio, EKI
Matthew Dachowski, LMGC

Will Halligan, LSCE
Robert Maddow, Esq.
Troy Flanagan, Olympic Club
Jim Blanke, RMC
Kimberlee West, RWQCB
Corey Chrisman, SFDPH
June Weintraub, SFDPH
Robert Klinesteker, SFGC
Alan R. Wong, SFPUC
Roberto Gonzales, SFPUC

Andrew DeGraca, SFPUC
Dan Mauer, SFRPD
Dave Iribarne, SFRPD
Jason Gurdak, SFSU
Charles Ice, SMCEH
Jacob Madden, SMCEH
Eric Lacy, SWRCB
Marco Pacheco, SWRCB
Vladimir Rakhimov, SWRCB
Brian Dossey, Town of Colma

EXECUTIVE SUMMARY

This report presents the results of the 2019 Annual Groundwater Monitoring Program for the Westside Groundwater Basin (Westside Basin or Basin) in San Francisco and San Mateo counties, California. The San Francisco Public Utilities Commission (SFPUC) prepared this report in cooperation with the City of Daly City (Daly City), the City of San Bruno (San Bruno), and the California Water Service Company (Cal Water).

The Westside Basin extends from Golden Gate Park in San Francisco to the City of Burlingame in San Mateo County. It is an important source of municipal and irrigation water supply for the communities and businesses that overlie the Basin.

The San Francisco Peninsula experienced normal conditions during most of 2019 although there were approximately two months where the region experienced “abnormally dry” conditions (USDA, 2019). Precipitation at the San Francisco Downtown gauge was 25.82 inches during water year 2019 (October 2018 through September 2019) and 26.25 inches for the 2019 calendar year. The average annual precipitation for the preceding 30 years (1989-2018) at this station is 22.60 inches (NOAA, 2019).

During 2019, SFPUC measured and recorded groundwater levels in 100 monitoring wells throughout the Westside Basin. Measurements were taken quarterly in 36 wells, semi-annually in 5 wells, and continuously in 59 wells using pressure transducers and data loggers. Additionally, SFPUC and the partner agencies conducted semi-annual (spring and fall) water quality sampling in 70 monitoring wells and 11 production wells.

Based on a combination of metered and estimated pumping, total pumping in the Westside Basin was approximately 4,053 acre-feet in 2019, an 8.1 percent increase compared to 2018, although only 58 percent of the annual average for the preceding 10 years, 2009-2018. Total recycled water use at the Lake Merced Golf Club, Olympic Club, and San Francisco Golf Club was 230 acre-feet in 2019, a 60 percent reduction from 2018. This reduction is largely due to recycled water being unavailable from the North San Mateo County Sanitation District during a significant portion of the irrigation season. A commensurate increase in groundwater pumping was reported by these Lake Merced area golf courses to make up for the lack of recycled water availability.

Compared to 2018, groundwater levels were stable or trended higher in 2019 in a majority of the Shallow, Primary Production, and Deep aquifer monitoring wells throughout the Westside Basin. In the South Westside Basin, this was largely because 2019 was the fourth consecutive year of in-lieu recharge associated with the Regional Groundwater Storage and Recovery Project. In the North Westside Basin, groundwater levels rose near the coast in the vicinity of Golden Gate Park in response to the redistribution of groundwater pumping for park irrigation further inland

and the SFGW Phase II wells (North Lake and South Windmill) being offline during most of the year for well and station development.

The seasonal low and high water elevations of Lake Merced (South Lake) were slightly higher in 2019 than 2018, and were above the interim lake level elevation range of 14 to 16 feet (NAVD88) established by SFPUC.

There is currently no clear indication of saltwater intrusion in most Westside Basin monitoring wells. Monitoring wells in relative proximity to San Francisco Bay near the San Francisco Airport and Burlingame continue to experience high chloride concentrations in shallow zones and sub-sea level groundwater elevations with increasing chloride concentrations in some deeper zones. In these cases, the source of the salinity may be the shallow Bay Sediments. Groundwater levels in Deep Aquifer monitoring wells along the coast in southwestern San Francisco fluctuate seasonally near sea level. Chloride concentrations do not suggest saltwater intrusion at the present time in San Francisco.

2019 was the second full year of operation for Phase I of the San Francisco Groundwater Supply (SFGW) Project, producing approximately 296 acre-feet for potable use, a 26.5 percent increase over 2018. Phase II construction continued in 2019 for the SFGW Project and the Regional Groundwater Storage and Recovery Project.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	I
EXECUTIVE SUMMARY	II
1.0 INTRODUCTION.....	1
1.1 Planned and Ongoing Projects	2
1.2 Municipal Water Agencies	4
1.3 California Groundwater Elevation Monitoring Program	5
2.0 WESTSIDE BASIN CLIMATE, HYDROLOGY, AND HYDROGEOLOGY	6
2.1 Climate	6
2.2 Hydrogeology	6
2.3 Surface Water Hydrology.....	8
3.0 HISTORICAL GROUNDWATER USE	10
4.0 2019 GROUNDWATER USE	13
4.1 City of Daly City	13
4.2 California Water Service Company (South San Francisco).....	13
4.3 City of San Bruno.....	13
4.4 City of San Francisco.....	13
4.5 Golden Gate Park and Pine Lake	13
4.6 San Francisco Zoo.....	13
4.7 Golf Courses.....	14
4.8 Cemeteries	14
4.9 Summary	14
5.0 MONITORING PROGRAM OVERVIEW.....	16
6.0 GROUNDWATER AND LAKE LEVEL MONITORING	18
6.1 Coastal Groundwater Level Monitoring	18
6.2 Lake Merced and Lake-Aquifer Level Monitoring	19
6.3 South Westside Basin Groundwater Level Monitoring	20
6.4 Bay Side Groundwater Level Monitoring.....	21
7.0 GROUNDWATER QUALITY MONITORING	22
7.1 Coastal Groundwater Quality Monitoring	22
7.2 Sunset District and Lake Merced Area Groundwater Quality Monitoring	23
7.3 South Westside Basin Groundwater Quality Monitoring	23
7.3.1 Daly City	24
7.3.2 Colma	24
7.3.3 South San Francisco.....	24
7.3.4 San Bruno and Millbrae.....	25
7.3.5 Bay Side	25
8.0 SUMMARY OF PROPOSED ACTIVITIES FOR 2020	26
8.1 Groundwater Monitoring Program.....	26

8.2	Coastal Groundwater Monitoring	26
8.3	Lake Merced.....	26
8.4	CASGEM.....	26
8.5	General Basin Conditions and GSR Project.....	26
8.6	Bay Side Monitoring.....	26
9.0	REFERENCES.....	28

TABLES

Table 1	Westside Basin Annual Groundwater Pumping
Table 2	Water Use for Golf Course Irrigation near Lake Merced, 2005-2019
Table 3	Groundwater Elevation Monitoring Network Wells
Table 4	Wells Used to Construct Groundwater Elevation Contours
Table 5	Groundwater Level Monitoring Frequency
Table 6	Groundwater Quality Monitoring Network Wells
Table 7	Groundwater Quality Monitoring Frequency and Analyses
Table 8	Comparison of Seasonal Low Groundwater Elevations for Selected Coastal Monitoring Wells
Table 9	Coastal Monitoring Network Groundwater Quality
Table 10	General Basin Groundwater Quality

FIGURES

Figure 1	Westside Basin Major Groundwater Production Areas
Figure 2	North-South Geologic Cross Section - Westside Basin
Figure 3	Westside Basin Groundwater Pumping, 1949-2019
Figure 4	Westside Basin Groundwater Pumping for Irrigation, 2005-2019
Figure 5	Well Location Map - Groundwater Elevation Monitoring Network
Figure 6	Well Location Map - Groundwater Quality Monitoring Network
Figure 7	Groundwater Elevation Contours - Shallow Aquifer, Spring 2019
Figure 8	Groundwater Elevation Contours - Shallow Aquifer, Fall 2019
Figure 9	Groundwater Elevation Contours - Primary Production Aquifer, Spring 2019
Figure 10	Groundwater Elevation Contours - Primary Production Aquifer, Fall 2019
Figure 11 (a-d)	Groundwater Elevation and Chloride Concentration Hydrographs - Kirkham Wells
Figure 12 (a-d)	Groundwater Elevation and Chloride Concentration Hydrographs - Ortega Wells
Figure 13 (a-d)	Groundwater Elevation and Chloride Concentration Hydrographs - Taraval Wells

Figure 14 (a-c)	Groundwater Elevation and Chloride Concentration Hydrographs - San Francisco Zoo Monitoring Wells
Figure 15	Lake Merced Water Surface Elevation, South Lake
Figure 16	Groundwater Elevation Hydrograph: LMMW1S and LMMW1D - Shallow and Primary Production Aquifers
Figure 17	Groundwater Elevation Hydrograph: DC-1 - Primary Production Aquifer
Figure 18	Groundwater Elevation Hydrograph: SS1-02 - Primary Production Aquifer
Figure 19	Groundwater Elevation Hydrograph: SB-12 - Primary Production Aquifer
Figure 20 (a-c)	Groundwater Elevation and Chloride Concentration Hydrographs - Bay Side Monitoring Wells - Burlingame
Figure 21 (a & b)	Groundwater Elevation and Chloride Concentration Hydrographs - Bay Side Monitoring Wells - SFO
Figure 22	Nitrate Concentrations in South Westside Basin Groundwater, 1957-2019
Figure 23	Long-Term Water Quality, Daly City Westlake DC-2
Figure 24	Long-Term Water Quality, Cal Water SS 1-21
Figure 25	Long-Term Water Quality, San Bruno SB-20 Lions Field Park

APPENDICES

Appendix A	Groundwater Elevation Hydrographs
Appendix B	Laboratory Analytical Results
Appendix C	Westside Basin Groundwater Monitoring Manual of Procedures
Appendix D	Summary of New Well Activity in the Westside Basin for 2019

ACRONYMS AND ABBREVIATIONS

af	acre-feet
afy	acre-feet per year
Bay	San Francisco Bay
bgs	below ground surface
CASGEM	California Statewide Groundwater Elevation Monitoring Program
CCSF	City and County of San Francisco
Daly City	City of Daly City
DWR	California Department of Water Resources
°F	degrees Fahrenheit
San Bruno	City of San Bruno
Cal Water	California Water Service Company
EIR	Environmental Impact Report
feet NAVD88	elevation in feet relative to North American Vertical Datum 1988
GMP	groundwater management plan
GSR	Regional Groundwater Storage and Recovery Project
LMPS	Lake Merced Pump Station
LSCE	Luhdorff and Scalmanini Consulting Engineers

MCL	maximum contaminant level
mgd	million gallons per day
mg/L	milligrams per liter
NAVD88	North American vertical datum, 1988
NSMCS	North San Mateo County Sanitation District
RGS	Regional Groundwater Storage and Recovery Project
SFGW	San Francisco Groundwater Supply Project
SFPUC	San Francisco Public Utilities Commission
SFRPD	San Francisco Recreation & Parks Department
SMCEHSA	San Mateo County Environmental Health Services Agency
SMCL	secondary drinking water standard
SWBVCMA	South Westside Basin Voluntary Cooperative Groundwater Monitoring Association
TDS	total dissolved solids
Westside Basin or Basin Westside Groundwater Basin	
WQD	SFPUC Water Quality Division
USDA	United States Department of Agriculture

1.0 INTRODUCTION

This report presents the results of the 2019 Annual Groundwater Monitoring Program for the Westside Groundwater Basin (Westside Basin or Basin) in San Francisco and San Mateo counties, California. The San Francisco Public Utilities Commission (SFPUC) prepared this report in cooperation with the City of Daly City (Daly City), the City of San Bruno (San Bruno), and the California Water Service Company (Cal Water). The Westside Basin extends from Golden Gate Park in San Francisco to the City of Burlingame in San Mateo County. It is an important supply of municipal and irrigation water for the communities and businesses that overlie the Basin. The northern and southern portions of the Westside Basin on either side of the San Francisco–San Mateo county line are referred to as the North and South Westside Basins, respectively (Figure 1).

Annual monitoring of the Westside Basin began in 2000 coordinated by the San Mateo County Environmental Health Services Agency (SMCEHSA, 2000). In 2004, SFPUC assumed implementation of the monitoring program in coordination with Daly City, San Bruno, and Cal Water. The monitoring program addresses planning elements in the 2005 *Final Draft North Westside Groundwater Basin Management Plan* (SFPUC, 2005) and the *South Westside basin Groundwater Management Plan* (San Bruno and others, 2012).

In 2006, SFPUC prepared the report *Hydrogeologic Conditions in the Westside Basin–2005* (Luhdorff and Scalmanini Consulting Engineers [LSCE], 2006) in cooperation with Daly City, San Bruno, and Cal Water. It summarized the basin hydrogeology and provided an overview of historical, current, and planned activities related to groundwater as of 2005. Since 2007, the SFPUC Water Resources Division has prepared the Westside Basin annual groundwater monitoring report.

This annual report summarizes 2019 groundwater levels, pumping, and water quality within the Westside Basin in relation to the historical record. Additionally, it provides the water level record for Lake Merced in relation to groundwater conditions. The report is intended for public education and as a resource for SFPUC and cooperating agencies. The 2019 Westside Basin annual groundwater monitoring report can be accessed at www.sfwater.org/groundwater. SFPUC, Daly City, San Bruno, and Cal Water plan to continue coordinating the execution and reporting of this comprehensive monitoring program.

Unless stated otherwise, elevations provided in this document reference the North American Vertical Datum of 1988 (NAVD88), which is locally 3.2 feet below mean sea level. San Francisco City Datum is equivalent to an elevation of 11.37 feet NAVD88. References to “sea level” in this document are equivalent to zero elevation NAVD88.

1.1 Planned and Ongoing Projects

The following projects are occurring concurrent with the groundwater monitoring program.

San Francisco Groundwater Supply Project

The San Francisco Groundwater Supply (SFGW) project provides a new, local source of water for the City and County of San Francisco (CCSF) that improves water supply reliability during system maintenance, drought, and emergencies. When fully operational, the SFPUC SFGW Project will provide up to 4 million gallons per day (mgd), on average, from wells in the North Westside Basin. Groundwater produced from the SFGW wells is blended with water from SFPUC's Regional Water System before entering the municipal drinking water system.

Phase I test wells were constructed between 2007 and 2011 at the South and West Sunset Playgrounds, the Lake Merced Pump Station, and the Central Pump Station in Golden Gate Park. The project's Final Environmental Impact Report (EIR) was certified in December 2013 and SFPUC approved the project for construction and implementation in January 2014. Construction of the pump stations for the four Phase I wells began in March 2015. Municipal groundwater production from the Lake Merced well began in 2017 and production from the other three Phase I wells began in early 2018.

Phase II of the SFGW project began in late 2017 and involves rehabilitating two existing wells in Golden Gate Park and reconstructing their pump stations. Work on the North Lake well station was completed in March 2019 and work on the South Windmill well will continue until project completion in mid-2020. The Phase II wells will be used predominantly for Golden Gate Park irrigation until completion of the Westside Recycled Water Project in 2021.

Recycled Water Projects

The Harding Park Recycled Water Project was completed in the fall of 2012. The project uses recycled water from the North San Mateo County Sanitation District (NSMCSD), a subsidiary of Daly City, to irrigate Harding Park and Fleming golf courses in San Francisco. SFPUC partnered with NSMCSD to construct a new pump station, distribution piping, and storage tank. The project replaces the use of potable water from SFPUC's Regional Water System for golf course irrigation.

NSMCSD also supplies recycled water to three other golf courses near Lake Merced: Lake Merced Golf Club, Olympic Club, and San Francisco Golf Club.

The Westside Recycled Water Project includes the construction of a recycled water treatment plant, storage reservoir, pump station, and associated pipelines to replace surface water and groundwater currently used to irrigate Golden Gate Park, Lincoln Park Golf Course, the Presidio Golf Course, and other irrigated areas in the Presidio. The EIR for the project was completed

and certified in September 2015. Construction of the recycled water pipeline began in early 2017 and was completed in July 2018. Construction of the treatment facility began in late 2017, and pump station construction began in mid-2019. Recycled water system start-up is anticipated for mid-2021.

Regional Groundwater Storage and Recovery Project

In cooperation with its Partner Agencies Daly City, San Bruno, and Cal Water, SFPUC is establishing a dry-year groundwater supply for its Regional Water System through implementation of the Regional Groundwater Storage and Recovery (GSR) Project in the South Westside Basin. The Partner Agencies currently supply potable water to their retail customers through a combination of groundwater pumped from the South Westside Basin and purchased SFPUC surface water. The GSR Project will provide supplemental SFPUC surface water to the Partner Agencies during normal and wet years. During these years, the Partner Agencies will reduce their groundwater pumping by a comparable amount, increasing the amount of groundwater retained in storage (referred to as "in-lieu recharge").

During a period of normal and wet years, the volume of groundwater in the South Westside Basin will increase due to natural recharge and reduced groundwater pumping by the Partner Agencies, increasing storage by up to 60,500 acre-feet (af) (about 20 billion gallons). During a period of dry or drought years, the Partner Agencies and SFPUC will pump the stored groundwater from thirteen new GSR wells and existing Partner Agency wells as needed to supplement other supplies. This new dry-year water supply will increase the Regional Water System's available water supply by up to approximately 7.2 mgd.

The 2002-2005 Pilot In-Lieu Recharge Demonstration Program evaluated the feasibility of GSR in the South Westside Basin and indicated that GSR could be a viable dry-year water supply project (LSCE, 2005).

The GSR Project was approved in 2014, began construction in spring 2015, and is currently in startup and commissioning with completion anticipated in spring 2021. The GSR project began in-lieu water deliveries to the Partner Agencies in May 2016 (Daly City) and June 2016 (San Bruno and Cal Water). The GSR project has been in a storage phase since May 2016 with in-lieu water deliveries to the Partner Agencies through at least April 2020.

Westside Basin Groundwater-Flow Model

Development of the Westside Basin Groundwater Flow Model began in 2002 funded by a California State Assembly Bill 303 grant (Daly City, 2003). Subsequent model updates and improvements have been funded by SFPUC and the Partner Agencies for the GSR Project (HydroFocus, 2007, 2009, 2011, 2017). SFPUC and the Partner Agencies have used the model to evaluate potential changes in groundwater conditions as a result of future activities and management practices. Model simulations supported the EIRs for the SFGW and GSR projects

(Kennedy-Jenks, 2012). The model will continue to be updated and refined as new data are collected. The model is being applied currently to evaluate the expected performance of the GSR project.

South Westside Basin Groundwater Management Plan

The 2012 *South Westside Basin Groundwater Management Plan* (GMP) provides a framework for regional groundwater management that sustains the beneficial uses of the groundwater resource in the South Westside Basin (San Bruno and others, 2012). Development of the plan was led by San Bruno and funded by a grant from the California Department of Water Resources (DWR). The plan's objectives include informing the public of the importance, challenges, and opportunities of groundwater management in the South Westside Basin; developing consensus among stakeholders on issues and solutions related to groundwater; building relationships among stakeholders within the South Westside Basin and local and state agencies; and supporting programs and actions to ensure the long-term sustainability of the groundwater resource. The plan provides recommendations for managing groundwater levels, protecting groundwater quality, and avoiding land surface subsidence.

North Westside Basin Groundwater Management Plan

SFPUC first developed a groundwater management plan for the North Westside Basin in 2005 and then more recently in 2016 to guide implementation of the SFGW Project and sustainably manage the groundwater resource within the northern portion of the Basin. The plan summarizes the Basin hydrogeology, defines measurable objectives and actions for avoiding salt water intrusion, land subsidence, and impacts to interconnected surface water, while protecting groundwater yield and quality. The plan also provides for public outreach, stakeholder involvement, and coordination with the management of the South Westside Basin. A draft plan was completed in early 2016 and will be finalized in late 2020. Because DWR classified the Westside Basin as very low priority in early 2019, submission of a Westside Basin groundwater sustainability plan to DWR is not currently required under the 2014 California Sustainable Groundwater Management Act.

1.2 Municipal Water Agencies

Approximately 2.7 million people rely on water supplied by SFPUC to meet their daily water needs. SFPUC is the retail water supplier for domestic, commercial, and institutional customers in San Francisco, which includes the North Westside Basin, and for a number of retail accounts outside the city. In addition, SFPUC provides water to 27 wholesale customers in San Mateo, Alameda, and Santa Clara counties under contractual agreement. Approximately two-thirds of the SFPUC water supply is delivered to the wholesale customers and one-third is delivered to retail customers.

The SFPUC Regional Water System draws approximately 85% of its water from runoff collected in Hetch Hetchy Reservoir in the upper Tuolumne River watershed within Yosemite National Park. This water is conveyed by gravity to Bay Area reservoirs and water users through a 167-mile aqueduct. The remainder of the water supply is derived from local runoff collected in reservoirs in the Alameda Creek and Peninsula watersheds in Alameda and San Mateo counties.

Water supply systems within the South Westside Basin are operated and managed by the Daly City Department of Water and Wastewater Resources, the Water Division of the San Bruno Public Services Department, and Cal Water (an investor-owned water utility) for South San Francisco, Colma, and a small portion of Daly City. These systems are supplied by groundwater pumped from the South Westside Basin and contracted water deliveries from the SFPUC Regional Water System. Since the 1990s, SFPUC and its Partner Agencies in the South Westside Basin have worked cooperatively to monitor and manage groundwater and coordinate projects.

1.3 California Groundwater Elevation Monitoring Program

DWR established the California Statewide Groundwater Elevation Monitoring Program (CASGEM) in 2009 in accordance with Senate Bill X7-6. It requires designated responsible parties to monitor seasonal groundwater elevations in basins within their jurisdiction and submit these data to DWR. SFPUC is the designated CASGEM entity for monitoring and reporting groundwater elevations in the North Westside Basin and five other small groundwater basins within CCSF: Islais Valley, South San Francisco, Lobos, Marina, and Downtown San Francisco. Based on a comprehensive hydrogeologic evaluation and well survey, SFPUC identified 16 wells for seasonal monitoring within these basins. Potential monitoring wells were not identified in Visitacion Valley, a seventh small basin within CCSF. This plan establishes procedures for collecting groundwater levels from these 16 wells and reporting them to DWR.

In the spring and fall of 2019, SFPUC measured groundwater levels in 14 of the 16 groundwater monitoring wells it had identified and entered these data into the DWR CASGEM system in accordance with State requirements. Measurements at the Downtown and Marina basin wells are no longer collected as the wells were destroyed.

Daly City, San Bruno, and Cal Water formed SWBVCGMA to address CASGEM requirements for their service areas in the South Westside Basin, and DWR designated SWBVCGMA as the monitoring entity for these areas in 2012. The CASGEM monitoring plan for SWBVCGMA identifies eight wells for monitoring.

2.0 WESTSIDE BASIN CLIMATE, HYDROLOGY, AND HYDROGEOLOGY

2.1 Climate

San Francisco has a Mediterranean climate with cool dry summers and mild wet winters. Based on meteorological data collected between 1914 and 2015, San Francisco's annual average daily high and low air temperatures are approximately 64 and 51 degrees Fahrenheit (°F), respectively. Temperatures range seasonally from a monthly average daily low of about 45°F in December and January to a monthly average daily high of about 70°F in September and October.

Since the early 1900s, San Francisco's mean annual precipitation has been approximately 21 inches, nearly all of which occurs as rainfall. On average, about 85 percent of annual precipitation occurs between November and March. December, January, and February are the wettest months, with monthly rainfall averaging approximately 4 inches. May through September are the driest months, with monthly rainfall averages of less than one-half inch.

The proximity of Lake Merced to the Pacific Ocean results in a distinct maritime Mediterranean climate influenced by wind, fog, and precipitation. In summer and fall, locations adjacent to the ocean, such as Lake Merced, are often foggy with cool temperatures in the 50s and 60s degrees Fahrenheit.

The San Francisco Peninsula experienced normal conditions during most of 2019 although there were approximately two months where the region experienced "abnormally dry" conditions (USDA, 2019).

Precipitation at the San Francisco Downtown station was 25.82 inches during water year 2019 (October 2018 through September 2019) and 26.25 inches for the 2019 calendar year. Based on the preceding 30 years (1989-2018) of precipitation data from the Downtown station rain gauge, the majority of annual rainfall occurs from late October through March. Precipitation typically declines during the late spring and becomes minimal during the summer. The average annual precipitation for the preceding 30 years is 22.60 inches (NOAA, 2019).

2.2 Hydrogeology

The Westside Basin has a land surface area of approximately 45 square miles in San Francisco and San Mateo counties (Figure 1). DWR designates it as groundwater basin number 2-35. The Westside Basin is bordered by four other small groundwater basins within CCSF: the Lobos Basin to the north (DWR basin 2-38); the Downtown, Islais Valley, and Visitacion Valley groundwater basins to the east (basins 2-40, 2-33, and 2-32); and the San Mateo Plain subbasin of the Santa Clara Valley basin to the south (basin 2-9.03).

As defined by Phillips and others (1993), the Westside Basin's northern boundary extends approximately four miles inland from Lands End north of Ocean Beach along a mostly buried bedrock ridge north and through Golden Gate Park. Continuing clockwise around the Basin, its northeastern boundary encompasses the panhandle of Golden Gate Park and extends five miles south through Twin Peaks and Mount Davidson to the San Francisco-San Mateo county line about a mile east of Lake Merced. The eastern Basin boundary in San Mateo County extends six miles along the southern flank of San Bruno Mountain to San Francisco Bay, and then five miles along the bay shore from South San Francisco to Burlingame. A buried bedrock ridge and a thick accumulation of Bay Mud appears to separate the San Bruno subsurface from San Francisco Bay. The 1.6-mile southeastern boundary is defined by a bedrock high separating the Westside Basin from the San Mateo Plain Subbasin. The Basin's southwestern boundary follows the Serra Fault Zone from Hillsborough twelve miles northwest to the Pacific Ocean. The Basin's onshore western boundary follows the coast for about six miles from Daly City north along Ocean Beach. In the subsurface, the Basin's western boundary is offshore and likely extends out to the San Andreas or Serra fault zones that trend offshore west and northwest of Daly City. The 2.2-mile county-line boundary between the North and South Westside basins does not have hydrogeological significance other than influencing the jurisdictional distribution of municipal groundwater pumping.

The Westside Basin contains two primary water-bearing geologic units, the weakly consolidated upper Merced Formation of early Pleistocene age and the unconsolidated Colma Formation of late Pleistocene age. These generally sandy units are underlain and bounded by low-permeability rock including the Franciscan and Great Valley complexes of Late Jurassic and Cretaceous age (basement rock) and the structurally deformed middle and lower units of the Merced Formation. Minor surficial units include late Quaternary dune sands, Holocene alluvium along existing and former stream channels, hillslope deposits, and both engineered and non-engineered artificial fill. These surficial deposits may directly overlie basement rock in areas where the Basin boundary is delineated along drainage divides. Along the basin axis, the total thickness of the groundwater system within these deposits ranges from about 400 feet near Golden Gate Park to greater than 800 feet in portions of the South Westside Basin (Figure 2).

Three aquifer zones are recognized in the Westside Basin, the Shallow, Primary Production, and Deep aquifers (LSCE, 2010). The Shallow Aquifer extends 50 to 120 feet below the water table within surficial deposits and the Colma and upper Merced formations. This shallow water-table zone occurs above the "-100-foot clay" aquitard beneath the Sunset District and Lake Merced areas. A shallow water-table zone is less well defined in the South Westside Basin due to predominantly fine-grained deposits at shallow depths.

The roughly 300-foot thick Primary Production Aquifer occurs within the upper Merced Formation below the -100-foot clay aquitard (where present) and above the W-clay aquitard, or its equivalent, from the Sunset District through Daly City to Colma. The Primary Production

Aquifer is subdivided vertically by discontinuous aquitards, including the X- and Y-clays extending between the Sunset District and Daly City, and an aquitard that separates shallow and deep aquifer zones beneath South San Francisco. The Primary Production Aquifer becomes overlain by fine-grained Bay Sediments near and southeast of San Bruno.

The Deep Aquifer is up to 200 feet thick and occurs within the upper Merced Formation beneath the W-clay, or its equivalent, from the Sunset District to Colma.

Groundwater in the vicinity of Lake Merced and north to Golden Gate Park is encountered at relatively shallow depths, ranging from approximately 5 to 60 feet below ground surface (bgs). Lake Merced is incised into the Colma Formation and is in hydraulic continuity with the Shallow Aquifer. South of Lake Merced, the depth to groundwater can exceed approximately 200 feet bgs within South Westside Basin pumping depressions. Groundwater movement is restricted along the southwestern boundary of the South Westside Basin by a low-permeability boundary formed along the Serra Fault zone.

2.3 Surface Water Hydrology

Lake Merced

Until the early 1900s, Lake Merced was a natural lake fed by local runoff and springflow, and drained by a stream discharging from the northwestern end of the lake. The stream flowed to the ocean through the present-day location of the San Francisco Zoo and Sloat Boulevard. The springs were primarily along the eastern side and beneath the southern portion of the lake, resulting in primarily south-to-north flow through the lake.

Today, Lake Merced consists of four lakes (North, East, South, and Impound lakes) and has no channelized inflow or outflow. A narrow channel connects North Lake and East Lake and equalizes their water surface elevations. A conduit between North Lake and South Lake allows water to flow between the lakes when the elevation in either lake is at least approximately 3.35 feet San Francisco City datum (14.72 feet NAVD88). When lake levels are below that elevation, these two lakes are separated and typically exhibit different water surface elevations. South Lake and Impound Lake are separated below an elevation of approximately 4.26 feet San Francisco City datum (15.63 feet NAVD88), by a levee that contains the Ingleside combined sewer pipeline and the foundation of a pedestrian walkway. Water flows freely beneath the pedestrian walkway and connects both lakes when the level of either lake is above this levee. The flow through the four lakes is generally north to south.

Beginning with the construction of the Vista Grande Canal and Tunnel by Spring Valley Water Works in 1897, urbanization of the Lake Merced watershed has diverted storm runoff away from the lake. Additionally, urbanization has impeded springflow into the lake as a result of emplaced fill, reduced groundwater recharge to the Shallow Aquifer, and downward hydraulic gradients

caused by pumping from the underlying aquifers. As a result, lake levels have become more sensitive to seasonal and climatic variability.

Pine Lake

Pine Lake is a relatively shallow, 3.4-acre freshwater lake located in the westernmost portion of Stern Grove and Pine Lake Park, about 0.5 mile northeast of Lake Merced. Pine Lake (also known as Laguna Puerca) is one of San Francisco's few natural lakes. Like Lake Merced, Pine Lake is incised into the upper portion of the Shallow aquifer.

The San Francisco Recreation & Parks Department (SFRPD) completed an improvement program for Stern Grove and Pine Lake Park in 2007. Since then, lake levels have been maintained at about 31.5 feet San Francisco City datum (42.9 feet NAVD88) by augmenting the lake with groundwater pumped from a previously inactive well (Stern Grove well) approximately 1,500 feet east of Pine Lake. According to SFRPD staff, the lake level is maintained by pumping groundwater into the lake for 2 to 3 days in summer and 1 day in winter. As a result, the lake currently is about 4 feet higher on average and about 7 feet higher than in 2004, with a typical depth of about 11.5 feet. Nearby monitoring wells have shown a corresponding increase in Shallow Aquifer groundwater levels.

Golden Gate Park Lakes

Golden Gate Park has 13 small lakes and ponds that were either manmade or have been substantially altered by human activity. Five of the lakes (Elk Glen, Middle, South, Mallard and North lakes) are believed to have been naturally fed by groundwater, whereas the other lakes and ponds may or may not have coincided with pre-existing natural surface water features. The lake levels are maintained by groundwater pumped from the park's irrigation wells.

3.0 HISTORICAL GROUNDWATER USE

Groundwater pumped from the Westside Basin has been used as a water supply since at least the early 1900s (Bartell, 1913a). Table 1 and Figure 3 summarize the historical record of municipal groundwater pumping from the Westside Basin since 1949. Table 2 and Figure 4 summarize the record of groundwater pumping for park, golf course, and cemetery irrigation. A brief summary of municipal and irrigation water use follows.

San Francisco

By the early 1900s, wells drilled to the north, east, and south of Lake Merced were supplying irrigation and potable water pumped from the Westside basin. The Spring Valley Water Company operated two wells near the outlet of Lake Merced that pumped about 0.1 mgd, or about 100 acre-feet per year (afy) (Bartell, 1913b). Total pumpage from the Lake Merced area, the Sunset District, and Golden Gate Park averaged about 0.4 mgd (400 to 500 afy).

During the early 1930s the San Francisco Board of Public Works installed production wells with a combined capacity of about 6.5 mgd (7,300 afy) in the Sunset District to serve as a drought emergency water supply (San Francisco Water Department, 1994). These wells produced an average of 5 mgd (5,600 afy) between 1930 and 1935. Use of these wells ended once Tuolumne River water from Hetch Hetchy Reservoir became available to San Francisco in the mid-1930s (San Francisco Water Department, 1961).

As described in Section 1.1 SFPUC installed four new municipal water supply wells from 2007 to 2011 for the SFGW Project, and is currently retrofitting two Golden Gate Park irrigation wells for municipal potable use. Production from the Lake Merced well began in 2017 and intermittent production from the South Sunset, West Sunset, and Golden Gate Central wells began in 2018. The SFGW Project contributed approximately 296 af to the municipal water supply in 2019.

Daly City

Local groundwater use by Daly City increased from about 1,500 afy in 1950 to 5,000 afy in 1970 in response to post-war development (Kirker, Chapman & Associates, 1972). Between 1970 and 2014, Daly City's groundwater use ranged from approximately 3,000 to 5,000 afy, except during the 2002-2005 Pilot In-Lieu Recharge Demonstration Program (Section 1.1) when pumping was reduced to approximately 700 to 2,700 afy. Daly City pumping declined since May 2016 as a result of SFPUC water deliveries during recent storage years for the GSR project. Daly City groundwater production was 56 af in 2019.

South San Francisco

Municipal groundwater pumping by Cal Water for South San Francisco declined from about 2,200 afy in the 1950s to approximately 1,100 afy in 2002 (Figure 3). From 2003 to 2008, groundwater pumping in South San Francisco was temporarily discontinued as part of the Pilot In-Lieu Recharge Demonstration Program, during which SFPUC surface water supplies temporarily replaced the use of groundwater. From 2008 to 2015, groundwater pumping by Cal Water for South San Francisco steadily increased from approximately 200 to 1,300 afy. Since 2016, groundwater pumping has declined as a result of SFPUC water deliveries for in-lieu recharge during recent storage years for the GSR project. Cal Water groundwater production for South San Francisco was approximately 31 af in 2019.

San Bruno

Municipal groundwater pumping by San Bruno was approximately 2,000 afy from the 1950s through the mid-1980s, then varied between 1,000 and 3,000 afy through 2002 (Figure 3). From 2002 to 2005, San Bruno reduced its pumping to approximately 550 to 1,200 afy during the Pilot In-Lieu Recharge Demonstration Program, after which its pumping ranged between approximately 1,600 to 2,400 afy through 2015. Since 2016, San Bruno's groundwater pumping has declined as a result of SFPUC water deliveries for in-lieu recharge as part of the GSR project. San Bruno groundwater production was approximately 277 af in 2019.

Irrigation and Other Non-Potable Use

Westside Basin groundwater use for irrigation and other non-potable uses at Golden Gate Park, the San Francisco Zoo, Lake Merced area golf courses, and Colma cemeteries is summarized below and in Tables 1 and 2 and Figure 4. The estimated annual groundwater use by each of these is discussed in Sections 4.5 through 4.8.

- **Golden Gate Park:** Golden Gate Park historically and currently uses groundwater pumped from wells within the park for irrigation and maintenance of lake levels. SFRPD currently operates and maintains these wells and SFPUC maintains a record of the flowmeter readings for each well.
- **San Francisco Zoo:** The San Francisco Zoo historically and currently uses groundwater for irrigation and to fill various zoo exhibits. The San Francisco Zoo well is operated and maintained by SFRPD, while SFPUC regularly records the flowmeter readings from the well.
- **Golf Courses:** There are seven golf courses in the Westside Basin that have used groundwater for irrigation: Harding Park Golf Course, Lake Merced Golf Club, Olympic Club Golf Course, San Francisco Golf Club, California Golf Club, Golden Gate Park Golf

Course, and Green Hills Country Club¹. In 2004, the NSMCSD Wastewater Treatment Plant began serving recycled water for irrigation to three golf courses (Lake Merced Golf Club, Olympic Club Golf Course, and San Francisco Golf Club) following the plant's addition of tertiary treatment and the construction of a distribution system to these golf courses. In 2012, recycled water was made available to Harding Park from NSMCSD for irrigation.

Metered groundwater pumping and recycled water use are reported by Lake Merced Golf Club, Olympic Club Golf Course, and San Francisco Golf Club (Table 2). The estimates of annual groundwater use presented in Table 2 and Figure 4 for the California Golf Club are from LSCE (2005) for 1960-2005, Carollo Engineers (2008) for 2006-2010, and HydroFocus (2011) for 2011-present.

- **Cemeteries:** The Westside Basin includes about 600 acres of cemetery property within and near Colma that historically and currently have pumped groundwater for irrigation. Estimates of cemetery annual groundwater use presented in Table 1 and Figure 4 are from LSCE (2005) for 1960-2005, Carollo Engineers (2008) for 2006-2010, and Hydro focus (2011) for 2011-present. Golden Gate National Cemetery has not been irrigated with groundwater since the 1960s (Boone, Cook and Associates, 1987).

¹ The discussion and estimates of groundwater use by Golden Gate Park includes irrigation for its golf course.

4.0 2019 GROUNDWATER USE

In 2019, groundwater pumping in the Westside Basin supplied municipal water for Daly City, South San Francisco (Cal Water), San Bruno, and San Francisco, and non-potable water for irrigation and other uses by Golden Gate Park, Pine Lake, San Francisco Zoo, golf courses, and cemeteries. Westside Basin groundwater pumping is described below and summarized in Tables 1 and 2 and Figures 3 and 4.

4.1 City of Daly City

Groundwater pumping by Daly City for municipal use during the 2019 calendar year totaled 56 af.

4.2 California Water Service Company (South San Francisco)

Groundwater pumping by Cal Water for municipal use during the 2019 calendar year totaled 31 af.

4.3 City of San Bruno

Groundwater pumping by San Bruno for municipal use during the 2019 calendar year totaled 277 af.

4.4 City of San Francisco

Groundwater pumping by SFPUC for municipal use during the 2019 calendar year totaled approximately 296 af.

4.5 Golden Gate Park and Pine Lake

Metered groundwater pumping for irrigation and other non-potable uses in Golden Gate Park during the 2019 calendar year totaled approximately 1,420 af.

SFRPD estimates that approximately 5 afy of groundwater pumping from the Stern Grove well is needed to maintain the level of Pine Lake.

4.6 San Francisco Zoo

Metered groundwater pumping at the San Francisco Zoo during the 2019 calendar year totaled 244 af.

4.7 Golf Courses

Metered groundwater pumping by Lake Merced Golf Club, Olympic Club Golf Course, and San Francisco Golf Club during calendar year 2019 totaled 494 af (Table 1 and 2). Recycled water from NSMCSD was unavailable for a significant portion of the 2019 irrigation season and as a result groundwater pumping replaced the use of recycled water during this period at these golf courses.

Groundwater pumping by California Golf Club and Green Hills Country Club is unmetered but estimated to average 237 and 134 afy, respectively (HydroFocus, 2011; Table 2).

4.8 Cemeteries

Groundwater pumping for the Colma cemeteries is unmetered but estimated to average 859 afy (HydroFocus, 2011).

4.9 Summary

As summarized in Table 1, groundwater production from the Westside Basin totaled approximately 4,053 af in 2019. Municipal groundwater use by San Francisco, Daly City, San Bruno, and California Water Service Company (South San Francisco) was 660 af in 2019. The three metered golf clubs in the Lake Merced area used 494 af of pumped groundwater and 230 af of recycled water during 2019.

The total metered use of Westside Basin groundwater in 2019 was approximately 2,818 af. Metered usage includes municipal pumping for San Francisco, Daly City, San Bruno, and Cal Water (South San Francisco), and non-potable use for Golden Gate Park, San Francisco Zoo, Lake Merced Golf Club, Olympic Club Golf Course, and San Francisco Golf Club. Average annual non-metered groundwater pumping in the Westside Basin is estimated to be approximately 1,235 afy (HydroFocus, 2011) and includes California Golf Club, Green Hills Country Club, Pine Lake filling, and cemeteries.

This report does not estimate groundwater pumping for domestic use, remediation, or construction dewatering. These uses may be assumed to be relatively negligible compared to the uses inventoried above.

5.0 MONITORING PROGRAM OVERVIEW

The Westside Basin monitoring program consists of quarterly or more frequent groundwater and lake elevation gauging and annual, semi-annual (spring and fall), or more frequent groundwater sampling for selected water quality parameters. These data support an ongoing evaluation of general groundwater conditions and water quality within the aquifer system, with particular emphasis on lake-aquifer interactions and the potential for saltwater intrusion. Program data extend as far back as 1996 and provide a baseline for evaluating the implementation of the SFGW, GSR, and other projects.

The groundwater elevation monitoring network consists of 101 individual wells at 41 locations (Table 3, Figure 5). The network consists of dedicated monitoring wells and 4 inactive production wells. The monitored wells are subdivided into coastal, lake-aquifer, Bay side, and general North and South Westside Basin monitoring networks. Table 4 lists a subset of 44 of these wells used to construct groundwater elevation contours for the Shallow and Primary Production aquifers. As shown in Table 5, measurements are collected manually on a quarterly or semi-annual basis for some wells, and daily using electronic pressure transducers and data loggers for other wells. Groundwater elevation hydrographs relative to the NAVD88 datum are provided for selected wells in figures 11 through 14, 16 through 21 and for all monitored wells in Appendix A. The program also includes continuous monitoring of the water surface elevation of Lake Merced's South Lake using a pressure transducer installed in a wet well.

The groundwater quality monitoring network consists of 86 individual wells at 41 locations (Table 6, Figure 6). The network consists of dedicated monitoring wells and 14 active or occasionally active production wells. These wells are subdivided into separate coastal, Bay side, and general basin monitoring networks. Samples are collected annually and semi-annually as indicated in Table 7. The historical and current results of groundwater quality monitoring are presented and discussed in Section 7. The laboratory analytical reports are provided in Appendix B.

SFPUC's Water Quality Division (WQD) has led the fieldwork for the groundwater monitoring program since fall 2014. WQD's sampling protocols and field procedures for this program are presented in the *Westside Basin Groundwater Monitoring Manual of Procedures* (SFPUC, 2014; Appendix C).

Samples collected to assess general groundwater quality are analyzed for some or all of the following constituents:

- General minerals: total alkalinity, calcium, magnesium, sodium, potassium, chloride, and sulfate.
- Nitrate.

- General parameters: specific conductance, pH, total dissolved solids (TDS), and hardness (as CaCO_3).

6.0 GROUNDWATER AND LAKE LEVEL MONITORING

Figures 7 and 8 present 2019 spring and fall estimated groundwater elevation contours for the Shallow aquifer, and Figures 9 and 10 present 2019 spring and fall estimated groundwater elevation contours for the Primary Production Aquifer. The estimated groundwater elevation contours are based on 2019 groundwater level data for monitoring wells listed in Table 4.

The following sections discuss the 2019 groundwater level monitoring results for the coastal, lake-aquifer, South Westside Basin, and Bay side monitoring networks.

6.1 Coastal Groundwater Level Monitoring

The coastal groundwater level monitoring network consists of 26 individual wells at 11 locations along the coastal zone from Golden Gate Park south to Daly City (Table 3, Figure 5). Monitoring well clusters are located in western Golden Gate Park; along the Old Great Highway near Kirkham, Ortega, and Taraval streets; and at San Francisco Zoo, Fort Funston, and Thornton Beach.

Figures 11, 12, 13, and 14 present groundwater elevation hydrographs for the period of record for the Kirkham, Ortega, Taraval, and Zoo monitoring well clusters, respectively. These plots include chloride concentrations monitored at these same wells and discussed in Section 7.1.

Groundwater elevations in the Shallow Aquifer coastal monitoring wells were above sea level in 2019.

Table 8 compares 2018 and 2019 seasonal low groundwater levels for selected coastal monitoring wells. Compared to 2018, seasonal low groundwater levels in the Shallow Aquifer were higher in 2019 at South Windmill MW57, South Windmill MW140, Kirkham MW130, Ortega MW125, and Taraval MW145. Seasonal high groundwater levels in the Shallow Aquifer in 2019 were generally similar to 2018 or slightly higher.

Seasonal high groundwater levels in monitoring wells completed in the Primary Production Aquifer were generally similar in 2019 compared to 2018, except for slightly lower levels in Zoo MW450. Groundwater levels in the Deep Aquifer measured in monitoring well Zoo MW565 continued to trend upward from a low of -12 feet NAVD88 measured in 2013 (Figure 14c). Since 2018, this well's seasonal high water levels have been above sea level.

Groundwater elevations in South Windmill MW140, SF-1, and SWM-3 all remained above sea level during 2019 (see hydrographs in Appendix A). Higher water levels in these wells during 2019 may be explained at least partially by the discontinuation of pumping from the nearby South Windmill Replacement irrigation well during the 2019 refurbishment of the well and its well station as part of the SFGW project.

Groundwater elevations measured in monitoring wells at Fort Funston and Thornton Beach continue to be generally stable and consistently above sea level (Appendix A). Groundwater conditions at these locations appear to be hydraulically separate from the Basin further inland as a result of low-permeability conditions along the Serra and San Bruno fault zones and highly deformed geologic strata on the west side of these faults (LSCE, 2004).

6.2 Lake Merced and Lake-Aquifer Level Monitoring

The level of Lake Merced is monitored at South Lake and groundwater levels are monitored in a network of 20 dedicated monitoring wells at 10 locations surrounding the lake complex using a combination of continuous and periodic monitoring (Table 3, Figure 5). During 2018, monitoring well LMMW-9SS was destroyed under permit with the San Francisco Department of Public Health due to construction of the Westside Recycled Water Facility. SFPUC installed replacement monitoring well LMMW-9S in late 2019 near the same location and screened it slightly deeper, from 55 to 75 ft bgs instead of 35 to 50 ft bgs (Appendix D). The well was installed to a total depth of 80 ft bgs with 2-inch diameter Schedule 40 PVC. Monitoring well construction details and generalized borehole lithology can be found in Appendix D.

South Lake water surface elevations ranged from approximately 16.75 to 18.25 feet NAVD88 in 2019 and generally were above the interim lake level range established by SFPUC (14 to 16 feet NAVD88). Figure 15 presents the 1997-2019 lake level hydrograph for Lake Merced's South Lake. Seasonal high and low lake levels were higher in 2019 than 2018, and the 2019 seasonal low level was more than five feet above the 2002 seasonal low. South and Impound lakes were connected throughout 2019 because the level of South Lake did not fall below 15.63 feet NAVD88 (4.26 feet San Francisco City datum), unlike 2017 when it did for a short time.

Groundwater elevations in the Shallow Aquifer surrounding Lake Merced ranged from 16.71 feet NAVD88 in monitoring well LMMW-1S to 29.64 feet NAVD88 in LMMW-7SS during spring 2019. During fall 2019, groundwater elevations ranged from 15.89 feet NAVD88 in LMMW-1S to 28.52 feet NAVD88 in LMMW-7SS.

Groundwater elevations in the Primary Production Aquifer in the vicinity of Lake Merced ranged from -10.89 feet NAVD88 in monitoring well LMMW-3D to 16.85 feet NAVD88 in LMMW-2D during spring 2019. During fall 2019, groundwater elevations in the Primary Production Aquifer in the vicinity of Lake Merced ranged from -14.11 feet NAVD88 in LMMW-3D to 15.47 feet NAVD88 in LMMW-2D.

Figure 16 presents groundwater level hydrographs for a pair of monitoring wells near the western shore of South Lake, one screened in the Shallow Aquifer (LMMW-1S) and one in the Primary Production Aquifer (LMMW-1D). Groundwater levels measured in LMMW-1S during 2019 remained above 2013-2016 drought levels. Groundwater elevations in LMMW-1D continued a rising trend that began in 2016, surpassing high levels observed in 2011, but falling

during the latter half of 2019, at least partially in response to increased pumping for golf course irrigation and pumping from the SFGW Lake Merced production well. Water levels in both monitoring wells remain substantially above low levels measured in 2002.

Groundwater levels in the Primary Production Aquifer measured in monitoring well LMMW-3D near the southwestern shore of Impound Lake (see hydrograph in Appendix A) had been rising since 2016 in response to the end of the drought and the start of GSR in-lieu recharge, with seasonal highs exceeding sea level each year since 2017, but declined slightly in 2019, at least partially in response to local pumping for golf course irrigation and by the SFGW Lake Merced well.

6.3 South Westside Basin Groundwater Level Monitoring

The groundwater level monitoring network in the south Westside Basin consists of 53 wells at 19 locations along the Basin axis between Daly City and Burlingame (Table 3, Figure 5). One of these wells (LMMW-6D) also is included in the Lake-Aquifer monitoring network, and seven of these wells at 3 locations comprise the Bay side monitoring program described in Section 6.4.

This network includes ten monitoring well clusters, and one single monitoring well, installed in Daly City, Colma, South San Francisco, San Bruno, and Millbrae by SFPUC from 2007 to 2012 (Kennedy/Jenks, 2009, 2010a, 2012), and four inactive production wells (DC-1, DC-8, SS 1-02, and SB-12). Monitoring records for nine of these wells extend back to 2000. Prior to fall 2015 the network included an additional monitoring well cluster (CUP-3A) that was destroyed to accommodate the construction of a GSR production well.

Figures 17, 18, and 19 present groundwater level hydrographs for monitoring well DC-1 Westlake in Daly City, SS1-02 in South San Francisco, and SB-12 in San Bruno. Appendix A provides hydrographs for all network wells.

Groundwater levels in all South Westside Basin monitoring wells representative of the Primary Production Aquifer were below sea level in 2019, ranging from -1.09 (LMMW-6D) to -168.86 (SB-12 Elm Avenue) feet NAVD88 during the spring monitoring event, and from -4.15 feet to -167.31 feet NAVD88 for these same two wells during the fall monitoring event.

Groundwater levels in the Primary Production Aquifer generally rose in 2019, continuing a trend that began in 2016 in response to the end of the 2012-2015 drought and four consecutive years of reduced municipal pumping (in-lieu recharge) in exchange for increased SFPUC surface-water deliveries to GSR partner agencies. Groundwater levels also rose or were stable in shallower zones.

6.4 Bay Side Groundwater Level Monitoring

San Bruno has conducted groundwater level monitoring since 2006 in two well clusters installed along the San Francisco Bay side (Bay side) of the Westside Basin: Burlingame-S, -M, and -D and SFO-S and SFO-D at San Francisco Airport (near the existing UAL-13C and -13D cluster) (Figure 5; WRIME, 2007a). San Bruno monitors these wells on a semi-annual basis in accordance with the *San Bruno Saltwater Intrusion Monitoring Wells: Sampling Plan* (WRIME, 2007b). Figures 20 and 21 present groundwater level hydrographs for the Burlingame and SFO monitoring well clusters, respectively.

In March 2019, groundwater elevations in the Burlingame-S, -M, and -D monitoring wells were 1.19, -0.17, and -6.04 feet NAVD88, respectively, and groundwater elevations in SFO-S and SFO-D were 0.69 and -26.92 feet NAVD88, respectively. In August 2019, groundwater elevations in Burlingame-S, -M, and -D were 2.32, -1.46, and -5.70 feet NAVD88, respectively, and groundwater elevations in SFO-S and SFO-D were 1.74 and -25.02 feet NAVD88, respectively. Consistent with previous years, 2019 groundwater levels in SFO-S were above sea level and levels in SFO-D and Burlingame-D were below sea level. Levels in Burlingame-S and M have fluctuated within 4 feet of sea level since the wells were installed in 2006.

7.0 GROUNDWATER QUALITY MONITORING

Wells included in the groundwater quality monitoring network are listed in Table 6 and located on the map in Figure 6. The network consists of 72 dedicated monitoring wells clustered at 27 locations, and 14 production wells. These wells are subdivided into separate groups for monitoring groundwater quality conditions along the coast; in the Sunset District and Lake Merced area; in the South Westside Basin; and in proximity to San Francisco Bay. Samples are collected annually and semi-annually as indicated in Table 7.

Water quality monitoring results for sampled raw (untreated) groundwater are presented in Tables 9, 10, and 11 in comparison to the maximum contaminant level (MCL) and secondary maximum contaminant levels (SMCL) of each water quality constituent or parameter, if established. Primary MCLs are regulatory benchmarks for drinking water developed to protect human health. SMCLs are benchmarks developed to protect the aesthetic quality of drinking water (e.g., taste, odor, and appearance). Laboratory analytical reports are provided in Appendix B.

7.1 Coastal Groundwater Quality Monitoring

The coastal groundwater quality monitoring network consists of 21 wells at 9 locations along the coastal zone from Golden Gate Park south to San Francisco Zoo (Table 6, Figure 6). Monitoring well clusters are located in western Golden Gate Park; along the Old Great Highway near Kirkham, Ortega, and Taraval streets; and at the San Francisco Zoo. The network is configured to among other things detect the potential for saltwater intrusion along the Pacific Ocean coast. Groundwater samples from these wells are analyzed for specific conductance, TDS, and chloride. Table 9 presents groundwater quality monitoring results for the coastal network. Measured chloride concentrations are plotted on the groundwater level hydrographs provided in Figures 11 through 16.

In 2019, chloride concentrations in all monitored coastal groundwater wells ranged from 23 milligrams per liter (mg/L) for monitoring well Ortega MW265 to 159 mg/L for USGS South Windmill MW57. Spring and fall 2019 chloride concentrations for USGS South Windmill MW57 were 159 and 140 mg/L, respectively, which were below 2018 levels. Coastal monitoring wells screened between 100 and 140 feet bgs, Kirkham MW130, Ortega MW125, and Taraval MW145 had chloride concentrations between 32 and 43 mg/L.

Chloride and TDS concentrations and values of specific conductance for the coastal monitoring wells were generally within historical ranges during 2019. Measured chloride concentrations were below the recommended and upper-level California SMCL of 250 and 500 mg/L, respectively.

7.2 Sunset District and Lake Merced Area Groundwater Quality Monitoring

The groundwater quality monitoring network in the Sunset District and Lake Merced area consists of 7 individual wells at 4 separate locations (Table 6, Figure 6). Table 10 presents historical and current groundwater quality monitoring results for these wells.

Groundwater sampled from monitoring well LMMW-1S has had elevated concentrations of chloride since samples were first collected in 2009. The fall 2019 sample had a chloride concentration of 372 mg/L, above the recommended SMCL of 250 mg/L and similar to historical concentrations. Concentrations of nitrate in groundwater sampled from this well during spring and fall 2019 were 26.8 and 93.3 mg/L, respectively, with the fall concentration above the 45 mg/L MCL for nitrate. Prior to fall 2017, nitrate concentrations were typically below the MCL for this well.

Groundwater sampled from LMMW-1D has been near or above the MCL for nitrate since 2010. Nitrate concentrations in groundwater sampled from this well during spring and fall 2019 were 44.9 and 47.5 mg/L, respectively, similar to prior years.

Among the remaining wells in this group, 2019 chloride concentrations ranged between 41 mg/L (West Sunset Playground monitoring well) and 150 mg/L (LMMW-2D), and nitrate concentrations ranged from below detection to 24.7 mg/L (LMMW-2S).

Total dissolved solids concentrations in groundwater sampled from the West Sunset Playground monitoring well during 2018 and 2019 were higher than the years immediately preceding but similar to concentrations during 2004-2010.

7.3 South Westside Basin Groundwater Quality Monitoring

The groundwater quality monitoring network in the South Westside Basin consists of 58 wells at 28 locations, 14 of which are active or occasionally active production wells (Table 6, Figure 6). Records for the dedicated monitoring wells extend back to the years they were installed, 2003-2012, whereas some production well records extend back to the mid-1970s for Daly City, the late 1950s for Cal Water, and 2000 for San Bruno. Table 10 presents historical and current groundwater quality monitoring results for these wells. Seven of these wells at 3 locations comprise the Bay side monitoring program and are discussed separately in Section 7.4.

During 2019, chloride concentrations in the South Westside Basin (excluding Bay Side monitoring wells) were below the recommended SMCL and ranged from 38 mg/L (MW-M1) to 187 mg/L (CUP-10A MW710). TDS concentrations were near the recommended SMCL of 500 mg/L, on average, ranging from 254 mg/L (MW-M1) to 1,130 mg/L (CUP-44-1 MW580). Nitrate concentrations were below the MCL in all but five wells (CUP-10A MW160, CUP-22A MW290, CUP-23 MW230 AND MW600, and Park Plaza MW195) during the 2019 sampling events.

Figure 22 is a plot of nitrate concentrations for six production wells monitored in the South Westside Basin.

The following sections discuss the results of groundwater quality monitoring in the Daly City, Colma, South San Francisco, San Bruno, and Millbrae areas.

7.3.1 Daly City

During 2019, detected concentrations of nitrate in groundwater sampled from wells in the Daly City area ranged from 10.5 mg/L for the Jefferson production well to 52.4 mg/L for monitoring well CUP-10A MW160 (Table 10). Nitrate concentrations for both spring and fall samples from CUP-10A MW160 exceeded the primary MCL of 45 mg/L.

Figure 23 presents time-series plots of chloride and TDS concentrations and specific conductance in groundwater sampled from the DC-2 Westlake production well. TDS concentrations were above the 500 mg/L SMCL in samples collected from 2001-2014, after which they were below the SMCL through 2017. This well and production wells DC-4 and Vale were out of service in 2019 and could not be sampled.

7.3.2 Colma

Groundwater is used for cemetery irrigation in the Colma area. Currently, groundwater is not pumped for municipal use in Colma. As part of the proposed GSR project, monitoring well clusters CUP-18 and CUP-19 were installed in the Colma area. During 2019, chloride concentrations ranged from 85 mg/L (CUP-18 MW595) to 124 mg/L (CUP-18 MW595), and were below the recommended SMCL of 250 mg/L. TDS concentrations ranged between 356 mg/L (CUP-18 MW425) and 525 mg/L (CUP-18 MW595), where only one sample (CUP-18 MW595) was above the 500 mg/L SMCL. Nitrate concentrations ranged from below detection to 19.3 mg/L (CUP-19 MW690), and were below the primary MCL of 45 mg/L (Table 10).

7.3.3 South San Francisco

During 2019 wells sampled in the South San Francisco area had TDS concentrations ranging from 268 mg/L (SSFLP 220) to 805 mg/L (SS 1-21), chloride concentrations ranging from 39 mg/L (CUP-31A MW480) to 172 mg/L (SS 1-21), and were below their recommended SMCLs of 500 and 250 mg/L, respectively (Table 10). Nitrate concentrations exceeded the MCL in two of the four nested wells in the CUP-23 well group, ranging up to 48.0 mg/L in MW230 and 99 mg/L in MW600. Nitrate concentrations in groundwater sampled from CUP-23 MW230 have been above the MCL since the well was first sampled in 2010, whereas groundwater sampled from CUP-23 MW600 first exceeded the MCL for nitrate in 2015. Additionally, nitrate at CUP-22 MW290 (46.6 mg/L) equaled or exceeded the 45 mg/L MCL for the first time since October 2010. Nitrate concentrations were below the 45 mg/L MCL in groundwater sampled from other South San Francisco monitoring wells.

Figure 24 presents time-series plots of chloride, TDS, and specific conductance for groundwater sampled from Cal Water well SS1-21. TDS concentrations and specific conductance have consistently exceeded the recommended SMCLs. South San Francisco production well SS 1-15 was taken out of service and has not been sampled since 2016.

7.3.4 San Bruno and Millbrae

During 2019, groundwater quality in the San Bruno and Millbrae areas was monitored in the CUP-44-1 nested well group, monitoring well MW-M1, and in four San Bruno production wells (SB-16, -17, -18, and -20). The lowest concentrations of chloride and TDS were measured in groundwater samples from MW-M1 (38 mg/L and 254 mg/L, respectively) and the highest chloride and TDS concentrations were 204 mg/L and 1,130 mg/L in samples from CUP-44-1 MW580, exceeding the recommended SMCL for TDS of 500 mg/L (Table 10). Detected nitrate concentrations were below the primary MCL of 45 mg/L and ranged from <0.3 mg/L (CUP-44 MW580 and SB-16) to 30.7 mg/L in CUP-44-1 MW300.

Figure 25 presents a time-series plot for San Bruno production well SB-20 (Lions Field Park). Chloride, TDS, and specific conductance have been consistently below their respective SMCLs in this well since 2004.

7.3.5 Bay Side

As part of the City of San Bruno's Bay Side monitoring program, the SFO and Burlingame well clusters were sampled in March and August 2019 (Table 10). Figures 20 and 21 provide plots of 2019 and historical chloride concentrations for the Burlingame and SFO wells superimposed on their respective 2006-2019 groundwater level hydrographs.

During the 2019 sampling events, chloride concentrations exceeding the upper SMCL were detected in groundwater samples from Bay Side monitoring well SFO-S (10,000 mg/L during both spring and fall) and wells SFO-D (1,300 mg/L spring and 1,200 mg/L fall) and Burlingame-S (1,200 mg/L during both spring and fall). Chloride concentrations at Burlingame-M and Burlingame-D were below the recommended SMCL during both spring and fall events. Nitrate was not detected in any of the Bay Side monitoring wells sampled in either the spring or fall of 2019.

8.0 SUMMARY OF PROPOSED ACTIVITIES FOR 2020

8.1 Groundwater Monitoring Program

In 2020, SFPUC, in cooperation with its partner agencies, will assess general groundwater conditions throughout the Westside Basin through continued implementation of the groundwater monitoring and reporting program documented in this report. This program remains consistent with recommendations made in the 2005 monitoring report (LSCE, 2006) and will continue to be updated and evaluated.

8.2 Coastal Groundwater Monitoring

SFPUC will measure groundwater levels daily to quarterly (Table 5) and conduct semi-annual (spring and fall) sampling of coastal groundwater quality (TDS, specific conductance, and chloride; Table 7).

8.3 Lake Merced

SFPUC will continue the Lake Merced groundwater and lake-level monitoring program in accordance with the recommendations of the 2005 annual report. Groundwater measurements will be recorded daily to quarterly, consistent with the current program (Table 5). Water quality monitoring reports for Lake Merced are prepared annually (SFPUC 2019), and the next report is expected in 2020.

8.4 CASGEM

SFPUC and the South Westside Basin Voluntary Cooperative Groundwater Monitoring Association (SWBVCGMA) will continue to participate in the CASGEM Program. SFPUC will continue collecting groundwater elevations for the North Westside, Islais Valley, South San Francisco, and Lobos San Francisco Basins, and reporting these data to DWR. SWBVCGMA will continue collecting South Westside Basin groundwater elevations and reporting these data to DWR.

8.5 General Basin Conditions and GSR Project

SFPUC will continue to monitor water levels and general water quality of key wells in the Westside Basin (Tables 5 and 7). The general water quality and water level monitoring network will document the Basin's response to initial testing and operation of the GSR project.

8.6 Bay Side Monitoring

The City of San Bruno will continue to monitor its Bay Side monitoring wells in the southeastern portion of the Westside Basin on a semi-annual basis, in general accordance with the Westside

Basin monitoring program, and transmit these data to SFPUC for inclusion in the annual groundwater monitoring report.

9.0 REFERENCES

- Bartell, M.J. 1913a. *Underground Water Supply of San Francisco County*.
- Bartell, M.J. 1913b. Map of San Francisco Peninsula showing locations of wells. San Francisco Department of Public Works.
- Boone, Cook and Associates. 1987. *Evaluation of Alternative Sources of Supply for Irrigation at Golden Gate National Cemetery, San Bruno, California*. February.
- Carollo Engineers. 2008. *Recycled Water Feasibility Study*. September.
- City of Daly City. 2003. Westside Basin Groundwater Model.
- City of San Bruno, California Water Service Company, Daly City, and Hetch Hetchy Regional Water System. 2012. South Westside Basin Groundwater Management Plan.
- HydroFocus, Inc. (HydroFocus). 2007. *Westside Basin Groundwater-Flow Model ("Westside Basin Groundwater-Flow Model (version 2.0), Historical Calibration Run (1959-2005) Results and Sensitivity Analysis")*. December.
- HydroFocus. 2009. *Westside Basin Groundwater-Flow Model (version 2.1): Revised Historical Simulation and No-Project Simulation Results*. August.
- HydroFocus. 2011. *Westside Basin Groundwater-Flow Model (Version 3.1): Updated Model and 2008 No Project Simulation Results*. May.
- HydroFocus. 2017. *Westside Basin Groundwater-Flow Model: Extended and Updated Model Simulation Results, Version 4.1 (1959-2014)*. March.
- Kennedy/Jenks Consultants (Kennedy/Jenks). 2009. *Monitoring Well Installation Technical Memorandum, South Westside Basin Conjunctive Use Project*. April.
- Kennedy/Jenks. 2010a. *Phase 2 Monitoring Well Installation Technical Memorandum, Groundwater Storage and Recovery Project*. March.
- Kennedy/Jenks. 2012. *Phase 3 Monitoring Well Installation Technical Memorandum, Groundwater Storage and Recovery Project*. October.
- Kirker, Chapman & Associates. 1972. *Lake Merced Water Resource Planning Study*. San Francisco Water Department.
- Luhdorff & Scalmanini Consulting Engineers, Inc. (LSCE). 2004. *Update on The Conceptualization of the Lake Aquifer System Westside Groundwater Basin San Francisco and San Mateo Counties*. April.

- LMPS. 2016. *San Francisco Public Utilities Commission Lake Merced Pumping Station Rain Gauge Data*. Accessed December 13, 2017.
- LSCE. 2005. *Results of In-Lieu Recharge Demonstration Fall 2002 through Spring 2005*. October.
- LSCE. 2006. *Hydrogeologic Conditions in the Westside Basin - 2005*. November.
- LSCE. 2010. *Final Task 8B. Technical Memorandum No. 1. Hydrologic Setting of the Westside Basin*. May.
- National Oceanic and Atmospheric Administration (NOAA). 2019. Precipitation Data for Station San Francisco Downtown, CA US. Available online at: <https://www.ncdc.noaa.gov/cdo-web/datasets/GHCND/stations/GHCND:USW00023272/detail>. Accessed April 7, 2020.
- Phillips, S. P., Hamlin, S. N., and Yates, E. B. 1993. *Geohydrology, Water Quality, and Estimation of Groundwater Recharge in San Francisco, California, 1987-92*. U.S. Geological Survey. Water-Resources Investigations Report 93-4019.
- San Francisco Public Utilities Commission (SFPUC). 2005. *Final Draft North Westside Groundwater Basin Management Plan*. April.
- SFPUC. 2014. *Westside Basin Groundwater Monitoring Manual of Procedures*. March.
- SFPUC. 2019. *2018 Lake Merced Water Quality Monitoring Report*. June.
- San Francisco Water Department (SFWD). 1961. *Water Production from Spring Valley and Other Local Sources*.
- SFWD. 1994. *Data Concerning San Francisco Water Department, Hetch Hetchy, Catchment, Storage, and Transmission Facilities*. Data Book. 1994 revision, p. 21.
- San Mateo County Environmental Health Services Agency. 2000. *Westside Basin Water Quality Sampling Results*. July.
- United States Department of Agriculture (USDA). 2019. U.S. Drought Monitor. Prepared by USDA, NOAA, National Drought Mitigation Center, and U.S. Department of Commerce. Available online at: <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx> Accessed March 17, 2020.
- Water Resources & Information Management Engineering, Inc. (WRIME). 2007a. *San Bruno Groundwater Monitoring Wells: Installation and Monitoring, an AB303 Project Report*. April.
- WRIME. 2007b. *San Bruno Seawater Intrusion Monitoring Wells: Sampling Plan*. April.

TABLES

**Table 1
Westside Basin Annual Groundwater Pumping**

Calendar Year	North Westside Basin Municipal and Irrigation			South Westside Basin Municipal			Golf Course Irrigation			Cemeteries	Approximate Total
	Golden Gate Park ¹	Zoo	City of San Francisco ²	Daly City	South San Francisco (Cal Water)	San Bruno	Lake Merced Area ³	California Golf Club	Green Hills Country Club		
	acre-feet per year										
1960s	1,100 ⁴	60 ⁴	0	5,000 ⁴	2,000 ⁴	1,900-2,400	2,235 ⁴	665 ^{4,6}	- ⁹	2,400 ^{4,6}	15,400-15,900
2005	1,100 ⁴	400	0	736	0	1,700	45	120-150 ^{4,6}	- ⁹	1,400-2,400 ^{4,6}	5,500-6,500
2006	1,100 ⁴	350	0	862	0	1,955	85	206 ^{4,7}	- ⁹	787 ^{4,7}	5,300
2007	909 ⁵	616	0	2,603	0	2,350	88	206 ^{4,7}	- ⁹	787 ^{4,7}	7,560
2008	1,280	260	0	3,564	206	2,097	122	206 ^{4,7}	- ⁹	787 ^{4,7}	8,520
2009	1,072	170	0	1,667	380	2,379	113	206 ^{4,7}	- ⁹	787 ^{4,7}	6,770
2010	1,061	195	0	1,743	453	2,364	96	206 ^{4,7}	- ⁹	787 ^{4,7}	6,900
2011	1,027 ⁵	404	0	2,699	515	2,129	76	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	8,080
2012	971	368	0	3,772	606	1,596	104	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	8,650
2013	1,212 ⁵	439 ⁵	0	3,351	995	2,198	102	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	9,530
2014	1,213 ⁵	459	0	3,452	1,028	2,025	149	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	9,560
2015	1,300 ⁵	270	0	1,980	1,312	2,164	200	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	8,460
2016	1,188	171	0	941	528	937	112	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	5,107
2017	1,184	234	17	62	0.4	303	114	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	3,145 ¹⁰
2018	1,439	238	234	59	35	333	174	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	3,747 ¹¹
2019	1,420	244	296	56	31	277	494	237 ^{4,8}	134 ^{4,8}	859 ^{4,8}	4,053 ¹¹

Notes:

¹ As of 2006, SFRPD reported that three wells were operating (Elk Glen, South Windmill Replacement, and North Lake). A flowmeter was installed at the Elk Glen well in November 2005. Flow totalizer information has been collected from the South Windmill Replacement well since November 2005 and from the North Lake well since June 2006. A flow meter was installed at the Golden Gate Park Central well in October 2017.

² The Lake Merced Pump Station, Golden Gate Central, South Sunset, and West Sunset production wells were operated intermittently from 2017 through 2019.

³ Lake Merced Golf Course, Olympic Club Golf Course, and San Francisco Golf Club.

⁴ Estimated.

⁵ Due to occasional resetting of flowmeters, some readings are estimated.

⁶ Irrigation estimates from LSCE (2005).

⁷ Irrigation estimates from Carollo (2008).

⁸ Irrigation estimates updated based on the HydroFocus Groundwater Model (2011).

⁹ Not available.

¹⁰ Total groundwater pumping in 2017 was decreased by approximately 1 AF due to data correction during preparation of the 2018 report.

¹¹ This total includes the estimated 5 acre-feet of water pumped to fill Pine Lake.

Table 2
Water Use for Golf Course Irrigation near Lake Merced, 2005-2019

Calendar Year	Actual Water Use (acre-feet per year) ¹											
	Lake Merced Golf Club			Olympic Club Golf Course			San Francisco Golf Club			Total		
	Re-cycled	Ground-water	Total	Re-cycled	Ground-water	Total	Re-cycled	Ground-water	Total	Re-cycled	Ground-water	Total
2005	91	5	95	275	3	278	107	37	144	473	45	517
2006	90	--	--	288	3	291	119	--	--	497	85	542
2007	100	37	137	370	2	372	150	49	199	620	88	708
2008	78	31	109	352	30	382	164	61	225	594	122	716
2009	102	31	133	354	20	374	147	62	209	603	113	716
2010	96	33	129	316	10	326	123	53	176	535	96	631
2011	43	18	61	284	20	304	132	38	170	459	76	535
2012	88	37	125	262	20	282	141	47	188	491	104	595
2013	78	32	110	384	13	397	179	57	236	641	102	743
2014	52	18	70	323	74	397	211	57	268	586	149	735
2015	85	30	115	299	123	422	187	47	234	571	200	771
2016	102	51	153	329	23	352	174	38	212	605	112	717
2017	79	54	133	350	28	378	141	32	173	570	114	684
2018	85	56	141	290	71	361	204	47	252	579	174	753
2019	60	89	149	81	320	402	90	85	174	230	494	725
Average	82	37	119	304	51	354	151	51	204	537	138	673
Minimum	43	5	61	81	2	278	90	32	144	230	45	517
Maximum	102	89	153	384	320	422	211	85	268	641	494	771

Notes:

¹ Water use data provided by golf courses.

-- Data are unknown although a total for recycled and groundwater use for 2006 was estimated.

**Table 3
Groundwater Elevation Monitoring Network Wells**

Coastal Monitoring Network^a	GGP NWM-3
	GGP SWM-3
	GGP Soccer Field SF-1
	GGP North Lake Road NL-1
	USGS South Windmill MW57, 140
	Kirkham MW130, 255, 385, 435
	Ortega MW125, 265, 400, 475
	Taraval MW145, 240, 400, 530
	Zoo MW275, 450, 565
	Fort Funston-S, M
	Thornton Beach MW225, 360, 670
Lake-Aquifer Monitoring Network^b	LMMW-1D, 1S
	LMMW-2D, 2S, 2SS
	LMMW-3D, 3S, 3SS
	LMMW-4S, 4SS
	LMMW-5S, 5SS
	LMMW-7SS
	LMMW-8SS
	LMMW-9SS ^c
	Lake Merced Pump Station MW155, 270, 440, 575
North Westside Basin General Monitoring Network	West Sunset Playground
	Central Pump Station MW190, 270
South Westside Basin General Monitoring Network^a	LMMW-6D
	DC-1 (Westlake 1)
	DC-8
	Park Plaza MW135, 195, 460, 620
	SSFLP MW120, 220, 440, 520
	CUP-10A MW160, 250, 500, 710
	CUP-18 MW230, 425, 490, 595
	CUP-19 MW180, 475, 600, 690
	CUP-22A MW140, 290, 440, 545
	CUP-23 MW230, 440, 515, 600
	CUP-31A MW145, 280, 480, 595
	CUP-36-1 MW160, 270, 455, 585
	CUP-44-1 MW190, 300, 460, 580
	SS 1-02
	SB-12 Elm Avenue
CUP MW-M1	
Bay Side Monitoring Network^a	UAL13C, 13D
	SFO-S, D
	Burlingame-S, M, D

Notes:

^a Wells are listed approximately from north to south.

^b Includes LMMW-6D listed with the southern Westside Basin.

^c LMMW-9SS was destroyed in 2018 and was replaced with LMMW-9S in late 2019.

Table 4
Wells Used to Construct Groundwater Elevation Contours

Shallow Aquifer	Primary Production Aquifer
South Windmill MW57	GGP Soccer Field SF-1
Kirkham MW130	GGP North Lake Road NL-1
Ortega MW125	GGP NWM-3
Taraval MW145	GGP SWM-3
LMMW-1S	Kirkham MW255
LMMW-2S	Ortega MW265
LMMW-3S	West Sunset Playground
LMMW-4S	Taraval MW240
LMMW-5S	Central Pump Station MW270
LMMW-7SS	Zoo MW275
LMMW-9SS ^a	LMMW-1D
SFO-S	LMMW-2D
Burlingame-S	LMMW-3D
	LMMW-6D
	Lake Merced Pump Station MW270
	DC-1 (Westlake 1)
	DC-8
	Park Plaza MW460
	CUP-10A MW500
	CUP-18 MW425
	CUP-19 MW475
	CUP-22A MW440
	CUP-23 MW440
	CUP-31A MW480
	CUP-36-1 MW455
	SSFLP MW440
	CUP-44-1 MW460
	SB-12 Elm Avenue
	CUP MW-M1
	SFO-D
	Burlingame-D

Notes:

Wells are listed approximately north to south.

^a LMMW-9SS was destroyed in 2018 and was replaced with LMMW-9S in late 2019.

**Table 5
Groundwater Level Monitoring Frequency**

Well Name	Frequency ¹
Coastal Monitoring Network	
USGS South Windmill MW57	C
USGS South Windmill MW140	C
GGP Soccer Field SF-1	C
GGP North Lake Road NL-1	C
GGP SWM-3	C
GGP NWM-3	C
Kirkham MW130	C
Kirkham MW255	C
Kirkham MW385	C
Kirkham MW435	C
Ortega MW125	C
Ortega MW265	C
Ortega MW400	C
Ortega MW475	C
Taraval MW145	C
Taraval MW240	C
Taraval MW400	C
Taraval MW530	C
Zoo MW275	C
Zoo MW450	C
Zoo MW565	C
Fort Funston-S	Q
Fort Funston-M	Q
Thornton Beach MW225	Q
Thornton Beach MW360	Q
Thornton Beach MW670	Q
Lake-Aquifer Monitoring Network	
LMMW-1D	C
LMMW-1S	C
LMMW-2D	C
LMMW-2S	Q
LMMW-2SS	Q
LMMW-3D	C
LMMW-3S	Q
LMMW-3SS	C
LMMW-4S	C
LMMW-4SS	Q
LMMW-5S	C
LMMW-5SS	C
LMMW-6D	C
LMMW-7SS	Q
LMMW-8SS	Q
LMMW-9SS ²	C
Lake Merced Pump Station MW155	Q
Lake Merced Pump Station MW270	C
Lake Merced Pump Station MW440	C
Lake Merced Pump Station MW575	Q

Well Name	Frequency ¹
Bay Side Monitoring Network	
SFO-S and D ³	S
Burlingame-S, M, and D ³	S
UAL13C	Q
UAL13D	Q
North Westside Basin General Monitoring Network	
West Sunset Playground	Q
Central Pump Station MW190	Q
Central Pump Station MW270	Q
South Westside Basin General Monitoring Network	
DC-1 (Westlake 1)	C
Park Plaza MW460, MW620	C
Park Plaza MW135, MW195	Q
South San Francisco Linear Park 120, 440	C
South San Francisco Linear Park 220, 520	Q
DC-8	C
SS 1-02	C
SB-12 Elm Avenue	C
CUP-10A MW500, MW710	C
CUP-10A MW160, MW250	Q
CUP-18 MW490	Q
CUP-18 MW230, MW425, MW660	C
CUP-19 MW180	Q
CUP-19 MW475, MW600, MW690	C
CUP-22A MW140, MW290	Q
CUP-22A MW440, MW545	C
CUP-23 MW230	Q
CUP-23 MW440, MW515, MW600	C
CUP-31A MW480, MW595	C
CUP-31A MW145, MW280	Q
CUP-36-1 MW160, MW270	Q
CUP-36-1 MW455, MW585	C
CUP-44-1 MW190, MW580	Q
CUP-44-1 MW300, MW460	C
CUP-MW-M1	Q

Notes:

¹Frequency:

C - Continuous water level monitoring

Q - Quarterly water level monitoring

S - Semi-annual water level monitoring (Spring and Fall)

² LMMW-9SS was destroyed in 2018 and was replaced with LMMW-9S in late 2019.

³ Monitoring conducted by City of San Bruno

Table 6
Groundwater Quality Monitoring Network Wells

Coastal Monitoring^a	GGP North Lake Road NL-1
	GGP NWM-3
	GGP Soccer Field SF-1
	GGP SWM-3
	USGS South Windmill MW57, 140
	Kirkham MW130, 255, 385, 435
	Ortega MW125, 265, 400, 475
	Taraval MW145, 240, 400, 530
	Zoo MW275, 450, 565
Sunset District and Lake Merced Area Groundwater Quality Monitoring	West Sunset Playground
	LMMW-1S, 1D
	LMMW-2S, 2D
	LMMW-3S, 3D
South Westside Basin Monitoring^a	LMMW-6D
	Jefferson
	Park Plaza MW195, 460, 620
	DC-2 Westlake
	DC-4
	Vale
	CUP-10A MW160, 250, 500, 710
	CUP-18 MW230, 425, 490, 595
	CUP-19 MW475, 600, 690
	CUP-22A MW290, 440, 545
	CUP-23 MW230, 440, 515, 600
	CUP-31A MW145, 280, 480, 595
	SS 1-15,-19,-20,-21,-22,-23
	CUP-36-1 MW160, 270, 455, 585
	SSFLP MW120, 220, 440, 520
	CUP-44-1 MW190, 300, 460, 580
	SB 16 Forest Lane
	SB 17 Corporation Yard
	SB 18 City Park
	SB 20 Lions Field Park
CUP MW-M1	
Bay Side Monitoring	SFO - S, D
	Burlingame - S, M, D

Notes:

^a Wells are listed approximately from north to south.

Table 7
Groundwater Quality Monitoring Frequency and Analyses

Well Name	Frequency¹	Analytes
Coastal Monitoring		
GGP North Lake Road NL-1	S	Chloride, total dissolved solids (TDS), specific conductance
GGP NWM-3	S	
GGP Soccer Field SF-1	S	
GGP SWM-3	S	
USGS South Windmill MW57, 140	S	
Kirkham MW130, 255, 385, 435	S	
Ortega MW125, 265, 400, 475	S	
Taraval MW145, 240, 400, 530	S	
Zoo MW275, 450, 565	S	
General Basin Monitoring		
West Sunset Playground	S	General parameters and minerals: total alkalinity, pH, specific conductance, TDS, hardness, calcium, magnesium, sodium, potassium, chloride, sulfate, and nitrate.
LMMW-1S, 1D	S	
LMMW-2S, 2D	S	
LMMW-3S, 3D	S	
LMMW-6D	S	
Park Plaza MW195, 460, 620	S	
DC-2 Westlake	A	
DC-4	A	
Jefferson	A	
Vale	A	
CUP-10A MW160, 250 ² , 500, 710	S	
CUP-18 MW230, 425, 490, 595	S	
CUP-19 MW475, 600, 690	S	
CUP-22A MW290, 440, 545	S	
CUP-23 MW230, 440, 515, 600	S	
CUP-31A MW145, 280, 480, 595	S	
SS 1-15	A	
SS 1-19	A	
SS 1-20	A	
SS 1-21	A	
SS 1-22	A	
SS 1-23	A	
SSFLP MW120, 220, 440, 520	S	
CUP-36-1 MW160, 270, 455, 585	S	
CUP-44-1 MW190, 300, 460, 580	S	
SB 16 Forest Ln	A	
SB 17 Corporation Yard	A	
SB 18 City Park	A	
SB-20 Lions Field Park	A	
CUP-MW-M1	S	
Bay Side Monitoring³		
SFO-S, D	S	General parameters and minerals: total alkalinity, pH, specific conductance, TDS, hardness, calcium, magnesium, sodium, potassium, chloride, sulfate, nitrate, bromide, boron, and orthophosphate.
Burlingame-S, M, and D	S	

Notes

¹ A - Annual water quality sampling (Spring), S - Semi-annual water quality sampling (Spring and Fall)

² Well CUP-10A MW250 has been dry since 2012.

³ Monitoring conducted by City of San Bruno.

Table 8**Comparison of Seasonal Low Groundwater Elevations for Selected Coastal Monitoring Wells**

Monitoring Well (hydrograph figure number)	Aquifer ¹			Change in Ground- water Elevation (feet) ²
		2018	2019	
South Windmill MW57	S	3.0 (July)	9.7 (May)	6.7
South Windmill MW140	S	-7.9 (July)	1.0 (May)	8.9
Kirkham MW130 (Figure 11a)	S	6.1 (July)	9.3 (May)	3.2
Kirkham MW255 (Figure 11b)	PP	6.1 (July)	9.5 (May)	3.4
Kirkham MW385 (Figure 11c)	PP	6.2 (September)	9.2 (May)	3.0
Kirkham MW435 (Figure 11d)	PP	4.0 (September)	6.5 (January)	2.5
Ortega MW125 (Figure 12a)	S	8.4 (September)	9.5 (January)	1.1
Ortega MW265 (Figure 12b)	PP	10.0 (September)	12.0 (January)	2
Ortega MW400 (Figure 12c)	PP	10.3 (September)	12.4 (January)	2.1
Ortega MW475 (Figure 12d)	PP	2.6 (September)	3.8 (January)	1.2
Taraval MW145 (Figure 13a)	S	8.6 (December)	8.9 (November)	0.3
Taraval MW240 (Figure 13b)	PP	10.7 (December)	11.7 (November)	1.0
Taraval MW400 (Figure 13c)	PP	9.9 (September)	10.8 (April)	0.9
Taraval MW530 (Figure 13d)	D	0.7 (October)	1.6 (January)	0.9
Zoo MW275 (Figure 14a)	PP	4.9 (July)	5.0 (September)	0.1
Zoo MW450 (Figure 14b)	PP	3.6 (September)	3.0 (September)	-0.6
Zoo MW565 (Figure 14c)	D	-2.1 (July)	-0.6 (January)	1.5

¹ S = Shallow aquifer; PP = Primary Production aquifer; D = Deep aquifer.

² A negative number indicates a decrease in seasonal low groundwater elevation from the previous year.

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH	
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE	
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE	
SF#34 - GRT HWY/KIRKHAM MW130	Apr-04	28.5	23.3	27.4	1.92	--	28	32.0	27.7**	445	308	160	8.04	
	Oct-04	30.8	27.5	26.8	1.51	128	33	34.6	28.9	465	233	180	7.90	
	Apr-05	26.1	26.6	24.7	1.20	120	35	34.0	31.0	457	284	168	7.99	
	Nov-05	--	--	--	--	122	--	--	--	469	218	180	8.01	
	May-06	--	--	--	--	--	36	--	--	466	240	--	--	
	Oct-06	--	--	--	--	--	34	--	--	468	260	--	--	
	May-07	--	--	--	--	--	34	--	--	478	278	--	--	
	Oct-07	--	--	--	--	--	34	--	--	413	255	--	--	
	Apr-08	--	--	--	--	--	34	--	--	459	278	--	--	
	Sep-08	--	--	--	--	--	33	--	--	437	257	--	--	
	Apr-09	--	--	--	--	--	36	--	--	444	257	--	--	
	Nov-09	--	--	--	--	--	32	--	--	416	260	--	--	
	Apr-10	--	--	--	--	--	32	--	--	423	248	--	--	
	Nov-10	--	--	--	--	--	33	--	--	420	238	--	--	
	May-11	--	--	--	--	--	36	--	--	407	241	--	--	
	Nov-11	--	--	--	--	--	98	32	--	--	386	250	142	8.06
	Apr-12	--	--	--	--	--	--	34	--	--	390	228	--	--
	Nov-12	--	--	--	--	--	--	35	--	--	379	237	--	--
	Apr-13	--	--	--	--	--	--	32	--	--	377	242	--	--
	Oct-13	--	--	--	--	--	--	29	--	--	349	168*	--	--
Apr-14	--	--	--	--	--	--	30	--	--	389	207	--	--	
Oct-14	--	--	--	--	--	--	30	--	--	347	197	--	--	
Apr-15	--	--	--	--	--	--	30	--	--	352	201	--	--	
Oct-15	--	--	--	--	--	--	31	--	--	340	212	--	--	
Apr-16	--	--	--	--	--	--	30	--	--	342	186	--	--	
Oct-16	--	--	--	--	--	--	31	--	--	352	268*	--	--	
Apr-17	--	--	--	--	--	--	30	--	--	359	216	--	--	
Oct-17	--	--	--	--	--	--	32	--	--	363	236	--	--	
Apr-18	--	--	--	--	--	--	33	--	--	384	206	--	--	
Oct-18	--	--	--	--	--	--	33	--	--	384	223	--	--	
Apr-19	--	--	--	--	--	--	34	--	--	398	202	--	--	
Oct-19	--	--	--	--	--	--	34	--	--	398	260	--	--	
SF#35 - GRT HWY/KIRKHAM MW255	Apr-04	26.3	29.2	21.3	1.33	--	33	29.0	26.4**	476	316	200	7.95	
	Oct-04	29.4	30.2	23.6	1.43	132	34	29.1	26.1	460	241	184	7.90	
	Apr-05	28.5	31.5	22.2	1.37	134	36	32.0	28.0	477	297	192	7.89	

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#35 - GRT HWY/KIRKHAM MW255 (continued)	Nov-05	--	--	--	--	132	37	--	--	471	217	206	7.95
	May-06	--	--	--	--	--	37	--	--	462	320	--	--
	Oct-06	--	--	--	--	--	36	--	--	472	270	--	--
	May-07	--	--	--	--	--	--	--	--	473	280	--	--
	Oct-07	--	--	--	--	--	35	--	--	425	249	--	--
	Apr-08	--	--	--	--	--	36	--	--	444	260	--	--
	Sep-08	--	--	--	--	--	38	--	--	441	261	--	--
	Apr-09	--	--	--	--	--	39	--	--	455	284	--	--
	Nov-09	--	--	--	--	--	37	--	--	443	254	--	--
	Apr-10	--	--	--	--	--	36	--	--	462	299	--	--
	Nov-10	--	--	--	--	--	38	--	--	476	287	--	--
	May-11	--	--	--	--	--	40	--	--	482	268	--	--
	Nov-11	--	--	--	--	124	39	--	--	467	260	180	7.86
	Apr-12	--	--	--	--	--	42	--	--	476	271	--	--
	Nov-12	--	--	--	--	--	43	--	--	482	304	--	--
	Apr-13	--	--	--	--	--	40	--	--	494	292	--	--
	Oct-13	--	--	--	--	--	37	--	--	454	228	--	--
	Apr-14	--	--	--	--	--	39	--	--	539	283	--	--
	Oct-14	--	--	--	--	--	38	--	--	457	250	--	--
	Apr-15	--	--	--	--	--	40	--	--	476	263	--	--
	Oct-15	--	--	--	--	--	37	--	--	439	254	--	--
	Apr-16	--	--	--	--	--	39	--	--	466	259	--	--
	Oct-16	--	--	--	--	--	36	--	--	436	254	--	--
	Apr-17	--	--	--	--	--	37	--	--	468	270	--	--
	Oct-17	--	--	--	--	--	36	--	--	433	240	--	--
	Apr-18	--	--	--	--	--	38	--	--	476	288	--	--
	Oct-18	--	--	--	--	--	35	--	--	440	245	--	--
	Apr-19	--	--	--	--	--	40	--	--	496	281	--	--
	Oct-19	--	--	--	--	--	41	--	--	496	299	--	--
SF#36 - GRT HWY/KIRKHAM MW385	Apr-04	53.4	7.21	24.7	4.83	--	28	72.0	<1.3**	466	362	175	8.05
	Oct-04	60.4	7.38	28.1	4.94	116	33	63.7	1.3	454	257	168	8.10
	May-05	54.4	7.54	24.8	5.04	124	34	57.0	<0.3	451	303	160	8.16
	Nov-05	--	--	--	--	116	35	--	--	446	229	160	8.16
	May-06	--	--	--	--	--	36	--	--	450	290	--	--
	Oct-06	--	--	--	--	--	34	--	--	451	290	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#36 - GRT HWY/KIRKHAM MW385 (continued)	May-07	--	--	--	--	--	--	--	--	452	286	--	--
	Oct-07	--	--	--	--	--	35	--	--	437	277	--	--
	Apr-08	--	--	--	--	--	36	--	--	450	288	--	--
	Sep-08	--	--	--	--	--	35	--	--	441	280	--	--
	Apr-09	--	--	--	--	--	38	--	--	464	262	--	--
	Nov-09	--	--	--	--	--	35	--	--	462	284	--	--
	Apr-10	--	--	--	--	--	34	--	--	457	282	--	--
	Nov-10	--	--	--	--	--	38	--	--	482	298	--	--
	May-11	--	--	--	--	--	40	--	--	467	302	--	--
	Nov-11	--	--	--	--	120	37	--	--	458	300	164	8.09
	Apr-12	--	--	--	--	--	39	--	--	457	290	--	--
	Nov-12	--	--	--	--	--	40	--	--	460	290	--	--
	Apr-13	--	--	--	--	--	37	--	--	462	302	--	--
	Oct-13	--	--	--	--	--	35	--	--	462	273	--	--
	Apr-14	--	--	--	--	--	35	--	--	504	288	--	--
	Oct-14	--	--	--	--	--	36	--	--	462	284	--	--
	Apr-15	--	--	--	--	--	36	--	--	465	285	--	--
	Oct-15	--	--	--	--	--	37	--	--	458	288	--	--
	Apr-16	--	--	--	--	--	35	--	--	460	263	--	--
	Oct-16	--	--	--	--	--	35	--	--	463	258	--	--
	Apr-17	--	--	--	--	--	35	--	--	466	303	--	--
	Oct-17	--	--	--	--	--	36	--	--	459	277	--	--
	Apr-18	--	--	--	--	--	37	--	--	463	256	--	--
	Oct-18	--	--	--	--	--	35	--	--	457	284	--	--
	Apr-19	--	--	--	--	--	37	--	--	464	261	--	--
	Oct-19	--	--	--	--	--	37	--	--	460	292	--	--
SF#37 - GRT HWY/KIRKHAM MW435	Apr-04	44.7	4.08	32.9	7.20	--	25	60.0	<1.3**	445	322	130	8.12
	Oct-04	49.5	4.03	37.6	7.50	116	29	60.8	<0.2	449	253	131	8.20
	May-05	46.7	3.90	35.0	7.43	112	30	60.0	<0.3	447	294	132	8.18
	Nov-05	--	--	--	--	110	31	--	--	441	229	134	8.21
	May-06	--	--	--	--	--	37	--	--	442	280	--	--
	Oct-06	--	--	--	--	--	31	--	--	446	270	--	--
	May-07	--	--	--	--	--	--	--	--	444	296	--	--
	Oct-07	--	--	--	--	--	32	--	--	425	265	--	--
	Apr-08	--	--	--	--	--	31	--	--	442	280	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#37 - GRT HWY/KIRKHAM MW435 (continued)	Sep-08	--	--	--	--	--	31	--	--	434	268	--	--
	Apr-09	--	--	--	--	--	34	--	--	452	266	--	--
	Nov-09	--	--	--	--	--	32	--	--	447	277	--	--
	Apr-10	--	--	--	--	--	30	--	--	446	288	--	--
	Nov-10	--	--	--	--	--	32	--	--	466	288	--	--
	May-11	--	--	--	--	--	33	--	--	450	281	--	--
	Nov-11	--	--	--	--	114	31	--	--	442	280	126	8.05
	Apr-12	--	--	--	--	--	33	--	--	437	272	--	--
	Nov-12	--	--	--	--	--	34	--	--	438	268	--	--
	Apr-13	--	--	--	--	--	30	--	--	438	269	--	--
	Oct-13	--	--	--	--	--	29	--	--	439	252	--	--
	Apr-14	--	--	--	--	--	29	--	--	478	261	--	--
	Oct-14	--	--	--	--	--	29	--	--	437	278	--	--
	Apr-15	--	--	--	--	--	30	--	--	438	272	--	--
	Oct-15	--	--	--	--	--	30	--	--	431	260	--	--
	Apr-16	--	--	--	--	--	29	--	--	434	249	--	--
	Oct-16	--	--	--	--	--	28	--	--	435	189*	--	--
	Apr-17	--	--	--	--	--	28	--	--	436	266	--	--
	Oct-17	--	--	--	--	--	29	--	--	430	254	--	--
	Apr-18	--	--	--	--	--	29	--	--	431	252	--	--
	Oct-18	--	--	--	--	--	29	--	--	430	265	--	--
	Apr-19	--	--	--	--	--	30	--	--	436	243	--	--
	Oct-19	--	--	--	--	--	30	--	--	427	281	--	--
SF#30 - GRT HWY/ORTEGA MW125	Apr-04	26.5	21.2	28.0	1.45	--	25	38.0	23.8**	426	344	145	7.93
	Oct-04	27.3	22.7	25.8	1.15	108	28	34.6	22.0	405	216	146	7.90
	May-05	26.5	22.5	25.2	1.24	108	29	--	--	412	245	146	7.89
	Nov-05	--	--	--	--	102	31	--	--	416	220	150	7.84
	May-06	--	--	--	--	--	31	--	--	417	250	--	--
	Oct-06	--	--	--	--	--	32	--	--	446	260	--	--
	May-07	--	--	--	--	--	34	--	--	459	269	--	--
	Oct-07	--	--	--	--	--	29	--	--	438	255	--	--
	Apr-08	--	--	--	--	--	35	--	--	447	383*	--	--
	Oct-08	--	--	--	--	--	30	--	--	450	252	--	--
	Apr-09	--	--	--	--	--	32	--	--	458	274	--	--
	Nov-09	--	--	--	--	--	30	--	--	430	251	--	--

**Table 9
Coastal Monitoring Network Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#30 - GRT HWY/ORTEGA MW125 (continued)	Apr-10	--	--	--	--	--	31	--	--	438	251	--	--
	Nov-10	--	--	--	--	--	35	--	--	463	260	--	--
	May-11	--	--	--	--	--	36	--	--	456	260	--	--
	Oct-11	--	--	--	--	112	33	--	--	464	260	172	7.82
	Apr-12	--	--	--	--	--	35	--	--	464	275	--	--
	Nov-12	--	--	--	--	--	37	--	--	463	273	--	--
	Apr-13	--	--	--	--	--	34	--	--	478	247	--	--
	Oct-13	--	--	--	--	--	32	--	--	466	236	--	--
	Apr-14	--	--	--	--	--	31	--	--	517	254	--	--
	Oct-14	--	--	--	--	--	30	--	--	442	246	--	--
	Apr-15	--	--	--	--	--	30	--	--	437	245	--	--
	Oct-15	--	--	--	--	--	30	--	--	405	243	--	--
	Apr-16	--	--	--	--	--	30	--	--	433	251	--	--
	Oct-16	--	--	--	--	--	26	--	--	349	214	--	--
	Apr-17	--	--	--	--	--	30	--	--	448	256	--	--
	Oct-17	--	--	--	--	--	31	--	--	440	235	--	--
	Apr-18	--	--	--	--	--	33	--	--	478	261	--	--
	Oct-18	--	--	--	--	--	33	--	--	481	261	--	--
	Apr-19	--	--	--	--	--	34	--	--	484	268	--	--
	Oct-19	--	--	--	--	--	32	--	--	455	277	--	--
SF#31 - GRT HWY/ORTEGA MW265	Apr-04	14.0	12.0	20.0	1.04	--	15	15.0	5.7**	269	216	90	8.13
	Oct-04	15.8	12.8	22.7	1.14	82	21	9.4	5.5	260	131	86	8.10
	May-05	13.5	12.4	19.9	0.89	80	19	--	--	1,392*	--	82	8.03
	Nov-05	--	--	--	--	--	24	--	--	257	177	--	--
	May-06	--	--	--	--	--	25	--	--	257	160	--	--
	Oct-06	--	--	--	--	--	31	--	--	429	250	--	--
	May-07	--	--	--	--	--	30	--	--	418	240	--	--
	Oct-07	--	--	--	--	--	31	--	--	448	262	--	--
	Apr-08	--	--	--	--	--	31	--	--	439	332*	--	--
	Sep-08	--	--	--	--	--	31	--	--	439	282	--	--
	Apr-09	--	--	--	--	--	30	--	--	388	232	--	--
	Nov-09	--	--	--	--	--	30	--	--	430	243	--	--
	Apr-10	--	--	--	--	--	24	--	--	282	169	--	--
	Nov-10	--	--	--	--	--	24	--	--	270	158	--	--
	May-11	--	--	--	--	--	27	--	--	271	284	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#31 - GRT HWY/ORTEGA MW265 (continued)	Oct-11	--	--	--	--	102	30	--	--	410	240	142	7.90
	Apr-12	--	--	--	--	--	25	--	--	259	163	--	--
	Nov-12	--	--	--	--	--	33	--	--	394	256	--	--
	Apr-13	--	--	--	--	--	25	--	--	281	138	--	--
	Oct-13	--	--	--	--	--	29	--	--	395	195	--	--
	Apr-14	--	--	--	--	--	28	--	--	404	194	--	--
	Oct-14	--	--	--	--	--	27	--	--	376	222	--	--
	Apr-15	--	--	--	--	--	27	--	--	374	210	--	--
	Oct-15	--	--	--	--	--	27	--	--	358	222	--	--
	Apr-16	--	--	--	--	--	26	--	--	338	196	--	--
	Oct-16	--	--	--	--	--	29	--	--	417	183	--	--
	Apr-17	--	--	--	--	--	22	--	--	274	149	--	--
	Oct-17	--	--	--	--	--	27	--	--	348	180	--	--
	Apr-18	--	--	--	--	--	23	--	--	267	157	--	--
	Oct-18	--	--	--	--	--	27	--	--	342	189	--	--
	Apr-19	--	--	--	--	--	23	--	--	256	142	--	--
	Oct-19	--	--	--	--	--	24	--	--	258	172	--	--
SF#32 - GRT HWY/ORTEGA MW400	Apr-04	15.2	11.8	23.1	1.47	--	20	10.0	5.3**	277	230	100	8.11
	Oct-04	17.0	12.7	23.3	1.31	92	22	13.5	5.8	277	146	88	8.20
	Apr-05	16.4	13.5	21.8	1.28	88	24	8.7	6.4	272	156	88	8.22
	Nov-05	--	--	--	--	--	25	--	--	273	176	--	--
	May-06	--	--	--	--	--	24	--	--	272	180	--	--
	Oct-06	--	--	--	--	--	24	--	--	272	160	--	--
	May-07	--	--	--	--	--	24	--	--	276	171	--	--
	Oct-07	--	--	--	--	--	23	--	--	271	170	--	--
	Apr-08	--	--	--	--	--	19	--	--	273	174	--	--
	Sep-08	--	--	--	--	--	24	--	--	268	216	--	--
	Apr-09	--	--	--	--	--	20	--	--	272	168	--	--
	Nov-09	--	--	--	--	--	25	--	--	275	166	--	--
	Apr-10	--	--	--	--	--	24	--	--	274	164	--	--
	Nov-10	--	--	--	--	--	24	--	--	278	208	--	--
	May-11	--	--	--	--	--	27	--	--	279	220	--	--
	Oct-11	--	--	--	--	84	26	--	--	272	160	86	8.04
	Apr-12	--	--	--	--	--	25	--	--	270	163	--	--
	Nov-12	--	--	--	--	--	29	--	--	270	165	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#32 - GRT HWY/ORTEGA MW400 (continued)	Apr-13	--	--	--	--	--	25	--	--	272	159	--	--
	Oct-13	--	--	--	--	--	25	--	--	271	129	--	--
	Apr-14	--	--	--	--	--	24	--	--	297	135	--	--
	Oct-14	--	--	--	--	--	24	--	--	270	155	--	--
	May-15	--	--	--	--	--	24	--	--	270	153	--	--
	Oct-15	--	--	--	--	--	25	--	--	266	175	--	--
	Apr-16	--	--	--	--	--	24	--	--	272	130	--	--
	Oct-16	--	--	--	--	--	23	--	--	273	130	--	--
	Apr-17	--	--	--	--	--	23	--	--	273	155	--	--
	Oct-17	--	--	--	--	--	24	--	--	272	155	--	--
	Apr-18	--	--	--	--	--	24	--	--	272	154	--	--
	Oct-18	--	--	--	--	--	25	--	--	273	151 ^a	--	--
	Apr-19	--	--	--	--	--	25	--	--	273	162	--	--
	Oct-19	--	--	--	--	--	25	--	--	275	183	--	--
SF#33 - GRT HWY/ORTEGA MW475	Apr-04	12.7	2.29	40.9	2.89	--	20	15.0	<1.3**	283	240	45	8.33
	Oct-04	13.7	1.75	45.6	3.43	80	27	14.2	<0.2	276	129	37	8.70
	Apr-05	13.5	1.80	43.1	2.87	78	30	13.0	<0.3	280	159	44	8.39
	Nov-05	--	--	--	--	76	30	--	--	280	136	42	7.67
	May-06	--	--	--	--	--	30	--	--	278	180	--	--
	Oct-06	--	--	--	--	--	28	--	--	283	160	--	--
	May-07	--	--	--	--	--	29	--	--	285	172	--	--
	Oct-07	--	--	--	--	--	29	--	--	279	184	--	--
	Apr-08	--	--	--	--	--	30	--	--	286	178	--	--
	Sep-08	--	--	--	--	--	31	--	--	283	168	--	--
	Apr-09	--	--	--	--	--	30	--	--	289	170	--	--
	Nov-09	--	--	--	--	--	30	--	--	292	168	--	--
	Apr-10	--	--	--	--	--	29	--	--	289	181	--	--
	Nov-10	--	--	--	--	--	32	--	--	304	203	--	--
	May-11	--	--	--	--	--	33	--	--	297	172	--	--
	Oct-11	--	--	--	--	82	31	--	--	289	160	42	8.23
	Apr-12	--	--	--	--	--	31	--	--	288	194	--	--
	Nov-12	--	--	--	--	--	33	--	--	290	179	--	--
	Apr-13	--	--	--	--	--	30	--	--	293	166	--	--
	Oct-13	--	--	--	--	--	30	--	--	293	140	--	--
	Apr-14	--	--	--	--	--	28	--	--	320	169	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH	
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE	
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE	
SF#33 - GRT HWY/ORTEGA MW475 (continued)	Oct-14	--	--	--	--	--	30	--	--	293	152	--	--	
	May-15	--	--	--	--	--	29	--	--	293	141	--	--	
	Oct-15	--	--	--	--	--	29	--	--	284	176	--	--	
	Apr-16	--	--	--	--	--	29	--	--	297	136	--	--	
	Oct-16	--	--	--	--	--	28	--	--	293	139	--	--	
	Apr-17	--	--	--	--	--	27	--	--	295	146	--	--	
	Oct-17	--	--	--	--	--	29	--	--	294	166	--	--	
	Apr-18	--	--	--	--	--	29	--	--	295	144	--	--	
	Oct-18	--	--	--	--	--	29	--	--	294	162	--	--	
	Apr-19	--	--	--	--	--	30	--	--	295	168	--	--	
	Oct-19	--	--	--	--	--	30	--	--	297	162	--	--	
SF#26 - GRT HWY/TARAVAL MW145	Apr-04	28.0	25.2	29.5	2.02	--	30	23.0	37.0**	473	360	170	7.96	
	Oct-04	30.6	25.9	30.3	1.78	132	35	25.2	35.8	478	277	171	7.90	
	Apr-05	29.6	26.1	29.0	1.62	132	35	25.0	36.0	478	295	172	7.88	
	Nov-05	--	--	--	--	--	36	--	--	486	317	--	--	
	May-06	--	--	--	--	--	38	--	--	502	320	--	--	
	Oct-06	--	--	--	--	--	36	--	--	489	300	--	--	
	May-07	--	--	--	--	--	26*	--	--	507	302	--	--	
	Oct-07	--	--	--	--	--	37	--	--	497	305	--	--	
	Apr-08	--	--	--	--	--	37	--	--	495	306	--	--	
	Sep-08	--	--	--	--	--	37	--	--	481	281	--	--	
	Apr-09	--	--	--	--	--	41	--	--	477	271	--	--	
	Nov-09	--	--	--	--	--	38	--	--	464	274	--	--	
	Apr-10	--	--	--	--	--	38	--	--	460	277	--	--	
	Nov-10	--	--	--	--	--	38	--	--	471	263	--	--	
	Jun-11	--	--	--	--	--	38	--	--	483	310	--	--	
	Nov-11	--	--	--	--	--	116	40	--	--	470	280	162	7.38
	May-12	--	--	--	--	--	--	43	--	--	457	273	--	--
	Nov-12	--	--	--	--	--	--	46	--	--	449	260	--	--
	Apr-13	--	--	--	--	--	--	41	--	--	454	263	--	--
	Oct-13	--	--	--	--	--	--	40	--	--	444	238	--	--
May-14	--	--	--	--	--	--	39	--	--	454	238	--	--	
Nov-14	--	--	--	--	--	--	34	--	--	383	236	--	--	
Apr-15	--	--	--	--	--	--	42	--	--	454	219	--	--	
Nov-15	--	--	--	--	--	--	41	--	--	452	139*	--	--	

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH	
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE	
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE	
SF#26 - GRT HWY/TARAVAL MW145 (continued)	May-16	--	--	--	--	--	41	--	--	457	267	--	--	
	Oct-16	--	--	--	--	--	39	--	--	457	265	--	--	
	Apr-17	--	--	--	--	--	39	--	--	460	272	--	--	
	Oct-17	--	--	--	--	--	43	--	--	468	275	--	--	
	Apr-18	--	--	--	--	--	41	--	--	466	272	--	--	
	Nov-18	--	--	--	--	--	42	--	--	440	260	--	--	
	Apr-19	--	--	--	--	--	42	--	--	465	253	--	--	
	Oct-19	--	--	--	--	--	43	--	--	460	269	--	--	
SF#27 - GRT HWY/TARAVAL MW240	Apr-04	21.6	19.5	22.2	1.88	--	25	17.0	11.0**	371	276	150	7.95	
	Oct-04	21.6	19.8	23.9	1.67	104	32	19.6	11.3	367	196	130	7.70	
	Apr-05	22.1	21.0	23.1	1.68	104	36	20.0	13.0	369	243	132	7.80	
	Nov-05	--	--	--	--	--	34	--	--	380	230	--	--	
	May-06	--	--	--	--	--	36	--	--	368	240	--	--	
	Oct-06	--	--	--	--	--	33	--	--	366	230	--	--	
	May-07	--	--	--	--	--	35	--	--	373	214	--	--	
	Oct-07	--	--	--	--	--	36	--	--	370	229	--	--	
	Apr-08	--	--	--	--	--	36	--	--	374	226	--	--	
	Sep-08	--	--	--	--	--	34	--	--	375	207	--	--	
	Apr-09	--	--	--	--	--	39	--	--	388	229	--	--	
	Nov-09	--	--	--	--	--	35	--	--	386	217	--	--	
	Apr-10	--	--	--	--	--	35	--	--	386	235	--	--	
	Nov-10	--	--	--	--	--	33	--	--	389	225	--	--	
	Jun-11	--	--	--	--	--	34	--	--	385	249	--	--	
	Nov-11	--	--	--	--	--	108	35	--	--	379	200	138	7.45
	May-12	--	--	--	--	--	--	37	--	--	377	256	--	--
	Nov-12	--	--	--	--	--	--	39	--	--	380	221	--	--
	Apr-13	--	--	--	--	--	--	35	--	--	380	230	--	--
	Oct-13	--	--	--	--	--	--	34	--	--	383	214	--	--
	May-14	--	--	--	--	--	--	34	--	--	385	196	--	--
	Nov-14	--	--	--	--	--	--	42	--	--	446	266	--	--
Apr-15	--	--	--	--	--	--	34	--	--	383	169	--	--	
Nov-15	--	--	--	--	--	--	34	--	--	379	177	--	--	
May-16	--	--	--	--	--	--	33	--	--	378	217	--	--	
Oct-16	--	--	--	--	--	--	33	--	--	383	206	--	--	
Apr-17	--	--	--	--	--	--	33	--	--	381	221	--	--	

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#27 - GRT HWY/TARAVAL MW240 (continued)	Oct-17	--	--	--	--	--	34	--	--	381	212	--	--
	Apr-18	--	--	--	--	--	34	--	--	384	225	--	--
	Nov-18	--	--	--	--	--	33	--	--	374	207	--	--
	Apr-19	--	--	--	--	--	34	--	--	379	209	--	--
	Oct-19	--	--	--	--	--	34	--	--	381	219	--	--
SF#28 - GRT HWY/TARAVAL MW400	Apr-04	17.6	14.7	20.4	1.72	--	20	28.0	<1.3**	313	248	140	8.16
	Oct-04	18.6	15.1	23.1	1.62	88	26	24.6	<0.2	310	162	104	8.10
	May-05	18.9	16.3	22.3	1.47	92	28	--	--	308	--	104	8.28
	Nov-05	--	--	--	--	--	28	--	--	311	193	--	--
	May-06	--	--	--	--	--	28	--	--	304	200	--	--
	Oct-06	--	--	--	--	--	27	--	--	309	180	--	--
	May-07	--	--	--	--	--	28	--	--	311	376*	--	--
	Oct-07	--	--	--	--	--	28	--	--	306	172	--	--
	Apr-08	--	--	--	--	--	28	--	--	306	213	--	--
	Sep-08	--	--	--	--	--	27	--	--	297	173	--	--
	Apr-09	--	--	--	--	--	29	--	--	311	183	--	--
	Nov-09	--	--	--	--	--	28	--	--	309	172	--	--
	Apr-10	--	--	--	--	--	28	--	--	309	188	--	--
	Nov-10	--	--	--	--	--	28	--	--	310	179	--	--
	Jun-11	--	--	--	--	--	28	--	--	319	206	--	--
	Nov-11	--	--	--	--	88	28	--	--	311	190	104	7.49
	May-12	--	--	--	--	--	29	--	--	312	215	--	--
	Nov-12	--	--	--	--	--	31	--	--	309	185	--	--
	Apr-13	--	--	--	--	--	29	--	--	324	195	--	--
	Oct-13	--	--	--	--	--	28	--	--	327	471*	--	--
	May-14	--	--	--	--	--	30	--	--	328	162	--	--
	Nov-14	--	--	--	--	--	29	--	--	327	195	--	--
	Apr-15	--	--	--	--	--	27	--	--	322	86*	--	--
	Nov-15	--	--	--	--	--	29	--	--	312	142	--	--
	May-16	--	--	--	--	--	28	--	--	319	169	--	--
	Oct-16	--	--	--	--	--	28	--	--	317	162	--	--
	Apr-17	--	--	--	--	--	28	--	--	320	179	--	--
	Oct-17	--	--	--	--	--	29	--	--	322	172	--	--
	Apr-18	--	--	--	--	--	30	--	--	320	172	--	--
	Nov-18	--	--	--	--	--	29	--	--	318	172 ^a	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#28 - GRT HWY/TARAVAL MW400	Apr-19	--	--	--	--	--	30	--	--	342	187	--	--
(continued)	Oct-19	--	--	--	--	--	31	--	--	329	176	--	--
SF#29 - GRT HWY/TARAVAL MW530	Apr-04	11.1	5.33	48.8	2.45	--	15	9.0	<1.3**	321	254	60	8.35
	Oct-04	0.08*	<0.02*	<0.01*	<0.35*	119	23	8.5	<0.2	323	188	48	8.30
	May-05	12.3	5.54	53.5	2.29	120	20	--	--	322	208	60	8.43
	Nov-05	--	--	--	--	--	26	--	--	322	207	--	--
	May-06	--	--	--	--	--	26	--	--	324	190	--	--
	Oct-06	--	--	--	--	--	25	--	--	321	200	--	--
	May-07	--	--	--	--	--	26	--	--	330	197	--	--
	Oct-07	--	--	--	--	--	26	--	--	324	192	--	--
	Apr-08	--	--	--	--	--	27	--	--	329	205	--	--
	Sep-08	--	--	--	--	--	26	--	--	319	186	--	--
	Apr-09	--	--	--	--	--	28	--	--	330	192	--	--
	Nov-09	--	--	--	--	--	26	--	--	331	178	--	--
	Apr-10	--	--	--	--	--	26	--	--	330	209	--	--
	Nov-10	--	--	--	--	--	24	--	--	332	185	--	--
	Jun-11	--	--	--	--	--	24	--	--	336	192	--	--
	Nov-11	--	--	--	--	132	26	--	--	340	220	56	7.62
	May-12	--	--	--	--	--	27	--	--	337	185	--	--
	Nov-12	--	--	--	--	--	30	--	--	343	202	--	--
	Apr-13	--	--	--	--	--	26	--	--	349	210	--	--
	Oct-13	--	--	--	--	--	25	--	--	345	195	--	--
	May-14	--	--	--	--	--	25	--	--	347	170	--	--
	Nov-14	--	--	--	--	--	25	--	--	342	196	--	--
	Apr-15	--	--	--	--	--	25	--	--	346	181	--	--
	Nov-15	--	--	--	--	--	26	--	--	365	162	--	--
	May-16	--	--	--	--	--	25	--	--	353	183	--	--
	Oct-16	--	--	--	--	--	25	--	--	352	141	--	--
	Apr-17	--	--	--	--	--	24	--	--	369	181	--	--
	Oct-17	--	--	--	--	--	25	--	--	366	197	--	--
	Apr-18	--	--	--	--	--	25	--	--	348	186	--	--
	Nov-18	--	--	--	--	--	25	--	--	356	192	--	--
	Apr-19	--	--	--	--	--	26	--	--	357	186	--	--
	Oct-19	--	--	--	--	--	27	--	--	353	192	--	--
SF#42 - ZOO MW275	Apr-04	17.9	0.77*	97.6*	3.06	--	60	45.0*	3.6**	530	360	44	10.20

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#42 - ZOO MW275 (continued)	Nov-04	24.1	15.0	45.5	5.07	110	60	12.2	<0.2	431	250	114	8.90
	May-05	21.1	18.8	35.9	4.89	118	68	7.0	<0.3	446	526*	158	8.32
	Nov-05	--	--	--	--	--	71	--	--	463	309	--	--
	May-06	--	--	--	--	--	70	--	--	459	260	--	--
	Nov-06	20.2	20.9	34.1	4.5	116	66	5.3	<0.3	453	240	132	7.95
	May-07	--	--	--	--	--	75	--	--	455	242	--	--
	Oct-07	18.8	20.3	33.9	4.5	116	65	4.6	<0.3	453	246	130	7.86
	May-08	--	--	--	--	--	64	--	--	456	245	--	--
	Sep-08	--	--	--	--	--	69	--	--	467	248	--	--
	Apr-09	--	--	--	--	--	68	--	--	461	246	--	--
	Nov-09	--	--	--	--	--	68	--	--	475	260	--	--
	Apr-10	--	--	--	--	--	42*	--	--	486	237	--	--
	Nov-10	--	--	--	--	--	41*	--	--	493	290	--	--
	May-11	--	--	--	--	--	44*	--	--	486	314	--	--
	Oct-11	--	--	--	--	120	69	--	--	458	240	140	7.46
	May-12	--	--	--	--	--	122*	--	--	468	265	--	--
	Nov-12	--	--	--	--	--	74	--	--	468	269	--	--
	Apr-13	--	--	--	--	--	71	--	--	475	254	--	--
	Oct-13	--	--	--	--	--	69	--	--	474	247	--	--
	May-14	--	--	--	--	--	68	--	--	476	248	--	--
	Nov-14	--	--	--	--	--	70	--	--	484	267	--	--
	Apr-15	--	--	--	--	--	72	--	--	484	232	--	--
	Nov-15	--	--	--	--	--	75	--	--	491	249	--	--
	May-16	--	--	--	--	--	72	--	--	495	246	--	--
	Nov-16	--	--	--	--	--	71	--	--	499	256	--	--
	Apr-17	--	--	--	--	--	70	--	--	497	269	--	--
	Oct-17	--	--	--	--	--	74	--	--	500	252	--	--
	Apr-18	--	--	--	--	--	74	--	--	495	235	--	--
	Nov-18	--	--	--	--	--	73	--	--	501	241	--	--
	Apr-19	--	--	--	--	--	76	--	--	498	267	--	--
	Oct-19	--	--	--	--	--	75	--	--	519	269	--	--
SF#43 - ZOO MW450	Apr-04	23.9	24.8	43.1	2.75	--	47	19.0	32.6**	469	360	138	8.63
	Nov-04	24.6	24.9	45.0	2.82	132	43	18.6	39.5	495	298	164	8.40
	May-05	23.2	26.1	41.7	2.86	122	44	19.0	41.0	491	295	138	8.44
	Nov-05	--	--	--	--	--	44	--	--	504	293	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#43 - ZOO MW450 (continued)	May-06	--	--	--	--	--	45	--	--	488	300	--	--
	Nov-06	21.9	27.0	41.6	2.7	154	44	19.6	37.8	488	280	128	8.32
	May-07	--	--	--	--	--	45	--	--	483	280	--	--
	Oct-07	18.9	24.1	37.2	2.1	126	42	17.8	30.0	472	290	140	8.22
	May-08	--	--	--	--	--	42	--	--	474	301	--	--
	Sep-08	--	--	--	--	--	43	--	--	478	283	--	--
	Apr-09	--	--	--	--	--	43	--	--	479	274	--	--
	Nov-09	--	--	--	--	--	43	--	--	486	293	--	--
	Apr-10	--	--	--	--	--	34*	--	--	474	211*	--	--
	Nov-10	--	--	--	--	--	67*	--	--	478	261	--	--
	May-11	--	--	--	--	--	72*	--	--	478	277	--	--
	Oct-11	--	--	--	--	132	44	--	--	479	270	154	7.01
	May-12	--	--	--	--	--	128*	--	--	473	468	--	--
	Nov-12	--	--	--	--	--	47	--	--	478	302	--	--
	Apr-13	--	--	--	--	--	43	--	--	482	293	--	--
	Oct-13	--	--	--	--	--	41	--	--	478	274	--	--
	May-14	--	--	--	--	--	42	--	--	481	274	--	--
	Nov-14	--	--	--	--	--	43	--	--	494	291	--	--
	Apr-15	--	--	--	--	--	44	--	--	501	265	--	--
	Nov-15	--	--	--	--	--	46	--	--	499	278	--	--
	May-16	--	--	--	--	--	43	--	--	501	292	--	--
	Nov-16	--	--	--	--	--	43	--	--	504	286	--	--
	Apr-17	--	--	--	--	--	42	--	--	507	293	--	--
	Oct-17	--	--	--	--	--	44	--	--	505	282	--	--
	Apr-18	--	--	--	--	--	45	--	--	511	297	--	--
	Nov-18	--	--	--	--	--	45	--	--	507	267	--	--
	Apr-19	--	--	--	--	--	47	--	--	517	300	--	--
	Oct-19	--	--	--	--	--	47	--	--	531	282	--	--
SF#45 - ZOO MW565	Apr-04	30.5	10.3	71.6	4.09	--	53	82*	<1.3**	510	380	100	8.31
	May-05	27.6	10.0	63.3	3.56	170	52	7.6	<0.3	505	313	104	8.25
	Nov-05	--	--	--	--	--	53	--	--	507	323	--	--
	May-06	--	--	--	--	--	53	--	--	498	300	--	--
	Nov-06	27.3	10.4	69.7	3.3	162	53	7.4	<0.3	503	280	104	8.21
	May-07	--	--	--	--	--	60	--	--	503	281	--	--
	Oct-07	25.1	9.9	65.6	2.6	170	52	6.9	<0.3	502	295	102	8.25

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#45 - ZOO MW565 (continued)	May-08	--	--	--	--	--	52	--	--	494	272	--	--
	Oct-08	--	--	--	--	--	51	--	--	494	262	--	--
	Apr-09	--	--	--	--	--	53	--	--	504	282	--	--
	Nov-09	--	--	--	--	--	53	--	--	506	304	--	--
	Apr-10	--	--	--	--	--	54	--	--	503	232	--	--
	Nov-10	--	--	--	--	--	52	--	--	510	283	--	--
	May-11	--	--	--	--	--	54	--	--	517	330	--	--
	Oct-11	--	--	--	--	150	52	--	--	449	240	76	8.04
	May-12	--	--	--	--	--	57	--	--	443	246	--	--
	Nov-12	--	--	--	--	--	57	--	--	433	244	--	--
	Apr-13	--	--	--	--	--	52	--	--	438	241	--	--
	Oct-13	--	--	--	--	--	50	--	--	436	218	--	--
	May-14	--	--	--	--	--	50	--	--	434	223	--	--
	Nov-14	--	--	--	--	--	51	--	--	431	230	--	--
	Apr-15	--	--	--	--	--	52	--	--	430	199	--	--
	Nov-15	--	--	--	--	--	51	--	--	423	199	--	--
	May-16	--	--	--	--	--	50	--	--	429	206	--	--
	Nov-16	--	--	--	--	--	50	--	--	427	187	--	--
	Apr-17	--	--	--	--	--	48	--	--	424	186	--	--
	Oct-17	--	--	--	--	--	48	--	--	426	224	--	--
	Apr-18	--	--	--	--	--	50	--	--	421	209	--	--
	Nov-18	--	--	--	--	--	50	--	--	423	195	--	--
	Apr-19	--	--	--	--	--	50	--	--	422	214	--	--
	Oct-19	--	--	--	--	--	50	--	--	427	194	--	--
SF#57 - USGS South Windmill MW57	May-06	--	--	--	--	--	115	--	--	963	--	--	--
	Oct-07	--	--	--	--	--	140	53	41	1,104	600	--	--
	May-08	--	--	--	--	--	150	--	--	1,183	653	--	--
	Sep-08	--	--	--	--	--	178	--	--	1,228	701	--	--
	Apr-09	--	--	--	--	--	178	--	--	1,253	684	--	--
	Nov-09	--	--	--	--	--	193	--	--	1,277	666	--	--
	Apr-10	--	--	--	--	--	176	--	--	1,281	705	--	--
	Nov-10	--	--	--	--	--	151	--	--	1,240	663	--	--
	May-11	--	--	--	--	--	157	--	--	1,201	667	--	--
	Nov-11	--	--	--	--	284	154	--	--	1,217	690	408	7.0
	Apr-12	--	--	--	--	--	168	--	--	1,206	662	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#57 - USGS South Windmill MW57 (continued)	Nov-12	--	--	--	--	--	180	--	--	1,237	686	--	--
	Apr-13	--	--	--	--	--	170	--	--	1,287	718	--	--
	Oct-13	--	--	--	--	--	173	--	--	1,288	713	--	--
	Apr-14	--	--	--	--	--	218	--	--	1,580	765	--	--
	Oct-14	--	--	--	--	--	182	--	--	1,310	746	--	--
	Apr-15	--	--	--	--	--	188	--	--	1,310	669	--	--
	Oct-15	--	--	--	--	--	196	--	--	1,360	750	--	--
	Apr-16	--	--	--	--	--	204	--	--	1,420	773	--	--
	Oct-16	--	--	--	--	--	191	--	--	1,380	725	--	--
	Apr-17	--	--	--	--	--	215	--	--	1,450	826	--	--
	Oct-17	--	--	--	--	--	190	--	--	1,280	707	--	--
	Apr-18	--	--	--	--	--	182	--	--	1,300	718	--	--
	Oct-18	--	--	--	--	--	168	--	--	1,230	680	--	--
	Apr-19	--	--	--	--	--	159	--	--	1,230	658	--	--
	Oct-19	--	--	--	--	--	140	--	--	1,110	665	--	--
SF#58 - USGS South Windmill MW140	May-06	--	--	--	--	--	57	--	--	605	--	--	--
	Oct-07	--	--	--	--	--	48	39	31	596	330	--	--
	May-08	--	--	--	--	--	57	--	--	636	350	--	--
	Sep-08	--	--	--	--	--	61	--	--	658	359	--	--
	Apr-09	--	--	--	--	--	67	--	--	703	382	--	--
	Nov-09	--	--	--	--	--	70	--	--	744	431	--	--
	Apr-10	--	--	--	--	--	65	--	--	720	400	--	--
	Nov-10	--	--	--	--	--	61	--	--	739	412	--	--
	May-11	--	--	--	--	--	60	--	--	693	490*	--	--
	Nov-11	--	--	--	--	202	59	--	--	704	410	176	7.72
	Apr-12	--	--	--	--	--	54	--	--	637	361	--	--
	Nov-12	--	--	--	--	--	66	--	--	715	399	--	--
	Apr-13	--	--	--	--	--	57	--	--	689	371	--	--
	Oct-13	--	--	--	--	--	60	--	--	736	393	--	--
	Apr-14	--	--	--	--	--	60	--	--	790	382	--	--
	Oct-14	--	--	--	--	--	58	--	--	735	418	--	--
	Apr-15	--	--	--	--	--	67	--	--	773	414	--	--
	Oct-15	--	--	--	--	--	55	--	--	720	394	--	--
	Apr-16	--	--	--	--	--	59	--	--	753	401	--	--
	Apr-16	--	--	--	--	--	59	--	--	753	401	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#58 - USGS South Windmill MW140 (continued)	Apr-17	--	--	--	--	--	55	--	--	741	391	--	--
	Oct-17	--	--	--	--	--	51	--	--	725	367	--	--
	Apr-18	--	--	--	--	--	46	--	--	665	361	--	--
	Oct-18	--	--	--	--	--	54	--	--	737	412	--	--
	Apr-19	--	--	--	--	--	46	--	--	638	325	--	--
	Oct-19	--	--	--	--	--	46	--	--	610	394	--	--
SF#69 - GGP NWM-3	Mar-13	26.2	32.0	26.0	3.10	147	52	34.2	20.3	537	295	210	7.31
	Oct-13	31.0	37.0	30.0	4.09	165	52	49.0	4.8**	598	309	225	7.11
	May-14	30.6	34.1	26.1	4.15	160	52	39.1	10.7	573	294	214	7.11
	Nov-14	31.0	34.8	25.7	4.19	158	54	39.4	0.9*	562	286	216	7.14
	Apr-15	30.8	35.3	28.1	4.28	171	55	39.3	<0.3	576	303	221	7.08
	Nov-15	31.4	34.0	28.8	3.91	175	50	37.3	<0.3	554	292	211	7.14
	May-16	--	--	--	--	--	50	--	<0.3	553	296	--	--
	Jul-16	--	--	--	--	--	52	--	--	564	296	--	--
	Oct-16	--	--	--	--	--	50	--	--	564	267	--	--
	Jan-17	--	--	--	--	--	44	--	--	490	243	--	--
	Apr-17	--	--	--	--	--	45	--	--	562	304	--	--
	Oct-17	--	--	--	--	--	41	--	--	448	249	--	--
	May-18	--	--	--	--	--	42	--	--	442	211	--	--
	Nov-18	--	--	--	--	--	42	--	--	442	237	--	--
	Apr-19	--	--	--	--	--	42	--	--	417	234	--	--
Oct-19	--	--	--	--	--	40	--	--	417	231	--	--	
SF#70 - GGP SWM-3	Mar-13	26.9	32.7	25.5	0.96	152	42	41.8	32.4	552	336	221	7.67
	Oct-13	33.2	40.5	29.9	1.77	175	52	42.0	29.9	636	345	252	7.50
	May-14	30.3	34.6	25.1	1.48	150	43	39.2	31.1	569	300	220	7.49
	Nov-14	33.1	40.1	25.9	1.65	163	47	43.2	30.8	601	317	243	7.51
	Apr-15	33.1	40.1	26.5	1.60	177	52	41.5	28.9	621	349	252	7.46
	Nov-15	35.2	41.3	29.1	1.67	175	52	41.8	29.0	623	349	248	7.47
	Apr-16	--	--	--	--	--	42	--	31.4	544	299	--	--
	Jul-16	--	--	--	--	--	54	--	--	632	333	--	--
	Oct-16	--	--	--	--	--	52	--	--	638	339	--	--
	Jan-17	--	--	--	--	--	43	--	--	563	326	--	--
	Apr-17	--	--	--	--	--	42	--	--	552	307	--	--
	Oct-17	--	--	--	--	--	46	--	--	578	320	--	--
	May-18	--	--	--	--	--	41	--	--	536	324	--	--

Table 9
Coastal Monitoring Network Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#70 - GGP SWM-3 (continued)	Oct-18	--	--	--	--	--	43	--	--	549	285	--	--
	Apr-19	--	--	--	--	--	40	--	--	487	255	--	--
	Oct-19	--	--	--	--	--	40	--	--	482	283	--	--
SF#67 - GGP Soccer Field SF-1	Oct-12	23.5	33.5	28.1	3.21	185	46	38.7	10.9	530	305	202	7.32
	May-13	23.1	35.0	30.0	3.19	174	40	36.0	9.7**	528	280	194	7.47
	Oct-13	22.3	31.6	29.5	3.06	175	41	27.0	2.5**	528	260	191	7.39
	May-14	24.6	33.0	28.1	3.16	176	41	27.8	2.7	531	252	195	7.42
	Nov-14	26.4	34.9	26.0	2.23	166	39	43.2	11.9	535	283	207	7.40
	Apr-15	24.9	35.3	28.9	3.20	190	42	26.3	1.4	534	278	201	7.34
	Nov-15	25.5	34.3	27.8	2.38	169	41	35.7	7.6	530	292	201	7.35
	Apr-16	--	--	--	--	--	39	--	4.1	530	286	--	--
	Jul-16	--	--	--	--	--	41	--	--	533	277	--	--
	Oct-16	--	--	--	--	--	40	--	--	540	261	--	--
	Jan-17	--	--	--	--	--	39	--	--	531	283	--	--
	Apr-17	--	--	--	--	--	38	--	--	539	286	--	--
	Oct-17	--	--	--	--	--	42	--	--	540	284	--	--
	May-18	--	--	--	--	--	40	--	--	524	283	--	--
	Nov-18	--	--	--	--	--	41	--	--	532	236	--	--
	Apr-19	--	--	--	--	--	44	--	--	541	290	--	--
	Oct-19	--	--	--	--	--	43	--	--	559	292	--	--
SF#68 - GGP North Lake Road NL-1	Oct-12	27.9	35.0	26.9	3.43	159	47	33.4	42.3	565	328	218	7.21
	May-13	27.0	37.9	29.6	2.90	150	43	40.0	21.1**	549	296	205	7.18
	Oct-13	33.0	41.8	28.9	2.87	165	52	44.0	31.7**	636	326	246	7.19
	May-14	35.2	35.7	24.8	2.54	154	46	36.4	23.1	563	300	42*	7.21
	Nov-14	27.3	31.4	22.6	2.36	136	31	27.2	42.6	493	273	183	7.22
	Apr-15	35.4	32.4	23.1	2.46	143	36	28.8	29.2	499	270	190	7.22
	Oct-15	43.6	32.3	24.6	2.33	143	37	30.0	33.4	505	293	198	7.18
	Apr-16	--	--	--	--	--	33	--	41.4	485	262	--	--
	Jul-16	--	--	--	--	--	33	--	--	480	264	--	--
	Oct-16	--	--	--	--	--	39	--	--	519	291	--	--
	Jan-17	--	--	--	--	--	48	--	--	598	320	--	--
	Apr-17	--	--	--	--	--	38	--	--	506	292	--	--
	Oct-17	--	--	--	--	--	28	--	--	459	254	--	--
	May-18	--	--	--	--	--	29	--	--	444	224	--	--
	Nov-18	--	--	--	--	--	26	--	--	425	243	--	--

**Table 9
Coastal Monitoring Network Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#68 - GGP North Lake Road NL-1	Apr-19	--	--	--	--	--	34	--	--	426	253	--	--
(continued)	Oct-19	--	--	--	--	--	27	--	--	409	234	--	--

Notes

^a = Anomalous primary sample results in 2018 were replaced with the corresponding duplicate result where available, as these results more closely resembled the historical concentrations.

= Shaded cell indicates data collected in 2019

* = Anomalous or questionable result

** = Nitrate as NO₃ is a calculated value: [NO₃] = 4.4 x [Nitrate as N]; for these results, Laboratory reported Nitrate as Nitrogen rather than Nitrate as Nitrate concentration.

Beginning in the Spring of 2016, the lab began reporting all Nitrate results as Nitrate as Nitrogen, and therefore from this point forward all results have been corrected and are no longer being marked by an **.

-- = Not analyzed

mg/L = Milligrams per liter

µmhos/cm = Micromhos per centimeter

= **Bold** font indicates a result that exceeds an MCL

NE = Not established

MCL¹ =Maximum Contaminant Level; values for MCLs are provided where they have been established for particular constituents. MCLs are drinking water standards that public water systems must achieve. They are not intended to regulate groundwater from monitoring wells or untreated water from production wells, because after withdrawal groundwater may be disinfected, filtered, blended, exposed to the atmosphere, and/or otherwise treated before being delivered to consumers. However, MCLs are used for comparison in this report to provide context for evaluating the quality of untreated groundwater. Primary MCLs are regulatory benchmarks for protecting human health. Secondary MCLs are benchmarks to protect the aesthetic quality of drinking water and are based on effects such as taste, odor, or appearance.

Secondary MCL² = 250/500/600: Recommended/Upper/Short Term

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#02 - EDGEWOOD SCHOOL	May-02	--	--	--	--	103	30	36.0	46.0	445	--	169	7.50
	Nov-02	--	--	--	--	144	30	36.0	49.0	452	227	164	7.30
	Jul-03	24.8	25.6	24.5	1.35	110	33	37.0	51.0	450	235	180	7.20
	Apr-04	24.5	25.0	24.5	1.37	--	--	--	--	--	--	--	--
	Nov-04	11.1*	0.254*	26.5	0.28*	108	29	34.5	47.9	446	312	166	7.50
SF#03 - ELK GLEN 2	Apr-00	30.4	32.8	24.2	ND	138	38	48.8	49.2	526	364	211	7.65
	Apr-01	--	--	--	--	140	41	52.0	55.0	580	330	236	7.62
	Dec-01	34.9	37.3	27.6	1.08	140	40	50.8	48.9	580	360	230	7.74
	Apr-04	34.4	38.5	26.9	1.11	--	43	52.0	52.8**	583	412	240	7.61
	Nov-04	38.9	39.5	30.9	1.18	143	40	56.0	51.2	590	374	235	7.80
	May-05	34.4	37.2	26.1	0.77	150	39	55.0	51.0	590	362	210	7.63
	Nov-05	--	--	--	--	--	--	--	--	--	--	--	--
SF#07 - LMMW-1S	Apr-09	58.4	89.7	90.6	2.67	340	235	114	10.7	1,488	859	590	7.09
	Nov-09	73.0	110	130	2.80	310	393	122	41.0	1,936	1,035	700	6.74
	Apr-10	52.9	78.4	76.1	2.31	342	129	77.0	<0.3*	1,170	657	454	6.88
	Nov-10	57.2	83.6	111	3.20	276	253	120	39.0	1,584	860	528	6.61
	May-11	51.9	81.5	84.2	3.10	296	172	82.5	19.1	1,274	696	464	6.92
	Oct-11	51.5	80.5	146	2.63	264	260	73.1	56.4	1,558	870	448	6.68
	Apr-12	40.7	66.1	70.7	1.91	268	144	61.9	13.7	1,068	461	394	6.81
	Nov-12	67.0	107	159	3.82	368	386	108	29.9	1,936	1,046	616	--
	Apr-13	60.1	90.5	124	3.84	355	295	72.2	17.8	1,658	820	576	--
	Oct-13	64.3	110	188	3.03	280	374	97.0	38.0	2,059	1,054	582	--
	Apr-14	58.5	88.9	131	2.86	324	258	69.8	16.2	1,740	841	530	--
	Oct-14	59.0	85.8	136	2.73	337	262	66.0	11.4**	1,600	848	503	--
	Apr-15	49.3	75.3	93.4	2.52	361	161	42.7	6.24	1,240	632	414	--
	Oct-15	51.4	75.5	110	2.56	384	209	47.1	6.78	1,350	756	461	--
	Apr-16	43.4	65.5	72.5	2.38	372	110	24.4	<0.3*	1,060	541	389	--
	Oct-16	56.6	88.3	141	2.63	316	273	63.0	21.6	1,629	828	518	6.78
	Apr-17	43.3	66.7	107	3.07	288	192	48.2	36.1	1,280	714	420	6.78
	Oct-17	39.4	68.8	130	2.43	194	211	54.6	88.8	1,290	686	395	6.59
	Apr-18	26.4	40.4	66	1.72	106	111	30.5	99.0	818	459	239	6.55
Oct-18	56.0	81.7	163	2.64	266	275	69.1	80.1	1,720	939	490	6.61	
Apr-19	27.1	39.1	55	1.55	180	102	28.8	26.8	762	416	242	7.89*	
Oct-19	62.5	93.3	185	3.02	310	372	81.4	93.3	1,950	1,030	526	6.75	
SF#63-LMMW-1D	Apr-10	32.3	47.7	50.8	3.33	160	104	28.0	48.7	780	438	266	7.93

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#63-LMMW-1D (continued)	Nov-10	27.6	42.2	44.1	3.10	162	106	27.0	48.0	781	431	264	7.85
	May-11	30.0	47.4	48.2	3.20	158	109	28.9	48.3	778	512	272	7.94
	Oct-11	33.8	46.8	48.7	3.22	160	105	28.1	45.5	771	440	270	7.88
	Apr-12	29.6	46.7	49.1	2.91	161	110	29.3	49.8	787	589	271	7.91
	Nov-12	36.2	58.0	58.9	3.40	170	110	28.8	48.0	775	444	263	--
	Apr-13	29.4	46.0	47.2	3.76	164	108	25.4	43.3	781	435	276	--
	Oct-13	33.8	52.6	52.0	3.10	129	76	29.0	50.0	832	423	245	--
	Apr-14	31.0	46.1	45.2	2.98	154	102	27.6	46.6	851	410	265	--
	Oct-14	29.9	43.5	45.0	2.82	154	104	28.0	44.4**	775	405	266	--
	Apr-15	29.5	47.3	45.9	2.74	160	104	27.8	46.1	790	440	268	--
	Oct-15	32.8	48.5	48.4	2.96	178	116	28.5	48.2	794	482	284	--
	Apr-16	31.4	47.7	46.8	2.77	148	94	28.9	49.3	807	458	284	--
	Oct-16	30.7	49.4	45.8	2.65	165	104	28.0	48.4	831	410	277	7.92
	Apr-17	28.8	46.9	44.5	3.07	175	101	27.2	46.6	774	426	270	7.93
	Oct-17	39.1	70.4	68.3	3.90	166	108	27.7	48.0	794	423	280	7.95
	Apr-18	30.7	46.6	51.8	2.83	157	104	28.5	47.1	779	397	274	7.88
	Oct-18	32.8	46.6	50.9	2.76	154	103	31.1	45.8	781	448	282	7.82
	Apr-19	30.5	43.9	50.9	2.68	157	104	26.8	44.9	775	396	266	7.97
	Oct-19	31.7	47.6	52.4	3.02	169	109	28.6	47.5	809	427	279	7.92
SF#09 - LMMW-2S	Apr-09	38.3	33.7	45.2	2.94	170	105	26.0	7.5	710	377	250	7.38
	Nov-09	36.0	36.0	44.0	2.50	170	111	34.0	7.6	756	375	258	7.45
	Apr-10	42.8	29.7	77.3	2.82	252	75	30.0	5.3	806	446	260	7.43
	Nov-10	42.9	31.4	71.5	3.20	262	89	33.0	6.9	836	468	272	7.57
	May-11	44.0	35.0	78.1	3.30	248	93	33.6	5.1	834	507	262	7.54
	Oct-11	45.6	35.8	76.9	2.90	262	90	31.9	4.0	839	460	262	7.47
	Apr-12	39.9	31.7	74.1	2.64	248	93	33.9	5.0	817	464	253	7.43
	Nov-12	41.6	33.4	73.4	2.96	269	101	29.4	3.0	800	441	241	--
	Apr-13	41.8	34.3	71.5	3.18	275	81	28.3	5.2	807	470	257	--
	Oct-13	42.5	35.4	72.1	2.63	209	60	26.0	<0.44*	818	396	245	--
	Apr-14	43.6	34.5	77.3	2.61	260	81	30.4	4.9	890	464	241	--
	Oct-14	44.2	34.2	71.6	2.37	247	84	32.0	4.4**	831	465	259	--
	May-15	42.7	35.8	70.2	2.26	252	91	34.0	4.8	845	439	240	--
	Oct-15	44.3	38.1	75.7	2.45	252	96	33.3	4.6	840	478	258	--
	Apr-16	41.5	36.6	69.0	2.17	250	96	34.0	6.6	852	447	258	--
	Oct-16	38.9	37.4	69.3	1.98	248	100	35.0	8.4	862	450	265	7.63

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#09 - LMMW-2S (continued)	Apr-17	40.8	39.5	72.7	2.59	264	99	32.8	5.6	869	455	276	7.51
	Oct-17	49.4	52.3	102.0	2.82	252	120	36.5	9.9	940	492	291	7.55
	Apr-18	48.3	45.8	95.5	2.65	246	141	42.0	12.5	1,010	539	314	7.55
	Oct-18	54.5	49.0	96.8	2.62	206	143	44.5	17.4	1,120	592	341	7.55
	Apr-19	57.0	51.3	99.5	2.55	251	204	49.2	24.6	1,220	632	357	7.87
	Oct-19	59.3	55.1	105.0	2.95	266	218	51.5	24.7	1,240	689	405	7.51
SF#08 - LMMW-2D	Apr-09	46.3	30.1	72.2	3.38	280	78	26.0	4.9	811	433	258	7.50
	Nov-09	45.0	31.0	70.0	3.00	262	80	32.0	5.1	814	456	250	7.50
	Apr-10	37.3	36.4	49.0	3.03	162	109	31.5	6.9	760	397	260	7.43
	Nov-10	35.8	36.9	44.3	3.50	182	114	32.0	2.1	773	440	262	7.45
	May-11	39.4	43.0	51.0	3.50	178	112	33.2	7.5	784	460	266	7.57
	Oct-11	42.8	46.6	52.7	3.60	190	116	32.8	6.9	791	430	270	7.57
	Apr-12	37.5	41.6	52.5	2.70	181	119	36.5	6.0	808	434	281	7.49
	Nov-12	39.2	46.8	52.9	3.38	204	133	34.4	7.5	804	421	278	--
	Apr-13	41.7	45.0	52.3	3.73	198	124	32.4	7.9	829	441	296	--
	Oct-13	43.2	47.4	55.4	2.88	139	85	36.0	6.0	850	396	242	--
	Apr-14	43.3	45.5	56.5	2.69	184	124	38.9	8.3	946	448	290	--
	Oct-14	44.0	46.1	53.1	2.54	199	132	41.0	8.8**	884	474	300	--
	May-15	47.0	49.2	53.1	2.55	170	107	40.0	10.5	884	453	287	--
	Oct-15	48.5	50.7	58.5	2.63	204	136	42.5	10.5	904	512	323	--
	Apr-16	43.6	48.2	53.9	2.60	201	136	44.0	11.4	912	472	322	--
	Oct-16	44.1	50.6	56.6	2.38	201	133	44.0	11.4	922	433	319	7.65
	Apr-17	44.0	49.5	54.8	2.91	208	135	44.5	11.6	938	473	337	7.65
	Oct-17	45.5	56.0	65.6	2.77	203	139	44.2	11.7	934	466	336	7.62
	Apr-18	48.5	54.0	62.3	2.62	199	138	45.3	12.9	932	485	337	7.68
Oct-18	50.0	51.6	59.9	2.68	237	175	45.0	12.5	946	472	341	7.71	
Apr-19	48.1	50.1	58.7	2.46	211	145	48.0	12.0	962	506	331	8.00	
Oct-19	49.0	50.8	62.6	2.83	213	150	49.8	13.2	966	530	374	7.67	
SF#65- LMMW-2SS	Apr-12	28.2	48.9	77.5	0.59	166	154	61.1	25.3	958	553	285	6.70
SF#11 - LMMW-3S	Apr-04	45.5	53.3	59.1	1.87	--	--	--	--	--	--	--	--
	Nov-04	42.8	45.4	61.2	2.09	264	66	55.7	<0.2	769	403	276	7.20
	Apr-05	41.1	46.0	54.2	1.47	282	51	61.0	0.3	773	469	294	7.23
	Nov-05	48.8	2.16*	45.2	60.5*	243	52	90.0	0.3	770	499	294	7.27
	May-06	28.7	34.2	46.2	1.53	192	44	57.0	<0.3	622	380	222	7.34
	May-07	31.3	36.0	52.4	1.79	270	30	12.9	<0.3	612	342	270	7.20

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#11 - LMMW-3S (continued)	May-08	49.5	57.2	49.5	2.27	368	54	3.8	<0.3	850	494	186	7.13
	Apr-09	57.3	63.6	38.3	1.83	434	56	0.8	<0.3	917	518	232	7.27
	Nov-09	48.0	55.0	33.0	1.90	340	55	1.2	<0.3	798	444	400*	7.13
	Apr-10	53.5	57.6	35.8	1.20	300	45	0.8	<0.3	847	465	400	7.07
	Nov-10	54.4	57.3	32.0	1.80	402	66	1.2	<0.88	899	518	406	7.10
	May-11	56.8	65.2	32.0	2.40	372	64	3.5	<0.3	892	479	428	7.20
	Oct-11	51.2	56.2	32.1	2.06	332	50	8.5	<0.3	761	420	340	7.15
	Apr-12	47.3	44.6	47.6	2.84	355	83	1.1	<0.3	897	480	284	6.66
	Nov-12	44.5	52.9	26.1	2.14	260	59	35.2	<0.3	703	443	311	--
	Apr-13	52.4	58.0	25.7	2.68	325	54	32.0	<0.3	786	465	380	--
	Oct-13	27.0*	31.1*	44.8*	--	183*	67*	10*	<0.44**	592*	291*	184*	7.61*
	Apr-14	51.6	56.5	33.2	4.00	323	48	20.2	<0.3	857	433	345	--
	Oct-14	55.3	59.2	30.4	1.99	386	50	10.0	<0.88**	852	462	406	--
	Apr-15	51.0	60.2	38.2	2.00	375	50	13.5	<0.3	855	463	381	--
	Oct-15	70.3	72.5	38.0	2.23	472	60	3.7	<0.3	985	538	474	--
	Apr-16	62.7	70.5	30.3	2.32	432	56	2.5	<0.88	951	506	450	--
	Oct-16	48.5	56.6	45.3	2.02	321	60	27.0	<0.88	794	424	348	--
	Apr-17	55.2	62.9	41.7	2.85	390	63	14.4	<0.3	933	486	387	--
	Oct-17	53.6	66.3	49.5	2.63	431	58	4.5	<0.3	950	486	425	--
	Apr-18	57.6	62.1	52.1	2.40	400	56	3.5	<0.3	884	485	393	7.19 ^a
Oct-18	59.8	61.4	44.0	2.41	403	63	4.2	<0.3	886	466	411	7.05	
Apr-19	57.3	58.5	39.8	2.50	400	63	4.7	<0.3	886	482	401	--	
Oct-19	56.4	60.8	37.8	2.68	372	62	8.1	<0.3	867	464	391	7.22	
SF#10 - LMMW-3D	Apr-04	32.9	36.2	43.5	1.96	--	70	14.0	<0.3**	591	340	210	7.58
	Nov-04	31.2	32.9	44.5	2.06	176	76	14.0	<0.2	601	287	200	7.60
	Apr-05	29.6	32.9	43.2	1.86	184	82	15.0	<0.3	605	355	206	7.63
	Nov-05	35.9	35.9	31.5	47.2*	182	82	14.4	<0.3	612	383	--	7.62
	May-06	29.4	30.6	43.2	1.99	178	75	14.0	<0.3	598	340	208	7.62
	May-07	30.3	33.7	45.7	2.00	190	80	13.3	<0.3	608	333	220	7.55
	May-08	29.5	32.0	42.9	2.21	180	76	11.9	<0.3	597	331	210	7.60
	Apr-09	27.7	30.6	44.3	1.74	162	75	11.8	<0.3	594	355	190	7.69
	Nov-09	28.0	31.0	42.0	1.90	180	80	13.0	<0.3	589	353	210	7.67
	Apr-10	27.8	29.1	42.3	0.72	180	70	12.3	<0.3	598	332	180	7.52
	Nov-10	25.7	28.5	39.4	2.20	186	75	13.0	<0.88**	602	319	202	7.70
May-11	27.6	31.4	43.8	2.00	180	73	12.8	<0.3	595	343	224	7.60	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#10 - LMMW-3D (continued)	Oct-11	31.7	31.9	44.9	1.96	178	71	12.4	<0.3	592	310	196	7.52
	Apr-12	25.9	29.8	44.1	1.95	182	74	12.5	<0.3	585	292	198	7.62
	Nov-12	26.6	30.2	43.0	2.04	201	75	11.6	<0.3	589	322	193	--
	Apr-13	26.7	30.2	41.9	2.19	188	71	12.5	<0.3	592	333	204	--
	Oct-13	42.9*	54.0*	30.0*	1.98	259*	50*	48*	<0.44**	740*	391*	318*	7.28
	Apr-14	28.4	30.0	43.7	1.97	175	68	10.5	<0.3	640	313	193	--
	Oct-14	27.8	29.1	40.2	1.82	184	70	9.8	<0.88**	588	313	197	--
	Apr-15	26.3	31.2	41.6	1.77	180	68	9.9	<0.3	581	314	192	--
	Oct-15	29.7	30.8	43.3	1.96	181	70	10.0	<0.3	576	318	195	--
	Apr-16	27.4	29.8	38.3	1.80	180	68	10.0	<0.88	590	304	195	--
	Oct-16	28.0	32.4	42.4	1.89	185	68	9.5	<0.88	588	287	196	7.63
	Apr-17	25.9	31.0	42.0	2.19	179	64	9.7	<0.3	590	296	191	7.62
	Oct-17	24.8	31.0	45.2	1.86	184	70	9.2	<0.3	584	289	191	7.54
	Apr-18	29.4	32.0	51.6	1.92	183	67	9.9	<0.3	587	309	198	7.59
	Oct-18	27.8	29.8	46.4	1.91	189	74	9.7	<0.3	584	297	205	7.52
	Apr-19	28.5	29.5	47.3	1.77	188	69	10.0	<0.3	593	313	196	7.93*
Oct-19	27.9	30.6	47.9	2.05	193	70	9.9	<0.3	585	317	199	7.62	
SF#12 - LMMW-4S	May-14	36.3	41.3	48.7	1.55	204	54	50.5	52.8	763	440	266	--
SF#13 - LMMW-4SS	Apr-04	36.1	42.8	30.9	1.57	--	--	--	--	--	--	--	--
	Oct-04	38.1	40.2	35.1	1.77	194	55	44.5	<0.2	624	464	244	7.30
	May-14	70.8	71.3	53.8	2.23	480	61	43.7	16.9	1,150	610	510	--
SF#15 - LMMW-6D	Apr-04	31.8	34.1	42.9	1.64	--	50	31.0	34.8**	564	380	200	7.89
	Nov-04	26.5	27.6	28.3	1.41	130	45	35.5	43.0	521	321	160	8.10
	Apr-05	30.2	30.4	40.4	1.58	140	55	30.0	32.0	560	350	194	7.95
	Nov-05	32.1	2.02*	29.2	42.5*	126	56	36.0	44.0	561	384	--	8.03
	May-06	27.8	27.8	38.7	1.67	130	54	37.0	45.0	560	350	212	8.06
	May-07	26.4	26.9	39.0	1.17	112	50	32.0	55.0	535	312	176	8.12
	May-08	27.7	28.4	39.1	1.70	118	55	33.0	49.0	549	310	178	7.95
	Apr-09	24.9	26.8	39.2	1.54	134	57	29.9	36.0	562	323	192	8.06
	Nov-09	27.0	27.0	37.0	1.70	120	53	34.0	43.8	558	301	180	7.95
	Apr-10	28.3	29.4	40.5	0.09	134	53	31.7	41.9	572	317	186	7.96
	Nov-10	23.6	25.2	31.2	1.60	122	52	28.0	47.0	578	331	182	8.10
	May-11	26.3	29.1	38.5	1.73	104	54	29.5	45.0	569	303	182	7.98
	Oct-11	29.9	30.4	40.8	1.68	136	55	29.3	40.8	572	320	192	--
Apr-12	26.4	30.3	40.1	1.56	148	58	31.1	40.0	595	315	201	7.89	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#15 - LMMW-6D (continued)	Nov-12	28.6	31.7	41.0	1.87	155	63	28.0	33.6	608	349	197	--
	Apr-13	28.4	31.7	40.2	2.20	156	55	28.4	40.1	606	346	212	--
	Oct-13	28.3	29.3	39.7	1.61	154	59	28.0	34.3**	592	351	199	7.90
	Apr-14	29.9	31.0	40.2	1.76	148	54	29.3	34.7	645	334	199	--
	Oct-14	28.5	28.7	37.5	1.61	144	52	31.0	42.2**	580	338	197	--
	Apr-15	28.8	34.0	39.7	1.60	163	54	27.4	34.1	610	331	205	--
	Oct-15	28.5	28.9	39.6	1.73	137	53	31.7	38.8	564	333	187	--
	Apr-16	27.6	29.9	36.5	1.63	146	52	32.0	37.8	584	328	193	--
	Oct-16	26.1	29.5	39.2	1.52	131	49	34.0	41.8	557	295	188	7.95
	Apr-17	26.4	29.7	37.7	1.88	138	47	31.2	36.5	580	307	183	7.90
	Oct-17	27.9	29.6	38.2	1.68	144	51	29.5	38.3	579	326	198	7.89
	Apr-18	27.0	28.6	42.1	1.57	132	50	34.6	41.8	556	308	189	7.96
	Oct-18	27.6	28.1	42.1	1.61	142	48	27.2	33.0	563	321	192	7.88
	Apr-19	27.8	28.2	41.2	1.63	140	51	31.8	38.9	567	312	188	8.04
Oct-19	30.8	31.3	43.4	1.82	174	58	26.1	21.9	599	328	211	7.90	
SF#16 - LMMW-7SS	Apr-04	44.0	48.5	54.9	1.18	--	--	--	--	--	--	--	--
	Oct-04	43.7	42.6	59.1	1.50	240	46	45.7	50.9	737	456	260	7.70
	Nov-09	42.0	42.0	53.0	1.50	240	43	47.0	52.0	769	496	282	7.58
	Apr-12	38.9	42.9	52.5	1.09	246	44	45.3	44.4	750	444	278	7.54
SF#17 - (NE) WINDMILL	Nov-02	--	--	--	--	168	48	39.0	28.0	574	265	212	7.50
	Jul-03	28.6	36.2	30.6	1.65	180	48	33.0	28.0	575	273	230	7.40
SF#18 - NEW GG PARK (N) LAKE	Nov-04	28.6	35.1	35.1	1.44	158	42	31.1	21.4	530	337	198	7.50
	May-05	24.9	30.4	26.6	0.70	146	41	27.0	25.0	500	289	178	7.69
	Nov-07	27.4	32.2	24.7	1.10	128	44	28.0	31.0	496	290	200	7.52
	Apr-09	23.1	28.6	24.8	1.07	140	44	24.0	28.0	494	298	194	7.79
	Mar-13	24.5	29.8	25.6	0.96	138	42	25.3	29.9	507	297	196	7.55
SF#19 - NEW GG PARK (S) WINDMILL	Nov-04	35.2	40.3	31.8	1.74	162	42	49.0	37.4	598	373	240	7.80
	May-05	25.5	34.5	25.5	1.16	146	42	42.0	20.0	525	311	230	8.04
	Nov-05	--	--	--	--	140	41	--	--	565	358	240	7.76
	Dec-05	28.9	35.8	27.0	1.50	--	--	--	--	--	--	--	--
	Jun-07	--	--	--	--	148	--	--	--	--	--	--	--
	Apr-09	28.4	32.5	27.6	1.41	150	46	40.0	31.0	558	316	224	7.87
	Aug-13	30.5	36.2	27.7	1.40	152	44	40.0	31.0	573	332	216	7.65
SF#20 - (NW) WINDMILL	May-02	--	--	--	--	171	44	37.0	28.0	573	--	219	7.50
	Nov-02	--	--	--	--	120	41	12.0	20.0	415	181	144	8.00

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#20 - (NW) WINDMILL (continued)	Jul-03	20.0	24.3	24.6	1.34	130	43	11.0	18.0	414	164	160	7.90
SF#22 - OLYMPIC CLUB #8	May-02	--	--	--	--	189	84	30.5	16.1	685	--	--	8.10
	Apr-04	38.5	39.7	46.0	1.95	--	--	--	--	--	--	--	--
SF#23 - PINE LAKE PROD WELL	Oct-04	32.7	33.4	36.4	1.09	144	35	37.0	65.0	565	336	244	7.20
SF#25 - (S) WINDMILL	May-02	--	--	--	--	133	41	28.0	36.0	476	--	185	7.70
	Nov-02	--	--	--	--	120	40	28.0	38.0	474	202	184	7.70
	Jul-03	25.5	28.6	24.5	1.49	150	43	22.0	36.0	486	202	190	7.80
	Apr-04	24.4	27.7	23.9	1.11	--	40	24.0	37.8**	455	330	180	7.70
	Nov-04	29.6	31.0	29.9	1.69	128	37	31.4	36.7	489	312	185	7.70
SF#41 - WEST SUNSET PLAYGROUND	May-04	15.2	16.4	21.7	0.85	--	20	24.0	14.1**	317	266	130	8.70
	May-05	16.3	17.0	22.9	1.01	80	26	27.0	16.0	326	205	112	8.59
	May-06	15.0	16.6	21.2	0.73	76	29	28.0	17.0	322	210	110	8.57
	May-07	17.3	16.5	22.2	0.88	75	30	26.7	17.5	317	185	107	8.52
	May-08	18.9	20.2	24.8	1.07	88	29	29.3	22.4	355	210	122	8.37
	Apr-09	18.5	19.3	24.9	1.09	96	32	29.7	22.4	382	241	140	8.50
	Nov-09	19.0	19.0	23.0	1.00	94	31	31.6	21.1	380	230	128	8.30
	Apr-10	20.6	20.2	24.5	1.13	96	26	31.3	23.5	397	226	136	8.27
	Nov-10	17.2	18.1	21.5	1.10	100	30	31.0	20.0	382	228	134	8.54
	Jun-11	16.6	18.3	22.2	1.10	92	28	30.7	19.6	385	213	128	--
	Oct-11	14.4	12.7	21.6	1.02	66	26	22.4	0.60	264	150	84	7.90
	May-12	13.2	12.9	21.6	1.05	68	68*	22.0	0.72	264	186	79	--
	Oct-12	12.2	12.4	20.4	0.89	69	31	22.7	0.87	268	166	80	--
	Apr-13	13.0	12.1	21.3	1.34	70	26	22.4	0.66	265	125	82	8.50
	Oct-13	12.5	12.0	20.6	0.95	69	25	22.0	0.90	273	137	81	8.56
	May-14	12.9	12.0	18.8	0.92	71	25	21.4	0.58	270	122	390*	8.73
	Nov-14	13.2	12.6	18.4	0.97	71	26	21.6	0.45	268	140	81	8.85
	Apr-15	13.1	13.3	19.2	0.97	74	25	21.5	0.51	270	123	81	8.79
	Oct-15	13.7	12.9	20.2	0.98	77	26	23.0	0.16	269	142	82	8.67
	May-16	11.9	12.3	20.8	0.95	72	25	21.6	0.55	270	143	81	8.84
Nov-16	11.3	11.7	17.5	1.14	70	24	22.0	<0.44	263	132	79	8.52	
May-17	12.3	11.7	19.6	0.94	71	24	22.4	<0.3	271	138	84	8.75	
Oct-17	11.1	11.9	21.8	0.83	66	24	22.2	0.40	263	143	80	8.85	
May-18	14.1	19.8	30.2	1.74	99	38	19.0	<0.3	351	170	112	8.28	
Nov-18	18.4	26.7	43.7	1.97	126	59	35.1	<0.3	515	245	152	7.12	
Apr-19	17.9	30.4	36.2	1.26	142	41	43.8	<0.3	496	228	176	8.44	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#41 - WEST SUNSET PLAYGROUND	Oct-19	23.1	37.5	35.2	1.20	162	42	51.5	10.91	562	305	214	8.13
SF#24 - (S) SUNSET PLAYGROUND	Apr-04	31.1	33.1	36.9	1.31	--	50	27.0	12.8**	576	394	200	7.34
	May-05	30.8	33.0	37.8	1.35	164	21	34.0	21.0	560	343	204	7.41
	May-06	28.8	31.6	35.6	1.18	154	54	38.0	30.0	584	360	212	7.39
SF#52 - CENTRAL PUMP ST MW190	May-05	44.2	43.2	46.9	1.81	270	47	47.0	19.0	750	433	300	7.59
	Oct-07	42.9	45.1	43.2	1.27	270	40	40.0	19.4	719	425	290	7.57
	Sep-08	45.4	45.9	43.2	1.40	260	40	45.0	22.0	707	382	294	7.56
SF#53 - CENTRAL PUMP ST MW270	May-05	29.0	21.9	48.2	1.52	168	72	8.7	<0.3	548	296	160	7.96
	Oct-07	28.5	23.1	44.0	1.32	170	70	8.6	<0.3	555	282	170	7.85
	Sep-08	32.2	24.0	45.9	1.60	174	69	10.7	<0.3	554	314	174	7.89
SF#46 -LK MERCED PUMP ST MW155	May-05	26.9	24.1	36.2	1.79	108	--	--	--	480	297	164	7.84
	Nov-05	26.4	25.0	35.9	1.80	102	39	47.0	49.0	--	353	7.83	7.51
	May-06	26.1	24.8	69.7*	3.26	100	39	47.0	48.0	503	310	182	7.81
	May-07	27.6	26.0	37.3	1.78	113	38	43.4	49.0	--	309	180	7.70
SF#47 -LK MERCED PUMP ST MW270	May-05	22.1	15.7	74.6	1.92	140	--	--	--	550	353	114	7.58
	Dec-05	22.6	16.2	55.6	0.69	114	41	35.0	27.0	510	335	132	--
	May-06	25.0	18.0	51.3	1.35	134	50	35.0	24.0	505	310	140	7.54
	May-07	27.2	20.3	42.1	1.87	118	40	34.1	37.0	--	293	150	7.60
SF#48 -LK MERCED PUMP ST MW440	May-05	19.5	20.8	32.6	1.90	112	--	--	--	400	242	132	8.14
	Dec-05	18.3	20.2	28.7	0.51	100	50	7.5	18.0	416	264	130	8.23
	May-06	19.4	21.8	30.7	1.17	110	52	7.6	19.9	421	250	138	8.18
	May-07	20.1	22.1	31.3	1.67	115	49	8.0	21.0	--	232	140	8.10
SF#49 -LK MERCED PUMP ST MW575	May-05	48.2	29.2	88.6	3.90	214	102	102	<0.3	860	531	240	7.75
	Nov-05	48.5	30.1	88.6	4.01	208	104	83.0	<0.3	--	1,120*	NS	7.80
	May-06	49.2	29.9	87.0	3.50	200	106	85.0	<0.3	861	490	238	7.80
	May-07	50.7	28.5	90.4	3.97	211	105	81.5	<0.3	--	517	250	7.80
SF #71 - PARK PLAZA MW195	Apr-13	104	83.7	84.2	6.03	417	142	195	36.1	1,519	915	656	7.16
	Nov-13	98.8	73.5	84.0	4.61	388	145	160	31.2**	1,479	215*	594	7.14
	May-14	111	86.5	73.4	4.45	367	151	179	31.6	1,500	859	614	7.16
	Oct-14	110	85.6	112	5.53	441	146	190	24.5	1,610	961	633	7.03
	May-15	112	86.3	78.8	4.11	328	150	190	36.5	1,560	865	689	7.15
	Dec-15	101	89.6	78.9	4.14	370	166	177	39.3	1,530	958	646	7.15
	May-16	112	88.1	80.9	4.22	389	160	195	41.6	1,580	959	680	7.09
	Nov-16	110	92.7	79.1	4.13	389	144	256*	48.4	1,660	1,010	709	7.07
May-17	127	92.9	107.0	4.69	446	146	236	47.1	1,690	1,060	715	7.02	

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF #71 - PARK PLAZA MW195 (continued)	Nov-17	106	84.5	128.0	4.40	462	145	225	45.8	1,730	1,060	640	7.04
	May-18	104	83.7	171.0	4.64	491	107	228	45.3	1,670	988	549	7.13
	Nov-18	106	72.6	138.0	4.32	495	101	213	42.0	1,630	965	598	7.04
	May-19	103	77.4	131.0	3.94	514	97	209	41.9	1,590	941	578	7.34
	Nov-19	103	82.0	87.8	4.08	443	99	194	37.6	1,530	907	627	7.13
SF#50 - PARK PLAZA MW460	Apr-05	51.0	52.9	50.0	2.25	274	66	49.0	41.0	847	557	338	7.47
	Nov-05	52.6	1.78*	47.6	49.5*	248	72	41.0	37.0	--	526	--	7.65
	May-06	39.5	43.6	39.5	2.14	218	65	36.0	33.0	733	430	282	7.71
	May-07	48.9	47.5	47.7	1.87	260	60	39.5	34.0	794	453	312	7.67
	May-08	42.0	43.8	45.3	1.73	230	70	39.9	26.5	730	420	290	7.47
	Apr-09	56.3	57.2	54.1	2.06	316	74	70.0	28.0	965	555	356	7.50
	Nov-09	49.0	51.0	48.0	1.90	270	67	63.0	28.0	862	500	344	7.50
	Apr-10	47.0	51.6	47.6	2.74	270	62	66.6	28.3	865	464	338	7.41
	Dec-10	32.9	34.9	40.8	1.50	198	61	41.0	27.0	712	442	242	7.50
	May-11	37.7	41.4	40.3	2.00	256	65	55.0	26.8	842	501	332	--
	Nov-11	53.4	56.6	55.0	2.00	286	64	91.5	28.3	933	560	372	7.06
	May-12	49.6	51.8	56.0	1.85	263	70	85.4	33.5	898	538	353	--
	Nov-12	49.6	53.6	54.5	2.34	278	71	63.5	32.9	887	512	334	7.32
	Apr-13	64.5*	69.6*	55.2	2.77	396*	33*	68.5	34.8	1,078	618	468*	7.33
	Nov-13	49.6	54.5	51.7	2.01	293	65	62.0	32.1**	912	162*	347	7.28
	May-14	59.8	59.5	50.8	1.94	323	65	62.5	33.3	969	519	383	7.30
	Oct-14	48.6	49.2	44.9	1.85	248	66	60.3	32.4	838	425	310	7.25
	May-15	49.5	50.1	48.6	1.82	236	60	64.0	33.4	859	445	298	7.29
	Dec-15	38.0	45.6	46.3	1.77	217	66	58.9	31.0	771	483	288	7.25
	May-16	41.7	44.5	45.0	1.83	223	65	61.5	29.7	794	443	309	7.22
Nov-16	28.7	33.4	36.6	1.76	165	68	39.3	26.0	656	341	232	7.35	
May-17	36.9	39.3	44.4	1.71	201	59	49.7	22.8	712	414	256	7.33	
Nov-17	28.9	33.7	39.1	1.48	185	63	35.7	24.6	662	363	234	7.31	
May-18	36.0	39.9	53.2	1.62	194	62	42.9	25.0	684	346	252	7.33	
Nov-18	38.3	36.4	45.1	1.61	187	59	48.4	24.4	702	395	248	7.30	
May-19	37.4	38.5	49.3	1.57	197	62	55.2	25.7	695	389	255	7.52	
Nov-19	40.3	41.8	46.7	1.84	213	62	57.5	25.8	736	404	278	7.42	
SF#51 - PARK PLAZA MW620	May-05	44.0	41.3	62.1	2.95	208	125	44.0	<0.3	853	250*	176	7.70
	Nov-05	52.0	2.18*	52.6	69.4*	236	142	44.0	<0.3	--	579	--	7.88
	May-06	42.4	44.2	54.3	3.28	218	119	43.0	<0.3	819	490	282	7.89

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SF#51 - PARK PLAZA MW620 (continued)	May-07	53.1	47.3	63.3	3.02	242	130	41.7	0.3	919	509	329	7.81
	Jun-08	63.2	53.4	68.4	3.08	290	155	43.0	0.6	1,042	592	410	7.79
	Apr-09	58.7	52.6	70.1	3.08	284	143	42.0	0.6	1,044	615	356	7.86
	Nov-09	56.0	51.0	66.0	3.00	274	138	45.0	0.5	1,018	585	360	7.85
	Apr-10	60.2	56.4	73.5	3.07	280	143	42.0	0.4	1,061	585	350	7.73
	Dec-10	55.1	48.8	63.7	3.10	274	139	42.0	<0.88	1,043	568	358	7.90
	May-11	49.6	47.0	58.1	3.30	280	148	38.3	0.5	1,078	603	400	--
	Nov-11	58.6	55.1	68.8	3.19	294	145	38.2	0.9	1,062	610	388	7.40
	May-12	60.6	55.7	70.4	3.37	300	156	39.2	0.6	1,079	618	396	--
	Nov-12	35.7	33.0	52.8	3.17	188	88	42.5	0.3	704	418	223	6.64
	Apr-13	30.1	28.3	46.3	2.84	160	75	38.8	0.4	620	368	201	7.26
	Nov-13	31.4	28.7	47.2	2.32	164	75	45.0	<0.44**	632	357	207	7.39
	May-14	35.3	30.0	43.5	2.23	157	71	47.7	0.3	644	343	207	7.30
	Oct-14	36.8	32.0	42.2	2.23	164	74	54.8	0.3	656	376	216	7.62
	May-15	36.9	33.0	44.9	2.16	172	71	63.0	<0.2	679	365	216	7.76
	Dec-15	32.4	33.7	44.6	2.25	166	76	61.4	<0.3	671	405	225	7.82
	May-16	35.1	31.4	42.6	2.34	164	76	63.3	<0.3	679	369	231	7.79
	Nov-16	31.9	30.7	40.7	2.17	164	77	62.1	<0.3	682	358	237	7.90
	May-17	37.1	32.9	45.5	2.18	163	78	56.3	<0.3	677	396	229	7.83
	Nov-17	35.6	35.4	49.1	2.17	164	84	58.2	<0.3	698	397	235	7.84
	May-18	37.9	35.4	56.3	2.10	163	85	58.5	<0.3	700	348	241	7.81
	Nov-18	39.3	32.9	47.5	2.11	157	81	56.8	<0.3	700	377	235	7.79
	May-19	38.3	32.6	53.4	1.94	162	84	59.3	<0.3	686	375	229	7.89
	Nov-19	36.5	32.0	47.8	2.44	160	82	62.1	<0.3	688	372	231	7.93
Elk Glen Monitoring Well	May-14	55.9	65.4	57.4	1.30	217	81	58.0	37.9	846	456	331	--
CUP-10A MW160	May-10	58.8	60.6	69.7	1.95	252	128	99.0	35.0	1,149	691	428	6.87
	Oct-10	57.0	56.4	68.5	1.10	256	133	99.0	23.0	1,158	679	412	6.86
	Jun-11	60.4	65.1	72.7	1.54	250	137	99.1	37.1	1,149	688	424	6.92
	Nov-11	60.2	62.3	73.2	1.44	260	129	84.4	38.5	1,108	640	408	6.83
	May-12	61.7	59.7	73.7	1.80	273	136	56.5	41.4	1,080	621	393	6.85
	Nov-12	60.1	62.3	75.9	1.59	278	147	64.2	42.4	1,100	632	377	6.89
	Apr-13	65.3	59.9	45.6	1.61	283	130	72.1	45.7	1,123	640	416	6.90
	Nov-13	61.2	59.2	74.0	1.26	274	130	62.0	41.4**	1,112	628	392	6.88
	May-14	56.7	59.8	69.0	1.32	271	125	62.8	44.7	1,110	606	396	6.87
	Oct-14	61.0	58.5	72.1	1.31	275	125	63.0	47.2	1,110	618	391	6.84

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-10A MW160 (continued)	May-15	60.0	59.7	70.1	1.23	258	115	63.4	49.1	1,110	538	397	6.87
	Dec-15	55.4	59.2	71.3	1.31	368*	195*	59.4	50.5	1,080	621	390	6.88
	May-16	55.2	56.0	63.9	1.15	263	120	58.5	51.9	1,090	628	818	6.83
	Nov-16	52.5	58.0	64.5	1.08	270	124	63.7	51.5	1,090	630	396	6.85
	May-17	58.7	55.3	67.2	1.14	236	99	51.5	54.6	1,080	628	315	6.80
	Nov-17	51.8	52.8	63.6	1.05	264	129	49.4	52.8	1,080	608	391	6.86
	May-18	59.2	61.1	75.0	1.17	270	133	49.9	53.7	1,080	627	399	6.87
	Nov-18	61.2	57.0	70.3	1.21	305	148	49.6	52.4	1,100	603	451	6.83
	May-19	58.7	61.7	72.9	1.28	268	131	49.8	52.4	1,100	557	384	7.30
Nov-19	59.4	60.0	73.6	1.35	262	128	49.6	51.9	1,110	632	379	6.92	
CUP-10A MW250	May-10	44.7	48.3	54.5	2.83	252	128	81.0	48.0	1,102	647	436	6.89
	Oct-10	57.1	58.1	71.7	1.45	264	132	76.0	36.0	1,119	654	398	6.90
	Jun-11	56.4	60.6	69.6	2.13	274	136	78.1	38.2	1,117	697	406	6.96
	Nov-11	59.7	60.8	72.6	1.43	262	130	75.7	38.9	1,096	640	396	6.90
CUP-10A MW500	May-10	41.3	34.5	108	2.42	212	110	68.0	36.0	1,012	598	132	7.48
	Oct-10	51.0	48.2	79.7	0.74	250	122	77.0	38.0	1,079	637	332	7.25
	Jun-11	56.5	57.6	73.0	1.93	242	131	76.2	38.1	1,116	649	382	7.01
	Nov-11	58.7	60.8	70.1	1.54	264	130	76.5	39.2	1,098	630	398	6.88
	May-12	61.7	62.6	72.7	1.42	249	136	126*	39.4	1,158	694	439	6.66
	Nov-12	62.9	66.7	73.1	1.50	255	143	122*	39.4	1,149	707	407	6.69
	Apr-13	63.4	65.4	76.1	1.81	263	130	130	42.6	1,141	681	444	6.78
	Nov-13	63.1	62.6	74.7	1.46	253	123	110	37.8**	1,134	669	404	6.77
	May-14	63.6	58.9	65.7	1.31	244	117	105	39.6	1,110	642	404	6.74
	Oct-14	61.8	62.5	63.9	1.29	252	119	104	40.5	1,100	661	403	6.70
	May-15	59.3	59.7	64.6	1.25	220	104	96.3	41.2	1,100	658	381	6.69
	Nov-16	51.5	58.4	65.8	1.16	247	124	113	43.5	1,090	650	415	6.69
	May-17	56.5	56.2	63.8	1.21	204	98	88	43.9	1,090	602	325	6.67
	Nov-17	58.0	60.9	66.2	1.23	247	127	82	42.9	1,090	635	406	6.72
	May-18	60.4	62.7	72.5	1.30	248	127	83.2	44.4	1,090	625	401	6.73
	Nov-18	61.2	56.6	68.3	1.21	284	144	81	43.9	1,090	607	451	6.68
May-19	61.8	58.3	65.8	1.17	246	125	81	43.5	1,080	664	398	6.74	
Nov-19	60.6	59.9	70.1	1.38	240	123	80	42.7	1,100	665	393	6.76	
CUP-10A MW710	May-12	69.8	46.0	91.5	4.05	210	189	120	<0.3	1,192	689	389	6.92
	Nov-12	72.3	50.6	88.4	4.31	198	189	139	<0.3	1,183	694	370	7.09
	Apr-13	72.3	50.6	86.8	5.61	211	188	137	<0.3	1,205	665	417	7.10

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-10A MW710	Nov-13	60.9	52.8	59.2*	1.93*	209	184	110	<0.22**	1,208	654	393	7.18
(continued)	May-14	77.3	46.9	81.5	3.97	199	179	116	<0.3	1,200	680	390	7.03
	Oct-14	78.0	49.8	85.8	3.89	211	185	115	<0.3	1,210	623	386	6.78
	May-15	74.4	49.7	82.2	3.74	224	189	117	<0.3	1,200	642	332	7.13
	Dec-15	69.6	48.9	91.7	3.62	220	128*	97.8	<0.3	1,210	672	388	7.27
	May-16	72.8	50.0	87.8	3.99	226	190	93.9	<0.3	1,220	625	415	7.20
	Nov-16	67.0	50.3	91.5	3.84	230	193	99.4	<0.3	1,220	649	392	7.09
	May-17	70.7	47.1	87.9	3.50	191	151	93.4	<0.3	1,210	658	318	7.12
	Nov-17	70.2	49.5	89.8	3.72	226	193	87.5	<0.3	1,210	662	395	7.20
	May-18	72.3	50.3	98.7	3.67	227	192	91.2	<0.3	1,220	633	391	7.05
	Nov-18	77.0	48.4	89.6	3.68	249	209	89.8	<0.3	1,210	648	441	7.20
	May-19	77.7	46.4	89.6	3.52	220	185	89.4	<0.3	1,210	628	385	7.27
	Nov-19	72.1	47.3	83.2	3.96	220	187	88.9	<0.3	1,210	653	373	7.26
CUP-18 MW230	May-10	33.7	32.1	59.9	1.62	178	90	38.0	7.4	726	419	210	6.70
	Oct-10	32.6	30.3	61.9	2.21	166	91	37.0	7.3	719	411	202	6.71
	Jun-11	30.3	30.2	59.3	2.18	166	92	38.0	8.8	722	412	208	6.72
	Oct-11	36.4	32.3	63.2	1.89	174	95	37.2	10.2	725	410	214	6.46
	May-12	31.6	31.0	61.2	1.68	176	100	38.3	10.6	731	428	222	6.61
	Nov-12	32.5	32.1	63.0	1.82	172	101	37.3	10.7	733	432	212	6.49
	Apr-13	32.2	30.9	59.2	1.97	181	98	40.7	11.1	740	423	228	6.67
	Nov-13	36.5	32.2	65.0	1.78	173	96	36.0	10.1**	743	426	214	6.56
	May-14	35.2	31.2	58.1	1.64	168	95	35.1	10.3	735	401	218	6.47
	Oct-14	35.7	32.7	56.6	1.62	170	99	36.1	11.0	740	399	297	6.27
	May-15	35.9	32.2	60.3	1.61	174	100	35.0	10.7	748	408	226	6.21
	Dec-15	32.2	32.9	61.5	1.72	166	100	36.9	11.6	735	412	219	6.25
	May-16	36.4	32.1	56.8	1.66	165	99	36.9	10.4	744	414	226	6.07
	Nov-16	32.2	30.9	53.3	1.54	163	105	36.0	11.4	747	399	222	6.13
	May-17	38.1	30.4	56.3	1.77	168	100	37.0	11.8	758	425	228	6.02
	Nov-17	30.9	31.9	60.7	1.50	163	106	35.6	11.1	747	423	226	6.05
	May-18	35.5	32.6	64.3	1.64	157	103	36.1	11.6	758	412	224	5.89
	Nov-18	37.4	31.5	62.3	1.64	166	111	35.7	11.2	757	386	236	5.87
	May-19	36.4	31.2	62.0	1.50	159	108	37.0	11.8	765	365	216	6.04
	Nov-19	35.8	31.4	62.1	1.76	151	108	36.7	12.0	775	436	222	5.94
CUP-18 MW425	May-10	31.1	32.0	49.4	1.17	180	91	37.7	7.9	726	418	234	6.64
	Oct-10	32.7	30.6	60.7	1.53	184	96	37.8	8.4	737	421	220	6.74

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-18 MW425	Jun-11	30.5	30.1	57.4	2.00	174	96	37.8	10.4	733	358	212	6.70
(continued)	Oct-11	35.9	32.0	62.4	1.91	170	95	37.2	10.5	726	410	216	6.58
	May-12	31.9	30.5	60.7	1.62	173	100	38.2	10.9	732	421	222	6.53
	Nov-12	33.3	32.2	63.7	1.83	172	103	38.0	11.3	733	418	212	6.62
	Apr-13	33.7	31.6	61.7	2.15	180	100	40.7	11.5	739	413	227	6.68
	Nov-13	36.1	32.0	63.4	1.82	172	96	36.0	10.6**	742	422	221	6.64
	May-14	34.4	30.6	57.8	1.65	169	95	35.6	10.7	735	398	216	6.68
	Oct-14	36.6	32.8	55.6	1.64	169	98	36.7	11.2	739	396	266	6.74
	May-15	34.4	32.4	57.0	1.60	175	100	35.8	10.8	745	640*	223	6.65
	Dec-15	32.3	32.5	61.7	1.72	168	102	36.9	11.7	734	400	221	6.71
	May-16	36.1	32.4	58.9	1.69	170	99	37.4	10.6	745	406	224	6.58
	Nov-16	31.9	31.7	55.9	1.61	164	102	36.0	11.4	749	416	222	6.61
	May-17	36.1	29.6	54.3	1.71	159	97	35.6	11.8	753	416	221	6.51
	Nov-17	33.1	32.0	61.2	1.60	166	107	35.1	11.4	754	417	223	6.62
	May-18	35.8	32.9	65.5	1.66	165	105	35.8	11.6	756	410	229	6.58
	Nov-18	36.7	30.1	63.2	1.66	172	108	37.9	11.8	760	423	230	6.60
	May-19	36.0	31.1	61.2	1.50	165	105	36.7	11.6	764	356	225	6.54
	Nov-19	35.4	32.5	62.9	1.81	162	104	36.2	11.4	772	425	227	6.65
CUP-18 MW490	May-10	26.7	26.0	49.7	1.43	142	90	31.0	2.3	639	363	176	6.76
	Oct-10	28.2	24.5	54.3	1.87	135	89	27.0	6.3	633	353	172	7.12
	Jun-11	26.9	24.6	52.7	1.99	132	90	28.7	9.4	635	369	184	6.87
	Nov-11	33.5	31.4	63.1	1.91	172	96	39.1	9.6	722	410	214	6.78
	May-12	31.1	29.2	60.5	1.63	172	100	39.6	9.9	728	420	218	6.63
	Nov-12	32.8	31.5	64.3	1.95	172	103	38.8	10.6	731	424	212	6.67
	Apr-13	33.3	31.8	63.7	2.24	177	99	41.3	11.4	734	428	224	6.73
	Nov-13	35.2	30.8	62.1	1.75	170	95	37.0	10.1**	740	412	220	6.75
	May-14	34.2	32.0	57.5	1.71	168	95	36.1	10.4	737	400	217	6.75
	Oct-14	36.5	32.0	61.4	1.76	172	98	37.5	10.6	744	404	224	6.68
	May-15	35.3	31.9	58.4	1.60	176	100	34.6	10.4	745	389	224	6.74
	Dec-15	32.8	33.0	57.8	1.77	170	103	37.2	11.4	739	412	220	6.69
	May-16	35.6	31.8	55.0	1.70	167	98	38.0	10.6	746	416	226	6.67
	Nov-16	30.6	31.4	58.6	1.74	170	104	40.0	10.7	752	422	225	6.71
	May-17	38.1	32.0	58.1	1.78	163	99	36.7	11.3	750	428	221	6.58
	Nov-17	30.0	30.0	57.9	1.46	163	107	34.9	10.9	747	411	223	6.66
	May-18	36.3	33.2	66.2	1.74	159	103	37.8	12.1	748	421	225	6.65

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-18 MW490	Nov-18	37.3	32.5	62.1	1.69	175	110	36.7	11.1	755	380	235	6.67
(continued)	May-19	35.0	31.8	61.6	1.79	165	108	37.7	11.5	760	359	228	6.80
	Nov-19	35.7	32.6	64.0	1.89	164	107	35.5	11.5	764	412	224	6.78
CUP-18 MW595	Apr-13	69.5	57.0	77.0	4.57	271	172	97.9	<0.3	1,176	643	437	7.21
	Nov-13	78.9	59.7	75.0	3.59	265	172	98.0	<0.22**	1,233	674	448	7.21
	May-14	74.2	56.5	72.8	3.56	252	166	101	<0.3	1,210	699	428	7.23
	Oct-14	84.7	70.3	73.0	3.59	269	182	116	<0.3	1,290	735	482	7.04
	May-15	80.3	61.4	72.4	3.44	269	178	106	<0.3	1,260	642	482	7.17
	Dec-15	53.7	43.7	59.7	2.98	209	121	67.4	<0.3	908	486	331	7.02
	May-16	47.6	34.8	51.3	2.87	208	95	51.6	<0.3	802	433	281	7.12
	Nov-16	49.1	42.1	51.6	2.91	218	112	66.9	<3.0	894	495	331	7.19
	May-17	42.7	28.4	41.7	2.56	176	80	33.6	<0.3	676	334	221	6.90
	Nov-17	56.1	45.6	58.6	2.58	217	126	75.1	<0.3	943	509	344	7.03
	May-18	44.6	35.0	54.9	2.50	195	80	39.7	0.33	723	380	251	7.23
	Nov-18	60.8	47.8	59.2	2.98	226	124	76.3	<0.3	930	478	349	6.98
	May-19	42.2	34.9	54.7	2.91	190	85	41.5	1.1	729	395	249	7.10
	Nov-19	55.8	47.9	58.2	3.17	211	124	73.8	8.8	972	525	337	7.29
CUP-19 MW475	May-10	32.4	35.2	46.8	1.87	154	99	36.8	0.5	691	367	248	7.88
	Oct-10	31.8	31.3	47.8	2.20	152	99	35.6	1.2	680	383	212	7.97
	May-11	30.5	30.0	47.8	2.68	136	100	32.9	2.1	665	397	214	7.99
	Oct-11	36.0	32.0	45.8	2.59	138	96	33.4	4.2	648	370	208	7.30
	May-12	35.3	34.0	47.3	2.46	133	109	49.5	6.4	703	373	233	7.25
	Nov-12	39.0	38.1	47.0	2.70	142	110	64.0	9.0	752	434	249	7.35
	Apr-13	39.9	38.6	48.9	3.26	145	110	64.5	7.8	771	435	268	7.30
	Nov-13	39.6	37.0	48.6	2.53	160	105	58.0	1.8**	759	418	257	7.38
	May-14	36.9	33.9	44.1	2.36	151	97	42.6	0.6	709	406	236	7.41
	Nov-14	37.4	35.1	43.3	2.32	149	97	39.1	0.7	685	389	301	7.41
	May-15	35.8	34.7	43.9	2.15	172	106	33.8	0.3	690	281	210	7.19
	Nov-15	34.2	35.2	46.1	2.32	143	100	44.3	2.4	695	382	88.6*	7.36
	May-16	34.5	33.5	41.9	2.40	148	99	38.7	0.8	688	364	233	7.33
	Nov-16	30.6	32.1	40.2	2.21	154	101	42.0	1.1	885*	391	237	7.33
	May-17	37.9	32.1	38.3	2.15	150	98	41.5	2.1	703	359	234	7.18
	Nov-17	30.7	31.0	38.1	1.98	121	84	37.0	1.8	699	399	190	7.38
	May-18	38.0	36.3	50.3	2.27	148	102	38.1	1.4	699	389	239	7.33
	Nov-18	38.8	35.6	48.3	2.30	153	107	46.2	4.1	730	402	253	7.22

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-19 MW475	Apr-19	39.3	33.6	47.1	2.21	148	103	40.4	2.4	701	375	235	7.86*
(continued)	Nov-19	38.8	34.6	47.5	2.51	147	106	40.0	3.2	714	404	242	7.59
CUP-19 MW600	May-10	46.8	41.7	56.8	2.15	256	95	18.5	<0.3	802	436	284	7.86
	Oct-10	44.3	37.7	57.0	2.61	260	95	15.5	<0.3	812	444	274	7.94
	May-11	44.6	39.4	55.5	3.03	256	95	11.7	<0.3	817	470	288	8.04
	Oct-11	51.3	39.8	57.5	2.80	276	92	11.0	<0.3	803	460	286	7.48
	May-12	49.7	39.2	58.1	2.57	292	94	4.1	<0.3	816	427	295	7.40
	Nov-12	48.0	39.7	57.8	2.56	273	108	16.3	<0.3	822	459	274	7.47
	Apr-13	52.6	40.8	59.6	3.55	298	94	7.4	<0.3	830	440	305	7.52
	Nov-13	52.2	39.8	57.3	2.56	297	91	3.1	<0.4**	832	432	299	7.51
	May-14	51.1	39.9	54.0	2.47	290	87	3.5	<0.3	826	440	294	7.45
	Nov-14	51.0	40.3	54.3	2.35	260	95	15.0	<0.3	827	430	279	7.51
	May-15	50.5	42.0	51.7	2.23	294	94	7.5	<0.3	829	434	288	7.27
	Nov-15	46.1	39.4	54.4	2.35	238	100	26.6	<0.3	800	450	283	7.48
	May-16	47.5	38.5	52.7	2.30	261	97	19.3	<0.3	827	457	300	7.48
	Nov-16	42.4	41.4	51.1	2.21	244	103	33.4	<0.3	822	455	301	7.36
	May-17	46.3	35.4	46.8	2.29	159	101	64.1	<0.3	784	444	263	7.13
	Nov-17	37.9	33.4	46.5	1.87	162	86	43.3	<0.3	811	430	222	7.39
	May-18	45.7	37.8	58.3	2.27	158	106	62.1	<0.3	783	426	270	7.31
	Nov-18	44.4	35.6	52.8	2.18	165	109	57.0	<0.3	778	379	263	7.17
	Apr-19	44.1	34.8	56.2	2.23	159	108	59.2	<0.3	772	395	257	7.30
	Nov-19	46.9	39.5	57.4	2.85	191	108	46.5	0.5	804	436	272	7.45
CUP-19 MW690	May-10	81.5	57.4	63.8	3.00	232	160	155	<0.3	1,229	715	448	7.35
	Oct-10	82.4	56.8	74.3	3.58	232	154	150	<1.1	1,233	738	440	7.48
	May-11	82.6	58.9	73.3	3.71	226	165	153	<0.3	1,229	752	448	7.52
	Oct-11	79.8	59.8	74.0	3.63	242	160	151	<0.3	1,223	720	456	7.17
	May-12	83.6	55.3	71.2	2.76	240	167	150	<0.3	1,224	724	442	7.10
	Nov-12	80.5	57.7	73.0	3.37	235	167	150	<0.3	1,175	691	415	7.27
	Apr-13	84.9	58.2	74.7	3.84	245	158	127	<0.3	1,206	--	453	7.23
	Nov-13	77.7	53.0	71.9	2.95	277	144	140	<0.22**	1,145	658	422	7.26
	May-14	73.3	50.3	64.8	2.73	221	130	132	<0.3	1,100	647	396	7.22
	Nov-14	64.9	43.4	58.5	2.41	192	110	110	<0.3	950	568	329	7.29
	May-15	58.4	40.4	53.8	2.16	202	115	102	<0.3	891	540	289	7.14
	Nov-15	49.6	36.5	48.2	1.99	148	103	87.1	6.1	800	454	280	7.23
	May-16	53.5	37.5	47.5	1.91	148	101	99.3	7.7	825	437	298	7.17

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-19 MW690 (continued)	Nov-16	51.0	39.7	48.8	1.92	160	105	111	3.3	848	455	314	7.31
	May-17	63.6	39.0	47.2	2.07	156	100	100	8.5	845	469	297	7.21
	Nov-17	49.7	36.6	47.0	1.79	119	84	91	12.7	826	468	233	7.27
	May-18	55.7	37.7	56.2	1.99	146	100	89.4	21.6	820	426	293	7.26
	Nov-18	54.9	35.2	50.9	1.91	152	102	83.3	18.3	804	453	288	7.09
	Apr-19	56.8	34.4	52.5	1.84	148	100	81.3	19.3	791	429	283	7.47
	Nov-19	56.4	35.2	53.2	2.16	149	101	80.2	17.5	793	438	272	7.32
CUP-22A MW290	May-10	54.0	43.3	56.3	2.52	196	106	63.8	32.7	903	537	318	7.08
	Oct-10	49.4	37.6	55.1	2.12	201	99	45.0	45.0	862	465	288	7.38
	May-11	49.3	40.4	54.1	2.76	190	100	47.0	40.5	859	501	300	7.56
	Oct-11	53.5	40.7	55.5	2.69	206	99	50.7	38.0	871	530	316	7.19
	May-12	51.7	39.5	56.4	2.14	208	106	51.5	38.1	880	492	312	7.13
	Nov-12	52.9	43.9	57.5	2.57	219	110	55.2	39.1	880	513	292	7.15
	Apr-13	54.0	42.4	57.8	2.54	218	102	51.0	33.9	887	465	320	7.19
	Nov-13	53.7	42.4	59.1	2.52	211	100	56.0	35.2**	900	492	314	7.18
	May-14	52.6	41.3	52.9	2.23	210	99	57.6	35.6	904	499	317	7.23
	Oct-14	59.2	44.6	53.1	2.30	216	103	60.0	37.0	922	502	334	7.13
	May-15	59.9	45.4	54.2	2.29	219	100	58.1	35.6	934	522	328	7.18
	Nov-15	54.7	46.8	59.8	2.46	221	103	61.9	36.8	922	543	324	7.19
	May-16	56.7	45.2	57.4	2.44	222	101	66.2	36.2	943	523	346	7.11
	Nov-16	50.9	45.9	58.1	2.25	234	104	65.3	36.7	941	517	356	6.89
	May-17	65.4	44.2	55.6	2.64	242	98	58.7	39.4	924	528	337	7.24
	Nov-17	53.1	42.9	54.4	2.18	185	81	55.2	37.3	923	520	266	7.19
	May-18	61.6	48.6	64.8	2.53	225	95	52.1	38.5	911	527	347	7.20
Oct-18	57.3	43.1	56.9	2.24	233	97	53.5	38.5	914	482	332	7.18	
Apr-19	58.9	41.8	61.4	2.17	223	92	48.7	40.7	903	494	312	7.38	
Nov-19	60.0	45.5	63.7	2.54	232	98	61.8	46.6	918	534	327	7.40	
CUP-22A MW440	May-10	29.6	9.73	43.7	1.67	102	71	6.8	1.4	441	270	114	8.49
	Oct-10	24.0	12.3	39.8	1.70	103	67	6.4	1.6	456	252	114	8.47
	May-11	25.9	11.7	39.3	2.40	100	73	5.7	1.5	454	288	120	8.54
	Nov-11	24.6	14.7	40.2	2.00	100	73	7.9	0.8	458	290	126	7.51
	May-12	29.1	10.8	39.8	1.75	117	73	6.3	1.5	468	269	129	7.54
	Nov-12	62.3	38.2	57.2	3.09	233	110	59.1	31.1	892	504	306	7.58
	Apr-13	65.0	40.1	59.3	3.07	228	98	55.4	29.0	909	544	324	7.57
Nov-13	59.5	41.7	58.1	2.77	228	100	59.0	29.9**	911	507	322	7.44	

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-22A MW440	May-14	58.7	40.8	53.3	2.47	224	97	61.2	29.5	908	504	322	7.49
(continued)	Oct-14	62.3	44.5	53.8	2.52	222	99	62.9	30.6	914	515	327	9.43*
	May-15	60.8	45.0	53.9	2.51	226	98	58.5	29.2	921	503	332	7.30
	Nov-15	56.8	46.5	58.9	2.54	229	101	65.1	33.1	927	525	331	7.41
	May-16	59.4	45.1	53.8	2.66	229	99	67.2	33.0	942	534	347	7.34
	Nov-16	49.6	43.0	53.7	2.28	233	100	67.5	28.3	917	634*	341	7.33
	May-17	27.4	18.0	35.3	1.62	129	63	12.4	2.6	498	228	149	7.41
	Nov-17	48.4	39.6	52.2	2.07	175	76	52.4	26.8	857	482	244	7.39
	May-18	43.2	34.2	59.9	2.12	174	80	33.4	16.5	692	403	235	7.33
	Oct-18	57.5	42.1	57.4	2.29	237	97	52.8	32.0	905	458	330	7.33
	Apr-19	32.9	23.7	48.1	1.82	141	71	17.8	7.4	550	304	181	7.34
	Nov-19	53.5	40.2	60.4	2.58	216	93	57.1	35.6	850	431	301	7.41
CUP-22A MW545	May-10	65.4	54.6	72.2	2.18	246	106	76.0	24.0	994	575	332	6.89
	Oct-10	58.4	43.7	70.8	2.60	254	108	76.0	24.0	1,011	586	342	6.93
	May-11	59.7	47.7	70.1	3.44	238	116	86.6	22.0	1,035	639	372	7.06
	Nov-11	62.4	47.7	75.3	3.03	254	110	87.2	21.9	1,032	620	356	6.80
	May-12	63.2	48.4	73.6	2.94	254	123	91.5	21.4	1,051	617	369	6.76
	Nov-12	63.5	50.7	78.0	3.09	261	130	100	20.9	1,063	635	348	6.75
	Apr-13	68.0	49.8	78.5	3.17	267	116	87.3	18.3	1,058	654	370	6.81
	Nov-13	61.1	47.1	79.9	2.88	271	113	90.0	19.4**	1,067	602	356	6.76
	May-14	62.6	47.0	72.3	2.72	261	110	94.7	20.4	1,060	605	366	6.80
	Oct-14	68.0	50.0	76.8	2.76	259	112	93.1	20.3	1,070	612	367	6.77
	May-15	66.2	49.4	74.2	2.68	279	110	3.56*	0.82*	1,090	654	340	6.69
	Nov-15	62.9	51.2	80.2	3.03	268	117	96.0	19.5	1,080	626	379	6.78
	May-16	63.3	51.0	79.3	2.87	282	107	94.4	21.2	1,080	620	383	6.70
	Nov-16	60.0	51.8	81.6	2.63	292	116	106	16.7	1,120	635	400	6.71
	May-17	72.6	47.7	73.0	3.05	302	111	102	18.9	1,120	654	398	6.75
	Nov-17	64.8	48.9	79.6	2.63	236	95	105	18.0	1,120	649	318	6.72
	May-18	69.0	52.1	86.2	2.91	299	110	95	20.1	1,120	668	404	6.73
	Oct-18	71.6	50.7	81.5	2.91	309	110	91	19.6	1,120	659	405	6.67
	Apr-19	72.4	49.1	80.8	2.74	304	108	98	22.3	1,110	656	386	6.81
	Nov-19	74.7	52.8	81.7	3.25	305	110	116	27.3	1,120	656	394	6.81
CUP-23 MW230	Oct-10	52.7	48.4	55.9	1.97	258	84	45.8	59.1	933	539	334	7.18
	May-11	51.7	49.1	55.4	2.23	258	88	40.5	61.7	935	538	344	7.17
	Oct-11	55.4	51.5	56.4	1.98	264	87	41.3	61.9	936	560	348	7.12

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-23 MW230 (continued)	May-12	55.9	51.3	56.5	1.82	272	93	41.1	61.5	957	498	363	7.04
	Nov-12	57.0	52.8	57.5	2.57	284	104	38.6	55.7	965	574	350	7.07
	Apr-13	60.6	53.2	59.7	2.07	286	86	38.6	53.1	979	532	368	7.10
	Nov-13	76.0*	48.4	97.6*	4.33*	290	85	41.0	52.8**	984	526	371	7.16
	May-14	58.7	51.8	54.7	1.80	290	85	40.7	55.6	977	549	379	7.12
	Oct-14	61.5	53.6	55.5	1.85	282	83	41.0	55.7	982	557	383	7.28
	May-15	58.7	56.1	53.7	1.86	291	82	39.3	51.9	982	546	370	7.10
	Nov-15	58.0	55.6	57.2	1.77	294	83	41.8	51.9	973	532	378	7.16
	May-16	61.0	55.7	56.2	1.89	294	82	42.8	52.4	988	508	392	7.08
	Nov-16	56.5	54.6	58.1	1.73	300	82	43.7	51.5	996	557	384	7.13
	Apr-17	67.3	54.6	54.9	1.96	320	84	43.1	51.5	1,000	587	427	7.14
	Nov-17	58.7	53.2	56.0	1.81	258	69	43.9	49.7	1,000	544	323	7.14
	May-18	69.0	62.3	64.0	1.87	314	83	47.2	49.3	1,020	597	405	7.06
	Oct-18	64.2	55.7	58.9	1.84	326	87	43.2	48.8	1,010	574	408	7.07
	May-19	66.2	57.1	59.7	1.61	326	86	46.3	48.4	1,010	564	395	7.23
	Nov-19	62.4	57.4	59.1	2.11	310	85	44.6	48.0	1,030	568	403	6.18
CUP-23 MW440	Oct-10	29.5	30.2	39.2	2.64	156	63	26.6	19.3	611	321	201	7.96
	May-11	31.2	33.8	40.3	2.54	168	70	35.3	25.4	647	378	228	7.85
	Oct-11	37.6	34.9	41.3	2.29	166	68	38.4	26.0	653	400	236	7.42
	May-12	39.0	39.5	43.9	2.04	182	78	45.2	37.9	734	413	267	7.04
	Nov-12	40.2	44.2	46.5	2.38	186	79	47.4	40.1	757	428	268	7.38
	Apr-13	43.3	43.7	46.6	2.52	201	78	44.5	35.7	783	427	288	7.48
	Nov-13	42.4	41.7	46.3	2.31	190	76	45.0	44.0**	781	418	281	7.53
	May-14	42.4	41.7	43.9	2.16	192	76	44.5	46.7	790	425	286	7.43
	Oct-14	42.9	41.9	43.0	2.16	192	77	43.5	47.4	796	434	287	7.57
	May-15	43.2	45.1	42.6	2.06	204	80	46.2	40.0	797	410	297	7.41
	Nov-15	54.9*	63.9*	54.3*	2.32	240*	84	58.6*	132*	1040*	605*	404*	7.36
	May-16	39.4	44.6	44.0	2.06	214	69	40.5	51.9	797	443	305	7.61
	Nov-16	32.0	37.3	41.0	1.72	188	66	34.9	33.7	701	372	254	7.54
	Apr-17	35.6	34.6	39.4	1.84	170	60	24.2	19.8	617	311	213	7.38
	Nov-17	34.6	38.4	40.4	1.65	201	69	34.8	31.0	749	384	270	7.56
	May-18	28.0	30.4	43.4	1.57	145	59	18.3	16.9	543	306	185	7.46
	Oct-18	34.9	34.8	44.9	1.84	182	69	29.1	24.8	668	361	242	7.56
	May-19	27.4	27.4	40.5	1.55	149	60	16.6	13.9	547	281	185	7.67
	Nov-19	25.1	25.8	39.0	1.72	137	59	16.6	15.1	516	286	170	7.61

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-23 MW515	Oct-10	41.0	28.9	66.9	2.62	310	64	2.4	<0.88	773	430	235	7.57
	May-11	40.6	29.2	67.0	4.20	300	68	<0.5	<0.3	765	446	230	7.55
	Oct-11	44.3	30.5	70.1	3.79	292	67	0.7	<0.3	750	430	290	7.23
	May-12	42.7	31.9	65.2	3.17	304	68	1.0	<0.3	759	421	246	7.20
	Nov-12	38.6	28.1	68.2	3.56	272	71	1.5	<0.3	717	406	208	7.37
	Apr-13	42.9	30.5	64.1	3.87	302	64	1.5	<0.3	748	414	241	7.30
	Nov-13	41.2	27.6	67.1	3.49	275	63	2.6	<0.44**	716	397	217	7.39
	May-14	39.9	29.8	60.0	3.41	282	61	2.8	<0.3	724	380	229	7.30
	Oct-14	39.4	26.9	58.9	3.13	258	62	4.3	<0.3	699	373	212	7.31
	May-15	37.9	28.1	55.8	3.07	258	62	5.9	<0.3	693	380	209	7.18
	Nov-15	32.0	23.8	56.2	2.98	220	64	9.2	<0.3	641	328	181	7.42
	May-16	31.0	22.0	51.7	3.06	171	64	24.6*	<0.3	598	308	195	7.24
	Nov-16	33.3	26.4	43.7	2.66	166	71	4.7	<0.3	649	328	207	7.25
	Apr-17	54.0	33.8	54.5	3.73	169	72	57.5	<0.3	696	364	225	7.25
	Nov-17	39.4	28.7	48.1	3.14	183	70	44.5	<0.3	667	371	220	7.35
	May-18	42.2	29.8	57.7	3.17	167	70	51.1	<0.3	659	356	213	7.31
	Oct-18	47.3	33.7	50.4	2.76	200	72	68.2	<0.3	758	429	274	7.25
May-19	38.9	27.0	51.9	2.51	184	71	37.8	<0.3	653	335	208	7.44	
Nov-19	40.4	27.2	49.8	2.97	171	71	43.2	<0.3	654	338	212	7.37	
CUP-23 MW600	Oct-10	25.3	18.5	40.4	2.00	122	63	23.0	41.0	577	322	164	7.74
	May-11	30.8	23.6	40.2	2.84	124	65	23.7	44.9	585	332	184	7.66
	Oct-11	34.2	24.2	42.3	2.86	128	64	31.9	31.3	573	340	190	7.16
	May-12	33.6	25.1	41.6	2.38	133	68	29.6	27.7	575	321	167	7.01
	Nov-12	31.6	24.6	39.2	2.42	130	67	29.1	36.1	578	324	182	7.13
	Apr-13	34.6	26.1	--	2.39	136	65	28.0	28.7	588	311	197	7.16
	Nov-13	35.8	25.9	38.4	2.41	131	62	28.0	37.0**	594	316	196	7.16
	May-14	36.9	27.0	35.5	2.28	137	64	30.1	33.6	601	332	202	7.16
	Oct-14	37.9	27.6	35.5	2.22	136	64	29.1	40.3	608	343	203	7.24
	May-15	38.8	29.5	35.2	2.21	139	64	29.7	44.9	620	357	211	7.15
	Nov-15	57.6*	46.5*	60.1*	2.50	135	66	28.3	48.8	617	342	206	6.94
	May-16	56.0	43.2	45.6	2.74	175	78	48.3	122	892	528	339	7.13
	Nov-16	53.2	44.8	47.1	2.63	184	78	57.3	114	919	537	338	7.16
	Apr-17	61.9	41.5	45.2	2.76	182	76	53.0	108	891	476	328	7.22
	Nov-17	44.4	47.0	45.6	1.97	190	79	47.3	106	900	508	326	7.38
May-18	50.7	52.0	59.3	2.22	180	76	46.1	106	873	510	320	7.30	

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-23 MW600	Oct-18	49.6	49.9	49.8	2.22	193	77	48.5	101	887	501	336	7.33
(continued)	May-19	44.8	45.1	51.7	1.85	176	76	43.7	99	824	476	292	7.20
	Nov-19	44.5	45.7	51.2	2.15	181	76	43.1	88	839	446	303	7.45
CUP-31A MW145	Apr-12	61.8	60.5	84.8	3.43	458	61	71.1	2.9	1,096	637	426	6.85
	Oct-12	74.5	70.2	93.2	4.07	418	66	74.6	3.3	1,074	657	383	6.76
	Apr-13	68.6	60.9	83.3	3.56	470	53	67.0	1.5	1,093	603	440	6.79
	Nov-13	<1*	60.8	86.7	3.24	462	53	65.0	4.4**	1,095	614	409	6.80
	May-14	61.6	61.5	76.4	3.14	455	51	60.6	6.9	1,080	601	423	6.82
	May-15	68.7	47.6	72.7	3.07	436	52	56.4	5.4	1,070	648	412	6.80
	Nov-15	63.5	62.4	82.1	3.18	457	53	65.2	6.6	1,070	623	381	6.79
	May-16	66.0	62.5	74.8	2.85	275*	48	84.8*	9.4*	816*	484*	287*	7.01*
	Nov-16	60.0	62.1	74.6	3.22	447	45	58.3	5.9	1,060	605	421	6.83
	Apr-17	71.3	60.3	73.3	3.42	448	48	61.8	4.0	1,050	600	427	6.77
	Nov-17	59.9	56.6	74.6	2.78	453	49	70.5	3.9	1,060	607	431	6.82
	May-18	69.8	65.8	86.5	3.05	439	46	70.0	6.6	1,080	602	429	6.84
	Nov-18	71.7	61.1	79.1	3.38	332	50	78.8*	19.14*	937	530	356	6.98
	May-19	66.3	57.9	76.0	3.45	460	49	56.7	8.5	1,040	582	415	8.03*
	Nov-19	67.2	57.0	70.5	3.60	432	46	55.3	7.5	1,030	578	412	6.87
CUP-31A MW280	May-12	56.3	45.4	85.1	3.40	320	76	95.2	9.5	1,007	584	339	7.03
	Oct-12	51.1	47.6	71.9	3.47	321	67	89.8	8.9	960	594	342	6.92
	Apr-13	52.7	47.0	74.8	3.14	327	55	83.1	6.9	933	523	337	7.09
	Nov-13	49.4	44.8	76.8	2.83	300	51	87.0	7.0**	890	499	304	7.03
	May-14	47.7	42.3	67.1	2.60	300	47	86.1	8.8	874	507	309	7.06
	May-15	46.9	43.6	66.1	2.49	285	47	78.8	8.3	852	520	283	7.00
	Nov-15	42.4	41.3	69.7	2.43	291	51	79.7	8.9	820	483	292	7.11
	May-16	43.1	40.0	69.8	2.37	458*	50	84.1	9.3	1,070*	610*	439*	6.77*
	Nov-16	47.9	49.4	79.4	3.08	307	47	91.0	12.8	902	540	331	7.06
	Apr-17	60.6	50.2	71.1	3.20	345	51	85.2	18.6	945	527	357	6.98
	Nov-17	48.1	47.1	68.5	2.30	343	51	79.9	16.8	948	538	364	6.99
	May-18	56.8	55.2	79.5	2.77	329	50	84.0	21.1	949	549	355	6.97
	Nov-18	59.7	49.6	68.8	2.62	463	47	54.2*	6.16*	1,070	599	421	6.84
	May-19	56.0	48.7	69.2	2.37	342	52	83.1	21	895	537	347	7.80*
	Nov-19	52.8	48.5	67.7	2.80	309	46	77.8	19	917	546	340	7.02
CUP-31A MW480	May-12	39.3	52.4	69.5	12.4	460	36	2.6	<0.3	940	542	319	7.21
	Oct-12	36.3	50.4	66.5	14.1	407	45	2.8	<0.3	885	513	280	6.64

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-31A MW480 (continued)	Apr-13	34.6	46.1	62.0	12.3	424	34	3.1	<0.3	867	450	293	7.27
	Nov-13	36.3	48.6	62.5	12.3	444	31	1.5	<0.4**	898	470	295	7.27
	May-14	33.9	46.1	56.4	11.4	398	34	3.7	<0.3	846	456	283	7.34
	May-15	36.5	48.3	56.5	8.86	408	35	2.0	<0.3	860	485	277	7.33
	Nov-15	33.9	49.0	62.2	11.8	441	30	<0.5	<0.3	865	488	299	7.30
	May-16	31.5	42.5	55.5	10.1	371	36	2.6	<0.3	790	433	266	7.35
	Nov-16	31.1	41.4	53.0	10.3	328	38	4.0	<0.3	762	419	252	7.46
	Apr-17	35.1	41.1	52.3	9.7	361	40	2.0	<0.3	768	390	256	7.36
	Nov-17	29.5	41.6	54.1	9.6	371	40	<0.5	<0.3	752	414	257	7.42
	May-18	32.0	44.9	60.9	10.0	348	37	<0.5	<0.9	769	416	261	7.40
	Nov-18	33.4	41.4	56.9	9.9	347	39	<0.5	<0.3	763	391	257	7.37
	May-19	32.4	40.4	57.2	9.4	373	39	<0.5	<0.3	758	399	247	7.48
Nov-19	30.1	39.7	52.9	10.4	337	39	<0.5	<0.3	753	400	243	7.45	
CUP-31A MW595	May-12	112	73.6	127	4.60	207	246	324	<0.5	1,713	1,112	556	7.07
	Oct-12	94.5	67.5	111	7.51	283	163	263	<0.3	1,410	946	442	6.86
	Apr-13	114	71.7	124	3.19	217	232	291	<0.3	1,708	1,048	595	7.22
	Nov-13	108	70.0	151	5.03	210	233	330	<0.2**	1,742	1,110	590	7.25
	May-14	113	71.7	132	4.46	208	230	353	<0.3	1,720	1,060	574	7.22
	May-15	113	74.6	127	4.30	203	224	305	<0.3	1,710	1,090	596	7.24
	Nov-15	104	76.0	133	4.37	232	248	328	<0.3	1,690	1,080	651	7.25
	May-16	101	75.1	144	4.59	207	228	344	<0.3	1,680	1,090	599	7.21
	Nov-16	98.9	70.3	119	4.82	225	195	259	<0.3	1,500	932	532	7.17
	Apr-17	109.0	71.0	109	5.48	242	187	228	<0.3	1,430	891	539	7.25
	Nov-17	95.9	61.8	101	3.95	234	183	209	<0.3	1,400	861	507	7.23
	May-18	97	56.7	102	3.92	256	161	180	<1.1	1,280	792	459	7.24
	Nov-18	98.8	50.1	92	3.95	243	158	170	<0.3	1,280	761	450	7.25
May-19	96.8	47.9	88	3.61	264	160	170	<0.3	1,210	748	441	7.40	
Nov-19	94.9	48.8	82	4.34	243	155	175	<0.3	1,260	760	447	7.30	
CUP-36-1 MW160	May-10	64.0	38.7	95.6	1.74	212	110	127	26.3	1,063	652	336	6.95
	Oct-10	66.0	34.0	94.2	2.94	216	112	119	25.4	1,044	650	314	7.07
	May-11	64.5	34.2	91.0	2.85	206	118	128	29.4	1,060	645	314	7.11
	Nov-11	64.3	33.8	90.6	2.69	216	107	125	24.0	1,020	660	312	6.99
	May-12	62.2	33.0	91.3	2.41	206	114	128	26.4	1,026	636	297	5.94*
	Nov-12	63.7	34.1	92.1	2.72	230	122	126	23.2	1,029	609	303	7.04
Apr-13	67.5	35.6	92.0	2.88	221	106	115	22.8	1,036	606	309	7.00	

Table 10
General Basin Groundwater Quality

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-36-1 MW160 (continued)	Oct-13	53.9	28.9	90.0	2.26	218	103	120	23.8**	1,035	622	304	6.98
	May-14	66.7	32.9	89.8	2.37	212	97	120	24.2	1,030	598	295	7.02
	Oct-14	62.9	31.8	90.2	2.34	223	102	121	24.6	1,030	621	315	7.06
	May-15	68.7	35.4	87.6	2.28	223	98	119	23.4	1,020	584	305	7.06
	Nov-15	62.1	33.7	87.0	2.30	224	99	125	23.4	1,010	595	307	7.04
	May-16	63.7	33.3	92.4	2.34	225	96	124	22.0	1,000	581	302	6.97
	Nov-16	58.0	33.9	93.2	2.47	223	95	131	22.1	1,000	613	285	7.01
	Apr-17	72.0	33.5	87.5	2.58	240	95	125	24.2	1,010	609	313	6.93
	Oct-17	65.6	34.2	92.6	2.46	180	79	112	26.4	1,000	609	257	6.97
	May-18	69.6	35.9	101.0	2.41	224	94	117	31.5	1,000	590	307	6.89
	Oct-18	69.8	34.7	95.8	2.42	219	92	114	34.6	1,000	614	289	6.97
	Apr-19	64.3	31.1	86.9	2.30	234	105	114	37.0	999	620	301	7.07
	Oct-19	67.3	33.0	93.3	2.56	232	100	115	41.7	1,010	603	327	7.03
CUP-36-1 MW270	May-10	31.6	30.7	48.2	1.58	138	118	21.8	7.6	726	408	214	7.63
	Oct-10	34.1	31.2	56.9	2.57	148	119	21.4	7.9	743	434	214	7.70
	May-11	34.2	31.5	55.9	2.70	144	133	23.6	9.0	756	422	230	7.75
	Nov-11	37.2	32.7	64.8	2.44	124	147	25.2	20.5	803	520	226	7.23
	May-12	34.8	31.3	64.8	2.07	106	151	25.8	24.9	817	488	210	5.66*
	Nov-12	35.0	31.9	60.6	2.39	142	138	24.4	12.3	768	430	222	7.33
	Apr-13	37.7	34.2	60.3	2.47	142	131	24.3	12.2	775	435	227	7.33
	Oct-13	36.2	31.6	62.9	2.27	139	126	23.0	11.4**	765	440	216	7.24
	May-14	36.7	30.7	55.4	2.19	137	124	23.4	11.2	760	382	220	7.36
	Oct-14	34.7	30.0	55.7	2.08	135	128	24.4	13.0	770	427	221	7.32
	May-15	38.8	34.1	55.9	2.17	141	127	23.7	12.3	770	452	219	7.34
	Nov-15	35.6	33.1	63.4	2.08	145	131	26.1	12.5	763	434	232	7.41
	May-16	36.2	32.7	61.6	1.95	140	132	27.8	14.6	788	412	236	7.29
	Nov-16	33.6	32.8	60.3	2.36	140	124	27.9	11.7	760	496	229	7.31
	Apr-17	38.5	30.3	54.1	2.34	145	115	24.5	9.2	743	456	218	7.26
	Oct-17	34.3	30.7	57.0	2.13	142	116	23.9	7.4	726	435	210	7.33
	May-18	37.0	33.3	62.3	2.16	144	117	24.9	7.6	729	411	220	7.32
	Oct-18	35.1	30.3	55.6	2.08	140	114	24.8	7.3	726	419	219	7.38
	Apr-19	34.2	28.9	53.7	2.08	142	119	23.8	8.1	726	420	222	7.40
	Oct-19	34.9	30.3	60.9	2.20	141	124	24.3	7.8	708	432	220	7.35
CUP-36-1 MW455	May-10	38.1	25.0	62.3	4.43	220	81	0.6	<0.3	691	361	192	7.51
	Oct-10	36.5	22.6	58.8	4.90	224	86	<0.5	<0.3	687	373	198	7.74

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-36-1 MW455 (continued)	May-11	38.0	23.3	60.2	5.47	212	89	<0.5	<0.3	696	355	200	7.75
	Nov-11	38.1	24.0	59.6	4.95	222	84	<0.5	<0.3	672	360	194	7.42
	May-12	37.5	22.6	59.0	4.29	216	91	<0.5	<0.3	693	363	194	7.18
	Nov-12	37.5	23.2	59.0	4.80	229	89	<0.5	<0.3	681	349	191	7.28
	Apr-13	39.3	24.0	59.0	5.10	221	84	0.5	<0.3	693	344	194	7.37
	Oct-13	36.1	21.6	59.6	4.56	221	88	<0.25	<0.44**	709	356	193	7.34
	May-14	40.9	22.8	56.9	4.59	214	84	0.7	<0.3	700	334	193	7.37
	Oct-14	37.8	22.5	54.8	4.50	219	83	<0.5	<0.3	691	353	199	7.34
	May-15	41.2	25.2	55.8	4.48	220	81	<0.5	<0.3	677	342	193	6.98
	Nov-15	37.7	24.7	61.6	4.57	224	90	<0.5	<0.3	705	333	205	7.30
	May-16	37.3	23.5	58.4	4.34	218	88	<0.5	<0.3	716	326	204	7.23
	Nov-16	35.1	23.9	58.8	4.85	222	83	<0.5	<0.3	683	354	199	7.41
	Apr-17	42.4	23.2	55.1	4.59	219	78	<0.5	<0.3	692	392	200	7.27
	Oct-17	39.0	23.6	56.7	4.52	216	79	<0.5	<0.3	684	366	165	7.31
	May-18	40.8	24.4	61.3	4.63	223	84	<0.5	<0.3	689	333	203	7.26
	Oct-18	40.6	22.7	57.2	4.36	217	82	<0.5	<0.3	691	344	199	7.06
	Apr-19	39.4	22.7	56.0	4.53	230	88	<0.5	<0.3	698	351	200	7.76
Oct-19	41.2	24.0	63.6	4.73	232	89	<0.5	<0.3	694	335	202	7.37	
CUP-36-1 MW585	May-10	121	56.1	77.1	3.30	216	186	206	<0.3	1,363	814	512	7.20
	Oct-10	121	53.6	79.0	4.28	216	197	210	<0.3	1,387	826	524	7.27
	May-11	95.0	43.8	75.9	4.17	204	157	167	0.7	1,184	752	444	7.40
	Nov-11	102	49.7	82.2	4.29	218	168	184	<0.3	1,257	780	456	7.22
	May-12	90.3	51.9	83.3	3.53	200	154	200	0.9	1,246	792	436	7.04
	Nov-12	102	61.1	83.5	3.99	225	205	213	<0.3	1,379	861	501	7.10
	Apr-13	96.7	66.3	91.3	4.52	230	174	187	0.6	1,354	779	501	7.13
	Oct-13	101	68.8	104	4.34	232	191	260*	<0.22**	1,509	914	553	7.09
	May-14	111	68.0	92.3	4.09	229	190	267	<0.3	1,530	944	580	7.17
	Oct-14	114	71.9	93.8	4.15	242	206	284	<0.3	1,590	994	611	7.08
	May-15	99.9	63.7	96.5	4.11	241	207	285	<0.3	1,610	993	633	7.09
	Nov-15	117	79.6	98.7	4.19	254	226	313	<0.3	1,630	1,040	708	7.13
	May-16	109	73.9	98.4	3.84	235	203	298	<0.3	1,600	979	629	7.13
	Nov-16	92.3	67.3	78.2	4.02	224	183	217	<0.3	1,370	842	527	7.07
	Apr-17	56.7*	32.0*	54.2*	3.11*	202	93.3*	36.8*	<0.3	778*	345*	253*	7.12
	Oct-17	49.0*	30.3*	54.9*	2.72*	191	93.4*	29.8*	<0.3	751*	417*	243*	7.13
	May-18	52.6	30.2	65.5	2.79	194	97	31.3	<0.3	735	406	247	7.10

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-36-1 MW585 (continued)	Oct-18	78.4	39.9	65.7	3.05	192	131	106	<0.3	1,020	605	365	7.03
	Apr-19	76.4	39.9	64.8	3.13	216	139	122	<0.3	1,030	637	382	7.25
	Oct-19	99.2	49.3	74.0	3.49	226	168	180	<0.3	1,180	702	485	7.14
CUP-44-1 MW190	May-10	51.9	33.6	57.7	1.75	238	69	60.6	34.8	842	485	292	6.66
	Oct-10	48.9	29.9	55.2	1.26	232	70	59.0	33.0	849	493	290	6.77
	Jun-11	47.8	36.3	112	1.63	226	98	90.8	53.2	1,042	617	266	6.61
	Oct-11	57.6	36.8	86.2	1.62	256	85	76.1	37.5	937	560	290	6.55
	May-12	49.4	32.6	94.2	1.11	237	90	82.0	40.5	956	533	263	6.49
	Nov-12	51.3	36.5	95.3	1.55	270	106	82.8	37.9	992	582	276	6.58
	May-13	53.2	38.7	102	1.57	261	92	78.5	36.9	1,000	562	287	6.51
	Oct-13	52.9	35.8	108	1.47	252	86	83.0	37.8**	979	566	278	6.56
	May-14	51.6	33.0	97.7	1.37	246	93	91.2	40.0	1,030	565	266	6.56
	Oct-14	45.4	32.2	112	1.29	255	96	95.8	43.3	1,030	607	273	6.58
	May-15	50.1	34.9	--	1.24	258	95	92.7	41.3	1,030	619	256	6.52
	Nov-15	47.7	34.0	109	1.23	251	90	96.0	42.2	1,010	611	260	6.50
	May-16	47.6	33.1	97.8	1.29	241	87	96.0	39.2	984	577	267	6.53
	Nov-16	45.2	33.7	110	1.34	248	87	98.4	37.4	965	612	265	6.52
	Apr-17	46.8	34.1	119	1.56	264	91	96.5	38.7	1,020	613	265	6.58
	Oct-17	46.0	34.2	123	1.25	276	101	98.7	35.2	1,040	594	256	6.46
	Apr-18	47.9	34.1	121	1.30	257	95	103.0	33.7	1,040	614	271	6.51
	Oct-18	49.8	33.1	120	1.26	259	96	96.2	30.6	1,040	599	267	6.48
	Apr-19	47.8	32.1	114	1.27	263	98	98.7	30.2	1,040	604	260	6.62
	Oct-19	50.7	34.5	125	1.46	258	98	103.0	30.2	1,050	599	265	6.62
CUP-44-1 MW300	May-10	52.5	35.2	91.4	2.03	258	84	80.6	36.8	978	564	290	6.57
	Oct-10	46.5	29.9	84.2	1.18	250	86	82.0	38.0	978	538	278	6.67
	Jun-11	50.1	35.2	101	1.81	236	96	88.8	39.9	1,026	617	278	6.74
	Oct-11	53.4	37.0	112	1.73	258	100	92.1	40.4	1,045	620	282	6.50
	May-12	34.7*	22.1*	72.9*	1.51	163*	64*	68.5*	29.6*	687*	372*	177*	6.43
	Nov-12	47.1	34.7	109	1.72	265	113	95.0	40.1	1,031	597	266	6.55
	May-13	52.6	36.9	114	1.70	263	100	88.9	38.1	1,060	599	279	6.45
	Oct-13	48.4	34.3	131	1.59	261	98	94.0	40.0**	1,066	598	268	6.48
	May-14	51.3	33.1	107	1.48	252	96	97.4	39.9	1,060	590	272	6.57
	Oct-14	47.5	31.9	112	1.41	245	92	96.0	40.6	1,040	601	263	9.46*
	May-15	49.5	34.2	82.6	1.28	262	95	92.2	38.8	1,040	607	267	6.62
	Nov-15	47.6	34.1	109	1.35	259	92	100	40.0	1,030	630	263	6.50

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-44-1 MW300 (continued)	May-16	45.5	31.5	105	1.24	242	87	97.0	38.3	998	581	262	6.49
	Nov-16	22.9*	15.9*	53.3*	1.62	120*	40.8*	45.7*	15.0*	481*	442	124*	6.19
	Apr-17	45.3	32.8	116	1.78	254	88	94.4	36.3	987	577	256	6.56
	Oct-17	42.6	30.6	109	1.18	261	94	96.9	35.1	1,030	600	265	6.48
	Apr-18	49.5	35.0	123	1.35	262	98	102.0	32.6	1,060	610	277	6.49
	Oct-18	49.7	33.7	119	1.29	259	96	98.5	31.3	1,040	594	269	6.50
	Apr-19	49.2	32.3	113	1.41	267	99	103.0	30.7	1,040	611	265	6.60
	Oct-19	49.9	34.3	121	1.47	252	96	102.0	29.5	1,020	584	259	6.58
CUP-44-1 MW460	May-10	55.4	46.6	62.9	3.39	168	134	118	2.1	1,026	618	336	6.98
	Oct-10	49.5	40.4	57.6	2.57	172	131	110	2.0	990	569	336	7.06
	Jun-11	53.1	47.2	62.0	3.62	164	136	119	1.9	988	599	338	7.04
	Oct-11	59.0	50.0	65.6	3.49	180	135	117	2.6	988	650	342	6.85
	May-12	55.8	44.8	60.3	2.50	169	135	116	2.1	974	561	339	6.79
	Nov-12	53.6	47.4	64.1	3.23	178	146	113	2.4	968	560	319	6.89
	May-13	57.2	50.7	64.1	3.28	177	136	103	2.3	968	527	345	6.79
	Oct-13	58.2	48.0	66.7	4.03	231	117	86	12.3**	1,006	590	352	6.89
	May-14	58.0	46.6	59.9	3.10	180	127	106	5.7	982	536	348	6.91
	Oct-14	54.9	46.3	60.2	3.03	220	117	86	11.5	1,000	577	363	6.89
	May-15	57.4	49.4	58.8	2.85	225	120	83.6	12.6	993	549	352	6.91
	Nov-15	54.4	48.2	60.3	2.96	226	124	84.7	12.8	977	569	385	6.90
	May-16	58.6	48.8	60.5	2.97	215	119	96.0	11.9	978	567	365	6.87
	Nov-16	49.0	46.5	59.6	3.07	176	127	109	5.0	942	562	333	6.85
	Apr-17	48.7	44.2	61.0	3.47	185	119	98	6.9	909	521	310	6.95
	Oct-17	48.9	44.2	62.2	2.71	166	127	98	5.6	917	507	325	6.86
	Apr-18	52.6	45.1	65.5	2.93	165	121	96.5	8.7	891	505	306	6.91
	Oct-18	48.7	38.3	58.9	2.66	162	118	81	11.1	847	466	286	6.91
Apr-19	46.3	37.6	57.4	2.65	157	115	82	12.8	844	484	281	7.59*	
Oct-19	49.0	40.5	66.2	2.97	155	113	82	13.4	832	472	277	7.03	
CUP-44-1 MW580	May-10	94.9	80.2	89.3	4.86	252	85	293	<0.3	1,576	992	608	7.53
	Oct-10	89.7	72.5	90.0	4.06	252	174	300	<2.2	1,582	1,074	610	7.55
	Jun-11	102	90.3	96.8	6.02	244	183	336	<0.3	1,618	1,054	624	7.53
	Oct-11	98.8	94.2	101	6.07	264	182	340	<0.3	1,629	1,100	644	7.11
	May-12	25.1*	15.4*	19.2*	2.25*	83*	33*	47.6*	0.5*	375*	207*	132*	6.97*
	Nov-12	97.6	84.9	92.3	5.77	264	192	320	<0.3	1,565	996	603	7.24
May-13	104	99.1	102	6.47	263	184	299	<0.3	1,621	1,012	635	7.19	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
CUP-44-1 MW580 (continued)	Oct-13	102	79.3	109	5.33	254	180	350	<0.22**	1,654	1,086	640	7.19
	May-14	110	93.6	94.3	5.31	250	180	354	<0.3	1,670	1,070	670	7.31
	Oct-14	98.6	80.9	98.7	5.00	259	186	360	<0.3	1,660	1,090	662	7.29
	May-15	--	94.9	96.6	5.03	262	184	357	<0.3	1,700	1,080	666	7.33
	Nov-15	104	91.5	101	5.38	276	194	362	<0.3	1,680	1,130	664	7.26
	May-16	101	93.3	95.3	4.99	257	180	380	<1.1	1,680	1,130	681	7.34
	Nov-16	97.8	93.4	108	5.47	265	184	386	<0.3	1,660	1,120	679	7.26
	Apr-17	105	95.7	106	6.82	264	177	362	<0.3	1,660	1,110	672	7.25
	Oct-17	97.9	84.6	99	4.44	265	190	347	<0.3	1,660	1,090	687	7.25
	Apr-18	116	100.0	113	5.42	253	184	366	<0.3	1,660	1,070	692	7.26
	Oct-18	111	90.4	100	5.04	258	189	366	<0.3	1,670	1,090	684	7.22
	Apr-19	111	90.9	103	5.20	276	204	397	<0.3	1,710	1,130	716	7.40
	Oct-19	113	97.5	108	5.48	258	194	391	<0.3	1,680	1,090	737	7.35
MW-M1	May-10	25.5	18.9	30.1	2.20	110	51	21.0	11.8	465	260	140	6.73
	Oct-10	23.1	16.4	28.1	1.64	110	56	22.0	12.0	475	272	152	6.87
	Jun-11	25.5	19.4	31.8	2.19	110	55	22.3	12.6	475	291	148	6.91
	Oct-11	29.7	19.0	31.4	1.93	112	53	20.7	13.1	456	290	148	6.77
	May-12	25.6	19.4	32.1	1.71	115	59	23.7	13.0	477	477*	156	6.76
	Nov-12	26.9	20.1	32.7	2.11	134	59	25.2	13.7	478	278	150	6.85
	May-13	29.1	21.4	32.2	2.14	119	57	22.2	12.0	484	258	160	6.71
	Oct-13	26.0	19.0	30.7	1.94	115	55	25.0	13.6**	487	258	154	6.77
	May-14	28.8	20.0	29.3	1.97	111	54	24.2	13.2	480	236	152	6.76
	Nov-14	29.8	21.5	29.6	1.83	114	55	25.2	14.0	489	294	156	6.80
	Apr-15	29.8	22.0	31.5	1.90	42.8*	40	23.6	14.4	485	253	160	6.70
	Oct-15	27.8	20.2	31.5	1.88	114	54	25.0	15.0	474	292	153	6.79
	May-16	24.6	18.1	26.3	1.36	108	46	16.4	18.9	437	206	147	6.78
	Nov-16	25.2	19.4	27.3	1.53	114	36	22.5	22.6	435	238	146	6.79
	Apr-17	26.6	18.0	24.6	1.50	114	38	17.8	23.5	434	251	145	6.68
	Oct-17	23.0	17.5	27.9	1.30	118	38	19.4	22.5	433	234	148	6.83
	May-18	27.0	20.8	33.8	1.49	118	37	20.5	22.0	437	247	152	6.78
	Nov-18	29.2	18.6	30.6	1.48	115	36	20.2	21.6	437	232	149	6.82
	Apr-19	27.0	19.4	31.2	1.54	120	38	21.1	22.8	442	254	150	7.61*
	Oct-19	27.4	19.5	31.1	1.65	122	40	21.3	20.7	446	261	150	7.04
DC#01 - A ST	Apr-00	24.8	27.6	37.8	2.19	113	72	20.6	53.5	540	280	176	8.10
	Apr-01	--	--	--	--	110	73	17.0	57.0	500	300	170	8.20

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
DC#01 - A ST (continued)	Oct-01	28.4	27.4	40.7	1.85	110	72	17.0	63.0	560	340	190	8.13
	Apr-03	33.0	32.0	44.0	1.60	111	84	22.0	25.0	609	370	--	7.70
	Nov-04	37.6	34.2	47.1	2.22	96	77	22.4	85.5	675	402	216	8.10
	May-05	40.0	40.1	46.1	2.18	92	70	31.0	33.0	775	--	254	8.03
	May-06	42.0	44.6	39.5	3.16	92	91	30.0	137	748	--	252	7.96
	Jun-07	37.7	41.0	43.1	2.23	100	85	33.0	140	779	466	250	7.91
	Apr-08	42.2	38.9	49.0	2.06	92	92	29.7	131	765	445	260	7.97
DC#03 - DC-4	Feb-81	22.0	23.0	42.0	--	107	60	11.0	--	--	170	--	9.10
	Jan-83	26.0	24.0	48.0	1.50	72	62	10.0	--	--	360	--	7.10
	Apr-85	25.0	23.0	38.0	--	116	64	14.0	40.0	--	234	--	7.80
	Jul-88	26.0	23.0	--	38.0	128	66	16.0	45.0	--	--	--	--
	Apr-00	27.1	32.5	42.2	1.83	126	65	32.3	42.2	474	324	202	8.12
	Nov-04	30.4	30.6	45.7	1.52	126	53	30.5	49.7	566	386	186	8.00
	May-05	28.1	29.1	39.1	1.59	150	59	31.0	49.0	570	--	188	8.03
	May-06	29.6	33.9	36.5	2.21	122	57	34.0	54.0	569	--	194	8.05
	Jun-07	27.7	31.1	37.6	1.85	130	80*	36.0	59.0	596	358	220	7.98
	Apr-09	26.6	27.5	37.6	1.50	130	57	32.4	56.0	602	327	198	7.98
	Apr-10	30.3	30.6	41.1	1.57	126	60	36.5	66.7	641	365	212	7.90
	May-11	30.4	32.7	41.6	2.26	124	59	36.5	65.6	634	378	208	7.98
	Apr-12	28.7	30.8	41.8	1.71	128	64	38.6	69.6	642	361	213	8.00
	May-13	29.4	30.7	38.5	1.60	131	55	34.0	61.6**	612	369	202	8.04
	Jun-14	32.6	32.7	39.2	1.64	131	58	38.3	63.6	642	378	215	7.99
	Oct-14	37.0	34.0	40.2	1.53	146	58	42.0	74.8**	684	404	241	7.80
Apr-15	31.3	29.1	37.6	1.46	136	57	32.1	57.1	609	326	208	7.93	
DC#06 - JEFFERSON	Apr-00	21.1	21.5	32.4	1.71	114	56	10.9	11.6	427	240	141	8.10
	Apr-01	--	--	--	--	110	56	11.0	11.0	390	230	150	8.10
	Oct-01	20.9	21.5	36.3	1.84	110	55	11.3	10.6	430	250	140	8.14
	Apr-03	20.0	20.0	35.0	1.60	138	60	9.7	1.8	393	230	--	7.52
	Nov-04	21.3	20.1	39.7	2.20	114	51	8.7	4.9	422	294	144	8.20
	May-05	20.3	20.9	34.2	1.82	110	56	9.2	7.9	420	--	128	8.12
	May-06	20.1	23.0	20.2	3.00	112	57	10.1	9.2	424	--	158	8.14
	Jun-07	18.4	20.7	31.7	1.90	110	80	10.3	9.4	427	253	140	8.09
	Apr-08	20.1	21.4	35.3	1.74	106	56	10.0	10.0	430	258	156	8.12
	Apr-09	17.9	19.6	31.5	1.79	112	58	11.0	10.0	442	252	134	8.04
Apr-10	18.6	19.3	32.7	1.30	134	55	10.8	9.3	442	268	156	7.93	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
DC#06 - JEFFERSON (continued)	May-11	18.9	20.4	33.7	1.90	108	58	11.3	10.2	445	128*	136	8.14
	Apr-12	18.8	20.8	34.0	1.71	109	59	12.3	10.9	446	266	136	8.11
	May-13	20.3	22.0	33.7	1.89	111	57	14.0	12.3**	459	257	139	8.17
	Jun-14	20.7	22.1	31.4	1.63	111	58	15.0	12.6	468	258	145	8.14
	Oct-14	22.2	21.2	31.0	1.65	114	61	15.0	12.3**	473	260	150	8.14
	Jun-16	21.9	23.5	31.5	1.62	113	59	17.3	14.0	486	249	153	8.16
	Apr-17	18.7	21.7	31.8	1.83	110	58	12.6	11.0	466	265	141	8.02
	Apr-18	21.8	22.4	39.9	1.81	107	61	12.2	10.2	461	240	142	8.17
	Apr-19	20.9	20.8	36.7	1.62	108	62	11.6	10.5	455	256	139	8.17
DC#10 - VALE	Apr-00	24.5	27.0	37.8	2.68	122	66	25.8	33.4	619	286	172	8.14
	Apr-01	--	--	--	--	120	70	23.0	33.0	490	270	170	8.00
	Oct-01	28.1	26.5	41.1	2.01	120	75	24.8	35.9	540	330	180	8.14
	Oct-02	29.0	26.0	40.0	2.70	120	69	34.0	41.0	510	330	--	8.20
	Nov-04	31.4	30.1	46.6	2.16	128	63	28.8	30.7	567	364	190	8.20
	May-05	28.2	29.3	38.6	1.83	126	97*	29.0	--	570	--	186	8.11
	May-06	26.5	30.6	34.1	2.33	124	64	37.0	39.0	573	--	194	8.20
	Jun-07	26.1	28.5	37.8	2.14	130	65	29.0	33.0	567	339	210	8.10
	Apr-08	29.3	29.3	41.6	2.07	128	69	27.4	32.2	570	341	192	8.11
	Apr-09	25.8	25.9	37.3	1.92	120	67	26.0	34.8	577	310	182	8.06
	Apr-10	26.4	25.3	38.3	0.79	122	67	27.7	35.7	580	338	184	7.95
	May-11	26.8	27.7	39.5	2.36	118	66	28.5	36.3	580	346	186	8.15
	Apr-12	26.2	26.3	40.3	1.86	120	68	28.8	38.7	581	329	186	8.07
	May-13	28.5	29.7	41.0	2.16	125	67	30.0	39.6**	592	322	184	8.12
	Jun-14	29.2	28.7	38.3	2.00	121	66	29.7	39.6	595	774*	191	8.11
	Oct-14	30.5	27.9	39.6	1.95	126	70	31.0	38.7**	603	348	198	8.08
	Apr-15	30.9	28.9	37.8	1.86	129	70	29.8	39.5	602	340	195	8.12
Jun-16	30.3	29.9	37.3	1.92	126	66	33.1	39.9	605	332	202	8.13	
DC#11 - DC-2 (WESTLAKE)	Nov-74	33.0	35.0	55.0	2.00	194	73	38.0	71.0	--	412	--	7.60
	Sep-81	36.0	35.0	47.0	--	158	75	35.0	--	--	260	--	7.90
	Jan-83	36.0	34.0	36.0	1.60	119	70	36.0	--	--	260	--	7.20
	Apr-85	39.0	39.0	51.0	--	173	81	44.0	73.0	--	344	--	7.60
	Apr-01	--	--	--	--	170	180	92.0	28.0	820	530	320	7.80
	Oct-01	49.0	48.9	71.1	2.81	170	120	96.7	27.3	910	570	--	7.70
	Apr-03	37.0	43.0	58.0	1.80	224	100	69.0	23.0**	725	460	--	7.20
May-05	23.2	26.2	38.1	1.58	114	48	26.0	41.0	490	--	160	8.22	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
DC#11 - DC-2 (WESTLAKE) (continued)	May-06	40.5	44.6	56.9	1.77	186	96	72.0	30.0	830	--	302	7.59
	Jun-07	37.7	46.6	55.0	2.43	190	105	78.0	29.0	855	--	330	7.55
	Apr-08	50.7	47.6	68.5	2.87	176	122	107	24.1	950	577	320	7.64
	Apr-09	47.8	42.2	65.5	2.87	174	120	113	19.9	976	572	320	7.58
	Apr-10	49.3	46.7	74.3	2.97	196	121	110	20.5	978	600	318	7.53
	May-11	48.9	47.2	69.9	3.24	174	122	112	21.6	968	582	318	7.67
	Apr-12	49.0	45.5	72.2	3.05	172	126	116	20.5	984	584	322	7.68
	May-13	50.8	47.0	69.7	3.51	176	124	120	19.4**	979	551	312	7.69
	Jun-14	49.1	43.7	67.7	3.09	165	121	114	18.6	974	741*	317	7.70
	Oct-14	55.0	42.8	71.0	3.29	168	128	120	16.7**	990	574	324	7.65
	Jun-16	41.0	43.7	55.2	2.16	177	99	89.0	17.8	864	470	293	7.59
	Apr-17	38.1	46.2	57.1	2.28	188	92	68.9	31.1	861	487	287	7.49
DC-JUNIPERO SERRA	Jun-14	21.0	23.8	32.5	1.44	110	49	25.9	37.2	504	273	157	8.21
	Apr-19	22.1	23.1	36.8	1.37	111	50	25.6	37.4	488	281	158	8.30
SSFLP 120	Oct-07	70.0	50.0	110	3.70	192	180	57.0	--	1,160	690	380	8.20
	May-08	67.3	47.4	92.0	3.53	284	176	54.0	<0.3	1,133	665	372	7.22
	Sep-08	65.7	47.8	90.5	2.84	306	168	57.0	<0.3	1,117	662	362	7.11
	Apr-09	60.5	44.8	85.6	2.89	272	170	51.5	<0.3	1,124	626	288	7.19
	Nov-09	64.0	48.0	90.0	2.90	250	173	53.0	<0.3	1,154	665	360	7.25
	Dec-10	66.0	45.7	91.5	3.50	292	173	49.0	<1.1	1,211	626	386	7.30
	May-11	60.0	46.1	87.8	3.00	294	173	51.6	0.4	1,202	668	390	7.20
	Nov-11	59.6	44.9	89.7	3.79	244	156	62.1	<0.3	1,056	630	322	7.14
	May-12	59.7	44.3	91.6	2.71	268	163	61.9	<0.3	1,097	623	354	7.13
	Nov-12	58.0	43.9	87.0	3.31	271	161	64.7	<0.3	1,092	622	321	7.15
	Apr-13	63.5	43.9	--	3.24	274	152	57.1	<0.3	1,097	629	352	7.13
	Nov-13	61.1	45.3	97.2	3.14	272	149	58.0	<0.22**	1,101	616	345	7.01
	May-14	62.1	42.7	85.8	2.85	262	142	61.1	<0.3	1,100	598	338	7.05
	Oct-14	61.9	42.9	86.2	2.87	269	144	71.8	<0.3	1,090	622	357	7.13
	May-15	60.9	45.8	83.0	2.99	268	139	64.3	<0.3	1,090	615	354	7.17
	Nov-15	58.7	45.6	86.0	3.14	273	146	61.7	<0.3	1,090	644	355	7.17
	May-16	60.8	44.7	89.1	2.87	271	138	65.9	<0.3	1,090	588	383	7.13
	Nov-16	54.8	46.5	92.2	3.08	271	135	69.0	<0.3	1,080	626	345	7.11
Apr-17	68.3	44.0	85.0	3.19	292	145	64.7	<0.3	1,070	590	348	6.97	
Nov-17	61.8	45.9	97.8	2.86	226	116	61.2	<0.3	1,090	630	280	7.18	
May-18	66.7	47.7	96.5	3.08	290	144	63.7	<0.3	1,080	605	362	7.06	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SSFLP 120 (continued)	Oct-18	64.5	42.5	88.4	2.83	279	138	63.5	<0.3	1,070	603	347	7.16
	Apr-19	63.4	42.9	88.4	2.80	282	137	66.7	<0.3	768*	617	343	8.14
	Nov-19	65.1	45.2	94.3	3.07	284	139	68.3	<0.3	1,100	607	346	7.20
SSFLP 220	Oct-07	35.0	29.0	54.0	2.40	150	100	20.0	--	643	366	210	8.20
	May-08	34.0	29.0	48.8	2.28	156	102	20.0	0.4	640	416	206	7.59
	Sep-08	34.6	30.6	49.6	2.40	146	104	20.0	0.5	639	395	220	7.51
	Apr-09	31.1	27.5	46.0	2.09	146	101	19.9	0.5	655	357	200	7.56
	Nov-09	32.0	28.0	47.0	2.10	146	100	20.0	0.6	658	350	200	7.56
	Dec-10	32.1	26.9	47.0	1.70	146	100	18.0	<0.88	681	376	208	7.60
	May-11	27.9	25.7	43.9	2.20	142	104	20.2	0.8	661	369	204	7.50
	Nov-11	33.3	27.2	51.6	2.02	140	106	19.2	2.2	642	390	192	7.13
	May-12	29.0	25.7	52.7	2.02	136	111	19.1	2.6	647	368	198	7.18
	Nov-12	29.9	27.2	53.4	2.26	135	108	20.1	2.6	645	358	184	7.19
	Apr-13	31.9	28.8	52.2	2.33	136	104	18.1	2.6	651	393	191	7.22
	Nov-13	31.2	26.9	52.4	2.19	134	103	18.0	2.5**	648	366	172	7.17
	May-14	30.3	25.6	47.7	1.96	131	101	19.5	2.8	651	389	184	7.29
	Oct-14	31.6	26.1	47.5	2.00	132	102	19.6	2.8	647	310	190	7.20
	May-15	31.9	27.8	47.7	1.99	131	100	18.3	3.1	649	372	186	7.14
	Nov-15	29.2	26.6	49.5	1.96	136	107	19.8	2.9	645	371	191	7.33
	May-16	29.3	27.1	48.8	1.90	141	103	19.9	3.1	644	386	203	7.17
	Nov-16	27.7	28.4	52.0	2.21	131	100	22.7	3.1	647	381	184	7.15
	Apr-17	40.7*	31.8*	58.1*	2.60*	133	99	19.2	3.1	643	366	258*	7.16
	Nov-17	29.2	27.1	52.5	1.95	108	85	18.4	3.0	645	353	149*	7.18
	May-18	32.9	28.4	60.8	2.12	133	104	19.2	3.3	647	395	192	7.17
	Oct-18	31.8	25.9	51.2	1.92	130	101	18.8	3.3	645	355	187	7.16
	Apr-19	30.6	25.2	50.1	1.92	128	101	21.5	3.4	1060*	376	191	7.98
	Nov-19	31.2	26.5	54.5	2.22	128	102	20.2	3.3	650	268	182	7.21
SSFLP 440	Oct-07	28.0	19.0	66.0	4.80	192	65	<1.0	--	571	310	150	8.30
	Jun-08	26.3	18.5	60.3	4.59	206	63	<0.5	<0.3	583	295	150	7.89
	Sep-08	27.7	19.8	64.9	5.13	206	62	<0.5	<0.3	577	317	148	7.82
	Apr-09	24.4	17.0	59.6	4.63	200	61	<0.5	<0.3	590	299	142	7.91
	Nov-09	26.0	18.0	60.0	4.40	206	61	<0.5	<0.3	594	304	140	7.92
	Dec-10	24.7	16.5	57.6	4.90	210	63	<0.5	<0.88	614	296	142	8.00
	May-11	21.1	15.1	51.2	5.00	194	65	<0.5	<0.3	600	301	150	7.90
	Nov-11	30.0	18.7	62.4	4.97	204	64	<0.5	<0.3	586	310	146	7.42

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SSFLP 440 (continued)	May-12	26.1	20.4	60.3	4.97	210	72	<0.5	<0.3	608	305	160	7.38
	Nov-12	25.6	18.8	61.5	5.25	207	67	<0.5	<0.3	594	245	143	7.49
	Apr-13	26.9	20.3	59.2	5.62	211	63	<0.5	<0.3	597	303	150	7.47
	Nov-13	27.6	23.4	58.5	5.38	212	68	<0.25	<0.44**	618	290	184	7.44
	May-14	28.1	24.0	51.0	4.91	212	70	<0.5	<0.3	635	328	174	7.49
	Oct-14	28.1	22.0	52.0	5.00	207	65	<0.5	<0.3	602	297	162	7.34
	May-15	29.0	24.4	53.2	5.05	209	67	<0.5	<0.3	620	260	168	7.45
	Nov-15	26.9	24.0	54.1	5.09	210	71	<0.5	<0.3	623	298	174	7.21
	May-16	26.7	24.0	55.3	4.86	234	77	<0.5	<0.3	629	320	177	7.35
	Nov-16	22.5	21.2	58.1	5.54	202	60	<0.5	<0.3	594	296	151	7.32
	Apr-17	32.2	23.0	61.6	6.22	201	58	<0.5	<0.3	586	277	197	7.20
	Nov-17	25.1	22.2	57.8	4.95	166	53	<0.5	<0.3	596	285	123	7.49
	May-18	23.5	18.9	60.7	4.54	209	62	<0.5	<0.3	589	276	154	7.50
	Oct-18	27.9	20.8	55.9	5.06	207	63	<0.5	<0.3	599	299	157	7.53
	Apr-19	26.0	19.5	55.6	4.90	209	63	0.51	<0.3	629	303	151	8.12
Nov-19	27.7	21.9	59.6	5.18	208	64	<0.5	<0.3	612	356	163	7.53	
SSFLP 520	Oct-07	47.0	18.0	110	3.90	<2.0	110	66.0	--	822	490	190	8.30
	Jun-08	44.5	18.3	102	4.00	198	107	66.0	<0.3	842	486	182	7.61
	Sep-08	47.0	18.4	105	4.18	208	103	65.0	<0.3	833	483	186	7.57
	Apr-09	41.1	16.4	90.3	3.66	194	106	62.0	<0.3	848	450	186	7.62
	Nov-09	44.0	17.0	93.0	3.50	200	107	67.0	<0.3	853	462	190	7.67
	Dec-10	44.5	16.2	93.7	3.60	196	106	59.0	<0.88	881	473	192	7.70
	May-11	36.8	14.7	79.5	4.00	186	107	62.7	<0.3	855	483	194	7.80
	Nov-11	44.3	17.1	93.4	3.93	202	99	51.8	<0.3	799	440	182	7.35
	May-12	41.9	17.1	93.7	3.87	207	106	52.5	<0.3	816	461	187	7.21
	Nov-12	40.9	17.6	93.5	4.26	210	96	52.0	<0.3	795	447	174	7.36
	Apr-13	43.2	18.1	91.7	4.20	214	93	40.4	<0.3	789	427	177	7.32
	Nov-13	43.3	17.4	96.5	3.84	219	92	45.0	<0.44**	801	417	182	7.24
	May-14	42.7	16.9	85.9	3.56	208	86	47.0	<0.3	634*	438	179	7.32
	Oct-14	43.6	17.5	90.4	3.62	214	89	53.6	<0.3	794	440	182	7.27
	May-15	43.9	17.8	86.2	3.49	215	87	45.4	<0.3	783	425	175	7.25
	Nov-15	41.4	17.6	88.1	3.64	216	95	44.3	<0.3	793	368*	187	7.22
	May-16	40.1	16.8	90.1	3.30	205	92	48.7	<0.3	796	446	175	7.05
	Nov-16	39.6	17.2	94.6	3.70	198	94	52.6	<0.3	801	435	174	7.25
Apr-17	45.1	16.2	88.8	3.90	199	90	44.2	<0.3	772	431	152	7.08	

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SSFLP 520	Nov-17	36.4	14.7	82.2	3.11	160	76	40.6	<0.3	758	415	135	6.95
(continued)	May-18	43.8	16.7	98.1	3.64	202	95	40.6	<0.3	772	398	177	7.26
	Oct-18	43.3	15.1	87.1	3.25	194	89	40.6	<0.3	765	419	171	7.32
	Apr-19	41.2	14.8	87.9	3.29	197	92	43.0	<0.3	583	421	167	7.47
	Nov-19	42.8	15.2	95.4	3.44	192	91	44.4	<0.3	773	384	164	7.29
SS#05 - SS 1-14	Feb-58	57.0	54.0	69.0	3.60	280	128	89.0	13.0	--	--	--	7.75
	Feb-60	55.0	46.0	69.0	3.60	261	120	82.0	16.0	--	--	--	7.65
	Feb-62	52.0	52.0	72.0	5.40	271	126	89.0	16.0	--	--	--	8.50
	Feb-64	58.0	44.0	78.0	2.10	273	125	79.0	14.0	--	--	--	7.83
	Feb-66	54.0	46.0	77.0	4.20	268	122	86.0	16.0	--	--	--	7.90
	Feb-68	60.0	52.0	81.0	3.90	327	131	87.0	12.0	--	--	--	7.75
	Aug-70	42.0	59.0	70.0	4.00	283	124	77.0	14.0	--	--	--	7.78
	Jun-72	58.0	53.0	76.0	3.20	298	127	87.0	28.0	1,028	624	--	7.70
	Sep-74	55.0	55.0	66.0	2.40	299	125	74.0	30.0	--	--	--	7.60
	Apr-76	54.0	52.0	70.0	3.90	277	125	69.0	30.0	--	--	--	7.40
	Apr-78	48.0	54.0	66.0	2.60	274	122	63.0	37.0	--	--	--	7.51
	Aug-80	57.0	48.0	66.0	2.50	276	111	65.0	31.0	--	--	--	7.66
	Dec-82	45.0	50.0	72.0	2.50	260	112	68.0	30.0	--	--	--	7.59
	Nov-84	--	--	--	--	--	--	--	37.0	--	--	--	--
	Nov-86	48.0	52.0	72.0	2.60	280	122	72.0	33.0	980	581	--	--
	Sep-87	47.0	50.0	70.0	3.00	274	112	71.0	30.0	--	--	--	7.77
	Aug-90	46.0	52.0	69.0	2.70	256	117	59.0	35.0	950	549	--	7.60
	Apr-00	12.0	69.0	83.0	3.00	360	120	98.0	53.0	1,181	694	448	7.55
	Apr-01	--	--	--	--	310	120	83.0	120	930	600	370	7.60
	Oct-01	65.8	78.0	88.8	2.51	310	130	130	60.0	1,200	770	470	7.43
	Oct-02	58.1	60.6	80.9	2.90	260	120	86.0	38.0	1,100	590	--	7.70
	May-04	1.34*	1.68*	1.09*	6.83	--	120	140	70.4	1,339	800	540	7.47
	Oct-04	78.8	87.5	80.4	2.45	360	117	142	77.0	1,367	919	495	7.40
	Apr-05	82.5	92.8	92.8	2.67	380	128	149	81.0	1,259	--	550	7.40
	May-06	82.7	91.0	86.3	2.92	386	126	145	82.0	1,436	--	560	7.50
	Jun-07	86.6	100	95.3	3.02	420	125	157	80.0	1,473	894	600	7.35
	May-11	57.0	70.1	74.1	2.60	276	129	91.1	36.4	1,149	635	414	7.70
SS#06 - SS 1-15	May-13	63.8	62.8	74.6	3.29	287	114	100	23.3**	1,099	642	400	7.46
	Oct-14	74.9	64.4	76.7	2.98	183*	110	120	11.0**	1,210	732	479	7.33
	Apr-15	62.5	58.2	72.2	2.68	315	124	91	21.0	1,080	595	348	7.44

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SS#06 - SS 1-15 (continued)	May-16	59.1	55.2	68.9	2.67	278	111	97	21.9	1,060	622	397	7.38
SS#08 - SS 1-19	May-08	49.4	60.4	72.3	2.12	252	93	82.0	47.0	993	587	342	7.31
	Apr-09	51.8	60.6	66.2	2.43	276	131	87.0	27.0	1,138	643	420	7.58
	Apr-10	53.7	68.9	76.1	2.76	324	128	86.0	31.6	1,143	651	266	7.54
	May-13	57.1	68.5	71.8	2.72	299	130	88.0	33.4**	1,138	638	424	7.65
	Oct-14	59.0	63.5	67.3	2.43	146*	128	88.0	31.7**	1,120	648	427	7.72
	Apr-15	58.5	65.8	67.9	2.42	245	108	83.8	32.2	1,110	618	462	7.68
	May-16	56.5	62.4	64.8	2.27	270	120	82.7	29.1	1,080	618	412	7.63
	Apr-18	53.0	59.8	69.6	2.26	280	94	85.6	32.4	1,010	574	390	7.12
	Apr-19	53.2	60.4	67.1	2.19	270	130	74.1	14.7	1,050	586	394	7.50
SS#09 - SS 1-20	May-08	44.8	49.3	73.6	3.18	210	82	93.0	35.0	863	517	296	7.30
	May-13	89.4	49.6	79.0	5.73	225	157	190	6.2**	1,232	730	421	7.48
	Jun-14	87.4	48.7	87.1	4.90	209	151	197	9.9	1,280	756	438	7.45
	Oct-14	89.5	46.8	87.4	5.08	107*	150	190	7.0**	1,240	758	428	7.56
	Apr-15	86.5	50.6	86.8	4.54	228	160	185	9.6	1,230	724	401	7.46
		Apr-19	41.6	41.8	61.6	1.62	225	70	89	29.5	826	480	289
SS#10 - SS 1-21	May-89	102	38.0	113	5.00	291	156	184	--	1,242	771	--	7.40
	Oct-02	122	40.7	101	5.80	230	160	200	--	1,300	780	--	7.50
	May-04	1.52	1.41	1.28	1.66	--	165	220	0.2	1,363	980	470	7.43
	Oct-04	36.2	33.1	88.0	8.74	306	71	6.5	0.1	943	548	266	7.70
	Apr-05	129	47.2	105	4.88	250	186	241	0.2	1,408	--	500	7.41
	May-06	125	49.6	91.3	5.92	228	182	248	0.2	1,429	--	510	7.57
	Jun-07	118	44.7	92.3	5.14	220	190	246	0.2	1,437	929	530	7.30
	Apr-09	97.3	35.7	89.8	4.35	218	147	168	0.2	1,208	747	396	7.40
	Apr-10	102	33.9	88.0	4.51	226	143	163	0.2	1,195	724	388	7.35
	May-11	97.4	36.8	90.1	5.40	198	148	176	--	1,234	759	410	7.50
	Apr-12	103	38.7	90.3	4.47	214	156	181	--	1,246	763	398	7.33
	May-13	111	41.4	87.6	5.04	233	162	200	<0.2	1,295	753	432	7.44
	Jun-14	103	38.7	94.5	4.48	218	153	190	<0.3	1,280	778	433	7.49
	Apr-15	109	41.8	91.1	4.31	195	136	196	<0.3	1,290	798	489	7.46
	Apr-18	123	46.2	98.8	4.98	222	180	238	<0.3	1,390	854	502	7.43
	Apr-19	112	39.2	88.2	4.46	241	172	202	<0.3	1,290	805	454	7.38
SS#15 - SS 1-22	Jun-14	95.1	39.5	87.9	4.65	228	146	185	2.0	1,260	563	420	7.49
	Apr-15	98.0	40.6	85.9	4.40	240	151	162	1.4	1,200	732	191*	7.46
	May-16	113.0	42.9	87.9	4.90	226	160	209	1.2	1,310	823	461	7.42

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SS#15 - SS 1-22 (continued)	Apr-18	100	42.7	90.6	5.34	240	150	185	2.2	1,240	744	438	7.47
	Apr-19	105	41.0	87.4	4.75	248	171	197	2.4	1,300	783	460	7.63
SS#16 - SS 1-23	Jun-14	75.4	34.5	72.9	4.68	214	118	111	0.9	1,020	575	330	7.52
	May-16	91.2	36.3	69.3	4.59	214	132	142	0.9	1,080	628	379	7.44
	Apr-18	90.3	45.6	83.2	5.65	240	141	167	1.4	1,200	727	436	7.53
	Apr-19	91.8	37.3	77.0	4.49	238	134	146	2.6	1,130	668	395	7.83
Burlingame-S ³	Nov-06	64	37	530	7.0	190	220	600	<0.44**	--	1,400	--	--
	Apr-07	30	18	97	2.5	170	110	160	1.8**	1,100	610*	--	7.20
	Aug-07	49	32	480	4.5	260	270	520	1.5**	2,600	1,500	--	7.40
	Feb-08	53	37	590	5.1	230	280	490	1.1**	2,200	1,400	--	7.20
	Aug-08	38.3	26	309	3.68	236	327	511	<0.44**	2,420	1,540	--	7.16
	Feb-09	53.8	37.6	469	4.94	314	518	601	<0.44**	2,840	1,760	--	7.45
	Oct-09	42.4	28.3	309	3.76	277	425	480	<0.44**	2,550	1,630	--	7.09
	Mar-10	56	42	540	8.1	330	500	350	<0.88**	2,900	1,400	--	7.39
	Aug-10	59	42	480	5.6	150	430	320	<0.88**	2,600	1,300	--	7.42
	Mar-11	58	38	490	5.1	320	580	290	<1.76**	2,900	1,500	--	7.50
	Aug-11	61	44	420	5.5	320	580	270	<0.88**	2,800	1,500	--	7.30
	Mar-12	66	47	460	6.1	300	670	220	<0.88**	2,900	1,600	--	7.60
	Aug-12	35*	20*	130*	2.9*	170*	130*	77*	1.58**	570*	510*	--	7.55
	Mar-13	71	50	550	6.4	340	700	230	<0.88**	2,800	2,800	--	7.53
	Aug-13	73	55	530	6.6	360	810	170	<1.76**	3,400	2,000	--	7.26
	Mar-14	72	52	490	6.4	150*	780	210	<0.88**	2,800	1,900	--	7.34
	Aug-14	100	82	520	12	230	1,000	91	<1.76**	3,900	2,100	--	7.47
	Mar-15	87	64	560	7.4	360	880	150	<0.88**	3,400	2,100	--	7.56
	Aug-15	57	40	380	5	300	600	190	<0.88**	2,500	1,500	--	7.33
	Mar-16	82	68	520	7.2	370	940	100	<1.76**	3,700	2,200	--	7.33
Aug-16	99	76	590	8.9	430	1,100	66	<1.76**	4,400	2,500	--	7.29	
Mar-17	100	80	680	8.4	420	1,200	60	<4.4**	4,400	2,400	--	7.36	
Aug-17	100	84	660	8.5	440	1,200	52	<0.88**	4,100	2,300	--	7.29	
Mar-18	110	88	660	8.9	440	1,300	51	<4.4**	4,500	2,500	--	7.19	
Aug-18	94	79	560	7.0	440	1,100	21*	<1.76**	4,200	2,500	--	7.27	
Mar-19	110	91	690	9.2	420	1,200	43	<1.76**	4,300	2,400	--	7.39	
Aug-19	110	81	610	8.2	440	1,200	47	<4.4**	4,100	2,300	--	7.53	
Burlingame-M ³	Nov-06	37	24	77	4.5	220	140	220	<0.44	--	1,200	--	--
	Apr-07	34	23	84	3.3	200	110	68	<0.44**	870	480	--	7.20

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
Burlingame-M ³ (continued)	Aug-07	27	16	96	3.1	200	74	47	<0.44**	760	420	--	7.40
	Feb-08	28	16	76	3.0	170	67	46	<0.44**	660	400	--	7.20
	Aug-08	29.6	17.0	65	2.59	163	67	41.0	<0.44**	614	363	--	6.96
	Feb-09	33.5	19.1	62	2.59	172	79	38.5	<0.44**	611	350	--	7.03
	Oct-09	32.3	18.9	58	2.53	160	74	36.3	<0.44**	570	337	--	7.22
	Mar-10	28	18	58	3.4	160	67	31	<0.44**	590	310	--	7.33
	Aug-10	33	19	51	2.5	180	63	29	<0.88**	570	320	--	7.39
	Mar-11	28	16	42	2.0	180	66	27	<0.88**	550	310	--	7.37
	Aug-11	28	19	45	2.1	330	66	25	<0.88**	540	310	--	7.12
	Mar-12	31	21	54	2.4	150	68	--	<0.88**	540	310	--	7.34
	Aug-12	31	20	53	2.4	150	71	25	<0.88**	350	310	--	7.53
	Mar-13	33	20	55	2.4	150	79	24	<0.88**	510	340	--	7.62
	Aug-13	30	17	47	2.2	140	73	25	<0.88**	560	370	--	7.20
	Mar-14	31	20	70	2.4	64*	72	24	<0.88**	480	330	--	7.23
	Aug-14	33	20	56	2.4	140	67	24	<0.88**	570	330	--	7.29
	Mar-15	33	21	58	2.4	140	92	23	<0.88**	580	400	--	7.51
	Aug-15	20	11	32	1.8	110	49	18	1.5	390	230	--	7.19
	Mar-16	35	23	61	2.3	160	120*	22	<0.88**	710	400	--	7.24
	Aug-16	38	24	68	2.6	140	130*	20	<0.88**	740	428	--	7.18
	Mar-17	30	19	58	2.4	140	90	20	<0.88**	600	320	--	7.24
	Aug-17	30	20	52	2.5	160	78	23	<0.88**	530	330	--	7.31
	Mar-18	34	21	57	2.5	140	100	20	<0.88**	610	330	--	7.06
	Aug-18	40	27	77	2.3	160	130	6.4*	<1.76**	780	480	--	7.28
	Mar-19	20	9	30	2.7	66	48	7.5	<0.88**	310	90	--	6.97
	Aug-19	17	6	19	2.6	54	32	5.9	<0.88**	230	86	--	6.96
Burlingame-D ³	Nov-06	61	42	230	12	190	140	140	<0.44**	--	820	--	--
	Apr-07	24	17	120	5	220	94	69	<0.44**	860	520	--	7.20
	Aug-07	26	17	83	4	230	78	36	<0.44**	680	400	--	7.30
	Feb-08	32	18	61	3	200	45	26	<0.44**	580	350	--	7.20
	Aug-08	30.3	17.2	53.1	2.53	195	42	22.7	<0.44**	525	332	--	6.96
	Feb-09	37.0	19.0	54.6	2.57	193	47	25.0	<0.44**	531	303	--	6.99
	Oct-09	34.5	16.7	49.0	2.22	189	44	23.3	<0.44**	519	310	--	7.16
	Mar-10	38	23	51	6.9	180	46	24	<0.88**	530	280	--	7.57
	Aug-10	38	18	47	2.3	260	41	24	3.5**	540	300	--	7.64
	Mar-11	32	14	47	1.7	180	44	24	<0.88**	550	310	--	7.37

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
Burlingame-D ³ (continued)	Aug-11	34	16	44	1.8	180	43	24	<0.88**	540	310	--	7.12
	Mar-12	37	18	51	--	180	41	24	<0.88**	510	290	--	7.61
	Aug-12	37	18	49	2.0	180	40	23	<0.88**	330	300	--	7.74
	Mar-13	35	15	51	1.9	180	47	25	<0.88**	470	310	--	7.68
	Aug-13	35	16	49	1.8	180	42	24	<0.88**	510	320	--	7.50
	Mar-14	36	16	67	1.9	76*	43	23	<0.88**	440	310	--	7.52
	Aug-14	35	16	47	1.8	170	38	22	<0.88**	530	300	--	7.64
	Mar-15	36	16	52	1.8	170	43	23	<0.88**	470	320	--	7.75
	Aug-15	32	14	43	1.6	180	42	24	<0.88**	500	280	--	7.49
	Mar-16	34	16	45	1.7	180	45	23	<0.88**	500	290	--	7.54
	Aug-16	33	14	50	1.9	160	32	23	<0.88**	500	300	--	7.47
	Mar-17	33	15	49	1.9	160	43	21	<0.88**	500	280	--	7.56
	Aug-17	33	15	44	1.8	180	50	22	<0.88**	470	300	--	7.58
	Mar-18	36	16	47	1.7	170	48	22	<0.88**	500	270	--	7.39
	Aug-18	34	15	48	1.9	160	18*	7.7*	<1.76**	490	280	--	7.57
	Mar-19	33	14	43	2.1	140	41	17	<0.88**	430	260	--	7.52
	Aug-19	37	16	46	1.9	160	43	20	<0.88**	450	270	--	7.68
SFO-D ³	Nov-06	26	19	140	6.6	210	440	88	<0.44**	--	1,100	--	--
	Apr-07	40	29	180	9.5	260	270	50	<0.44**	1,400	720	--	7.50
	Aug-07	57	38	190	8.9	260	540	120	<0.44**	2,700	1,400	--	7.70
	Feb-08	110	84	530*	13	210	260	39	<0.44**	1,300	730	--	7.50
	Aug-08	40.3	29.6	121	7.39	195	473	50.8	<0.44**	1,970	1,040	--	7.43
	Feb-09	54.9	40.8	196	9.00	297	2,210*	179*	<0.44**	5,310*	3,000	--	7.47
	Oct-09	45.5	31.9	131	7.70	230	498	61.0	<0.44**	2,040	1,150	--	7.35
	Mar-10	49	36	150	9.5	220	240	40	<0.88**	1,300	580	--	7.37
	Aug-10	72	55	320	11	220	550	60	<0.88**	2,300	1,100	--	7.43
	Mar-11	57	42	260	7.8	220	520	59	<1.8**	2,200	1,200	--	7.45
	Aug-11	51	40	170	8.2	200	350	45	<22**	1,600	960	--	7.26
	Mar-12	67	52	250	9.4	240	440	54	<0.88**	1,800	980	--	7.39
	Aug-12	72	58	300	9.6	230	580	61	<0.88**	2,200	1,200	--	7.67
	Mar-13	100	86	540	11	240	1,100	96	<0.88**	3,600	2,200	--	7.75
	Aug-13	69	54	290	9.9	240	720	80	<0.88**	2,300	1,300	--	7.32
	Mar-14	100	87	520	10	220	1,100	93	<0.88**	3,200	2,100	--	7.55
	Aug-14	92	68	640	8.0	420*	1,100	110	<1.76**	4,300	2,400	--	7.42
	Mar-15	85	70	390	12.0	220	760	66	<0.88**	2,500	1,600	--	7.76

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SFO-D ³ (continued)	Aug-15	110	96	560	11.0	240	1,200	130	<1.76**	4,100	2,300	--	7.53
	Mar-16	60	47	230	9	570	470	49	<0.88**	2,000	1,200	--	7.35
	Aug-16	88	76	440	10	230	880	83	<1.76**	3,300	1,800	--	7.73
	Mar-17	120	110	830	13	260	1,500	140	<0.88**	5,500	3,200	--	7.53
	Aug-17	80	66	360	12	230	710	57	<0.88**	2,600	1,500	--	7.59
	Mar-18	130	120	660	13	260	1,500	140	<4.4**	5,100	2,800	--	7.51
	Aug-18	100	90	490	10	240	1,200	46	<1.76**	4,200	2,400	--	7.45
	Mar-19	120	110	630	12	250	1,300	110	<1.76**	4,600	2,500	--	7.47
	Aug-19	120	100	570	12	240	1,200	110	<4.4**	4,100	2,300	--	7.63
SFO-S ³	Nov-06	330	390	3,600	64	620	8,400	1,100	33.4**	--	16,000	--	7.00
	Apr-07	320	370	4,200	57	73	9,300	1,200	<2.2**	28,000	17,000	--	7.00
	Aug-07	350	470	5,100	62	740	9,200	740	<2.2**	38,000	16,000	--	8.20
	Feb-08	370	490	5,300	64	660	9,600	670	<2.2**	34,000	16,000	--	7.00
	Aug-08	439	439	4,770	59	620	10,500	716	<4.4**	29,400	21,200	--	7.15
	Feb-09	497	630	4,980	77.3	673	12,400	830	<2.2**	31,400	17,800	--	7.51
	Oct-09	487	618	4,850	62.8	744	9,990	663	<0.88**	27,500	15,400	--	7.11
	Mar-10	530	630	4,900	93	680	9,800	640	<4.4**	2,900*	1,200*	--	7.08
	Aug-10	490	640	4,500	63	680	10,000	660	<0.88**	27,000	11,000	--	7.16
	Mar-11	500	600	5,000	76	690	14,000	680	<4.4**	27,000	15,000	--	7.17
	Aug-11	390	510	4,300	61	680	9,600	700	<0.88**	26,000	15,000	--	7.02
	Mar-12	530	400	5,200	67	680	9,900	670	<4.4**	26,000	15,000	--	7.16
	Aug-12	550	700	5,000	79	680	9,800	650	<0.88**	27,000	18,000	--	7.36
	Mar-13	460	580	4,800	75	680	10,000	720	<8.8**	25,000	17,000	--	7.32
	Aug-13	450	550	5,100	69	600	9,700	740	<4.4**	26,000	17,000	--	6.98
	Mar-14	520	650	5,500	72	640	9,300	680	<1.76**	18,000	17,000	--	7.15
	Aug-14	450	550	5,400	72	660	9,900	730	<1.76**	27,000	18,000	--	7.23
	Mar-15	550	680	5,200	77	660	9,300	680	<0.88**	27,000	17,000	--	7.82
	Aug-15	450	560	4,500	64	660	9,700	710	<4.4**	26,000	19,000	--	7.09
	Mar-16	490	590	4,500	76	660	10,000	730	<17.6**	28,000	16,000	--	7.16
	Aug-16	500	640	4,600	79	650	9,400	630	<8.8**	38,000	4,200*	--	7.15
	Mar-17	460	580	5,300	77	650	10,000	700	<4.4**	28,000	15,000	--	7.10
	Aug-17	480	590	2,000*	83	620	10,000	660	<8.8**	27,000	14,000	--	7.40
	Mar-18	490	590	4,600	97	670	9,600	720	<17.6**	27,000	19,000	--	7.14
	Aug-18	530	700	4,600	100	660	10,000	690	<1.76**	38,000	18,000	--	7.14
	Mar-19	510	610	4,200	91	660	10,000	700	<88.0**	850*	18,000	--	7.17

**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SFO-S ³ (continued)	Aug-19	540	640	4,800	81	660	10,000	730	<17.6**	26,000	18,000	--	7.21
SB#05 - SB 16 FOREST LN	Apr-09	50.3	34.8	51.0	2.92	180	110	77.0	0.3	856	484	302	7.38
	May-10	60.3	45.8	58.6	2.60	186	105	80.0	0.3	866	519	290	7.27
	May-11	38.5	27.5	39.7	3.54	178	114	83.8	0.4	876	536	290	7.40
	May-13	59.9	42.2	57.4	3.57	191	115	82.1	<0.3	899	477	322	7.34
	Apr-14	59.5	39.6	57.6	3.12	186	112	88.4	0.3	964	478	308	7.34
	Oct-14	57.8	40.1	54.1	3.07	189	114	86.9	0.3	888	513	318	7.34
	Apr-15	59.9	41.5	56.7	2.98	183	111	85.3	0.4	903	294*	332	7.39
	Apr-16	52.6	38.6	53.3	2.92	185	113	88.4	0.4	904	513	325	7.39
	Apr-18	60.2	42.1	58.9	3.09	187	115	92.2	<0.3	886	493	329	7.33
Apr-19	58.1	38.8	56.2	2.72	185	114	61.4*	<0.3	888	503	312	7.39	
SB#06 - SB 17 CORPORATION YARD	Apr-00	34.0	21.0	46.0	4.00	152	66	29.0	3.5	510	290	172	7.60
	Apr-01	--	--	--	--	160	59	27.0	3.9	480	300	170	7.77
	Oct-01	34.1	21.0	48.8	3.35	160	58	27.3	3.8	530	280	170	7.67
	Oct-02	33.4	22.1	48.5	3.30	160	61	28.0	4.0	540	270	--	7.60
	May-04	0.62*	0.36*	0.76*	2.89	--	58	23.0	1.4	518	340	136	7.57
	Nov-04	33.1	21.8	48.4	2.25	140	57	30.8	3.5	514	304	158	7.50
	May-05	32.8	20.4	45.5	3.37	150	56	25.0	5.4	521	319	158	7.58
	May-06	31.9	19.7	40.1	3.42	152	55	26.0	5.0	523	--	162	7.60
	Jun-07	30.3	19.1	43.1	3.47	150	55	25.0	5.5	525	295	160	7.50
	Apr-08	31.5	20.2	43.5	3.25	152	57	23.7	5.5	520	300	160	7.57
	May-10	29.6	19.9	43.3	2.55	140	55	24.0	5.6	524	292	158	7.39
	May-11	29.5	18.9	44.1	3.69	144	56	24.2	5.9	526	305	166	7.54
	Apr-12	29.2	19.2	44.1	3.22	148	58	23.4	6.1	518	281	154	7.48
	May-13	29.4	19.5	42.8	3.52	150	55	22.2	5.6	527	269	159	7.55
	Apr-14	32.1	18.9	45.0	3.45	145	53	23.1	5.9	571	278	151	7.64
	Oct-14	29.1	20.8	37.9	2.53	143	58	23.5	5.7	520	293	158	7.59
	Apr-15	32.3	19.3	44.7	3.16	152	58	23.4	6.5	741*	506*	159	7.84
	May-16	27.6	19.0	37.1	2.22	127	55	24.2	3.8	499	282	146	7.17
	Apr-17	32.7	17.8	38.3	3.33	149	51	21.0	8.6	518	295	126	7.50
	Apr-18	31.6	19.3	50.0	3.42	152	54	22.0	8.2	516	281	158	7.54
Apr-19	31.2	18.1	48.8	3.24	150	55	21.3	7.4	527	292	151	7.69	
SB#07 - SB 18 CITY PARK	May-13	29.7	23.8	42.9	3.62	138	71	24.4	7.0	560	290	173	7.46
	Apr-14	31.2	22.8	43.2	3.24	133	69	27.9	7.2	613	288	170	7.45
	Oct-14	31.1	23.0	39.3	3.17	138	71	28.0	7.5	564	313	175	7.42


**Table 10
General Basin Groundwater Quality**

Well	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Alkalinity (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (as NO ₃) (mg/L)	Specific Conductance (µmhos/cm)	Total Dissolved Solids (mg/L)	Hardness (as CaCO ₃) (mg/L)	pH
	Primary MCL ¹	NE	NE	NE	NE	NE	NE	NE	45	NE	NE	NE	NE
	Secondary MCL ^{1,2}	NE	NE	NE	NE	NE	250/500/600	250/500/600	NE	900/1,600/2,200	500/1,000/1,500	NE	NE
SB#07 - SB 18 CITY PARK (continued)	Apr-15	32.7	24.7	43.4	3.12	137	74	28.6	7.5	580	304	181	7.45
	Apr-16	30.6	22.8	40.7	3.19	136	70	31.4	7.5	583	315	175	7.47
	Apr-17	32.6	23.3	40.3	3.50	144	56	29.8	5.8	547	294	170	7.41
	Apr-18	29.8	23.3	48.8	3.43	143	59	29.7	6.2	537	297	170	7.43
	May-19	30.4	20.5	47.0	2.74	140	62	28.3	7.4	549	295	161	7.65
SB#08 - SB 20 LIONS FIELD PARK	Nov-04	51.0	36.8	81.5	3.52	232	84	70.1	1.6	829	488	260	7.80
	May-05	47.0	36.1	72.8	3.93	220	89	62.0	1.4	786	464	256	7.74
	May-06	41.5	32.7	67.3	3.73	210	86	58.0	1.3	777	--	244	7.66
	Jun-07	43.2	30.3	70.8	3.90	220	95	60.0	1.4	769	432	240	7.55
	Apr-08	40.2	32.2	63.9	4.67	202	84	53.6	1.4	750	432	94*	7.68
	Apr-09	37.2	27.8	60.5	3.69	200	83	51.0	1.4	750	419	226	7.58
	May-10	38.7	32.7	55.8	3.06	200	80	50.6	1.5	743	427	220	7.84
	May-11	41.3	31.9	66.9	3.82	188	83	54.4	1.5	740	438	220	7.69
	Apr-12	38.6	29.9	63.6	3.39	196	87	52.4	1.4	732	405	219	7.62
	May-13	39.0	30.8	59.8	4.13	198	83	46.8	1.4	737	381	227	7.65
	Apr-14	41.1	29.0	62.9	3.74	189	80	49.5	1.4	790	381	212	7.66
	Oct-14	39.1	29.0	57.2	3.52	193	81	49.4	1.5	721	389	222	7.66
	Apr-15	40.4	29.8	61.2	3.40	197	84	48.6	1.5	734	403	224	7.65
	Apr-16	38.8	28.1	58.0	3.36	187	80	49.3	1.5	730	376	215	7.69
	Apr-17	50.0	27.4	43.5	3.06	182	80	52.9	0.8	737	418	247	7.46
Apr-18	39.9	29.3	63.8	3.58	190	80	47.6	1.3	710	376	222	7.61	
May-19	41.2	28.1	63.1	3.20	194	85	49.3	1.2	728	376	216	7.69	

Table 10 General Basin Groundwater Quality

Notes

^a = Duplicate result used as the primary sample was inadvertently not analyzed for the indicated parameter.

 = Shaded cell indicates data collected in 2019

mg/L = milligrams per liter

µmhos/cm = Micromhos per centimeter

-- = Not analyzed

ND = Non-detectable concentration. Detection limit not known.

* = Anomalous or questionable result

** = Nitrate as NO₃ is a calculated value: [NO₃] = 4.4 x [Nitrate as N]; for these results, Laboratory reported Nitrate as Nitrogen rather than Nitrate as Nitrate concentration. Beginning in the Spring of 2016, the lab began reporting all Nitrate results as Nitrate as Nitrogen, and therefore from this point forward all results have been corrected and are no longer being marked by an **.

= **Font** indicates a result that exceeds the maximum contaminant level (MCL) and/or the secondary maximum contaminant level (SMCL)

NE = Not established

MCL¹ = Maximum Contaminant Level; values for MCLs are provided where they have been established for particular constituents. MCLs are drinking water standards that public water systems must achieve. They are not intended to regulate groundwater from monitoring wells or untreated water from production wells, because after withdrawal groundwater may be disinfected, filtered, blended, exposed to the atmosphere, and/or otherwise treated before being delivered to consumers. However, MCLs are used for comparison in this report to provide context for evaluating the quality of untreated groundwater. Primary MCLs are regulatory benchmarks for protecting human health. Secondary MCLs are benchmarks to protect the aesthetic quality of drinking water and are based on effects such as taste, odor, or appearance.

Secondary MCL² = 250/500/600: Recommended/Upper/Short Term

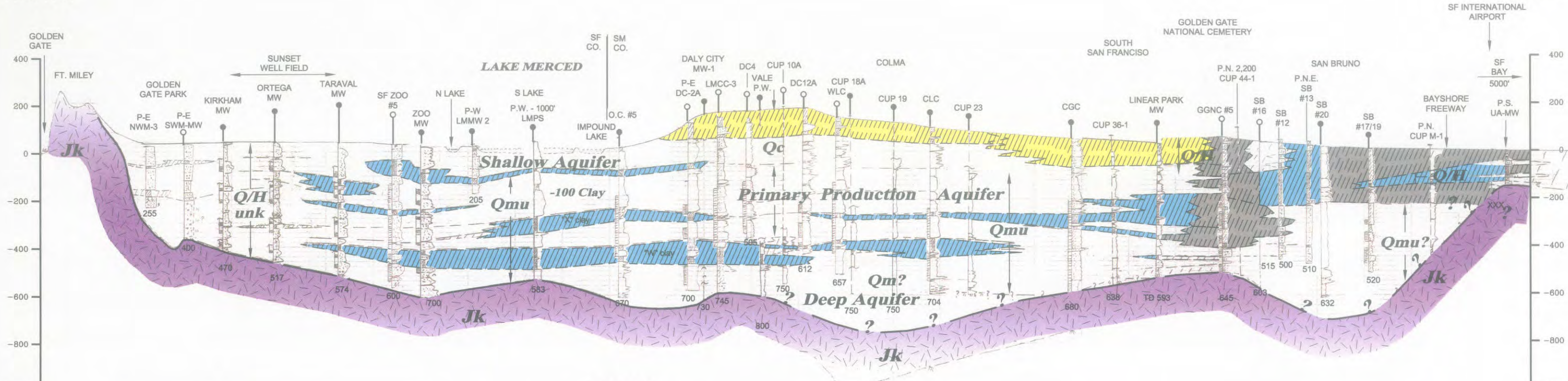
FIGURES



Figure 1
Westside Basin Major Groundwater Production Areas

NORTH

SOUTH



Cross Section Location Map

LEGEND

WELL PROFILES	
E-Log	Drill Log
#13	#21
Well Identification	
PW - Production Well	
TH - Test Hole	
MW - Monitoring Well	
TW - Test Well	
Seal	
Clay w/Sand	
Sand/Gravel Screen/Intake	
Clay	
Bedrock at Borehole or From: Philips; 1993 Bonilla; 1964	
647	647
Total Depth	
	P.N. - Projected North P.W. - Projected West P.E. - Projected East P.NE. - Projected Northeast
● -Elog Reviewed	
○ -Elog Not Reviewed	

CROSS-SECTION LEGEND

	"Blue" Clay
	Blue & Gray Clays with Sand & Clay, and Sand Beds
	Clay & Sand Red & Brown Soil Zone
	Sand, Sand & Gravel or Sandy Gravel
	Bedrock

STRATIGRAPHIC UNITS*

Q/H	Bay Clays
Q/H unk	Unknown Correlation
Qc	Colma Formation
Qmu	Upper Merced Formation
Qm?	Older Merced Formation - Middle, Lower
Jk	Franciscan Bedrock

* SURFICIAL UNITS NOT SHOWN

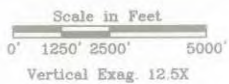
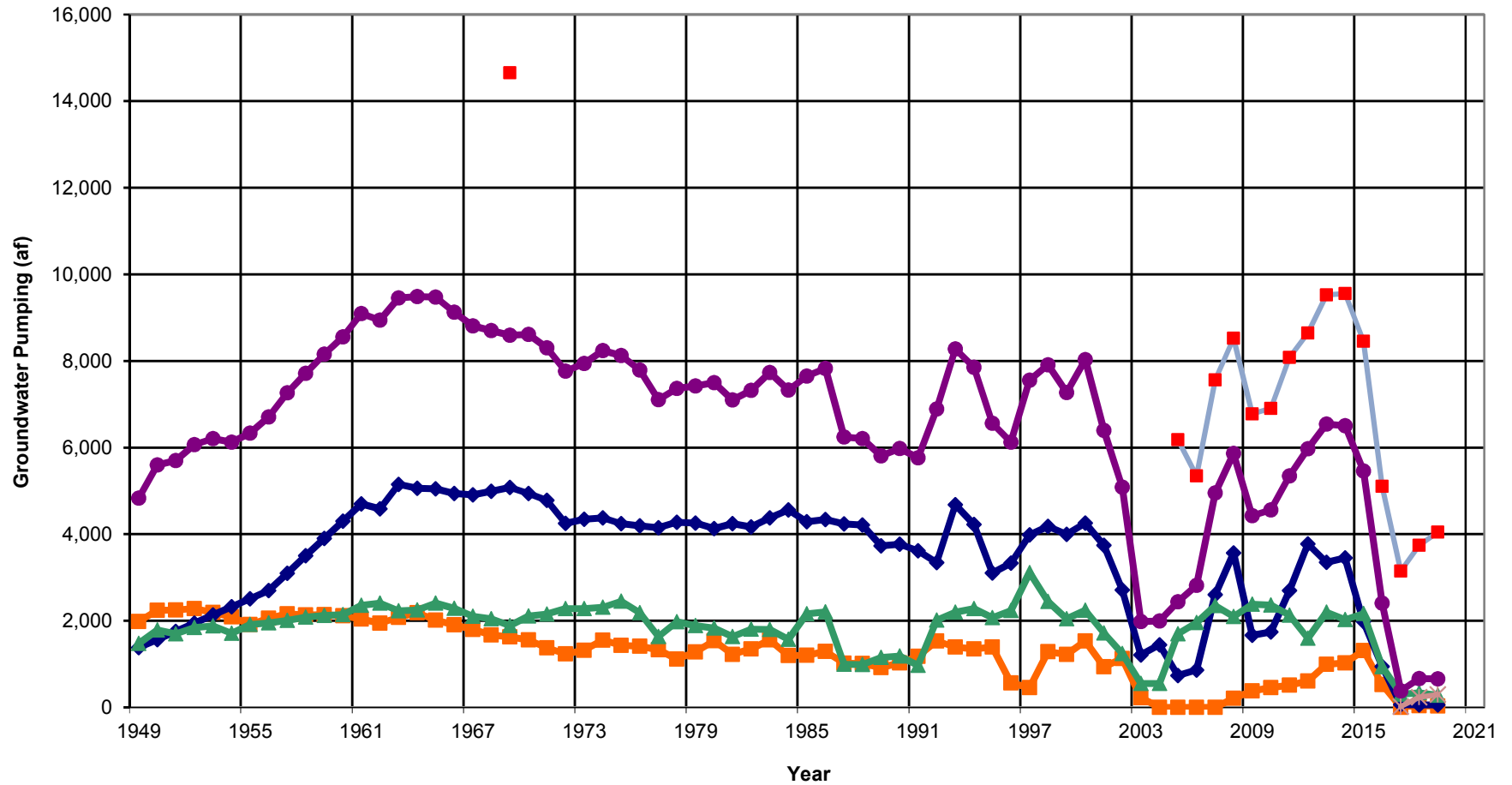


Figure 2

Figure 3
Westside Basin Groundwater Pumping
1949-2019



The 2002-2005 Pilot In-Lieu Recharge Demonstration Program evaluated the feasibility of GSR in the South Westside Basin (LSCE, 2005). The GSR project began in-lieu water deliveries to the Partner Agencies and has been in a storage phase since May 2016.

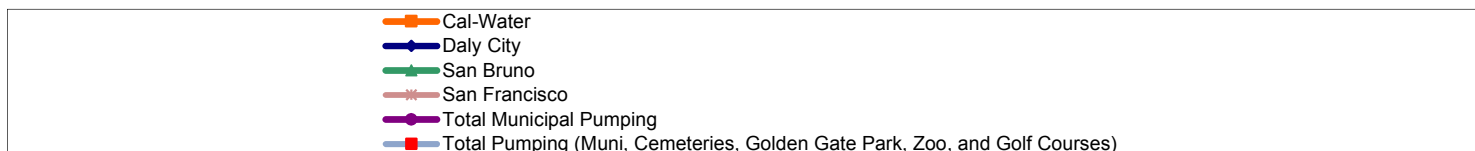
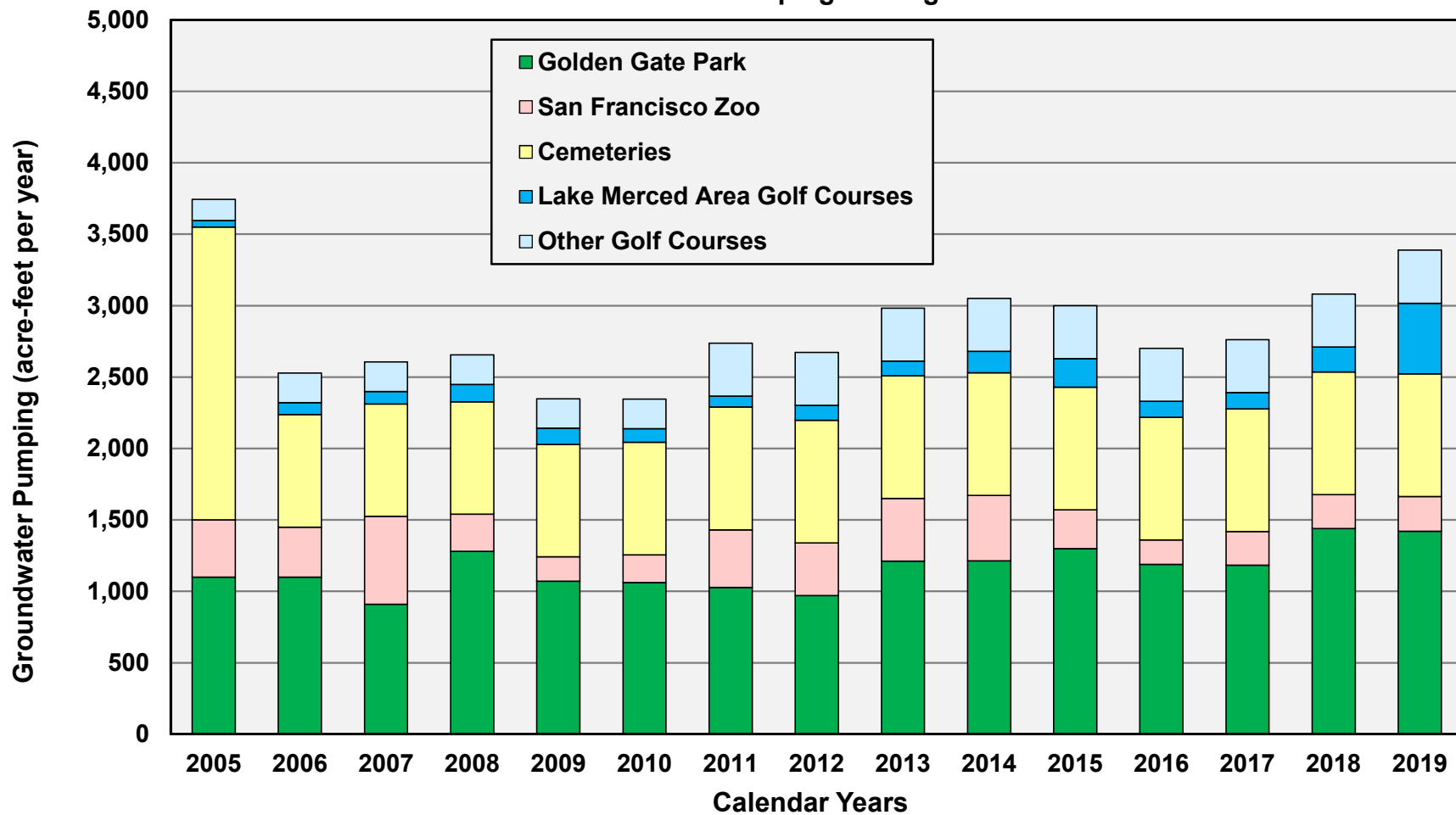
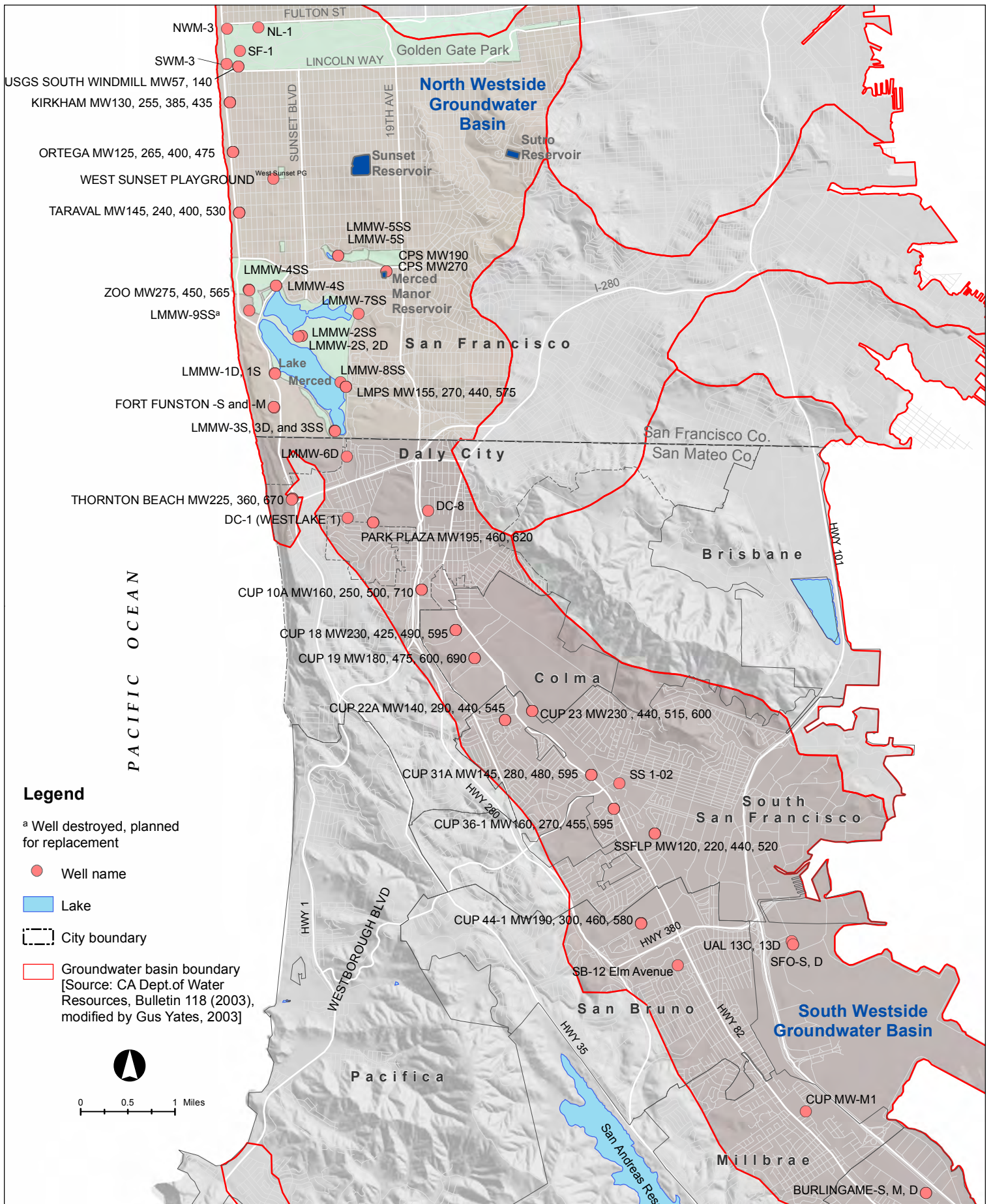


Figure 4
Westside Basin Groundwater Pumping for Irrigation 2005-2019



Note that cemetery and other golf course irrigation values are estimates derived from LSCE (2005) for 2005, Carollo (2008) for 2006-2010, and HydroFocus Groundwater Model (2011) for 2011-2019.



Legend

^a Well destroyed, planned for replacement

● Well name

■ Lake

▭ City boundary

□ Groundwater basin boundary
 [Source: CA Dept. of Water Resources, Bulletin 118 (2003), modified by Gus Yates, 2003]

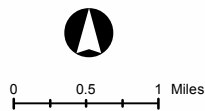


Figure 5
Well Location Map
Groundwater Elevation Monitoring Network

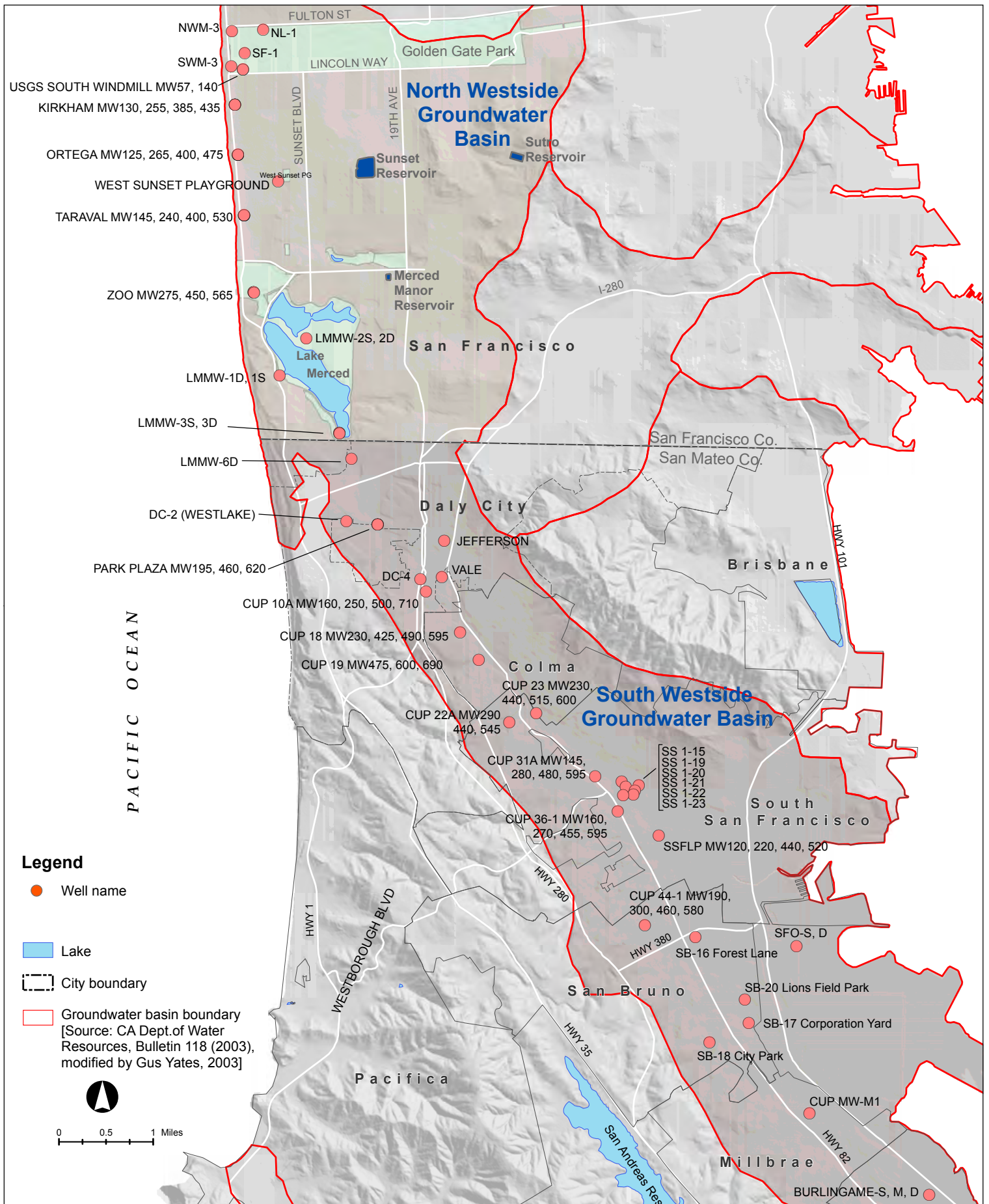


Figure 6
Well Location Map
Groundwater Quality Monitoring Network

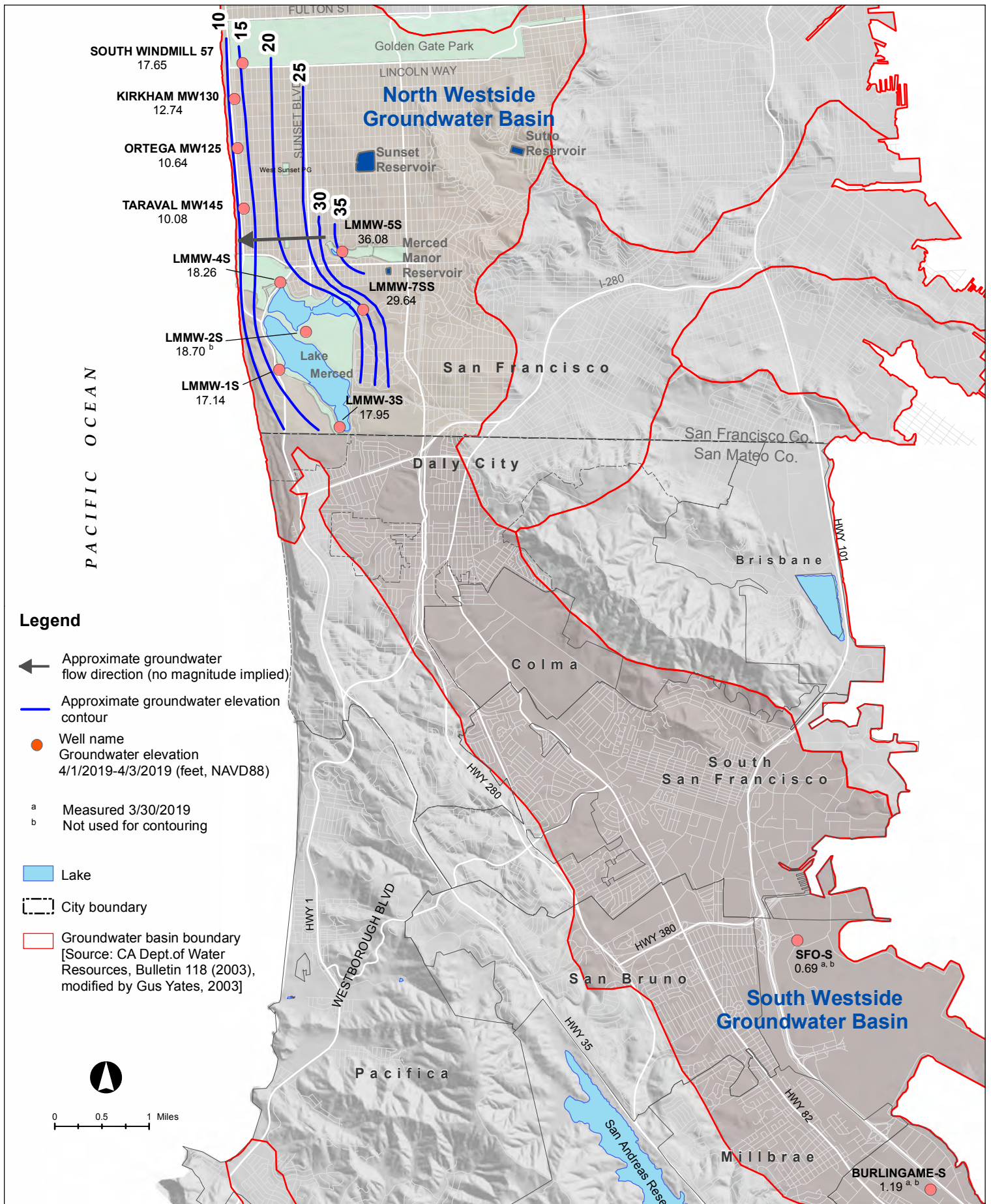


Figure 7
Groundwater Elevation Contours
Shallow Aquifer, Spring 2019

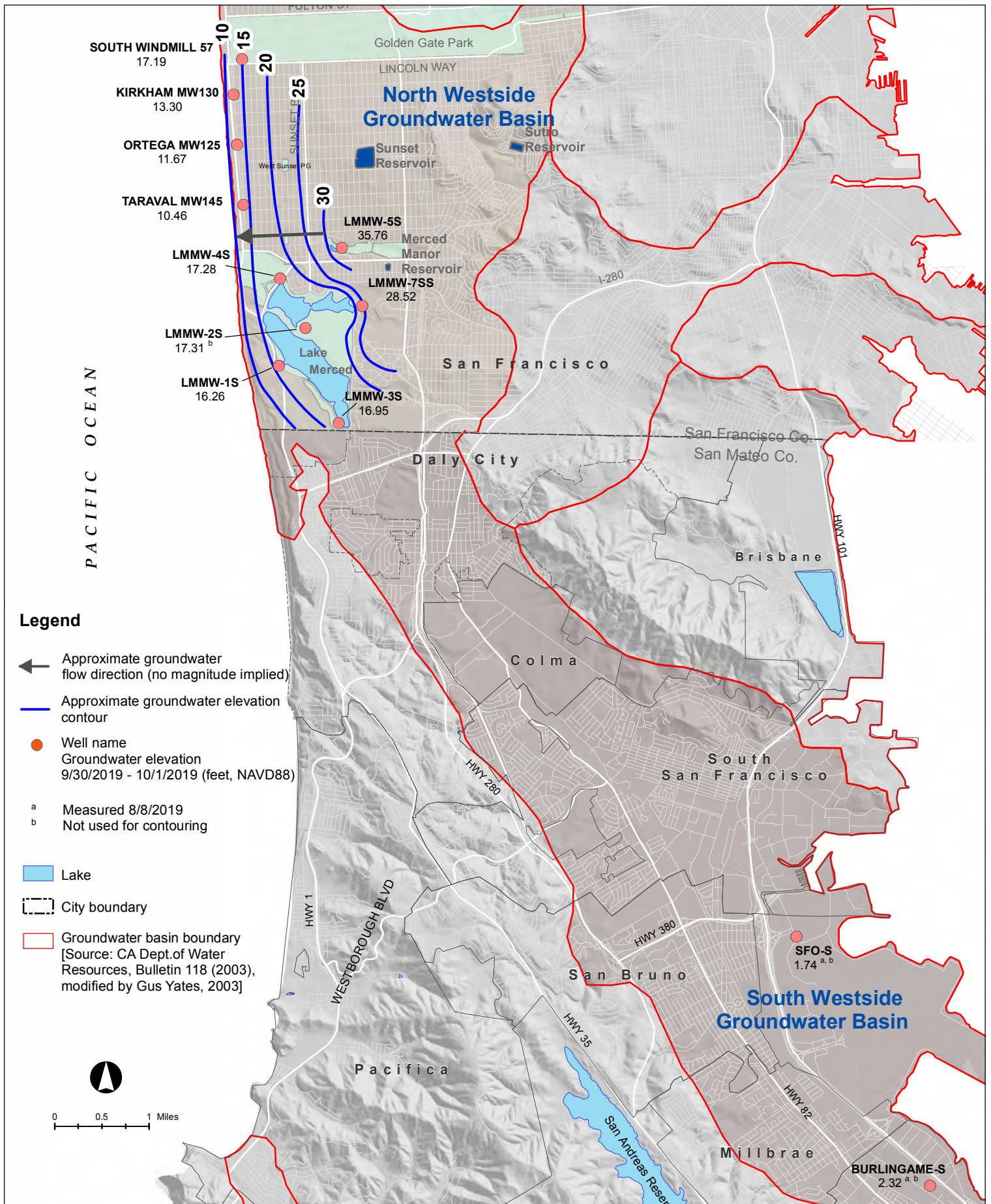


Figure 8
Groundwater Elevation Contours
Shallow Aquifer, Fall 2019

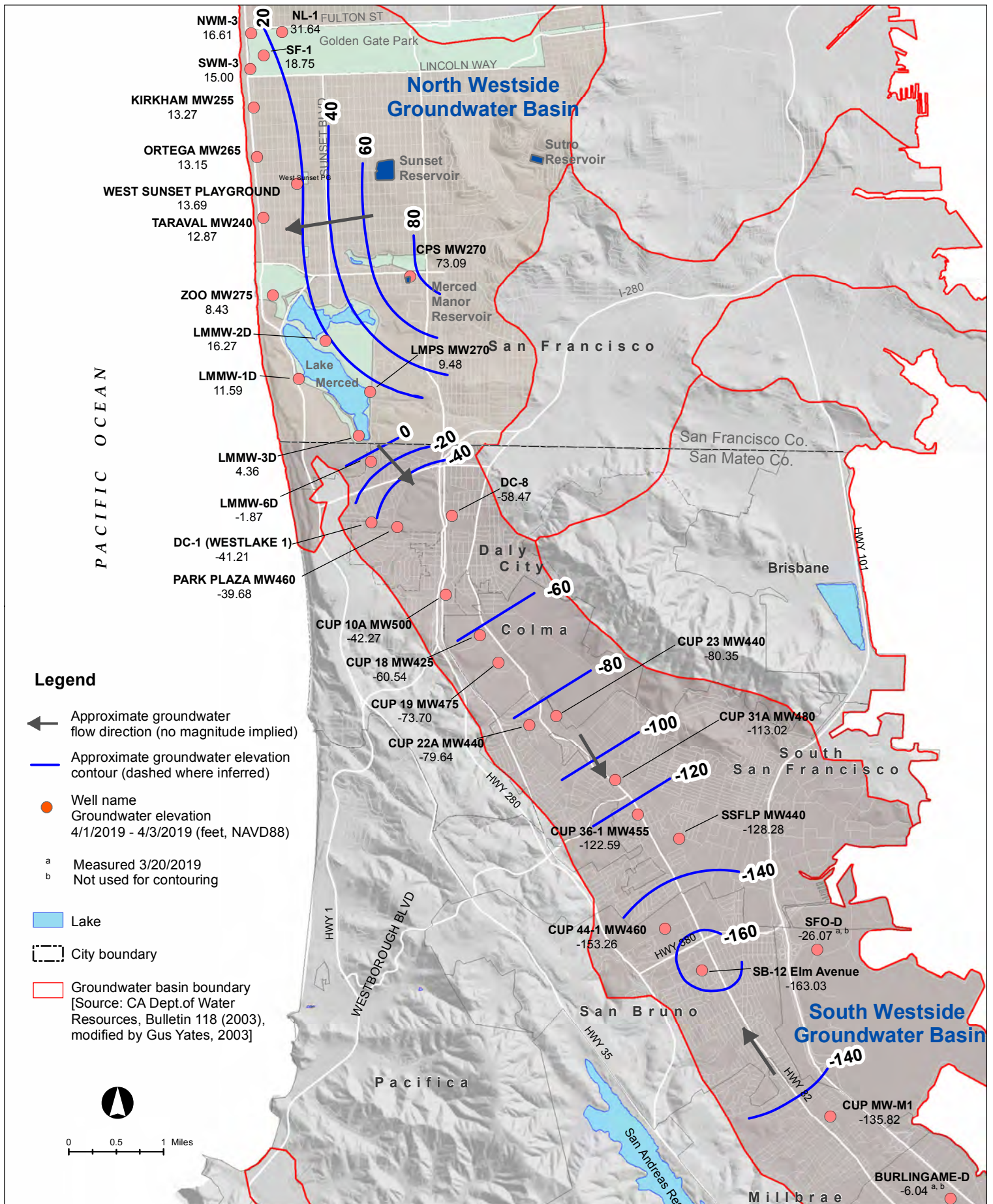


Figure 9
Groundwater Elevation Contours
Primary Production Aquifer, Spring 2019

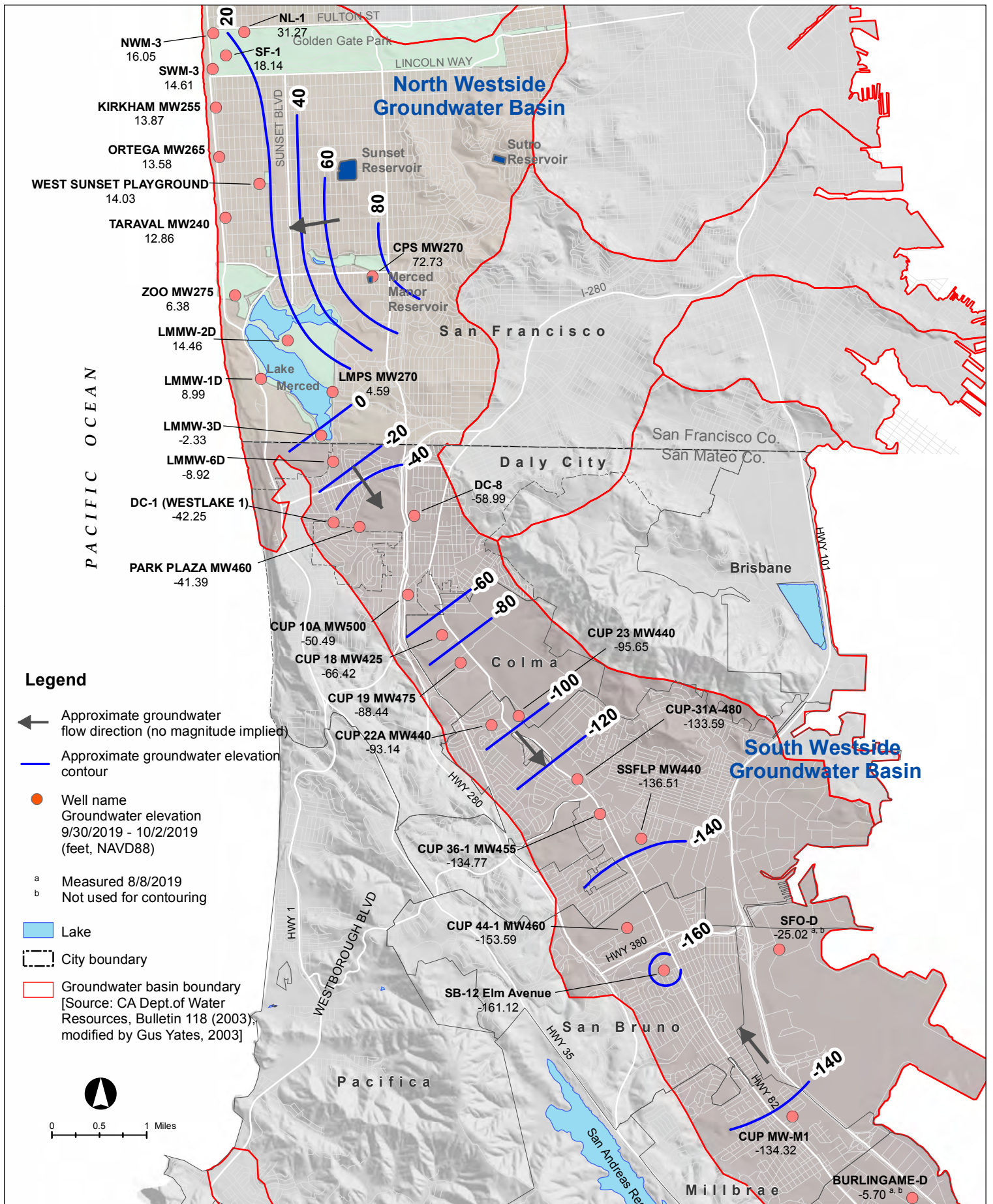


Figure 10
Groundwater Elevation Contours
Primary Production Aquifer, Fall 2019

Figure 11a Kirkham 130

Groundwater Elevation and Chloride Concentration Hydrograph

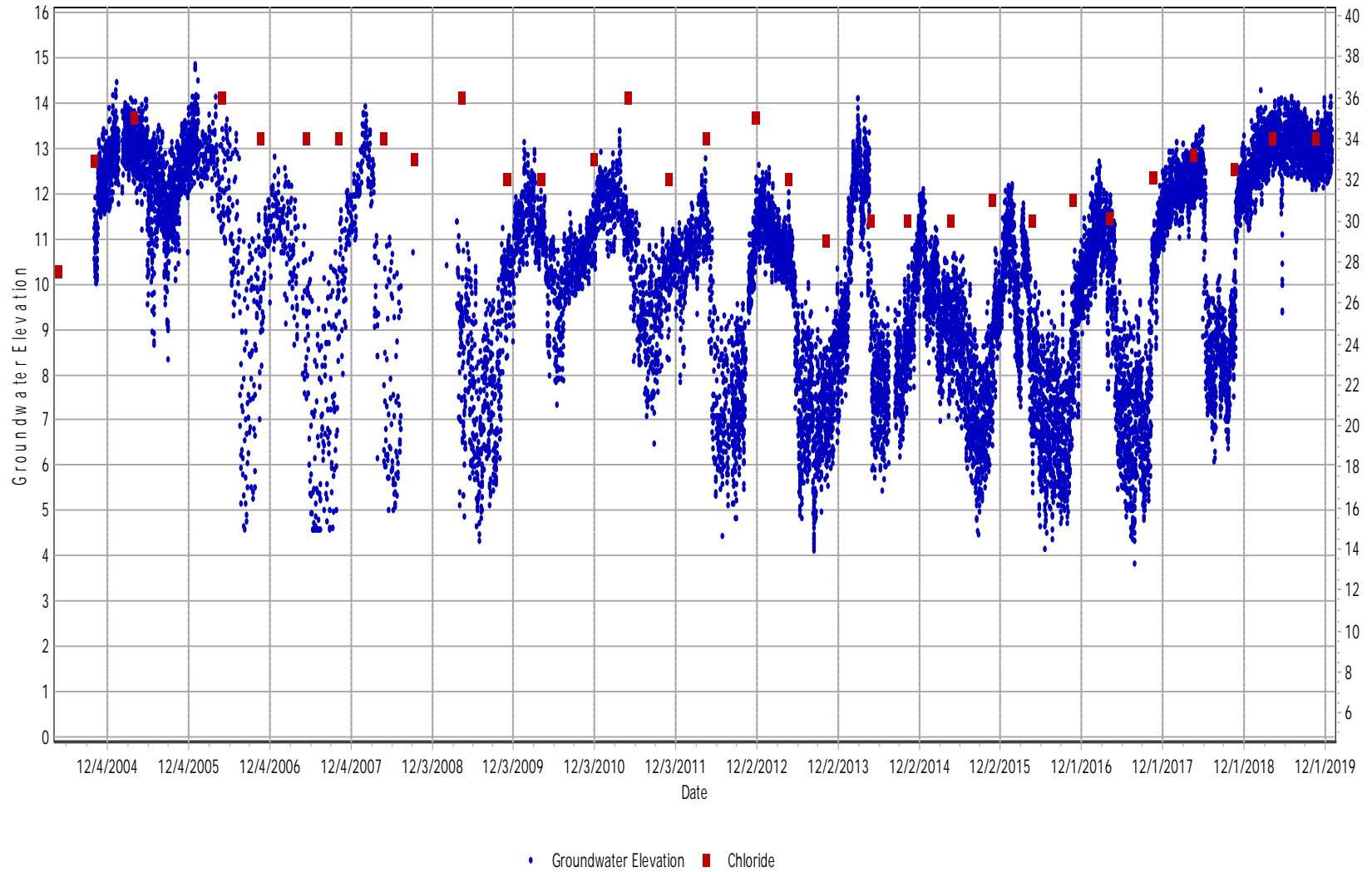


Figure 11b Kirkham 255

Groundwater Elevation and Chloride Concentration Hydrograph

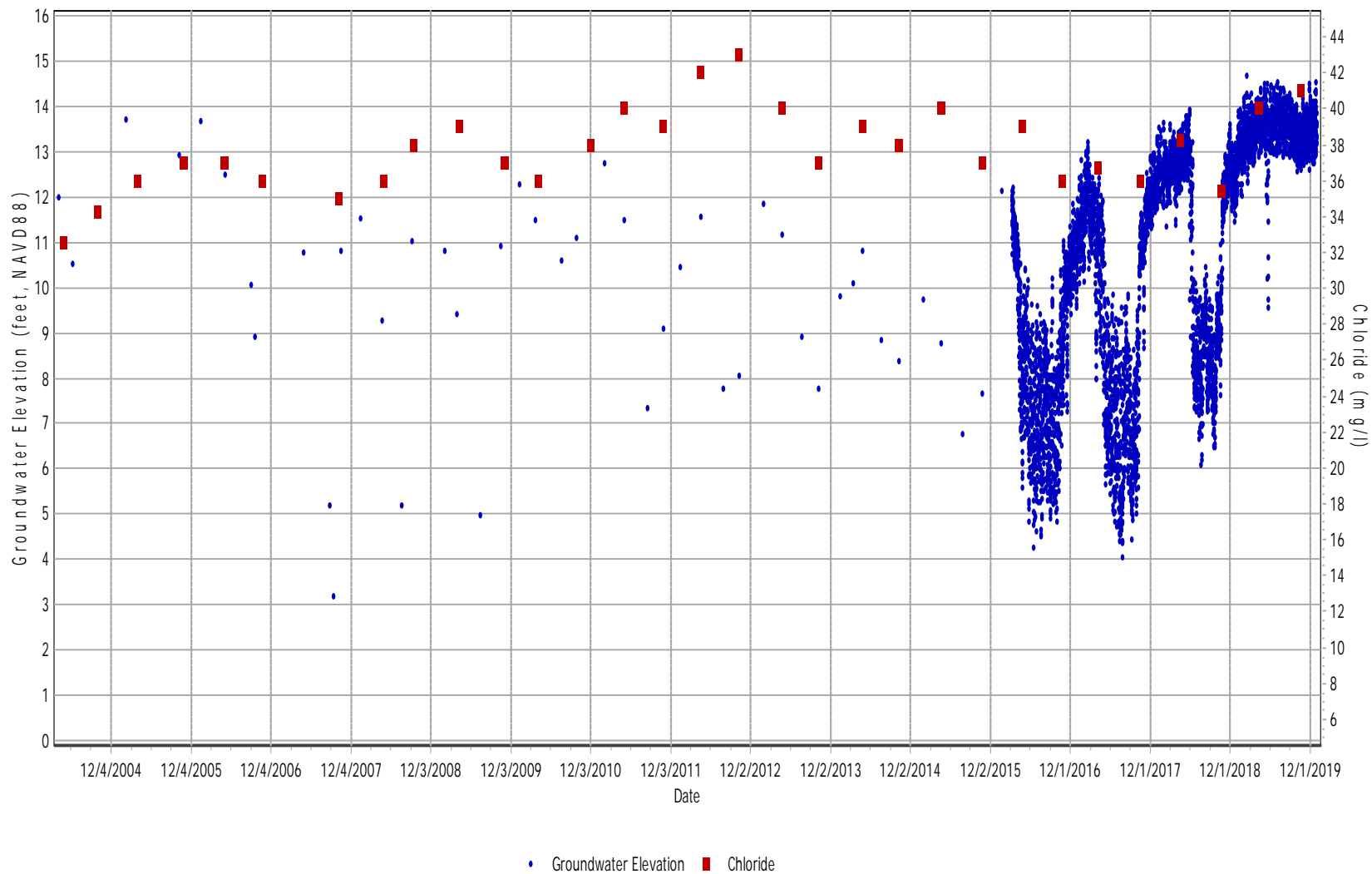


Figure 11c Kirkham 385

Groundwater Elevation and Chloride Concentration Hydrograph

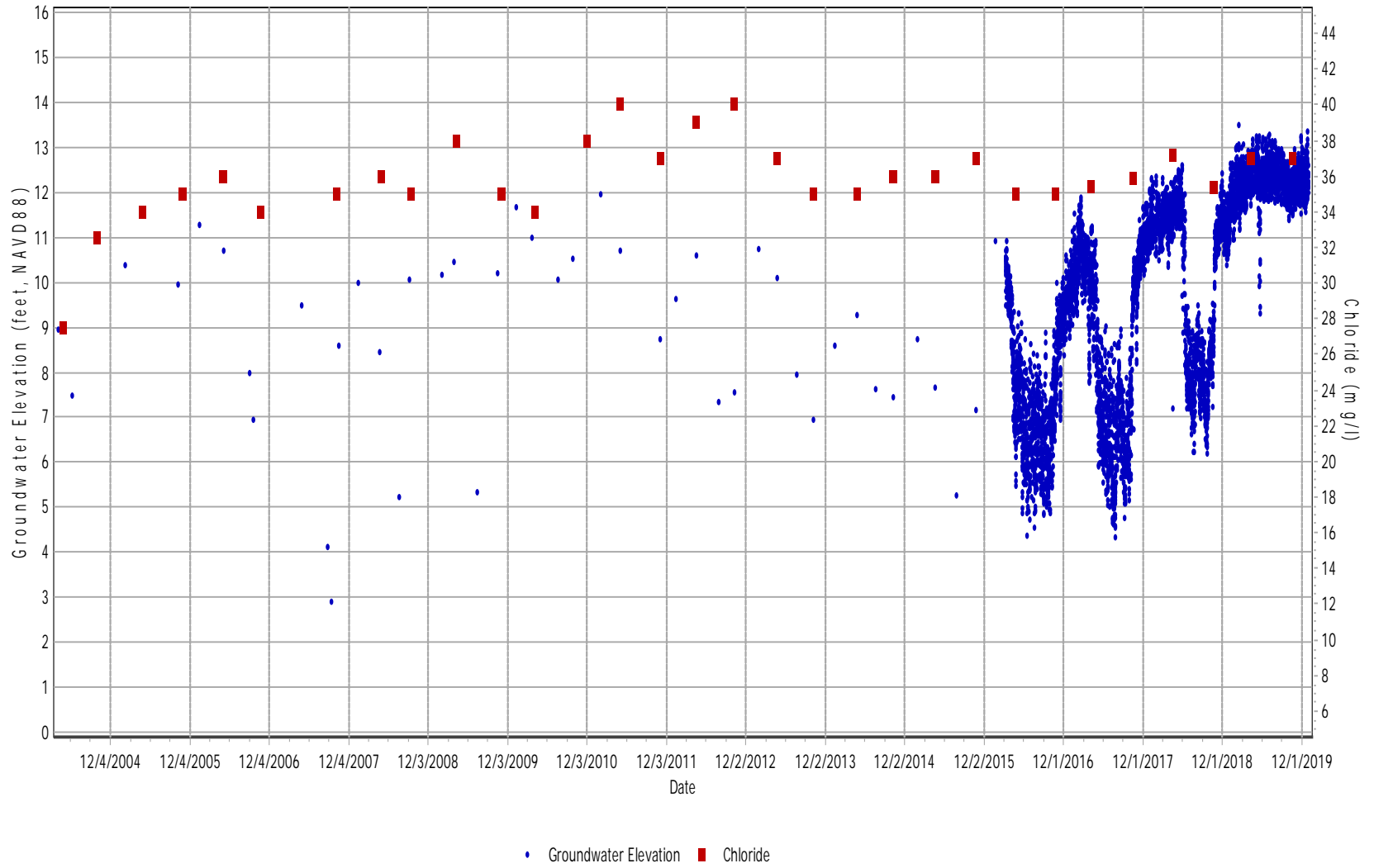


Figure 11d Kirkham 435

Groundwater Elevation and Chloride Concentration Hydrograph

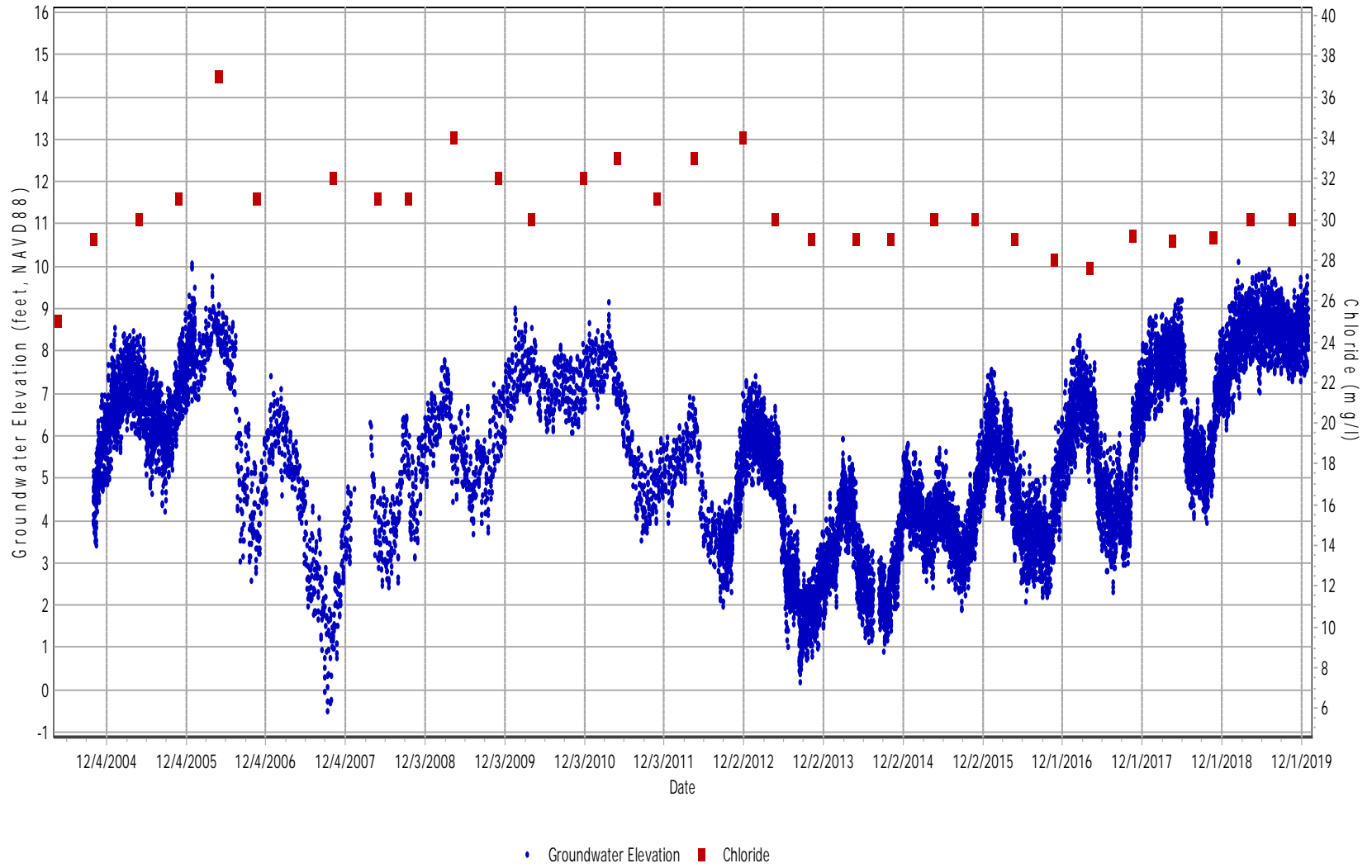


Figure 12a Ortega 125

Groundwater Elevation and Chloride Concentration Hydrograph

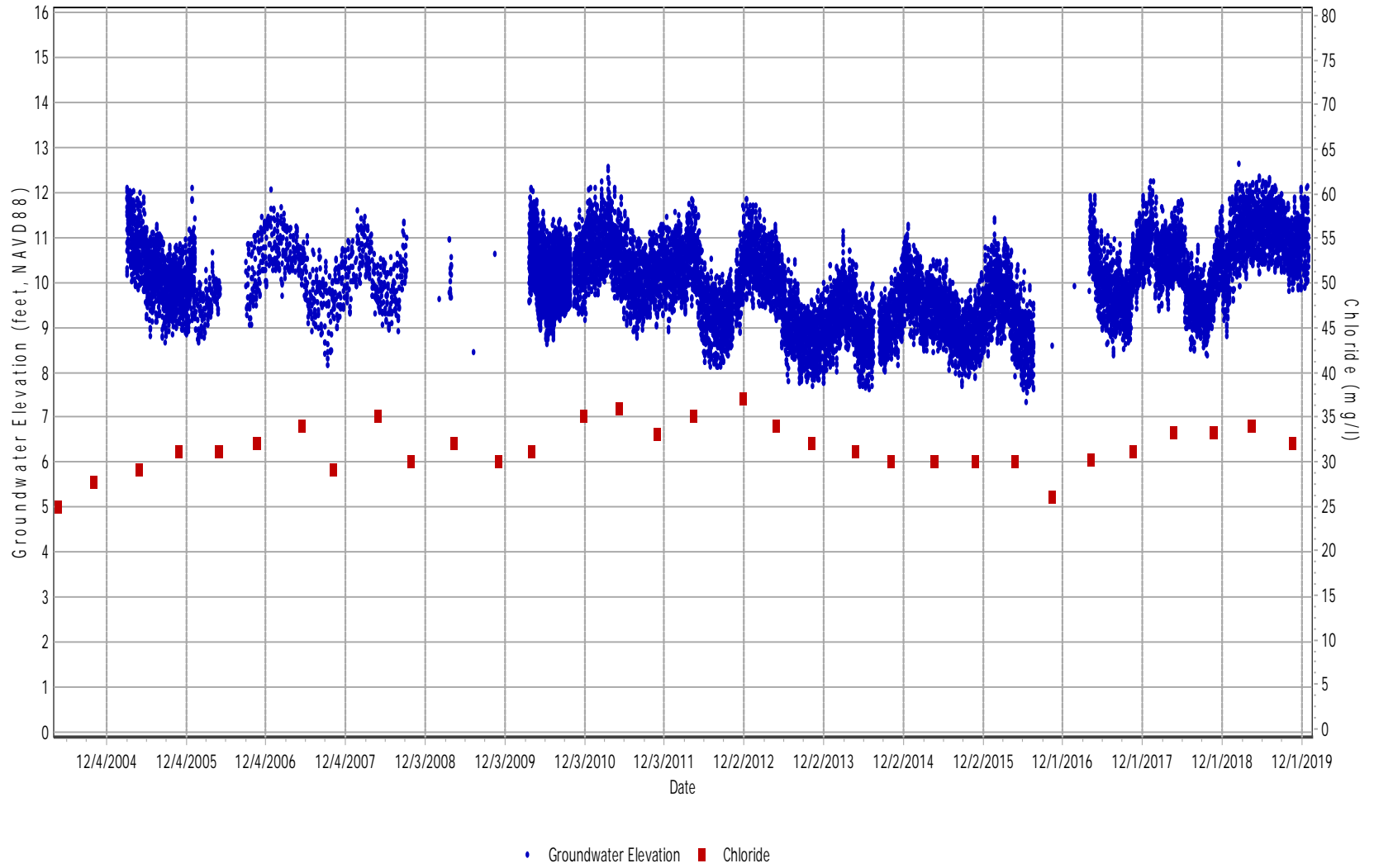


Figure 12b Ortega 265

Groundwater Elevation and Chloride Concentration Hydrograph

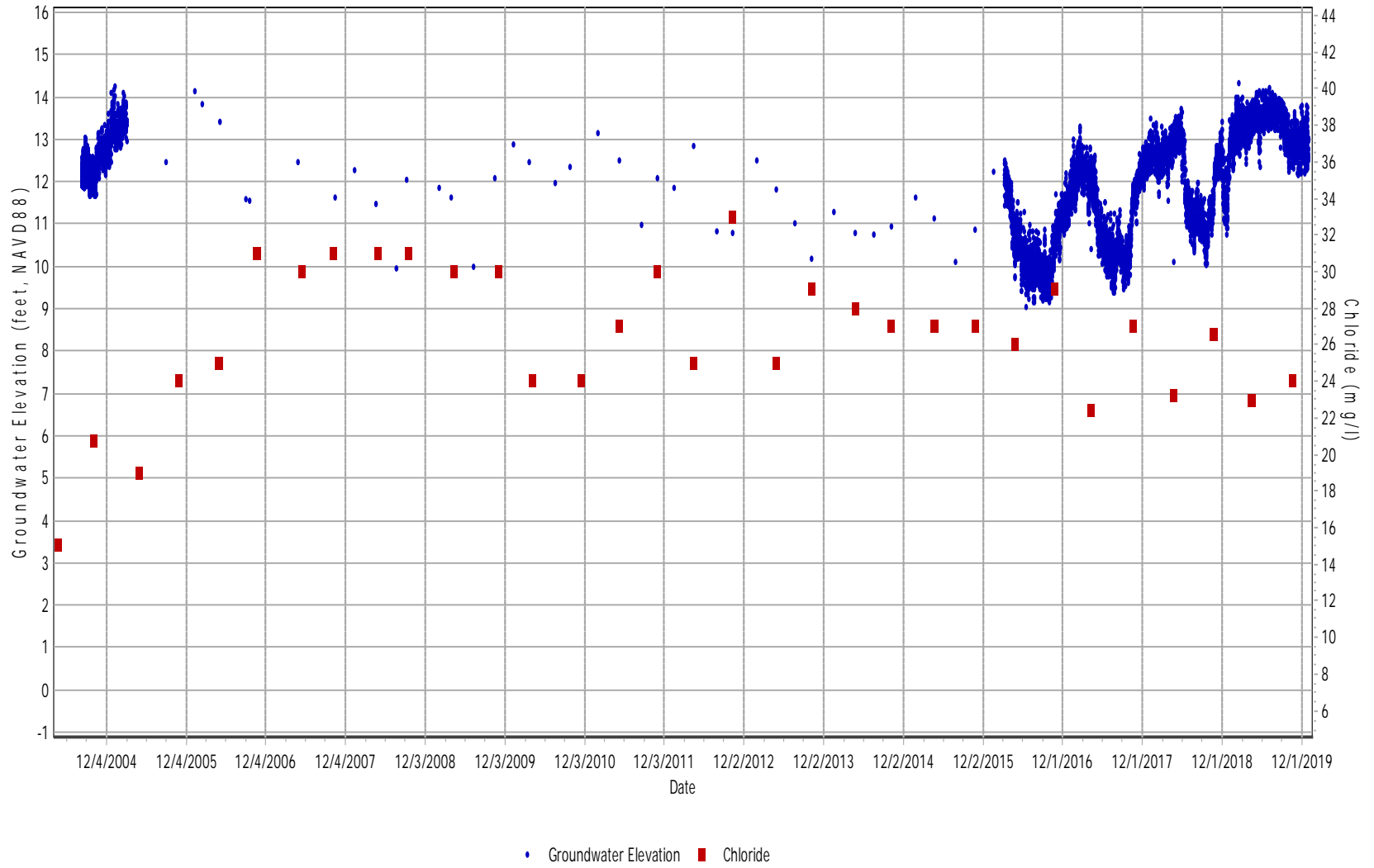


Figure 12c Ortega 400

Groundwater Elevation and Chloride Concentration Hydrograph

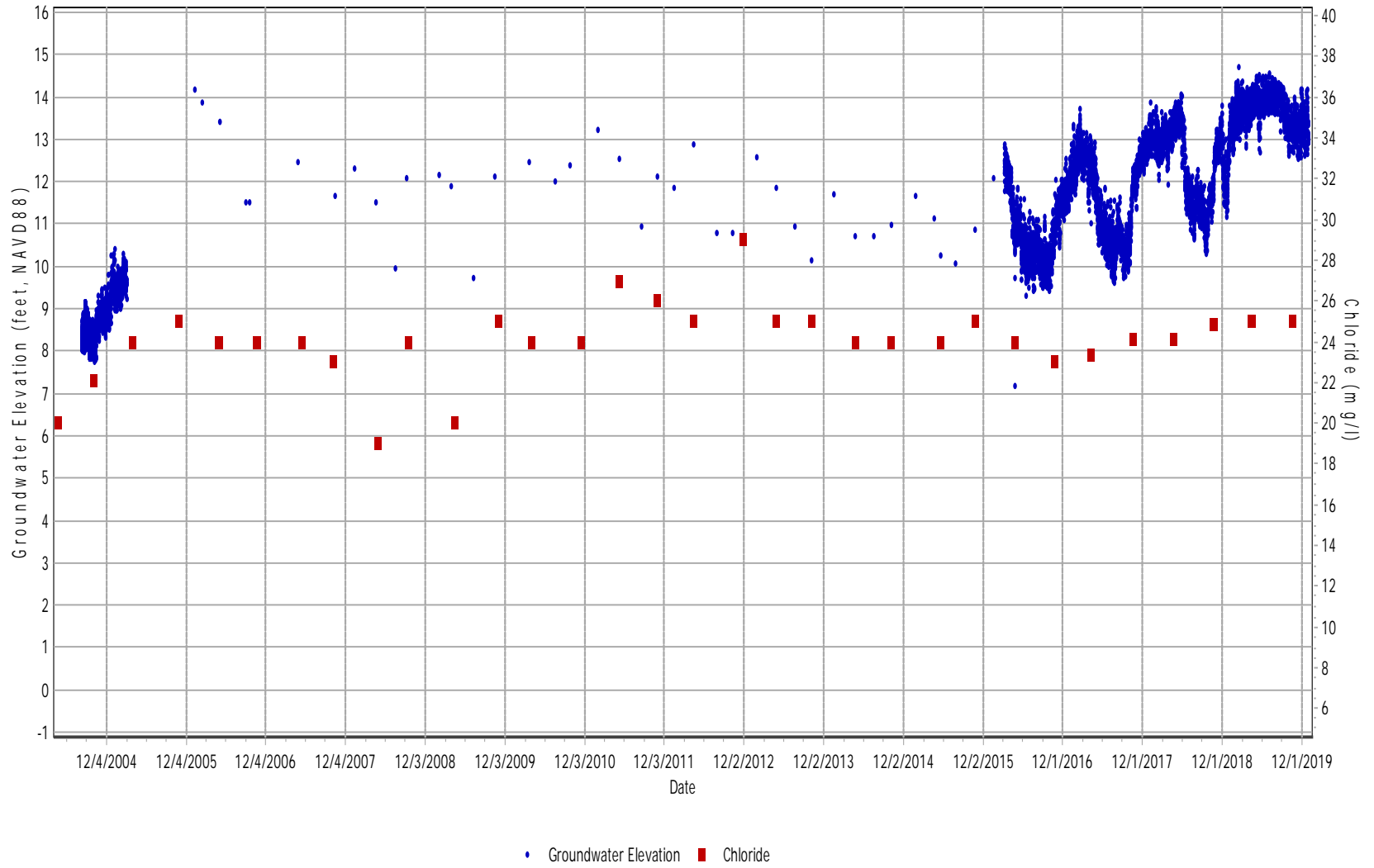


Figure 12d Ortega 475

Groundwater Elevation and Chloride Concentration Hydrograph

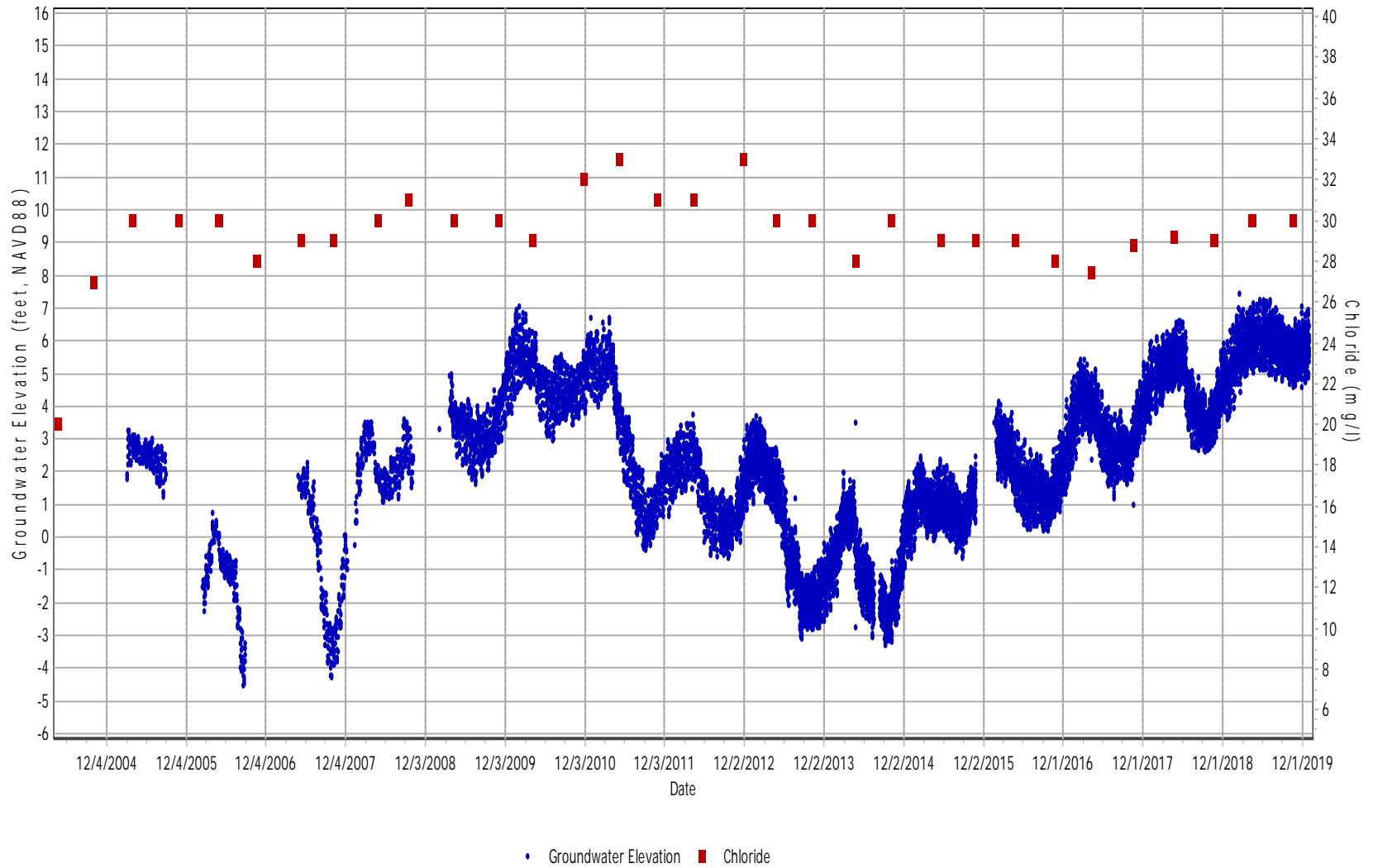


Figure 13a Taraval 145

Groundwater Elevation and Chloride Concentration Hydrograph

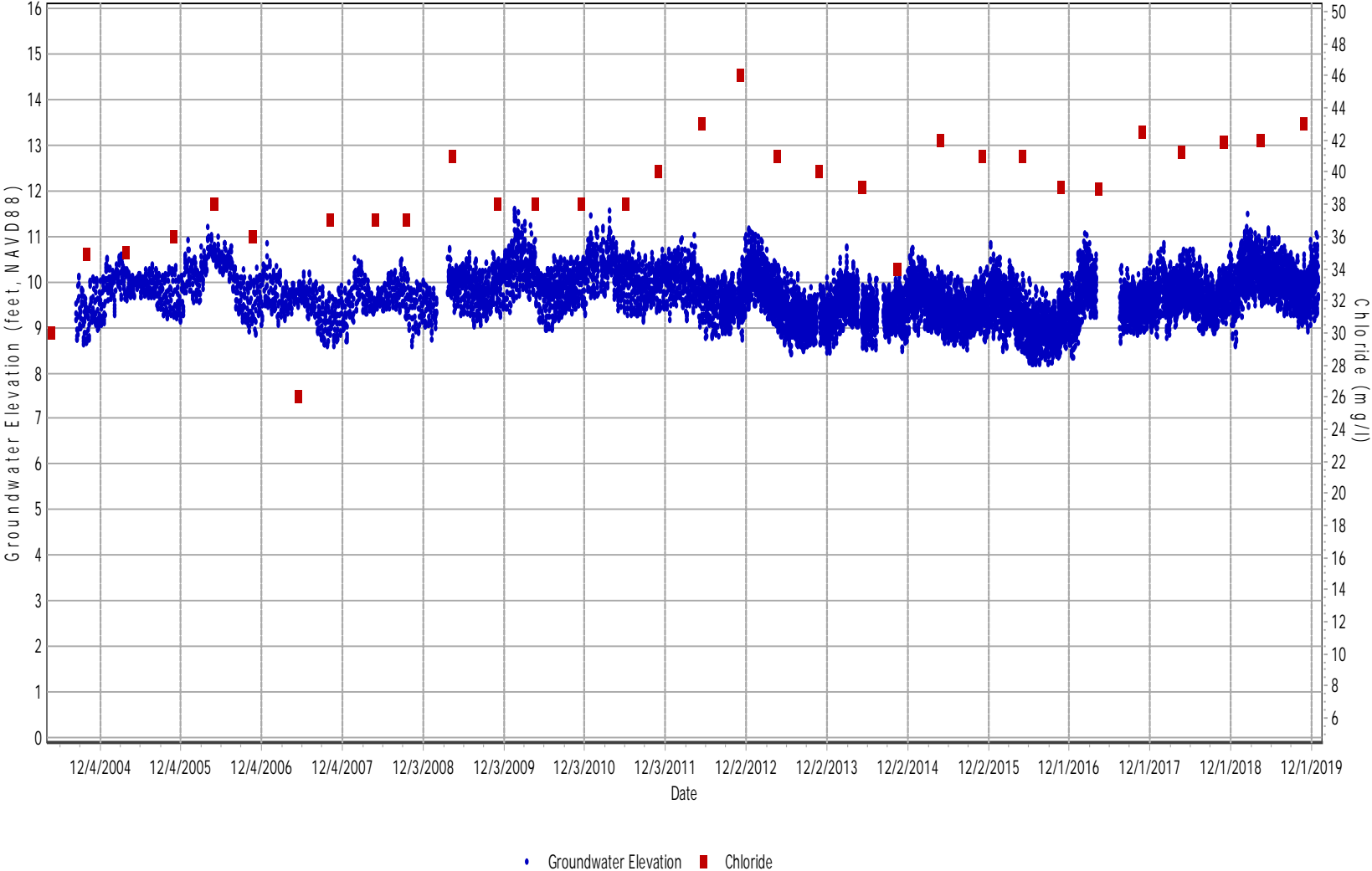


Figure 13b Taraval 240

Groundwater Elevation and Chloride Concentration Hydrograph

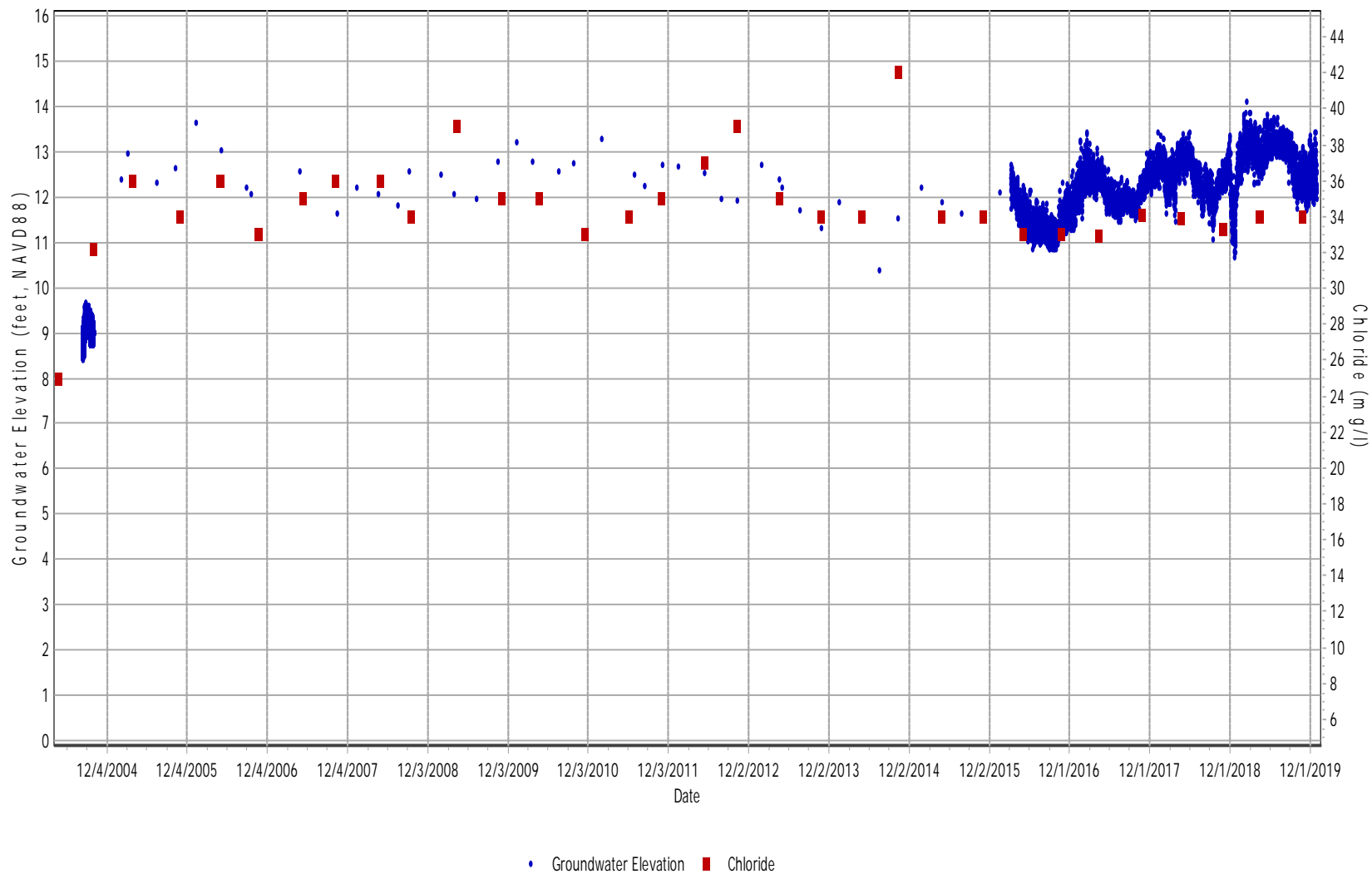


Figure 13c Taraval 400

Groundwater Elevation and Chloride Concentration Hydrograph

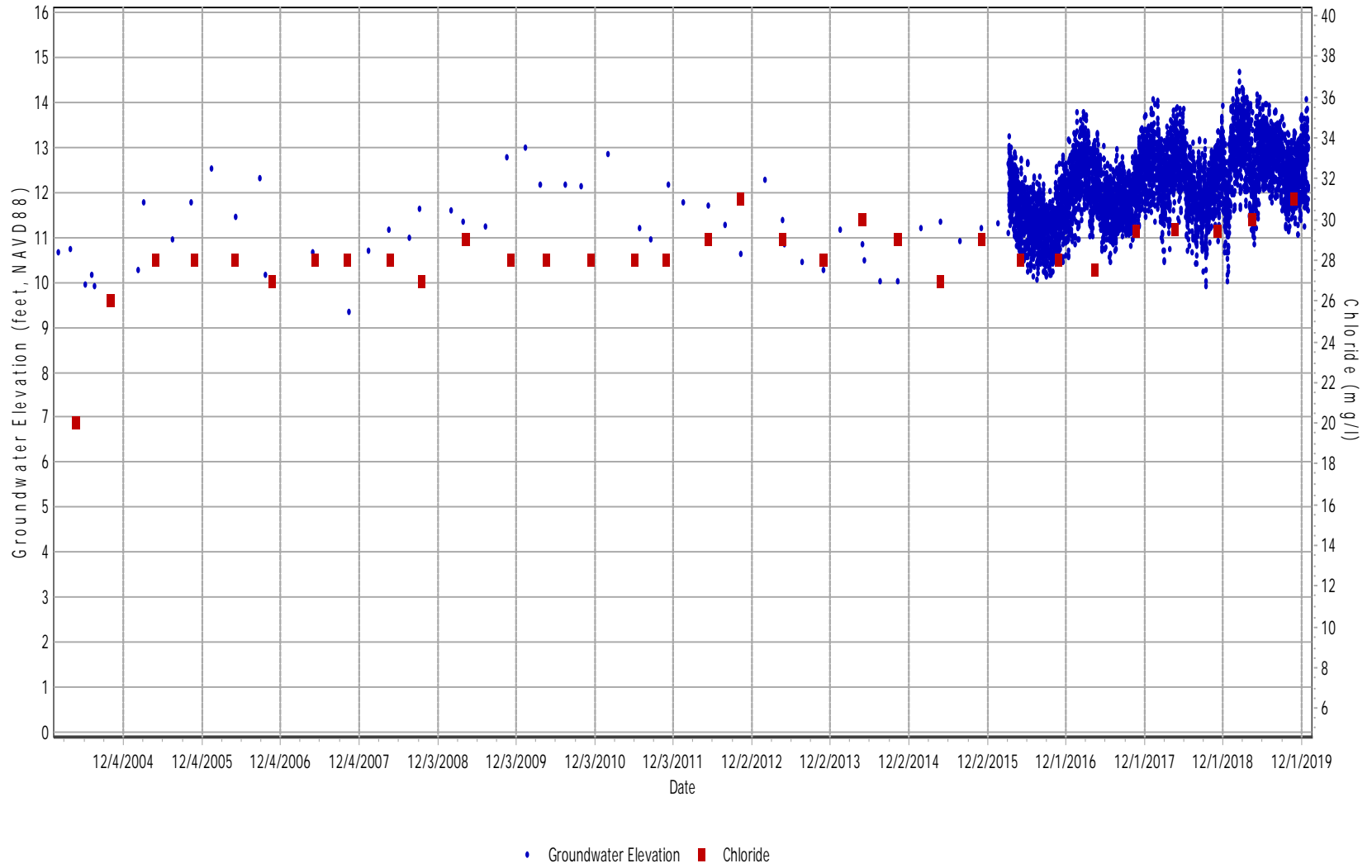


Figure 13d Taraval 530

Groundwater Elevation and Chloride Concentration Hydrograph

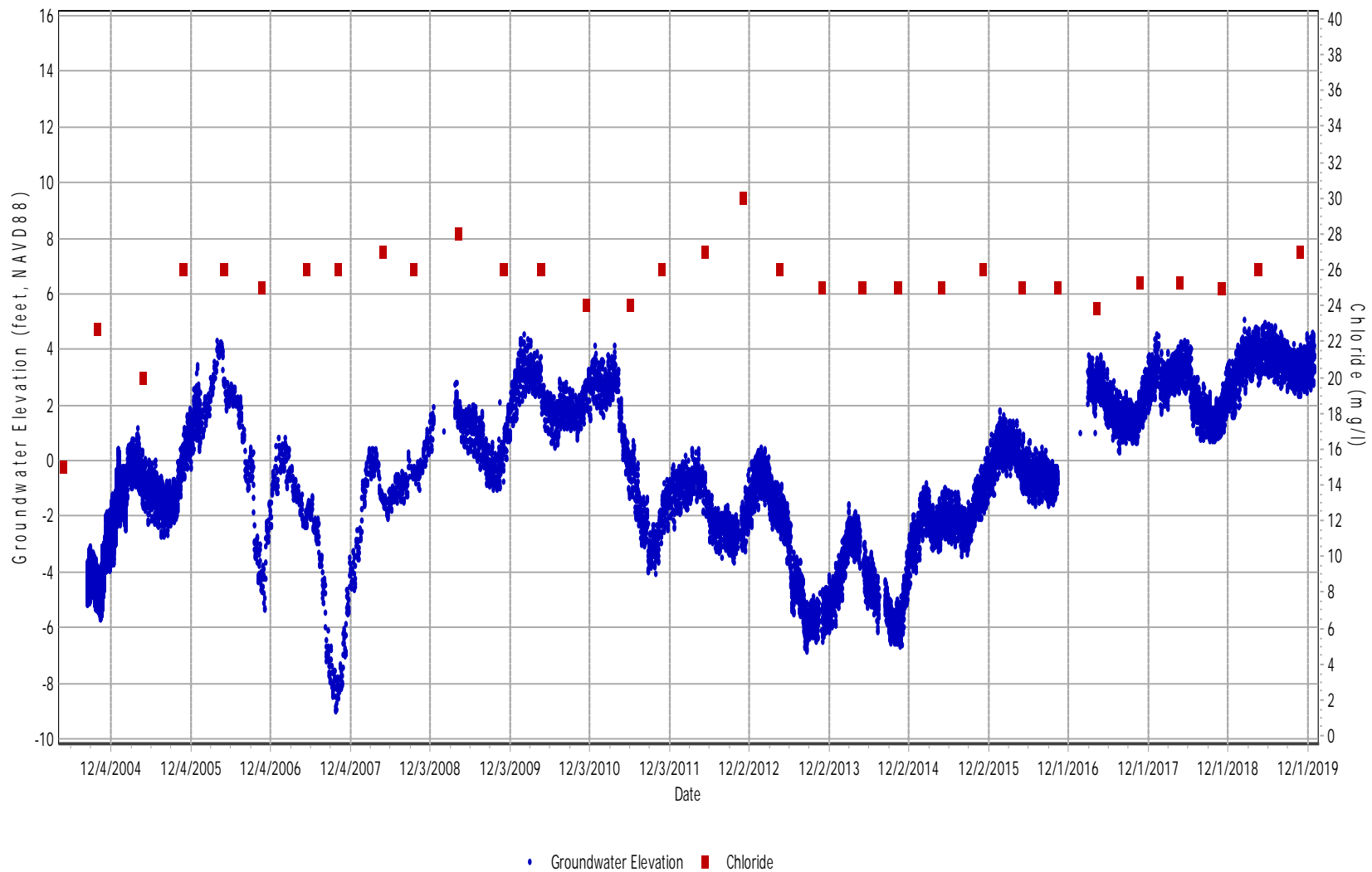


Figure 14a Zoo 275

Groundwater Elevation and Chloride Concentration Hydrograph

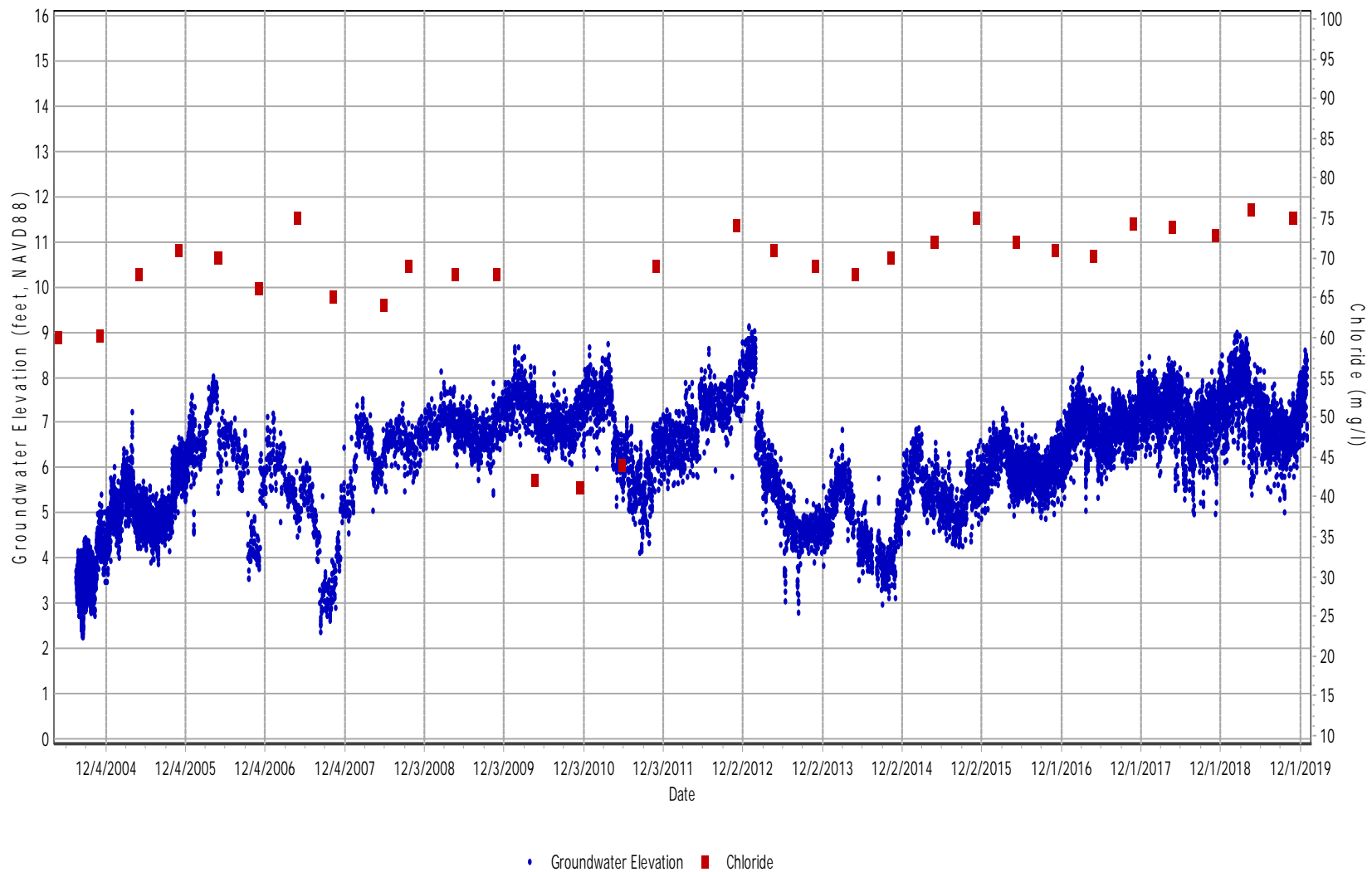


Figure 14b Zoo 450

Groundwater Elevation and Chloride Concentration Hydrograph

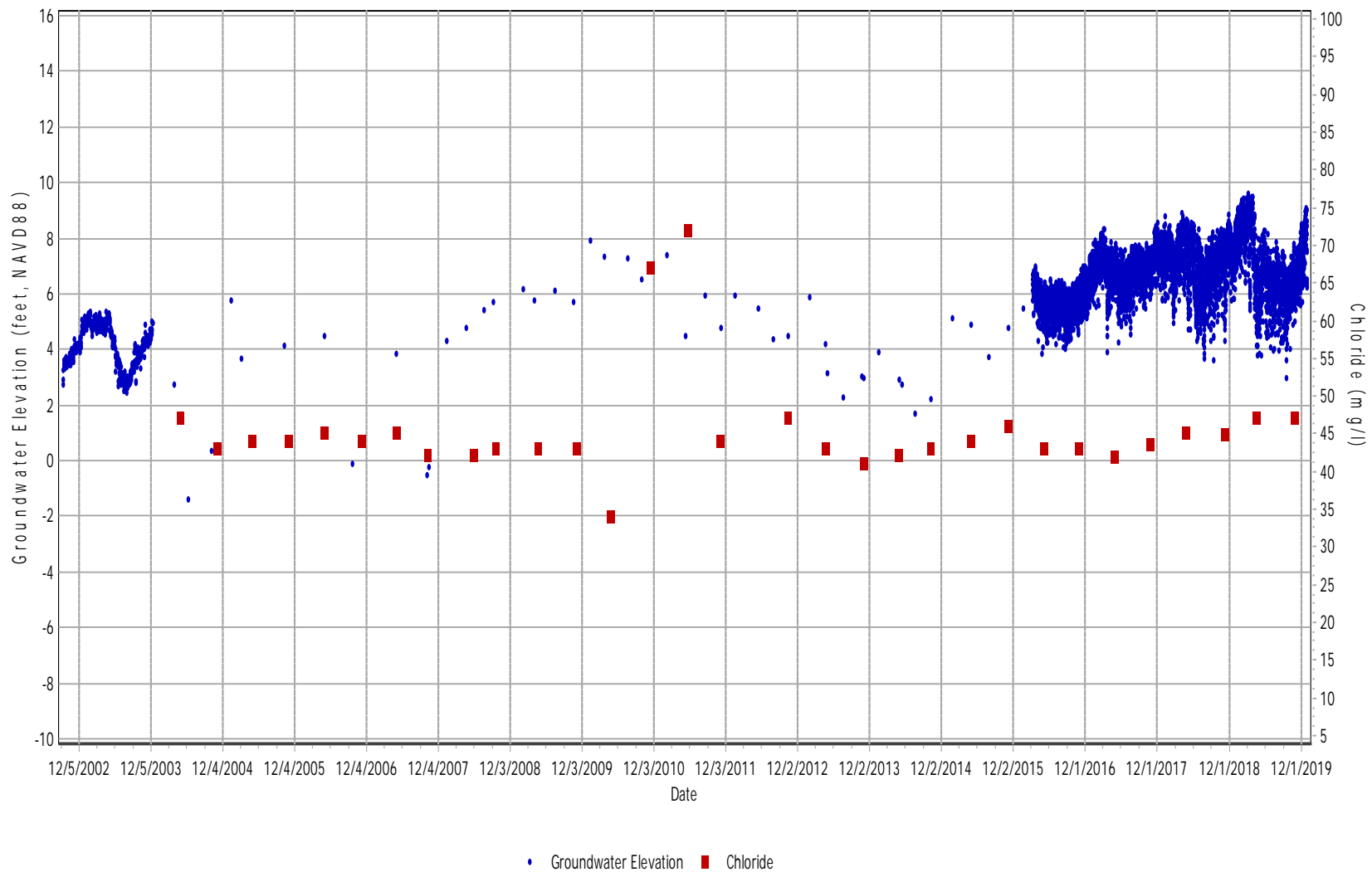


Figure 14c Zoo 565

Groundwater Elevation and Chloride Concentration Hydrograph

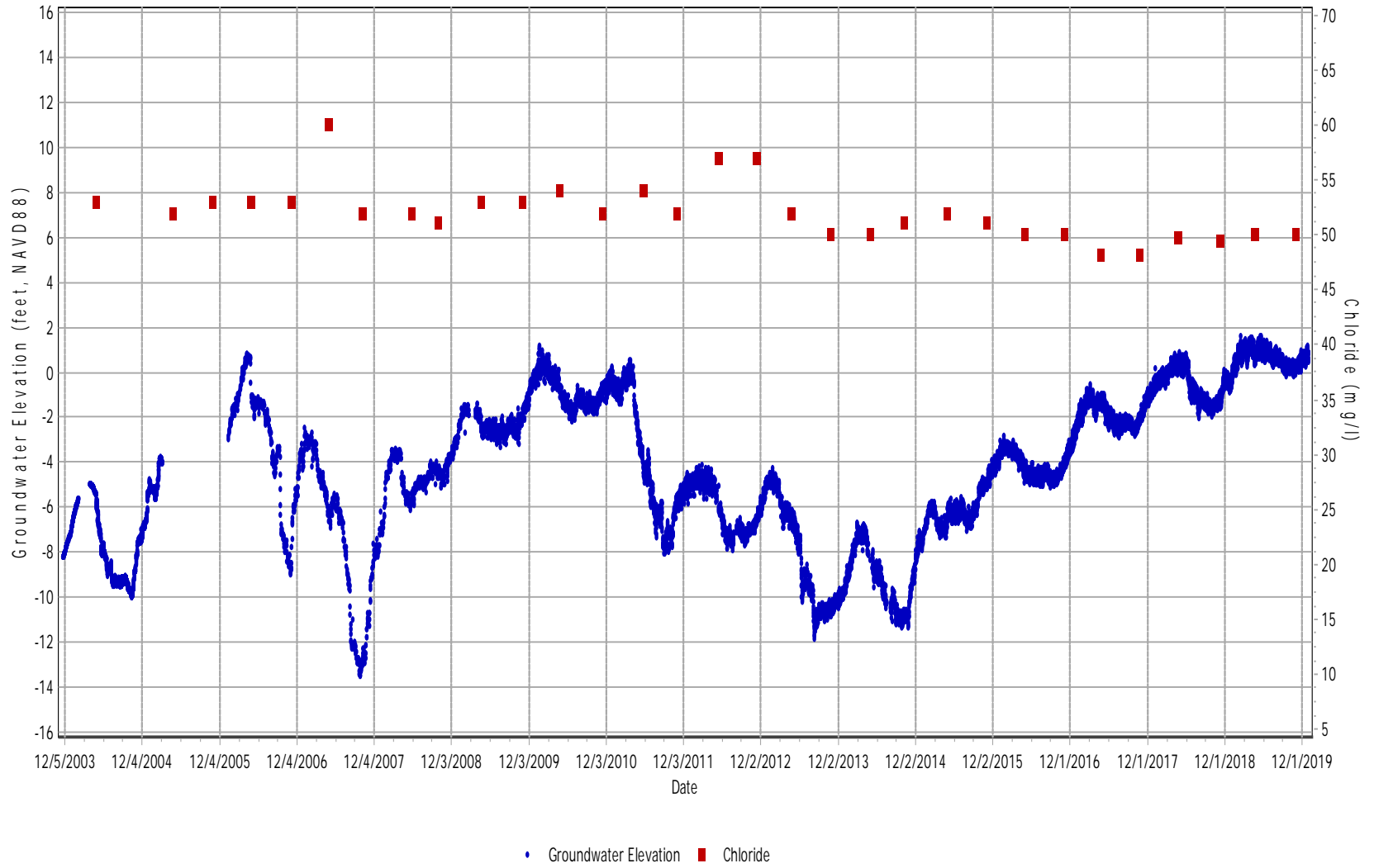


Figure 15 Lake Merced Surface Elevation

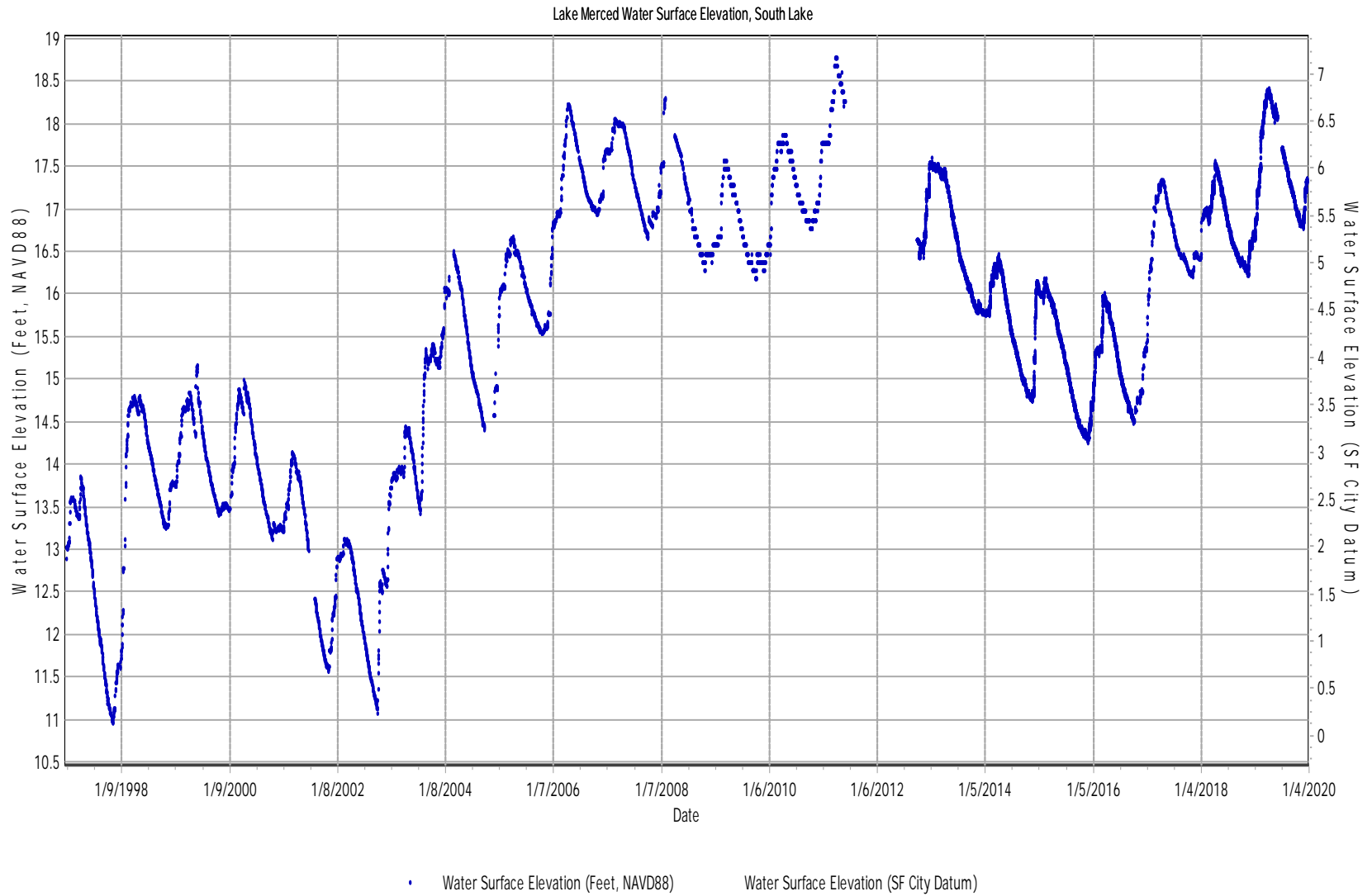


Figure 16

LMMW-1S & LMMW-1D

Groundwater Elevation Hydrograph: Shallow and Primary Production Aquifers

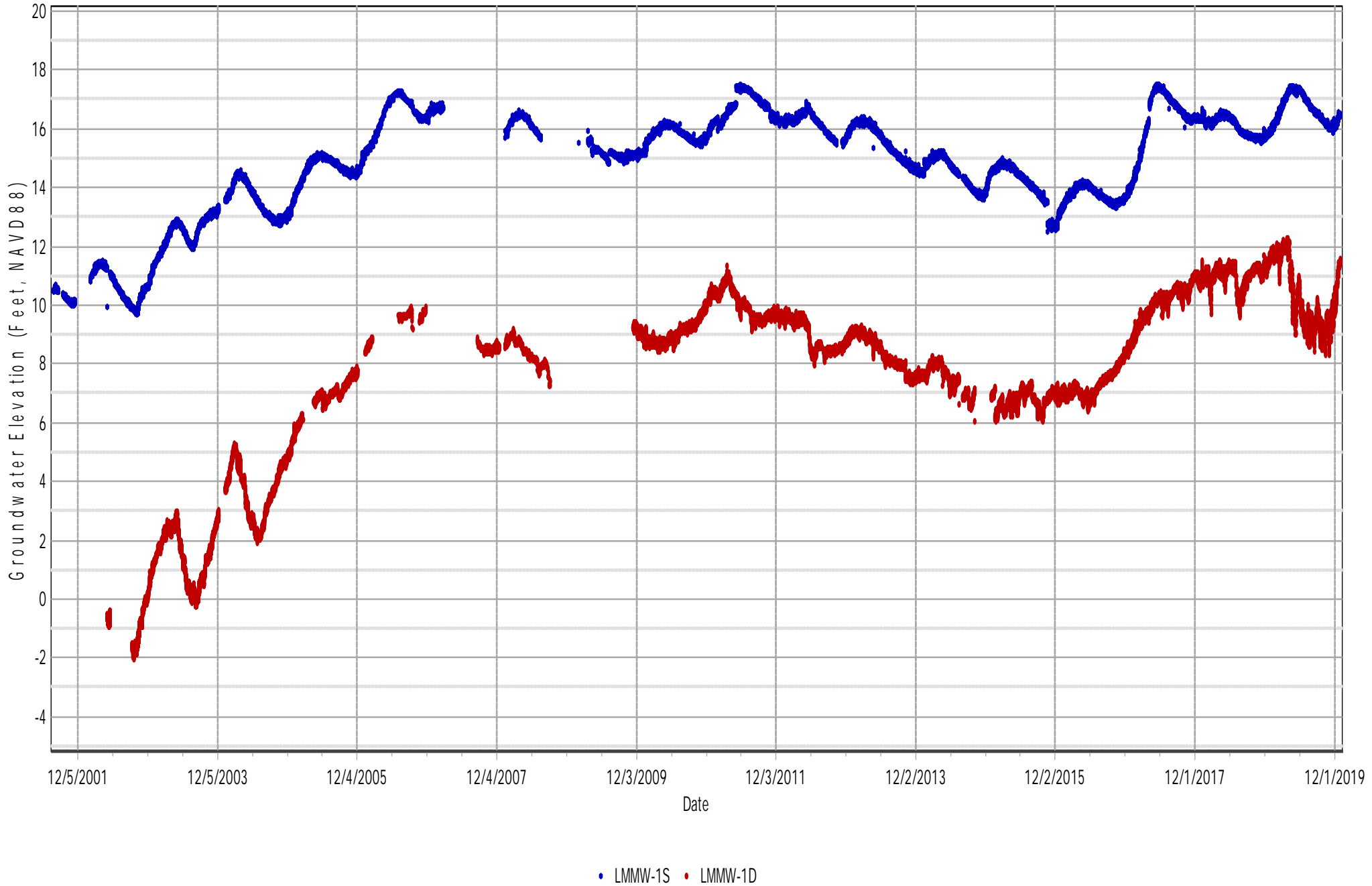
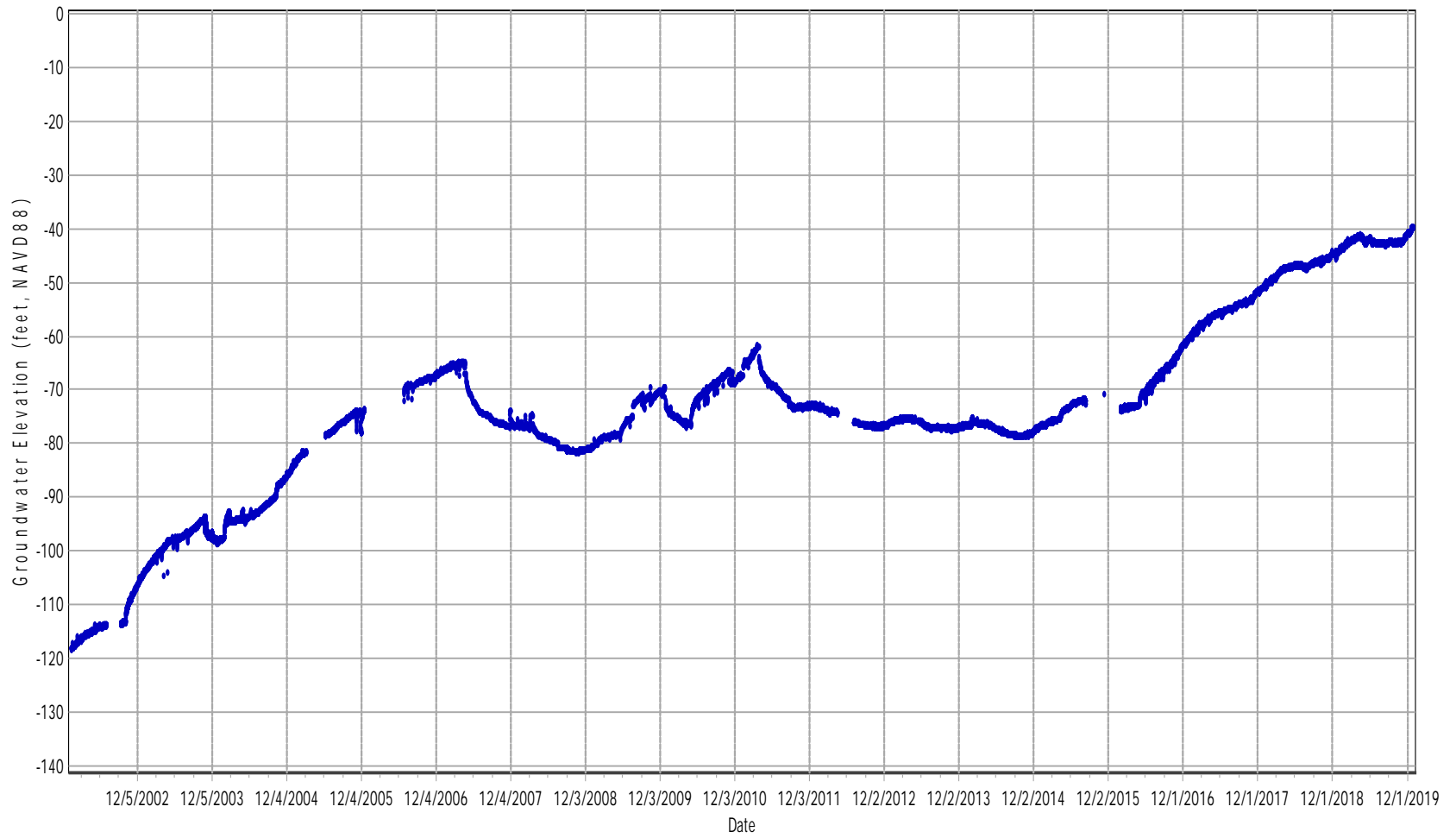


Figure 17 DC-01 (WESTLAKE 1)

Groundwater Elevation Hydrograph - Primary Production Aquifer



• Groundwater Elevation

Figure 18 CAL. WATER SERV. SS1-02

Groundwater Elevation Hydrograph - Primary Production Aquifer

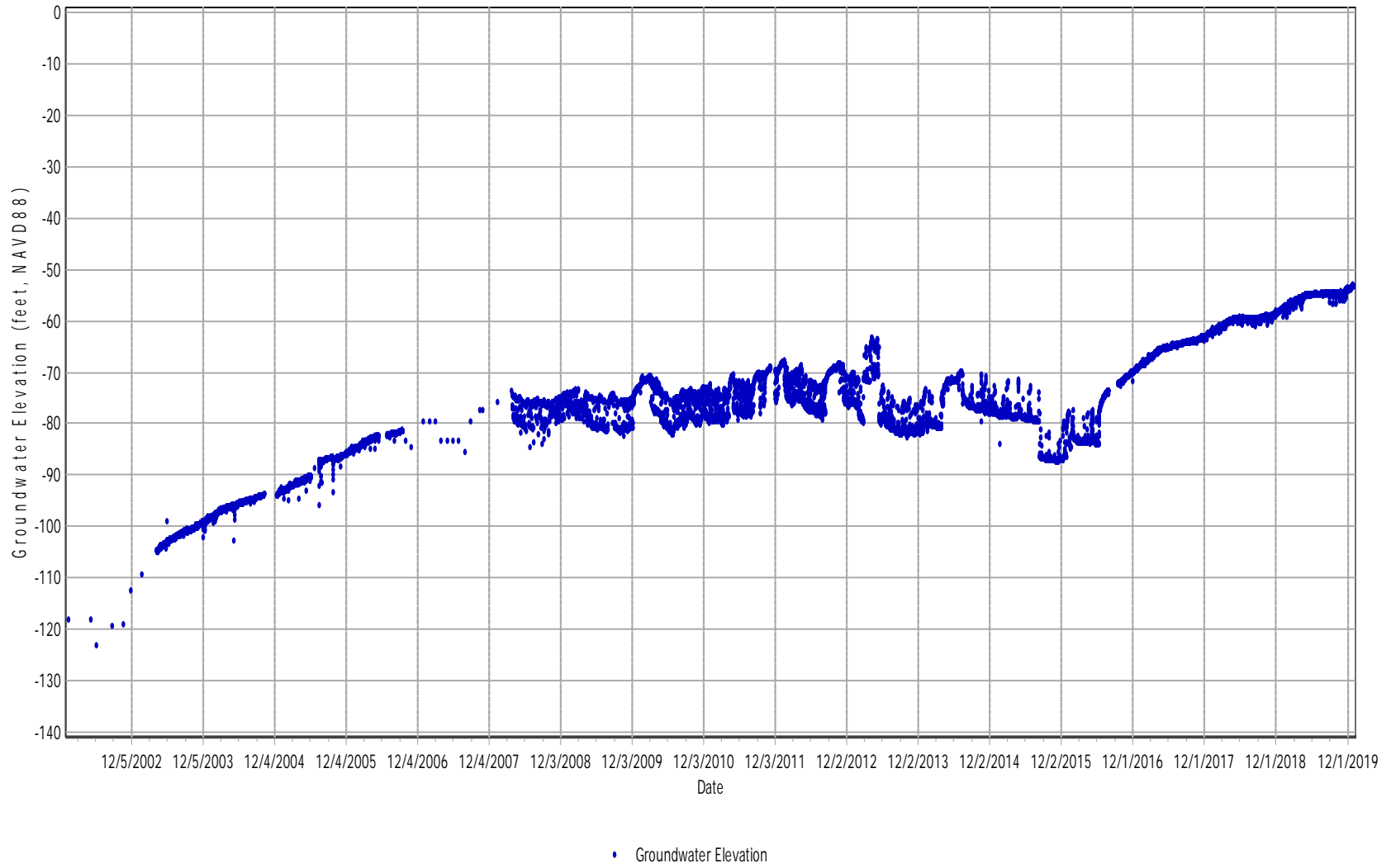
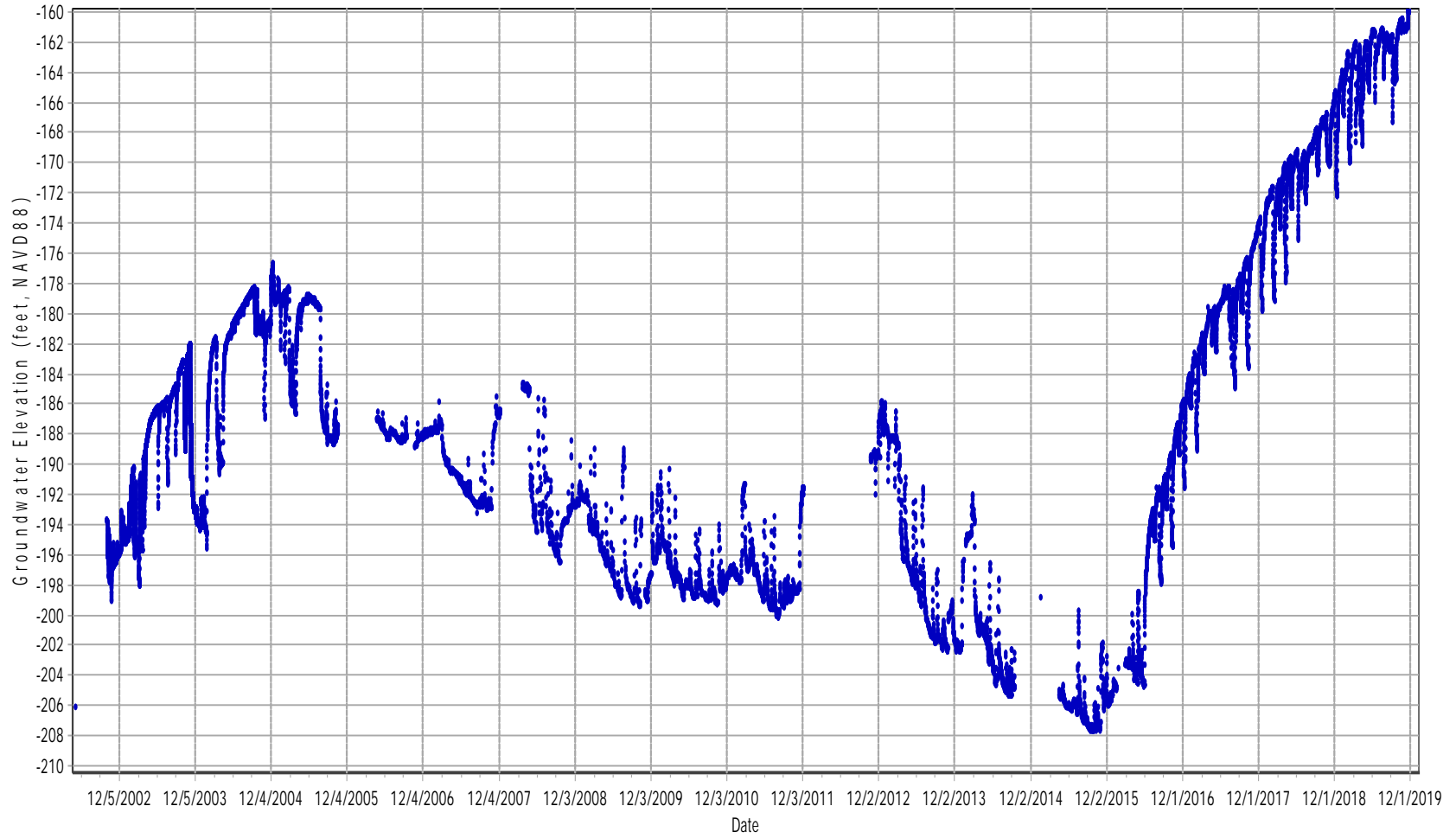


Figure 19 SB-12 ELM AVENUE

Groundwater Elevation Hydrograph - Primary Production Aquifer



• Groundwater Elevation

Figure 20a Burlingame S

Groundwater Elevation and Chloride Concentration Hydrograph

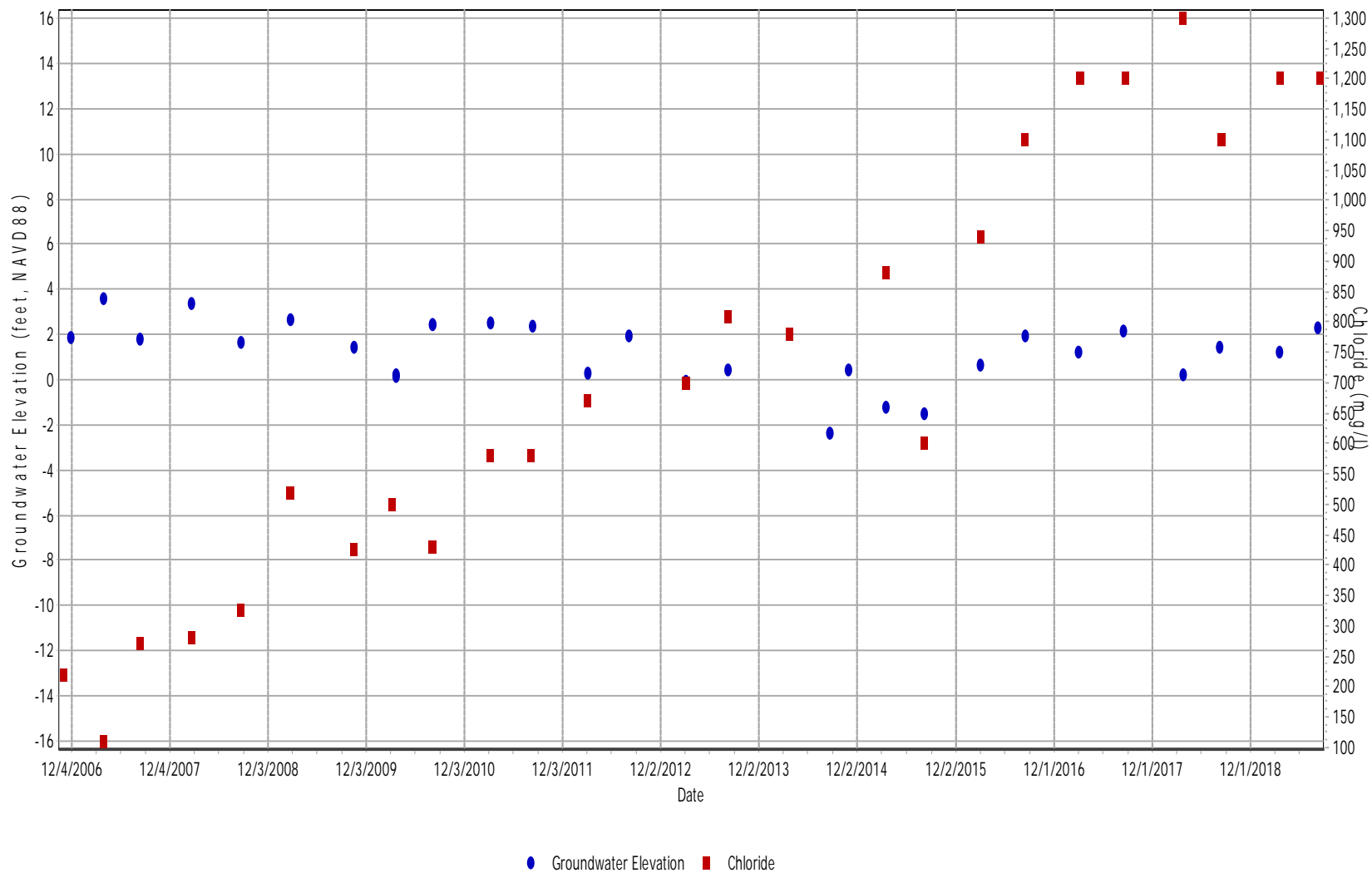


Figure 20b Burlingame M

Groundwater Elevation and Chloride Concentration Hydrograph

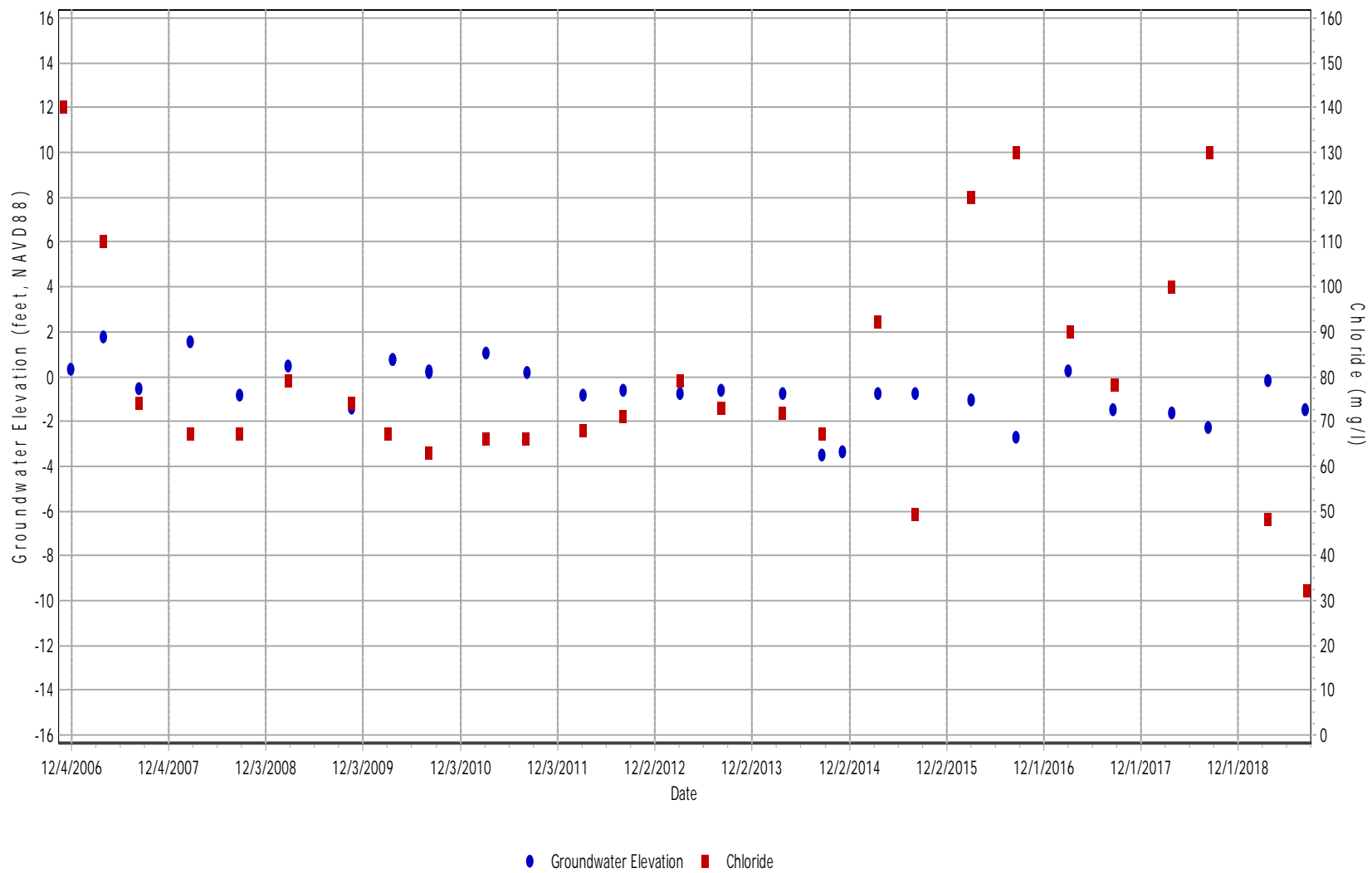


Figure 20c Burlingame D

Groundwater Elevation and Chloride Concentration Hydrograph

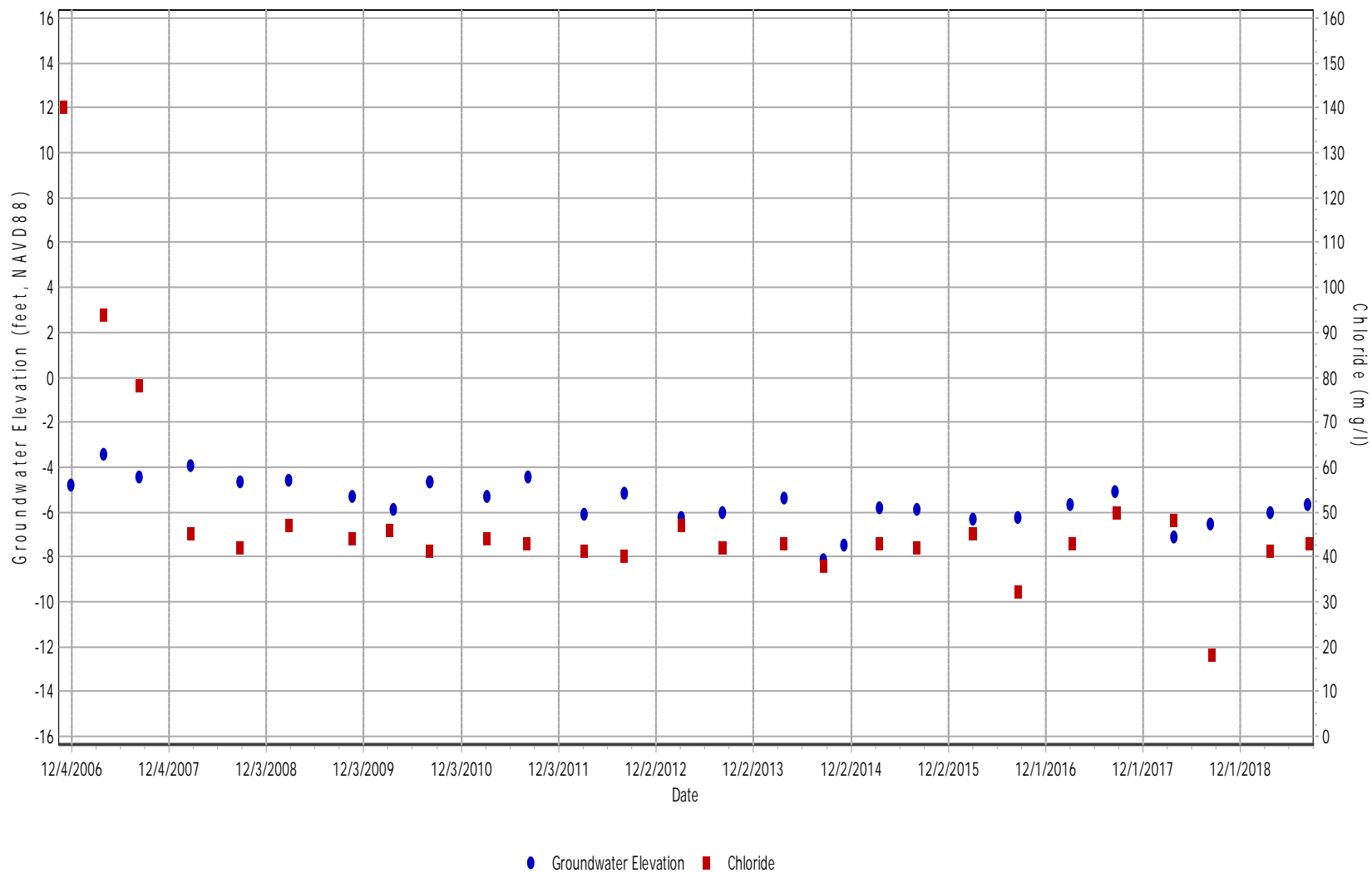


Figure 21a SFO S

Groundwater Elevation and Chloride Concentration Hydrograph

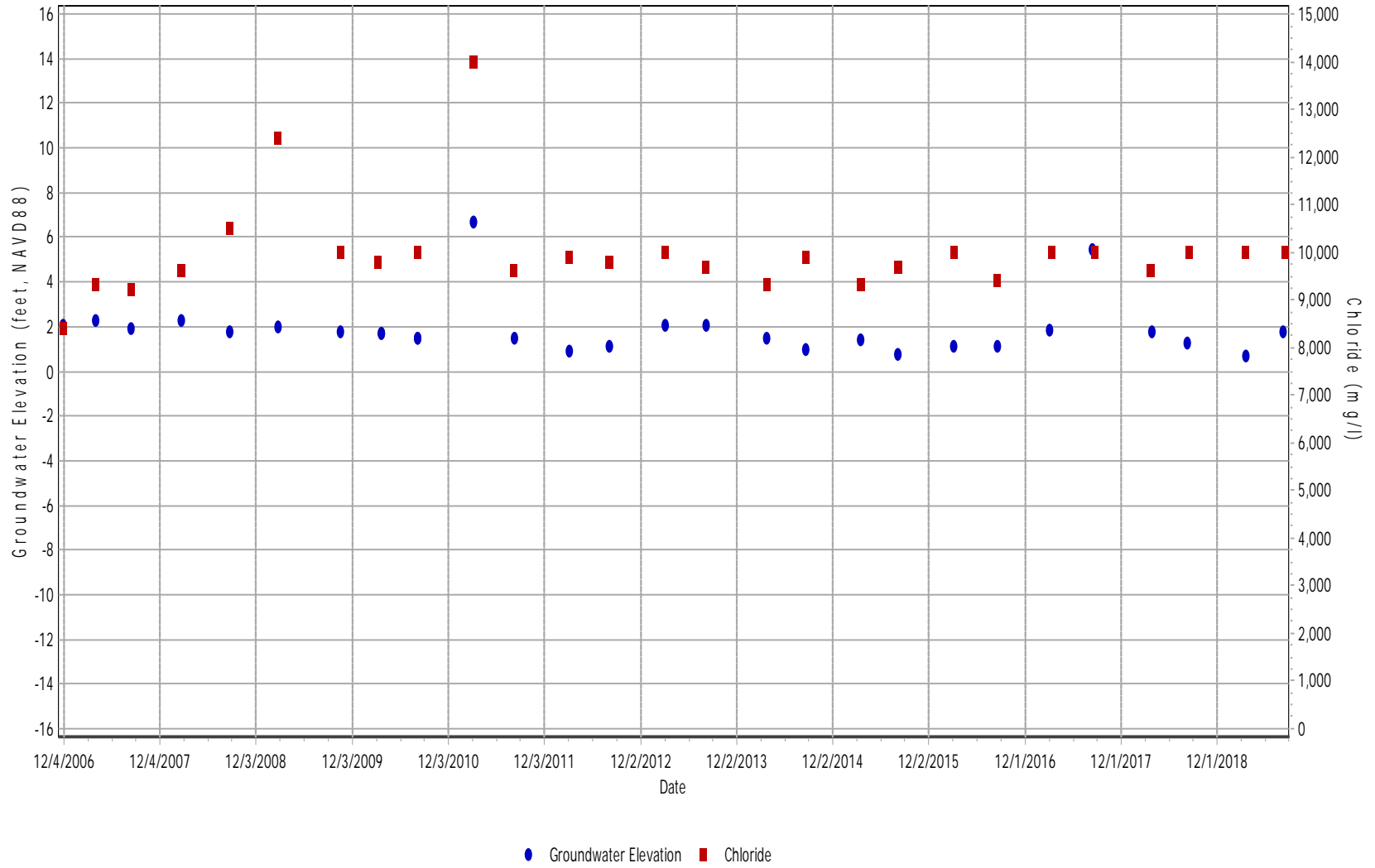


Figure 21b SFO D

Groundwater Elevation and Chloride Concentration Hydrograph

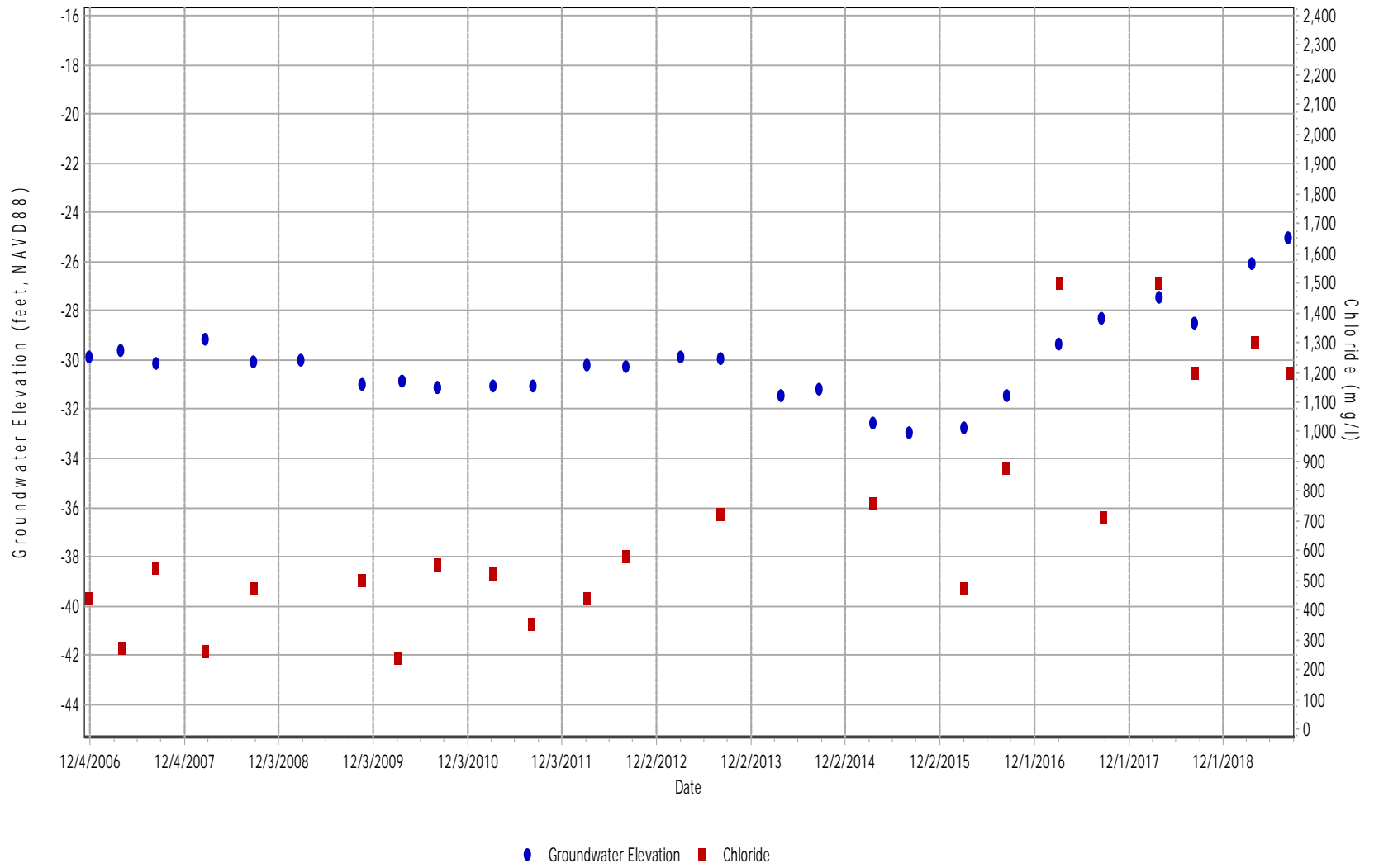
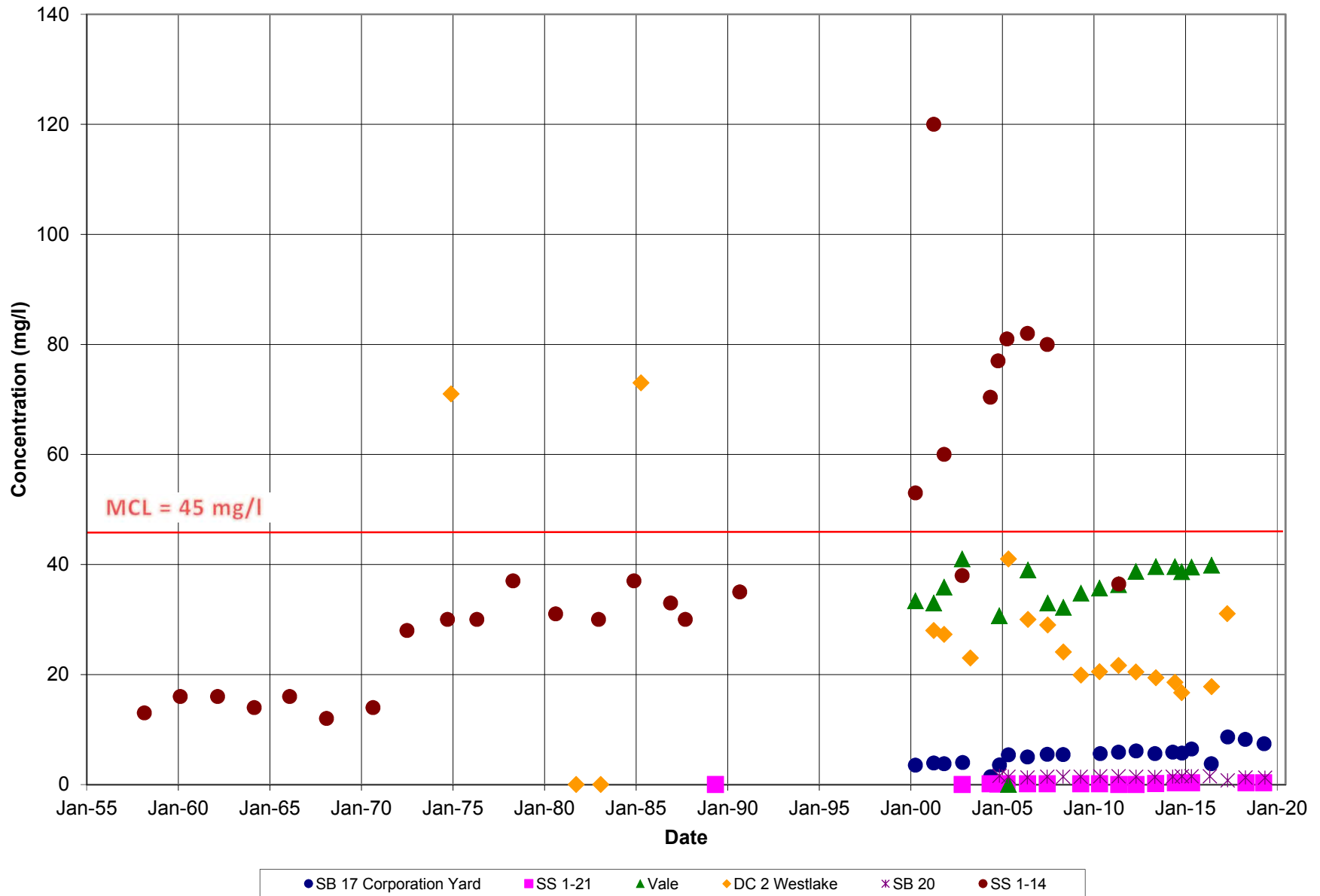
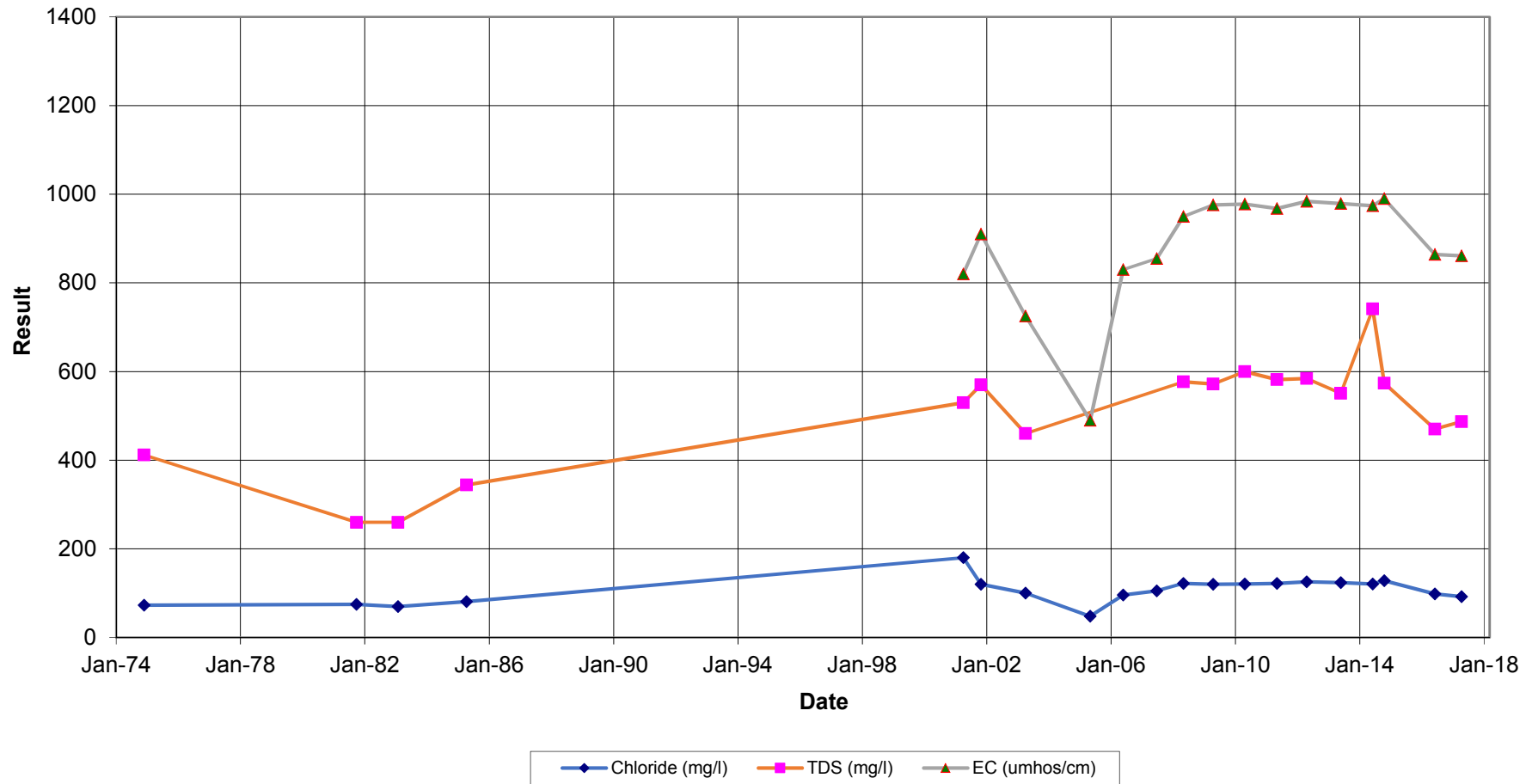


Figure 22
Nitrate Concentrations in Southern Westside Basin Groundwater, 1957-2019



Note: Well SS 1-14 was offline from 2007-2011, and permanently taken out of service in 2015. SS 1-21 was placed back into service during 2018. Vale and DC 2 Westlake have been offline since 2017 and 2018, respectively.

Figure 23
Long-Term Water Quality, Daly City Westlake DC-2



Note: Well DC2 Westlake has not been sampled since 2017 as it is offline.

Figure 24
Long-Term Water Quality, Cal Water SS 1-21

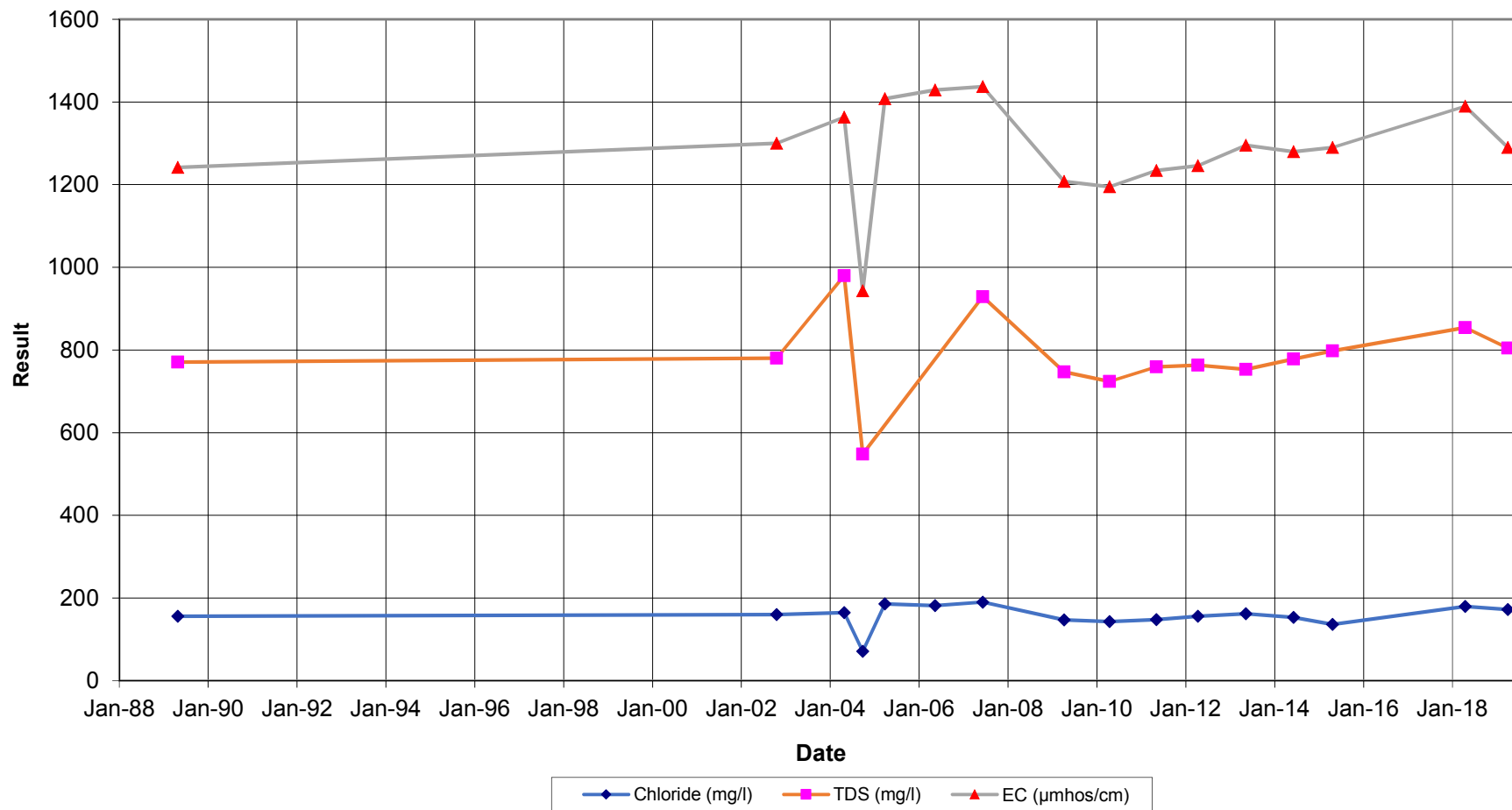
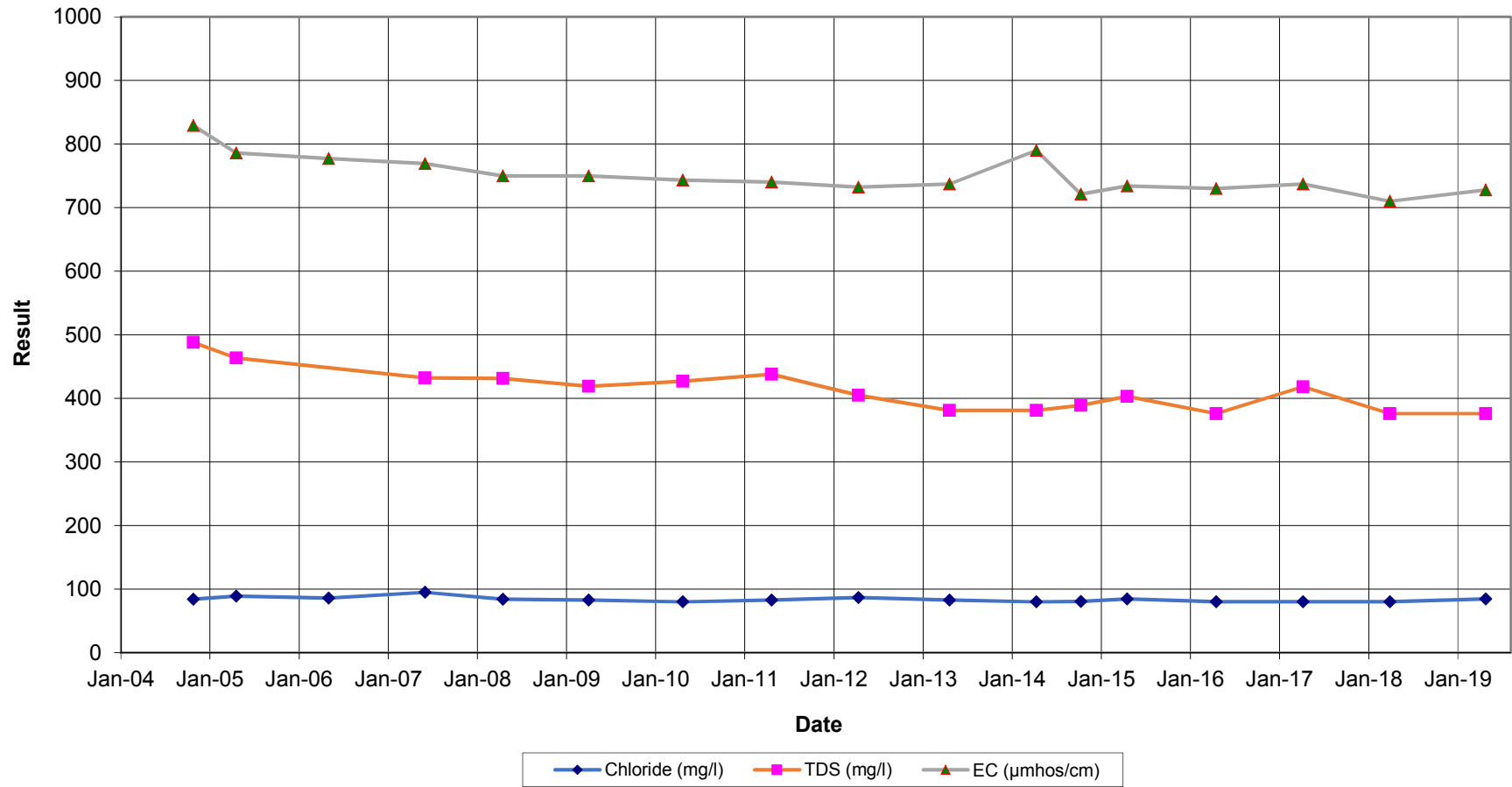
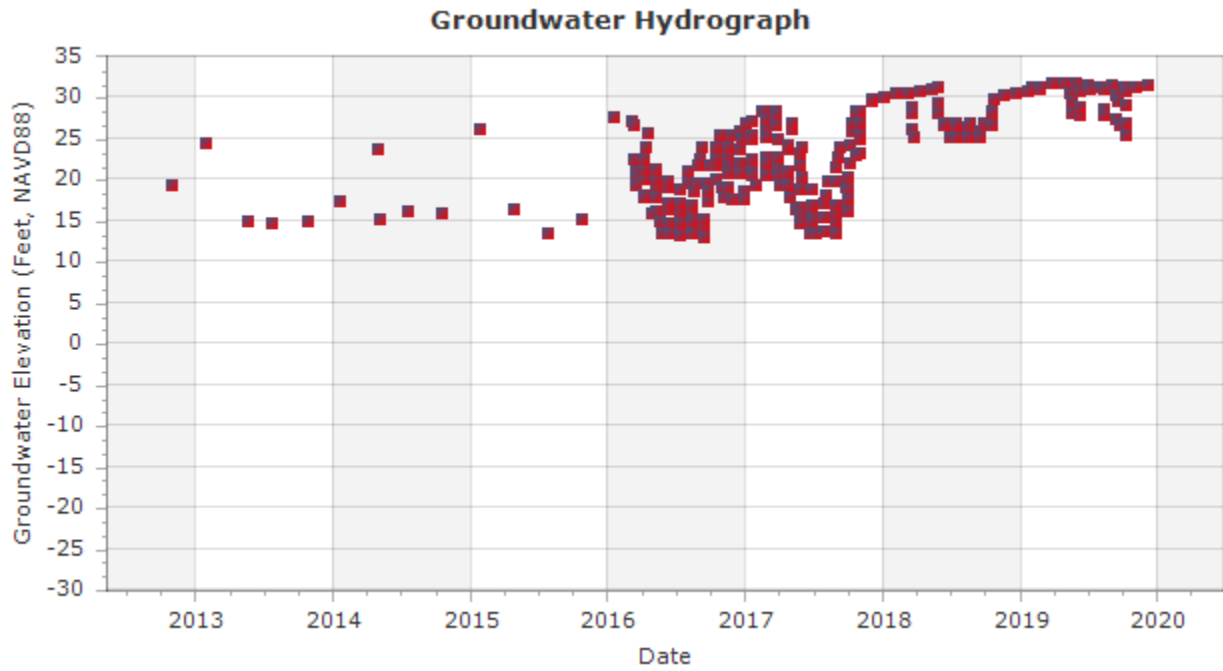


Figure 25
Long-Term Water Quality, San Bruno SB-20
Lions Field Park

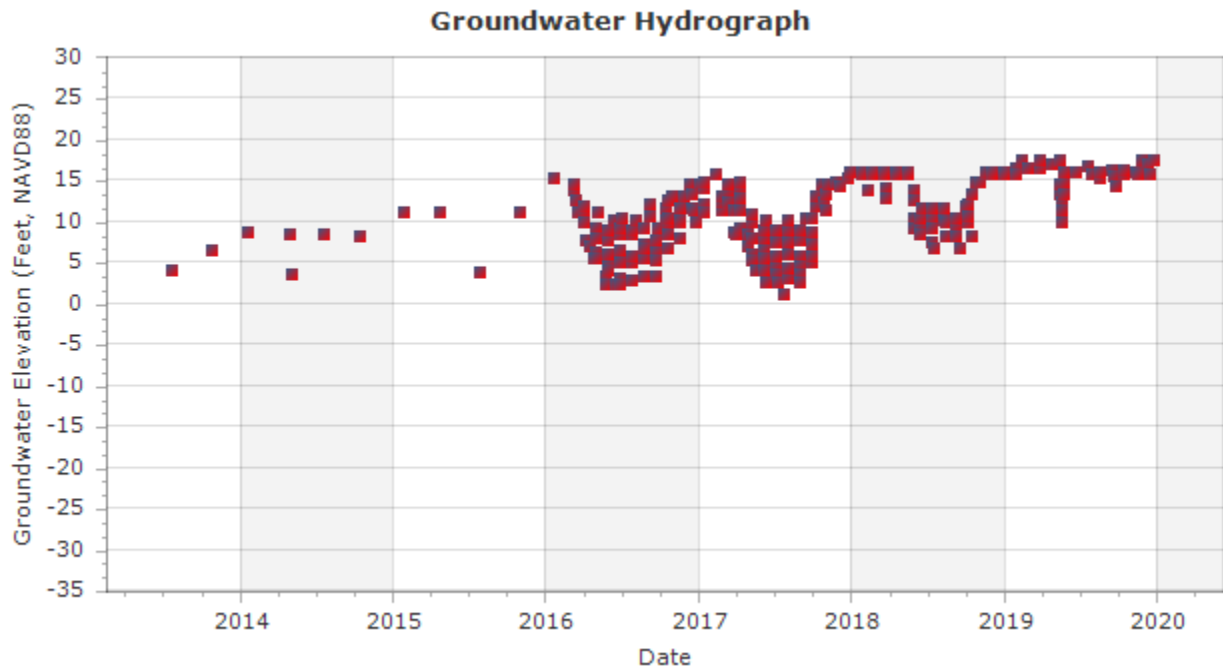


APPENDIX A
Groundwater Elevation Hydrographs

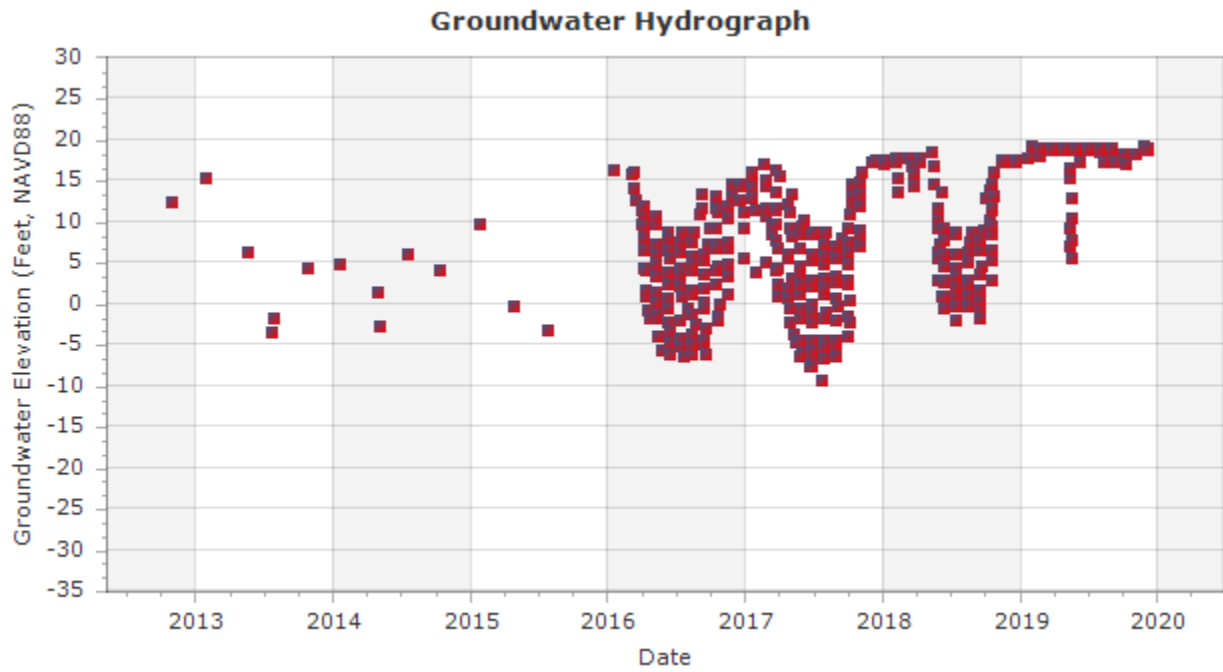
Station Name: NL-1



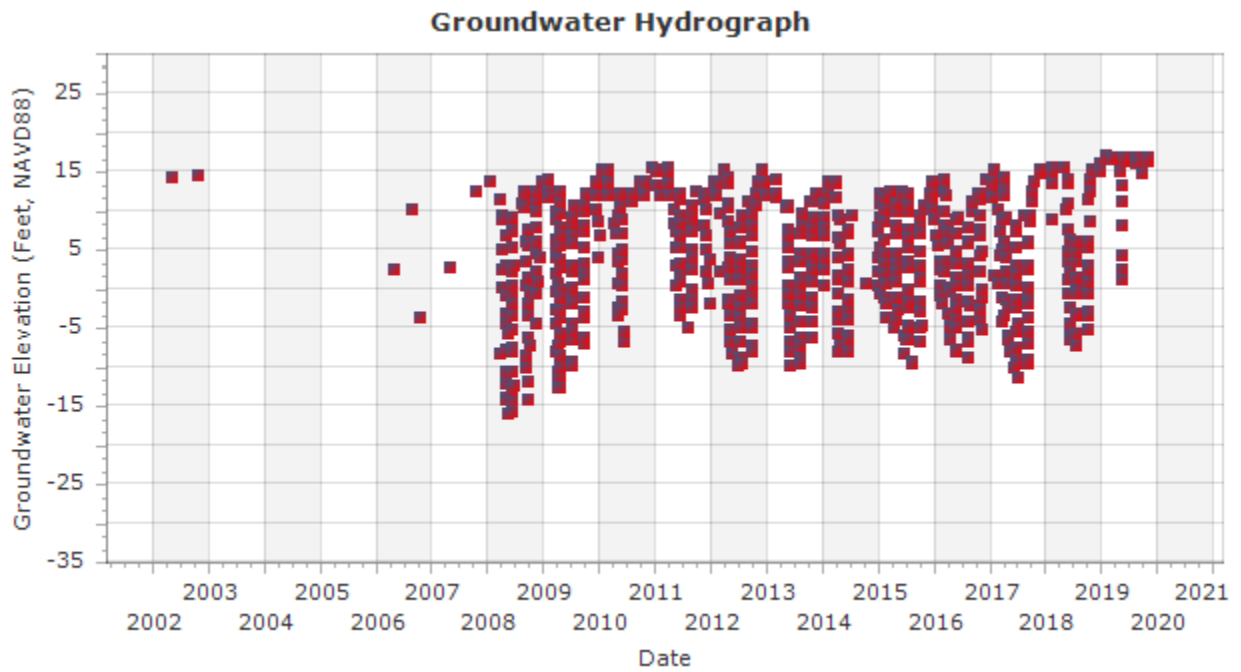
Station Name: NWM-3



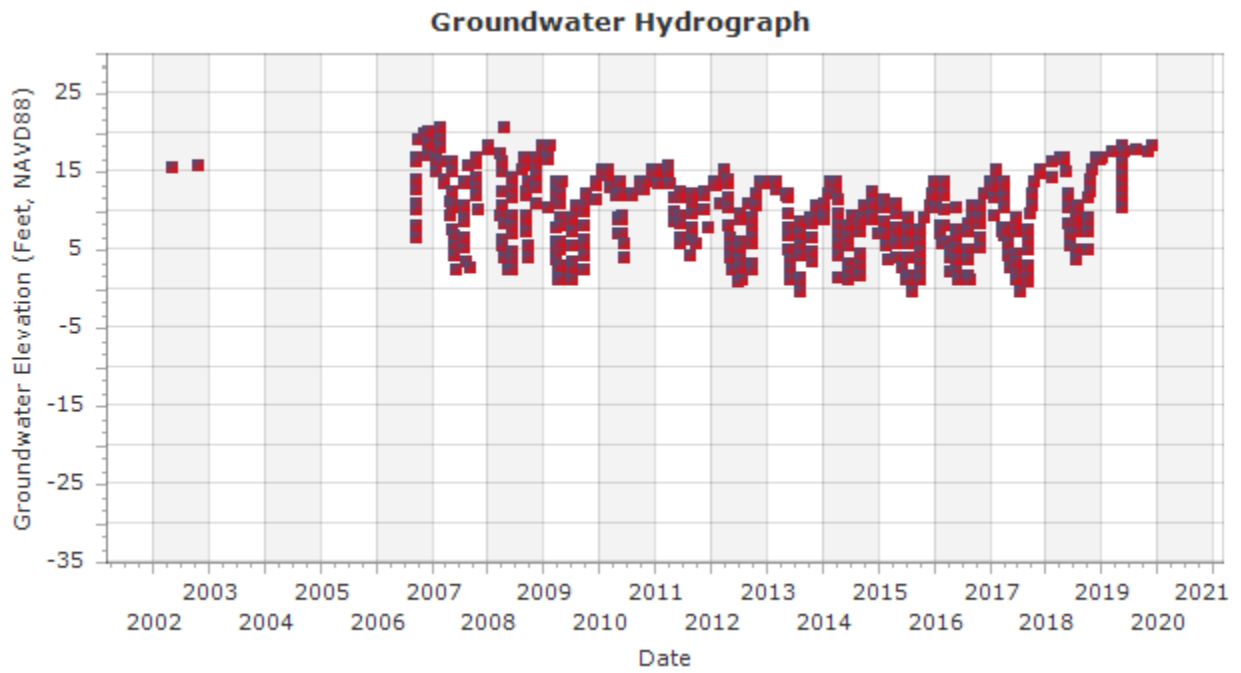
Station Name: SF-1



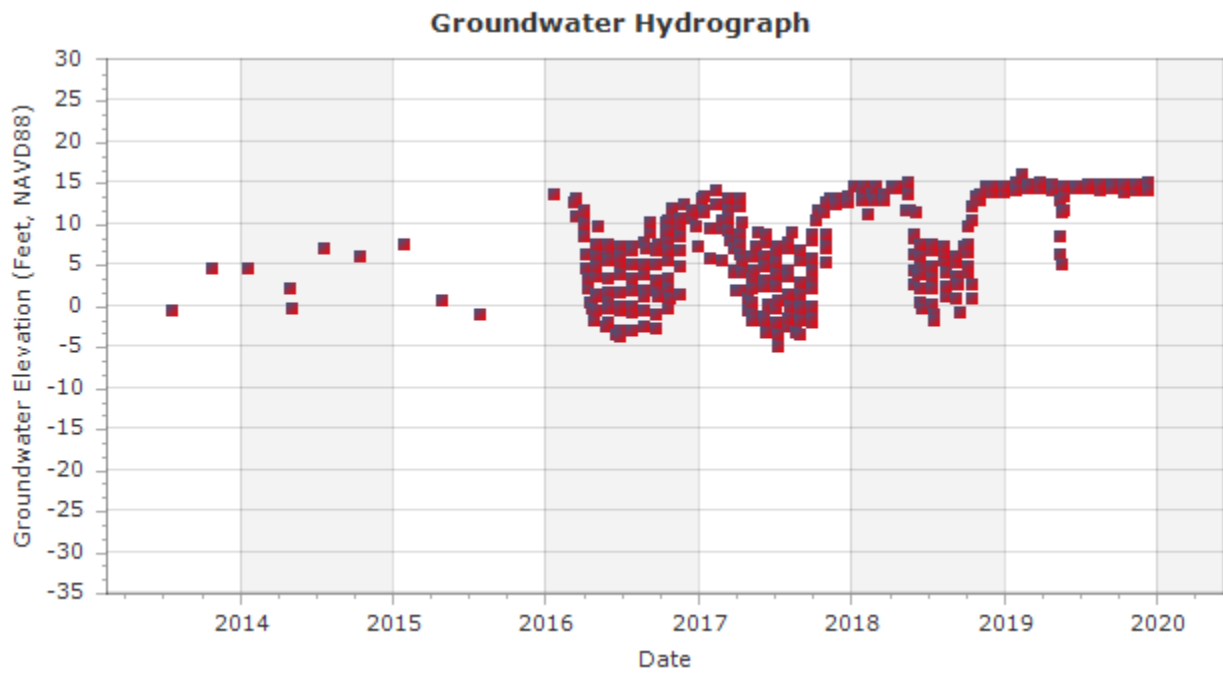
Station Name: South Windmill 140



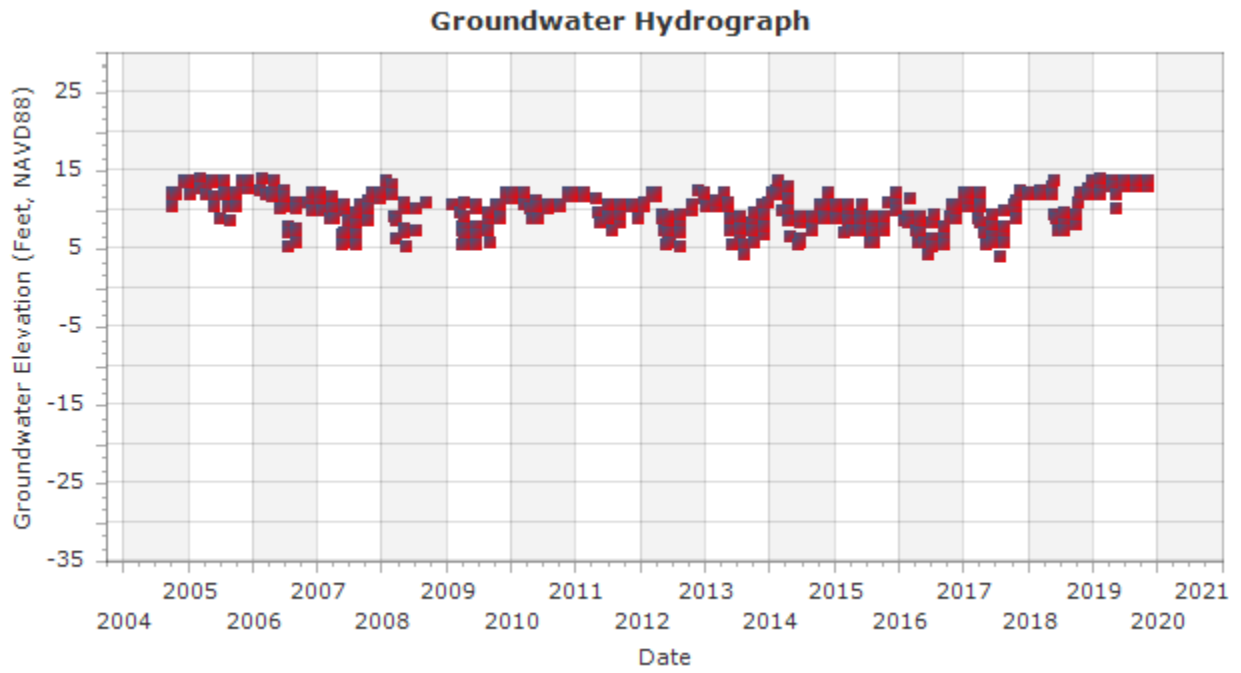
Station Name: South Windmill 57



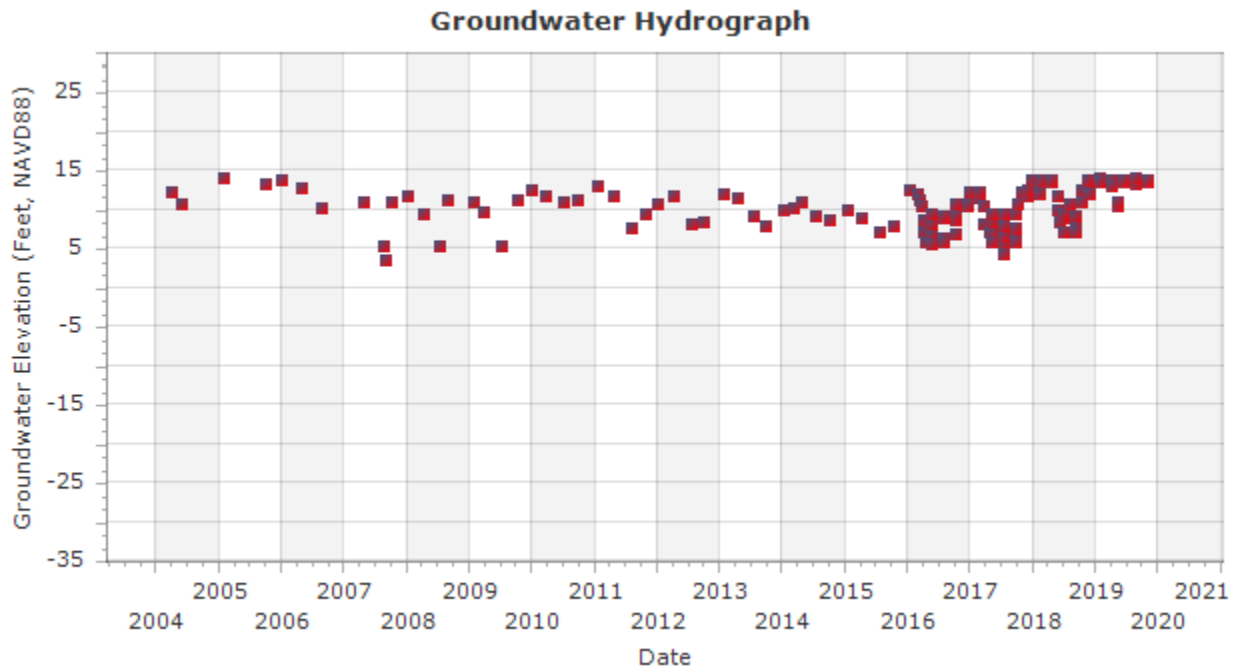
Station Name: SWM-3



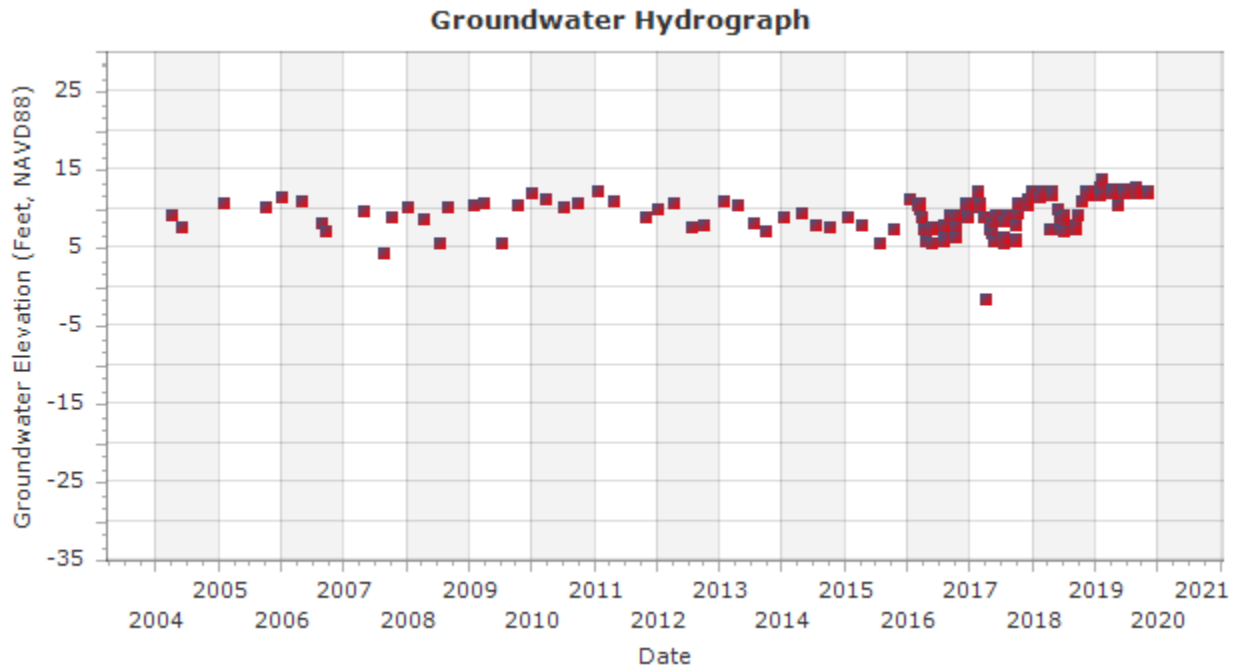
Station Name: KIRKHAM MW130



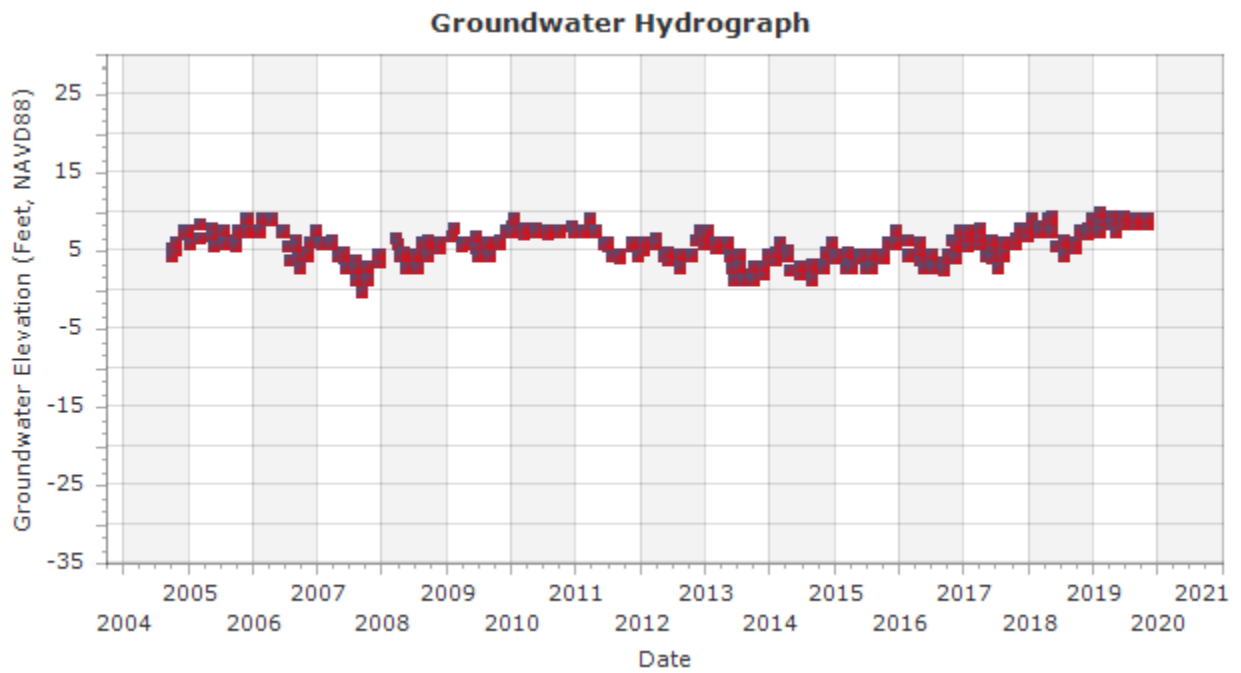
Station Name: KIRKHAM MW255



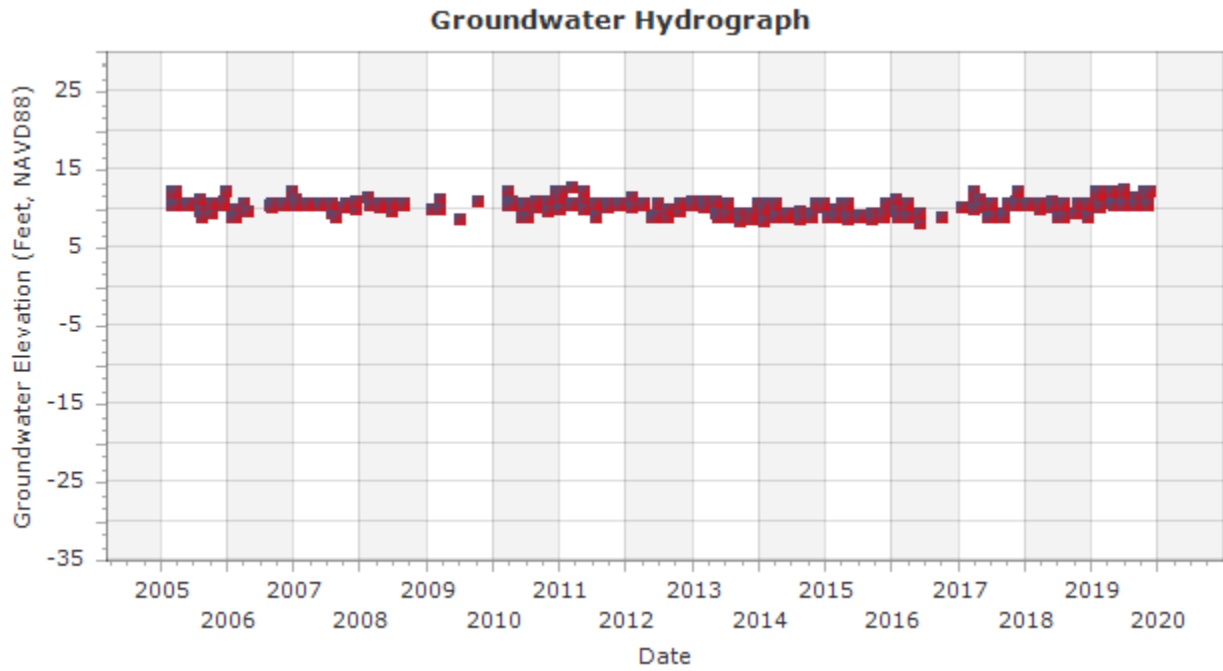
Station Name: KIRKHAM MW385



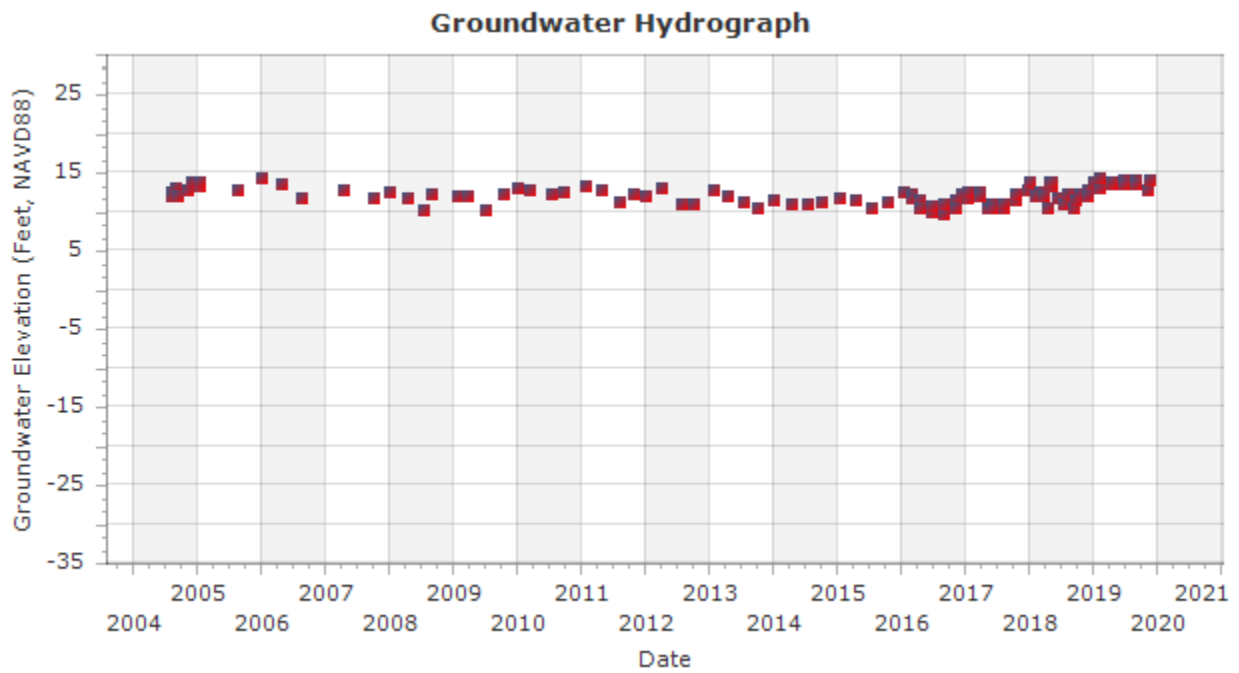
Station Name: KIRKHAM MW435



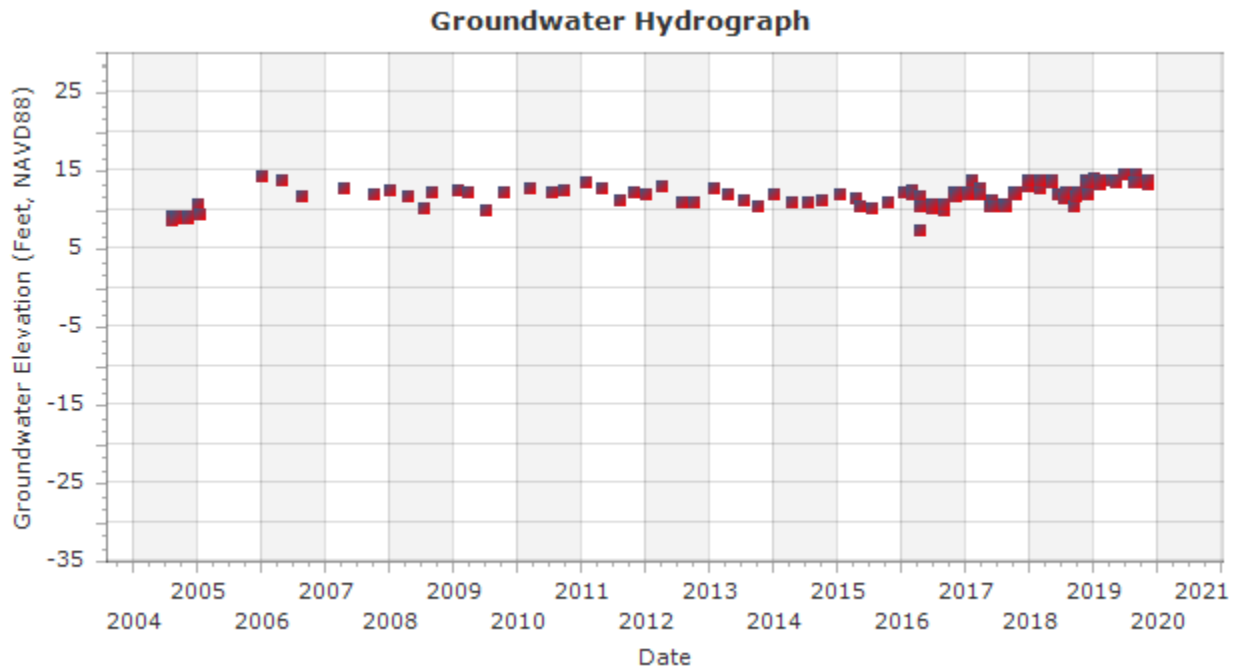
Station Name: ORTEGA MW120



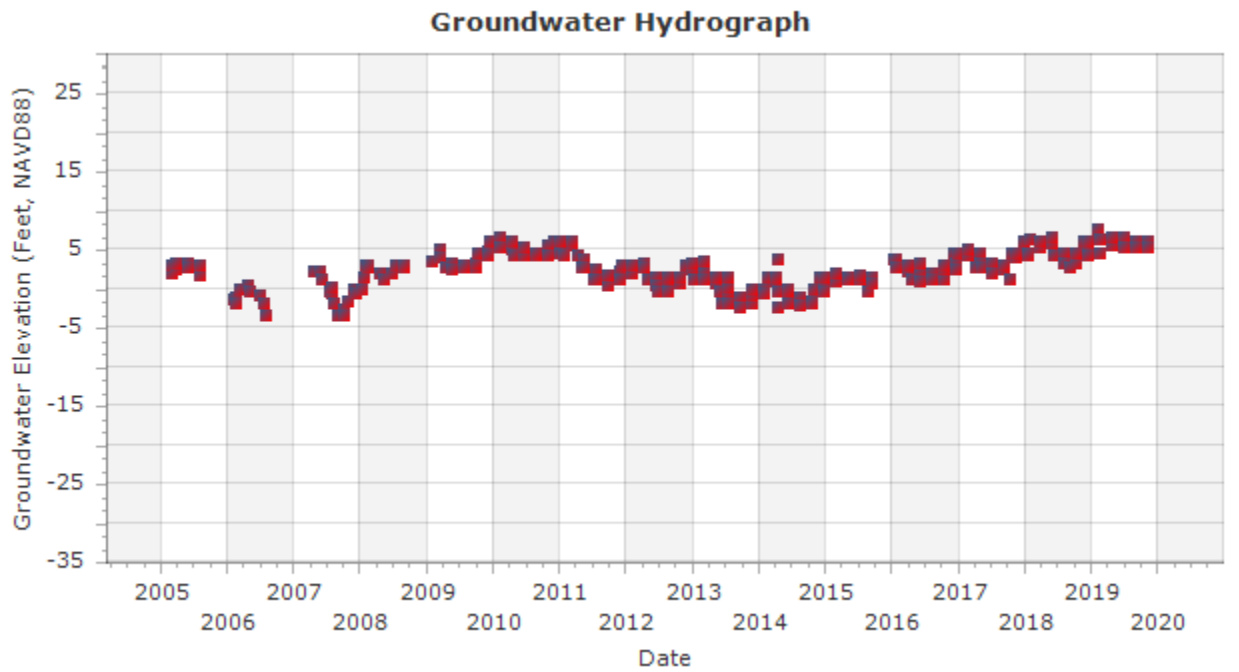
Station Name: ORTEGA MW265



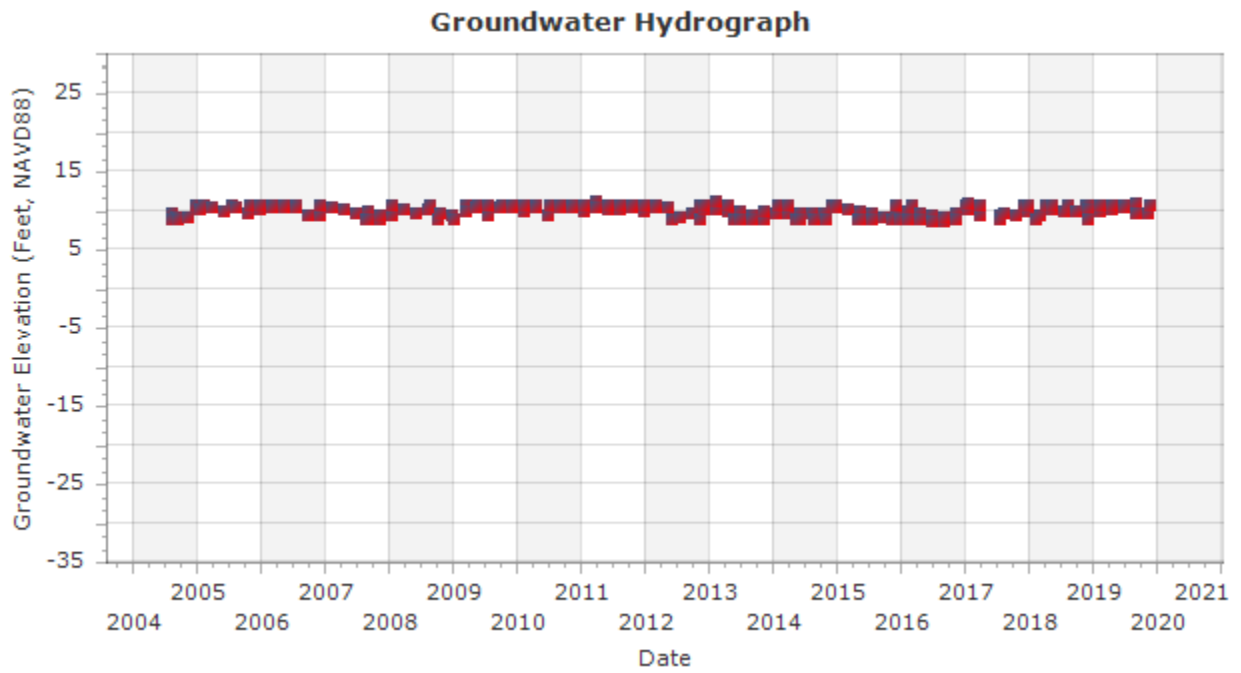
Station Name: ORTEGA MW400



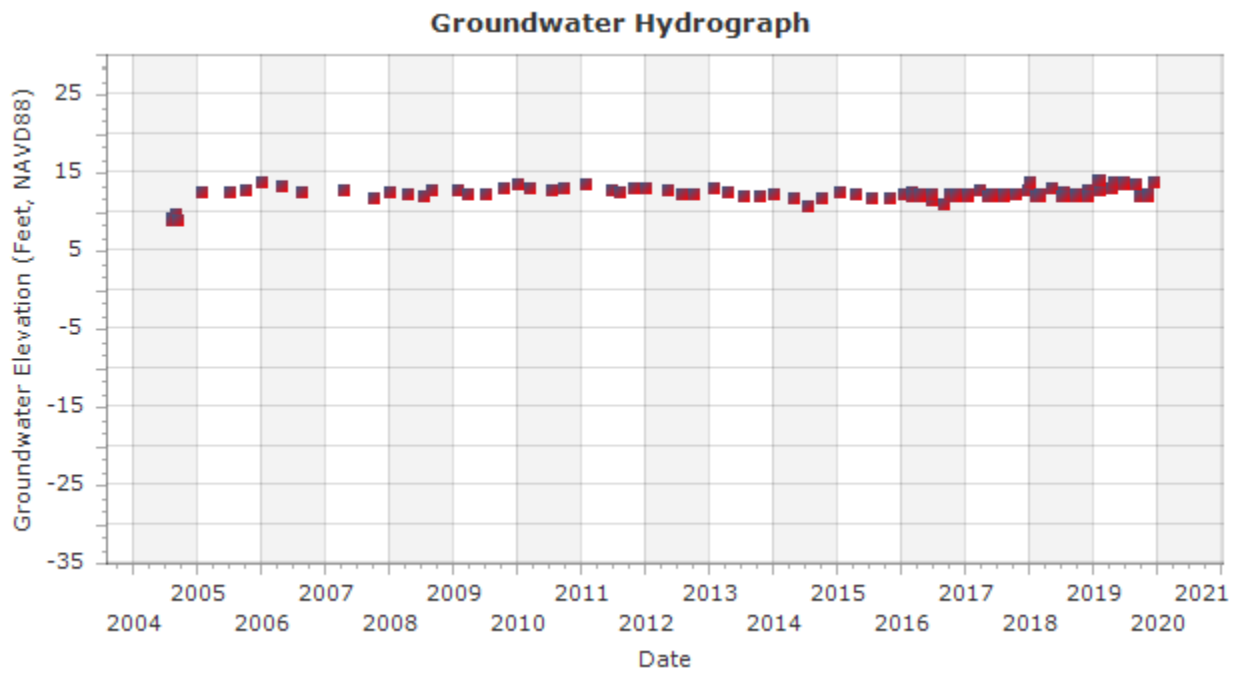
Station Name: ORTEGA MW475



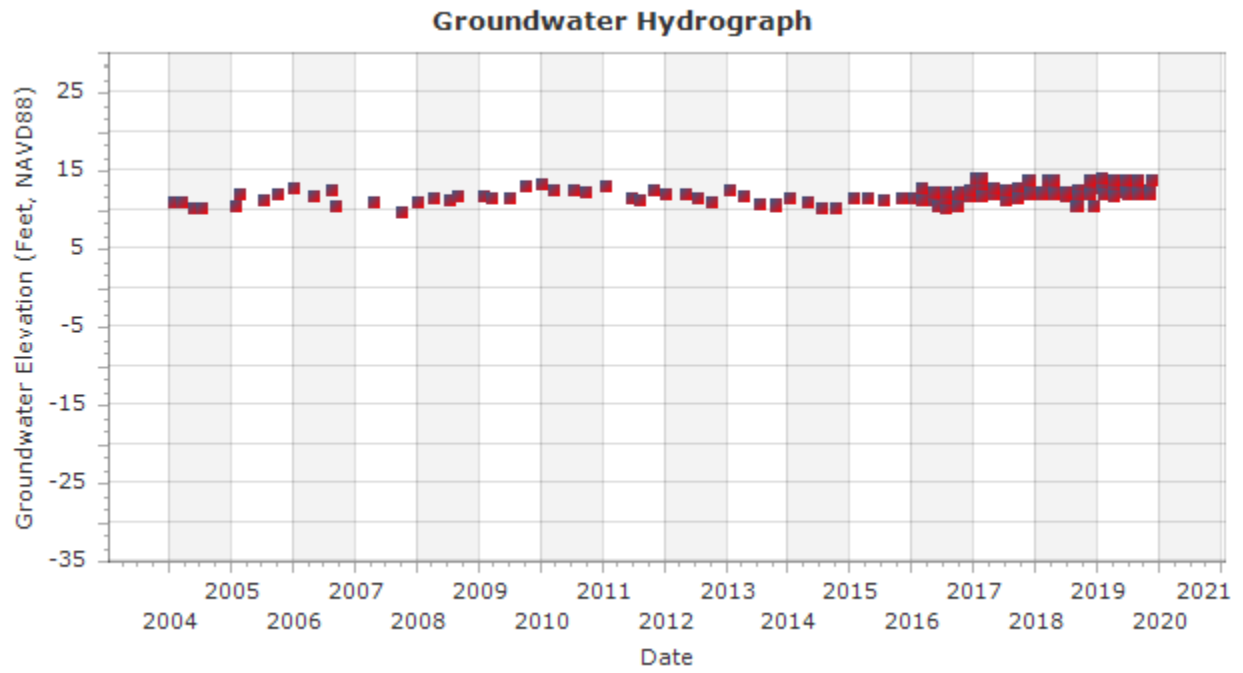
Station Name: TARAVAL MW145



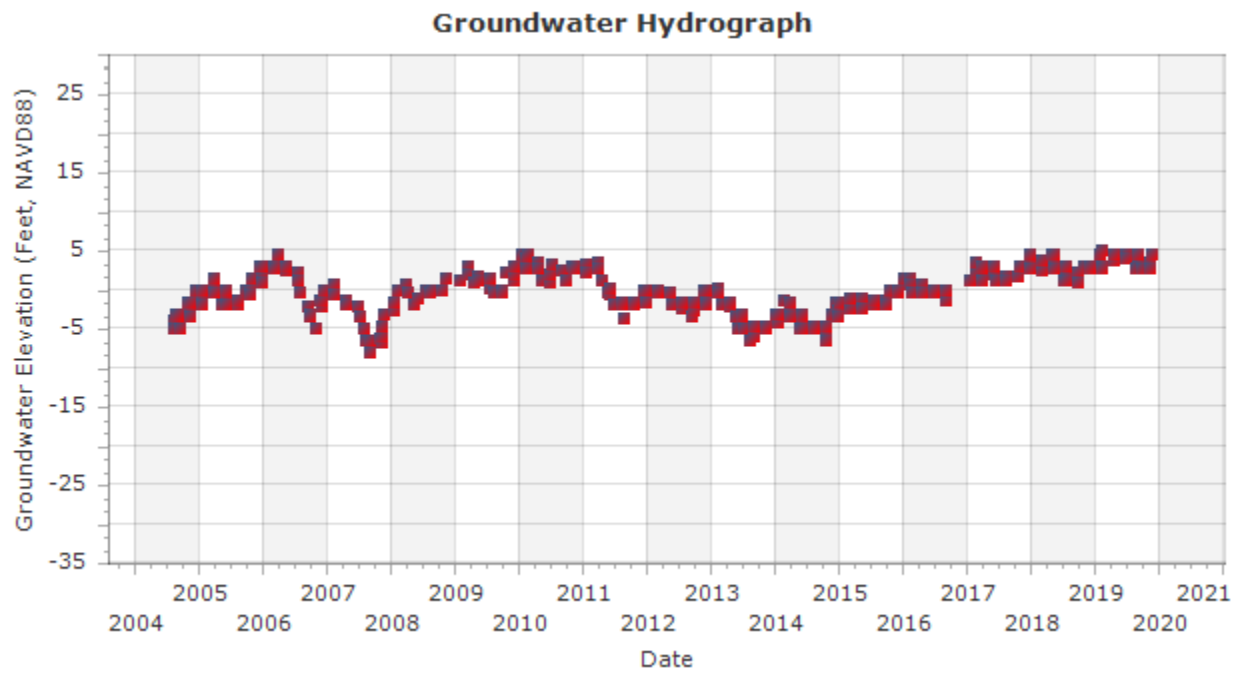
Station Name: TARAVAL MW240



Station Name: TARAVAL MW400

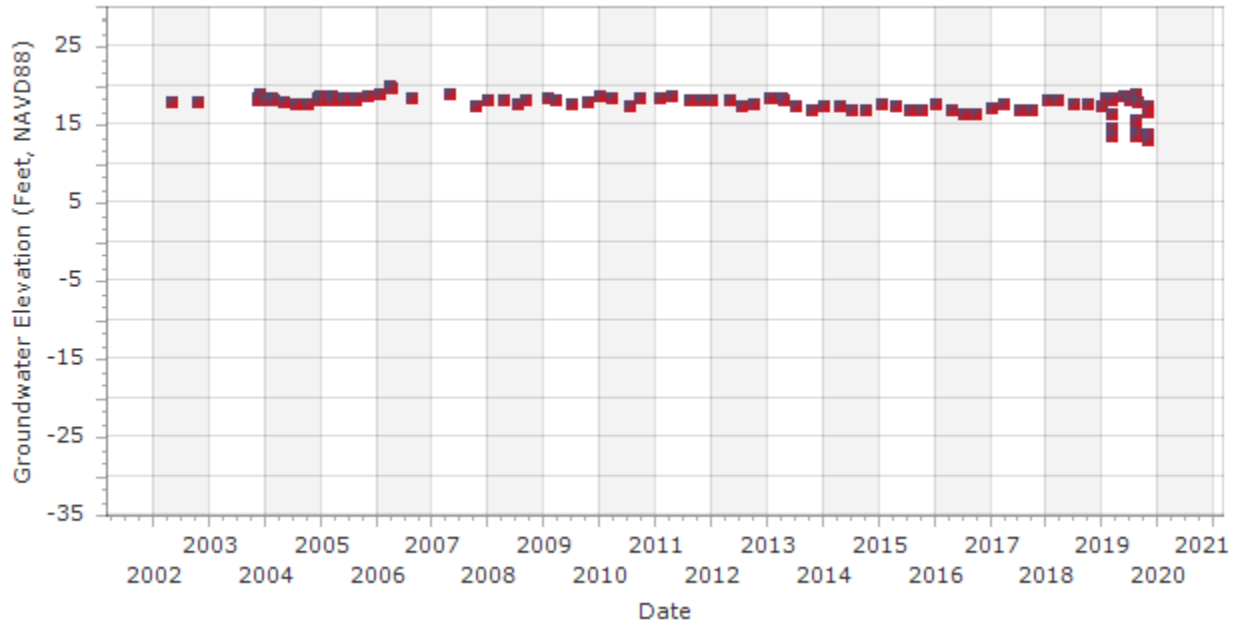


Station Name: TARAVAL MW530



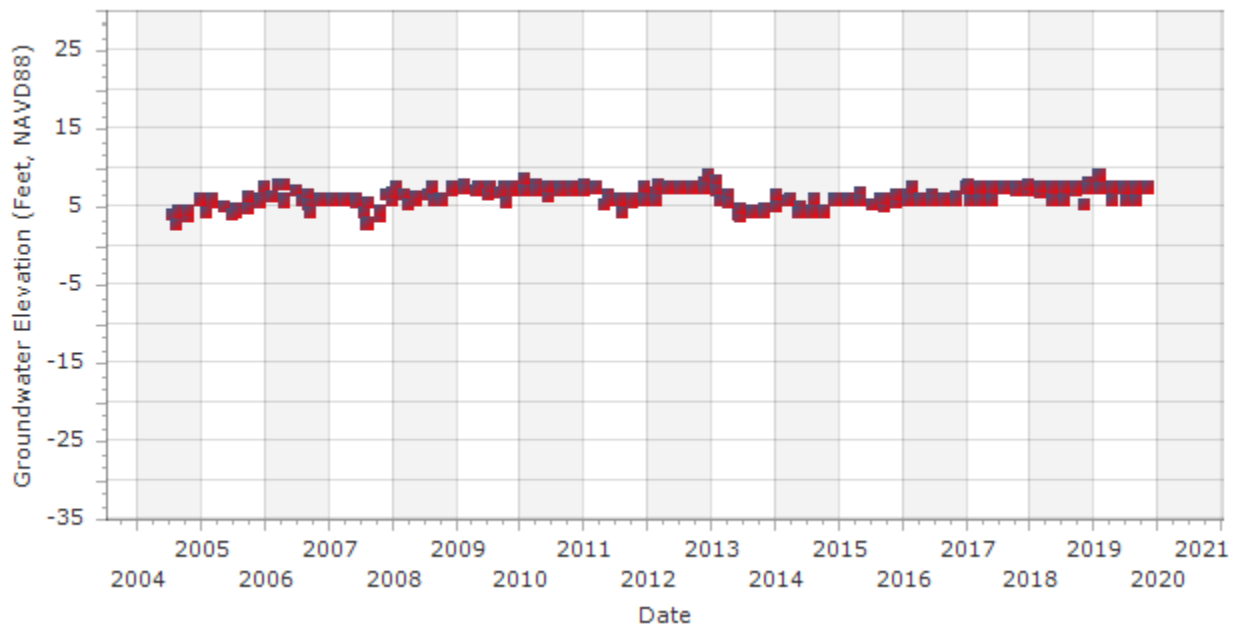
Station Name: WEST SUNSET
PLAYGROUND

Groundwater Hydrograph

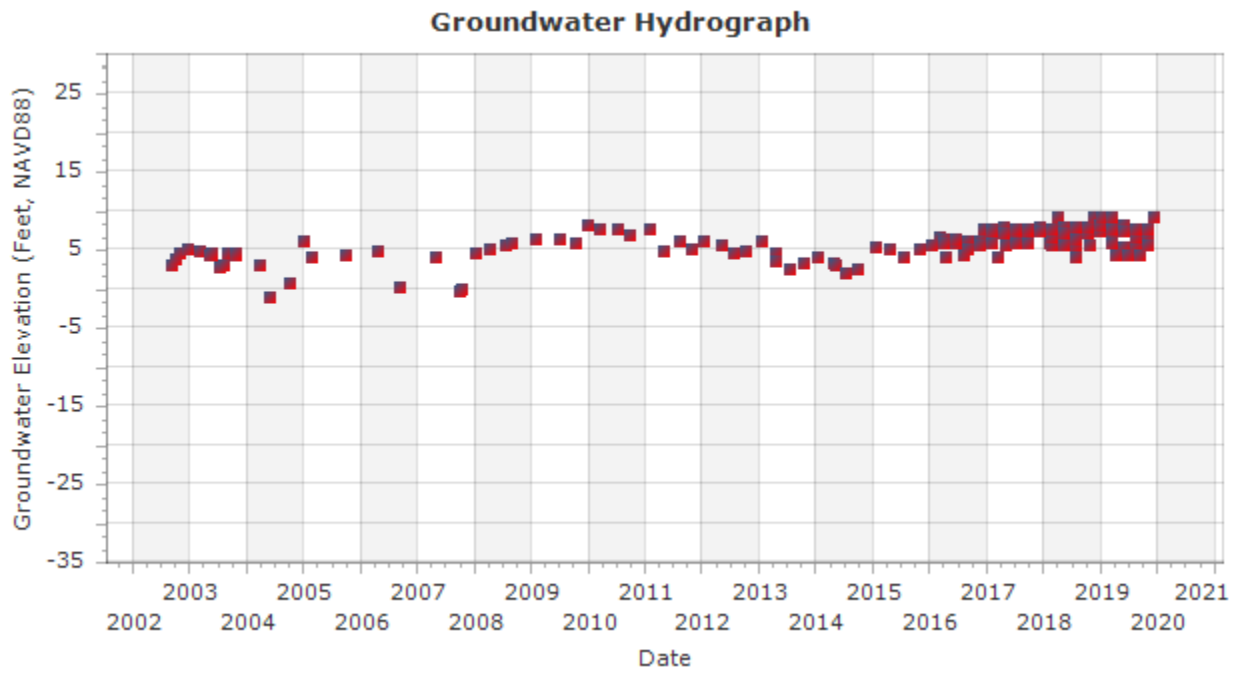


Station Name: ZOO MW275

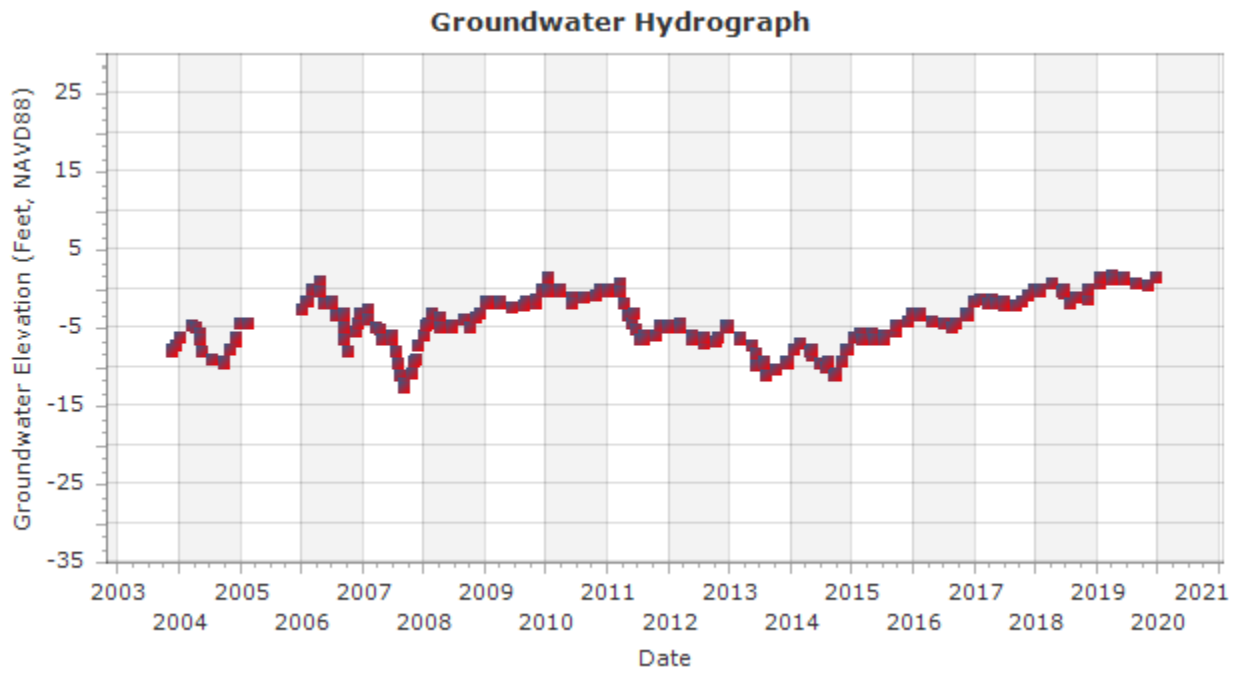
Groundwater Hydrograph



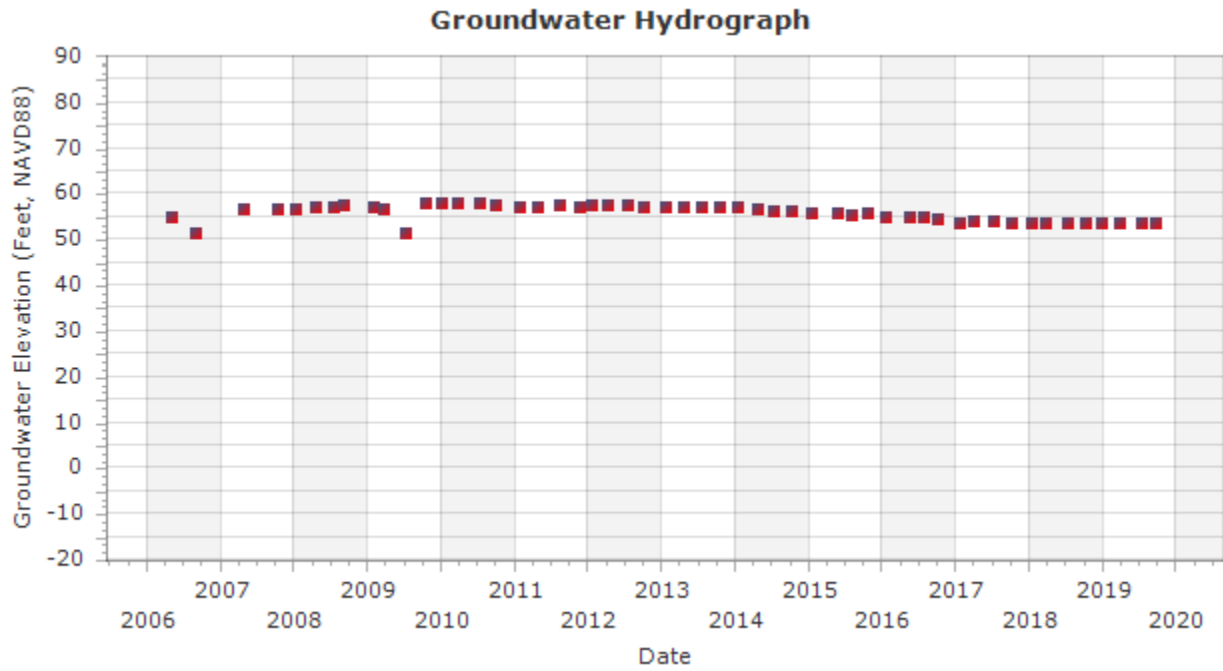
Station Name: ZOO MW450



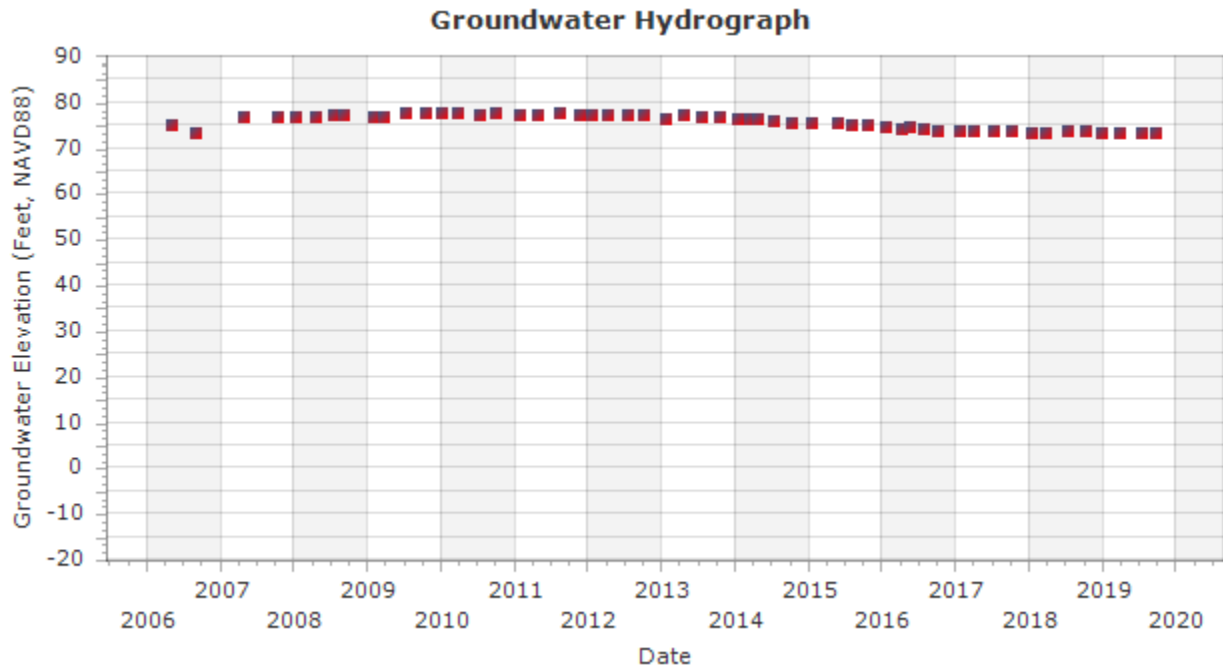
Station Name: ZOO MW565



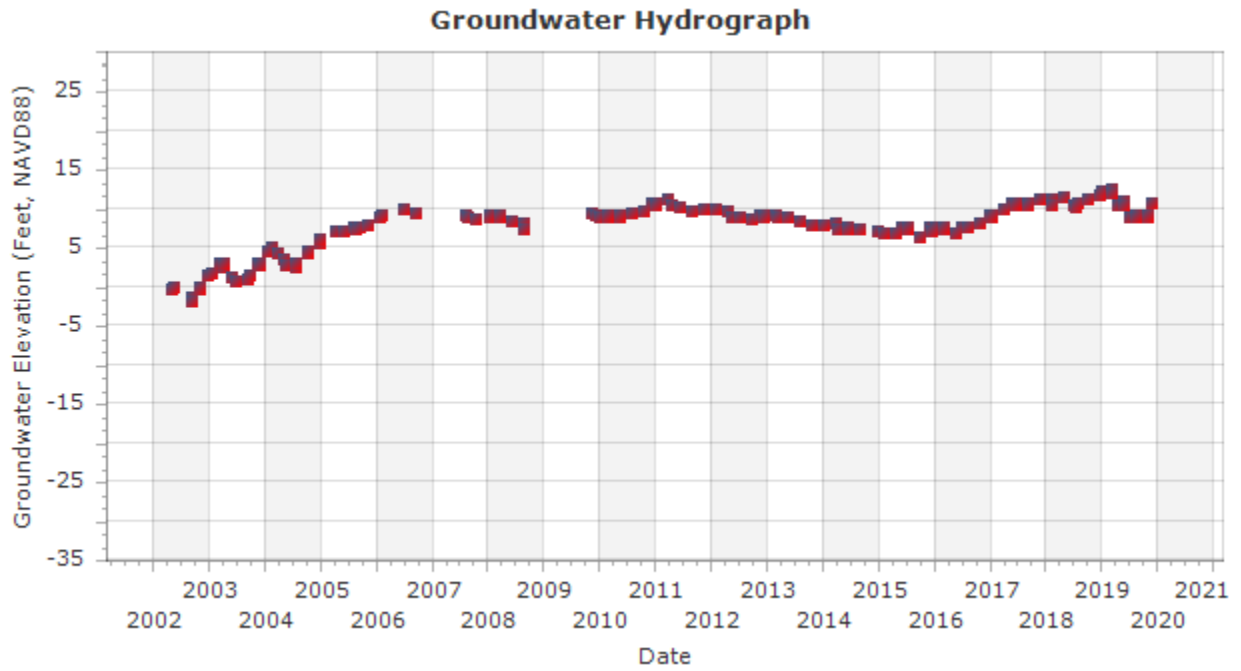
Station Name: CENTRAL PUMP 190



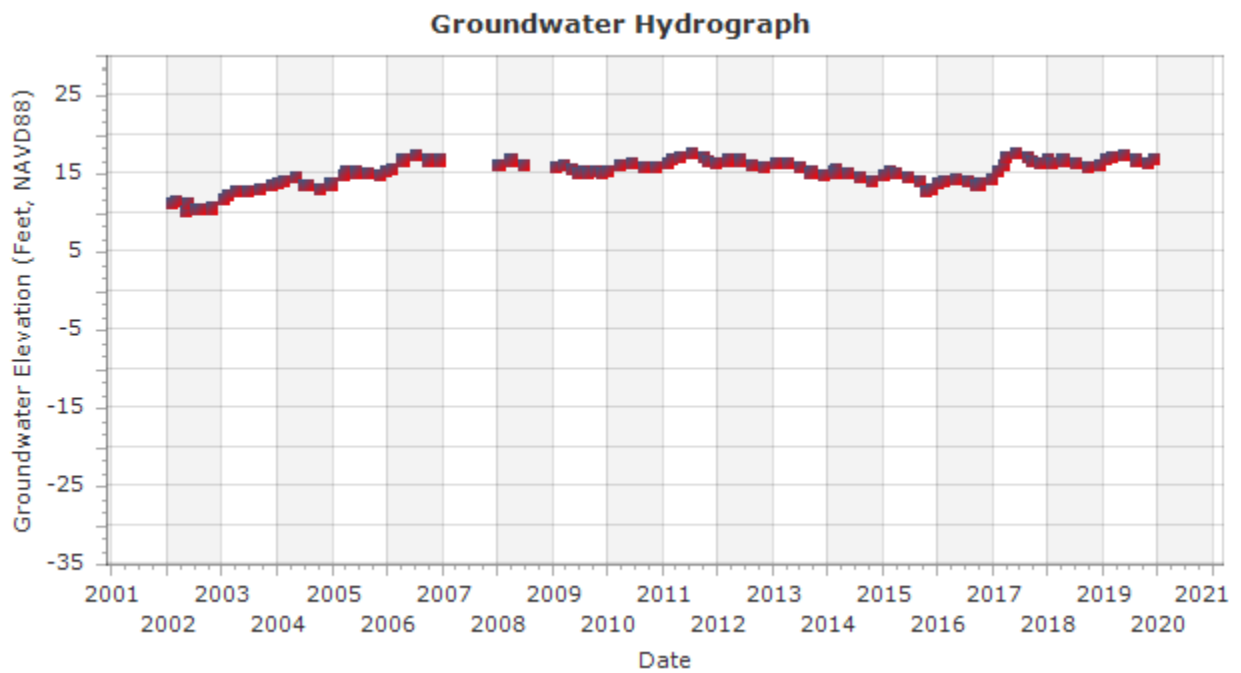
Station Name: CENTRAL PUMP 270



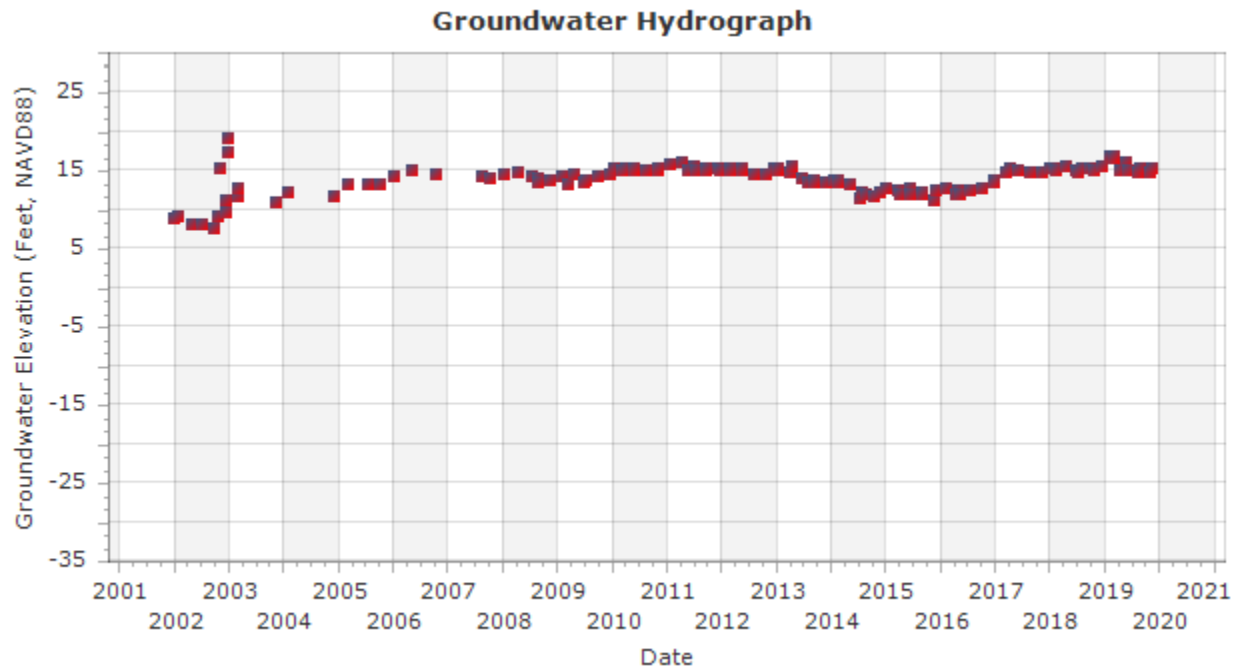
Station Name: LMMW-1D



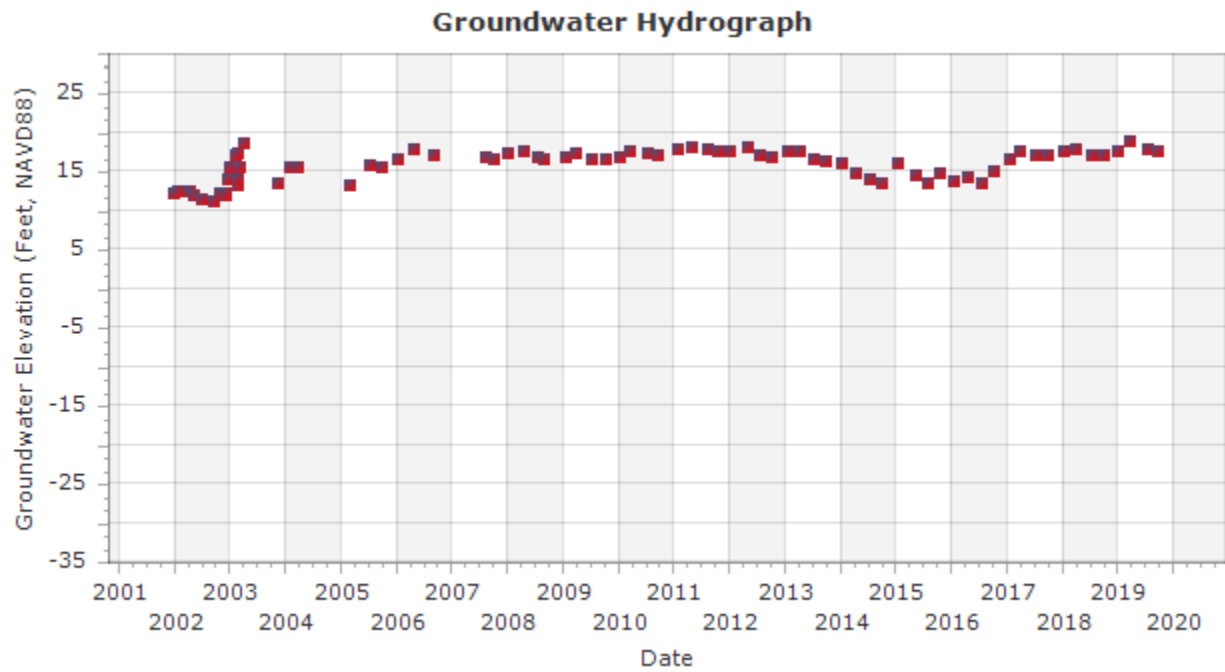
Station Name: LMMW-1S



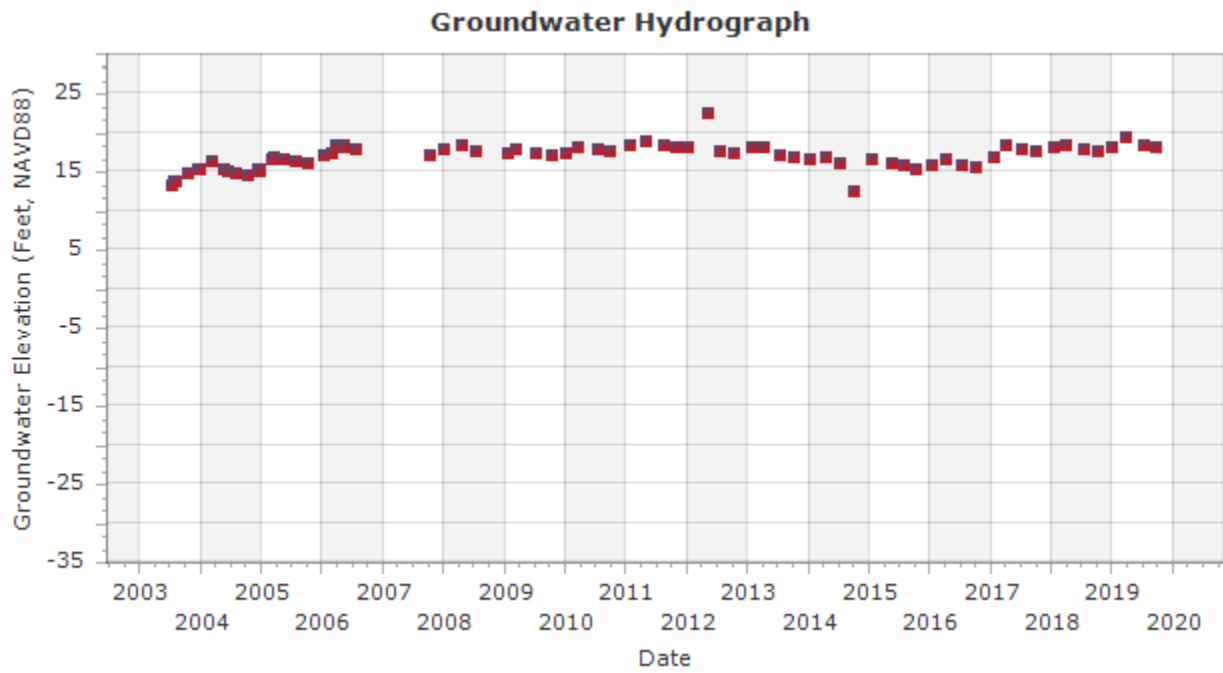
Station Name: LMMW-2D



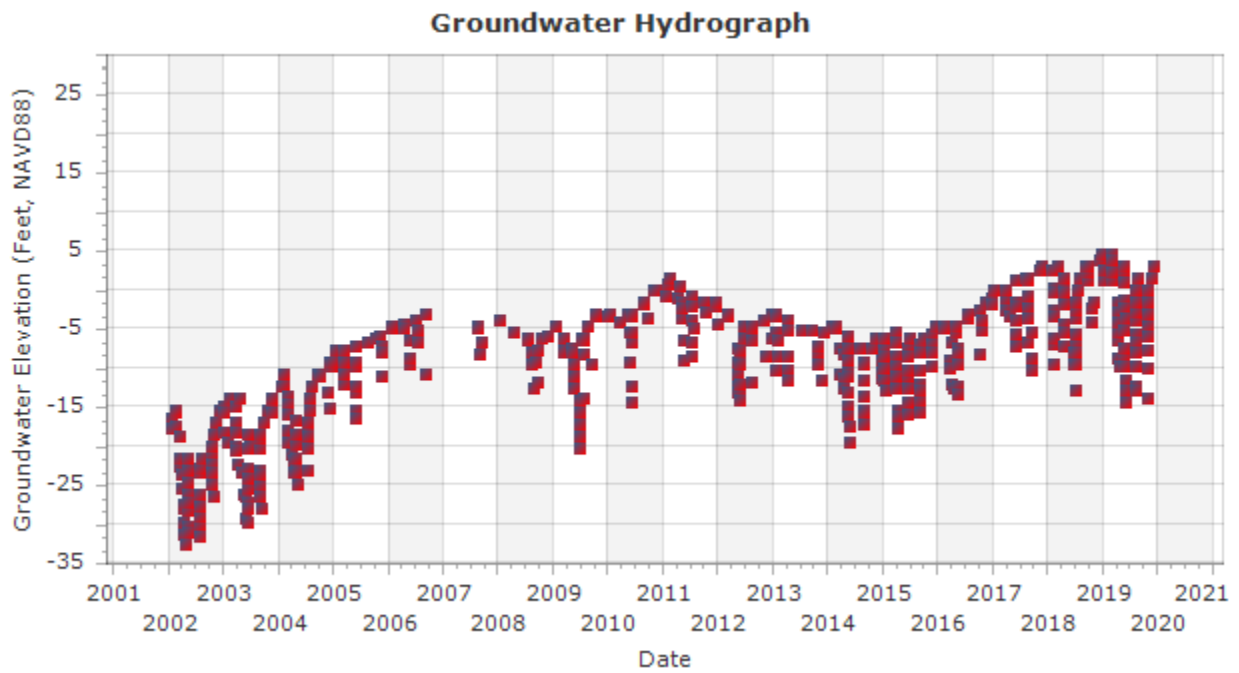
Station Name: LMMW-2S



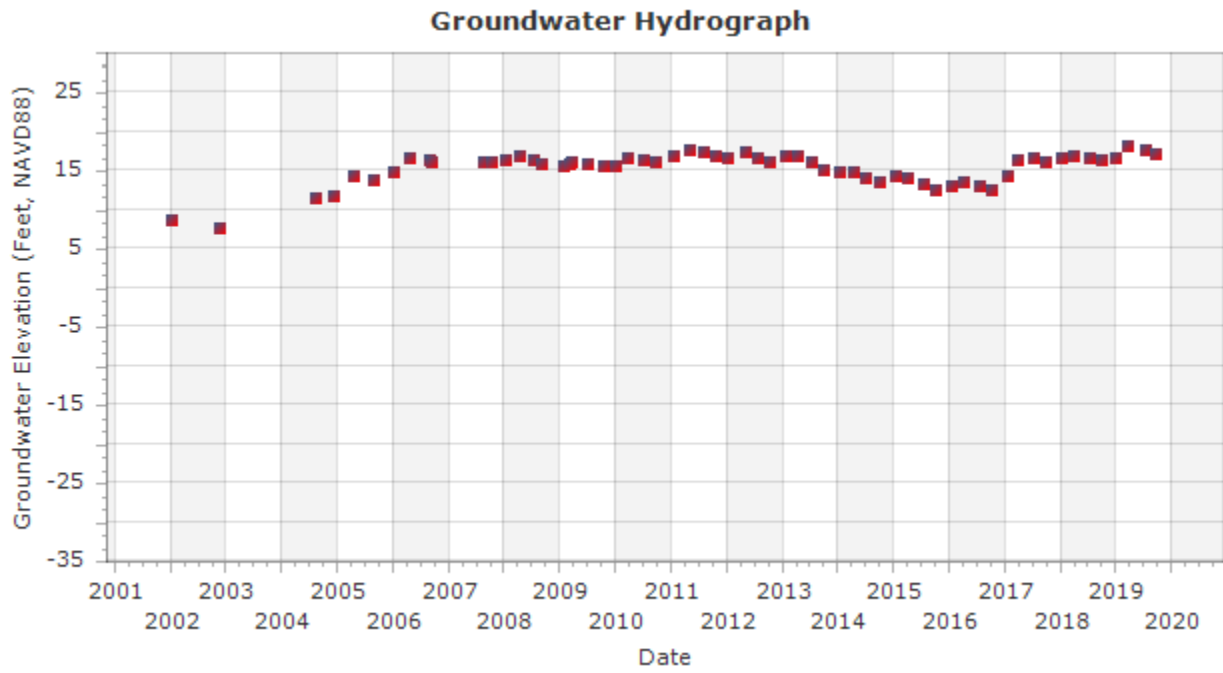
Station Name: LMMW-2SS



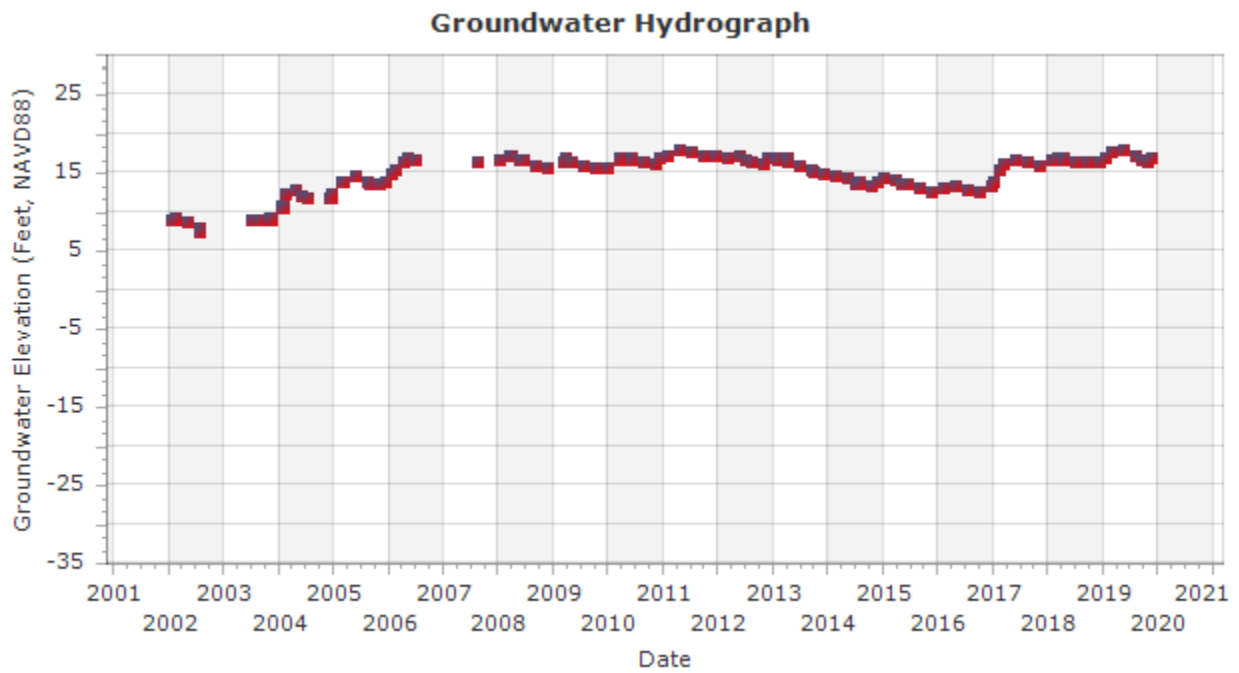
Station Name: LMMW-3D



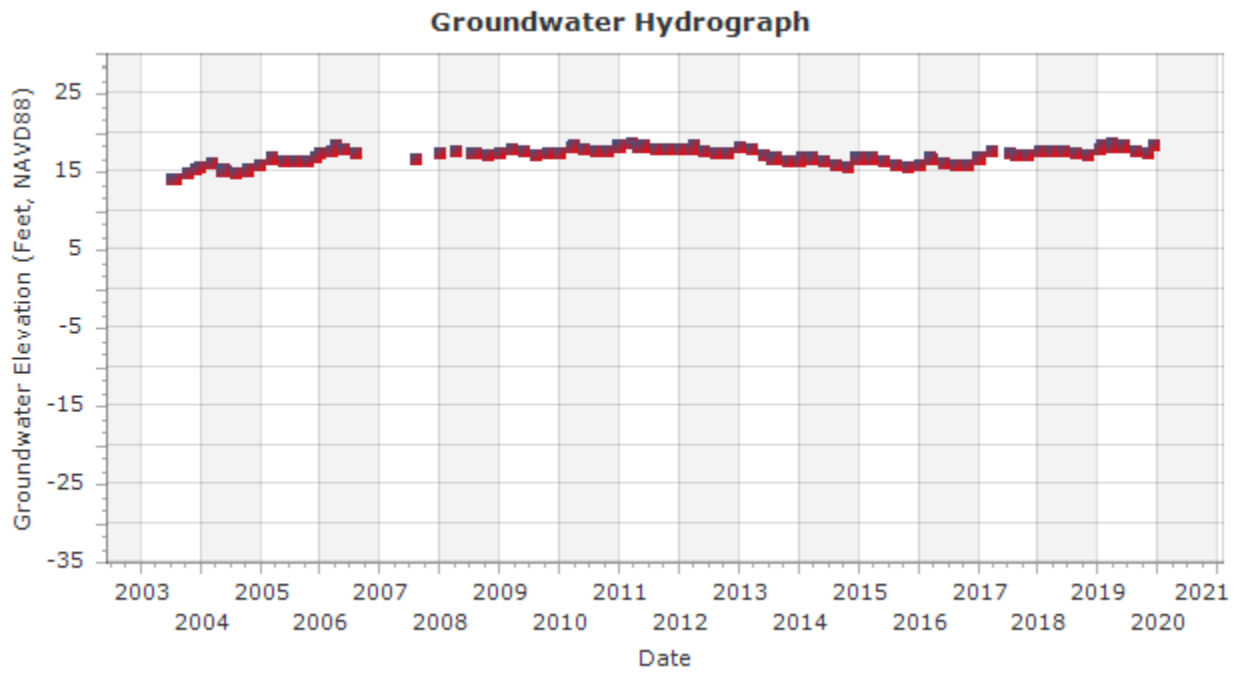
Station Name: LMMW-3S



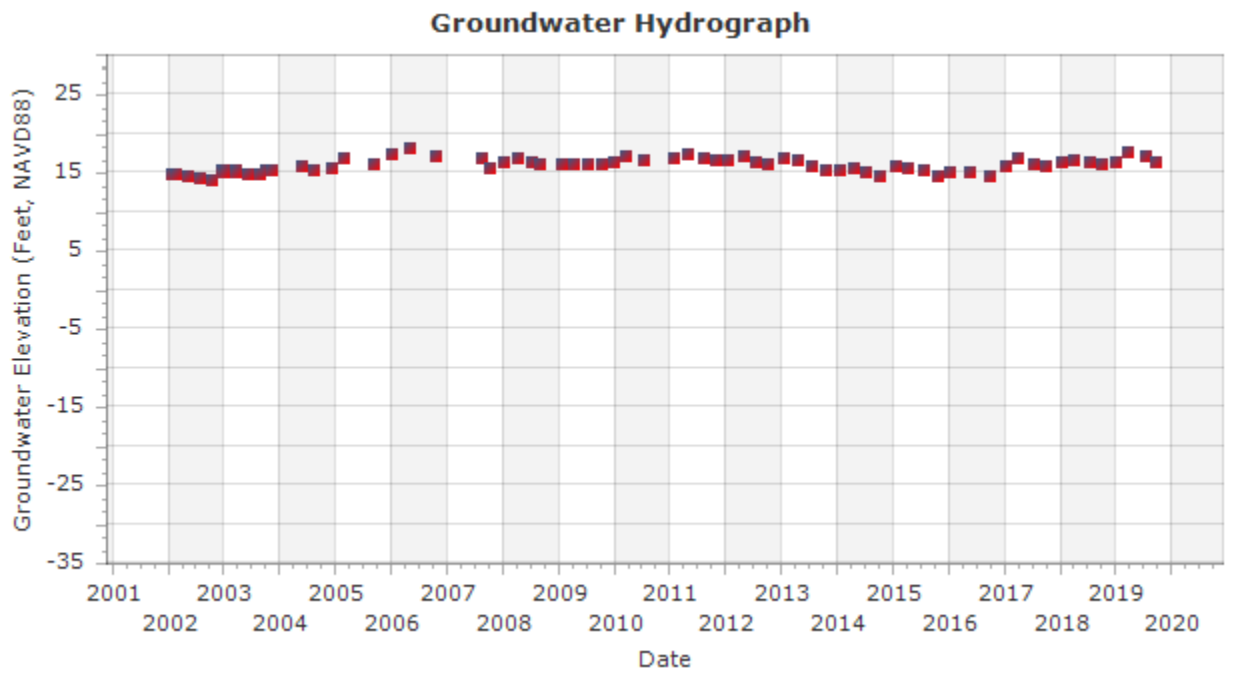
Station Name: LMMW-3SS



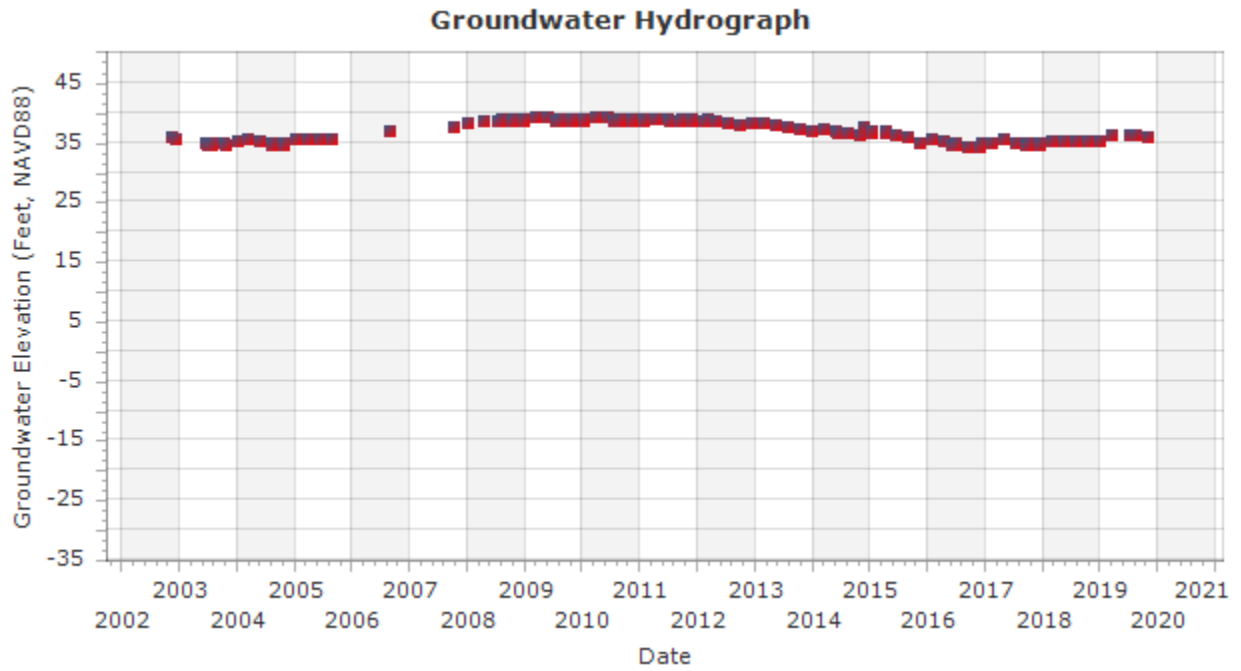
Station Name: LMMW-4S



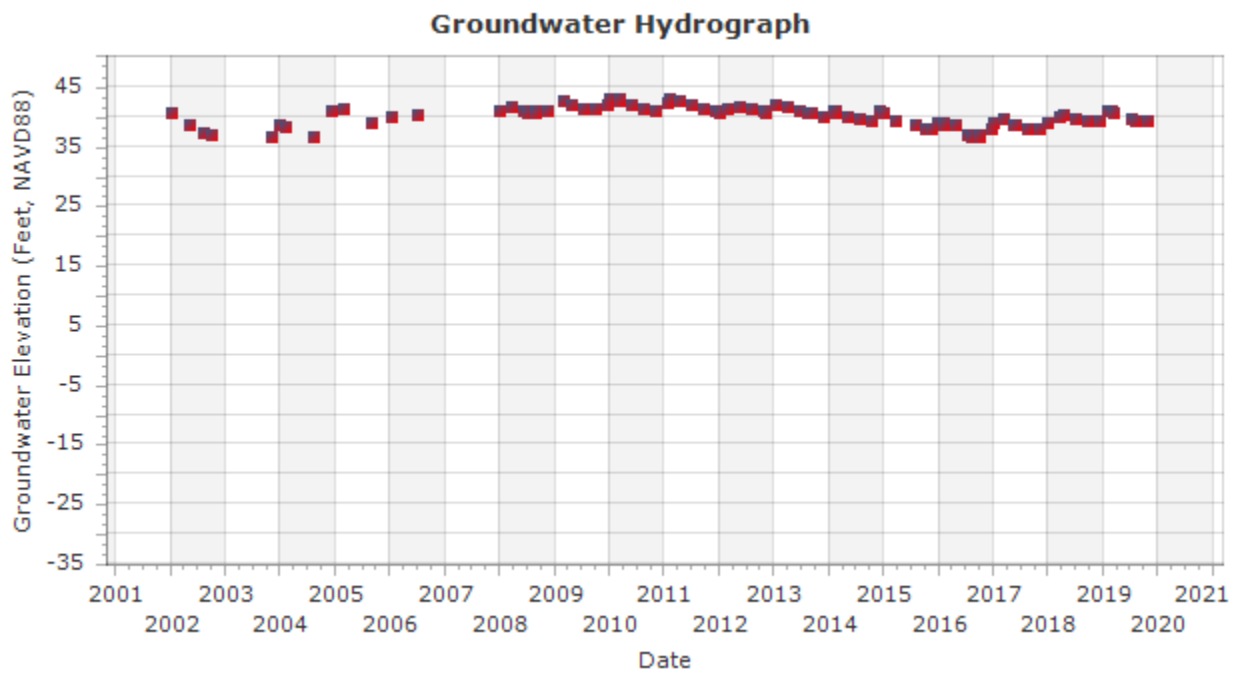
Station Name: LMMW-4SS



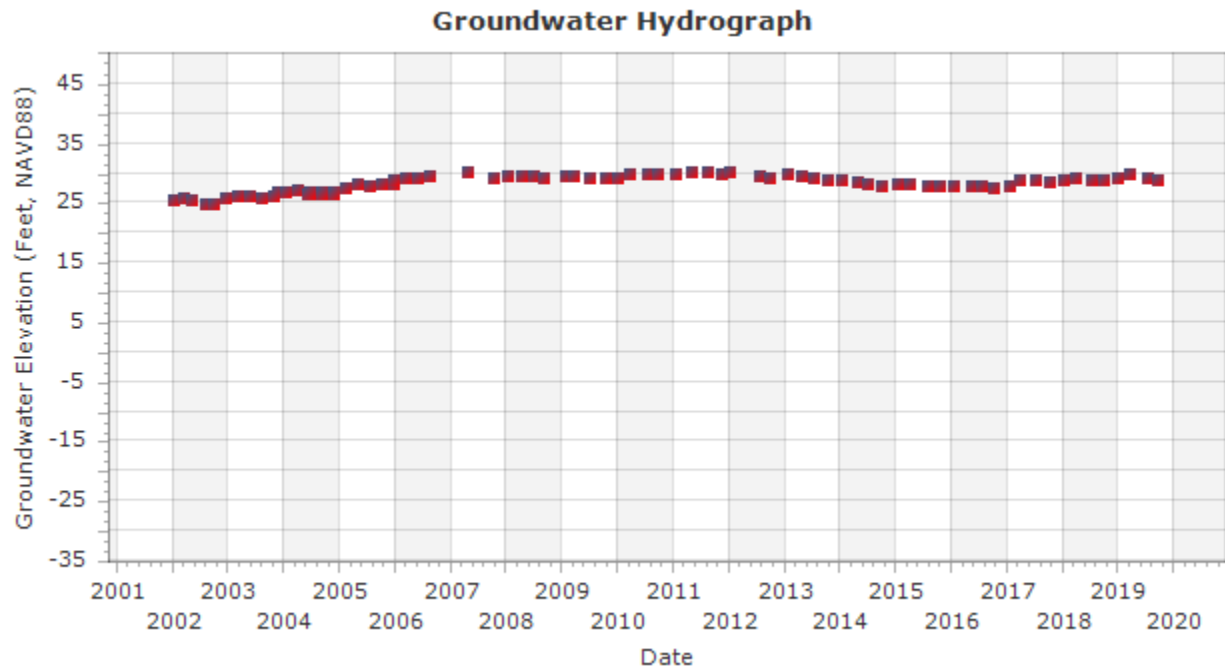
Station Name: LMMW-5S



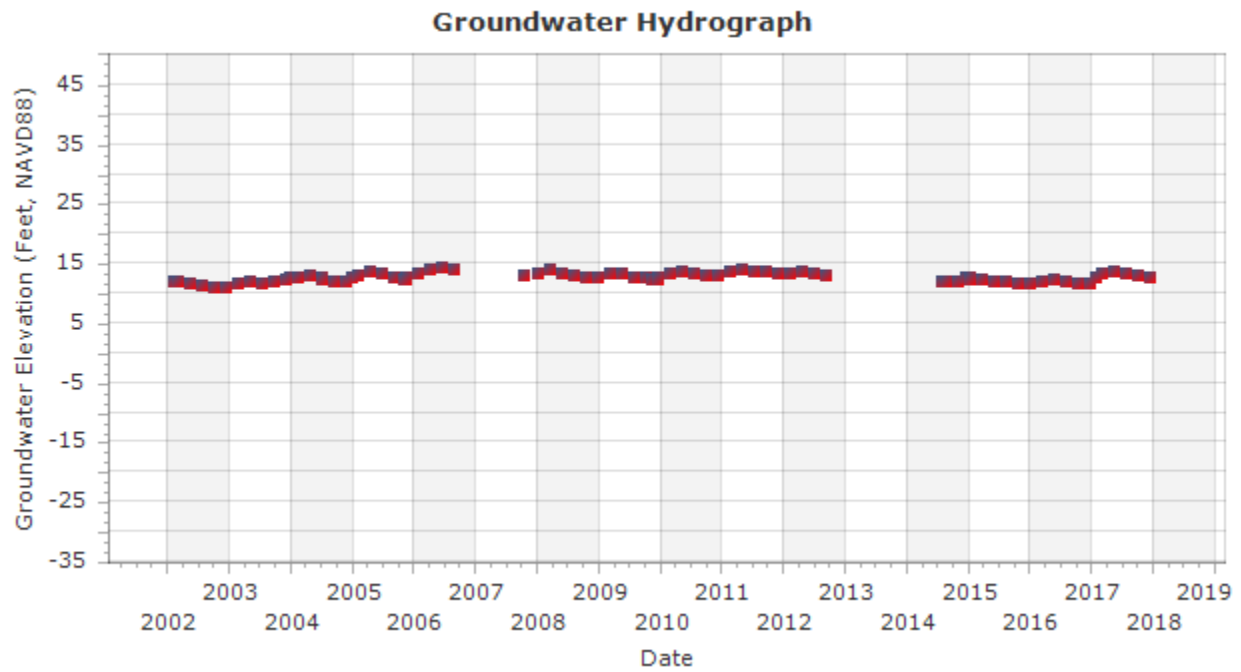
Station Name: LMMW-5SS



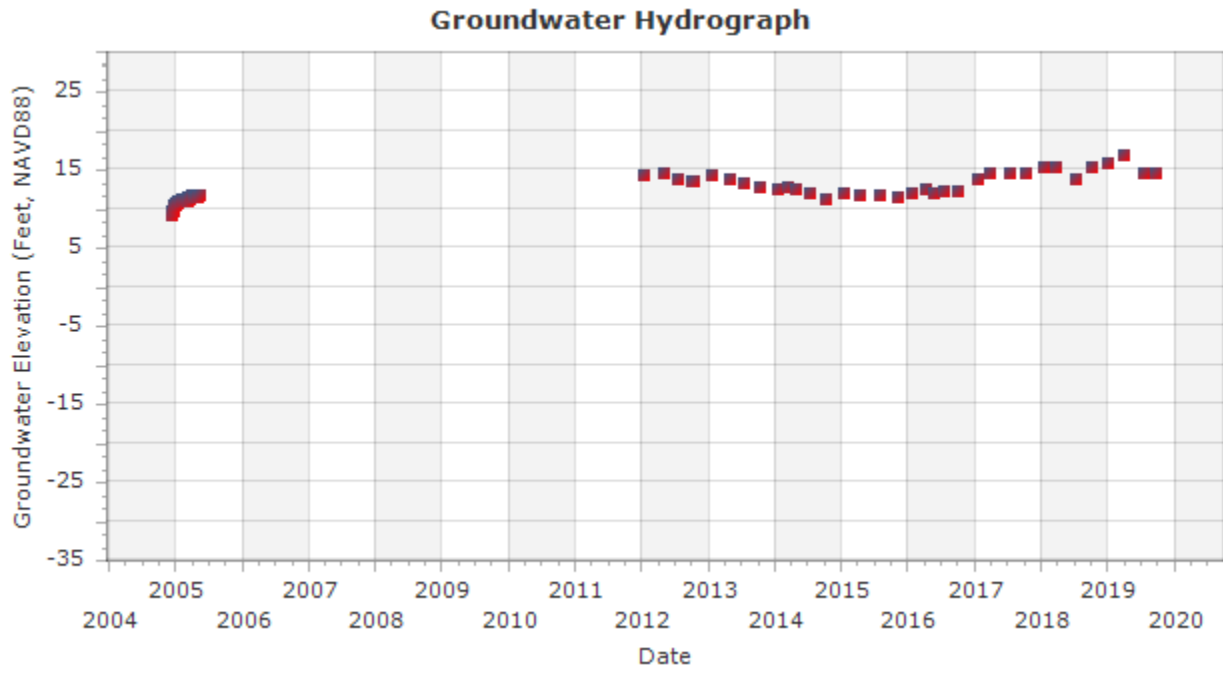
Station Name: LMMW-7SS



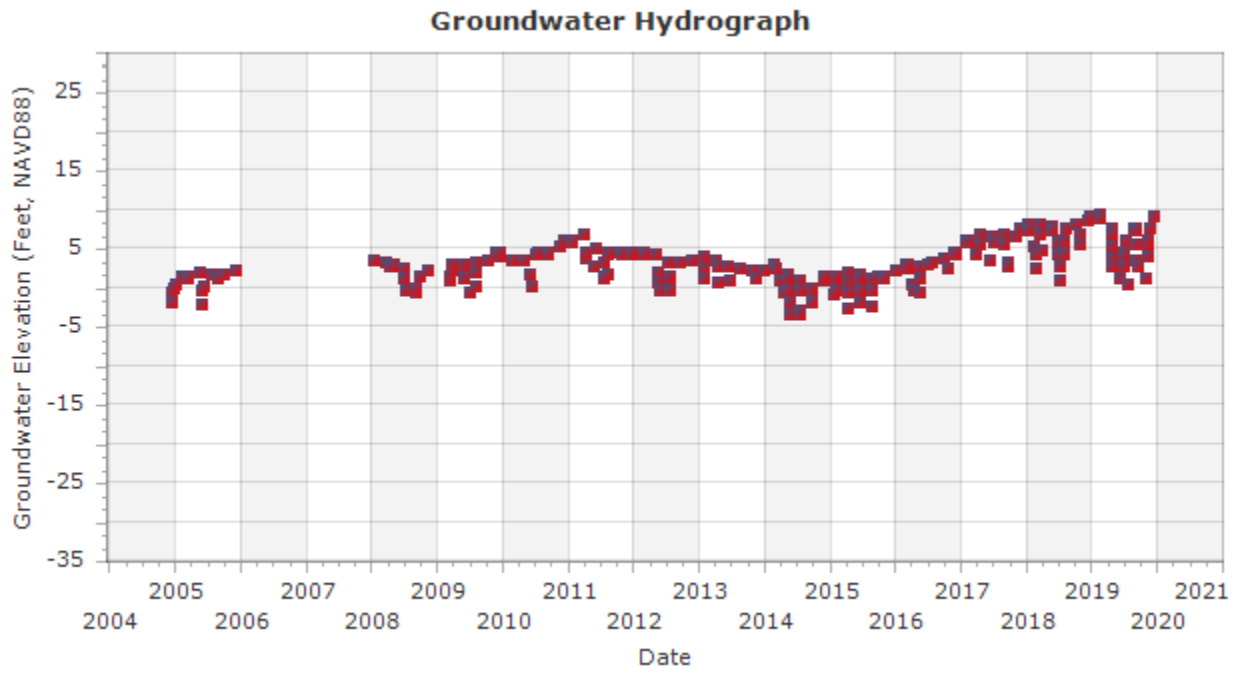
Station Name: LMMW-9SS



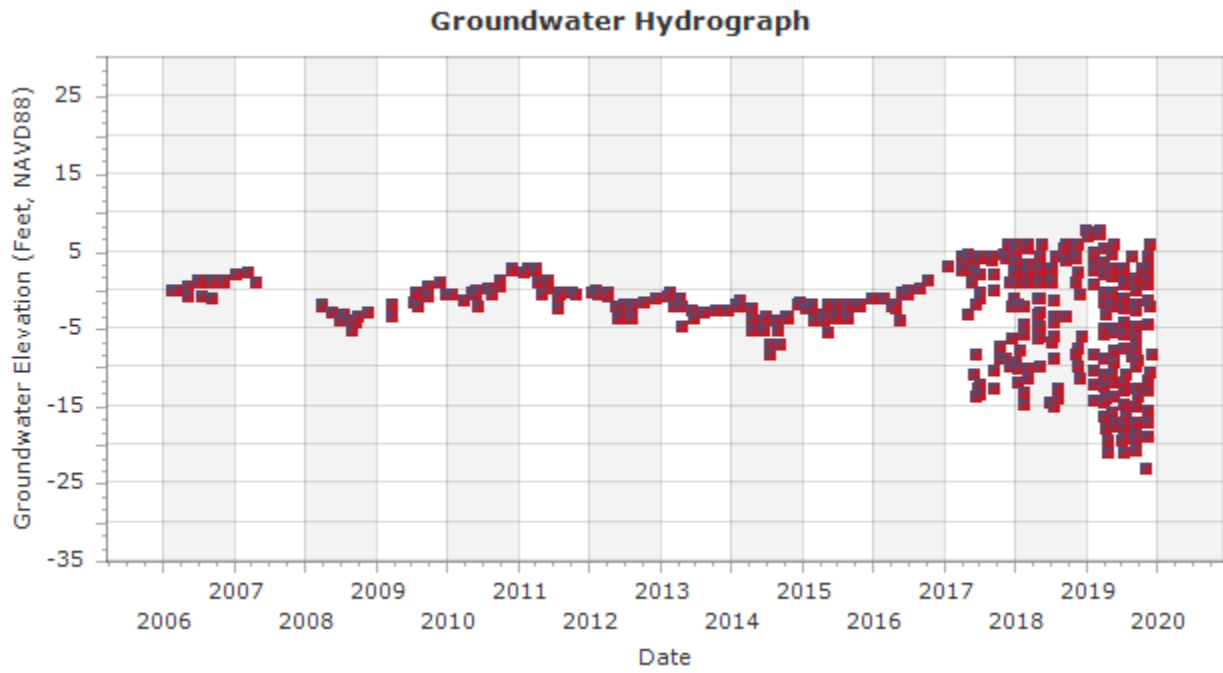
Station Name: LMPS 155



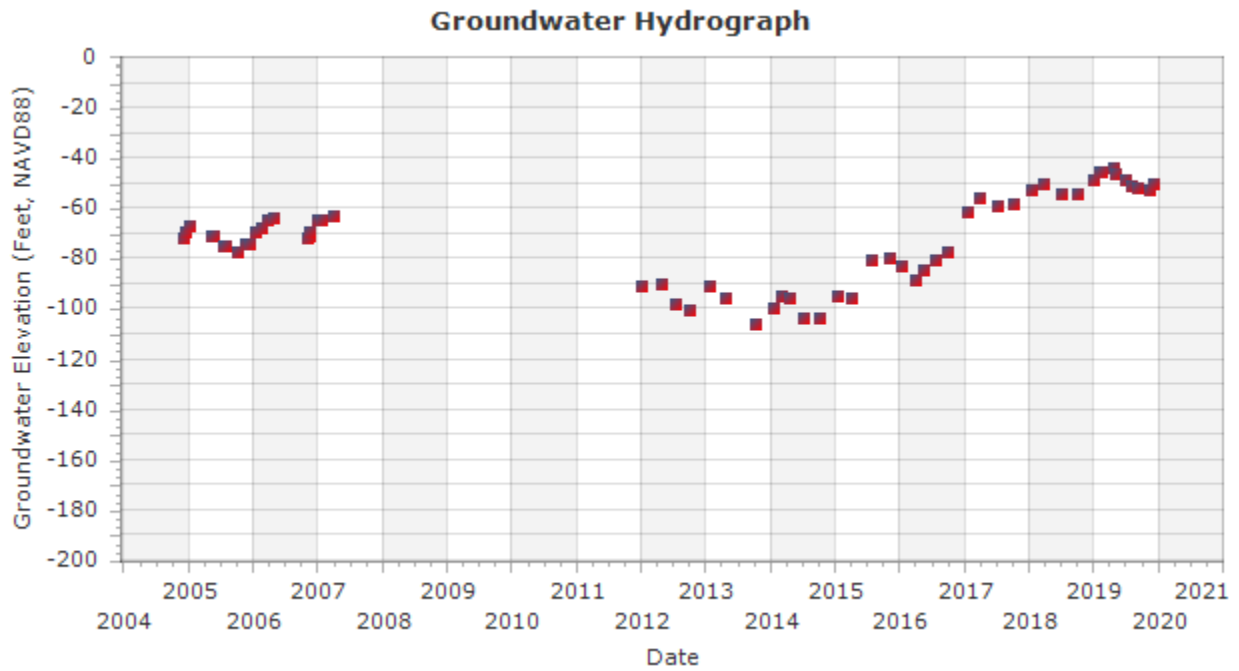
Station Name: LMPS 270



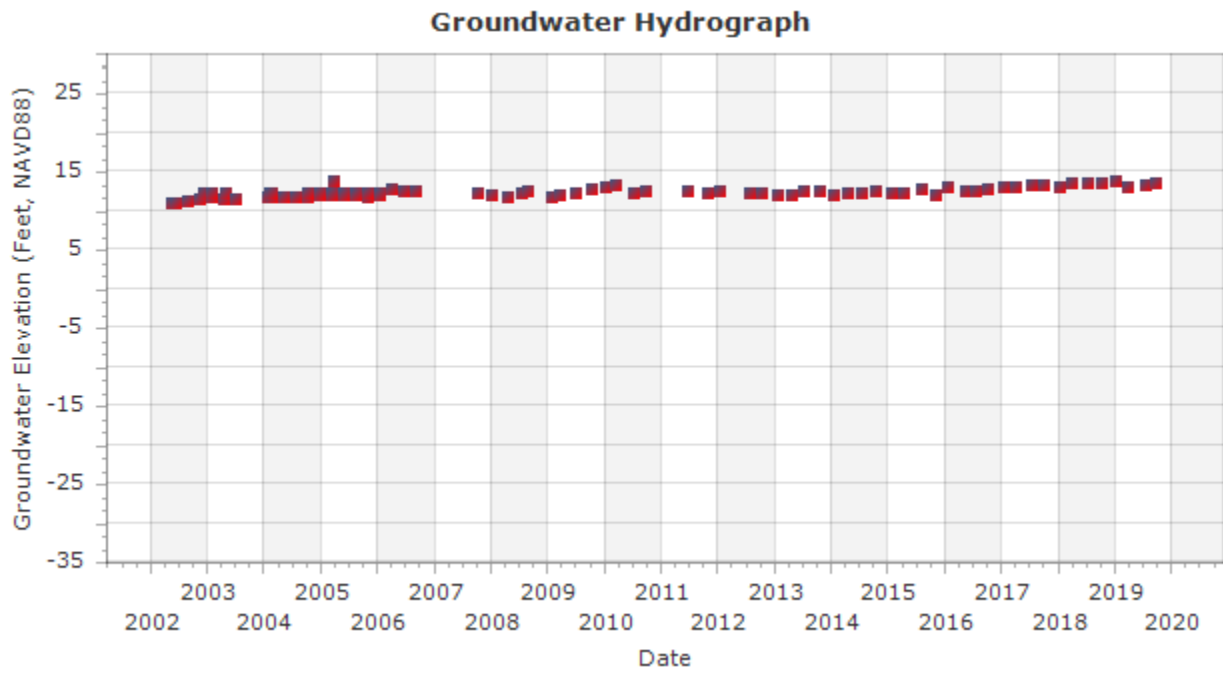
Station Name: LMPS 440



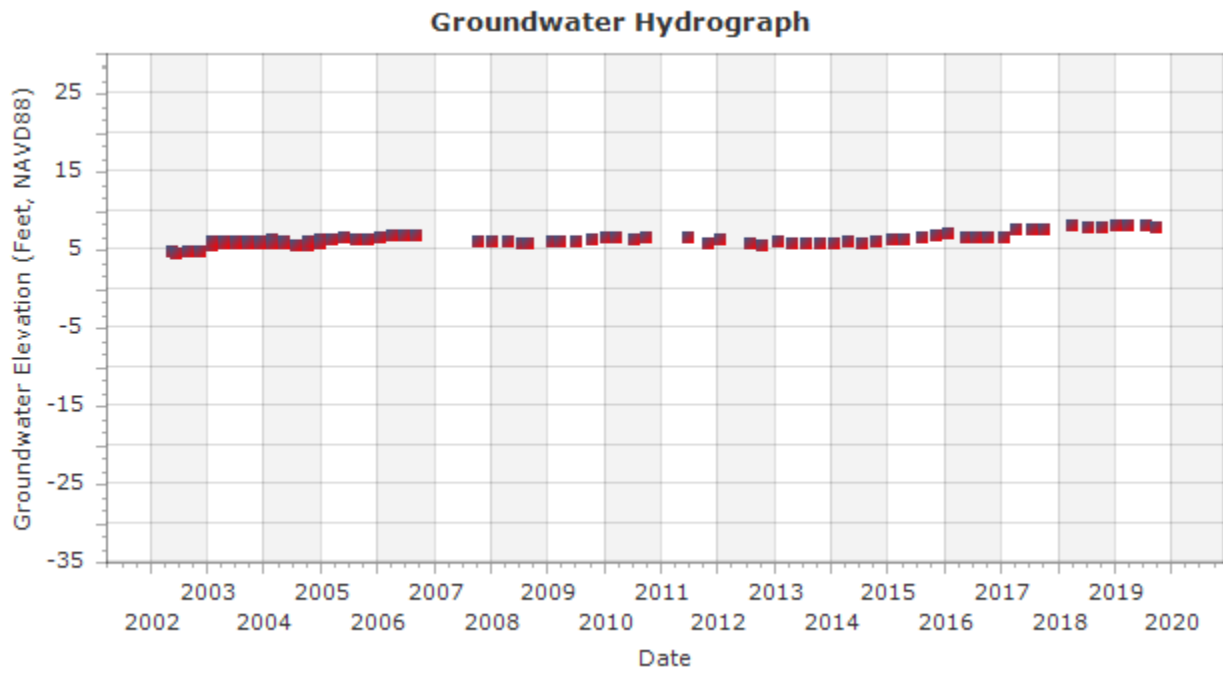
Station Name: LMPS 575



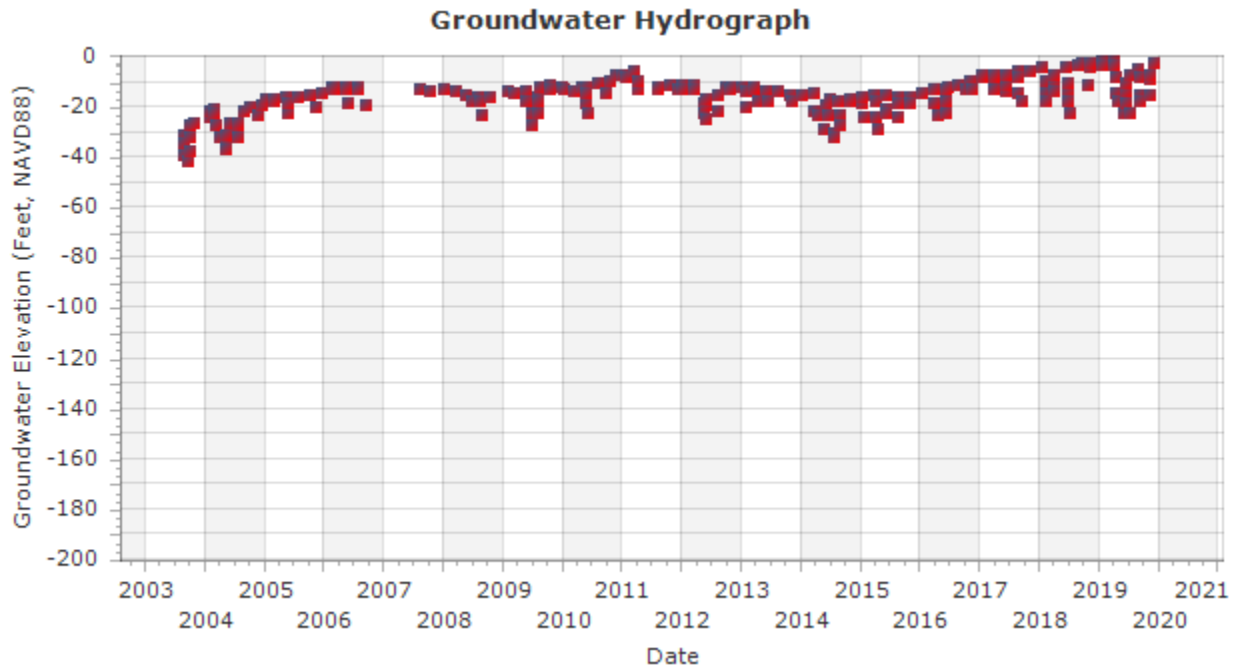
Station Name: FORT FUNSTON-M



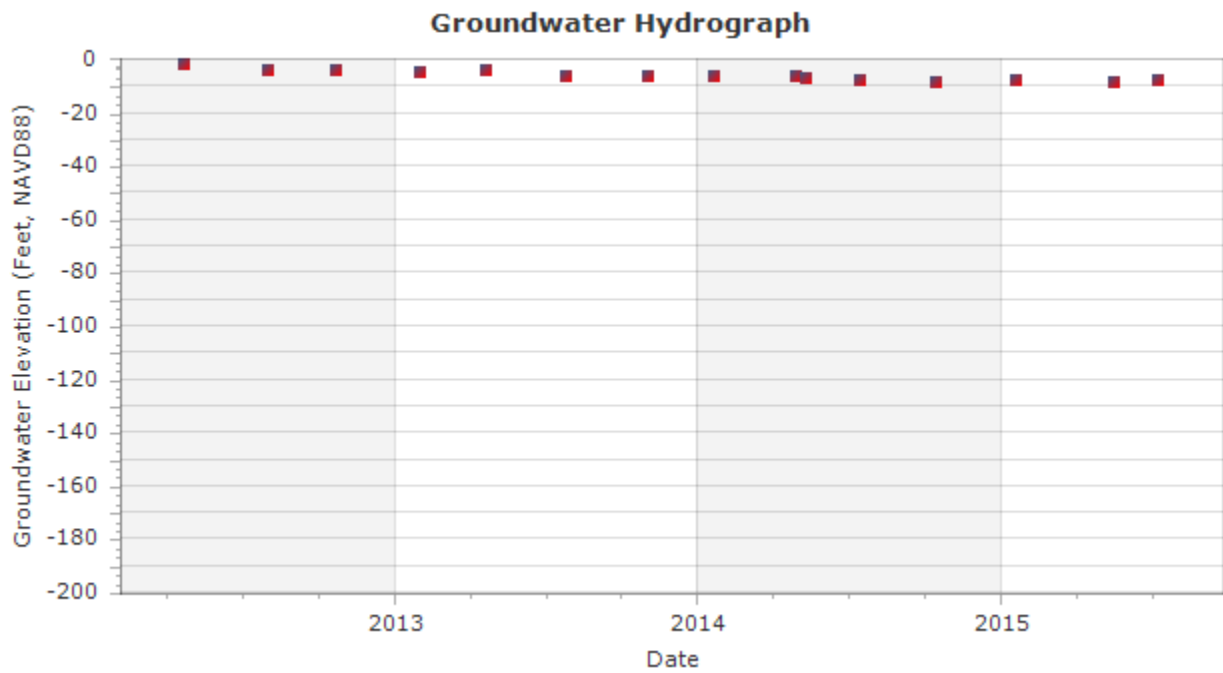
Station Name: FORT FUNSTON-S



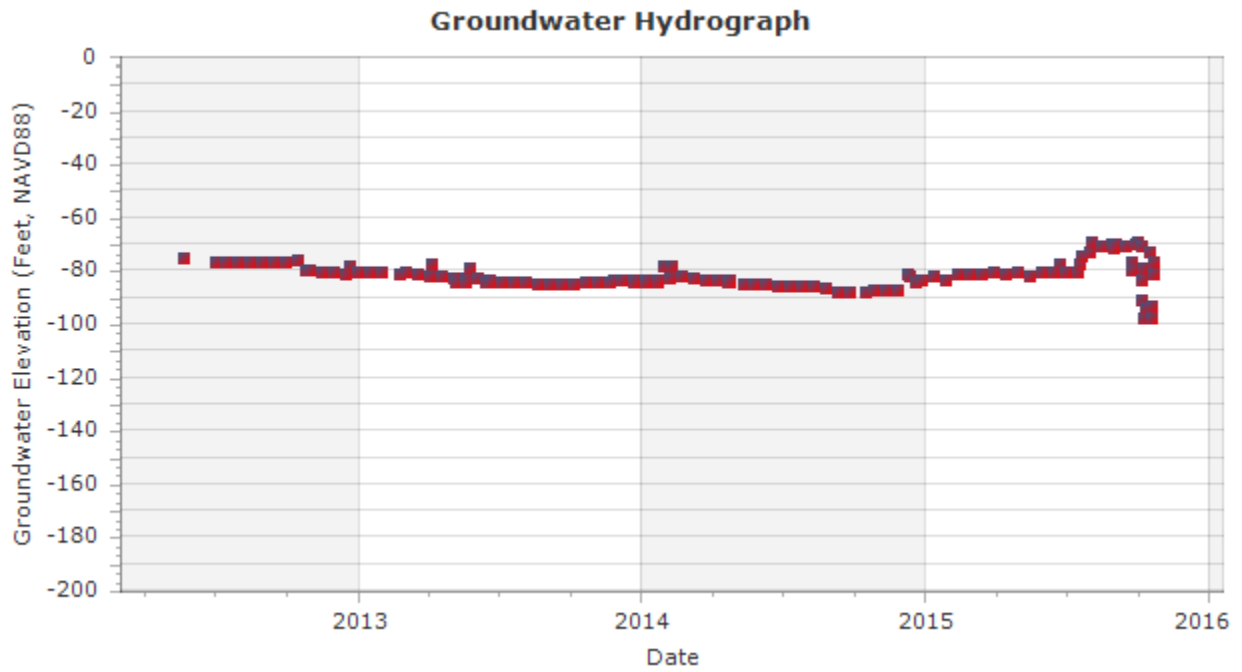
Station Name: LMMW-6D



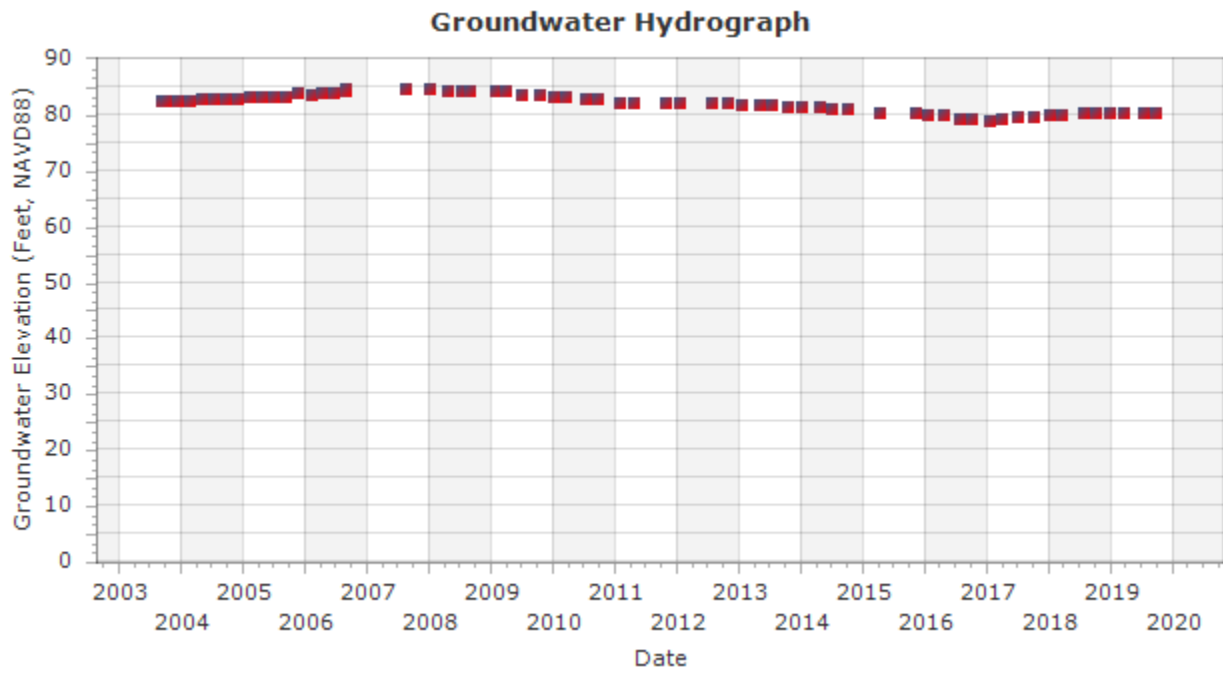
Station Name: MW-CUP-3A-240



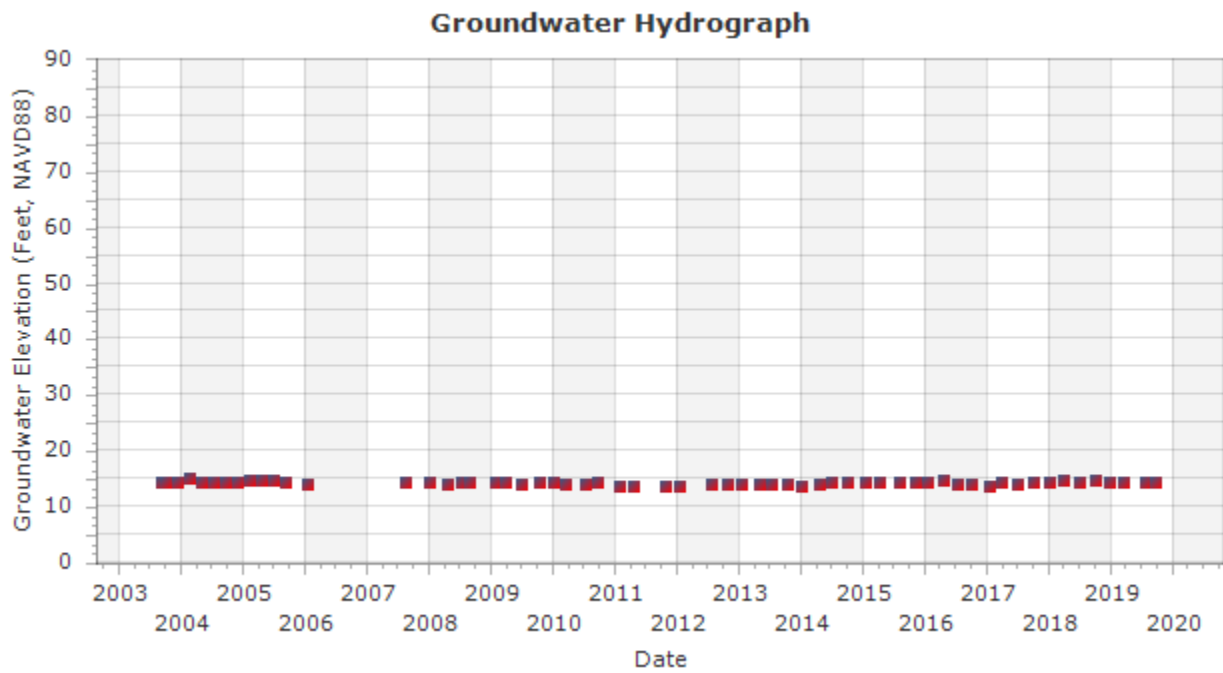
Station Name: MW-CUP-3A-450



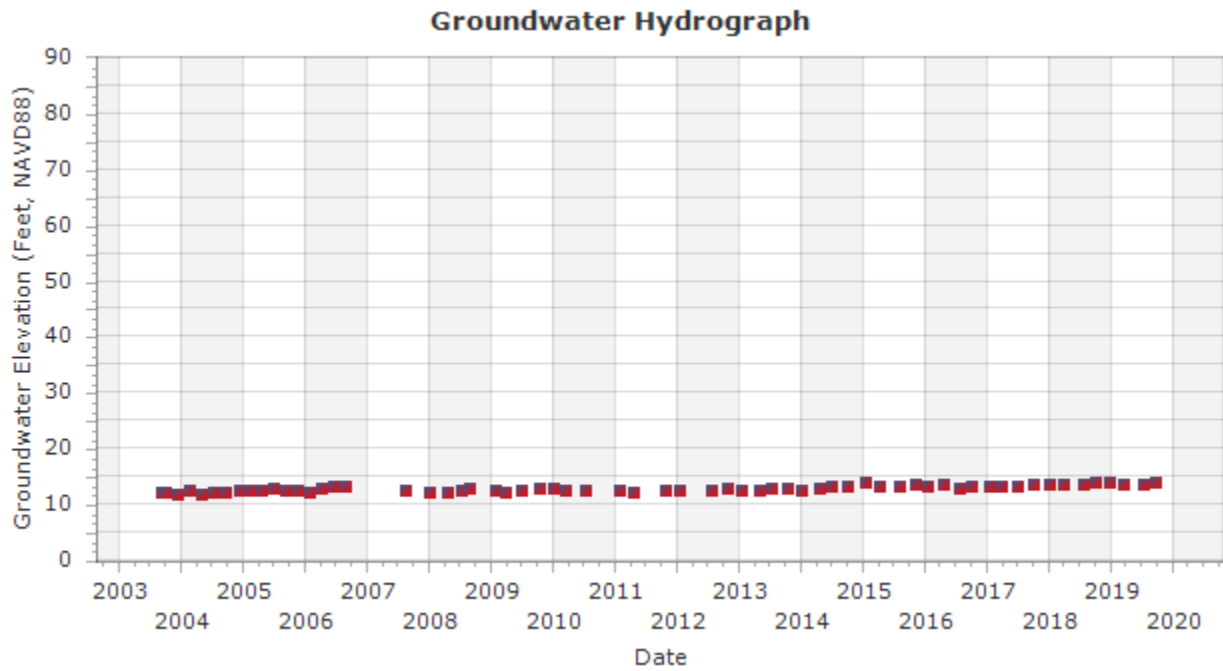
Station Name: THORNTON BEACH MW225



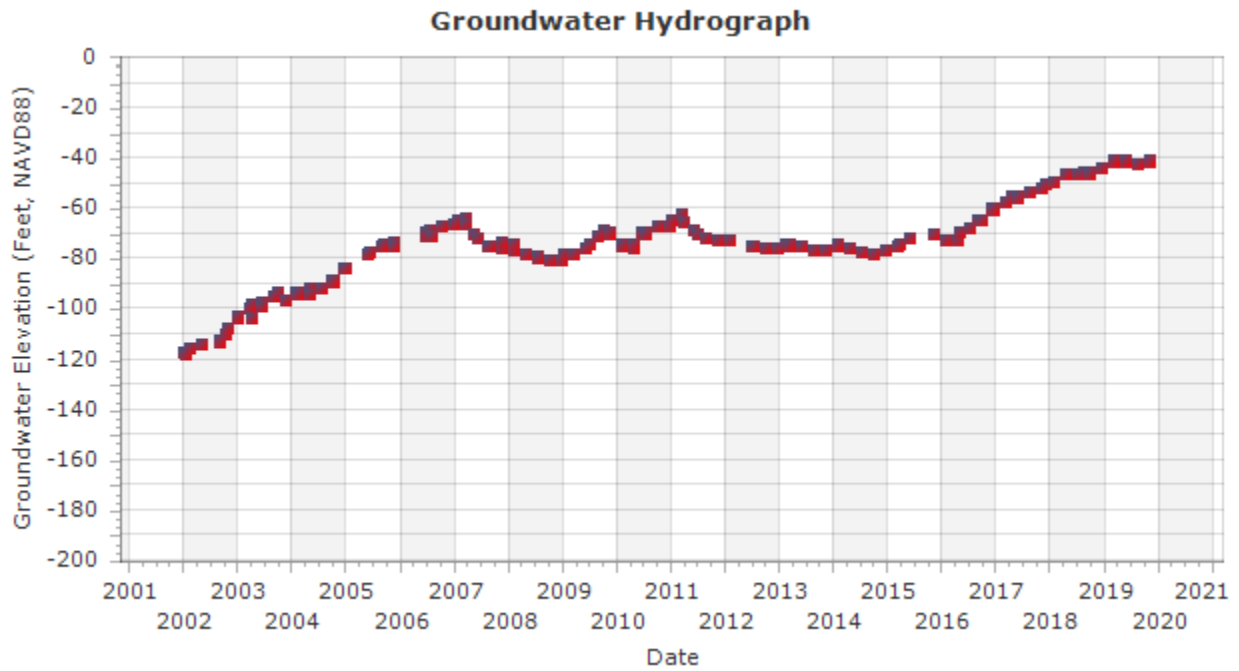
Station Name: THORNTON BEACH MW360



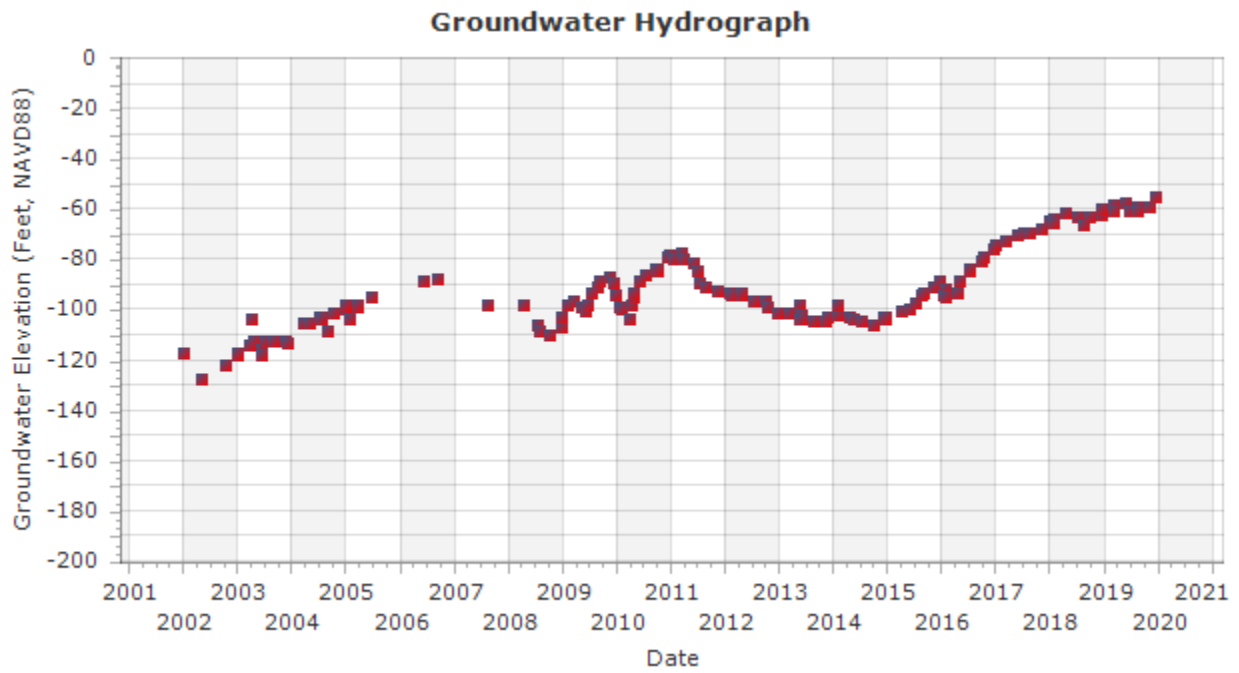
Station Name: THORNTON BEACH MW670



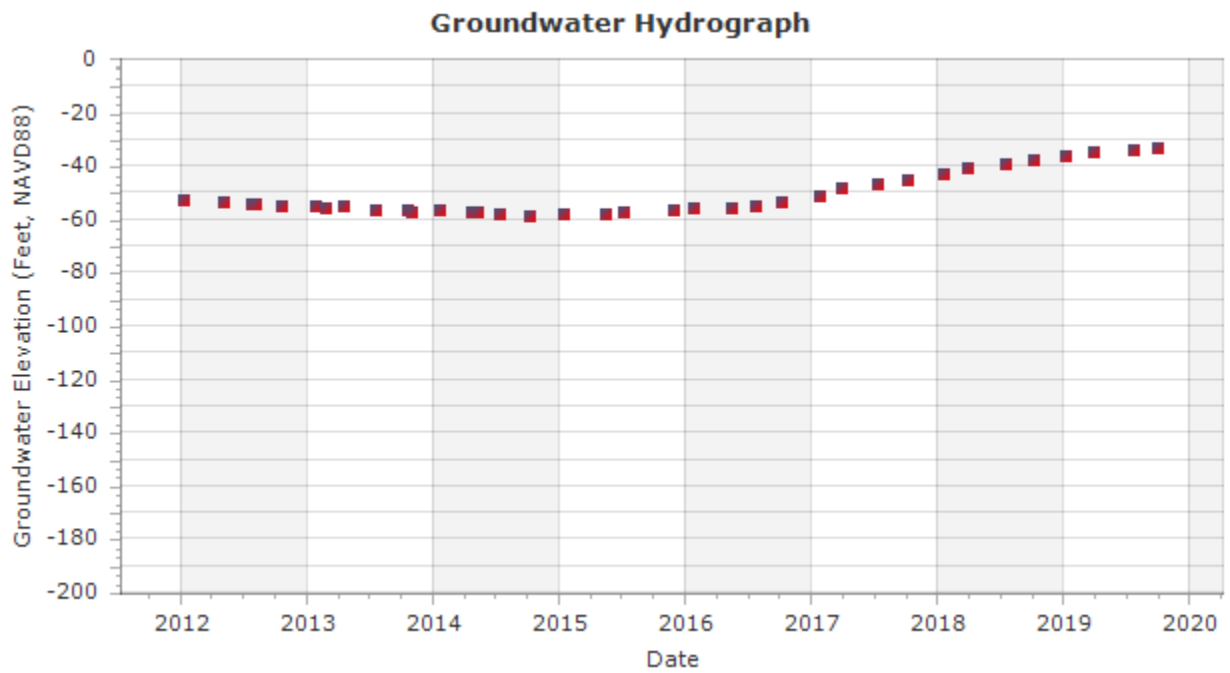
Station Name: DC-01 (WESTLAKE 1)



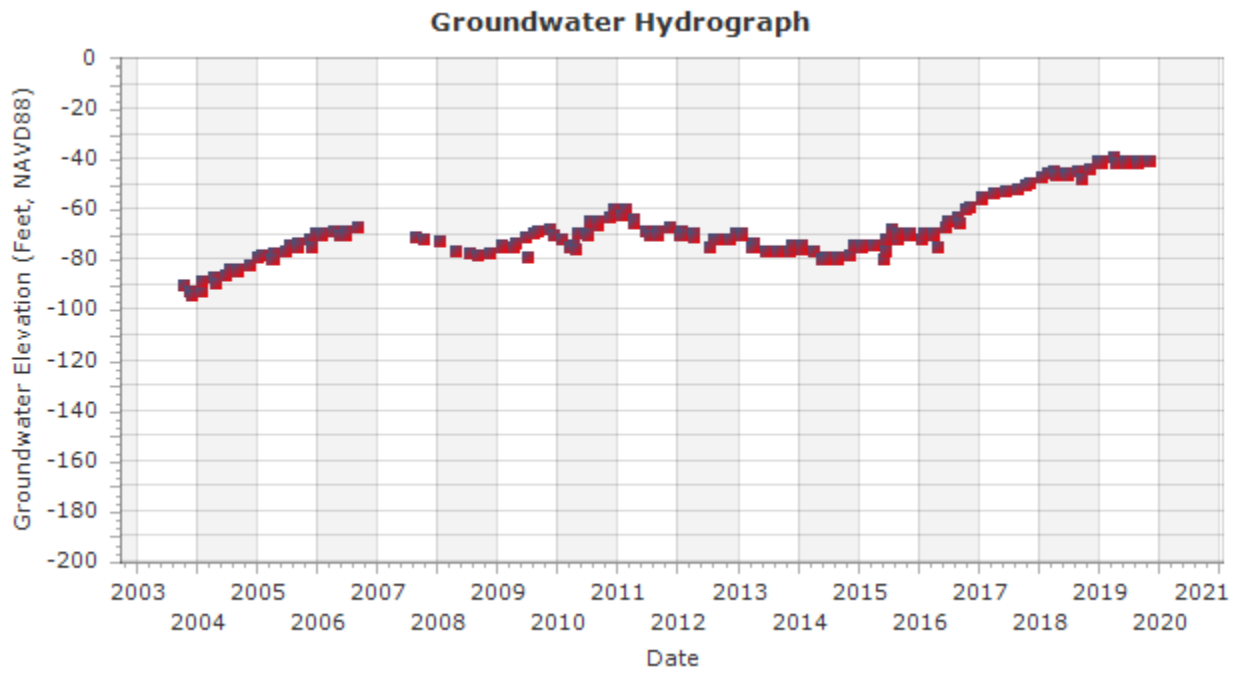
Station Name: DC-08



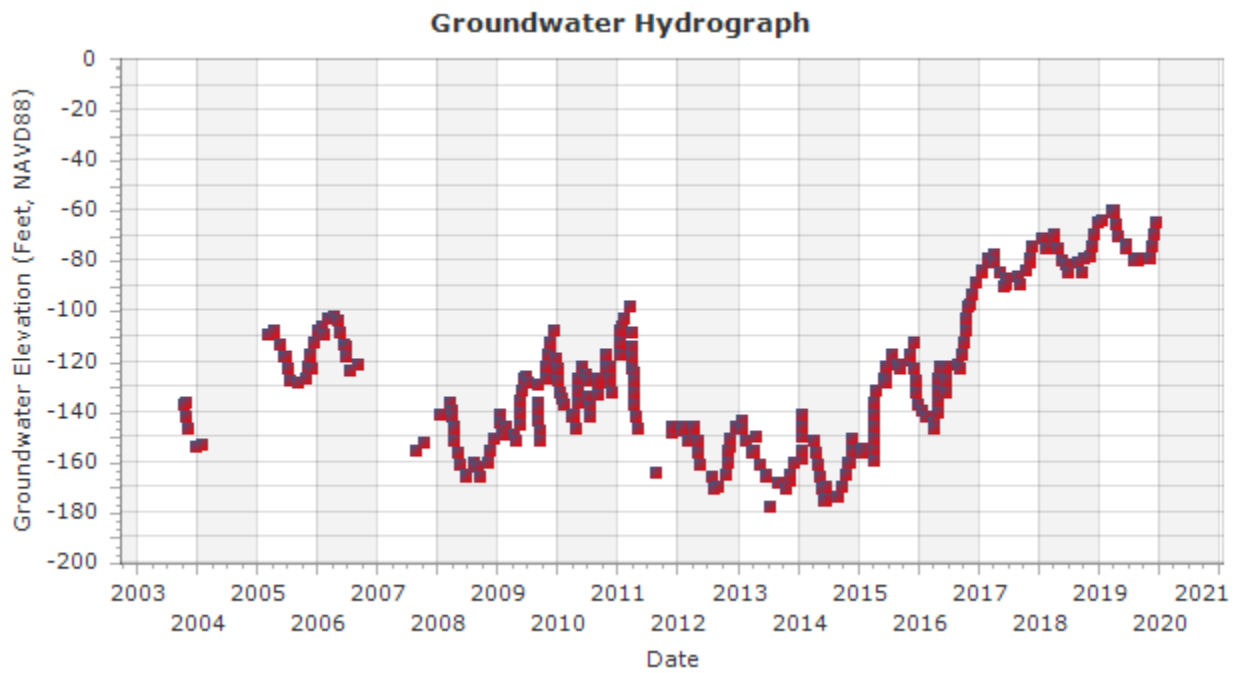
Station Name: PARK PLAZA MW195



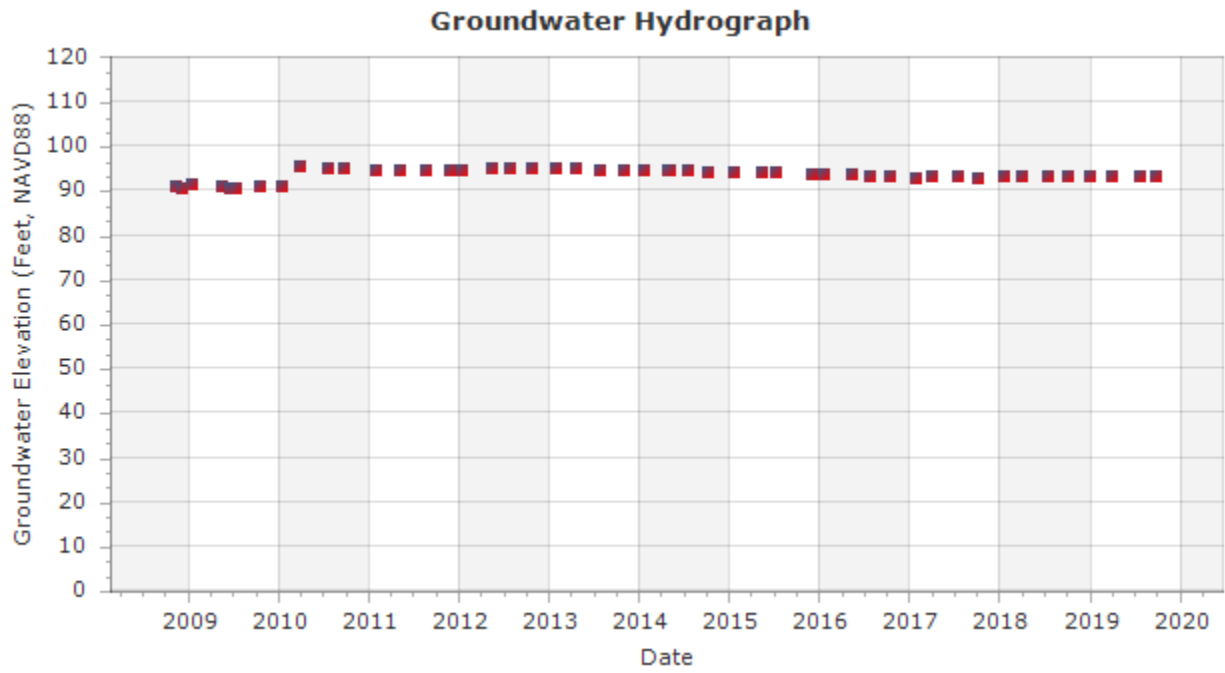
Station Name: PARK PLAZA MW460



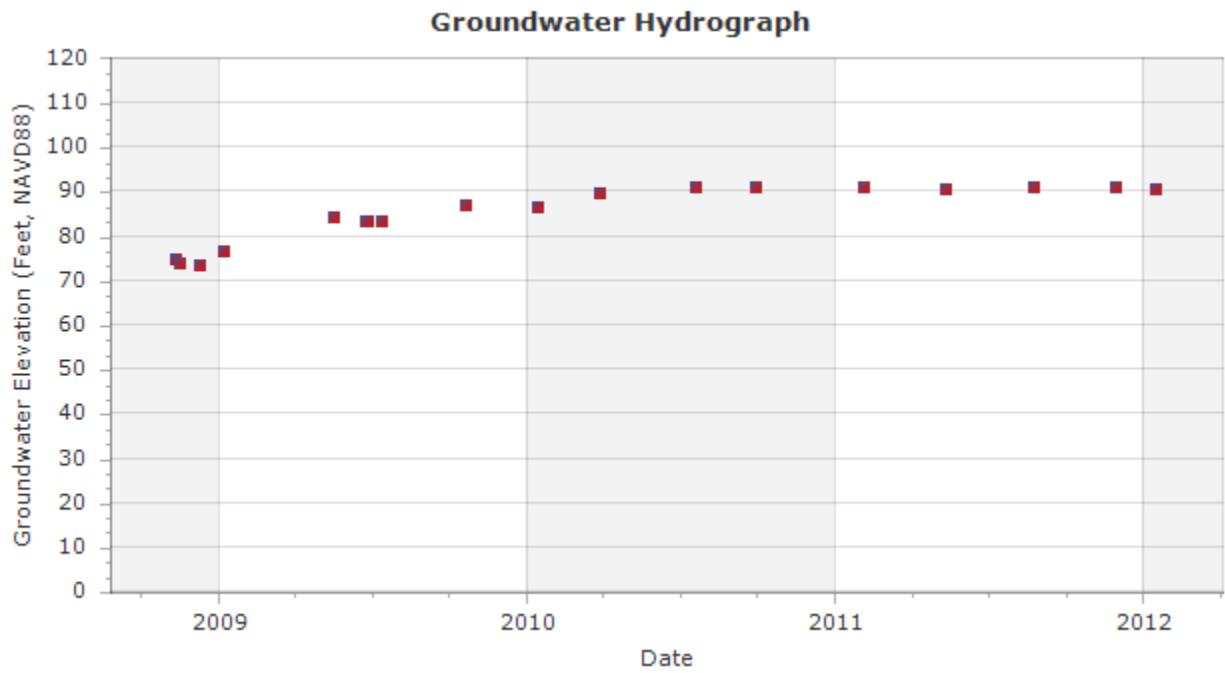
Station Name: PARK PLAZA MW620



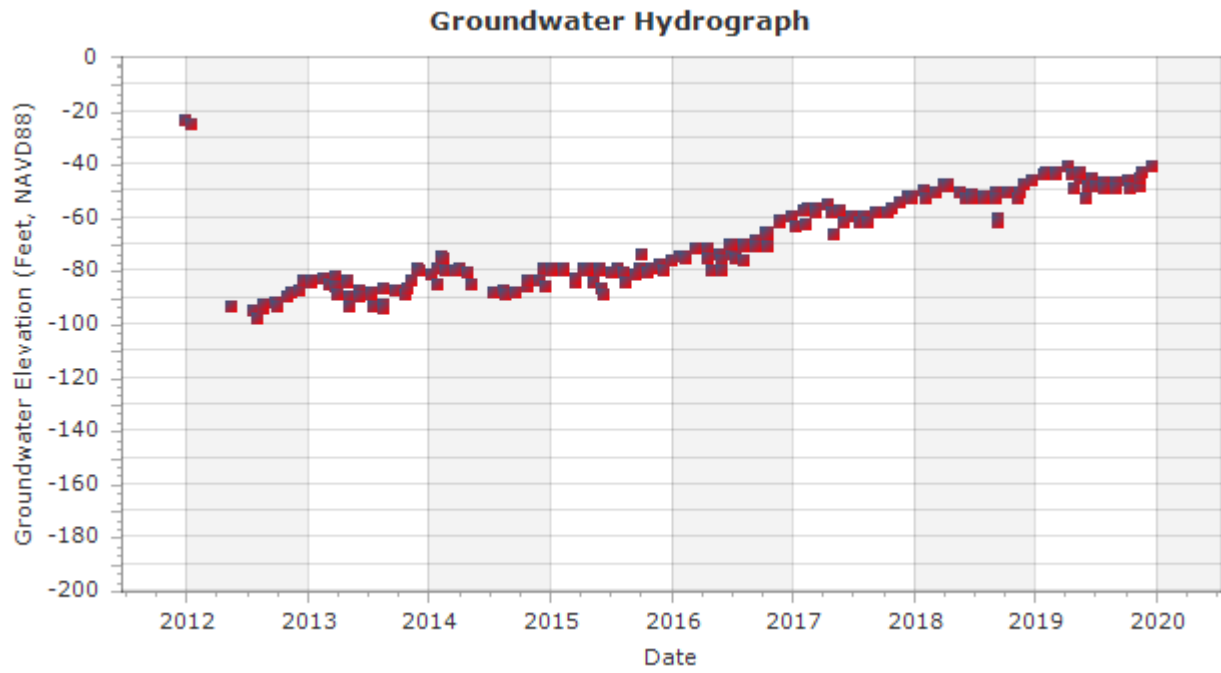
Station Name: MW-CUP-10A-160



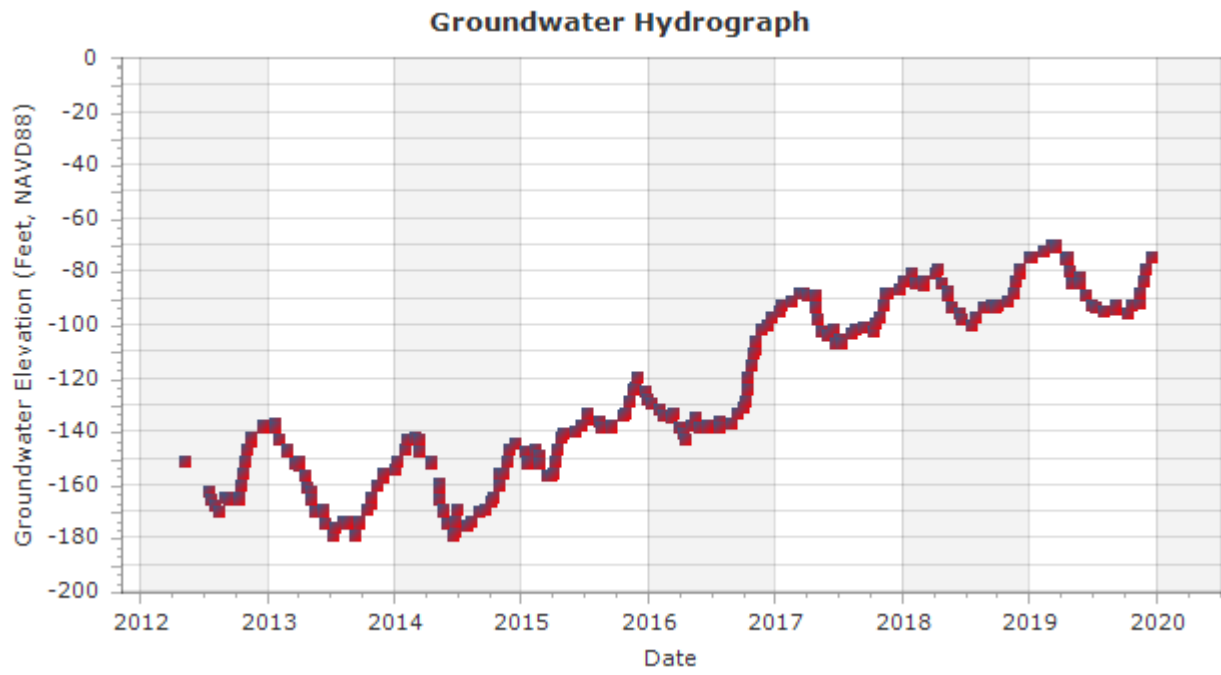
Station Name: MW-CUP-10A-250



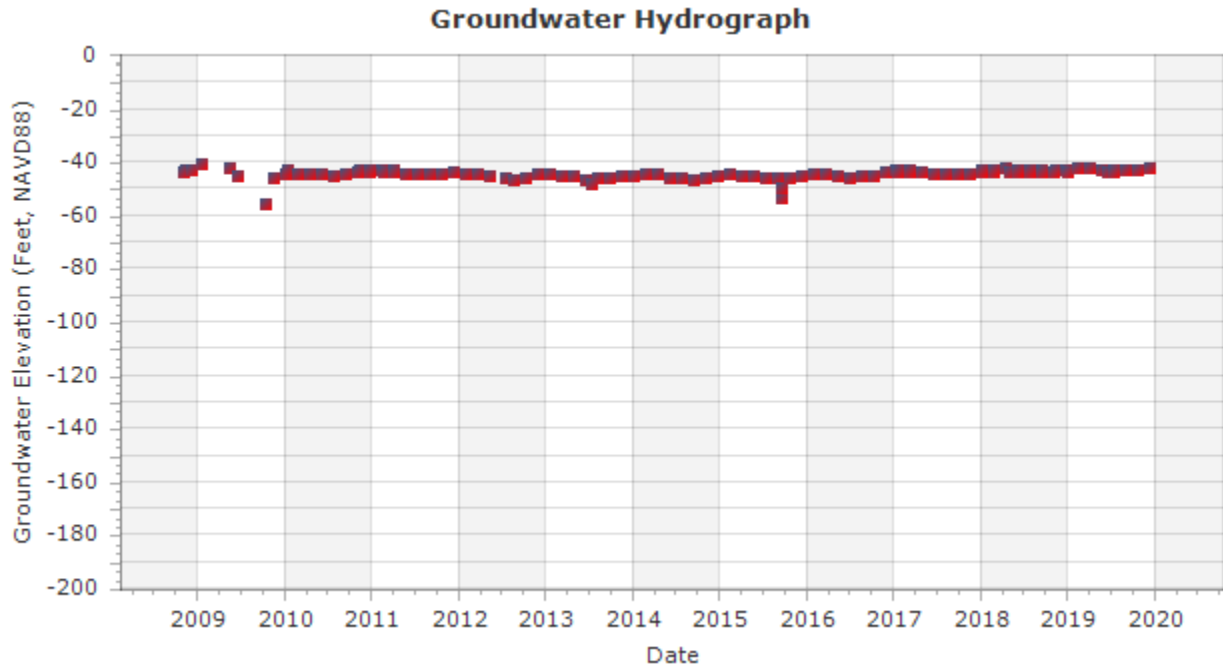
Station Name: MW-CUP-10A-500



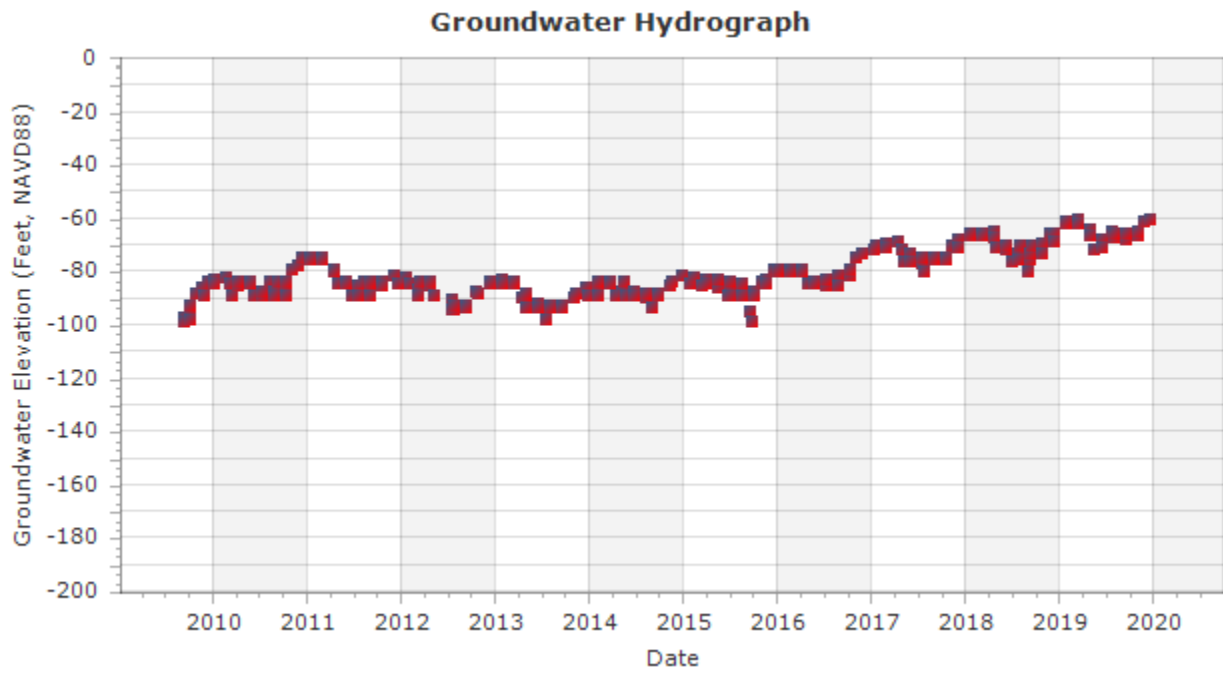
Station Name: MW-CUP-10A-710



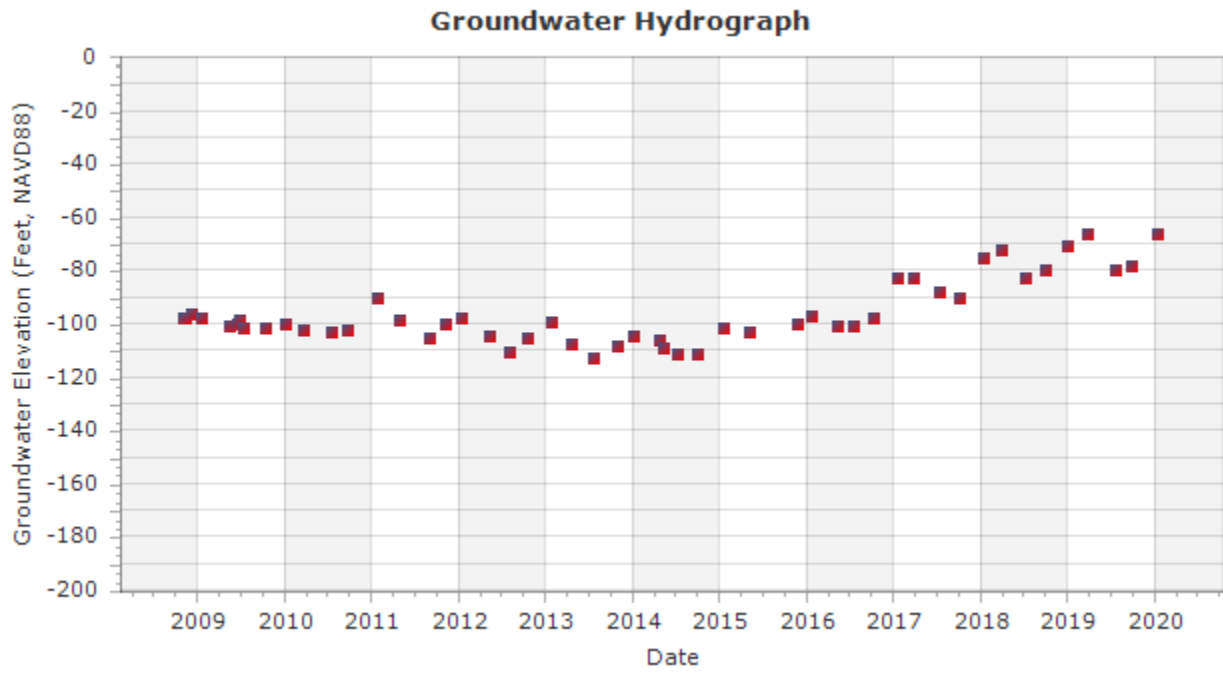
Station Name: MW-CUP-18-230



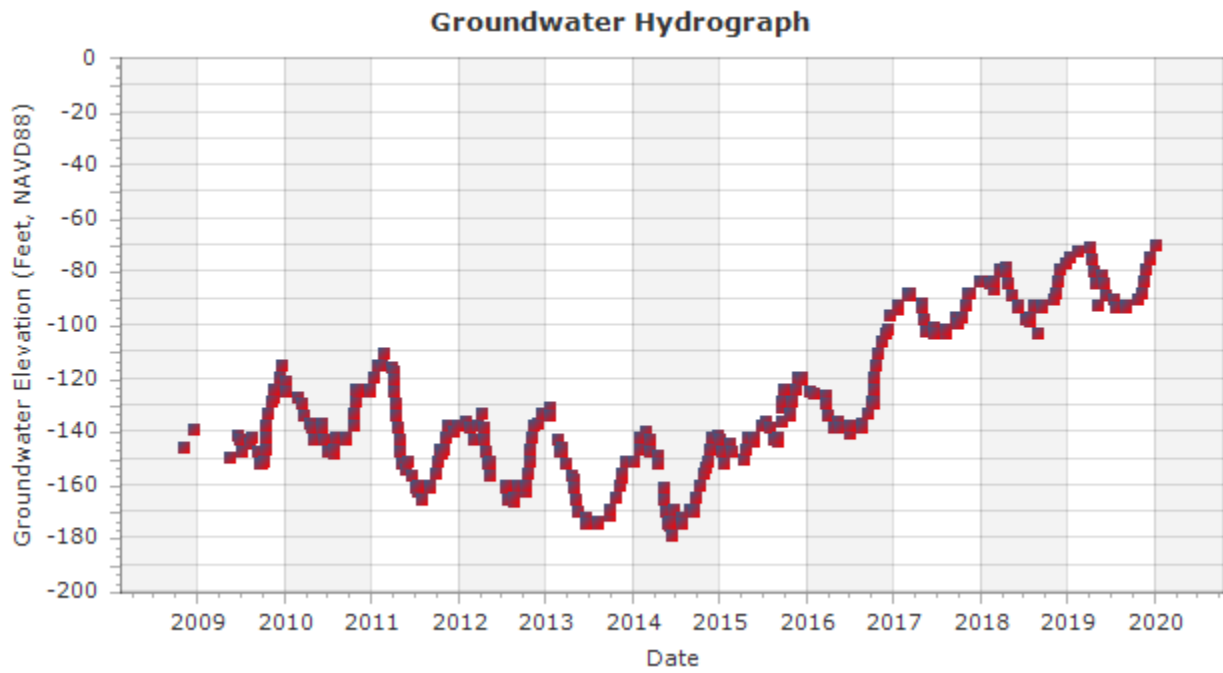
Station Name: MW-CUP-18-425



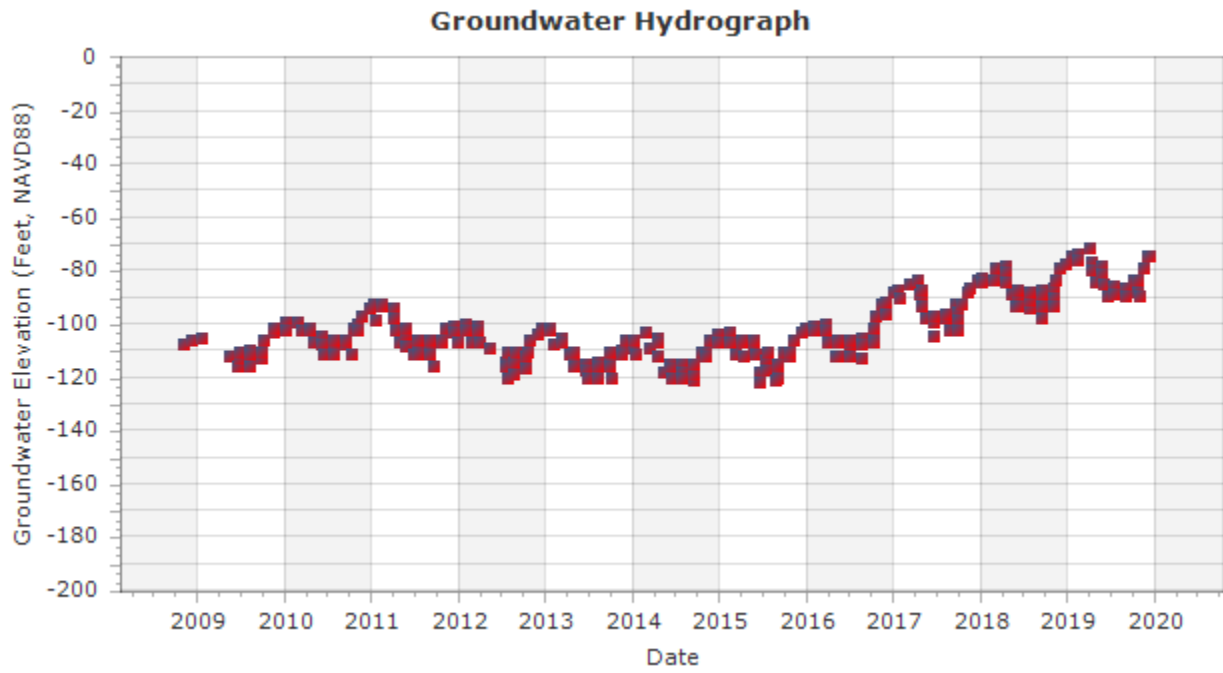
Station Name: MW-CUP-18-490



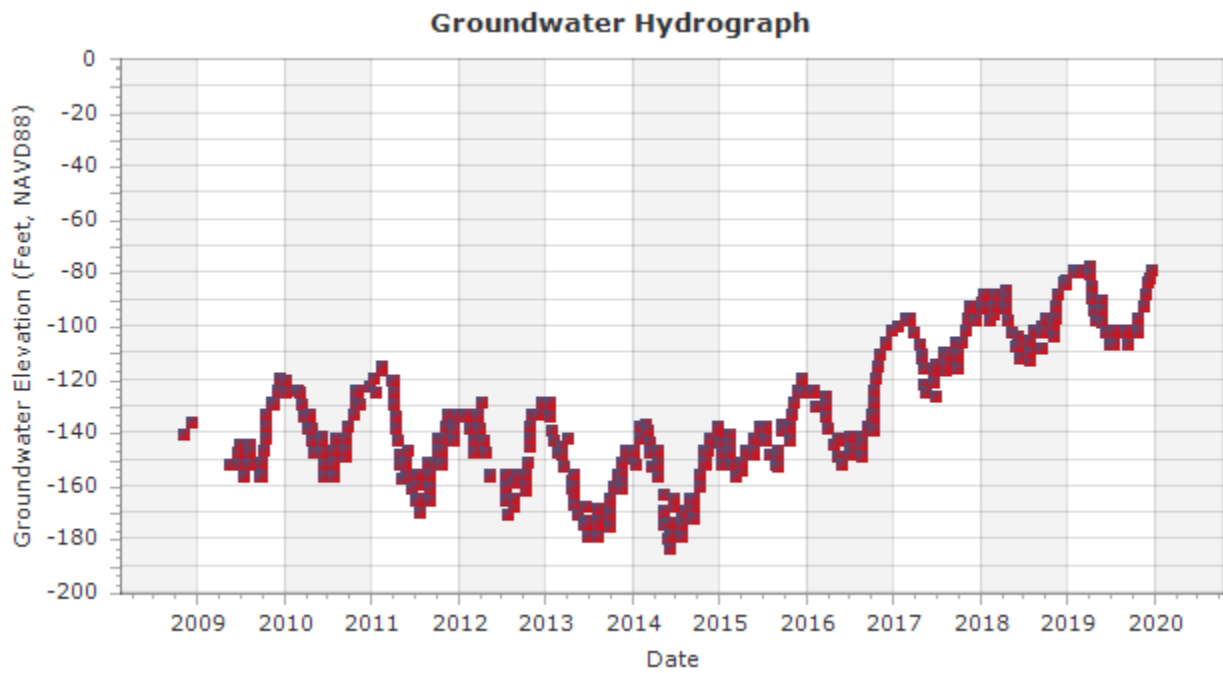
Station Name: MW-CUP-18-660



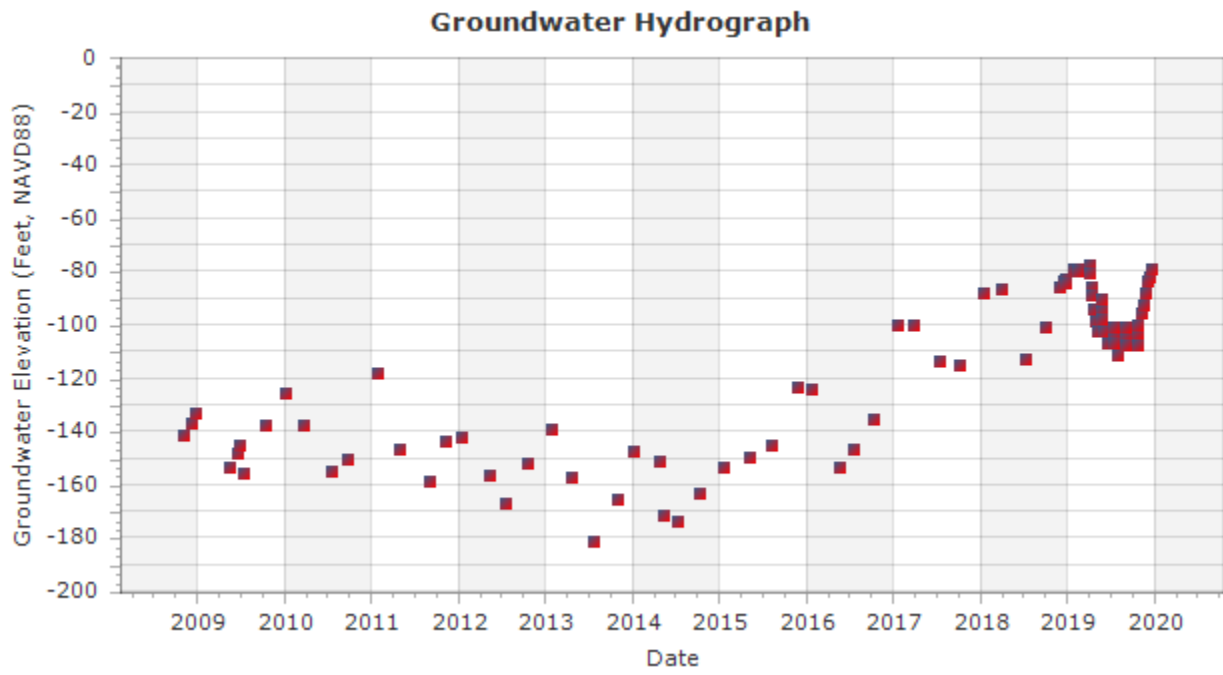
Station Name: MW-CUP-19-475



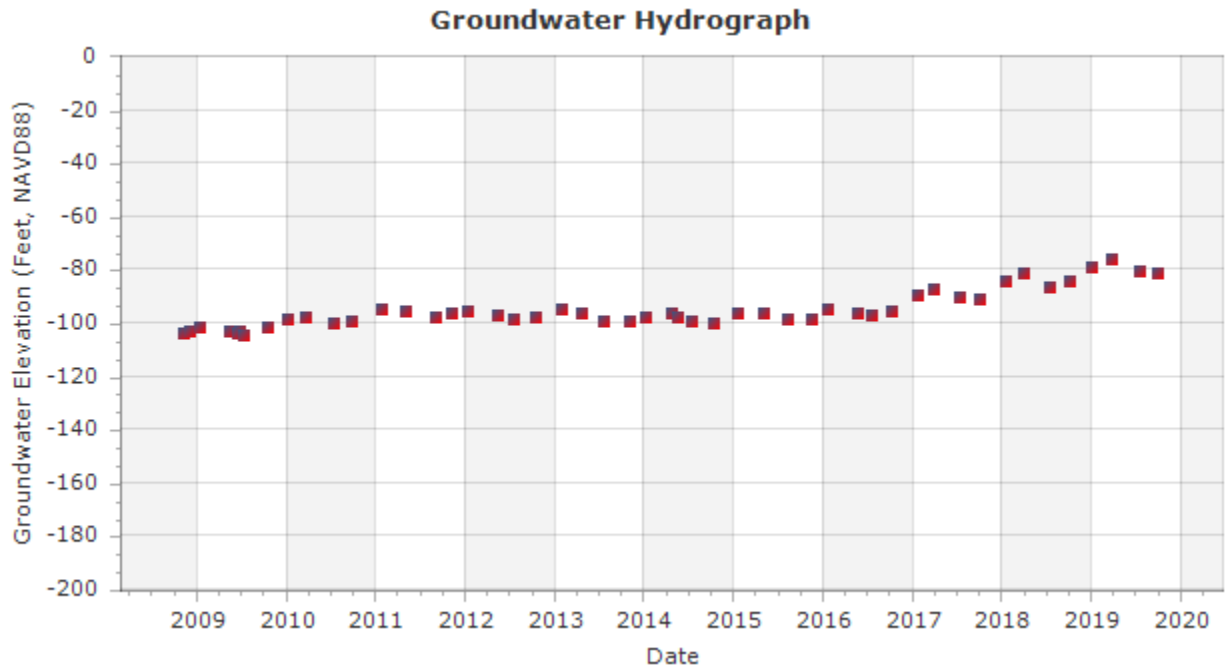
Station Name: MW-CUP-19-600



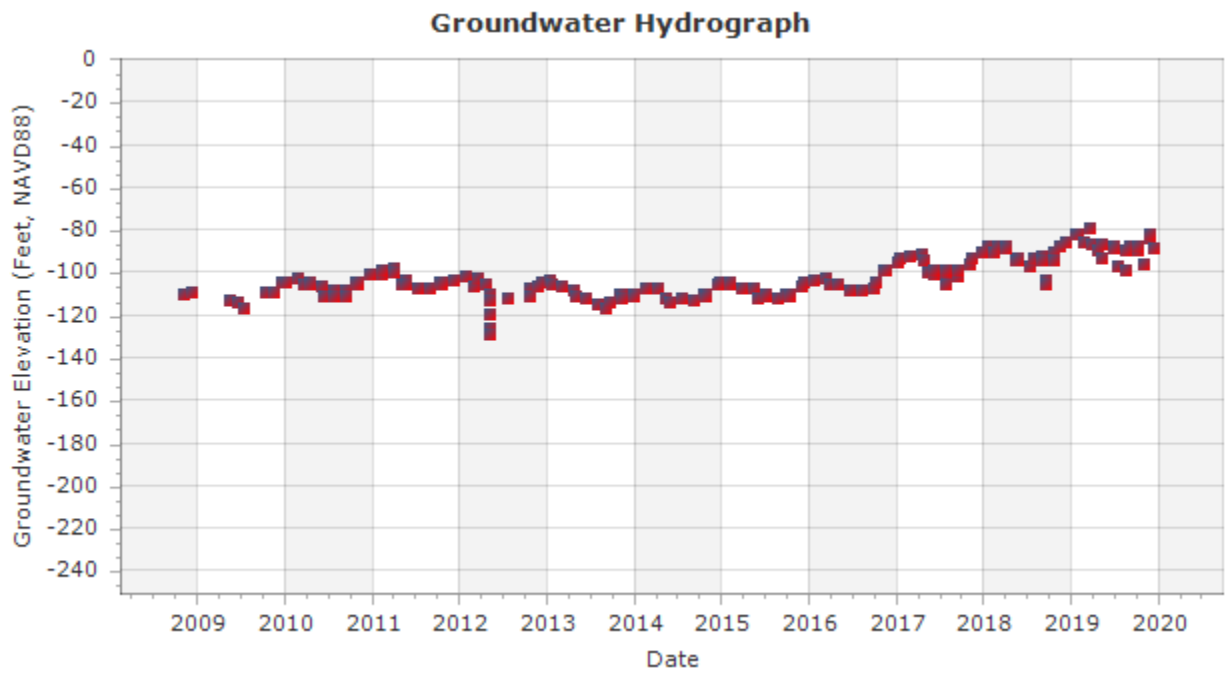
Station Name: MW-CUP-19-690



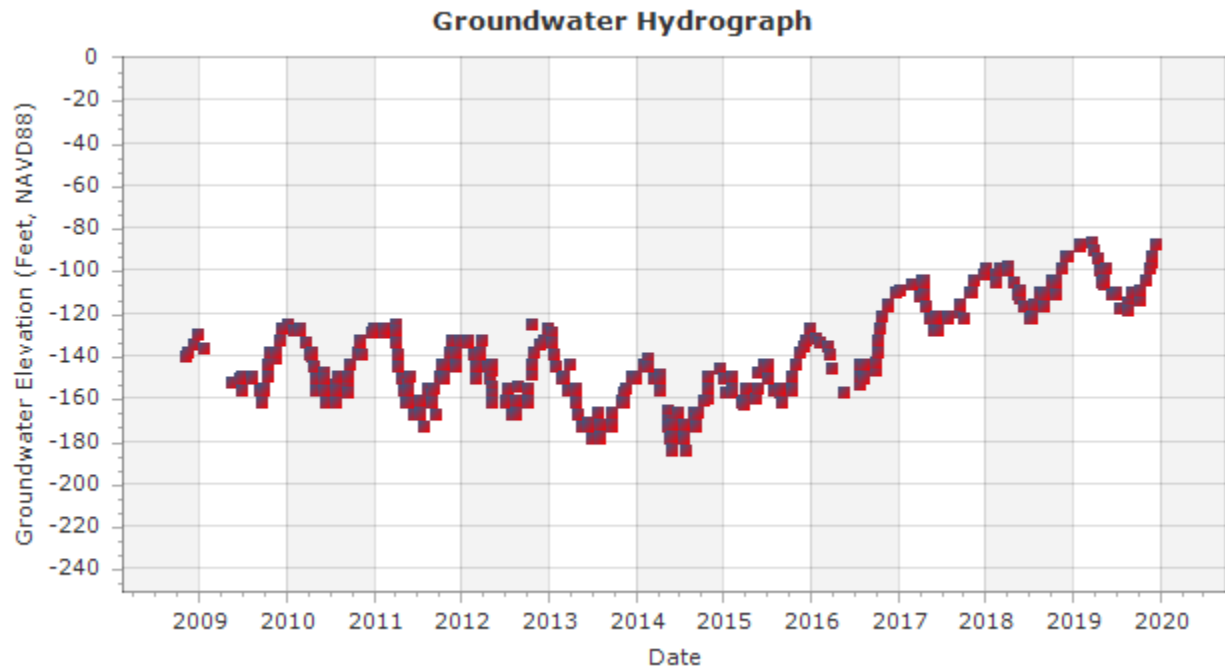
Station Name: MW-CUP-22A-290



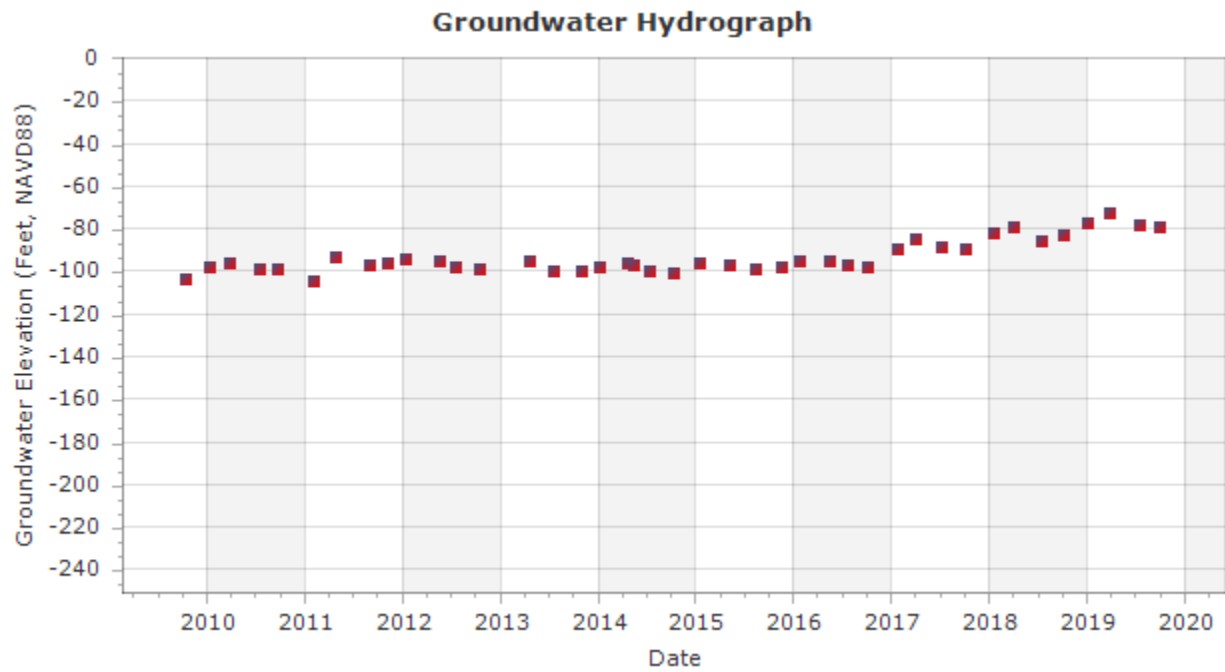
Station Name: MW-CUP-22A-440



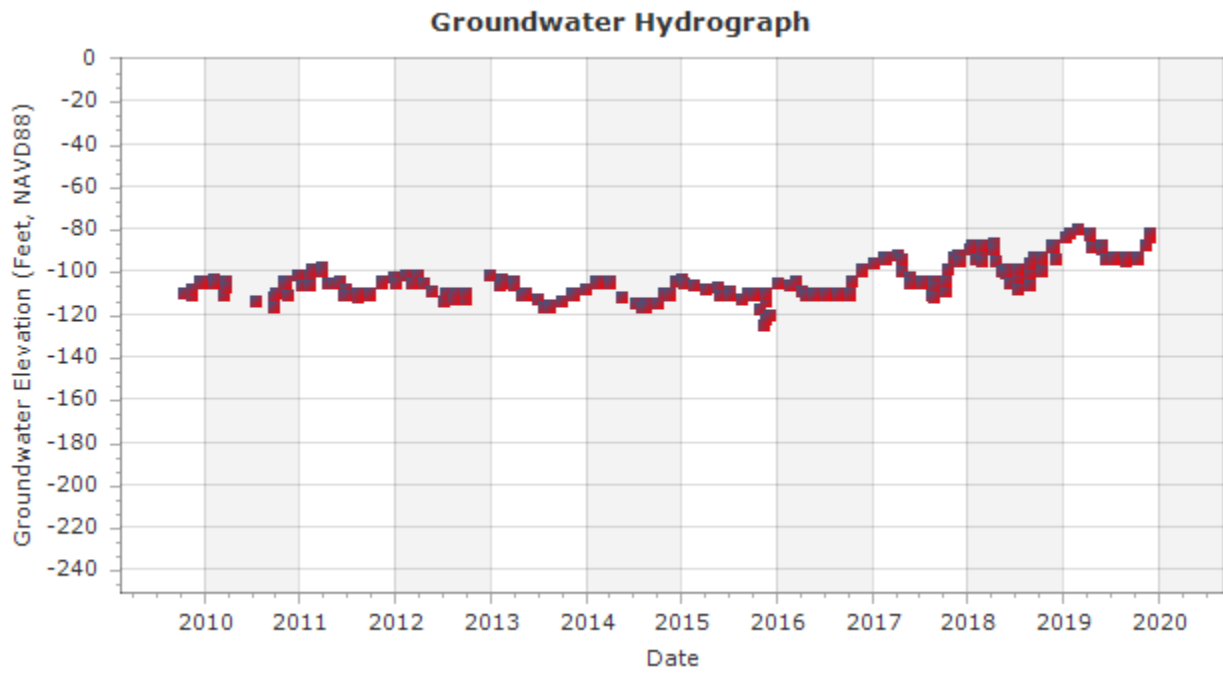
Station Name: MW-CUP-22A-545



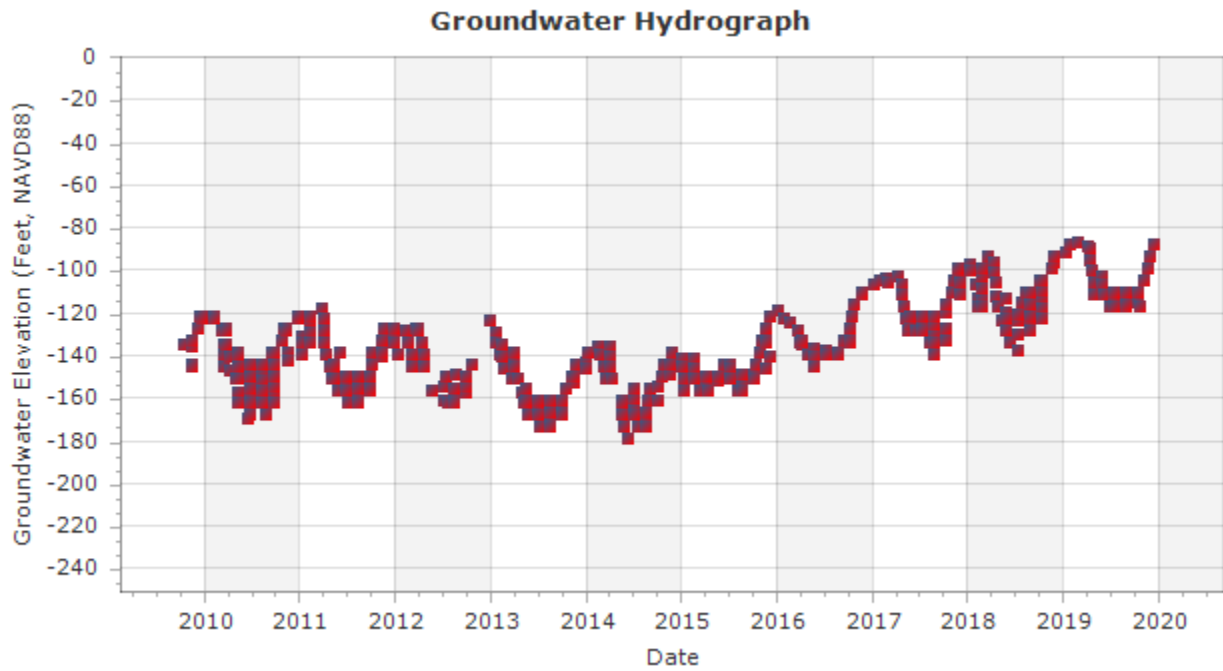
Station Name: MW-CUP-23-230



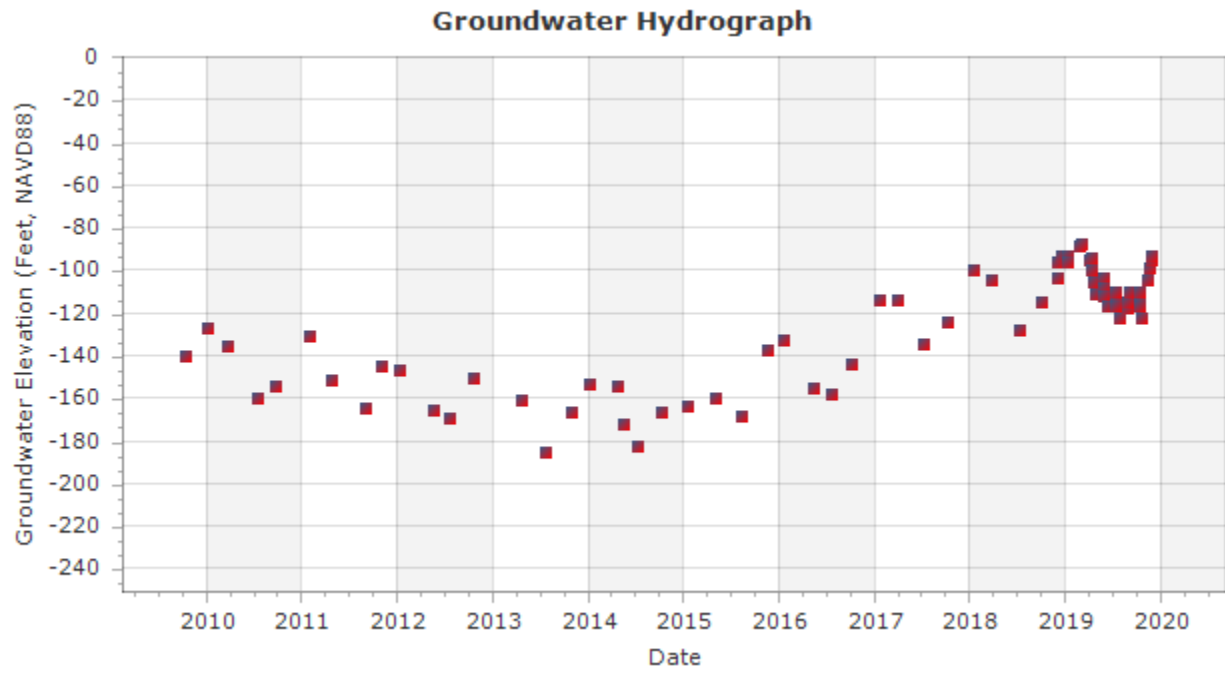
Station Name: MW-CUP-23-440



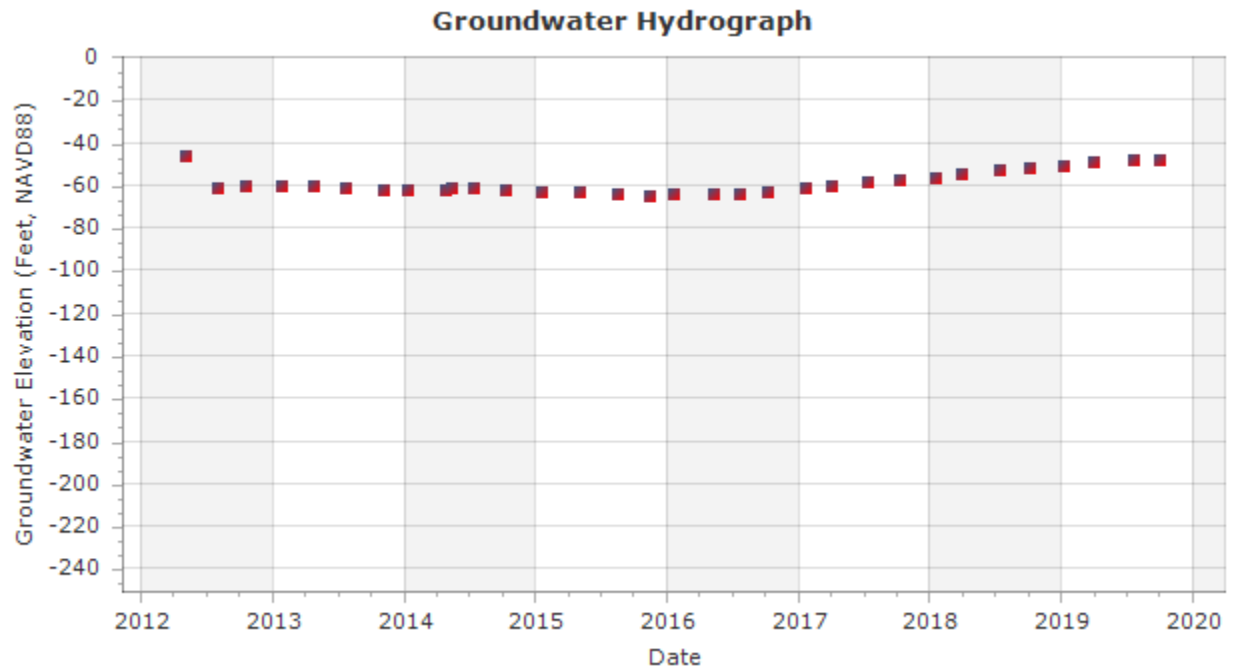
Station Name: MW-CUP-23-515



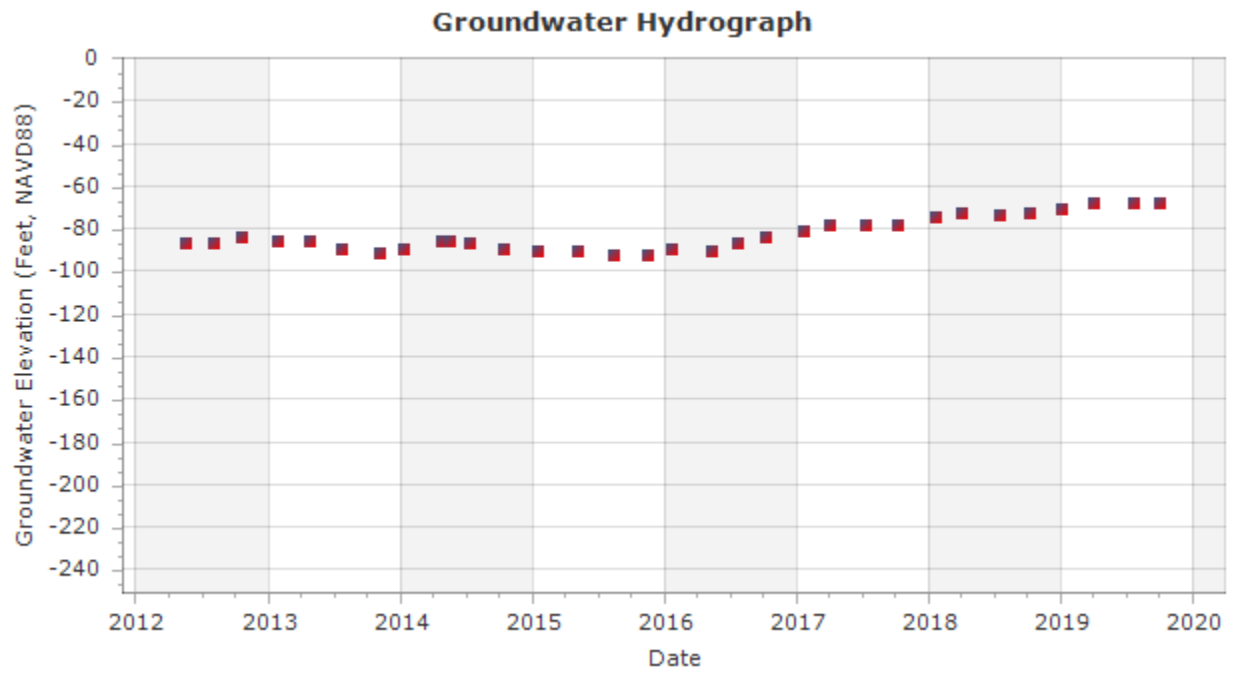
Station Name: MW-CUP-23-600



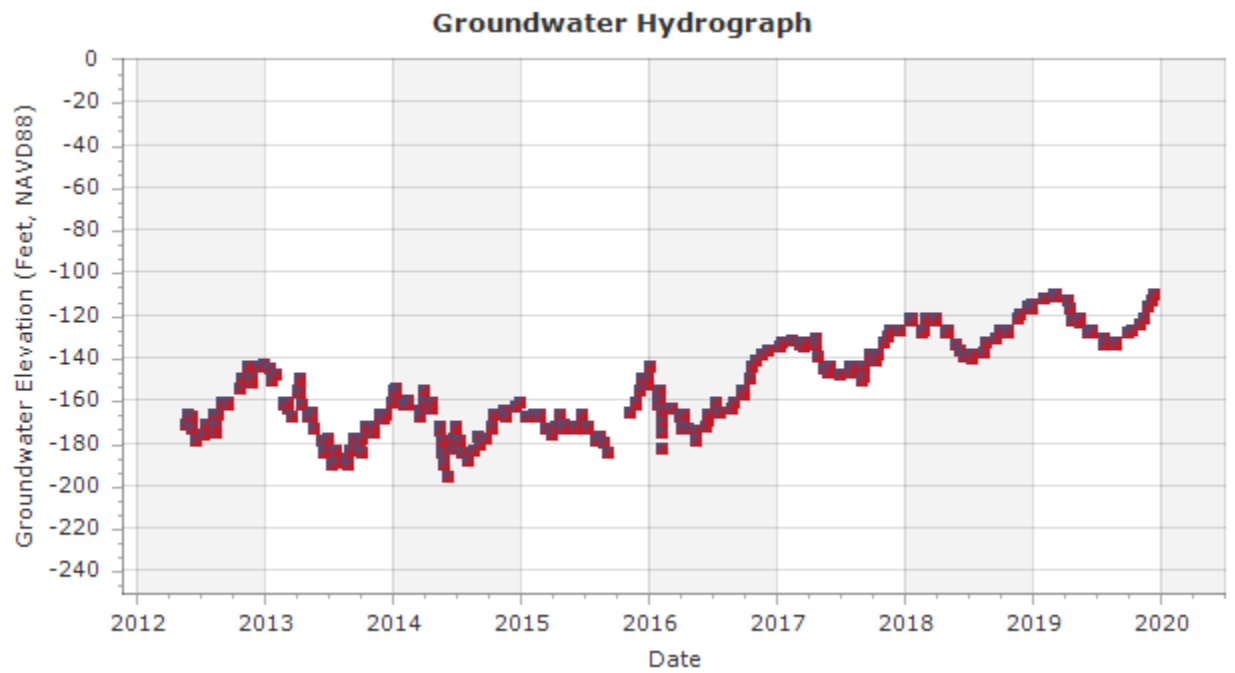
Station Name: MW-CUP-31-145



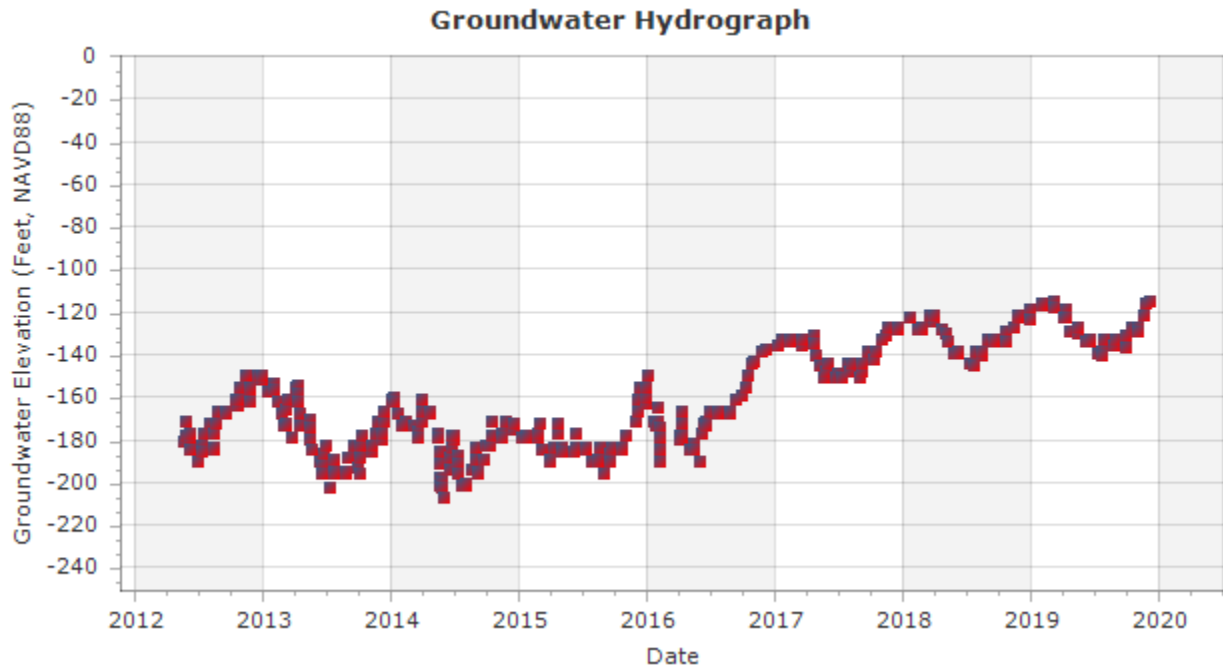
Station Name: MW-CUP-31-280



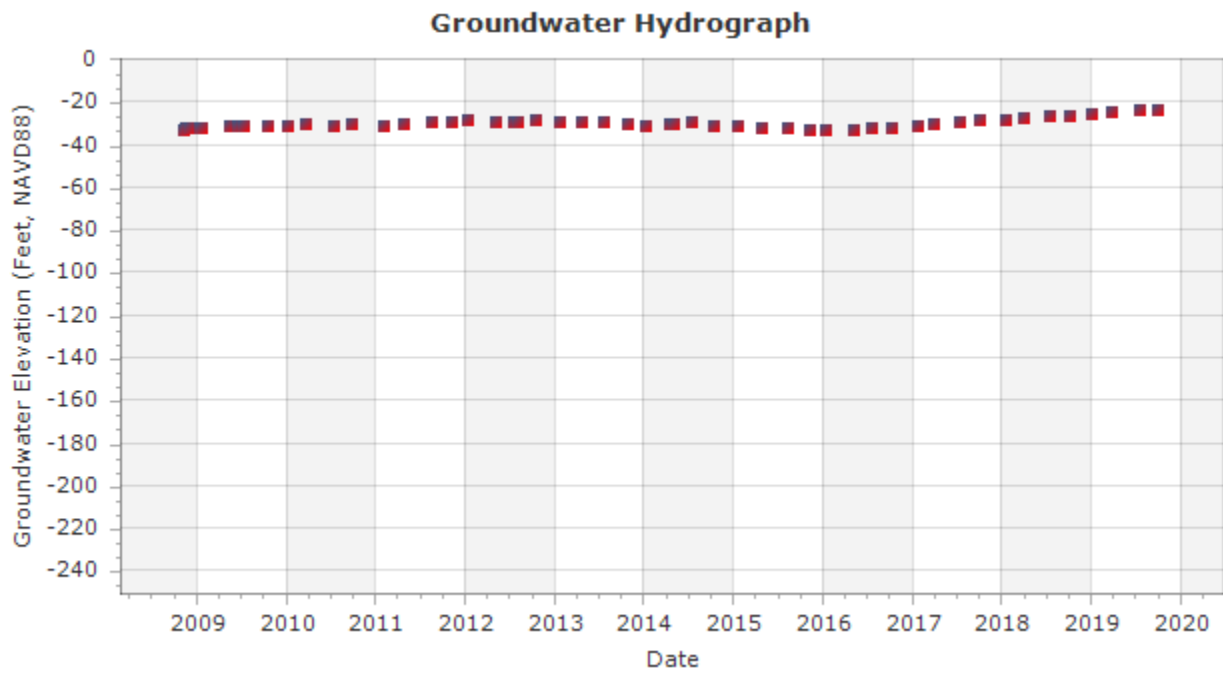
Station Name: MW-CUP-31-480



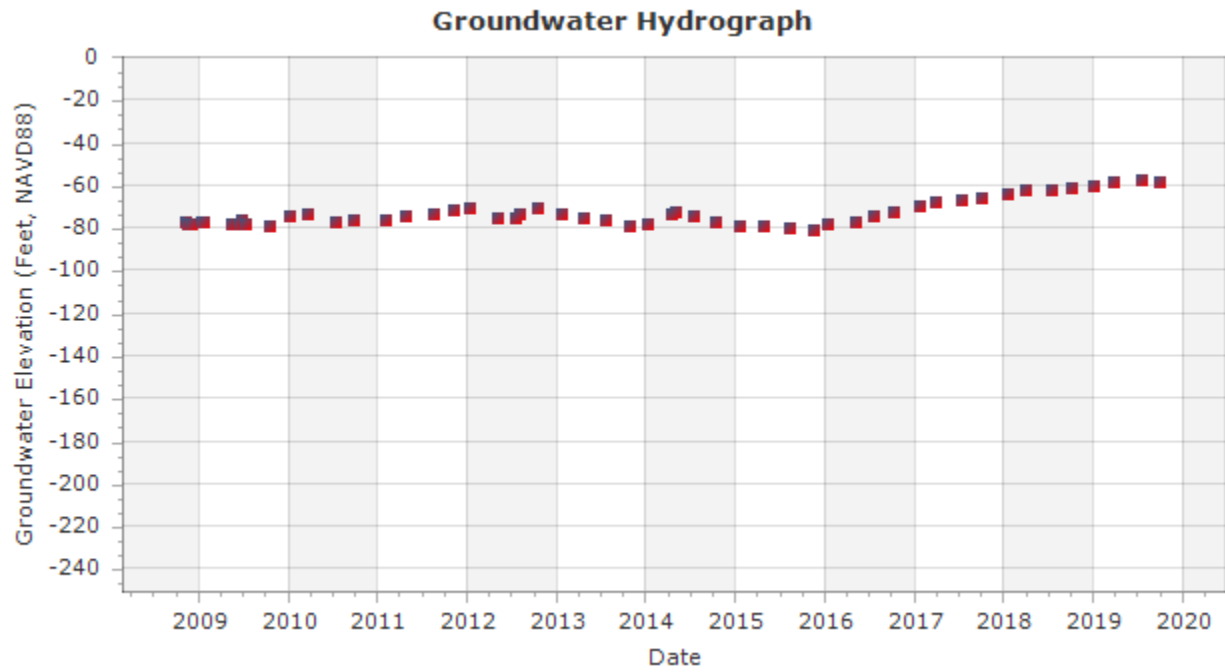
Station Name: MW-CUP-31-595



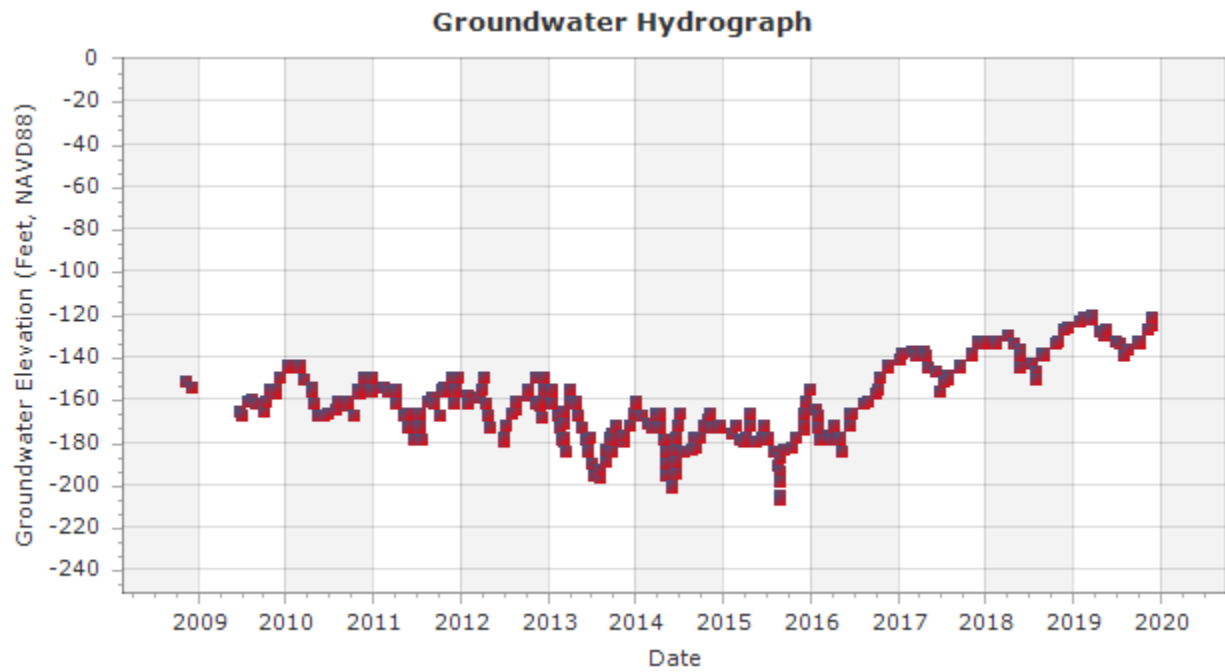
Station Name: MW-CUP-36-1-160



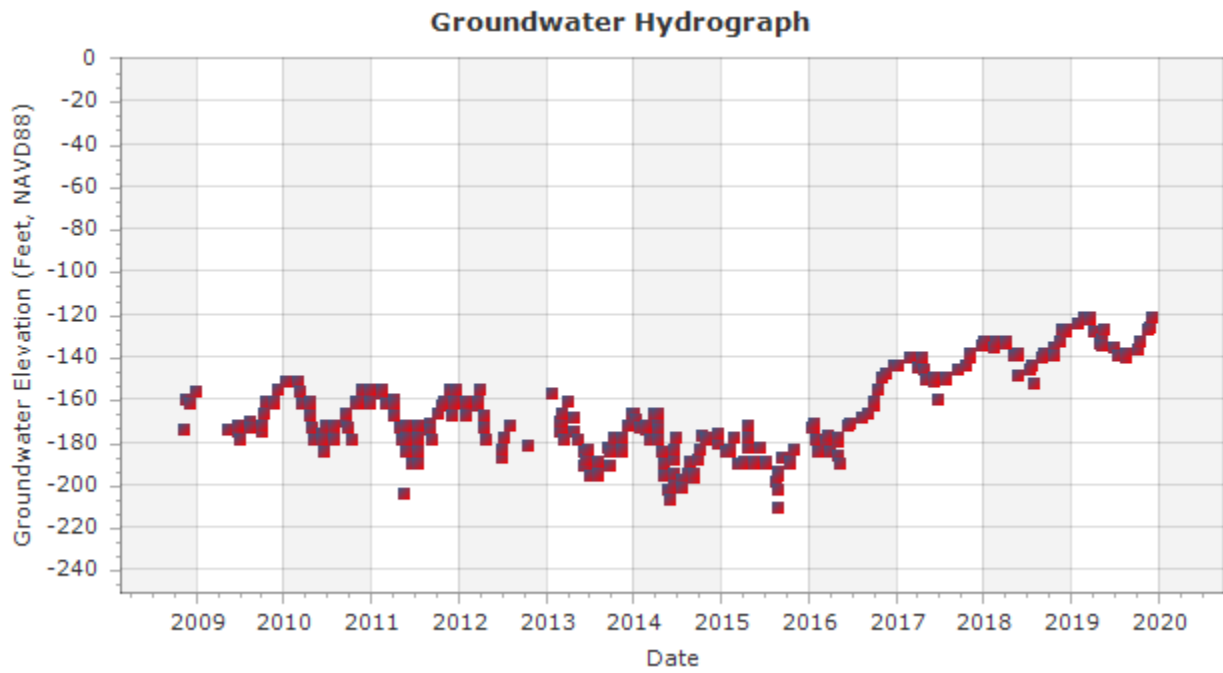
Station Name: MW-CUP-36-1-270



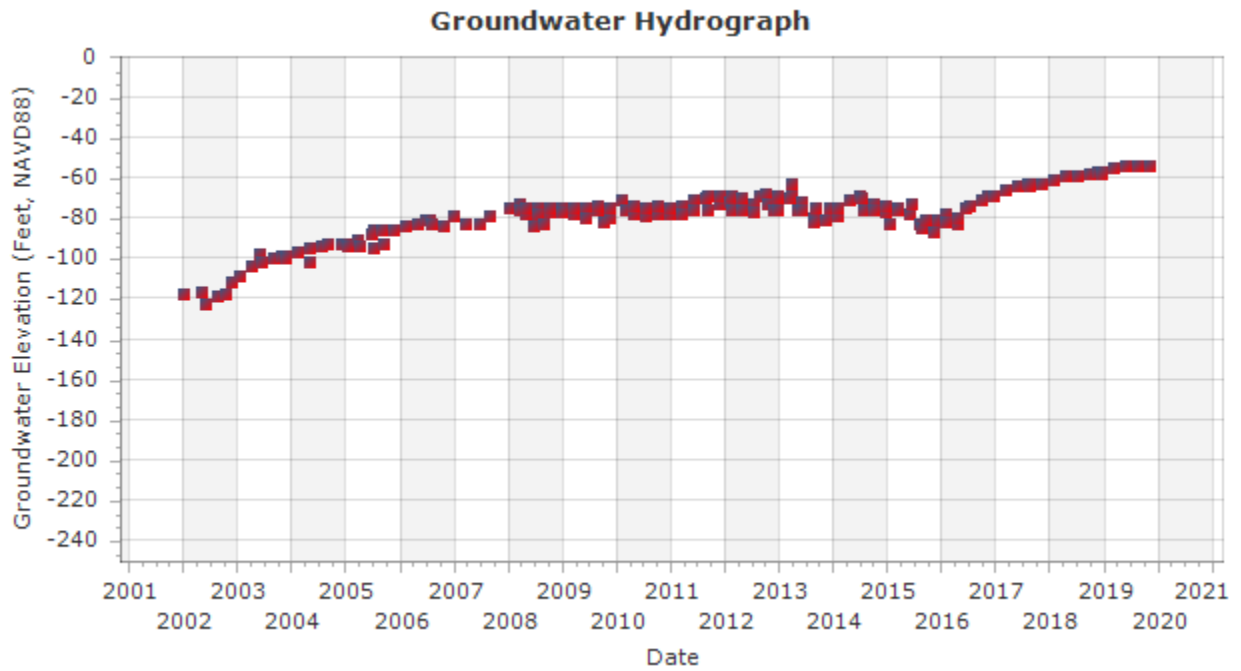
Station Name: MW-CUP-36-1-455



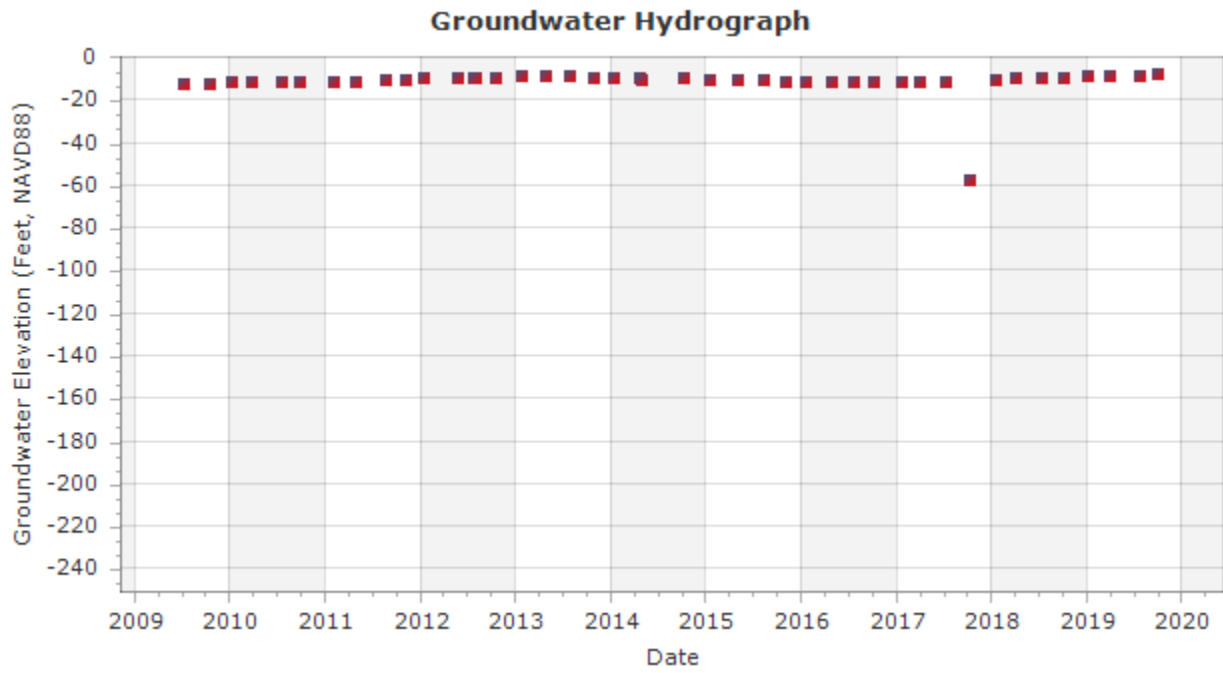
Station Name: MW-CUP-36-1-585



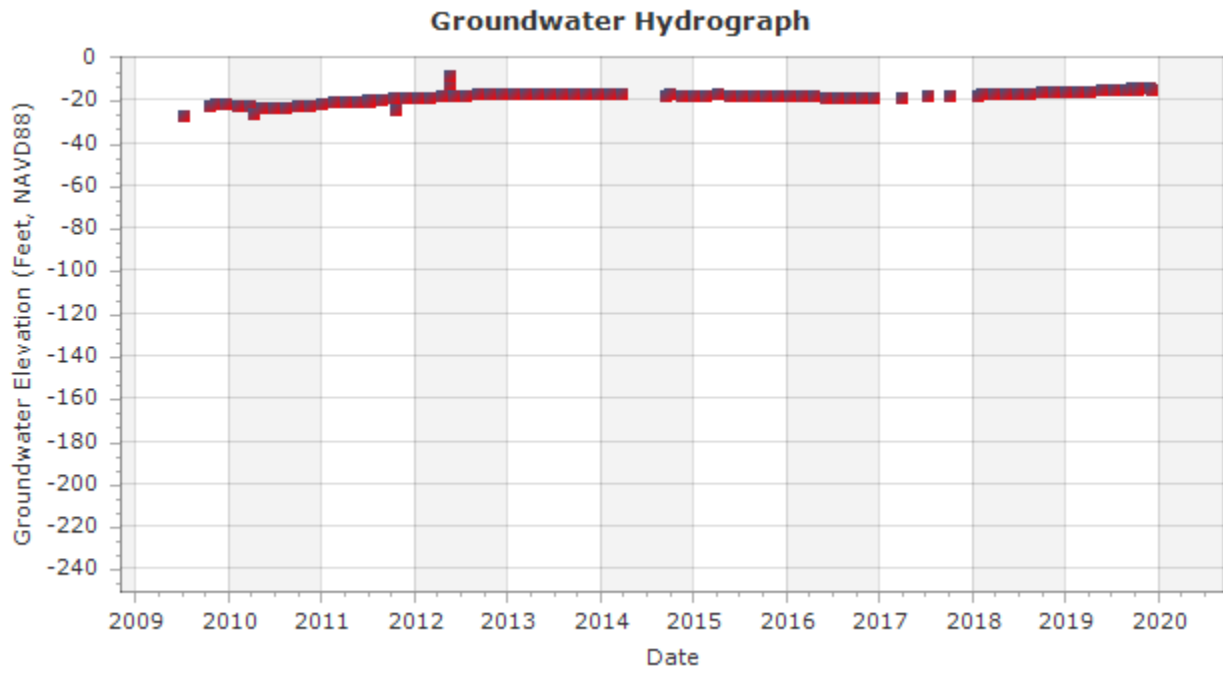
Station Name: CAL. WATER SERV. SS1-02



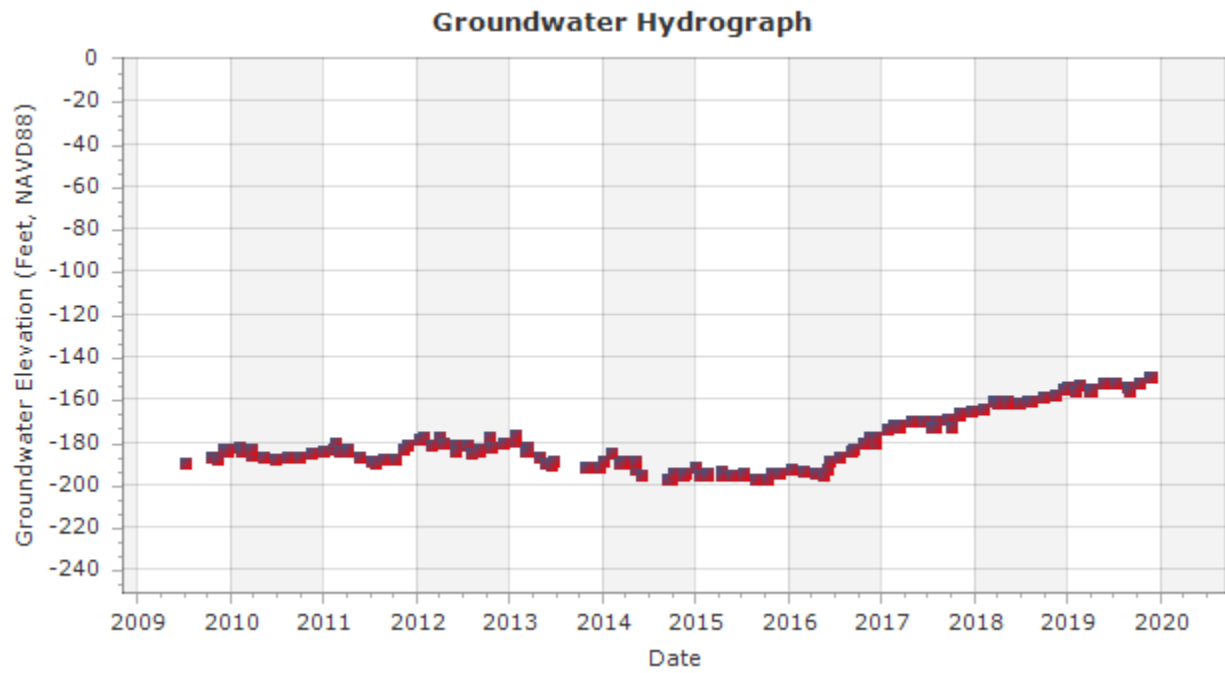
Station Name: MW-CUP-44-1-190



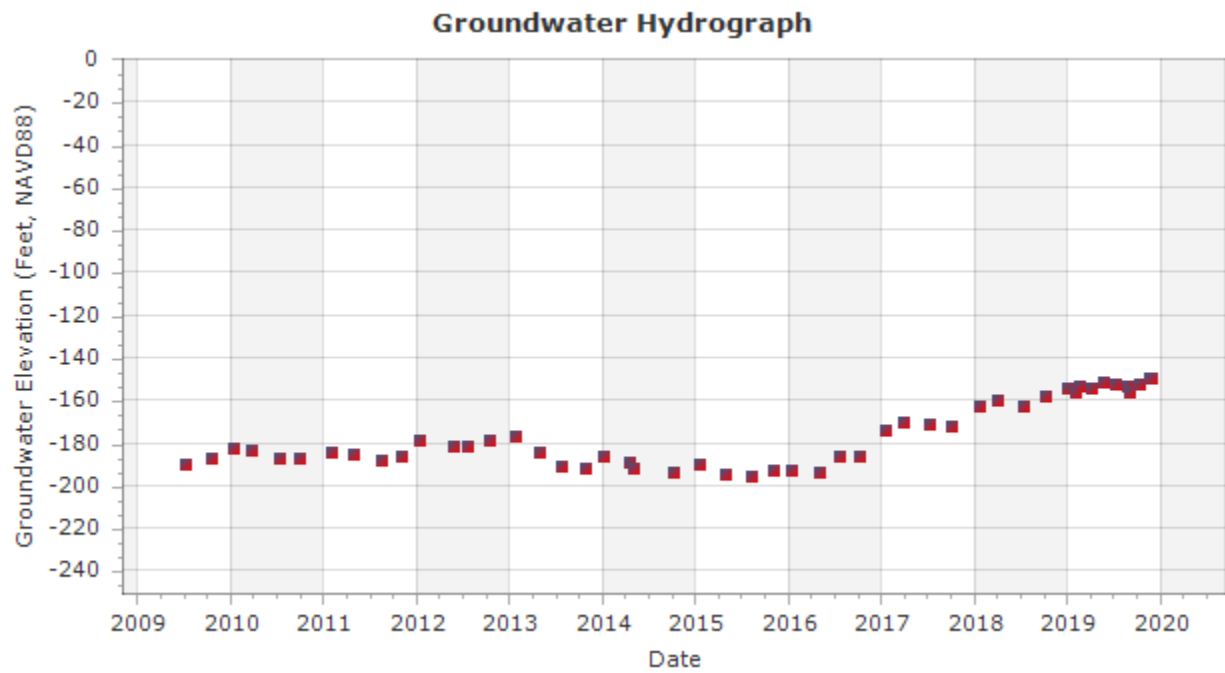
Station Name: MW-CUP-44-1-300



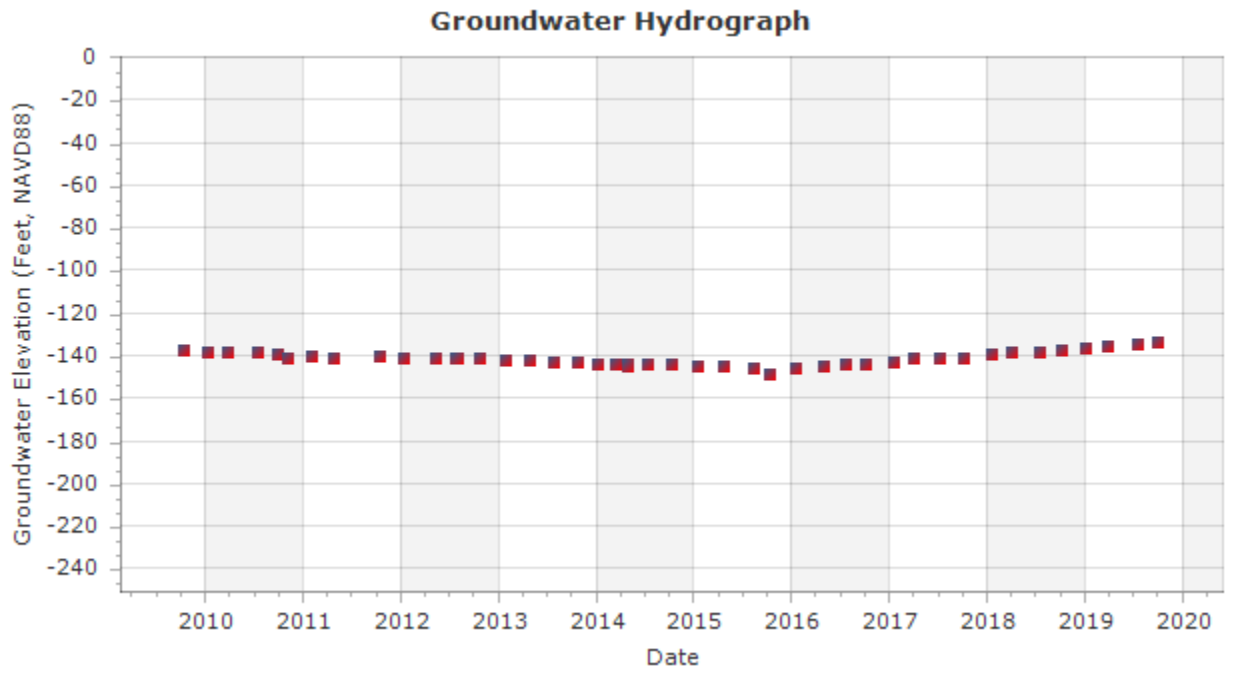
Station Name: MW-CUP-44-1-460



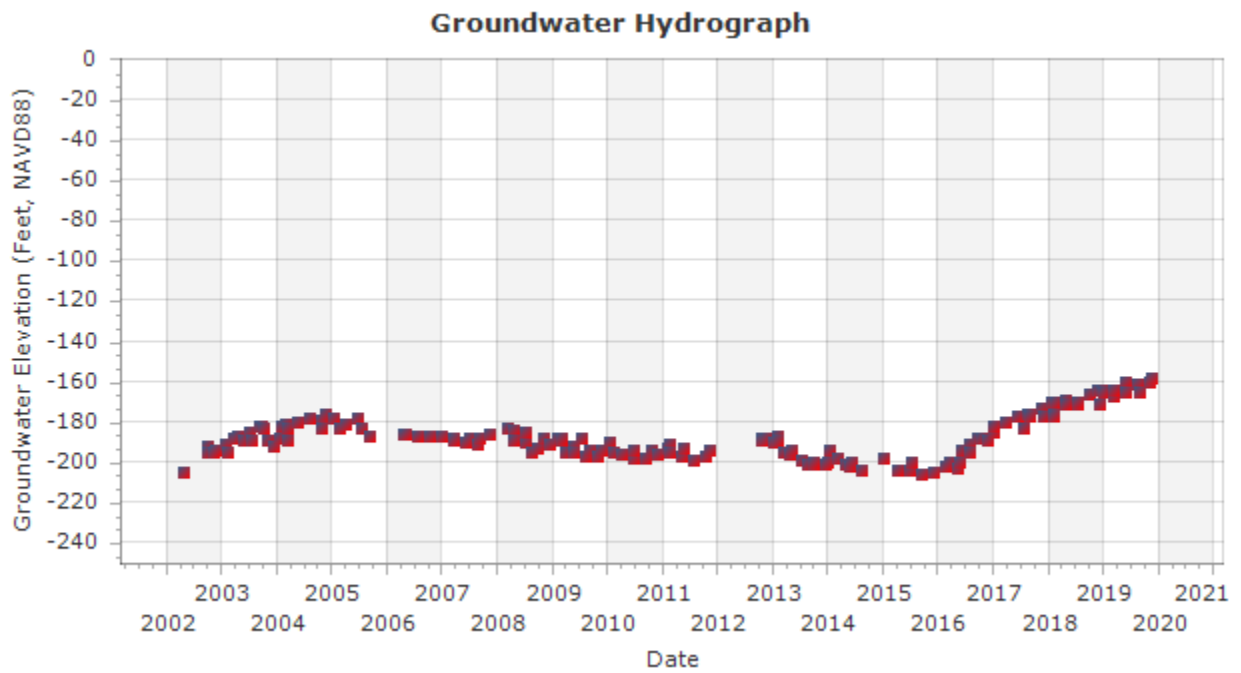
Station Name: MW-CUP-44-1-580



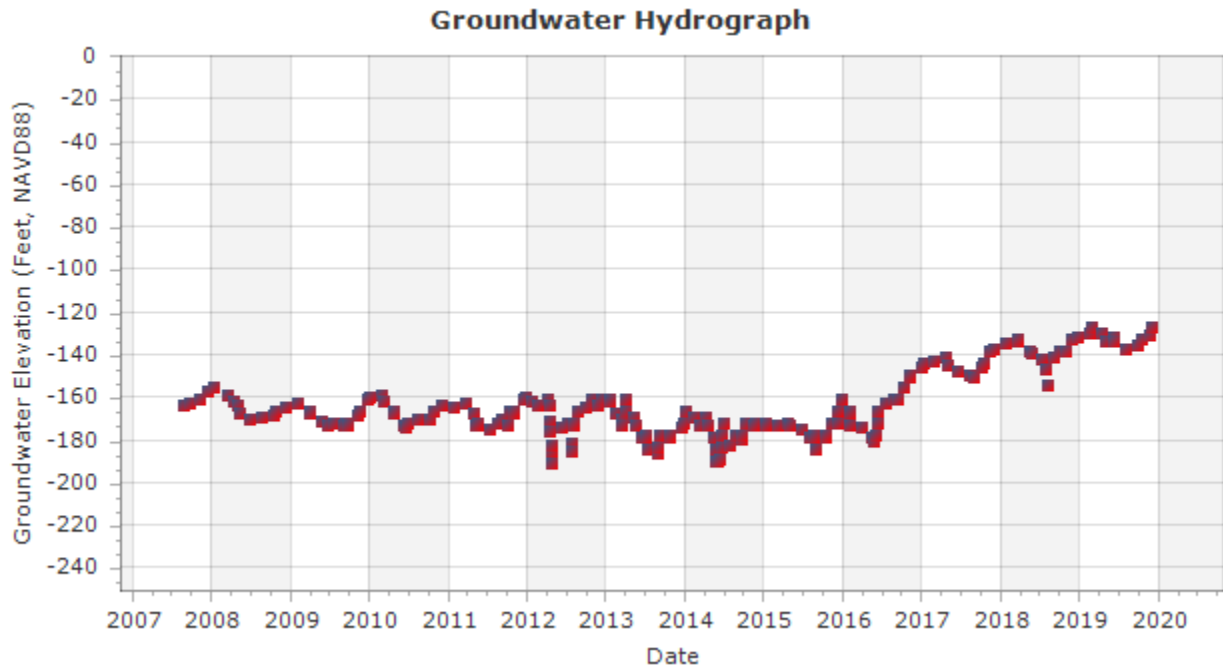
Station Name: MW-M1



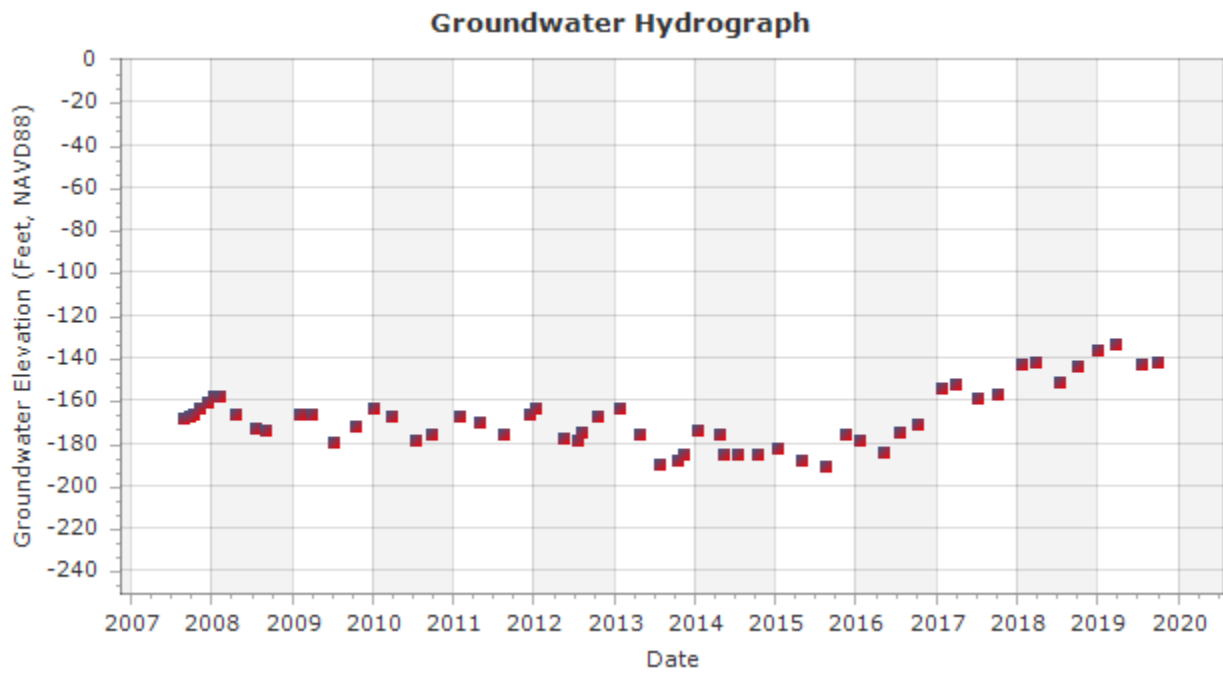
Station Name: SB-12 ELM AVENUE



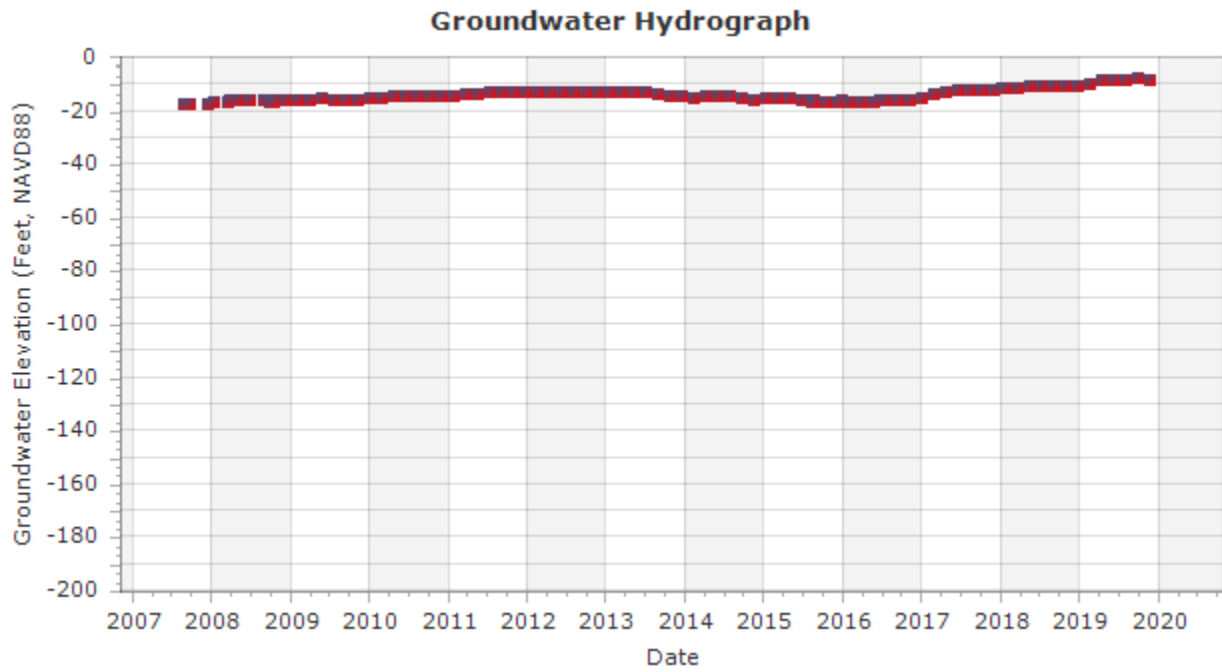
Station Name: SSFLP MW440



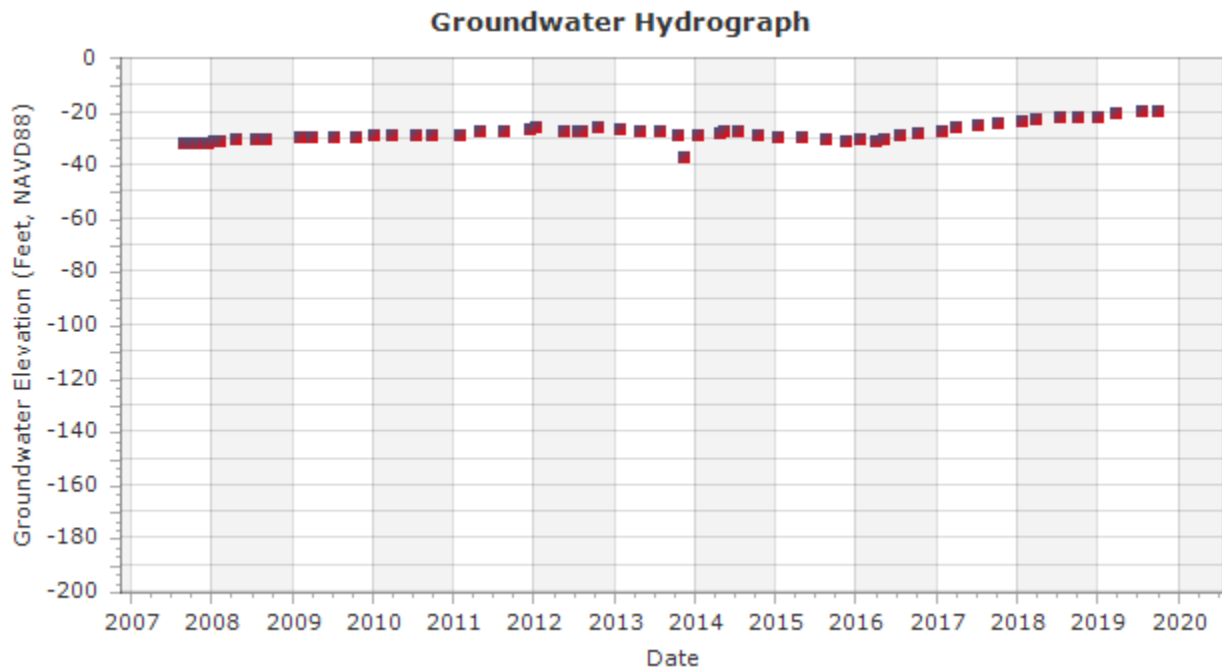
Station Name: SSFLP MW520



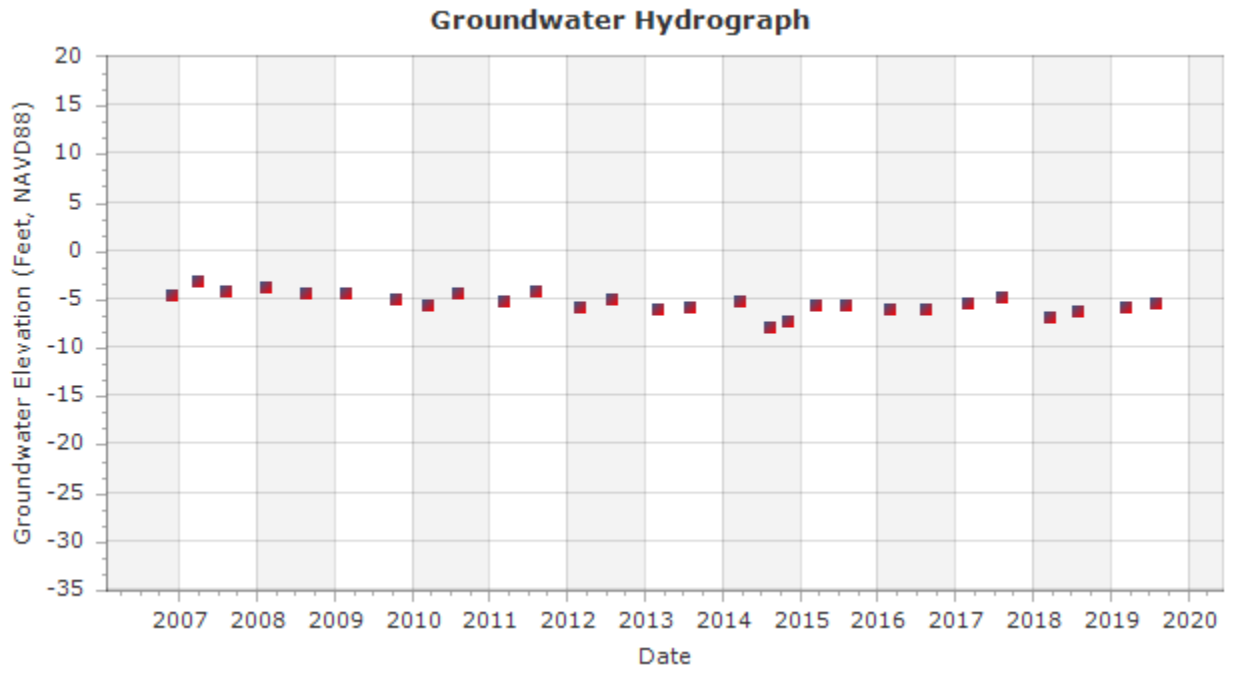
Station Name: SSFLP MW120



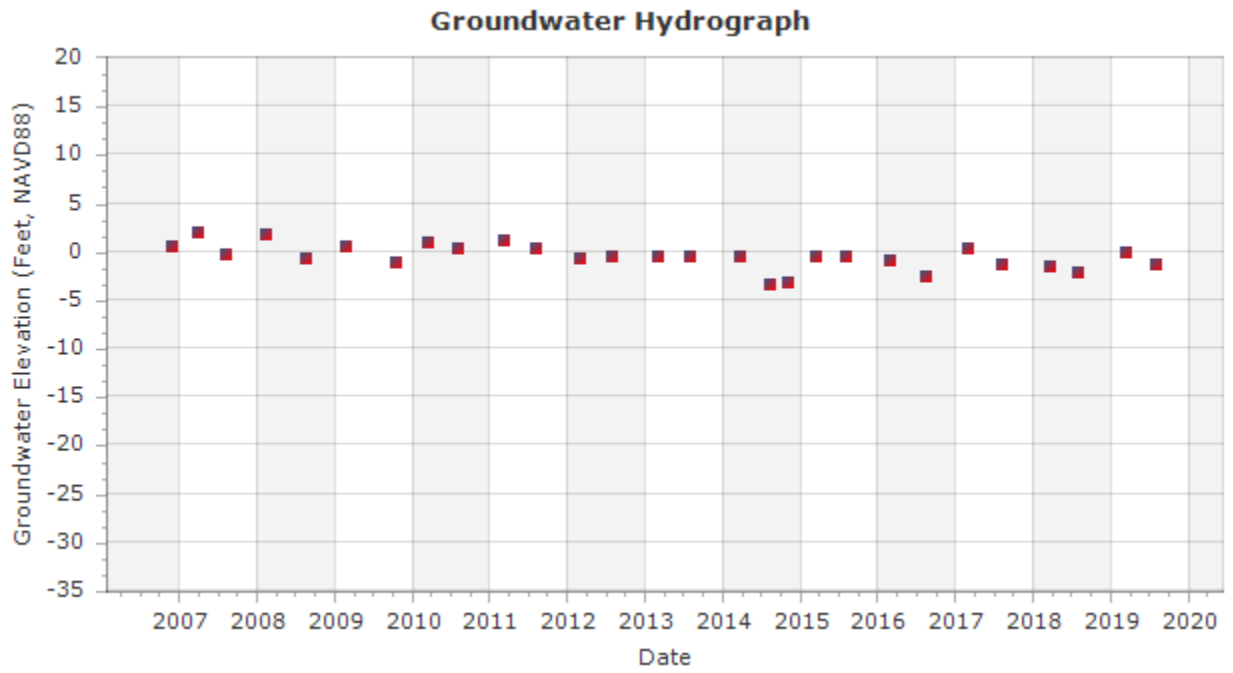
Station Name: SSFLP MW220



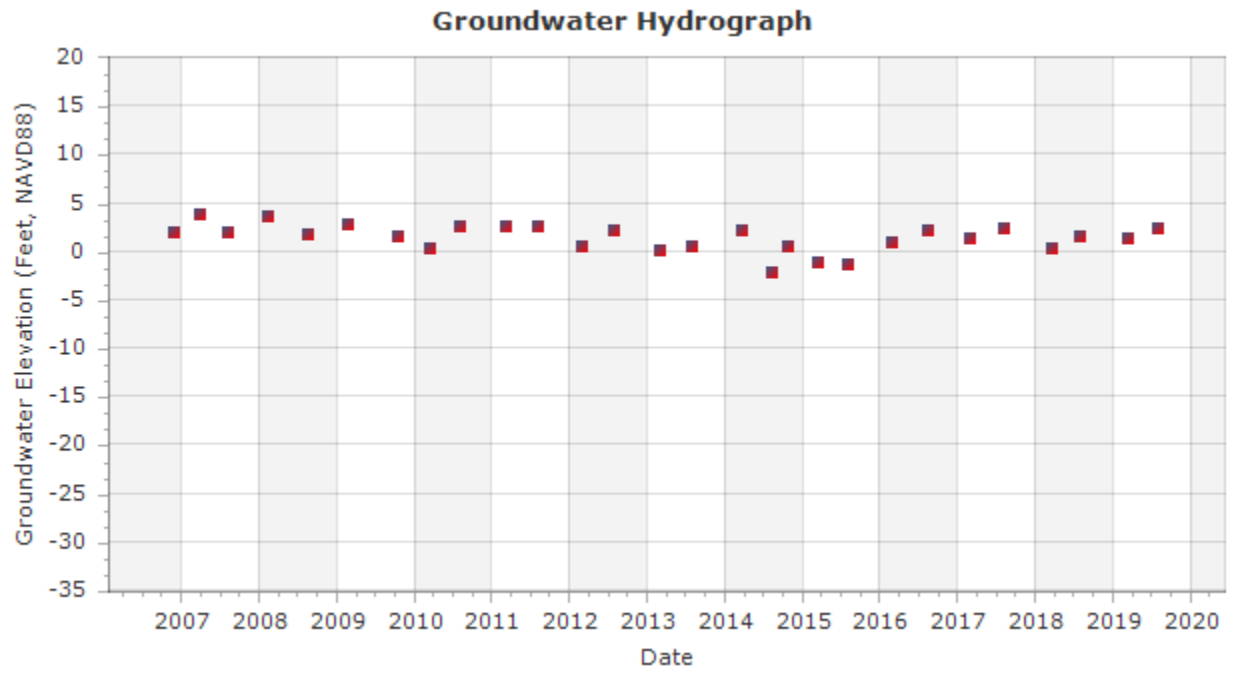
Station Name: Burlingame D



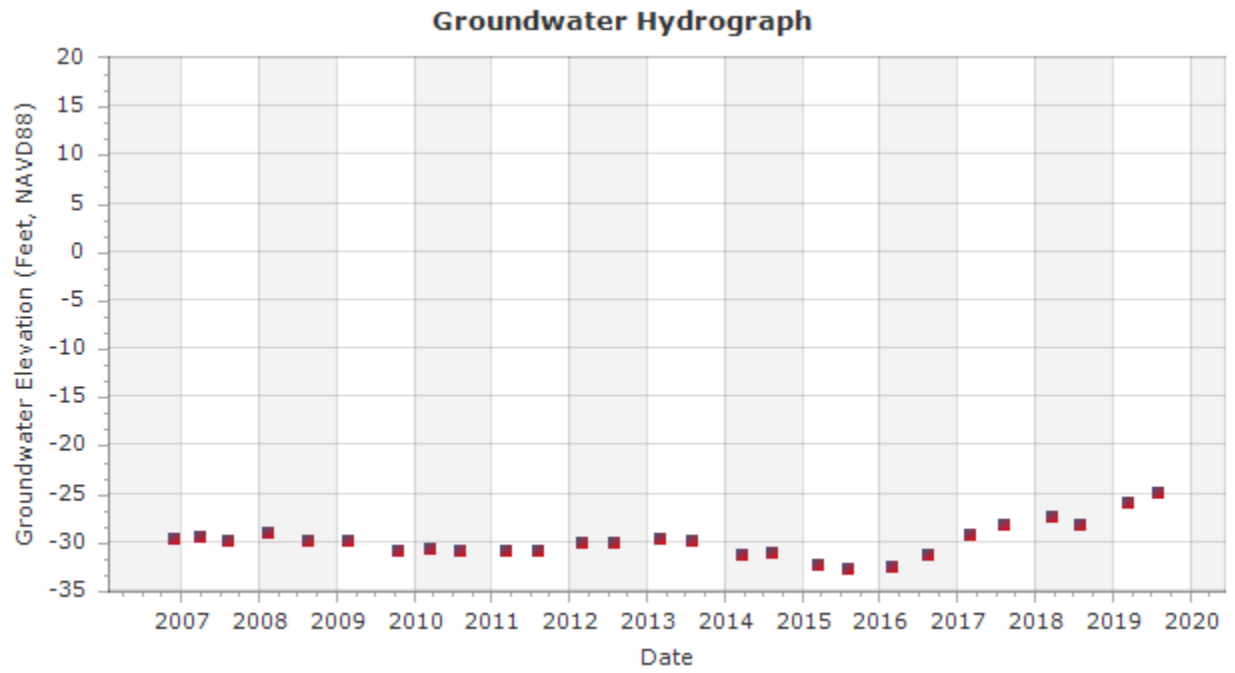
Station Name: Burlingame M



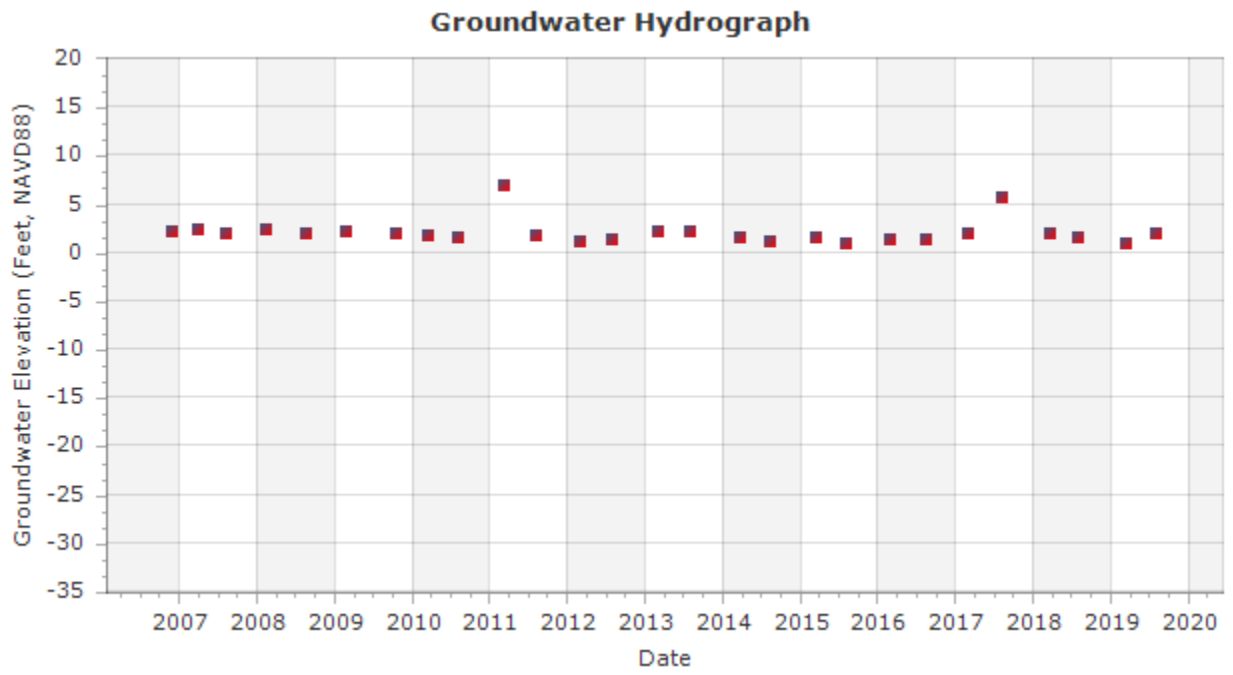
Station Name: Burlingame S



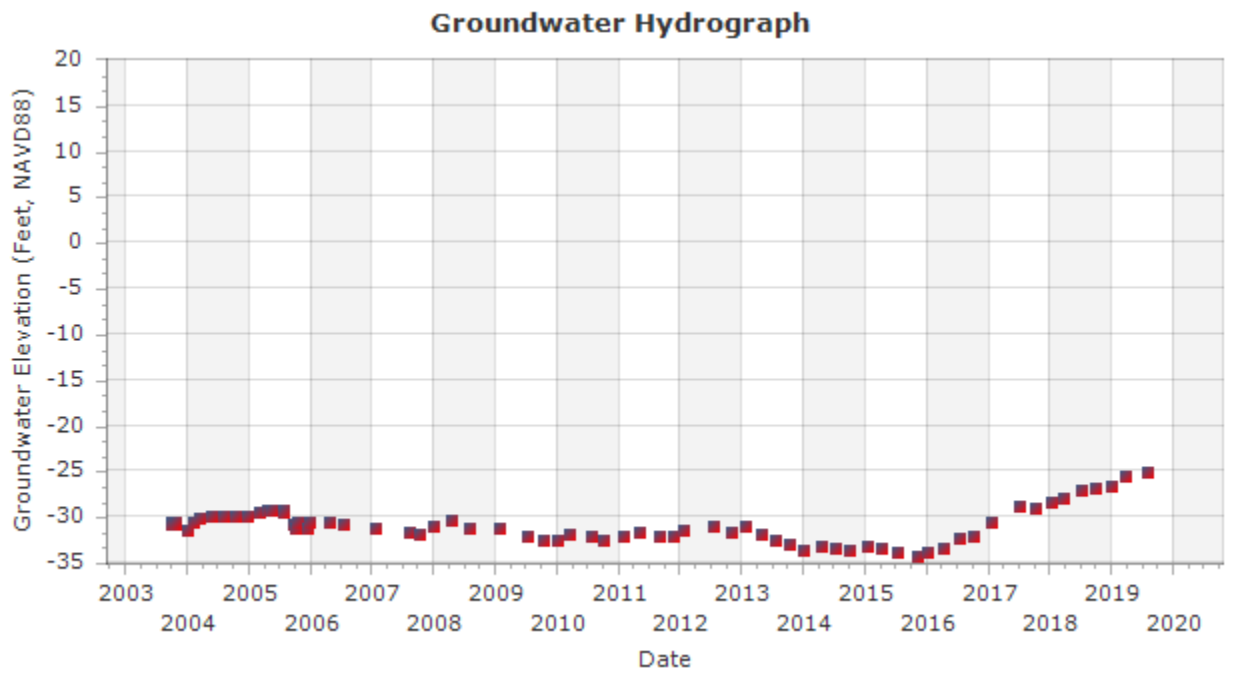
Station Name: SFO-D



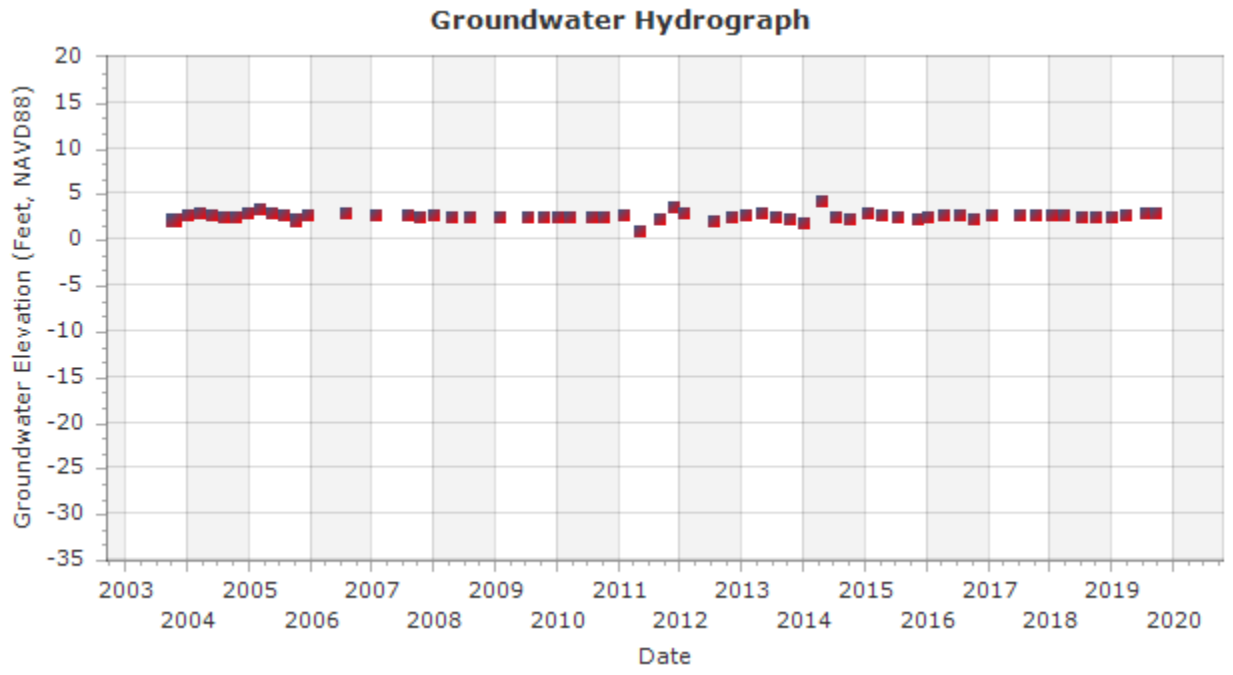
Station Name: SFO-S



Station Name: UAL MW13C



Station Name: UAL MW13D



APPENDIX B
Laboratory Analytical Results

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Lab Sample#: 1952265-01 **Sample Source:** WSB_SB05_SB16 **External ID:**

Date Collected: 4/3/19 12:50 pm **Date Received:** 4/3/19 1:33 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	61.4	mg/L	1	5	04/03/2019	99783 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	58.1	mg/L	0.01	1	04/16/2019	100333 BTRINH	
Magnesium, Mg	38.8	mg/L	0.024	0.2	04/16/2019	100333 BTRINH	
Potassium, K	2.72	mg/L	0.035	0.2	04/16/2019	100333 BTRINH	
Sodium, Na	56.2	mg/L	0.013	1	04/16/2019	100333 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	185	mg/L	0.593	3	04/03/2019	99782 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	114	mg/L		3	04/03/2019	99785 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	888	µmhos/cm		1	04/03/2019	99775 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	312	mg/L	0.474	3	04/03/2019	99777 JCOLOMA	
MBP_PH(SM 4500-H+ B) pH	7.39	pH			04/03/2019	99776 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	503	mg/L	13.2	20	04/04/2019	99794 CCHAPMAN	>MCL

Lab Sample#: 1952265-01A **Sample Source:** WSB_SB05_SB16 **External ID:**

Date Collected: 4/3/19 12:50 pm **Date Received:** 4/3/19 1:33 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/03/2019	99783 MAWALLACE	

Lab Sample#: 1952265-02 **Sample Source:** WSB_SB06_SB17 **External ID:**

Date Collected: 4/16/19 11:45 am **Date Received:** 4/16/19 1:20 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	21.3	mg/L	0.5	2.5	04/17/2019	100439 MAWALLACE	
Nitrate as N	1.69	mg/L	0.17	0.35	04/17/2019	100439 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	31.2	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	18.1	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	3.24	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	48.8	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	150	mg/L	0.593	3	04/16/2019	100442 CCHAPMAN	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_CHLORIDE(SM 4500-CL- D) Chloride	54.8	mg/L		3	04/16/2019	100443 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	527	µmhos/cm		1	04/16/2019	100435 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	151	mg/L	0.474	3	04/16/2019	100446 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.69	pH			04/16/2019	100449 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	292	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952265-03 **Sample Source:** WSB_SB07_SB18 **External ID:**

Date Collected: 5/8/19 10:05 am **Date Received:** 4/16/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	1.69	mg/L	0.034	0.07	05/08/2019	101562 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	30.4	mg/L	0.01	1	05/13/2019	101726 BTRINH
Magnesium, Mg	20.5	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
Potassium, K	2.74	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
Sodium, Na	47	mg/L	0.013	1	05/13/2019	101726 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	140	mg/L	0.593	3	05/08/2019	101554 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D) Chloride	61.9	mg/L		3	05/08/2019	101555 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	549	µmhos/cm		1	05/08/2019	101539 CCHAPMAN
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	161	mg/L	0.474	3	05/08/2019	101553 JCOLOMA
MBP_PH(SM 4500-H+ B) pH	7.65	pH			05/08/2019	101540 CCHAPMAN
MBP_TDS(SM 2540 C) Total Dissolved Solids	295	mg/L	13.2	20	05/09/2019	101545 ALEE

Lab Sample#: 1952265-03A **Sample Source:** WSB_SB07_SB18 **External ID:**

Date Collected: 5/8/19 10:05 am **Date Received:** 4/16/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	28.3	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE

Lab Sample#: 1952265-04 **Sample Source:** WSB_SB08_SB20 **External ID:**

Date Collected: 5/8/19 10:40 am **Date Received:** 4/16/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
--------------	--------	------	-----	-----	---------------	---------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	0.279	mg/L	0.034	0.07	05/08/2019	101562	MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	41.2	mg/L	0.01	1	05/13/2019	101726	BTRINH
Magnesium, Mg	28.1	mg/L	0.024	0.2	05/13/2019	101726	BTRINH
Potassium, K	3.2	mg/L	0.035	0.2	05/13/2019	101726	BTRINH
Sodium, Na	63.1	mg/L	0.013	1	05/13/2019	101726	BTRINH
MBP_ALK(SM 2320 B) Alkalinity	194	mg/L	0.593	3	05/08/2019	101554	JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D) Chloride	84.7	mg/L		3	05/08/2019	101555	JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	728	µmhos/cm		1	05/08/2019	101539	CCHAPMAN
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	216	mg/L	0.474	3	05/08/2019	101553	JCOLOMA
MBP_PH(SM 4500-H+ B) pH	7.69	pH			05/08/2019	101540	CCHAPMAN
MBP_TDS(SM 2540 C) Total Dissolved Solids	376	mg/L	13.2	20	05/09/2019	101545	ALEE

Lab Sample#: 1952265-04A **Sample Source:** WSB_SB08_SB20 **External ID:**

Date Collected: 5/8/19 10:40 am **Date Received:** 4/16/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	49.3	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE

Lab Sample#: 1952265-05 **Sample Source:** WSB_SB_DUP **External ID:**

Date Collected: 4/3/19 12:55 pm **Date Received:** 4/3/19 1:33 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	87.8	mg/L	1	5	04/03/2019	99783 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	61	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	38.5	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	2.74	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	53.7	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	186	mg/L	0.593	3	04/03/2019	99782 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D) Chloride	114	mg/L		3	04/03/2019	99785 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	891	µmhos/cm		1	04/03/2019	99775 JCOLOMA

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

<i>MBP_HARDNESS_T(SM 2340 C)</i>									
<i>Hardness, Total, as CaCO3</i>	313	mg/L	0.474	3	04/03/2019	99777	JCOLOMA		
<i>MBP_PH(SM 4500-H+ B)</i>									
<i>pH</i>	7.42	pH			04/03/2019	99776	ALEE		
<i>MBP_TDS(SM 2540 C)</i>									
<i>Total Dissolved Solids</i>	506	mg/L	13.2	20	04/04/2019	99794	CCHAPMAN	>MCL	
Lab Sample#:	1952265-05A	Sample Source:	WSB_SB_DUP	External ID:					
Date Collected:	4/3/19 12:55 pm	Date Received:	4/3/19 1:33 pm	Sample Matrix:	Aqueous	Location Desc:			
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments			
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>									
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	04/03/2019	99783	MAWALLACE		

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

QC list for Run#: 99775 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962557-01	MRL_CK	Specific Conductance	10.8	µmhos/cm	108				
QC1962557-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962557-03	DUP	Specific Conductance	159	µmhos/cm		0		1	Splt# 1951961-04 (159µmhos/cm)
QC1962557-04	DUP	Specific Conductance	<1	µmhos/cm		N/A		1	Splt# 1736977-01 (<1µmhos/cm)
QC1962557-05	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 99776 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962549-01	ICV	pH	9.04	pH	100				
QC1962549-02	DUP	pH	9.05	pH		0			Splt# 1951980-01 (9.05pH)
QC1962549-03	CCV	pH	10	pH	100				

QC list for Run#: 99777 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962548-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1962548-03	DUP	Hardness, Total, as CaCO3	313	mg/L		0	0.474	3	Splt# 1952265-05 (313mg/L)
QC1962548-04	LCS	Hardness, Total, as CaCO3	38.8	mg/L	97			3	

QC list for Run#: 99782 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962552-03	DUP	Alkalinity	183	mg/L		0	0.593	3	Splt# 1952265-01 (185mg/L)
QC1962552-04	LCS	Alkalinity	40.2	mg/L	101			3	

QC list for Run#: 99783 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962553-01	MRL_CK	Sulfate	0.532	mg/L	106				
	MRL_CK	Nitrate as N	0.0718	mg/L	106				
QC1962553-02	CCV	Sulfate	2.36	mg/L	94				
	CCV	Nitrate as N	0.319	mg/L	94				
QC1962553-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962553-04	LCS	Sulfate	4.73	mg/L	94				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
LCS	Nitrate as N		0.638	mg/L	94				
QC1962553-05	SPK	Sulfate	13.8	mg/L	153				Splt# 1952487-01 (9.98mg/L)
	SPK	Nitrate as N	0.39	mg/L	95				Splt# 1952487-01 (0.0702mg/L)
QC1962553-06	SPKD	Sulfate	14.1	mg/L	168	2			Splt# 1952487-01 (9.98mg/L)
	SPKD	Nitrate as N	0.395	mg/L	96	1			Splt# 1952487-01 (0.0702mg/L)
QC1962553-07	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1962553-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 99785 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962554-03	DUP	Chloride	112	mg/L		1	1.16	3	Splt# 1952265-01 (114mg/L)
QC1962554-04	LCS	Chloride	38.9	mg/L	97			3	

QC list for Run#: 99794 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962562-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1962562-02	DUP	Total Dissolved Solids	500	mg/L		1	13.2	20	Splt# 1952265-05 (506mg/L)

QC list for Run#: 100333 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962846-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1962846-02	LCS	Calcium, Ca	20.1	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	20.6	mg/L	103		0.024	0.2	
	LCS	Potassium, K	18.4	mg/L	91		0.035	0.2	
	LCS	Sodium, Na	21.4	mg/L	107		0.013	1	
QC1962846-03	DUP	Calcium, Ca	59.6	mg/L		2	0.01	1	Splt# 1952265-01 (58.1mg/L)
	DUP	Magnesium, Mg	38.7	mg/L		0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
	DUP	Potassium, K	2.71	mg/L		0	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
	DUP	Sodium, Na	53.6	mg/L		4	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
SPK	Calcium, Ca		80.4	mg/L	112		0.01	1	Splt# 1952265-01 (58.1mg/L)
SPK	Magnesium, Mg		60.1	mg/L	107		0.024	0.2	Splt# 1952265-01 (38.8mg/L)
SPK	Potassium, K		20.9	mg/L	90		0.035	0.2	Splt# 1952265-01 (2.72mg/L)
SPK	Sodium, Na		72.1	mg/L	79		0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-05									
SPKD	Calcium, Ca		80.6	mg/L	113	0	0.01	1	Splt# 1952265-01 (58.1mg/L)
SPKD	Magnesium, Mg		59.8	mg/L	105	0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
SPKD	Potassium, K		21.6	mg/L	94	3	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
SPKD	Sodium, Na		74.2	mg/L	89	2	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-06									
DUP	Calcium, Ca		59.8	mg/L		2	0.01	1	Splt# 1952265-05 (61mg/L)
DUP	Magnesium, Mg		38.5	mg/L		0	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
DUP	Potassium, K		2.83	mg/L		2	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
DUP	Sodium, Na		58.1	mg/L		7	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-07									
SPK	Calcium, Ca		80.7	mg/L	98		0.01	1	Splt# 1952265-05 (61mg/L)
SPK	Magnesium, Mg		59	mg/L	103		0.024	0.2	Splt# 1952265-05 (38.5mg/L)
SPK	Potassium, K		21.4	mg/L	93		0.035	0.2	Splt# 1952265-05 (2.74mg/L)
SPK	Sodium, Na		73.8	mg/L	100		0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-08									
SPKD	Calcium, Ca		80	mg/L	95	0	0.01	1	Splt# 1952265-05 (61mg/L)
SPKD	Magnesium, Mg		58.3	mg/L	99	1	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
SPKD	Potassium, K		21.3	mg/L	92	0	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
SPKD	Sodium, Na		73.2	mg/L	97	0	0.013	1	Splt# 1952265-05 (53.7mg/L)

QC list for Run#: 100435 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962957-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1962957-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962957-03	DUP	Specific Conductance	156	µmhos/cm		0		1	Splt# 1952780-01 (156µmhos/cm)
QC1962957-04	DUP	Specific Conductance	174	µmhos/cm		0		1	Splt# 1952779-01 (173µmhos/cm)
QC1962957-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

QC list for Run#: 100439 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962959-01	MRL_CK	Sulfate	0.515	mg/L	103				
	MRL_CK	Nitrate as N	0.0694	mg/L	102				
QC1962959-02	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1962959-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962959-04	LCS	Sulfate	4.86	mg/L	97				
	LCS	Nitrate as N	0.655	mg/L	96				
QC1962959-05	SPK	Sulfate	17.5	mg/L	106				Splt# 1952779-01 (14.9mg/L)
	SPK	Nitrate as N	0.416	mg/L	94				Splt# 1952779-01 (0.0979mg/L)
QC1962959-06	SPKD	Sulfate	17.7	mg/L	114	1			Splt# 1952779-01 (14.9mg/L)
	SPKD	Nitrate as N	0.415	mg/L	94	0			Splt# 1952779-01 (0.0979mg/L)
QC1962959-07	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1962959-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962959-09	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.334	mg/L	98				
QC1962959-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100442 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962961-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1962961-02	MRL_CK	Alkalinity	3.12	mg/L	104				
QC1962961-03	DUP	Alkalinity	46.4	mg/L		0	0.593	3	Splt# 1952782-03 (46.6mg/L)
QC1962961-04	LCS	Alkalinity	40.1	mg/L	100			3	

QC list for Run#: 100443 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962962-01	BLK	Chloride	<3	mg/L			1.16	3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

QC1962962-02	MRL_CK	Chloride	3.48	mg/L	116				
QC1962962-03	DUP	Chloride	13.8	mg/L		0	1.16	3	Splt# 1952782-03 (13.7mg/L)
QC1962962-04	LCS	Chloride	38.7	mg/L	96			3	

QC list for Run#: 100446 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962963-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1962963-02	MRL_CK	Hardness, Total, as CaCO3	1.7	mg/L	56				
QC1962963-03	DUP	Hardness, Total, as CaCO3	45.4	mg/L		2	0.474	3	Splt# 1952782-03 (44.3mg/L)
QC1962963-04	LCS	Hardness, Total, as CaCO3	38.9	mg/L	97			3	

QC list for Run#: 100449 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962965-01	ICV	pH	9.06	pH	100				
QC1962965-02	DUP	pH	8.61	pH		0			Splt# 1952262-05 (8.6pH)
QC1962965-03	CCV	pH	10	pH	100				
QC1962965-04	CCV	pH	10	pH	100				

QC list for Run#: 100483 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962988-01	DUP	Total Dissolved Solids	489	mg/L		1	13.2	20	Splt# 1952692-01 (482mg/L)
QC1962988-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101024 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963334-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963334-02	LCS	Calcium, Ca	20	mg/L	100		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.1	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963334-03	DUP	Calcium, Ca	31.4	mg/L		0	0.01	1	Splt# 1952265-02 (31.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
DUP	Magnesium, Mg		18.1	mg/L		0	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
DUP	Potassium, K		3.18	mg/L		1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
DUP	Sodium, Na		48.6	mg/L		0	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-04	SPK	Calcium, Ca	51.8	mg/L	103		0.01	1	Splt# 1952265-02 (31.2mg/L)
SPK	Magnesium, Mg		37.1	mg/L	94		0.024	0.2	Splt# 1952265-02 (18.1mg/L)
SPK	Potassium, K		22.4	mg/L	95		0.035	0.2	Splt# 1952265-02 (3.24mg/L)
SPK	Sodium, Na		64.8	mg/L	79		0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-05	SPKD	Calcium, Ca	52.8	mg/L	108	1	0.01	1	Splt# 1952265-02 (31.2mg/L)
SPKD	Magnesium, Mg		38	mg/L	99	2	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
SPKD	Potassium, K		22.1	mg/L	94	1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
SPKD	Sodium, Na		64.8	mg/L	79	0	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-06	DUP	Calcium, Ca	17.4	mg/L		3	0.01	1	Splt# 1952417-01 (17.9mg/L)
DUP	Magnesium, Mg		30.1	mg/L		1	0.024	0.2	Splt# 1952417-01 (30.4mg/L)
DUP	Potassium, K		1.27	mg/L		0	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
DUP	Sodium, Na		35.1	mg/L		2	0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-07	SPK	Calcium, Ca	37.9	mg/L	99		0.01	1	Splt# 1952417-01 (17.9mg/L)
SPK	Magnesium, Mg		49.8	mg/L	97		0.024	0.2	Splt# 1952417-01 (30.4mg/L)
SPK	Potassium, K		19.9	mg/L	93		0.035	0.2	Splt# 1952417-01 (1.26mg/L)
SPK	Sodium, Na		53.2	mg/L	85		0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-08	SPKD	Calcium, Ca	38.3	mg/L	102	0	0.01	1	Splt# 1952417-01 (17.9mg/L)
SPKD	Magnesium, Mg		50.2	mg/L	98	0	0.024	0.2	Splt# 1952417-01 (30.4mg/L)
SPKD	Potassium, K		19.3	mg/L	90	3	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
SPKD	Sodium, Na		53.9	mg/L	88	1	0.013	1	Splt# 1952417-01 (36.2mg/L)

QC list for Run#: 101539 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963647-01	MRL_CK	Specific Conductance	11	µmhos/cm	110				
QC1963647-02	CCV	Specific Conductance	98	µmhos/cm	98			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

QC1963647-03	DUP	Specific Conductance	1010	µmhos/cm	0	1	Splt# 1953274-01 (1010µmhos/cm)
QC1963647-04	DUP	Specific Conductance	26	µmhos/cm	0	1	Splt# 1953297-01 (26µmhos/cm)
QC1963647-05	LCS	Specific Conductance	146	µmhos/cm	99	1	

QC list for Run#: 101540 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963648-01	ICV	pH	9.07	pH	100				
QC1963648-02	DUP	pH	9.2	pH		0			Splt# 1953297-01 (9.19pH)
QC1963648-03	CCV	pH	10.1	pH	100				
QC1963648-04	CCV	pH	10.1	pH	100				

QC list for Run#: 101545 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963651-01	DUP	Total Dissolved Solids	339	mg/L		1	13.2	20	Splt# 1953274-05 (344mg/L)
QC1963651-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101553 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963658-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963658-03	DUP	Hardness, Total, as CaCO3	163	mg/L		1	0.474	3	Splt# 1952265-03 (161mg/L)
QC1963658-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	102			3	

QC list for Run#: 101554 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963659-03	DUP	Alkalinity	140	mg/L		0	0.593	3	Splt# 1952265-03 (140mg/L)
QC1963659-04	LCS	Alkalinity	41	mg/L	103			3	

QC list for Run#: 101555 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963660-03	DUP	Chloride	61.8	mg/L		0	1.16	3	Splt# 1952265-03 (61.9mg/L)
QC1963660-04	LCS	Chloride	39.5	mg/L	98			3	

QC list for Run#: 101562 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963666-01									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Sample ID	Code	Analyte	Result	Units	Rec	RPD	MDL	MRL	Flag/Comments
QC1963666-02	MRL_CK	Sulfate	0.462	mg/L	92				
	MRL_CK	Nitrate as N	0.0643	mg/L	94				
QC1963666-03	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.321	mg/L	94				
QC1963666-04	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963666-05	LCS	Sulfate	4.9	mg/L	98				
	LCS	Nitrate as N	0.655	mg/L	96				
QC1963666-06	SPK	Sulfate	4.11	mg/L	102				Splt# 1953521-01 (1.58mg/L)
	SPK	Nitrate as N	0.374	mg/L	111				Splt# 1953521-01 (<0.07mg/L)
QC1963666-07	SPKD	Sulfate	3.91	mg/L	94	4			Splt# 1953521-01 (1.58mg/L)
	SPKD	Nitrate as N	0.35	mg/L	104	6			Splt# 1953521-01 (<0.07mg/L)
QC1963666-08	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1963666-09	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963666-10	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.325	mg/L	96				
QC1963666-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101726 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963775-02	LCS	Calcium, Ca	20	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	100		0.024	0.2	
	LCS	Potassium, K	17.7	mg/L	88		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963775-03	DUP	Calcium, Ca	36.8	mg/L		1	0.01	1	Splt# 1952431-01 (36.4mg/L)
	DUP	Magnesium, Mg	31.1	mg/L		0	0.024	0.2	Splt# 1952431-01 (31.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952265

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_San Bruno

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	DO	pH	Depth	Notes	
QC1963775-04	DUP Potassium, K	1.5	mg/L	0	0.035	0.2	Splt# 1952431-01 (1.5mg/L)		
	DUP Sodium, Na	60.6	mg/L	2	0.013	1	Splt# 1952431-01 (62mg/L)		
QC1963775-05	SPK Calcium, Ca	57	mg/L	103	0.01	1	Splt# 1952431-01 (36.4mg/L)		
	SPK Magnesium, Mg	50.4	mg/L	95	0.024	0.2	Splt# 1952431-01 (31.2mg/L)		
	SPK Potassium, K	19	mg/L	87	0.035	0.2	Splt# 1952431-01 (1.5mg/L)		
	SPK Sodium, Na	79.5	mg/L	87	0.013	1	Splt# 1952431-01 (62mg/L)		
	SPKD Calcium, Ca	56.6	mg/L	101	0	0.01	1	Splt# 1952431-01 (36.4mg/L)	
QC1963775-06	SPKD Magnesium, Mg	49.6	mg/L	91	1	0.024	0.2	Splt# 1952431-01 (31.2mg/L)	
	SPKD Potassium, K	18.1	mg/L	83	4	0.035	0.2	Splt# 1952431-01 (1.5mg/L)	
	SPKD Sodium, Na	78.3	mg/L	81	1	0.013	1	Splt# 1952431-01 (62mg/L)	
	DUP Calcium, Ca	36.7	mg/L	2	0.01	1	Splt# 1952431-02 (36mg/L)		
QC1963775-07	DUP Magnesium, Mg	31.5	mg/L	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)		
	DUP Potassium, K	1.55	mg/L	2	0.035	0.2	Splt# 1952431-02 (1.5mg/L)		
	DUP Sodium, Na	61.6	mg/L	0	0.013	1	Splt# 1952431-02 (61.2mg/L)		
	SPK Calcium, Ca	55.9	mg/L	99	0.01	1	Splt# 1952431-02 (36mg/L)		
	SPK Magnesium, Mg	51.6	mg/L	103	0.024	0.2	Splt# 1952431-02 (31.1mg/L)		
	SPK Potassium, K	18.2	mg/L	83	0.035	0.2	Splt# 1952431-02 (1.5mg/L)		
	SPK Sodium, Na	83.3	mg/L	110	0.013	1	Splt# 1952431-02 (61.2mg/L)		
	SPKD Calcium, Ca	56.9	mg/L	105	1	0.01	1	Splt# 1952431-02 (36mg/L)	
QC1963775-08	SPKD Magnesium, Mg	52.6	mg/L	108	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)	
	SPKD Potassium, K	18.4	mg/L	84	1	0.035	0.2	Splt# 1952431-02 (1.5mg/L)	
	SPKD Sodium, Na	83.8	mg/L	113	0	0.013	1	Splt# 1952431-02 (61.2mg/L)	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

Lab Sample#: 1952407-02 **Sample Source:** WSB_SS08_1-19 **External ID:**

Date Collected: 4/8/19 1:45 pm **Date Received:** 4/8/19 3:18 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	74.1	mg/L	2	10	04/08/2019	99984 MAWALLACE	
Nitrate as N	3.34	mg/L	0.68	1.4	04/08/2019	99984 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	53.2	mg/L	0.01	1	04/16/2019	100333 BTRINH	
Magnesium, Mg	60.4	mg/L	0.024	0.2	04/16/2019	100333 BTRINH	
Potassium, K	2.19	mg/L	0.035	0.2	04/16/2019	100333 BTRINH	
Sodium, Na	67.1	mg/L	0.013	1	04/16/2019	100333 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	270	mg/L	1.19	6	04/08/2019	100002 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	130	mg/L		6	04/08/2019	100003 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	1050	µmhos/cm		1	04/08/2019	99998 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	394	mg/L	0.948	6	04/08/2019	100001 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	7.5	pH			04/08/2019	99999 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	586	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN	>MCL

Lab Sample#: 1952407-03 **Sample Source:** WSB_SS09_1-20 **External ID:**

Date Collected: 4/8/19 2:00 pm **Date Received:** 4/8/19 3:18 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	88.6	mg/L	2	10	04/08/2019	99984 MAWALLACE	
Nitrate as N	6.71	mg/L	0.68	1.4	04/08/2019	99984 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	41.6	mg/L	0.01	1	04/16/2019	100333 BTRINH	
Magnesium, Mg	41.8	mg/L	0.024	0.2	04/16/2019	100333 BTRINH	
Potassium, K	1.62	mg/L	0.035	0.2	04/16/2019	100333 BTRINH	
Sodium, Na	61.6	mg/L	0.013	1	04/16/2019	100333 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	225	mg/L	1.19	6	04/08/2019	100002 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	69.7	mg/L		6	04/08/2019	100003 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	826	µmhos/cm		1	04/08/2019	99998 ALEE	
MBP_HARDNESS_T(SM 2340 C)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

Hardness, Total, as CaCO3	289	mg/L	0.948	6	04/08/2019	100001	ALEE
MBP_PH(SM 4500-H+ B) pH	7.39	pH			04/08/2019	99999	ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	480	mg/L	13.2	20	04/10/2019	100058	CCHAPMAN

Lab Sample#: 1952407-04 Sample Source: WSB_SS10_1-21 External ID:

Date Collected: 4/8/19 1:30 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	202	mg/L	2	10	04/09/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	112	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	39.2	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	4.46	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	88.2	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	241	mg/L	1.19	6	04/08/2019	100002 ALEE
MBP_CHLORIDE(SM 4500-CL- D) Chloride	172	mg/L		6	04/08/2019	100003 ALEE
MBP_COND(SM 2510 B) Specific Conductance	1290	µmhos/cm		1	04/08/2019	99998 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	454	mg/L	0.948	6	04/08/2019	100001 ALEE
MBP_PH(SM 4500-H+ B) pH	7.38	pH			04/08/2019	99999 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	805	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN >MCL

Lab Sample#: 1952407-04A Sample Source: WSB_SS10_1-21 External ID:

Date Collected: 4/8/19 1:30 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/09/2019	99984 MAWALLACE

Lab Sample#: 1952407-05 Sample Source: WSB_SS15_1-22 External ID:

Date Collected: 4/8/19 2:30 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	197	mg/L	2	10	04/09/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	105	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	41	mg/L	0.024	0.2	04/16/2019	100333 BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

Potassium, K	4.75	mg/L	0.035	0.2	04/16/2019	100333	BTRINH	
Sodium, Na	87.4	mg/L	0.013	1	04/16/2019	100333	BTRINH	
MBP_ALK(SM 2320 B)								
Alkalinity	248	mg/L	1.19	6	04/08/2019	100002	ALEE	
MBP_CHLORIDE(SM 4500-CL- D)								
Chloride	171	mg/L		6	04/08/2019	100003	ALEE	
MBP_COND(SM 2510 B)								
Specific Conductance	1300	µmhos/cm		1	04/08/2019	99998	ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)								
Hardness, Total, as CaCO3	460	mg/L	0.948	6	04/08/2019	100001	ALEE	
MBP_PH(SM 4500-H+ B)								
pH	7.63	pH			04/08/2019	99999	ALEE	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	783	mg/L	13.2	20	04/10/2019	100058	CCHAPMAN	>MCL

Lab Sample#: 1952407-05A Sample Source: WSB_SS15_1-22 External ID:

Date Collected: 4/8/19 2:30 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	0.55	mg/L	0.034	0.07	04/09/2019	99984 MAWALLACE

Lab Sample#: 1952407-06 Sample Source: WSB_SS16_1-23 External ID:

Date Collected: 4/8/19 2:15 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	146	mg/L	2	10	04/09/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	91.8	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	37.3	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	4.49	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	77	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	238	mg/L	1.19	6	04/08/2019	100002 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	134	mg/L		6	04/08/2019	100003 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	1130	µmhos/cm		1	04/08/2019	99998 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	395	mg/L	0.948	6	04/08/2019	100001 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.83	pH			04/08/2019	99999 ALEE
MBP_TDS(SM 2540 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SSF-CalWater

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

Total Dissolved Solids	668	mg/L	13.2	20	04/10/2019	100058	CCHAPMAN	>MCL
------------------------	-----	------	------	----	------------	--------	----------	------

Lab Sample#: 1952407-06A Sample Source: WSB_SS16_1-23 External ID:

Date Collected: 4/8/19 2:15 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	0.594	mg/L	0.034	0.07	04/09/2019	99984 MAWALLACE

Lab Sample#: 1952407-07 Sample Source: WSB_SS_DUP External ID:

Date Collected: 4/8/19 2:15 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc: WSB_SS16_1-23

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	145	mg/L	2	10	04/09/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	89.2	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	36.6	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	4.29	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	77.2	mg/L	0.013	1	04/16/2019	100333 BTRINH

MBP_ALK(SM 2320 B)							
Alkalinity	237	mg/L	1.19	6	04/08/2019	100002 ALEE	

MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	134	mg/L		6	04/08/2019	100003 ALEE	

MBP_COND(SM 2510 B)							
Specific Conductance	1130	µmhos/cm		1	04/08/2019	99998 ALEE >MCL	

MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	390	mg/L	0.948	6	04/08/2019	100001 ALEE	

MBP_PH(SM 4500-H+ B)							
pH	7.52	pH			04/08/2019	99999 ALEE	

MBP_TDS(SM 2540 C)							
Total Dissolved Solids	676	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN >MCL	

Lab Sample#: 1952407-07A Sample Source: WSB_SS_DUP External ID:

Date Collected: 4/8/19 2:15 pm Date Received: 4/8/19 3:18 pm Sample Matrix: Aqueous Location Desc: WSB_SS16_1-23

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	0.589	mg/L	0.034	0.07	04/09/2019	99984 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

QC list for Run#: 99984 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962675-01	MRL_CK	Sulfate	0.474	mg/L	94				
	MRL_CK	Nitrate as N	0.064	mg/L	94				
QC1962675-02	CCV	Sulfate	2.37	mg/L	94				
	CCV	Nitrate as N	0.322	mg/L	95				
QC1962675-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962675-04	LCS	Sulfate	4.8	mg/L	96				
	LCS	Nitrate as N	0.649	mg/L	95				
QC1962675-05	SPK	Sulfate	14.3	mg/L	133				Splt# 1952651-01 (11mg/L)
	SPK	Nitrate as N	0.399	mg/L	97				Splt# 1952651-01 (0.0727mg/L)
QC1962675-06	SPKD	Sulfate	13.7	mg/L	108	4			Splt# 1952651-01 (11mg/L)
	SPKD	Nitrate as N	0.385	mg/L	92	3			Splt# 1952651-01 (0.0727mg/L)
QC1962675-07	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1962675-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962675-09	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.331	mg/L	97				
QC1962675-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 99998 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962685-01	MRL_CK	Specific Conductance	10.9	µmhos/cm	109				
QC1962685-02	CCV	Specific Conductance	102	µmhos/cm	102				1
QC1962685-03	DUP	Specific Conductance	1130	µmhos/cm		0			1 Splt# 1952407-07 (1130µmhos/cm)
QC1962685-04	LCS	Specific Conductance	146	µmhos/cm	99				1

QC list for Run#: 99999 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962686-01	ICV	pH	8.97	pH	99				
QC1962686-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

DUP	pH	7.57	pH	0	Spl# 1952407-07 (7.52pH)				
QC1962686-03	CCV	pH	9.98	pH	99				

QC list for Run#: 100001 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962687-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1962687-02	MRL CK	Hardness, Total, as CaCO3	1.8	mg/L	60				
QC1962687-03	DUP	Hardness, Total, as CaCO3	390	mg/L		0	0.948	6	Spl# 1952407-07 (390mg/L)
QC1962687-04	LCS	Hardness, Total, as CaCO3	39.6	mg/L	98			3	

QC list for Run#: 100002 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962688-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1962688-02	MRL CK	Alkalinity	3.39	mg/L	113				
QC1962688-03	DUP	Alkalinity	232	mg/L		2	1.19	6	Spl# 1952407-07 (237mg/L)
QC1962688-04	LCS	Alkalinity	40.3	mg/L	101			3	

QC list for Run#: 100003 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962689-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1962689-02	MRL CK	Chloride	3.6	mg/L	120				
QC1962689-03	DUP	Chloride	131	mg/L		1	2.31	6	Spl# 1952407-07 (134mg/L)
QC1962689-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 100058 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962725-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1962725-02	DUP	Total Dissolved Solids	432	mg/L		4	13.2	20	Spl# 1952409-05 (451mg/L)

QC list for Run#: 100333 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962846-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1962846-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952407

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SSF-CalWater

Sampling Team: Field

LCS	Calcium, Ca	20.1	mg/L	101	0.01	1	
LCS	Magnesium, Mg	20.6	mg/L	103	0.024	0.2	
LCS	Potassium, K	18.4	mg/L	91	0.035	0.2	
LCS	Sodium, Na	21.4	mg/L	107	0.013	1	
QC1962846-03							
DUP	Calcium, Ca	59.6	mg/L	2	0.01	1	Splt# 1952265-01 (58.1mg/L)
DUP	Magnesium, Mg	38.7	mg/L	0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
DUP	Potassium, K	2.71	mg/L	0	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
DUP	Sodium, Na	53.6	mg/L	4	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-04							
SPK	Calcium, Ca	80.4	mg/L	112	0.01	1	Splt# 1952265-01 (58.1mg/L)
SPK	Magnesium, Mg	60.1	mg/L	107	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
SPK	Potassium, K	20.9	mg/L	90	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
SPK	Sodium, Na	72.1	mg/L	79	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-05							
SPKD	Calcium, Ca	80.6	mg/L	113	0	0.01	1 Splt# 1952265-01 (58.1mg/L)
SPKD	Magnesium, Mg	59.8	mg/L	105	0	0.024	0.2 Splt# 1952265-01 (38.8mg/L)
SPKD	Potassium, K	21.6	mg/L	94	3	0.035	0.2 Splt# 1952265-01 (2.72mg/L)
SPKD	Sodium, Na	74.2	mg/L	89	2	0.013	1 Splt# 1952265-01 (56.2mg/L)
QC1962846-06							
DUP	Calcium, Ca	59.8	mg/L	2	0.01	1	Splt# 1952265-05 (61mg/L)
DUP	Magnesium, Mg	38.5	mg/L	0	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
DUP	Potassium, K	2.83	mg/L	2	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
DUP	Sodium, Na	58.1	mg/L	7	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-07							
SPK	Calcium, Ca	80.7	mg/L	98	0.01	1	Splt# 1952265-05 (61mg/L)
SPK	Magnesium, Mg	59	mg/L	103	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
SPK	Potassium, K	21.4	mg/L	93	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
SPK	Sodium, Na	73.8	mg/L	100	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-08							
SPKD	Calcium, Ca	80	mg/L	95	0	0.01	1 Splt# 1952265-05 (61mg/L)
SPKD	Magnesium, Mg	58.3	mg/L	99	1	0.024	0.2 Splt# 1952265-05 (38.5mg/L)
SPKD	Potassium, K	21.3	mg/L	92	0	0.035	0.2 Splt# 1952265-05 (2.74mg/L)
SPKD	Sodium, Na	73.2	mg/L	97	0	0.013	1 Splt# 1952265-05 (53.7mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1952408-01 **Sample Source:** WSB_SF10_LM3D **External ID:**

Date Collected: 4/8/19 11:24 am **Date Received:** 4/8/19 2:09 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	9.99	mg/L	0.1	0.5	04/08/2019	99984 MAWALLACE
Nitrate as N	<0.07	mg/L	0.034	0.07	04/08/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	28.5	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	29.5	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	1.77	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	47.3	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	188	mg/L	0.593	3	04/08/2019	99973 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	68.7	mg/L		3	04/08/2019	99974 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	593	µmhos/cm		1	04/08/2019	99992 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	196	mg/L	0.474	3	04/08/2019	99976 JCOLOMA
MBP_PH(SM 4500-H+ B)						
pH	7.93	pH			04/08/2019	99993 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	313	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN

Lab Sample#: 1952408-02 **Sample Source:** WSB_SF11_LM3S **External ID:**

Date Collected: 4/8/19 10:55 am **Date Received:** 4/8/19 2:09 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	4.68	mg/L	0.1	0.5	04/08/2019	99984 MAWALLACE
Nitrate as N	<0.07	mg/L	0.034	0.07	04/08/2019	99984 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	57.3	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	58.5	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	2.5	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	39.8	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	400	mg/L	1.19	6	04/08/2019	99973 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	63.2	mg/L		6	04/08/2019	99974 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	886	µmhos/cm		1	04/08/2019	99992 ALEE
MBP_HARDNESS_T(SM 2340 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>Hardness, Total, as CaCO3</i>	401	mg/L	0.948	6	04/08/2019	99976 JCOLOMA
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	482	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN
Lab Sample#: 1952408-03 Sample Source: WSB_SF15_LM6D External ID:						
Date Collected: 4/8/19 1:30 pm Date Received: 4/8/19 2:09 pm Sample Matrix: Aqueous Location Desc:						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	31.8	mg/L	0.5	2.5	04/08/2019	99984 MAWALLACE
<i>Nitrate as N</i>	8.85	mg/L	0.17	0.35	04/08/2019	99984 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	27.8	mg/L	0.01	1	04/16/2019	100333 BTRINH
<i>Magnesium, Mg</i>	28.2	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
<i>Potassium, K</i>	1.63	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
<i>Sodium, Na</i>	41.2	mg/L	0.013	1	04/16/2019	100333 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	140	mg/L	0.593	3	04/08/2019	99973 JCOLOMA
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	50.5	mg/L		3	04/08/2019	99974 JCOLOMA
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	567	µmhos/cm		1	04/08/2019	99992 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	188	mg/L	0.474	3	04/08/2019	99976 JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	8.04	pH			04/08/2019	99993 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	312	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN

Lab Sample#: 1952408-05 Sample Source: WSB_SF_DUP External ID:						
Date Collected: 4/8/19 11:30 am Date Received: 4/8/19 2:09 pm Sample Matrix: Aqueous Location Desc: SF#10 - LM3D						
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	10	mg/L	0.1	0.5	04/08/2019	99984 MAWALLACE
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	04/08/2019	99984 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	28.3	mg/L	0.01	1	04/16/2019	100333 BTRINH
<i>Magnesium, Mg</i>	28.9	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
<i>Potassium, K</i>	1.77	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
<i>Sodium, Na</i>	45.6	mg/L	0.013	1	04/16/2019	100333 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	185	mg/L	0.593	3	04/08/2019	99973 JCOLOMA
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

<i>Chloride</i>	67.6	mg/L		3	04/08/2019	99974	JCOLOMA
<i>MBP_COND(SM 2510 B)</i> <i>Specific Conductance</i>	594	µmhos/cm		1	04/08/2019	99992	ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i> <i>Hardness, Total, as CaCO3</i>	196	mg/L	0.474	3	04/08/2019	99976	JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i> <i>pH</i>	7.61	pH			04/08/2019	99993	ALEE
<i>MBP_TDS(SM 2540 C)</i> <i>Total Dissolved Solids</i>	305	mg/L	13.2	20	04/10/2019	100058	CCHAPMAN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 99973 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962668-03	DUP	Alkalinity	52.3	mg/L		0	0.593	3	Splt# 1952162-01 (51.8mg/L)
QC1962668-04	LCS	Alkalinity	40.2	mg/L	100			3	

QC list for Run#: 99974 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962669-03	DUP	Chloride	16.1	mg/L		0	1.16	3	Splt# 1952162-01 (16.2mg/L)
QC1962669-04	LCS	Chloride	38.8	mg/L	96			3	

QC list for Run#: 99976 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962670-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1962670-03	DUP	Hardness, Total, as CaCO3	50.6	mg/L		0	0.474	3	Splt# 1952162-01 (50.7mg/L)
QC1962670-04	LCS	Hardness, Total, as CaCO3	38.6	mg/L	96			3	

QC list for Run#: 99984 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962675-01	MRL_CHK	Sulfate	0.474	mg/L	94				
	MRL_CHK	Nitrate as N	0.064	mg/L	94				
QC1962675-02	CCV	Sulfate	2.37	mg/L	94				
	CCV	Nitrate as N	0.322	mg/L	95				
QC1962675-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962675-04	LCS	Sulfate	4.8	mg/L	96				
	LCS	Nitrate as N	0.649	mg/L	95				
QC1962675-05	SPK	Sulfate	14.3	mg/L	133				Splt# 1952651-01 (11mg/L)
	SPK	Nitrate as N	0.399	mg/L	97				Splt# 1952651-01 (0.0727mg/L)
QC1962675-06	SPKD	Sulfate	13.7	mg/L	108	4			Splt# 1952651-01 (11mg/L)
	SPKD	Nitrate as N	0.385	mg/L	92	3			Splt# 1952651-01 (0.0727mg/L)
QC1962675-07	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1962675-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC1962675-09

CCV	Sulfate	2.42	mg/L	96
CCV	Nitrate as N	0.331	mg/L	97

QC1962675-10

BLK	Sulfate	<0.5	mg/L	0.1	0.5
BLK	Nitrate as N	<0.07	mg/L	0.034	0.07

QC list for Run#: 99992 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962681-01	MRL_CK	Specific Conductance	10.8	µmhos/cm	108				
QC1962681-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962681-03	DUP	Specific Conductance	195	µmhos/cm		0		1	Splt# 1952219-01 (195µmhos/cm)
QC1962681-04	LCS	Specific Conductance	145	µmhos/cm	98			1	

QC list for Run#: 99993 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962682-01	ICV	pH	8.98	pH	99				
QC1962682-02	DUP	pH	9.03	pH		0			Splt# 1952219-01 (9.01pH)
QC1962682-03	CCV	pH	9.99	pH	99				

QC list for Run#: 100058 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962725-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1962725-02	DUP	Total Dissolved Solids	432	mg/L		4	13.2	20	Splt# 1952409-05 (451mg/L)

QC list for Run#: 100333 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962846-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1962846-02	LCS	Calcium, Ca	20.1	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	20.6	mg/L	103		0.024	0.2	
	LCS	Potassium, K	18.4	mg/L	91		0.035	0.2	
	LCS	Sodium, Na	21.4	mg/L	107		0.013	1	
QC1962846-03	DUP	Calcium, Ca	59.6	mg/L		2	0.01	1	Splt# 1952265-01 (58.1mg/L)
	DUP	Magnesium, Mg	38.7	mg/L		0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
	DUP	Potassium, K	2.71	mg/L		0	0.035	0.2	Splt# 1952265-01 (2.72mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952408

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

DUP	Sodium, Na	53.6	mg/L	4	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-04							
SPK	Calcium, Ca	80.4	mg/L	112	0.01	1	Splt# 1952265-01 (58.1mg/L)
SPK	Magnesium, Mg	60.1	mg/L	107	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
SPK	Potassium, K	20.9	mg/L	90	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
SPK	Sodium, Na	72.1	mg/L	79	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-05							
SPKD	Calcium, Ca	80.6	mg/L	113	0	0.01	1 Splt# 1952265-01 (58.1mg/L)
SPKD	Magnesium, Mg	59.8	mg/L	105	0	0.024	0.2 Splt# 1952265-01 (38.8mg/L)
SPKD	Potassium, K	21.6	mg/L	94	3	0.035	0.2 Splt# 1952265-01 (2.72mg/L)
SPKD	Sodium, Na	74.2	mg/L	89	2	0.013	1 Splt# 1952265-01 (56.2mg/L)
QC1962846-06							
DUP	Calcium, Ca	59.8	mg/L	2	0.01	1	Splt# 1952265-05 (61mg/L)
DUP	Magnesium, Mg	38.5	mg/L	0	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
DUP	Potassium, K	2.83	mg/L	2	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
DUP	Sodium, Na	58.1	mg/L	7	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-07							
SPK	Calcium, Ca	80.7	mg/L	98	0.01	1	Splt# 1952265-05 (61mg/L)
SPK	Magnesium, Mg	59	mg/L	103	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
SPK	Potassium, K	21.4	mg/L	93	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
SPK	Sodium, Na	73.8	mg/L	100	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-08							
SPKD	Calcium, Ca	80	mg/L	95	0	0.01	1 Splt# 1952265-05 (61mg/L)
SPKD	Magnesium, Mg	58.3	mg/L	99	1	0.024	0.2 Splt# 1952265-05 (38.5mg/L)
SPKD	Potassium, K	21.3	mg/L	92	0	0.035	0.2 Splt# 1952265-05 (2.74mg/L)
SPKD	Sodium, Na	73.2	mg/L	97	0	0.013	1 Splt# 1952265-05 (53.7mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/09/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1952409-01 **Sample Source:** WSB_SF07_LM1S **External ID:**

Date Collected: 4/9/19 9:25 am **Date Received:** 4/9/19 2:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	28.8	mg/L	2	10	04/10/2019	100054
Nitrate as N	6.09	mg/L	0.68	1.4	04/10/2019	100054
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	27.1	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	39.1	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	1.55	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	55.1	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	180	mg/L	1.19	6	04/09/2019	100060 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	102	mg/L		6	04/09/2019	100064 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	762	µmhos/cm		1	04/09/2019	100065 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	242	mg/L	0.948	6	04/09/2019	100052 JCOLOMA
MBP_PH(SM 4500-H+ B)						
pH	7.89	pH			04/09/2019	100066 JCOLOMA
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	416	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN

Lab Sample#: 1952409-02 **Sample Source:** WSB_SF08_LM2D **External ID:**

Date Collected: 4/9/19 12:55 pm **Date Received:** 4/9/19 2:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	48	mg/L	0.5	2.5	04/10/2019	100054
Nitrate as N	2.72	mg/L	0.17	0.35	04/10/2019	100054
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	48.1	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	50.1	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	2.46	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	58.7	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	211	mg/L	1.19	6	04/09/2019	100060 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	145	mg/L		6	04/09/2019	100064 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	962	µmhos/cm		1	04/09/2019	100065 JCOLOMA >MCL
MBP_HARDNESS_T(SM 2340 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/09/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
<i>Hardness, Total, as CaCO3</i>	331	mg/L	2.37	15	04/09/2019	100052 JCOLOMA	
<i>MBP_PH(SM 4500-H+ B)</i>							
<i>pH</i>	8	pH			04/09/2019	100066 JCOLOMA	
<i>MBP_TDS(SM 2540 C)</i>							
<i>Total Dissolved Solids</i>	506	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN	>MCL
Lab Sample#: 1952409-03 Sample Source: WSB_SF09_LM2S External ID:							
Date Collected: 4/9/19 11:45 am Date Received: 4/9/19 2:05 pm Sample Matrix: Aqueous Location Desc:							
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>							
<i>Sulfate</i>	49.2	mg/L	0.5	2.5	04/10/2019	100054	
<i>Nitrate as N</i>	5.58	mg/L	0.17	0.35	04/10/2019	100054	
<i>SEM_200.7_DW(EPA 200.7)</i>							
<i>Calcium, Ca</i>	57	mg/L	0.01	1	04/16/2019	100333 BTRINH	
<i>Magnesium, Mg</i>	51.3	mg/L	0.024	0.2	04/16/2019	100333 BTRINH	
<i>Potassium, K</i>	2.55	mg/L	0.035	0.2	04/16/2019	100333 BTRINH	
<i>Sodium, Na</i>	99.5	mg/L	0.013	1	04/16/2019	100333 BTRINH	
<i>MBP_ALK(SM 2320 B)</i>							
<i>Alkalinity</i>	251	mg/L	1.19	6	04/09/2019	100060 JCOLOMA	
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>							
<i>Chloride</i>	204	mg/L		6	04/09/2019	100064 JCOLOMA	
<i>MBP_COND(SM 2510 B)</i>							
<i>Specific Conductance</i>	1220	µmhos/cm		1	04/09/2019	100065 JCOLOMA	>MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>							
<i>Hardness, Total, as CaCO3</i>	357	mg/L	2.37	15	04/09/2019	100052 JCOLOMA	
<i>MBP_PH(SM 4500-H+ B)</i>							
<i>pH</i>	7.87	pH			04/09/2019	100066 JCOLOMA	
<i>MBP_TDS(SM 2540 C)</i>							
<i>Total Dissolved Solids</i>	632	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN	>MCL

Lab Sample#: 1952409-04 Sample Source: WSB_SF63_LM1D External ID:							
Date Collected: 4/9/19 10:30 am Date Received: 4/9/19 2:05 pm Sample Matrix: Aqueous Location Desc:							
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>							
<i>Sulfate</i>	26.8	mg/L	1	5	04/10/2019	100054	
<i>Nitrate as N</i>	10.2	mg/L	0.34	0.7	04/10/2019	100054	>MCL
<i>SEM_200.7_DW(EPA 200.7)</i>							
<i>Calcium, Ca</i>	30.5	mg/L	0.01	1	04/16/2019	100333 BTRINH	
<i>Magnesium, Mg</i>	43.9	mg/L	0.024	0.2	04/16/2019	100333 BTRINH	
<i>Potassium, K</i>	2.68	mg/L	0.035	0.2	04/16/2019	100333 BTRINH	
<i>Sodium, Na</i>	50.9	mg/L	0.013	1	04/16/2019	100333 BTRINH	
<i>MBP_ALK(SM 2320 B)</i>							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/09/2019

Sampling Team: Field

Alkalinity	157	mg/L	1.19	6	04/09/2019	100060	JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D) Chloride	104	mg/L		6	04/09/2019	100064	JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	775	µmhos/cm		1	04/09/2019	100065	JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	266	mg/L	0.948	6	04/09/2019	100052	JCOLOMA
MBP_PH(SM 4500-H+ B) pH	7.97	pH			04/09/2019	100066	JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	396	mg/L	13.2	20	04/10/2019	100058	CCHAPMAN

Lab Sample#: 1952409-05

Sample Source: WSB_SF_DUP

External ID:

Date Collected: 4/9/19 9:30 am Date Received: 4/9/19 2:05 pm Sample Matrix: Aqueous Location Desc: SF#07 - LMMW1S

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	28.7	mg/L	2	10	04/10/2019	100054
Nitrate as N	6.03	mg/L	0.68	1.4	04/10/2019	100054
SEM_200.7_DW(EPA 200.7) Calcium, Ca	26.8	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	38.9	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	1.57	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	55.8	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	176	mg/L	1.19	6	04/09/2019	100060 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D) Chloride	99.4	mg/L		6	04/09/2019	100064 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	758	µmhos/cm		1	04/09/2019	100065 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	240	mg/L	0.948	6	04/09/2019	100052 JCOLOMA
MBP_PH(SM 4500-H+ B) pH	7.73	pH			04/09/2019	100066 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	451	mg/L	13.2	20	04/10/2019	100058 CCHAPMAN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/09/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 100052 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962721-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1962721-03	DUP	Hardness, Total, as CaCO3	240	mg/L		1	0.948	6	Splt# 1952409-01 (242mg/L)
QC1962721-04	LCS	Hardness, Total, as CaCO3	39	mg/L	97			3	

QC list for Run#: 100054 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962722-01	MRL_CK	Sulfate	0.541	mg/L	108				
	MRL_CK	Nitrate as N	0.0724	mg/L	107				
QC1962722-02	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.322	mg/L	94				
QC1962722-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962722-04	LCS	Sulfate	4.84	mg/L	96				
	LCS	Nitrate as N	0.648	mg/L	95				
QC1962722-05	SPK	Sulfate	17.4	mg/L	107				Splt# 1952667-01 (14.8mg/L)
	SPK	Nitrate as N	0.406	mg/L	93				Splt# 1952667-01 (0.0907mg/L)
QC1962722-06	SPKD	Sulfate	17.4	mg/L	104	0			Splt# 1952667-01 (14.8mg/L)
	SPKD	Nitrate as N	0.4	mg/L	92	1			Splt# 1952667-01 (0.0907mg/L)
QC1962722-07	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.332	mg/L	97				
QC1962722-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962722-09	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.333	mg/L	98				
QC1962722-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100058 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962725-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1962725-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/09/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

DUP	Total Dissolved Solids	432	mg/L	4	13.2	20	Splt# 1952409-05 (451mg/L)
-----	------------------------	-----	------	---	------	----	-------------------------------

QC list for Run#: 100060 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962727-03	DUP	Alkalinity	175	mg/L		2	1.19	6	Splt# 1952409-01 (180mg/L)
QC1962727-04	LCS	Alkalinity	40.2	mg/L	101			3	

QC list for Run#: 100064 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962728-03	DUP	Chloride	99	mg/L		2	2.31	6	Splt# 1952409-01 (102mg/L)
QC1962728-04	LCS	Chloride	38.9	mg/L	97			3	

QC list for Run#: 100065 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962729-01	MRL_CK	Specific Conductance	10.9	µmhos/cm	109				
QC1962729-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962729-03	DUP	Specific Conductance	168	µmhos/cm		0		1	Splt# 1952667-01 (167µmhos/cm)
QC1962729-04	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 100066 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962730-01	ICV	pH	9.04	pH	100				
QC1962730-02	DUP	pH	7.95	pH		0			Splt# 1952409-01 (7.89pH)
QC1962730-03	CCV	pH	9.04	pH	100				

QC list for Run#: 100333 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962846-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1962846-02	LCS	Calcium, Ca	20.1	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	20.6	mg/L	103		0.024	0.2	
	LCS	Potassium, K	18.4	mg/L	91		0.035	0.2	
	LCS	Sodium, Na	21.4	mg/L	107		0.013	1	
QC1962846-03	DUP	Calcium, Ca	59.6	mg/L		2	0.01	1	Splt# 1952265-01 (58.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952409

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/09/2019

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	pH	DO	Flow	Notes
DUP	Magnesium, Mg	38.7	mg/L	0	0.024	0.2		Splt# 1952265-01 (38.8mg/L)
DUP	Potassium, K	2.71	mg/L	0	0.035	0.2		Splt# 1952265-01 (2.72mg/L)
DUP	Sodium, Na	53.6	mg/L	4	0.013	1		Splt# 1952265-01 (56.2mg/L)
QC1962846-04	SPK	Calcium, Ca	80.4	mg/L	112	0.01	1	Splt# 1952265-01 (58.1mg/L)
	SPK	Magnesium, Mg	60.1	mg/L	107	0.024	0.2	Splt# 1952265-01 (38.8mg/L)
	SPK	Potassium, K	20.9	mg/L	90	0.035	0.2	Splt# 1952265-01 (2.72mg/L)
	SPK	Sodium, Na	72.1	mg/L	79	0.013	1	Splt# 1952265-01 (56.2mg/L)
QC1962846-05	SPKD	Calcium, Ca	80.6	mg/L	113	0	0.01	1 Splt# 1952265-01 (58.1mg/L)
	SPKD	Magnesium, Mg	59.8	mg/L	105	0	0.024	0.2 Splt# 1952265-01 (38.8mg/L)
	SPKD	Potassium, K	21.6	mg/L	94	3	0.035	0.2 Splt# 1952265-01 (2.72mg/L)
	SPKD	Sodium, Na	74.2	mg/L	89	2	0.013	1 Splt# 1952265-01 (56.2mg/L)
QC1962846-06	DUP	Calcium, Ca	59.8	mg/L	2	0.01	1	Splt# 1952265-05 (61mg/L)
	DUP	Magnesium, Mg	38.5	mg/L	0	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
	DUP	Potassium, K	2.83	mg/L	2	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
	DUP	Sodium, Na	58.1	mg/L	7	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-07	SPK	Calcium, Ca	80.7	mg/L	98	0.01	1	Splt# 1952265-05 (61mg/L)
	SPK	Magnesium, Mg	59	mg/L	103	0.024	0.2	Splt# 1952265-05 (38.5mg/L)
	SPK	Potassium, K	21.4	mg/L	93	0.035	0.2	Splt# 1952265-05 (2.74mg/L)
	SPK	Sodium, Na	73.8	mg/L	100	0.013	1	Splt# 1952265-05 (53.7mg/L)
QC1962846-08	SPKD	Calcium, Ca	80	mg/L	95	0	0.01	1 Splt# 1952265-05 (61mg/L)
	SPKD	Magnesium, Mg	58.3	mg/L	99	1	0.024	0.2 Splt# 1952265-05 (38.5mg/L)
	SPKD	Potassium, K	21.3	mg/L	92	0	0.035	0.2 Splt# 1952265-05 (2.74mg/L)
	SPKD	Sodium, Na	73.2	mg/L	97	0	0.013	1 Splt# 1952265-05 (53.7mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952410

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/10/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1952410-01 **Sample Source:** WSB_SF57_SWD57 **External ID:**

Date Collected: 4/10/19 10:03 am **Date Received:** 4/10/19 12:20 pm **Sample Matrix:** Aqueous **Location Desc:** Dilution factor: 2

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	159	mg/L		6	04/10/2019	100121 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	1230	µmhos/cm		1	04/10/2019	100125 JCOLOMA	>MCL
MBP_TDS(SM 2540 C) Total Dissolved Solids	658	mg/L	13.2	20	04/12/2019	100171 ALEE	>MCL

Lab Sample#: 1952410-02 **Sample Source:** WSB_SF58_SWD140 **External ID:**

Date Collected: 4/10/19 10:03 am **Date Received:** 4/10/19 12:20 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	45.5	mg/L		3	04/10/2019	100121 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	638	µmhos/cm		1	04/10/2019	100125 JCOLOMA	
MBP_TDS(SM 2540 C) Total Dissolved Solids	325	mg/L	13.2	20	04/12/2019	100171 ALEE	

Lab Sample#: 1952410-03 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/10/19 10:03 am **Date Received:** 4/10/19 12:20 pm **Sample Matrix:** Aqueous **Location Desc:** SF#57 - USGS SOUTH WINDMILL N

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	164	mg/L		6	04/10/2019	100121 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	1210	µmhos/cm		1	04/10/2019	100125 JCOLOMA	>MCL
MBP_TDS(SM 2540 C) Total Dissolved Solids	652	mg/L	13.2	20	04/12/2019	100171 ALEE	>MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952410

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/10/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 100121 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962755-03	DUP	Chloride	<3	mg/L		N/A	1.16	3	Splt# 1952164-01 (<3mg/L)
QC1962755-04	LCS	Chloride	39.7	mg/L	99			3	

QC list for Run#: 100125 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962758-01	MRL_CHK	Specific Conductance	11	µmhos/cm	110				
QC1962758-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962758-03	DUP	Specific Conductance	489	µmhos/cm		0		1	Splt# 1952435-01 (488µmhos/cm)
QC1962758-05	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 100171 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962792-01	DUP	Total Dissolved Solids	264	mg/L		12	13.2	20	Splt# 1952416-03 (299mg/L)
QC1962792-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952412

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/11/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1952412-01 **Sample Source:** WSB_SF34_KIR130 **External ID:**

Date Collected: 4/11/19 10:20 am **Date Received:** 4/11/19 2:10 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	33.9	mg/L		3	04/11/2019	100186 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	398	µmhos/cm		1	04/11/2019	100201 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	202	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952412-02 **Sample Source:** WSB_SF35_KIR255 **External ID:**

Date Collected: 4/11/19 10:45 am **Date Received:** 4/11/19 2:10 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	40	mg/L		3	04/11/2019	100186 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	496	µmhos/cm		1	04/11/2019	100201 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	281	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952412-03 **Sample Source:** WSB_SF36_KIR385 **External ID:**

Date Collected: 4/11/19 11:50 am **Date Received:** 4/11/19 2:10 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	36.7	mg/L		3	04/11/2019	100186 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	464	µmhos/cm		1	04/11/2019	100201 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	261	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952412-04 **Sample Source:** WSB_SF37_KIR435 **External ID:**

Date Collected: 4/11/19 1:10 pm **Date Received:** 4/11/19 2:10 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	29.9	mg/L		3	04/11/2019	100186 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	436	µmhos/cm		1	04/11/2019	100201 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	243	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952412-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/11/19 10:25 am **Date Received:** 4/11/19 2:10 pm **Sample Matrix:** Aqueous **Location Desc:** WSB - SF35 - KIR130

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	34	mg/L		3	04/11/2019	100186 JCOLOMA

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952412

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/11/2019

Sampling Team: Field

MBP_COND(SM 2510 B)
Specific Conductance 394 µmhos/cm 1 04/11/2019 100201 JCOLOMA

MBP_TDS(SM 2540 C)
Total Dissolved Solids 225 mg/L 13.2 20 04/12/2019 100171 ALEE

QC list for Run#: 100171 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962792-01	DUP	Total Dissolved Solids	264	mg/L		12	13.2	20	Splt# 1952416-03 (299mg/L)
QC1962792-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 100186 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962801-03	DUP	Chloride	13.2	mg/L		0	1.16	3	Splt# 1952232-02 (13.2mg/L)
QC1962801-04	LCS	Chloride	39.1	mg/L	97			3	
QC1962801-05	DUP	Chloride	33.7	mg/L		0	1.16	3	Splt# 1952412-05 (34mg/L)

QC list for Run#: 100201 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962810-01	MRL_CK	Specific Conductance	10.9	µmhos/cm	109				
QC1962810-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1962810-03	DUP	Specific Conductance	400	µmhos/cm		0		1	Splt# 1952412-01 (398µmhos/cm)
QC1962810-04	LCS	Specific Conductance	146	µmhos/cm	99			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952413

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/15/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1952413-01 **Sample Source:** WSB_SF30_ORT125 **External ID:**

Date Collected: 4/15/19 11:05 am **Date Received:** 4/15/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	33.5	mg/L		3	04/15/2019	100361 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	484	µmhos/cm		1	04/15/2019	100357 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	268	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952413-02 **Sample Source:** WSB_SF31_ORT265 **External ID:**

Date Collected: 4/15/19 11:08 am **Date Received:** 4/15/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	23.4	mg/L		3	04/15/2019	100361 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	256	µmhos/cm		1	04/15/2019	100357 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	142	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952413-03 **Sample Source:** WSB_SF32_ORT400 **External ID:**

Date Collected: 4/15/19 10:18 am **Date Received:** 4/15/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	25.2	mg/L		3	04/15/2019	100361 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	273	µmhos/cm		1	04/15/2019	100357 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	162	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952413-04 **Sample Source:** WSB_SF33_ORT475 **External ID:**

Date Collected: 4/15/19 10:13 am **Date Received:** 4/15/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	29.5	mg/L		3	04/15/2019	100361 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	295	µmhos/cm		1	04/15/2019	100357 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	168	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952413-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/15/19 10:20 am **Date Received:** 4/15/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:** WSB - SF32 - ORT400

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	25.4	mg/L		3	04/15/2019	100361 CCHAPMAN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952413

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 04/15/2019

Sampling Team: Field

MBP_COND(SM 2510 B)

Specific Conductance

274 µmhos/cm

1 04/15/2019 100357 ALEE

MBP_TDS(SM 2540 C)

Total Dissolved Solids

162 mg/L 13.2

20 04/18/2019 100483 CCHAPMAN

QC list for Run#: 100357 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962912-01	MRL_CK	Specific Conductance	10.9	µmhos/cm	109				
QC1962912-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962912-03	DUP	Specific Conductance	169	µmhos/cm		2		1	Splt# 1952279-07 (166µmhos/cm)
QC1962912-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100361 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962914-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1962914-02	MRL_CK	Chloride	2.07	mg/L	69				
QC1962914-03	DUP	Chloride	6.28	mg/L		0	1.16	3	Splt# 1952233-01 (6.29mg/L)
QC1962914-04	LCS	Chloride	39	mg/L	97			3	

QC list for Run#: 100483 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962988-01	DUP	Total Dissolved Solids	489	mg/L		1	13.2	20	Splt# 1952692-01 (482mg/L)
QC1962988-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952414

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/16/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952414-01 **Sample Source:** WSB_SF68_GGPNL1 **External ID:**

Date Collected: 4/16/19 11:30 am **Date Received:** 4/16/19 1:23 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	34.2	mg/L		3	04/16/2019	100443 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	426	µmhos/cm		1	04/16/2019	100435 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	253	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952414-02 **Sample Source:** WSB_SF69_NWM3 **External ID:**

Date Collected: 4/16/19 10:18 am **Date Received:** 4/16/19 1:23 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	41.5	mg/L		3	04/16/2019	100443 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	417	µmhos/cm		1	04/16/2019	100435 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	234	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952414-03 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/16/19 10:22 am **Date Received:** 4/16/19 1:23 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF69, GGP NWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	41.8	mg/L		3	04/16/2019	100443 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	426	µmhos/cm		1	04/16/2019	100435 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	245	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952414

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/16/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 100435 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962957-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1962957-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962957-03	DUP	Specific Conductance	156	µmhos/cm		0		1	Splt# 1952780-01 (156µmhos/cm)
QC1962957-04	DUP	Specific Conductance	174	µmhos/cm		0		1	Splt# 1952779-01 (173µmhos/cm)
QC1962957-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100443 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962962-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1962962-02	MRL_CK	Chloride	3.48	mg/L	116				
QC1962962-03	DUP	Chloride	13.8	mg/L		0	1.16	3	Splt# 1952782-03 (13.7mg/L)
QC1962962-04	LCS	Chloride	38.7	mg/L	96			3	

QC list for Run#: 100483 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962988-01	DUP	Total Dissolved Solids	489	mg/L		1	13.2	20	Splt# 1952692-01 (482mg/L)
QC1962988-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952416

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/10/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952416-01 **Sample Source:** WSB_SF67_GGPSF1 **External ID:**

Date Collected: 4/16/19 9:34 am **Date Received:** 4/16/19 1:25 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	43.6	mg/L		3	04/16/2019	100443 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	541	µmhos/cm		1	04/16/2019	100435 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	290	mg/L	13.2	20	04/18/2019	100483 CCHAPMAN

Lab Sample#: 1952416-02 **Sample Source:** WSB_SF70_SWM3 **External ID:**

Date Collected: 4/10/19 11:18 am **Date Received:** 4/10/19 12:22 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	39.5	mg/L		3	04/10/2019	100121 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	487	µmhos/cm		1	04/10/2019	100125 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	255	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952416-03 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/10/19 11:20 am **Date Received:** 4/10/19 12:22 pm **Sample Matrix:** Aqueous **Location Desc:** WSB - SF70, GGP SWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	39.4	mg/L		3	04/10/2019	100121 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	488	µmhos/cm		1	04/10/2019	100125 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	299	mg/L	13.2	20	04/12/2019	100171 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952416

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/10/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 100121 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962755-03	DUP	Chloride	<3	mg/L		N/A	1.16	3	Splt# 1952164-01 (<3mg/L)
QC1962755-04	LCS	Chloride	39.7	mg/L	99			3	

QC list for Run#: 100125 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962758-01	MRL_CHK	Specific Conductance	11	µmhos/cm	110				
QC1962758-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962758-03	DUP	Specific Conductance	489	µmhos/cm		0		1	Splt# 1952435-01 (488µmhos/cm)
QC1962758-05	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 100171 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962792-01	DUP	Total Dissolved Solids	264	mg/L		12	13.2	20	Splt# 1952416-03 (299mg/L)
QC1962792-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 100435 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962957-01	MRL_CHK	Specific Conductance	10.7	µmhos/cm	107				
QC1962957-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962957-03	DUP	Specific Conductance	156	µmhos/cm		0		1	Splt# 1952780-01 (156µmhos/cm)
QC1962957-04	DUP	Specific Conductance	174	µmhos/cm		0		1	Splt# 1952779-01 (173µmhos/cm)
QC1962957-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100443 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962962-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1962962-02	MRL_CHK	Chloride	3.48	mg/L	116				
QC1962962-03	DUP	Chloride	13.8	mg/L		0	1.16	3	Splt# 1952782-03 (13.7mg/L)
QC1962962-04	LCS	Chloride	38.7	mg/L	96			3	

QC list for Run#: 100483 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
----------	------	---------	--------	-------	-------	-----	-----	-----	---------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952416

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/10/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC1962988-01	DUP	Total Dissolved Solids	489	mg/L	1	13.2	20	Splt# 1952692-01 (482mg/L)
QC1962988-02	BLK	Total Dissolved Solids	<20	mg/L		13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952417-01 **Sample Source:** WSB_SF41_WSPLAY **External ID:**

Date Collected: 4/18/19 9:07 am **Date Received:** 4/18/19 11:26 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	43.8	mg/L	0.5	2.5	04/19/2019	100569 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	17.9	mg/L	0.01	1	04/30/2019	101024 BTRINH
Magnesium, Mg	30.4	mg/L	0.024	0.2	04/30/2019	101024 BTRINH
Potassium, K	1.26	mg/L	0.035	0.2	04/30/2019	101024 BTRINH
Sodium, Na	36.2	mg/L	0.013	1	04/30/2019	101024 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	142	mg/L	0.593	3	04/18/2019	100570 CCHAPMAN
MBP_CHLORIDE(SM 4500-CL- D) Chloride	40.8	mg/L		3	04/18/2019	100572 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	496	µmhos/cm		1	04/18/2019	100559 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	176	mg/L	0.474	3	04/18/2019	100573 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	8.44	pH			04/18/2019	100561 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	228	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952417-01A **Sample Source:** WSB_SF41_WSPLAY **External ID:**

Date Collected: 4/18/19 9:07 am **Date Received:** 4/18/19 11:26 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/19/2019	100569 MAWALLACE

Lab Sample#: 1952417-03 **Sample Source:** WSB_SB-M-1 **External ID:**

Date Collected: 4/18/19 10:58 am **Date Received:** 4/18/19 11:26 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	21.1	mg/L	0.5	2.5	04/19/2019	100569 MAWALLACE
Nitrate as N	5.19	mg/L	0.17	0.35	04/19/2019	100569 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	27	mg/L	0.01	1	04/30/2019	101024 BTRINH
Magnesium, Mg	19.4	mg/L	0.024	0.2	04/30/2019	101024 BTRINH
Potassium, K	1.54	mg/L	0.035	0.2	04/30/2019	101024 BTRINH
Sodium, Na	31.2	mg/L	0.013	1	04/30/2019	101024 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	120	mg/L	0.593	3	04/18/2019	100570 CCHAPMAN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	37.6	mg/L		3	04/18/2019	100572 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	442	µmhos/cm		1	04/18/2019	100559 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	150	mg/L	0.474	3	04/18/2019	100573 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.61	pH			04/18/2019	100561 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	254	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952417-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/18/19 9:30 am **Date Received:** 4/18/19 11:27 am **Sample Matrix:** Aqueous **Location Desc:** SF#41 - WEST SUNSET PLAYGROU

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	44.4	mg/L	0.5	2.5	04/19/2019	100569 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	17.6	mg/L	0.01	1	04/30/2019	101024 BTRINH
Magnesium, Mg	29.8	mg/L	0.024	0.2	04/30/2019	101024 BTRINH
Potassium, K	1.27	mg/L	0.035	0.2	04/30/2019	101024 BTRINH
Sodium, Na	35.7	mg/L	0.013	1	04/30/2019	101024 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	143	mg/L	0.593	3	04/18/2019	100570 CCHAPMAN
MBP_CHLORIDE(SM 4500-CL- D) Chloride	41	mg/L		3	04/18/2019	100572 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	492	µmhos/cm		1	04/18/2019	100559 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	171	mg/L	0.474	3	04/18/2019	100573 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	8.54	pH			04/18/2019	100561 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	241	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952417-05A **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/18/19 9:30 am **Date Received:** 4/18/19 11:27 am **Sample Matrix:** Aqueous **Location Desc:** SF#41 - WEST SUNSET PLAYGROU

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/19/2019	100569 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 100559 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963031-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963031-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1963031-03	DUP	Specific Conductance	164	µmhos/cm		0		1	Splt# 1952784-02 (163µmhos/cm)
QC1963031-04	DUP	Specific Conductance	178	µmhos/cm		0		1	Splt# 1952784-04 (177µmhos/cm)
QC1963031-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100561 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963034-01	ICV	pH	9.06	pH	100				
QC1963034-02	DUP	pH	9.29	pH		0			Splt# 1952784-04 (9.29pH)
QC1963034-03	CCV	pH	10.1	pH	100				
QC1963034-04	CCV	pH	10.1	pH	100				

QC list for Run#: 100569 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963038-01	MRL_CK	Chloride	0.529	mg/L	106				
	MRL_CK	Sulfate	0.532	mg/L	106				
	MRL_CK	Nitrate as N	0.07	mg/L	103				
QC1963038-02	CCV	Chloride	2.52	mg/L	101				
	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.323	mg/L	95				
QC1963038-03	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963038-04	LCS	Chloride	5.12	mg/L	102				
	LCS	Sulfate	4.89	mg/L	97				
	LCS	Nitrate as N	0.649	mg/L	95				
QC1963038-05	SPK	Chloride	6.67	mg/L	68				Splt# 1952856-01 (4.97mg/L)
	SPK	Sulfate	7.16	mg/L	39				Splt# 1952856-01 (8.13mg/L)
	SPK	Nitrate as N	0.372	mg/L	111				Splt# 1952856-01 (<0.07mg/L)
QC1963038-06									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample ID	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
SPKD	Chloride		6.65	mg/L	67	0			Splt# 1952856-01 (4.97mg/L)
SPKD	Sulfate		7.17	mg/L	38	0			Splt# 1952856-01 (8.13mg/L)
SPKD	Nitrate as N		0.371	mg/L	110	0			Splt# 1952856-01 (<0.07mg/L)
QC1963038-07	CCV	Chloride	2.53	mg/L	101				
	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.33	mg/L	97				
QC1963038-08	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963038-09	CCV	Chloride	2.63	mg/L	105				
	CCV	Sulfate	2.6	mg/L	104				
	CCV	Nitrate as N	0.336	mg/L	99				
QC1963038-10	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100570 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963039-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963039-02	MRL CK	Alkalinity	3.35	mg/L	112				
QC1963039-03	DUP	Alkalinity	47.7	mg/L		0	0.593	3	Splt# 1952784-04 (47.3mg/L)
QC1963039-04	LCS	Alkalinity	40.2	mg/L	100			3	

QC list for Run#: 100572 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963040-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963040-02	MRL CK	Chloride	3.07	mg/L	102				
QC1963040-03	DUP	Chloride	13.7	mg/L		0	1.16	3	Splt# 1952784-04 (13.8mg/L)
QC1963040-04	LCS	Chloride	38.8	mg/L	96			3	

QC list for Run#: 100573 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963041-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963041-02	MRL CK	Hardness, Total, as CaCO3	2.21	mg/L	73				
QC1963041-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

DUP	Hardness, Total, as CaCO3	45.1	mg/L	0	0.474	3	Splt# 1952784-04 (45.1mg/L)
QC1963041-04							
LCS	Hardness, Total, as CaCO3	39.2	mg/L	97		3	

QC list for Run#: 100608 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963069-01	DUP	Total Dissolved Solids	495	mg/L		0	13.2	20	Splt# 1950777-01 (498mg/L)
QC1963069-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101024 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963334-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963334-02	LCS	Calcium, Ca	20	mg/L	100		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.1	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963334-03	DUP	Calcium, Ca	31.4	mg/L		0	0.01	1	Splt# 1952265-02 (31.2mg/L)
	DUP	Magnesium, Mg	18.1	mg/L		0	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
	DUP	Potassium, K	3.18	mg/L		1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
	DUP	Sodium, Na	48.6	mg/L		0	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-04	SPK	Calcium, Ca	51.8	mg/L	103		0.01	1	Splt# 1952265-02 (31.2mg/L)
	SPK	Magnesium, Mg	37.1	mg/L	94		0.024	0.2	Splt# 1952265-02 (18.1mg/L)
	SPK	Potassium, K	22.4	mg/L	95		0.035	0.2	Splt# 1952265-02 (3.24mg/L)
	SPK	Sodium, Na	64.8	mg/L	79		0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-05	SPKD	Calcium, Ca	52.8	mg/L	108	1	0.01	1	Splt# 1952265-02 (31.2mg/L)
	SPKD	Magnesium, Mg	38	mg/L	99	2	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
	SPKD	Potassium, K	22.1	mg/L	94	1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
	SPKD	Sodium, Na	64.8	mg/L	79	0	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-06	DUP	Calcium, Ca	17.4	mg/L		3	0.01	1	Splt# 1952417-01 (17.9mg/L)
	DUP	Magnesium, Mg	30.1	mg/L		1	0.024	0.2	Splt# 1952417-01 (30.4mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952417

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

DUP	Potassium, K	1.27	mg/L	0	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
DUP	Sodium, Na	35.1	mg/L	2	0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-07							
SPK	Calcium, Ca	37.9	mg/L	99	0.01	1	Splt# 1952417-01 (17.9mg/L)
SPK	Magnesium, Mg	49.8	mg/L	97	0.024	0.2	Splt# 1952417-01 (30.4mg/L)
SPK	Potassium, K	19.9	mg/L	93	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
SPK	Sodium, Na	53.2	mg/L	85	0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-08							
SPKD	Calcium, Ca	38.3	mg/L	102	0	0.01	1 Splt# 1952417-01 (17.9mg/L)
SPKD	Magnesium, Mg	50.2	mg/L	98	0	0.024	0.2 Splt# 1952417-01 (30.4mg/L)
SPKD	Potassium, K	19.3	mg/L	90	3	0.035	0.2 Splt# 1952417-01 (1.26mg/L)
SPKD	Sodium, Na	53.9	mg/L	88	1	0.013	1 Splt# 1952417-01 (36.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952419

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/17/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952419-01 **Sample Source:** WSB_SF26_TAR145 **External ID:**

Date Collected: 4/17/19 10:44 am **Date Received:** 4/17/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	42.1	mg/L		3	04/17/2019	100499 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	465	µmhos/cm		1	04/17/2019	100494 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	253	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952419-02 **Sample Source:** WSB_SF27_TAR240 **External ID:**

Date Collected: 4/17/19 10:31 am **Date Received:** 4/17/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	33.9	mg/L		3	04/17/2019	100499 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	379	µmhos/cm		1	04/17/2019	100494 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	209	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952419-03 **Sample Source:** WSB_SF28_TAR400 **External ID:**

Date Collected: 4/17/19 9:43 am **Date Received:** 4/17/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	30.2	mg/L		3	04/17/2019	100499 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	342	µmhos/cm		1	04/17/2019	100494 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	187	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952419-04 **Sample Source:** WSB_SF29_TAR530 **External ID:**

Date Collected: 4/17/19 9:48 am **Date Received:** 4/17/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	26.1	mg/L		3	04/17/2019	100499 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	357	µmhos/cm		1	04/17/2019	100494 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	186	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952419-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/17/19 9:48 am **Date Received:** 4/17/19 1:11 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF28_TAR400

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	30.2	mg/L		3	04/17/2019	100499 JCOLOMA

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952419

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 04/17/2019

Sampling Team: Field

MBP_COND(SM 2510 B)

Specific Conductance

342 μmhos/cm 1 04/17/2019 100494 ALEE

MBP_TDS(SM 2540 C)

Total Dissolved Solids

181 mg/L 13.2 20 04/22/2019 100608 ALEE

QC list for Run#: 100494 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962993-01	MRL_CK	Specific Conductance	10.7	μmhos/cm	107				
QC1962993-02	CCV	Specific Conductance	102	μmhos/cm	102			1	
QC1962993-03	DUP	Specific Conductance	152	μmhos/cm		0		1	Splt# 1952808-04 (152μmhos/cm)
QC1962993-04	LCS	Specific Conductance	146	μmhos/cm	99			1	

QC list for Run#: 100499 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962997-03	DUP	Chloride	9.83	mg/L		1	1.16	3	Splt# 1952808-01 (9.64mg/L)
QC1962997-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 100608 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963069-01	DUP	Total Dissolved Solids	495	mg/L		0	13.2	20	Splt# 1950777-01 (498mg/L)
QC1963069-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952420

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952420-01 **Sample Source:** WSB_SF42_ZOO275 **External ID:**

Date Collected: 4/19/19 9:51 am **Date Received:** 4/19/19 1:35 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.5	mg/L		3	04/19/2019	100607 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	498	µmhos/cm		1	04/19/2019	100614 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	267	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952420-02 **Sample Source:** WSB_SF43_ZOO450 **External ID:**

Date Collected: 4/19/19 9:53 am **Date Received:** 4/19/19 1:35 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	46.6	mg/L		3	04/19/2019	100607 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	517	µmhos/cm		1	04/19/2019	100614 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	300	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952420-03 **Sample Source:** WSB_SF45_ZOO565 **External ID:**

Date Collected: 4/19/19 10:48 am **Date Received:** 4/19/19 1:35 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	49.5	mg/L		3	04/19/2019	100607 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	422	µmhos/cm		1	04/19/2019	100614 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	214	mg/L	13.2	20	04/22/2019	100608 ALEE

Lab Sample#: 1952420-04 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/19/19 10:05 am **Date Received:** 4/19/19 1:35 pm **Sample Matrix:** Aqueous **Location Desc:** SF#42 - ZOO MW275

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.4	mg/L		3	04/19/2019	100607 JCOLOMA
MBP_COND(SM 2510 B) Specific Conductance	498	µmhos/cm		1	04/19/2019	100614 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	276	mg/L	13.2	20	04/22/2019	100608 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952420

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/18/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 100607 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963071-03	DUP	Chloride	5.39	mg/L		2	1.16	3	Splt# 1952289-06 (5.51mg/L)
QC1963071-04	LCS	Chloride	39.2	mg/L	98			3	

QC list for Run#: 100608 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963069-01	DUP	Total Dissolved Solids	495	mg/L		0	13.2	20	Splt# 1950777-01 (498mg/L)
QC1963069-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 100614 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963076-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963076-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1963076-03	DUP	Specific Conductance	103	µmhos/cm		0		1	Splt# 1952289-06 (102µmhos/cm)
QC1963076-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/22/2019

Sampling Team: Field

Lab Sample#: 1952422-01 **Sample Source:** WSB_SB-44-1-190 **External ID:**

Date Collected: 4/22/19 9:21 am **Date Received:** 4/22/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	98.7	mg/L	1	5	04/23/2019	100702 MAWALLACE	
Nitrate as N	6.87	mg/L	0.34	0.7	04/23/2019	100702 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	47.8	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	32.1	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	1.27	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	114	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	263	mg/L	1.19	6	04/22/2019	100717 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	98	mg/L		6	04/22/2019	100718 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	1040	µmhos/cm		1	04/22/2019	100710 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	260	mg/L	0.948	6	04/22/2019	100719 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	6.62	pH			04/22/2019	100711 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	604	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL

Lab Sample#: 1952422-02 **Sample Source:** WSB_SB-44-1-300 **External ID:**

Date Collected: 4/22/19 9:28 am **Date Received:** 4/22/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	103	mg/L	1	5	04/23/2019	100702 MAWALLACE	
Nitrate as N	6.98	mg/L	0.34	0.7	04/23/2019	100702 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	49.2	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	32.3	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	1.41	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	113	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	267	mg/L	1.19	6	04/22/2019	100717 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	98.6	mg/L		6	04/22/2019	100718 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	1040	µmhos/cm		1	04/22/2019	100710 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/22/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
Hardness, Total, as CaCO3	265	mg/L	0.948	6	04/22/2019	100719 ALEE	
MBP_PH(SM 4500-H+ B) pH	6.6	pH			04/22/2019	100711 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	611	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL
Lab Sample#: 1952422-03 Sample Source: WSB_SB-44-1-460 External ID:							
Date Collected: 4/22/19 10:22 am Date Received: 4/22/19 1:16 pm Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	82.2	mg/L	1	5	04/23/2019	100702 MAWALLACE	
Nitrate as N	2.9	mg/L	0.34	0.7	04/23/2019	100702 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	46.3	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	37.6	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	2.65	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	57.4	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	157	mg/L	1.19	6	04/22/2019	100717 ALEE	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	115	mg/L		6	04/22/2019	100718 ALEE	
MBP_COND(SM 2510 B) Specific Conductance	844	µmhos/cm		1	04/22/2019	100710 ALEE	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	281	mg/L	0.948	6	04/22/2019	100719 ALEE	
MBP_PH(SM 4500-H+ B) pH	7.59	pH			04/22/2019	100711 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	484	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	

Lab Sample#: 1952422-04 Sample Source: WSB_SB-44-1-580 External ID:							
Date Collected: 4/22/19 10:31 am Date Received: 4/22/19 1:16 pm Sample Matrix: Aqueous Location Desc:							
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	397	mg/L	2	10	04/23/2019	100702 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7) Calcium, Ca	111	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	90.9	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	5.2	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	103	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	276	mg/L	2.96	15	04/22/2019	100717 ALEE	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/22/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	204	mg/L		15	04/22/2019	100718 ALEE	
MBP_COND(SM 2510 B) Specific Conductance	1710	µmhos/cm		1	04/22/2019	100710 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	716	mg/L	2.37	15	04/22/2019	100719 ALEE	
MBP_PH(SM 4500-H+ B) pH	7.4	pH			04/22/2019	100711 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	1130	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL

Lab Sample#: 1952422-04A **Sample Source:** WSB_SB-44-1-580 **External ID:**

Date Collected: 4/22/19 10:31 am **Date Received:** 4/22/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/23/2019	100702 MAWALLACE	

Lab Sample#: 1952422-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/22/19 10:30 am **Date Received:** 4/22/19 1:16 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SB-44-1-460

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	82.4	mg/L	1	5	04/23/2019	100702 MAWALLACE	
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	2.88	mg/L	0.34	0.7	04/23/2019	100702 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	45.9	mg/L	0.01	1	04/30/2019	101024 BTRINH	
SEM_200.7_DW(EPA 200.7) Magnesium, Mg	37.4	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
SEM_200.7_DW(EPA 200.7) Potassium, K	2.71	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
SEM_200.7_DW(EPA 200.7) Sodium, Na	56	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	159	mg/L	1.19	6	04/22/2019	100717 ALEE	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	116	mg/L		6	04/22/2019	100718 ALEE	
MBP_COND(SM 2510 B) Specific Conductance	843	µmhos/cm		1	04/22/2019	100710 ALEE	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	289	mg/L	0.948	6	04/22/2019	100719 ALEE	
MBP_PH(SM 4500-H+ B) pH	6.95	pH			04/22/2019	100711 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	493	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/22/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100702 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963124-01	MRL_CK	Sulfate	0.523	mg/L	105				
	MRL_CK	Nitrate as N	0.072	mg/L	106				
QC1963124-02	CCV	Sulfate	2.39	mg/L	95				
	CCV	Nitrate as N	0.32	mg/L	94				
QC1963124-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963124-04	LCS	Sulfate	4.9	mg/L	98				
	LCS	Nitrate as N	0.646	mg/L	95				
QC1963124-05	SPK	Sulfate	4.73	mg/L	2				Splt# 1952933-01 (4.66mg/L)
	SPK	Nitrate as N	0.365	mg/L	109				Splt# 1952933-01 (<0.07mg/L)
QC1963124-06	SPKD	Sulfate	4.71	mg/L	2	0			Splt# 1952933-01 (4.66mg/L)
	SPKD	Nitrate as N	0.363	mg/L	108	0			Splt# 1952933-01 (<0.07mg/L)
QC1963124-07	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.33	mg/L	97				
QC1963124-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100710 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963128-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963128-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1963128-03	DUP	Specific Conductance	58.4	µmhos/cm		0		1	Splt# 1952317-01 (58.4µmhos/cm)
QC1963128-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100711 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963129-01	ICV	pH	9.06	pH	100				
QC1963129-02	DUP	pH	9.62	pH		0			Splt# 1952317-01 (9.62pH)
QC1963129-03	CCV	pH	10.1	pH	100				
QC1963129-04	CCV	pH	10.1	pH	100				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/22/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100717 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963133-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963133-02	MRL_CK	Alkalinity	3.32	mg/L	111				
QC1963133-03	DUP	Alkalinity	16.8	mg/L		10	0.593	3	Splt# 1952317-01 (18.6mg/L)
QC1963133-04	LCS	Alkalinity	40.3	mg/L	101			3	

QC list for Run#: 100718 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963134-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963134-02	MRL_CK	Chloride	3.06	mg/L	102				
QC1963134-03	DUP	Chloride	4.59	mg/L		9	1.16	3	Splt# 1952317-01 (5.07mg/L)
QC1963134-04	LCS	Chloride	39.2	mg/L	98			3	

QC list for Run#: 100719 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963135-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963135-02	MRL_CK	Hardness, Total, as CaCO3	2.3	mg/L	76				
QC1963135-03	DUP	Hardness, Total, as CaCO3	12.6	mg/L		1	0.474	3	Splt# 1952317-01 (12.5mg/L)
QC1963135-04	LCS	Hardness, Total, as CaCO3	39.7	mg/L	99			3	

QC list for Run#: 100834 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963206-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963206-02	DUP	Total Dissolved Solids	418	mg/L		0	13.2	20	Splt# 1952425-05 (421mg/L)

QC list for Run#: 101024 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963334-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963334-02	LCS	Calcium, Ca	20	mg/L	100		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.1	mg/L	95		0.035	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

MILLBRAE 1449

Water Quality Laboratory

SEWPCP 1721

FOLDER ID: 1952422

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/22/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Conduct	Turbidity	Other	Notes	
LCS	Sodium, Na	21.1	mg/L	105	0.013	1			
QC1963334-03	DUP	Calcium, Ca	31.4	mg/L	0	0.01	1	Splt# 1952265-02 (31.2mg/L)	
DUP	Magnesium, Mg	18.1	mg/L	0	0.024	0.2		Splt# 1952265-02 (18.1mg/L)	
DUP	Potassium, K	3.18	mg/L	1	0.035	0.2		Splt# 1952265-02 (3.24mg/L)	
DUP	Sodium, Na	48.6	mg/L	0	0.013	1		Splt# 1952265-02 (48.8mg/L)	
QC1963334-04	SPK	Calcium, Ca	51.8	mg/L	103	0.01	1	Splt# 1952265-02 (31.2mg/L)	
SPK	Magnesium, Mg	37.1	mg/L	94	0.024	0.2		Splt# 1952265-02 (18.1mg/L)	
SPK	Potassium, K	22.4	mg/L	95	0.035	0.2		Splt# 1952265-02 (3.24mg/L)	
SPK	Sodium, Na	64.8	mg/L	79	0.013	1		Splt# 1952265-02 (48.8mg/L)	
QC1963334-05	SPKD	Calcium, Ca	52.8	mg/L	108	1	0.01	1	Splt# 1952265-02 (31.2mg/L)
SPKD	Magnesium, Mg	38	mg/L	99	2	0.024	0.2	Splt# 1952265-02 (18.1mg/L)	
SPKD	Potassium, K	22.1	mg/L	94	1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)	
SPKD	Sodium, Na	64.8	mg/L	79	0	0.013	1	Splt# 1952265-02 (48.8mg/L)	
QC1963334-06	DUP	Calcium, Ca	17.4	mg/L	3	0.01	1	Splt# 1952417-01 (17.9mg/L)	
DUP	Magnesium, Mg	30.1	mg/L	1	0.024	0.2		Splt# 1952417-01 (30.4mg/L)	
DUP	Potassium, K	1.27	mg/L	0	0.035	0.2		Splt# 1952417-01 (1.26mg/L)	
DUP	Sodium, Na	35.1	mg/L	2	0.013	1		Splt# 1952417-01 (36.2mg/L)	
QC1963334-07	SPK	Calcium, Ca	37.9	mg/L	99	0.01	1	Splt# 1952417-01 (17.9mg/L)	
SPK	Magnesium, Mg	49.8	mg/L	97	0.024	0.2		Splt# 1952417-01 (30.4mg/L)	
SPK	Potassium, K	19.9	mg/L	93	0.035	0.2		Splt# 1952417-01 (1.26mg/L)	
SPK	Sodium, Na	53.2	mg/L	85	0.013	1		Splt# 1952417-01 (36.2mg/L)	
QC1963334-08	SPKD	Calcium, Ca	38.3	mg/L	102	0	0.01	1	Splt# 1952417-01 (17.9mg/L)
SPKD	Magnesium, Mg	50.2	mg/L	98	0	0.024	0.2	Splt# 1952417-01 (30.4mg/L)	
SPKD	Potassium, K	19.3	mg/L	90	3	0.035	0.2	Splt# 1952417-01 (1.26mg/L)	
SPKD	Sodium, Na	53.9	mg/L	88	1	0.013	1	Splt# 1952417-01 (36.2mg/L)	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/23/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952423-01 **Sample Source:** WSB_SS-36-1-160 **External ID:**

Date Collected: 4/23/19 12:00 pm **Date Received:** 4/23/19 1:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	114	mg/L	1	5	04/23/2019	100776 MAWALLACE	
Nitrate as N	8.41	mg/L	0.34	0.7	04/23/2019	100776 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	64.3	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	31.1	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	2.3	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	86.9	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	234	mg/L	1.19	6	04/23/2019	100784 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	105	mg/L		6	04/23/2019	100786 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	999	µmhos/cm		1	04/23/2019	100779 JCOLOMA	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	301	mg/L	0.948	6	04/23/2019	100787 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	7.07	pH			04/23/2019	100795 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	620	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL

Lab Sample#: 1952423-02 **Sample Source:** WSB_SS-36-1-270 **External ID:**

Date Collected: 4/23/19 11:30 am **Date Received:** 4/23/19 1:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Nitrate as N	1.84	mg/L	0.034	0.07	04/23/2019	100776 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	34.2	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	28.9	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	2.08	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	53.7	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	142	mg/L	1.19	6	04/23/2019	100784 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	119	mg/L		6	04/23/2019	100786 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	726	µmhos/cm		1	04/23/2019	100779 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	222	mg/L	0.948	6	04/23/2019	100787 ALEE	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/23/2019

Sampling Team: Field

MBP_PH(SM 4500-H+ B)								
pH	7.4	pH			04/23/2019	100795	ALEE	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	420	mg/L	13.2	20	04/25/2019	100834	CCHAPMAN	

Lab Sample#: 1952423-02A Sample Source: WSB_SS-36-1-270 External ID:

Date Collected: 4/23/19 11:30 am Date Received: 4/23/19 1:05 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	23.8	mg/L	0.5	2.5	04/23/2019	100776 MAWALLACE

Lab Sample#: 1952423-03 Sample Source: WSB_SS-36-1-455 External ID:

Date Collected: 4/23/19 10:40 am Date Received: 4/23/19 1:05 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	<0.5	mg/L	0.1	0.5	04/23/2019	100776 MAWALLACE
Nitrate as N	<0.07	mg/L	0.034	0.07	04/23/2019	100776 MAWALLACE

SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	39.4	mg/L	0.01	1	04/30/2019	101024	BTRINH
Magnesium, Mg	22.7	mg/L	0.024	0.2	04/30/2019	101024	BTRINH
Potassium, K	4.53	mg/L	0.035	0.2	04/30/2019	101024	BTRINH
Sodium, Na	56	mg/L	0.013	1	04/30/2019	101024	BTRINH

MBP_ALK(SM 2320 B)							
Alkalinity	230	mg/L	1.19	6	04/23/2019	100784	ALEE

MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	87.9	mg/L		6	04/23/2019	100786	ALEE

MBP_COND(SM 2510 B)							
Specific Conductance	698	µmhos/cm		1	04/23/2019	100779	JCOLOMA

MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	200	mg/L	0.948	6	04/23/2019	100787	ALEE

MBP_PH(SM 4500-H+ B)							
pH	7.76	pH			04/23/2019	100795	ALEE

MBP_TDS(SM 2540 C)							
Total Dissolved Solids	351	mg/L	13.2	20	04/25/2019	100834	CCHAPMAN

Lab Sample#: 1952423-04 Sample Source: WSB_SS-36-1-585 External ID:

Date Collected: 4/23/19 10:19 am Date Received: 4/23/19 1:05 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments	
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Nitrate as N	<0.07	mg/L	0.034	0.07	04/23/2019	100776 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	76.4	mg/L	0.01	1	04/30/2019	101024	BTRINH
Magnesium, Mg	39.9	mg/L	0.024	0.2	04/30/2019	101024	BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/23/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Potassium, K	3.13	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	64.8	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	216	mg/L	1.19	6	04/23/2019	100784 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	139	mg/L		6	04/23/2019	100786 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	1030	µmhos/cm		1	04/23/2019	100779 JCOLOMA	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	382	mg/L	0.948	6	04/23/2019	100787 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	7.25	pH			04/23/2019	100795 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	637	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL

Lab Sample#: 1952423-04A **Sample Source:** WSB_SS-36-1-585 **External ID:**

Date Collected: 4/23/19 10:19 am **Date Received:** 4/23/19 1:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	122	mg/L	1	5	04/23/2019	100776 MAWALLACE

Lab Sample#: 1952423-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/23/19 10:45 am **Date Received:** 4/23/19 1:05 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_SS_CUP-36-1-585, ROW AT F

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	<0.07	mg/L	0.034	0.07	04/23/2019	100776 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	80.4	mg/L	0.01	1	04/30/2019	101024 BTRINH
Magnesium, Mg	40.6	mg/L	0.024	0.2	04/30/2019	101024 BTRINH
Potassium, K	2.95	mg/L	0.035	0.2	04/30/2019	101024 BTRINH
Sodium, Na	66.2	mg/L	0.013	1	04/30/2019	101024 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	220	mg/L	1.19	6	04/23/2019	100784 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	142	mg/L		6	04/23/2019	100786 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	1030	µmhos/cm		1	04/23/2019	100779 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	377	mg/L	0.948	6	04/23/2019	100787 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.16	pH			04/23/2019	100795 ALEE
MBP_TDS(SM 2540 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

SEWPCP 1721

MILLBRAE 1449

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/23/2019

Sampling Team: Field

Total Dissolved Solids		637	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL
Lab Sample#:	1952423-05A	Sample Source:	WSB_SF_DUP		External ID:			
Date Collected: 4/23/19 10:45 am		Date Received: 4/23/19 1:05 pm		Sample Matrix: Aqueous		Location Desc: GSR_SS_CUP-36-1-585, ROW AT F		
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments		
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>								
<i>Sulfate</i>	123	mg/L	1	5	04/23/2019	100776 MAWALLACE		

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/23/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100776 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963166-01	MRL_CK	Sulfate	0.535	mg/L	107				
	MRL_CK	Nitrate as N	0.0741	mg/L	109				
QC1963166-02	CCV	Sulfate	2.39	mg/L	95				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1963166-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963166-04	LCS	Sulfate	4.82	mg/L	96				
	LCS	Nitrate as N	0.649	mg/L	95				
QC1963166-05	SPK	Sulfate	15.1	mg/L	221				Splt# 1952943-01 (9.59mg/L)
	SPK	Nitrate as N	0.734	mg/L	218				Splt# 1952943-01 (<0.07mg/L)
QC1963166-06	SPKD	Sulfate	12.4	mg/L	112	19			Splt# 1952943-01 (9.59mg/L)
	SPKD	Nitrate as N	0.363	mg/L	108	67			Splt# 1952943-01 (<0.07mg/L)
QC1963166-07	CCV	Sulfate	2.45	mg/L	97				
	CCV	Nitrate as N	0.332	mg/L	97				
QC1963166-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100779 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963169-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963169-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1963169-03	DUP	Specific Conductance	1000	µmhos/cm		0		1	Splt# 1952423-01 (999µmhos/cm)
QC1963169-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 100784 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963173-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963173-02	MRL_CK	Alkalinity	3.66	mg/L	122				
QC1963173-03	DUP	Alkalinity	39	mg/L		0	0.593	3	Splt# 1952298-07 (38.6mg/L)
QC1963173-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/23/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	Alkalinity	40.3	mg/L	101	3
-----	------------	------	------	-----	---

QC list for Run#: 100786 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963174-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963174-02	MRL_CK	Chloride	3.27	mg/L	109				
QC1963174-03	DUP	Chloride	11.3	mg/L		9	1.16	3	Splt# 1952298-07 (10.3mg/L)
QC1963174-04	LCS	Chloride	39	mg/L	97			3	

QC list for Run#: 100787 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963175-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963175-02	MRL_CK	Hardness, Total, as CaCO3	1.83	mg/L	61				
QC1963175-03	DUP	Hardness, Total, as CaCO3	35	mg/L		1	0.474	3	Splt# 1952298-07 (34.6mg/L)
QC1963175-04	LCS	Hardness, Total, as CaCO3	39.9	mg/L	99			3	

QC list for Run#: 100795 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963178-01	ICV	pH	9.04	pH	100				
QC1963178-02	DUP	pH	9.31	pH		0			Splt# 1952943-02 (9.31pH)
QC1963178-03	CCV	pH	10	pH	100				
QC1963178-04	CCV	pH	10	pH	100				

QC list for Run#: 100834 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963206-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963206-02	DUP	Total Dissolved Solids	418	mg/L		0	13.2	20	Splt# 1952425-05 (421mg/L)

QC list for Run#: 101024 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963334-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963334-02	LCS	Calcium, Ca	20	mg/L	100		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	99		0.024	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952423

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/23/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	pH	DO	Notes
LCS	Potassium, K	19.1	mg/L	95	0.035	0.2	
LCS	Sodium, Na	21.1	mg/L	105	0.013	1	
QC1963334-03							
DUP	Calcium, Ca	31.4	mg/L	0	0.01	1	Splt# 1952265-02 (31.2mg/L)
DUP	Magnesium, Mg	18.1	mg/L	0	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
DUP	Potassium, K	3.18	mg/L	1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
DUP	Sodium, Na	48.6	mg/L	0	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-04							
SPK	Calcium, Ca	51.8	mg/L	103	0.01	1	Splt# 1952265-02 (31.2mg/L)
SPK	Magnesium, Mg	37.1	mg/L	94	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
SPK	Potassium, K	22.4	mg/L	95	0.035	0.2	Splt# 1952265-02 (3.24mg/L)
SPK	Sodium, Na	64.8	mg/L	79	0.013	1	Splt# 1952265-02 (48.8mg/L)
QC1963334-05							
SPKD	Calcium, Ca	52.8	mg/L	108	1	0.01	1 Splt# 1952265-02 (31.2mg/L)
SPKD	Magnesium, Mg	38	mg/L	99	2	0.024	0.2 Splt# 1952265-02 (18.1mg/L)
SPKD	Potassium, K	22.1	mg/L	94	1	0.035	0.2 Splt# 1952265-02 (3.24mg/L)
SPKD	Sodium, Na	64.8	mg/L	79	0	0.013	1 Splt# 1952265-02 (48.8mg/L)
QC1963334-06							
DUP	Calcium, Ca	17.4	mg/L	3	0.01	1	Splt# 1952417-01 (17.9mg/L)
DUP	Magnesium, Mg	30.1	mg/L	1	0.024	0.2	Splt# 1952417-01 (30.4mg/L)
DUP	Potassium, K	1.27	mg/L	0	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
DUP	Sodium, Na	35.1	mg/L	2	0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-07							
SPK	Calcium, Ca	37.9	mg/L	99	0.01	1	Splt# 1952417-01 (17.9mg/L)
SPK	Magnesium, Mg	49.8	mg/L	97	0.024	0.2	Splt# 1952417-01 (30.4mg/L)
SPK	Potassium, K	19.9	mg/L	93	0.035	0.2	Splt# 1952417-01 (1.26mg/L)
SPK	Sodium, Na	53.2	mg/L	85	0.013	1	Splt# 1952417-01 (36.2mg/L)
QC1963334-08							
SPKD	Calcium, Ca	38.3	mg/L	102	0	0.01	1 Splt# 1952417-01 (17.9mg/L)
SPKD	Magnesium, Mg	50.2	mg/L	98	0	0.024	0.2 Splt# 1952417-01 (30.4mg/L)
SPKD	Potassium, K	19.3	mg/L	90	3	0.035	0.2 Splt# 1952417-01 (1.26mg/L)
SPKD	Sodium, Na	53.9	mg/L	88	1	0.013	1 Splt# 1952417-01 (36.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952425-01 **Sample Source:** WSB_SS11SSLP120 **External ID:**

Date Collected: 4/24/19 10:09 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/24/2019	100844 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	63.4	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	42.9	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	2.8	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	88.4	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	282	mg/L	0.593	3	04/24/2019	100846 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	137	mg/L		3	04/24/2019	100847 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	768	µmhos/cm		1	04/24/2019	100836 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	343	mg/L	0.474	3	04/24/2019	100835 JCOLOMA	
MBP_PH(SM 4500-H+ B) pH	8.14	pH			04/24/2019	100849 JCOLOMA	
MBP_TDS(SM 2540 C) Total Dissolved Solids	617	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	>MCL

Lab Sample#: 1952425-01A **Sample Source:** WSB_SS11SSLP120 **External ID:**

Date Collected: 4/24/19 10:09 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	66.7	mg/L	0.5	2.5	04/24/2019	100844 MAWALLACE	

Lab Sample#: 1952425-02 **Sample Source:** WSB_SS12SSLP220 **External ID:**

Date Collected: 4/24/19 10:09 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	21.5	mg/L	0.1	0.5	04/24/2019	100844 MAWALLACE	
Nitrate as N	0.766	mg/L	0.034	0.07	04/24/2019	100844 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	30.6	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	25.2	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	1.92	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	50.1	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	128	mg/L	1.19	6	04/24/2019	100846 JCOLOMA	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	101	mg/L		6	04/24/2019	100847 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	1060	µmhos/cm		1	04/24/2019	100836 JCOLOMA	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	191	mg/L	0.948	6	04/24/2019	100835 JCOLOMA	
MBP_PH(SM 4500-H+ B) pH	7.98	pH			04/24/2019	100849 JCOLOMA	
MBP_TDS(SM 2540 C) Total Dissolved Solids	376	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	

Lab Sample#: 1952425-03 **Sample Source:** WSB_SS13SSLP440 **External ID:**

Date Collected: 4/24/19 11:02 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	0.508	mg/L	0.1	0.5	04/24/2019	100844 MAWALLACE	
Nitrate as N	<0.07	mg/L	0.034	0.07	04/24/2019	100844 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	26	mg/L	0.01	1	04/30/2019	101024 BTRINH	
Magnesium, Mg	19.5	mg/L	0.024	0.2	04/30/2019	101024 BTRINH	
Potassium, K	4.9	mg/L	0.035	0.2	04/30/2019	101024 BTRINH	
Sodium, Na	55.6	mg/L	0.013	1	04/30/2019	101024 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	209	mg/L	0.593	3	04/24/2019	100846 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	62.6	mg/L		3	04/24/2019	100847 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	629	µmhos/cm		1	04/24/2019	100836 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	151	mg/L	0.474	3	04/24/2019	100835 JCOLOMA	
MBP_PH(SM 4500-H+ B) pH	8.12	pH			04/24/2019	100849 JCOLOMA	
MBP_TDS(SM 2540 C) Total Dissolved Solids	303	mg/L	13.2	20	04/25/2019	100834 CCHAPMAN	

Lab Sample#: 1952425-04 **Sample Source:** WSB_SS14SSLP520 **External ID:**

Date Collected: 4/24/19 10:50 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/24/2019	100844 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	41.2	mg/L	0.01	1	04/30/2019	101024 BTRINH	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Magnesium, Mg	14.8	mg/L	0.024	0.2	04/30/2019	101024	BTRINH
Potassium, K	3.29	mg/L	0.035	0.2	04/30/2019	101024	BTRINH
Sodium, Na	87.9	mg/L	0.013	1	04/30/2019	101024	BTRINH
MBP_ALK(SM 2320 B)							
Alkalinity	197	mg/L	0.593	3	04/24/2019	100846	JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	91.5	mg/L		3	04/24/2019	100847	JCOLOMA
MBP_COND(SM 2510 B)							
Specific Conductance	583	µmhos/cm		1	04/24/2019	100836	JCOLOMA
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	167	mg/L	0.474	3	04/24/2019	100835	JCOLOMA
MBP_PH(SM 4500-H+ B)							
pH	7.47	pH			04/24/2019	100849	JCOLOMA
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	421	mg/L	13.2	20	04/25/2019	100834	CCHAPMAN

Lab Sample#: 1952425-04A **Sample Source:** WSB_SS14SSLP520 **External ID:**

Date Collected: 4/24/19 10:50 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	43	mg/L	0.5	2.5	04/24/2019	100844 MAWALLACE

Lab Sample#: 1952425-05 **Sample Source:** WSB_SS_DUP **External ID:**

Date Collected: 4/24/19 11:10 am **Date Received:** 4/24/19 12:00 pm **Sample Matrix:** Aqueous **Location Desc:** SS#14 - SS LINEAR PARK MW-520

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	<0.07	mg/L	0.034	0.07	04/24/2019	100844 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	42.1	mg/L	0.01	1	04/30/2019	101024 BTRINH
Magnesium, Mg	14.9	mg/L	0.024	0.2	04/30/2019	101024 BTRINH
Potassium, K	3.35	mg/L	0.035	0.2	04/30/2019	101024 BTRINH
Sodium, Na	86.9	mg/L	0.013	1	04/30/2019	101024 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	195	mg/L	0.593	3	04/24/2019	100846 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	92	mg/L		3	04/24/2019	100847 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	755	µmhos/cm		1	04/24/2019	100836 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	168	mg/L	0.474	3	04/24/2019	100835 JCOLOMA
MBP_PH(SM 4500-H+ B)						
pH	8.05	pH			04/24/2019	100849 JCOLOMA

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

SEWPCP 1721

MILLBRAE 1449

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/24/2019

Sampling Team: Field

MBP_TDS(SM 2540 C)

Total Dissolved Solids

421 mg/L 13.2 20 04/25/2019 100834 CCHAPMAN

Lab Sample#: 1952425-05A

Sample Source: WSB_SS_DUP

External ID:

Date Collected: 4/24/19 11:10 am Date Received: 4/24/19 12:00 pm Sample Matrix: Aqueous Location Desc: SS#14 - SS LINEAR PARK MW-520

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	44.8	mg/L	0.5	2.5	04/24/2019	100844 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100834 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963206-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963206-02	DUP	Total Dissolved Solids	418	mg/L		0	13.2	20	Splt# 1952425-05 (421mg/L)

QC list for Run#: 100835 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963212-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963212-03	DUP	Hardness, Total, as CaCO3	168	mg/L		0	0.474	3	Splt# 1952425-04 (167mg/L)
QC1963212-04	LCS	Hardness, Total, as CaCO3	39.4	mg/L	98			3	

QC list for Run#: 100836 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963207-01	MRL_CK	Specific Conductance	10.5	µmhos/cm	105				
QC1963207-02	CCV	Specific Conductance	100	µmhos/cm	100			1	
QC1963207-03	DUP	Specific Conductance	770	µmhos/cm		0		1	Splt# 1952425-01 (768µmhos/cm)
QC1963207-04	DUP	Specific Conductance	756	µmhos/cm		0		1	Splt# 1952425-05 (755µmhos/cm)
QC1963207-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100844 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963211-01	MRL_CK	Sulfate	0.614	mg/L	123				
	MRL_CK	Nitrate as N	0.0852	mg/L	126				
QC1963211-02	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.321	mg/L	94				
QC1963211-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963211-04	LCS	Sulfate	4.88	mg/L	97				
	LCS	Nitrate as N	0.644	mg/L	95				
QC1963211-05	SPK	Sulfate	25	mg/L	142				Splt# 1952425-02 (21.5mg/L)
	SPK	Nitrate as N	1.13	mg/L	109				Splt# 1952425-02 (0.766mg/L)
QC1963211-06	SPKD	Sulfate	24.5	mg/L	122	2			Splt# 1952425-02 (21.5mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963211-07	SPKD	Nitrate as N	1.12	mg/L	104	1			Splt# 1952425-02 (0.766mg/L)
	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.325	mg/L	95				
QC1963211-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100846 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963213-03	DUP	Alkalinity	199	mg/L		0	0.593	3	Splt# 1952425-04 (197mg/L)
QC1963213-04	LCS	Alkalinity	40.4	mg/L	101			3	

QC list for Run#: 100847 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963214-03	DUP	Chloride	92	mg/L		0	1.16	3	Splt# 1952425-04 (91.5mg/L)
QC1963214-04	LCS	Chloride	39	mg/L	97			3	

QC list for Run#: 100849 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963215-01	ICV	pH	9.04	pH	100				
QC1963215-02	DUP	pH	8.15	pH		0			Splt# 1952425-01 (8.14pH)
QC1963215-03	CCV	pH	10	pH	100				
QC1963215-04	CCV	pH	10	pH	100				

QC list for Run#: 101024 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963334-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963334-02	LCS	Calcium, Ca	20	mg/L	100		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.1	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963334-03	DUP	Calcium, Ca	31.4	mg/L		0	0.01	1	Splt# 1952265-02 (31.2mg/L)
	DUP	Magnesium, Mg	18.1	mg/L		0	0.024	0.2	Splt# 1952265-02 (18.1mg/L)
	DUP	Potassium, K	3.18	mg/L		1	0.035	0.2	Splt# 1952265-02 (3.24mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952425

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/24/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

DUP	Parameter	Value	Unit	Temp	Cond	Turb	SpH	Split#	Result
	Sodium, Na	48.6	mg/L		0	0.013		1	Splt# 1952265-02 (48.8mg/L)
QC1963334-04									
	Calcium, Ca	51.8	mg/L	103		0.01		1	Splt# 1952265-02 (31.2mg/L)
	Magnesium, Mg	37.1	mg/L	94		0.024		0.2	Splt# 1952265-02 (18.1mg/L)
	Potassium, K	22.4	mg/L	95		0.035		0.2	Splt# 1952265-02 (3.24mg/L)
	Sodium, Na	64.8	mg/L	79		0.013		1	Splt# 1952265-02 (48.8mg/L)
QC1963334-05									
	Calcium, Ca	52.8	mg/L	108	1	0.01		1	Splt# 1952265-02 (31.2mg/L)
	Magnesium, Mg	38	mg/L	99	2	0.024		0.2	Splt# 1952265-02 (18.1mg/L)
	Potassium, K	22.1	mg/L	94	1	0.035		0.2	Splt# 1952265-02 (3.24mg/L)
	Sodium, Na	64.8	mg/L	79	0	0.013		1	Splt# 1952265-02 (48.8mg/L)
QC1963334-06									
	Calcium, Ca	17.4	mg/L		3	0.01		1	Splt# 1952417-01 (17.9mg/L)
	Magnesium, Mg	30.1	mg/L		1	0.024		0.2	Splt# 1952417-01 (30.4mg/L)
	Potassium, K	1.27	mg/L		0	0.035		0.2	Splt# 1952417-01 (1.26mg/L)
	Sodium, Na	35.1	mg/L		2	0.013		1	Splt# 1952417-01 (36.2mg/L)
QC1963334-07									
	Calcium, Ca	37.9	mg/L	99		0.01		1	Splt# 1952417-01 (17.9mg/L)
	Magnesium, Mg	49.8	mg/L	97		0.024		0.2	Splt# 1952417-01 (30.4mg/L)
	Potassium, K	19.9	mg/L	93		0.035		0.2	Splt# 1952417-01 (1.26mg/L)
	Sodium, Na	53.2	mg/L	85		0.013		1	Splt# 1952417-01 (36.2mg/L)
QC1963334-08									
	Calcium, Ca	38.3	mg/L	102	0	0.01		1	Splt# 1952417-01 (17.9mg/L)
	Magnesium, Mg	50.2	mg/L	98	0	0.024		0.2	Splt# 1952417-01 (30.4mg/L)
	Potassium, K	19.3	mg/L	90	3	0.035		0.2	Splt# 1952417-01 (1.26mg/L)
	Sodium, Na	53.9	mg/L	88	1	0.013		1	Splt# 1952417-01 (36.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952426

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952426-02 **Sample Source:** WSB_CM-23-440 **External ID:**

Date Collected: 4/25/19 11:40 am **Date Received:** 4/25/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	28.2	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	27.1	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	1.65	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	39.6	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	156	mg/L	1.19	6	04/25/2019	100923 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	63.3	mg/L		6	04/25/2019	100924 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	552	µmhos/cm		1	04/25/2019	100913 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	185	mg/L	0.948	6	04/25/2019	100925 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.62	pH			04/25/2019	100916 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	274	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952426-03 **Sample Source:** WSB_CM-23-515 **External ID:**

Date Collected: 4/25/19 10:34 am **Date Received:** 4/25/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	40.1	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	26.5	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	2.81	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	50.7	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	180	mg/L	1.19	6	04/25/2019	100923 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	71.5	mg/L		6	04/25/2019	100924 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	649	µmhos/cm		1	04/25/2019	100913 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	215	mg/L	0.948	6	04/25/2019	100925 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.75	pH			04/25/2019	100916 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	349	mg/L	13.2	20	05/01/2019	101095 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952426

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952426-04 Sample Source: WSB_CM-23-600 External ID:

Date Collected: 4/25/19 10:34 am Date Received: 4/25/19 1:41 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	45.6	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	43.8	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	1.97	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	47.8	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	183	mg/L	1.19	6	04/25/2019	100923 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	77.7	mg/L		6	04/25/2019	100924 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	823	µmhos/cm		1	04/25/2019	100913 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	296	mg/L	0.948	6	04/25/2019	100925 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.95	pH			04/25/2019	100916 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	445	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952426-05 Sample Source: WSB_CM_DUP External ID:

Date Collected: 4/25/19 10:57 am Date Received: 4/25/19 1:41 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP23-600, TREASURE I

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	39.8	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	26	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	2.88	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	49.7	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	179	mg/L	1.19	6	04/25/2019	100923 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	71.4	mg/L		6	04/25/2019	100924 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	654	µmhos/cm		1	04/25/2019	100913 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	213	mg/L	0.948	6	04/25/2019	100925 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.33	pH			04/25/2019	100916 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	329	mg/L	13.2	20	05/01/2019	101095 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952426

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100911 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963254-01	MRL_CK	Sulfate	0.546	mg/L	109				
	MRL_CK	Nitrate as N	0.0732	mg/L	108				
QC1963254-02	CCV	Sulfate	2.4	mg/L	95				
	CCV	Nitrate as N	0.321	mg/L	94				
QC1963254-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963254-04	LCS	Sulfate	4.84	mg/L	96				
	LCS	Nitrate as N	0.644	mg/L	95				
QC1963254-05	SPK	Sulfate	4.38	mg/L	102				Splt# 1953010-01 (1.86mg/L)
	SPK	Nitrate as N	0.369	mg/L	110				Splt# 1953010-01 (<0.07mg/L)
QC1963254-06	SPKD	Sulfate	4.25	mg/L	96	3			Splt# 1953010-01 (1.86mg/L)
	SPKD	Nitrate as N	0.365	mg/L	108	1			Splt# 1953010-01 (<0.07mg/L)
QC1963254-07	CCV	Sulfate	2.39	mg/L	95				
	CCV	Nitrate as N	0.323	mg/L	95				
QC1963254-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100913 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963256-01	MRL_CK	Specific Conductance	10.6	µmhos/cm	106				
QC1963256-02	CCV	Specific Conductance	100	µmhos/cm	100			1	
QC1963256-03	DUP	Specific Conductance	655	µmhos/cm		0		1	Splt# 1952426-05 (654µmhos/cm)
QC1963256-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 100916 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963258-01	ICV	pH	9.06	pH	100				
QC1963258-02	DUP	pH	7.29	pH		0			Splt# 1952426-05 (7.33pH)
QC1963258-03	CCV	pH	10	pH	100				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952426

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 100923 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963265-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963265-02	MRL_CK	Alkalinity	3.39	mg/L	113				
QC1963265-03	DUP	Alkalinity	181	mg/L		1	1.19	6	Splt# 1952426-05 (179mg/L)
QC1963265-04	LCS	Alkalinity	40.8	mg/L	102			3	

QC list for Run#: 100924 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963266-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963266-02	MRL_CK	Chloride	3.39	mg/L	113				
QC1963266-03	DUP	Chloride	72.1	mg/L		0	2.31	6	Splt# 1952426-05 (71.4mg/L)
QC1963266-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 100925 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963267-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963267-02	MRL_CK	Hardness, Total, as CaCO3	2.12	mg/L	70				
QC1963267-03	DUP	Hardness, Total, as CaCO3	210	mg/L		1	0.948	6	Splt# 1952426-05 (213mg/L)
QC1963267-04	LCS	Hardness, Total, as CaCO3	40.3	mg/L	101			3	

QC list for Run#: 101095 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963377-01	DUP	Total Dissolved Solids	458	mg/L		0	13.2	20	Splt# 1952428-04 (457mg/L)
QC1963377-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101377 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963549-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963549-02	LCS	Calcium, Ca	20.2	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952426

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Flow	Conductivity	Turbidity	Notes
LCS	Sodium, Na	20.8	mg/L	104		0.013	1	
QC1963549-03	DUP	Calcium, Ca	65.1	mg/L	1	0.01	1	Splt# 1952426-01 (66.3mg/L)
DUP	Magnesium, Mg	54.9	mg/L	3	0.024	0.2		Splt# 1952426-01 (56.8mg/L)
DUP	Potassium, K	1.85	mg/L	2	0.035	0.2		Splt# 1952426-01 (1.89mg/L)
DUP	Sodium, Na	59.3	mg/L	3	0.013	1		Splt# 1952426-01 (61.2mg/L)
QC1963549-04	SPK	Calcium, Ca	88.4	mg/L	111	0.01	1	Splt# 1952426-01 (66.3mg/L)
SPK	Magnesium, Mg	76.5	mg/L	98	0.024	0.2		Splt# 1952426-01 (56.8mg/L)
SPK	Potassium, K	19.8	mg/L	89	0.035	0.2		Splt# 1952426-01 (1.89mg/L)
SPK	Sodium, Na	77.7	mg/L	82	0.013	1		Splt# 1952426-01 (61.2mg/L)
QC1963549-05	SPKD	Calcium, Ca	88.4	mg/L	110	0	1	Splt# 1952426-01 (66.3mg/L)
SPKD	Magnesium, Mg	74.3	mg/L	87	2	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
SPKD	Potassium, K	20.5	mg/L	93	3	0.035	0.2	Splt# 1952426-01 (1.89mg/L)
SPKD	Sodium, Na	77	mg/L	78	0	0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-06	DUP	Calcium, Ca	27.7	mg/L	1	0.01	1	Splt# 1952426-02 (28.2mg/L)
DUP	Magnesium, Mg	27	mg/L	0	0.024	0.2		Splt# 1952426-02 (27.1mg/L)
DUP	Potassium, K	1.67	mg/L	1	0.035	0.2		Splt# 1952426-02 (1.65mg/L)
DUP	Sodium, Na	39.9	mg/L	0	0.013	1		Splt# 1952426-02 (39.6mg/L)
QC1963549-07	SPK	Calcium, Ca	48.2	mg/L	99	0.01	1	Splt# 1952426-02 (28.2mg/L)
SPK	Magnesium, Mg	47.2	mg/L	100	0.024	0.2		Splt# 1952426-02 (27.1mg/L)
SPK	Potassium, K	20	mg/L	91	0.035	0.2		Splt# 1952426-02 (1.65mg/L)
SPK	Sodium, Na	60.8	mg/L	106	0.013	1		Splt# 1952426-02 (39.6mg/L)
QC1963549-08	SPKD	Calcium, Ca	49.4	mg/L	106	2	1	Splt# 1952426-02 (28.2mg/L)
SPKD	Magnesium, Mg	46.2	mg/L	95	2	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
SPKD	Potassium, K	20.3	mg/L	93	1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)
SPKD	Sodium, Na	58.4	mg/L	93	4	0.013	1	Splt# 1952426-02 (39.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952428-01 **Sample Source:** WSB_CAL-19-475 **External ID:**

Date Collected: 4/29/19 11:12 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	40.4	mg/L	1	5	04/29/2019	101038 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	39.3	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	33.6	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	2.21	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	47.1	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	148	mg/L	0.593	3	04/29/2019	101063 CCHAPMAN
MBP_CHLORIDE(SM 4500-CL- D) Chloride	103	mg/L		3	04/29/2019	101070 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	701	µmhos/cm		1	04/29/2019	101043 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	235	mg/L	0.474	3	04/29/2019	101071 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.86	pH			04/29/2019	101066 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	375	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952428-01C **Sample Source:** WSB_CAL-19-475 **External ID:**

Date Collected: 4/29/19 11:12 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	0.546	mg/L	0.034	0.07	04/30/2019	101145 MAWALLACE

Lab Sample#: 1952428-02 **Sample Source:** WSB_CAL-19-600 **External ID:**

Date Collected: 4/29/19 10:26 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	04/29/2019	101038 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	44.1	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	34.8	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	2.23	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	56.2	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	159	mg/L	0.593	3	04/29/2019	101063 CCHAPMAN
MBP_CHLORIDE(SM 4500-CL- D)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
Chloride	108	mg/L		3	04/29/2019	101070 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	772	µmhos/cm		1	04/29/2019	101043 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	257	mg/L	0.474	3	04/29/2019	101071 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.3	pH			04/29/2019	101066 JCOLOMA
MBP_TDS(SM 2540 C) Total Dissolved Solids	395	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952428-02A **Sample Source:** WSB_CAL-19-600 **External ID:**

Date Collected: 4/29/19 10:26 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	59.2	mg/L	1	5	04/29/2019	101038 MAWALLACE

Lab Sample#: 1952428-03 **Sample Source:** WSB_CAL-19-690 **External ID:**

Date Collected: 4/29/19 9:19 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	81.3	mg/L	1	5	04/29/2019	101038 MAWALLACE
Nitrate as N	4.38	mg/L	0.34	0.7	04/29/2019	101038 MAWALLACE

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
SEM_200.7_DW(EPA 200.7) Calcium, Ca	56.8	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	34.4	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	1.84	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	52.5	mg/L	0.013	1	05/06/2019	101377 BTRINH

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_ALK(SM 2320 B) Alkalinity	148	mg/L	0.593	3	04/29/2019	101063 CCHAPMAN

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_CHLORIDE(SM 4500-CL- D) Chloride	100	mg/L		3	04/29/2019	101070 CCHAPMAN

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_COND(SM 2510 B) Specific Conductance	791	µmhos/cm		1	04/29/2019	101043 JCOLOMA

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	283	mg/L	0.474	3	04/29/2019	101071 CCHAPMAN

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_PH(SM 4500-H+ B) pH	7.47	pH			04/29/2019	101066 JCOLOMA

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
MBP_TDS(SM 2540 C) Total Dissolved Solids	429	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952428-04 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 4/29/19 9:34 am **Date Received:** 4/29/19 12:05 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-690, ROW AT St

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc
--------------	--------	------	-----	-----	---------------	---------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 04/29/2019

Sampling Team: Field

Parameter	Value	Unit	1	5	Date	Lab ID	Analyst
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	94.7	mg/L	1	5	04/29/2019	101038	MAWALLACE
Nitrate as N	4.69	mg/L	0.34	0.7	04/29/2019	101038	MAWALLACE
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	56.3	mg/L	0.01	1	05/06/2019	101377	BTRINH
Magnesium, Mg	33.5	mg/L	0.024	0.2	05/06/2019	101377	BTRINH
Potassium, K	1.78	mg/L	0.035	0.2	05/06/2019	101377	BTRINH
Sodium, Na	51.6	mg/L	0.013	1	05/06/2019	101377	BTRINH
MBP_ALK(SM 2320 B)							
Alkalinity	148	mg/L	0.593	3	04/29/2019	101063	CCHAPMAN
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	99.9	mg/L		3	04/29/2019	101070	CCHAPMAN
MBP_COND(SM 2510 B)							
Specific Conductance	796	µmhos/cm		1	04/29/2019	101043	JCOLOMA
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	279	mg/L	0.474	3	04/29/2019	101071	CCHAPMAN
MBP_PH(SM 4500-H+ B)							
pH	7.8	pH			04/29/2019	101066	JCOLOMA
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	457	mg/L	13.2	20	05/01/2019	101095	ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 101038 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963340-01	MRL_CK	Sulfate	0.552	mg/L	110				
	MRL_CK	Nitrate as N	0.0746	mg/L	110				
QC1963340-02	CCV	Sulfate	2.45	mg/L	97				
	CCV	Nitrate as N	0.336	mg/L	99				
QC1963340-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963340-04	LCS	Sulfate	5	mg/L	100				
	LCS	Nitrate as N	0.662	mg/L	97				
QC1963340-05	SPK	Sulfate	4.61	mg/L	97				Splt# 1953117-01 (2.2mg/L)
	SPK	Nitrate as N	0.371	mg/L	110				Splt# 1953117-01 (<0.07mg/L)
QC1963340-06	SPKD	Sulfate	4.58	mg/L	95	0			Splt# 1953117-01 (2.2mg/L)
	SPKD	Nitrate as N	0.367	mg/L	109	0			Splt# 1953117-01 (<0.07mg/L)
QC1963340-07	CCV	Sulfate	2.5	mg/L	100				
	CCV	Nitrate as N	0.339	mg/L	100				
QC1963340-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101043 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963341-01	MRL_CK	Specific Conductance	10.8	µmhos/cm	108				
QC1963341-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1963341-03	DUP	Specific Conductance	82.1	µmhos/cm		0		1	Splt# 1953015-01 (81.9µmhos/cm)
QC1963341-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 101063 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963350-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963350-02	MRL_CK	Alkalinity	3.6	mg/L	120				
QC1963350-03	DUP	Alkalinity	29.5	mg/L		2	0.593	3	Splt# 1953039-01 (30.3mg/L)
QC1963350-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

LCS Alkalinity 40.2 mg/L 101 3

QC list for Run#: 101066 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963353-01	ICV	pH	9.05	pH	100				
QC1963353-02	DUP	pH	7.89	pH		0			Splt# 1952428-01 (7.86pH)
QC1963353-03	CCV	pH	10	pH	100				
QC1963353-04	CCV	pH	10	pH	100				

QC list for Run#: 101070 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963356-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963356-02	MRL_CHK	Chloride	2.85	mg/L	95				
QC1963356-03	DUP	Chloride	8.77	mg/L		4	1.16	3	Splt# 1953039-01 (9.13mg/L)
QC1963356-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 101071 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963357-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963357-02	MRL_CHK	Hardness, Total, as CaCO3	2.16	mg/L	72				
QC1963357-03	DUP	Hardness, Total, as CaCO3	27.8	mg/L		3	0.474	3	Splt# 1953039-01 (26.9mg/L)
QC1963357-04	LCS	Hardness, Total, as CaCO3	39.8	mg/L	99			3	

QC list for Run#: 101095 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963377-01	DUP	Total Dissolved Solids	458	mg/L		0	13.2	20	Splt# 1952428-04 (457mg/L)
QC1963377-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101145 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963402-01	MRL_CHK	Sulfate	0.561	mg/L	112				
	MRL_CHK	Nitrate as N	0.0774	mg/L	114				
QC1963402-02	CCV	Sulfate	2.49	mg/L	99				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1963402-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963402-04	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
	LCS	Sulfate	4.98	mg/L	99				
	LCS	Nitrate as N	0.66	mg/L	97				
QC1963402-05	SPK	Sulfate	9.96	mg/L	101				Splt# 1953122-01 (7.45mg/L)
	SPK	Nitrate as N	0.432	mg/L	104				Splt# 1953122-01 (0.0827mg/L)
QC1963402-06	SPKD	Sulfate	9.89	mg/L	98	0			Splt# 1953122-01 (7.45mg/L)
	SPKD	Nitrate as N	0.415	mg/L	98	4			Splt# 1953122-01 (0.0827mg/L)
QC1963402-07	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.337	mg/L	99				
QC1963402-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963402-09	CCV	Sulfate	2.49	mg/L	99				
	CCV	Nitrate as N	0.339	mg/L	100				
QC1963402-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101377 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963549-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963549-02	LCS	Calcium, Ca	20.2	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
	LCS	Sodium, Na	20.8	mg/L	104		0.013	1	
QC1963549-03	DUP	Calcium, Ca	65.1	mg/L		1	0.01	1	Splt# 1952426-01 (66.3mg/L)
	DUP	Magnesium, Mg	54.9	mg/L		3	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
	DUP	Potassium, K	1.85	mg/L		2	0.035	0.2	Splt# 1952426-01 (1.89mg/L)
	DUP	Sodium, Na	59.3	mg/L		3	0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-04	SPK	Calcium, Ca	88.4	mg/L	111		0.01	1	Splt# 1952426-01 (66.3mg/L)
	SPK	Magnesium, Mg	76.5	mg/L	98		0.024	0.2	Splt# 1952426-01 (56.8mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952428

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

	SPK	Potassium, K	19.8	mg/L	89		0.035	0.2	Splt# 1952426-01 (1.89mg/L)
	SPK	Sodium, Na	77.7	mg/L	82		0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-05									
	SPKD	Calcium, Ca	88.4	mg/L	110	0	0.01	1	Splt# 1952426-01 (66.3mg/L)
	SPKD	Magnesium, Mg	74.3	mg/L	87	2	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
	SPKD	Potassium, K	20.5	mg/L	93	3	0.035	0.2	Splt# 1952426-01 (1.89mg/L)
	SPKD	Sodium, Na	77	mg/L	78	0	0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-06									
	DUP	Calcium, Ca	27.7	mg/L		1	0.01	1	Splt# 1952426-02 (28.2mg/L)
	DUP	Magnesium, Mg	27	mg/L		0	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	DUP	Potassium, K	1.67	mg/L		1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)
	DUP	Sodium, Na	39.9	mg/L		0	0.013	1	Splt# 1952426-02 (39.6mg/L)
QC1963549-07									
	SPK	Calcium, Ca	48.2	mg/L	99		0.01	1	Splt# 1952426-02 (28.2mg/L)
	SPK	Magnesium, Mg	47.2	mg/L	100		0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	SPK	Potassium, K	20	mg/L	91		0.035	0.2	Splt# 1952426-02 (1.65mg/L)
	SPK	Sodium, Na	60.8	mg/L	106		0.013	1	Splt# 1952426-02 (39.6mg/L)
QC1963549-08									
	SPKD	Calcium, Ca	49.4	mg/L	106	2	0.01	1	Splt# 1952426-02 (28.2mg/L)
	SPKD	Magnesium, Mg	46.2	mg/L	95	2	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	SPKD	Potassium, K	20.3	mg/L	93	1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)
	SPKD	Sodium, Na	58.4	mg/L	93	4	0.013	1	Splt# 1952426-02 (39.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952429-01 **Sample Source:** WSB_CAL-22A-290 **External ID:**

Date Collected: 4/30/19 10:22 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	58.9	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	41.8	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	2.17	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	61.4	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	223	mg/L	1.19	6	04/30/2019	101136 JCOLOMA DIL FACTOR: 2
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	92.4	mg/L		6	04/30/2019	101137 JCOLOMA DIL FACTOR: 2
MBP_COND(SM 2510 B)						
Specific Conductance	903	µmhos/cm		1	04/30/2019	101119 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	312	mg/L	0.948	6	04/30/2019	101135 JCOLOMA dil factor: 2
MBP_PH(SM 4500-H+ B)						
pH	7.38	pH			04/30/2019	101120 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	494	mg/L	13.2	20	05/01/2019	101095 ALEE

Lab Sample#: 1952429-01A **Sample Source:** WSB_CAL-22A-290 **External ID:**

Date Collected: 4/30/19 10:22 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	48.7	mg/L	1	5	04/30/2019	101145 MAWALLACE

Lab Sample#: 1952429-02 **Sample Source:** WSB_CAL-22A-440 **External ID:**

Date Collected: 4/30/19 9:52 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	17.8	mg/L	0.5	2.5	04/30/2019	101145 MAWALLACE
Nitrate as N	1.68	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	32.9	mg/L	0.01	1	05/06/2019	101377 BTRINH
Magnesium, Mg	23.7	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
Potassium, K	1.82	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
Sodium, Na	48.1	mg/L	0.013	1	05/06/2019	101377 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	141	mg/L	0.593	3	04/30/2019	101136 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	71.4	mg/L		3	04/30/2019	101137 JCOLOMA
MBP_COND(SM 2510 B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>Specific Conductance</i>	550	µmhos/cm		1	04/30/2019	101119 ALEE	
<i>MBP_HARDNESS_T(SM 2340 C)</i> <i>Hardness, Total, as CaCO3</i>	181	mg/L	0.474	3	04/30/2019	101135 JCOLOMA	
<i>MBP_PH(SM 4500-H+ B)</i> <i>pH</i>	7.34	pH			04/30/2019	101120 ALEE	
<i>MBP_TDS(SM 2540 C)</i> <i>Total Dissolved Solids</i>	304	mg/L	13.2	20	05/01/2019	101095 ALEE	

Lab Sample#: 1952429-03 **Sample Source:** WSB_CAL-22A-545 **External ID:**

Date Collected: 4/30/19 9:15 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i> <i>Nitrate as N</i>	5.06	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i> <i>Calcium, Ca</i>	72.4	mg/L	0.01	1	05/06/2019	101377 BTRINH
<i>Magnesium, Mg</i>	49.1	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
<i>Potassium, K</i>	2.74	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
<i>Sodium, Na</i>	80.8	mg/L	0.013	1	05/06/2019	101377 BTRINH
<i>MBP_ALK(SM 2320 B)</i> <i>Alkalinity</i>	304	mg/L	1.19	6	04/30/2019	101136 JCOLOMA DIL FACTOR: 2
<i>MBP_CHLORIDE(SM 4500-CL- D)</i> <i>Chloride</i>	108	mg/L		6	04/30/2019	101137 JCOLOMA DIL FACTOR: 2
<i>MBP_COND(SM 2510 B)</i> <i>Specific Conductance</i>	1110	µmhos/cm		1	04/30/2019	101119 ALEE >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i> <i>Hardness, Total, as CaCO3</i>	386	mg/L	0.948	6	04/30/2019	101135 JCOLOMA dil factor: 2
<i>MBP_PH(SM 4500-H+ B)</i> <i>pH</i>	6.81	pH			04/30/2019	101120 ALEE
<i>MBP_TDS(SM 2540 C)</i> <i>Total Dissolved Solids</i>	656	mg/L	13.2	20	05/01/2019	101095 ALEE >MCL

Lab Sample#: 1952429-03A **Sample Source:** WSB_CAL-22A-545 **External ID:**

Date Collected: 4/30/19 9:15 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i> <i>Sulfate</i>	97.7	mg/L	1	5	04/30/2019	101145 MAWALLACE

Lab Sample#: 1952429-04 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 4/30/19 9:35 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i> <i>Nitrate as N</i>	5.09	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Calcium, Ca	72.5	mg/L	0.01	1	05/06/2019	101377 BTRINH	
Magnesium, Mg	50.6	mg/L	0.024	0.2	05/06/2019	101377 BTRINH	
Potassium, K	2.81	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
Sodium, Na	80.8	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	309	mg/L	1.19	6	04/30/2019	101136 JCOLOMA	DIL FACTOR: 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	110	mg/L		6	04/30/2019	101137 JCOLOMA	DIL FACTOR: 2
MBP_COND(SM 2510 B)							
Specific Conductance	1120	µmhos/cm		1	04/30/2019	101119 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	384	mg/L	0.948	6	04/30/2019	101135 JCOLOMA	dil factor: 2
MBP_PH(SM 4500-H+ B)							
pH	6.81	pH			04/30/2019	101120 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	653	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	>MCL

Lab Sample#: 1952429-04A **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 4/30/19 9:35 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	97.5	mg/L	1	5	04/30/2019	101145 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101095 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963377-01	DUP	Total Dissolved Solids	458	mg/L		0	13.2	20	Splt# 1952428-04 (457mg/L)
QC1963377-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101119 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963388-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963388-02	CCV	Specific Conductance	100	µmhos/cm	100			1	
QC1963388-03	DUP	Specific Conductance	1120	µmhos/cm		0		1	Splt# 1952429-04 (1120µmhos/cm)
QC1963388-04	LCS	Specific Conductance	145	µmhos/cm	98			1	

QC list for Run#: 101120 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963389-01	ICV	pH	8.98	pH	99				
QC1963389-02	DUP	pH	9.13	pH		0			Splt# 1953122-01 (9.14pH)
QC1963389-03	CCV	pH	9.96	pH	99				
QC1963389-04	CCV	pH	9.96	pH	99				

QC list for Run#: 101135 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963396-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963396-03	DUP	Hardness, Total, as CaCO3	181	mg/L		0	0.474	3	Splt# 1952429-02 (181mg/L)
QC1963396-04	LCS	Hardness, Total, as CaCO3	40	mg/L	100			3	

QC list for Run#: 101136 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963397-03	DUP	Alkalinity	29.1	mg/L		2	0.593	3	Splt# 1953016-07 (28.4mg/L)
QC1963397-04	LCS	Alkalinity	40.4	mg/L	101			3	

QC list for Run#: 101137 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963398-03	DUP	Chloride	7.32	mg/L		0	1.16	3	Splt# 1953016-07 (7.31mg/L)
QC1963398-04	LCS	Chloride	39.4	mg/L	98			3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101145 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963402-01	MRL_CK	Sulfate	0.561	mg/L	112				
	MRL_CK	Nitrate as N	0.0774	mg/L	114				
QC1963402-02	CCV	Sulfate	2.49	mg/L	99				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1963402-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963402-04	LCS	Sulfate	4.98	mg/L	99				
	LCS	Nitrate as N	0.66	mg/L	97				
QC1963402-05	SPK	Sulfate	9.96	mg/L	101				Splt# 1953122-01 (7.45mg/L)
	SPK	Nitrate as N	0.432	mg/L	104				Splt# 1953122-01 (0.0827mg/L)
QC1963402-06	SPKD	Sulfate	9.89	mg/L	98	0			Splt# 1953122-01 (7.45mg/L)
	SPKD	Nitrate as N	0.415	mg/L	98	4			Splt# 1953122-01 (0.0827mg/L)
QC1963402-07	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.337	mg/L	99				
QC1963402-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963402-09	CCV	Sulfate	2.49	mg/L	99				
	CCV	Nitrate as N	0.339	mg/L	100				
QC1963402-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101269 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963477-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963477-02	DUP	Total Dissolved Solids	384	mg/L		1	13.2	20	Splt# 1952431-05 (378mg/L)

QC list for Run#: 101377 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963549-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963549-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Filter	Temp	Conductivity	Flow	Notes
LCS	Calcium, Ca	20.2	mg/L	101		0.01	1	
LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
LCS	Sodium, Na	20.8	mg/L	104		0.013	1	
QC1963549-03								
DUP	Calcium, Ca	65.1	mg/L	1		0.01	1	Splt# 1952426-01 (66.3mg/L)
DUP	Magnesium, Mg	54.9	mg/L	3		0.024	0.2	Splt# 1952426-01 (56.8mg/L)
DUP	Potassium, K	1.85	mg/L	2		0.035	0.2	Splt# 1952426-01 (1.89mg/L)
DUP	Sodium, Na	59.3	mg/L	3		0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-04								
SPK	Calcium, Ca	88.4	mg/L	111		0.01	1	Splt# 1952426-01 (66.3mg/L)
SPK	Magnesium, Mg	76.5	mg/L	98		0.024	0.2	Splt# 1952426-01 (56.8mg/L)
SPK	Potassium, K	19.8	mg/L	89		0.035	0.2	Splt# 1952426-01 (1.89mg/L)
SPK	Sodium, Na	77.7	mg/L	82		0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-05								
SPKD	Calcium, Ca	88.4	mg/L	110	0	0.01	1	Splt# 1952426-01 (66.3mg/L)
SPKD	Magnesium, Mg	74.3	mg/L	87	2	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
SPKD	Potassium, K	20.5	mg/L	93	3	0.035	0.2	Splt# 1952426-01 (1.89mg/L)
SPKD	Sodium, Na	77	mg/L	78	0	0.013	1	Splt# 1952426-01 (61.2mg/L)
QC1963549-06								
DUP	Calcium, Ca	27.7	mg/L	1		0.01	1	Splt# 1952426-02 (28.2mg/L)
DUP	Magnesium, Mg	27	mg/L	0		0.024	0.2	Splt# 1952426-02 (27.1mg/L)
DUP	Potassium, K	1.67	mg/L	1		0.035	0.2	Splt# 1952426-02 (1.65mg/L)
DUP	Sodium, Na	39.9	mg/L	0		0.013	1	Splt# 1952426-02 (39.6mg/L)
QC1963549-07								
SPK	Calcium, Ca	48.2	mg/L	99		0.01	1	Splt# 1952426-02 (28.2mg/L)
SPK	Magnesium, Mg	47.2	mg/L	100		0.024	0.2	Splt# 1952426-02 (27.1mg/L)
SPK	Potassium, K	20	mg/L	91		0.035	0.2	Splt# 1952426-02 (1.65mg/L)
SPK	Sodium, Na	60.8	mg/L	106		0.013	1	Splt# 1952426-02 (39.6mg/L)
QC1963549-08								
SPKD	Calcium, Ca	49.4	mg/L	106	2	0.01	1	Splt# 1952426-02 (28.2mg/L)
SPKD	Magnesium, Mg	46.2	mg/L	95	2	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
SPKD	Potassium, K	20.3	mg/L	93	1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/30/2019

Sampling Team: Field

SPKD	Sodium, Na	58.4	mg/L	93	4	0.013	1	Splt# 1952426-02 (39.6mg/L)
------	------------	------	------	----	---	-------	---	--------------------------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/01/2019

Sampling Team: Field

Lab Sample#: 1952430-01 Sample Source: WSB_DC-10A-160 External ID:

Date Collected: 5/1/19 10:31 am Date Received: 5/1/19 12:34 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	49.8	mg/L	1	5	05/01/2019	101175 MAWALLACE	
Nitrate as N	11.9	mg/L	0.34	0.7	05/01/2019	101175 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	58.7	mg/L	0.01	1	05/21/2019	102131 BTRINH	
Magnesium, Mg	61.7	mg/L	0.024	0.2	05/21/2019	102131 BTRINH	
Potassium, K	1.28	mg/L	0.035	0.2	05/21/2019	102131 BTRINH	
Sodium, Na	72.9	mg/L	0.013	1	05/21/2019	102131 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	268	mg/L	1.19	6	05/01/2019	101180 JCOLOMA	dil factor: 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	131	mg/L		6	05/01/2019	101181 JCOLOMA	dil factor: 2
MBP_COND(SM 2510 B)							
Specific Conductance	1100	µmhos/cm		1	05/01/2019	101167 CCHAPMAN	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	384	mg/L	0.948	6	05/01/2019	101176 JCOLOMA	dil factor: 2
MBP_PH(SM 4500-H+ B)							
pH	7.3	pH			05/01/2019	101168 CCHAPMAN	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	557	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	>MCL

Lab Sample#: 1952430-03 Sample Source: WSB_DC-10A-500 External ID:

Date Collected: 5/1/19 10:10 am Date Received: 5/1/19 12:34 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	81.2	mg/L	1	5	05/01/2019	101175 MAWALLACE	
Nitrate as N	9.88	mg/L	0.34	0.7	05/01/2019	101175 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	61.8	mg/L	0.01	1	05/06/2019	101377 BTRINH	
Magnesium, Mg	58.3	mg/L	0.024	0.2	05/06/2019	101377 BTRINH	
Potassium, K	1.17	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
Sodium, Na	65.8	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	246	mg/L	1.19	6	05/01/2019	101180 JCOLOMA	dil factor: 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	125	mg/L		6	05/01/2019	101181 JCOLOMA	dil factor: 2
MBP_COND(SM 2510 B)							
Specific Conductance	1080	µmhos/cm		1	05/01/2019	101167 CCHAPMAN	>MCL
MBP_HARDNESS_T(SM 2340 C)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/01/2019

Sampling Team: Field

<i>Hardness, Total, as CaCO3</i>	398	mg/L	0.948	6	05/01/2019	101176 JCOLOMA	dil factor: 2
<i>MBP_PH(SM 4500-H+ B)</i>							
<i>pH</i>	6.74	pH			05/01/2019	101168 CCHAPMAN	
<i>MBP_TDS(SM 2540 C)</i>							
<i>Total Dissolved Solids</i>	664	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	>MCL

Lab Sample#: 1952430-04 **Sample Source:** WSB_DC-10A-710 **External ID:**

Date Collected: 5/1/19 9:11 am **Date Received:** 5/1/19 12:34 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	05/01/2019	101175 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	77.7	mg/L	0.01	1	05/06/2019	101377 BTRINH
<i>Magnesium, Mg</i>	46.4	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
<i>Potassium, K</i>	3.52	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
<i>Sodium, Na</i>	89.6	mg/L	0.013	1	05/06/2019	101377 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	220	mg/L	1.19	6	05/01/2019	101180 JCOLOMA dil factor: 2
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	185	mg/L		6	05/01/2019	101181 JCOLOMA dil factor: 2
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1210	µmhos/cm		1	05/01/2019	101167 CCHAPMAN >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	385	mg/L	0.948	6	05/01/2019	101176 JCOLOMA dil factor: 2
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.27	pH			05/01/2019	101168 CCHAPMAN
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	628	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN >MCL

Lab Sample#: 1952430-04A **Sample Source:** WSB_DC-10A-710 **External ID:**

Date Collected: 5/1/19 9:11 am **Date Received:** 5/1/19 12:34 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	89.4	mg/L	1	5	05/01/2019	101175 MAWALLACE

Lab Sample#: 1952430-05 **Sample Source:** WSB_DC_DUP **External ID:**

Date Collected: 5/1/19 10:30 am **Date Received:** 5/1/19 12:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_DC_CUP-10A-500 ROW AT SF

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	80.7	mg/L	1	5	05/01/2019	101175 MAWALLACE
<i>Nitrate as N</i>	9.77	mg/L	0.34	0.7	05/01/2019	101175 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	63.7	mg/L	0.01	1	05/06/2019	101377 BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/01/2019

Sampling Team: Field

<i>Magnesium, Mg</i>	57.6	mg/L	0.024	0.2	05/06/2019	101377 BTRINH	
<i>Potassium, K</i>	1.22	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
<i>Sodium, Na</i>	66.5	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B)							
<i>Alkalinity</i>	244	mg/L	1.19	6	05/01/2019	101180 JCOLOMA	dil factor: 2
MBP_CHLORIDE(SM 4500-CL- D)							
<i>Chloride</i>	124	mg/L		6	05/01/2019	101181 JCOLOMA	dil factor: 2
MBP_COND(SM 2510 B)							
<i>Specific Conductance</i>	1100	µmhos/cm		1	05/01/2019	101167 CCHAPMAN	>MCL
MBP_HARDNESS_T(SM 2340 C)							
<i>Hardness, Total, as CaCO3</i>	403	mg/L	0.948	6	05/01/2019	101176 JCOLOMA	dil factor: 2
MBP_PH(SM 4500-H+ B)							
<i>pH</i>	6.75	pH			05/01/2019	101168 CCHAPMAN	
MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>	591	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	>MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/01/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101167 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963414-01	MRL_CK	Specific Conductance	11	µmhos/cm	110				
QC1963414-02	CCV	Specific Conductance	100	µmhos/cm	100			1	
QC1963414-03	DUP	Specific Conductance	1100	µmhos/cm		9		1	Splt# 1952430-04 (1210µmhos/cm)
QC1963414-04	DUP	Specific Conductance	48	µmhos/cm		2		1	Splt# 1953181-07 (49µmhos/cm)
QC1963414-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 101168 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963415-01	ICV	pH	8.99	pH	99				
QC1963415-02	DUP	pH	9.61	pH		0			Splt# 1953181-07 (9.63pH)
QC1963415-03	CCV	pH	9.99	pH	99				
QC1963415-04	CCV	pH	10	pH	99				

QC list for Run#: 101175 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963418-01	MRL_CK	Sulfate	0.538	mg/L	108				
	MRL_CK	Nitrate as N	0.0723	mg/L	107				
QC1963418-02	CCV	Sulfate	2.48	mg/L	99				
	CCV	Nitrate as N	0.33	mg/L	97				
QC1963418-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963418-04	LCS	Sulfate	4.98	mg/L	99				
	LCS	Nitrate as N	0.669	mg/L	98				
QC1963418-05	SPK	Sulfate	4.41	mg/L	114				Splt# 1953304-01 (1.57mg/L)
	SPK	Nitrate as N	0.361	mg/L	107				Splt# 1953304-01 (<0.07mg/L)
QC1963418-06	SPKD	Sulfate	4.42	mg/L	115	0			Splt# 1953304-01 (1.57mg/L)
	SPKD	Nitrate as N	0.366	mg/L	109	1			Splt# 1953304-01 (<0.07mg/L)
QC1963418-07	CCV	Sulfate	2.48	mg/L	99				
	CCV	Nitrate as N	0.337	mg/L	99				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/01/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC1963418-08

BLK	Sulfate	<0.5	mg/L	0.1	0.5
BLK	Nitrate as N	<0.07	mg/L	0.034	0.07

QC list for Run#: 101176 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963419-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963419-03	DUP	Hardness, Total, as CaCO3	388	mg/L		1	0.948	6	Splt# 1952430-01 (384mg/L) dil factor: 2
QC1963419-04	LCS	Hardness, Total, as CaCO3	40.1	mg/L	100			3	

QC list for Run#: 101180 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963421-03	DUP	Alkalinity	268	mg/L		0	1.19	6	Splt# 1952430-01 (268mg/L) dil factor: 2
QC1963421-04	LCS	Alkalinity	40.5	mg/L	101			3	

QC list for Run#: 101181 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963422-03	DUP	Chloride	130	mg/L		0	2.31	6	Splt# 1952430-01 (131mg/L) dil factor: 2
QC1963422-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 101269 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963477-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963477-02	DUP	Total Dissolved Solids	384	mg/L		1	13.2	20	Splt# 1952431-05 (378mg/L)

QC list for Run#: 101377 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963549-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963549-02	LCS	Calcium, Ca	20.2	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
	LCS	Sodium, Na	20.8	mg/L	104		0.013	1	
QC1963549-03	DUP	Calcium, Ca	65.1	mg/L		1	0.01	1	Splt# 1952426-01 (66.3mg/L)
	DUP	Magnesium, Mg	54.9	mg/L		3	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
	DUP	Potassium, K	1.85	mg/L		2	0.035	0.2	Splt# 1952426-01 (1.89mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/01/2019

Sampling Team: Field

QC	DUP	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963549-04	DUP	Sodium, Na		59.3	mg/L		3	0.013	1	Splt# 1952426-01 (61.2mg/L)
	SPK	Calcium, Ca		88.4	mg/L	111		0.01	1	Splt# 1952426-01 (66.3mg/L)
	SPK	Magnesium, Mg		76.5	mg/L	98		0.024	0.2	Splt# 1952426-01 (56.8mg/L)
	SPK	Potassium, K		19.8	mg/L	89		0.035	0.2	Splt# 1952426-01 (1.89mg/L)
QC1963549-05	SPK	Sodium, Na		77.7	mg/L	82		0.013	1	Splt# 1952426-01 (61.2mg/L)
	SPKD	Calcium, Ca		88.4	mg/L	110	0	0.01	1	Splt# 1952426-01 (66.3mg/L)
	SPKD	Magnesium, Mg		74.3	mg/L	87	2	0.024	0.2	Splt# 1952426-01 (56.8mg/L)
	SPKD	Potassium, K		20.5	mg/L	93	3	0.035	0.2	Splt# 1952426-01 (1.89mg/L)
QC1963549-06	SPKD	Sodium, Na		77	mg/L	78	0	0.013	1	Splt# 1952426-01 (61.2mg/L)
	DUP	Calcium, Ca		27.7	mg/L		1	0.01	1	Splt# 1952426-02 (28.2mg/L)
	DUP	Magnesium, Mg		27	mg/L		0	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	DUP	Potassium, K		1.67	mg/L		1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)
QC1963549-07	DUP	Sodium, Na		39.9	mg/L		0	0.013	1	Splt# 1952426-02 (39.6mg/L)
	SPK	Calcium, Ca		48.2	mg/L	99		0.01	1	Splt# 1952426-02 (28.2mg/L)
	SPK	Magnesium, Mg		47.2	mg/L	100		0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	SPK	Potassium, K		20	mg/L	91		0.035	0.2	Splt# 1952426-02 (1.65mg/L)
QC1963549-08	SPK	Sodium, Na		60.8	mg/L	106		0.013	1	Splt# 1952426-02 (39.6mg/L)
	SPKD	Calcium, Ca		49.4	mg/L	106	2	0.01	1	Splt# 1952426-02 (28.2mg/L)
	SPKD	Magnesium, Mg		46.2	mg/L	95	2	0.024	0.2	Splt# 1952426-02 (27.1mg/L)
	SPKD	Potassium, K		20.3	mg/L	93	1	0.035	0.2	Splt# 1952426-02 (1.65mg/L)
QC1963549-08	SPKD	Sodium, Na		58.4	mg/L	93	4	0.013	1	Splt# 1952426-02 (39.6mg/L)

QC list for Run#: 102131 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1964009-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1964009-02	LCS	Calcium, Ca	19.8	mg/L	99		0.01	1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952430

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/01/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Count	Concentration	Volume	Notes
LCS	Magnesium, Mg	19.9	mg/L	99	0.024	0.2	
LCS	Potassium, K	19.6	mg/L	98	0.035	0.2	
LCS	Sodium, Na	21.1	mg/L	105	0.013	1	
QC1964009-03							
DUP	Calcium, Ca	59.7	mg/L	1	0.01	1	Splt# 1952430-01 (58.7mg/L)
DUP	Magnesium, Mg	59.5	mg/L	3	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
DUP	Potassium, K	1.25	mg/L	2	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
DUP	Sodium, Na	71.7	mg/L	1	0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-04							
SPK	Calcium, Ca	79.1	mg/L	102	0.01	1	Splt# 1952430-01 (58.7mg/L)
SPK	Magnesium, Mg	79.6	mg/L	89	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
SPK	Potassium, K	20.6	mg/L	96	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
SPK	Sodium, Na	91.4	mg/L	92	0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-05							
SPKD	Calcium, Ca	80	mg/L	107	0.01	1	Splt# 1952430-01 (58.7mg/L)
SPKD	Magnesium, Mg	81.9	mg/L	101	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
SPKD	Potassium, K	20.3	mg/L	95	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
SPKD	Sodium, Na	93	mg/L	101	0.013	1	Splt# 1952430-01 (72.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1952431-01 **Sample Source:** WSB_CAL-18-230 **External ID:**

Date Collected: 5/2/19 12:00 pm **Date Received:** 5/2/19 1:48 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	37	mg/L	0.5	2.5	05/02/2019	101258 MAWALLACE
Nitrate as N	2.69	mg/L	0.17	0.35	05/02/2019	101258 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	36.4	mg/L	0.01	1	05/13/2019	101726 BTRINH
Magnesium, Mg	31.2	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
Potassium, K	1.5	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
Sodium, Na	62	mg/L	0.013	1	05/13/2019	101726 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	159	mg/L	0.593	3	05/02/2019	101257
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	108	mg/L		3	05/02/2019	101260 CCHAPMAN
MBP_COND(SM 2510 B)						
Specific Conductance	765	µmhos/cm		1	05/02/2019	101264 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	216	mg/L	0.474	3	05/02/2019	101262 CCHAPMAN
MBP_PH(SM 4500-H+ B)						
pH	6.04	pH			05/03/2019	101267
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	365	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN

Lab Sample#: 1952431-02 **Sample Source:** WSB_CAL-18-425 **External ID:**

Date Collected: 5/2/19 11:10 am **Date Received:** 5/2/19 1:48 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	36.7	mg/L	0.5	2.5	05/02/2019	101258 MAWALLACE
Nitrate as N	2.64	mg/L	0.17	0.35	05/02/2019	101258 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	36	mg/L	0.01	1	05/13/2019	101726 BTRINH
Magnesium, Mg	31.1	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
Potassium, K	1.5	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
Sodium, Na	61.2	mg/L	0.013	1	05/13/2019	101726 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	165	mg/L	0.593	3	05/02/2019	101257
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	105	mg/L		3	05/02/2019	101260 CCHAPMAN
MBP_COND(SM 2510 B)						
Specific Conductance	764	µmhos/cm		1	05/02/2019	101264 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
Hardness, Total, as CaCO3	225	mg/L	0.474	3	05/02/2019	101262 CCHAPMAN	
MBP_PH(SM 4500-H+ B)							
pH	6.54	pH			05/03/2019	101267	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	356	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	
Lab Sample#: 1952431-03 Sample Source: WSB_CAL-18-490 External ID:							
Date Collected: 5/2/19 10:05 am Date Received: 5/2/19 1:48 pm Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	37.7	mg/L	0.5	2.5	05/02/2019	101258 MAWALLACE	
Nitrate as N	2.61	mg/L	0.17	0.35	05/02/2019	101258 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	35	mg/L	0.01	1	05/21/2019	102131 BTRINH	
Magnesium, Mg	31.8	mg/L	0.024	0.2	05/21/2019	102131 BTRINH	
Potassium, K	1.79	mg/L	0.035	0.2	05/21/2019	102131 BTRINH	
Sodium, Na	61.6	mg/L	0.013	1	05/21/2019	102131 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	165	mg/L	0.593	3	05/02/2019	101257	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	108	mg/L		3	05/02/2019	101260 CCHAPMAN	
MBP_COND(SM 2510 B)							
Specific Conductance	760	µmhos/cm		1	05/02/2019	101264 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	228	mg/L	0.474	3	05/02/2019	101262 CCHAPMAN	
MBP_PH(SM 4500-H+ B)							
pH	6.8	pH			05/03/2019	101267	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	359	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	

Lab Sample#: 1952431-04 Sample Source: WSB_CAL-18-595 External ID:							
Date Collected: 5/2/19 10:31 am Date Received: 5/2/19 1:48 pm Sample Matrix: Aqueous Location Desc:							
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Nitrate as N	0.245	mg/L	0.034	0.07	05/02/2019	101258 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	42.2	mg/L	0.01	1	05/21/2019	102131 BTRINH	
Magnesium, Mg	34.9	mg/L	0.024	0.2	05/21/2019	102131 BTRINH	
Potassium, K	2.91	mg/L	0.035	0.2	05/21/2019	102131 BTRINH	
Sodium, Na	54.7	mg/L	0.013	1	05/21/2019	102131 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	190	mg/L	0.593	3	05/02/2019	101257	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	External ID
MBP_CHLORIDE(SM 4500-CL- D) Chloride	84.8	mg/L		3	05/02/2019	101260 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	729	µmhos/cm		1	05/02/2019	101264 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	249	mg/L	0.474	3	05/02/2019	101262 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.1	pH			05/03/2019	101267
MBP_TDS(SM 2540 C) Total Dissolved Solids	395	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN

Lab Sample#: 1952431-04A Sample Source: WSB_CAL-18-595 External ID:

Date Collected: 5/2/19 10:31 am Date Received: 5/2/19 1:48 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	External ID
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	41.5	mg/L	1	5	05/02/2019	101258 MAWALLACE

Lab Sample#: 1952431-05 Sample Source: WSB_CAL_DUP External ID:

Date Collected: 5/2/19 11:10 am Date Received: 5/2/19 1:48 pm Sample Matrix: Aqueous Location Desc: GSR_CAL_CUP-18-595, ROW AT C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	External ID
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	0.23	mg/L	0.034	0.07	05/02/2019	101258 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	41.3	mg/L	0.01	1	05/21/2019	102131 BTRINH
Magnesium, Mg	34.5	mg/L	0.024	0.2	05/21/2019	102131 BTRINH
Potassium, K	2.77	mg/L	0.035	0.2	05/21/2019	102131 BTRINH
Sodium, Na	53.5	mg/L	0.013	1	05/21/2019	102131 BTRINH

MBP_ALK(SM 2320 B) Alkalinity	188	mg/L	0.593	3	05/02/2019	101257
MBP_CHLORIDE(SM 4500-CL- D) Chloride	83.4	mg/L		3	05/02/2019	101260 CCHAPMAN
MBP_COND(SM 2510 B) Specific Conductance	726	µmhos/cm		1	05/02/2019	101264 JCOLOMA
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	246	mg/L	0.474	3	05/02/2019	101262 CCHAPMAN
MBP_PH(SM 4500-H+ B) pH	7.14	pH			05/03/2019	101267
MBP_TDS(SM 2540 C) Total Dissolved Solids	378	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN

Lab Sample#: 1952431-05A Sample Source: WSB_CAL_DUP External ID:

Date Collected: 5/2/19 11:10 am Date Received: 5/2/19 1:48 pm Sample Matrix: Aqueous Location Desc: GSR_CAL_CUP-18-595, ROW AT C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	External ID
--------------	--------	------	-----	-----	---------------	-------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:
SEWPCP 1721
MILLBRAE 1449

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 05/02/2019

Sampling Team: Field

MBI_IC_ANIONS_A(EPA 300.0 (A))

Sulfate

39.9

mg/L

1

5

05/02/2019

101258 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 101257 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963464-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1963464-02	MRL_CK	Alkalinity	3.4	mg/L	113				
QC1963464-03	DUP	Alkalinity	191	mg/L		1	0.593	3	Splt# 1952431-05 (188mg/L)
QC1963464-04	LCS	Alkalinity	40.5	mg/L	101			3	

QC list for Run#: 101258 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963463-01	MRL_CK	Sulfate	0.574	mg/L	115				
	MRL_CK	Nitrate as N	0.0762	mg/L	112				
QC1963463-02	CCV	Sulfate	2.45	mg/L	97				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1963463-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963463-04	LCS	Sulfate	5	mg/L	99				
	LCS	Nitrate as N	0.67	mg/L	98				
QC1963463-05	SPK	Sulfate	3.84	mg/L	96				Splt# 1953360-01 (1.45mg/L)
	SPK	Nitrate as N	0.356	mg/L	106				Splt# 1953360-01 (<0.07mg/L)
QC1963463-06	SPKD	Sulfate	3.86	mg/L	97	0			Splt# 1953360-01 (1.45mg/L)
	SPKD	Nitrate as N	0.358	mg/L	106	0			Splt# 1953360-01 (<0.07mg/L)
QC1963463-07	CCV	Sulfate	2.46	mg/L	98				
	CCV	Nitrate as N	0.333	mg/L	98				
QC1963463-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101260 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963465-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1963465-02	MRL_CK	Chloride	2.89	mg/L	96				
QC1963465-03	DUP	Chloride	84.6	mg/L		1	1.16	3	Splt# 1952431-05 (83.4mg/L)
QC1963465-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

LCS Chloride 39.2 mg/L 97 3

QC list for Run#: 101262 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963467-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963467-02	MRL_CK	Hardness, Total, as CaCO3	2.4	mg/L	80				
QC1963467-03	DUP	Hardness, Total, as CaCO3	247	mg/L		0	0.474	3	Splt# 1952431-05 (246mg/L)
QC1963467-04	LCS	Hardness, Total, as CaCO3	40.1	mg/L	100			3	

QC list for Run#: 101264 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963468-01	MRL_CK	Specific Conductance	10.7	µmhos/cm	107				
QC1963468-02	CCV	Specific Conductance	98.8	µmhos/cm	98			1	
QC1963468-03	DUP	Specific Conductance	764	µmhos/cm		0		1	Splt# 1952431-03 (760µmhos/cm)
QC1963468-04	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 101267 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963474-01	ICV	pH	9.01	pH	99				
QC1963474-02	DUP	pH	6.81	pH		0			Splt# 1952431-03 (6.8pH)
QC1963474-03	CCV	pH	9.99	pH	99				

QC list for Run#: 101269 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963477-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1963477-02	DUP	Total Dissolved Solids	384	mg/L		1	13.2	20	Splt# 1952431-05 (378mg/L)

QC list for Run#: 101726 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963775-02	LCS	Calcium, Ca	20	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	100		0.024	0.2	
	LCS	Potassium, K	17.7	mg/L	88		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC	DUP/SPK/SPKD	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-03	DUP	Calcium, Ca	36.8	mg/L		1	0.01	1	Splt# 1952431-01 (36.4mg/L)
	DUP	Magnesium, Mg	31.1	mg/L		0	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
	DUP	Potassium, K	1.5	mg/L		0	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	DUP	Sodium, Na	60.6	mg/L		2	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-04	SPK	Calcium, Ca	57	mg/L	103		0.01	1	Splt# 1952431-01 (36.4mg/L)
	SPK	Magnesium, Mg	50.4	mg/L	95		0.024	0.2	Splt# 1952431-01 (31.2mg/L)
	SPK	Potassium, K	19	mg/L	87		0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	SPK	Sodium, Na	79.5	mg/L	87		0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-05	SPKD	Calcium, Ca	56.6	mg/L	101	0	0.01	1	Splt# 1952431-01 (36.4mg/L)
	SPKD	Magnesium, Mg	49.6	mg/L	91	1	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
	SPKD	Potassium, K	18.1	mg/L	83	4	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	SPKD	Sodium, Na	78.3	mg/L	81	1	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-06	DUP	Calcium, Ca	36.7	mg/L		2	0.01	1	Splt# 1952431-02 (36mg/L)
	DUP	Magnesium, Mg	31.5	mg/L		1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
	DUP	Potassium, K	1.55	mg/L		2	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
	DUP	Sodium, Na	61.6	mg/L		0	0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-07	SPK	Calcium, Ca	55.9	mg/L	99		0.01	1	Splt# 1952431-02 (36mg/L)
	SPK	Magnesium, Mg	51.6	mg/L	103		0.024	0.2	Splt# 1952431-02 (31.1mg/L)
	SPK	Potassium, K	18.2	mg/L	83		0.035	0.2	Splt# 1952431-02 (1.5mg/L)
	SPK	Sodium, Na	83.3	mg/L	110		0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-08	SPKD	Calcium, Ca	56.9	mg/L	105	1	0.01	1	Splt# 1952431-02 (36mg/L)
	SPKD	Magnesium, Mg	52.6	mg/L	108	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
	SPKD	Potassium, K	18.4	mg/L	84	1	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
	SPKD	Sodium, Na	83.8	mg/L	113	0	0.013	1	Splt# 1952431-02 (61.2mg/L)

QC list for Run#: 102131 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1964009-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952431

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/02/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample ID	Method	Parameter	Result	Unit	Flow	Conductivity	Temperature	Notes
QC1964009-02	LCS	Calcium, Ca	19.8	mg/L	99	0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99	0.024	0.2	
	LCS	Potassium, K	19.6	mg/L	98	0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105	0.013	1	
QC1964009-03	DUP	Calcium, Ca	59.7	mg/L	1	0.01	1	Splt# 1952430-01 (58.7mg/L)
	DUP	Magnesium, Mg	59.5	mg/L	3	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
	DUP	Potassium, K	1.25	mg/L	2	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
	DUP	Sodium, Na	71.7	mg/L	1	0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-04	SPK	Calcium, Ca	79.1	mg/L	102	0.01	1	Splt# 1952430-01 (58.7mg/L)
	SPK	Magnesium, Mg	79.6	mg/L	89	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
	SPK	Potassium, K	20.6	mg/L	96	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
	SPK	Sodium, Na	91.4	mg/L	92	0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-05	SPKD	Calcium, Ca	80	mg/L	107	0.01	1	Splt# 1952430-01 (58.7mg/L)
	SPKD	Magnesium, Mg	81.9	mg/L	101	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
	SPKD	Potassium, K	20.3	mg/L	95	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
	SPKD	Sodium, Na	93	mg/L	101	0.013	1	Splt# 1952430-01 (72.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/06/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952433-01 **Sample Source:** WSB_SF50_PP460 **External ID:**

Date Collected: 5/6/19 10:41 am **Date Received:** 5/6/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	55.2	mg/L	0.5	2.5	05/06/2019	101405 MAWALLACE	
Nitrate as N	5.84	mg/L	0.17	0.35	05/06/2019	101405 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	37.4	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	38.5	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.57	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	49.3	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	197	mg/L	0.593	3	05/06/2019	101402 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	62.1	mg/L		3	05/06/2019	101403 JCOLOMA	
MBP_COND(SM 2510 B)							
Specific Conductance	695	µmhos/cm		1	05/06/2019	101425 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	255	mg/L	0.474	3	05/06/2019	101401 JCOLOMA	
MBP_PH(SM 4500-H+ B)							
pH	7.52	pH			05/06/2019	101427 JCOLOMA	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	389	mg/L	13.2	20	05/09/2019	101545 ALEE	

Lab Sample#: 1952433-02 **Sample Source:** WSB_SF51_PP620 **External ID:**

Date Collected: 5/6/19 10:16 am **Date Received:** 5/6/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Nitrate as N	<0.07	mg/L	0.034	0.07	05/06/2019	101405 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	38.3	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	32.6	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.94	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	53.4	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	162	mg/L	0.593	3	05/06/2019	101402 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	83.6	mg/L		3	05/06/2019	101403 JCOLOMA	
MBP_COND(SM 2510 B)							
Specific Conductance	686	µmhos/cm		1	05/06/2019	101425 JCOLOMA	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	229	mg/L	0.474	3	05/06/2019	101401 JCOLOMA	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/06/2019

Sampling Team: Field

MBP_PH(SM 4500-H+ B)								
pH	7.89	pH			05/06/2019	101427	JCOLOMA	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	375	mg/L	13.2	20	05/09/2019	101545	ALEE	
Lab Sample#: 1952433-02A		Sample Source: WSB_SF51_PP620		External ID:				
Date Collected: 5/6/19 12:00 am		Date Received: 5/6/19 1:57 pm		Sample Matrix: Aqueous		Location Desc:		
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>		
MBI_IC_ANIONS_A(EPA 300.0 (A))								
Sulfate	59.3	mg/L	0.5	2.5	05/06/2019	101405	MAWALLACE	
Lab Sample#: 1952433-03		Sample Source: WSB_SF_DUP		External ID:				
Date Collected: 5/6/19 10:57 am		Date Received: 5/6/19 1:57 pm		Sample Matrix: Aqueous		Location Desc: SF#50 - PARK PLAZA MW460		
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>		
MBI_IC_ANIONS_A(EPA 300.0 (A))								
Sulfate	55.7	mg/L	0.5	2.5	05/06/2019	101405	MAWALLACE	
Nitrate as N	5.99	mg/L	0.17	0.35	05/06/2019	101405	MAWALLACE	
SEM_200.7_DW(EPA 200.7)								
Calcium, Ca	37.8	mg/L	0.01	1	05/13/2019	101726	BTRINH	
Magnesium, Mg	38.8	mg/L	0.024	0.2	05/13/2019	101726	BTRINH	
Potassium, K	1.48	mg/L	0.035	0.2	05/13/2019	101726	BTRINH	
Sodium, Na	49.7	mg/L	0.013	1	05/13/2019	101726	BTRINH	
MBP_ALK(SM 2320 B)								
Alkalinity	195	mg/L	0.593	3	05/06/2019	101402	JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)								
Chloride	61.5	mg/L		3	05/06/2019	101403	JCOLOMA	
MBP_COND(SM 2510 B)								
Specific Conductance	699	µmhos/cm		1	05/06/2019	101425	JCOLOMA	
MBP_HARDNESS_T(SM 2340 C)								
Hardness, Total, as CaCO3	258	mg/L	0.474	3	05/06/2019	101401	JCOLOMA	
MBP_PH(SM 4500-H+ B)								
pH	7.74	pH			05/06/2019	101427	JCOLOMA	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	389	mg/L	13.2	20	05/09/2019	101545	ALEE	
Lab Sample#: 1952433-04		Sample Source: WSB_DC6		External ID:				
Date Collected: 5/6/19 11:13 am		Date Received: 5/6/19 1:57 pm		Sample Matrix: Aqueous		Location Desc: PARK PLAZA MW195		
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>		
MBI_IC_ANIONS_A(EPA 300.0 (A))								
Nitrate as N	9.53	mg/L	0.34	0.7	05/06/2019	101405	MAWALLACE	
SEM_200.7_DW(EPA 200.7)								
Calcium, Ca	103	mg/L	0.01	1	05/13/2019	101726	BTRINH	
Magnesium, Mg	77.4	mg/L	0.024	0.2	05/13/2019	101726	BTRINH	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/06/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Potassium, K	3.94	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	131	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	514	mg/L	2.96	15	05/06/2019	101402 JCOLOMA	DIL FACTOR 5
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	96.6	mg/L		15	05/06/2019	101403 JCOLOMA	DIL FACTOR 5
MBP_COND(SM 2510 B)							
Specific Conductance	1590	µmhos/cm		1	05/06/2019	101425 JCOLOMA	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	578	mg/L	2.37	15	05/06/2019	101401 JCOLOMA	DIL FACTOR 5
MBP_PH(SM 4500-H+ B)							
pH	7.34	pH			05/06/2019	101427 JCOLOMA	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	941	mg/L	13.2	20	05/09/2019	101545 ALEE	>MCL

Lab Sample#: 1952433-04A **Sample Source:** WSB_DC6 **External ID:**

Date Collected: 5/6/19 12:00 am **Date Received:** 5/6/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** PARK PLAZA MW195

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	209	mg/L	2	10	05/06/2019	101405 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/06/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101401 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963559-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963559-03	DUP	Hardness, Total, as CaCO3	20.9	mg/L		4	0.474	3	Splt# 1953222-01 (21mg/L)
QC1963559-04	LCS	Hardness, Total, as CaCO3	40.5	mg/L	101			3	

QC list for Run#: 101402 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963560-03	DUP	Alkalinity	26.7	mg/L		9	0.593	3	Splt# 1953222-01 (24.2mg/L)
QC1963560-04	LCS	Alkalinity	41.4	mg/L	104			3	

QC list for Run#: 101403 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963561-03	DUP	Chloride	6.76	mg/L		1	1.16	3	Splt# 1953222-01 (6.63mg/L)
QC1963561-04	LCS	Chloride	39.1	mg/L	97			3	

QC list for Run#: 101405 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963563-01	MRL_CHK	Sulfate	0.513	mg/L	103				
	MRL_CHK	Nitrate as N	0.0703	mg/L	104				
QC1963563-02	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.323	mg/L	95				
QC1963563-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963563-04	LCS	Sulfate	4.93	mg/L	98				
	LCS	Nitrate as N	0.651	mg/L	96				
QC1963563-05	SPK	Sulfate	3.98	mg/L	99				Splt# 1953428-01 (1.5mg/L)
	SPK	Nitrate as N	0.356	mg/L	106				Splt# 1953428-01 (<0.07mg/L)
QC1963563-06	SPKD	Sulfate	4.01	mg/L	101	0			Splt# 1953428-01 (1.5mg/L)
	SPKD	Nitrate as N	0.362	mg/L	108	1			Splt# 1953428-01 (<0.07mg/L)
QC1963563-07	CCV	Sulfate	2.44	mg/L	97				
	CCV	Nitrate as N	0.331	mg/L	97				
QC1963563-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/06/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

BLK Nitrate as N <0.07 mg/L 0.034 0.07

QC list for Run#: 101425 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963574-01	MRL_CK	Specific Conductance	10.9	µmhos/cm	109				
QC1963574-02	CCV	Specific Conductance	98.2	µmhos/cm	98			1	
QC1963574-03	DUP	Specific Conductance	701	µmhos/cm		0		1	Splt# 1952433-01 (695µmhos/cm)
QC1963574-04	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 101427 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963576-01	ICV	pH	9.05	pH	100				
QC1963576-02	DUP	pH	7.55	pH		0			Splt# 1952433-01 (7.52pH)
QC1963576-03	CCV	pH	10	pH	100				

QC list for Run#: 101545 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963651-01	DUP	Total Dissolved Solids	339	mg/L		1	13.2	20	Splt# 1953274-05 (344mg/L)
QC1963651-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101726 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963775-02	LCS	Calcium, Ca	20	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	100		0.024	0.2	
	LCS	Potassium, K	17.7	mg/L	88		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963775-03	DUP	Calcium, Ca	36.8	mg/L		1	0.01	1	Splt# 1952431-01 (36.4mg/L)
	DUP	Magnesium, Mg	31.1	mg/L		0	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
	DUP	Potassium, K	1.5	mg/L		0	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	DUP	Sodium, Na	60.6	mg/L		2	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-04	SPK	Calcium, Ca	57	mg/L	103		0.01	1	Splt# 1952431-01 (36.4mg/L)
	SPK	Magnesium, Mg	50.4	mg/L	95		0.024	0.2	Splt# 1952431-01 (31.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952433

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/06/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	DO	pH	Flow	Notes
QC1963775-05	SPK Potassium, K	19	mg/L	87	0.035	0.2		Splt# 1952431-01 (1.5mg/L)
	SPK Sodium, Na	79.5	mg/L	87	0.013	1		Splt# 1952431-01 (62mg/L)
	SPKD Calcium, Ca	56.6	mg/L	101	0	0.01	1	Splt# 1952431-01 (36.4mg/L)
	SPKD Magnesium, Mg	49.6	mg/L	91	1	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
QC1963775-06	SPKD Potassium, K	18.1	mg/L	83	4	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	SPKD Sodium, Na	78.3	mg/L	81	1	0.013	1	Splt# 1952431-01 (62mg/L)
	DUP Calcium, Ca	36.7	mg/L	2	0.01	1		Splt# 1952431-02 (36mg/L)
	DUP Magnesium, Mg	31.5	mg/L	1	0.024	0.2		Splt# 1952431-02 (31.1mg/L)
QC1963775-07	DUP Potassium, K	1.55	mg/L	2	0.035	0.2		Splt# 1952431-02 (1.5mg/L)
	DUP Sodium, Na	61.6	mg/L	0	0.013	1		Splt# 1952431-02 (61.2mg/L)
	SPK Calcium, Ca	55.9	mg/L	99	0.01	1		Splt# 1952431-02 (36mg/L)
	SPK Magnesium, Mg	51.6	mg/L	103	0.024	0.2		Splt# 1952431-02 (31.1mg/L)
QC1963775-08	SPK Potassium, K	18.2	mg/L	83	0.035	0.2		Splt# 1952431-02 (1.5mg/L)
	SPK Sodium, Na	83.3	mg/L	110	0.013	1		Splt# 1952431-02 (61.2mg/L)
	SPKD Calcium, Ca	56.9	mg/L	105	1	0.01	1	Splt# 1952431-02 (36mg/L)
	SPKD Magnesium, Mg	52.6	mg/L	108	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
	SPKD Potassium, K	18.4	mg/L	84	1	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
	SPKD Sodium, Na	83.8	mg/L	113	0	0.013	1	Splt# 1952431-02 (61.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1952434-01 **Sample Source:** WSB_CAL-31A-145

External ID:

Date Collected: 5/7/19 9:36 am **Date Received:** 5/7/19 2:03 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	56.7	mg/L	1	5	05/07/2019	101498 MAWALLACE	
Nitrate as N	1.93	mg/L	0.34	0.7	05/07/2019	101498 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	66.3	mg/L	0.01	1	05/21/2019	102131 BTRINH	
Magnesium, Mg	57.9	mg/L	0.024	0.2	05/21/2019	102131 BTRINH	
Potassium, K	3.45	mg/L	0.035	0.2	05/21/2019	102131 BTRINH	
Sodium, Na	76	mg/L	0.013	1	05/21/2019	102131 BTRINH	
MBO_524_VOC(EPA 524.2)							
tert Butyl Alcohol (TBA)	<2	µg/L	0.664	2	05/14/2019	101804 TMNGUYEN	
Dichlorodifluoromethane (F-12)	<0.5	µg/L	0.079	0.5	05/14/2019	101804 TMNGUYEN	
Chloromethane	<0.5	µg/L	0.089	0.5	05/14/2019	101804 TMNGUYEN	
Vinyl chloride	<0.5	µg/L	0.1	0.5	05/14/2019	101804 TMNGUYEN	
Bromomethane	<0.5	µg/L	0.158	0.5	05/14/2019	101804 TMNGUYEN	
Chloroethane	<0.5	µg/L	0.201	0.5	05/14/2019	101804 TMNGUYEN	
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	05/14/2019	101804 TMNGUYEN	
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	05/14/2019	101804 TMNGUYEN	
Methylene chloride	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	05/14/2019	101804 TMNGUYEN	
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	05/14/2019	101804 TMNGUYEN	
Methyl t-butyl ether	<3	µg/L	0.106	3	05/14/2019	101804 TMNGUYEN	
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN	
Diisopropyl ether	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN	
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	05/14/2019	101804 TMNGUYEN	
2,2-Dichloropropane	<0.5	µg/L	0.083	0.5	05/14/2019	101804 TMNGUYEN	
Bromochloromethane	<0.5	µg/L	0.065	0.5	05/14/2019	101804 TMNGUYEN	
Chloroform, THM	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN	
Ethyl tert-Butyl Ether	<0.5	µg/L	0.123	0.5	05/14/2019	101804 TMNGUYEN	
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	05/14/2019	101804 TMNGUYEN	
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	05/14/2019	101804 TMNGUYEN	
1,1-Dichloropropene	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN	
Benzene	<0.5	µg/L	0.061	0.5	05/14/2019	101804 TMNGUYEN	
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	05/14/2019	101804 TMNGUYEN	
tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5	05/14/2019	101804 TMNGUYEN	
Trichloroethylene	<0.5	µg/L	0.093	0.5	05/14/2019	101804 TMNGUYEN	
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	05/14/2019	101804 TMNGUYEN	
Dibromomethane	<0.5	µg/L	0.055	0.5	05/14/2019	101804 TMNGUYEN	
Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5	05/14/2019	101804 TMNGUYEN	
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	05/14/2019	101804 TMNGUYEN	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Toluene	<0.5	µg/L	0.118	0.5	05/14/2019	101804	TMNGUYEN
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
Tetrachloroethylene	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropane	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromoethane	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
Chlorobenzene	<0.5	µg/L	0.185	0.5	05/14/2019	101804	TMNGUYEN
1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5	05/14/2019	101804	TMNGUYEN
Ethylbenzene	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
m,p-Xylene	<0.5	µg/L	0.151	0.5	05/14/2019	101804	TMNGUYEN
o-Xylene	<0.5	µg/L	0.076	0.5	05/14/2019	101804	TMNGUYEN
Styrene	<0.5	µg/L	0.053	0.5	05/14/2019	101804	TMNGUYEN
Bromoform, THM	<0.5	µg/L	0.068	0.5	05/14/2019	101804	TMNGUYEN
Isopropylbenzene	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
Bromobenzene	<0.5	µg/L	0.062	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
n-Propylbenzene	<0.5	µg/L	0.104	0.5	05/14/2019	101804	TMNGUYEN
2-Chlorotoluene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
4-Chlorotoluene	<0.5	µg/L	0.094	0.5	05/14/2019	101804	TMNGUYEN
tert-Butylbenzene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5	05/14/2019	101804	TMNGUYEN
sec-Butylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
p-Isopropyltoluene	<0.5	µg/L	0.098	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5	05/14/2019	101804	TMNGUYEN
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
n-Butylbenzene	<0.5	µg/L	0.109	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
Hexachlorobutadiene	<0.5	µg/L	0.107	0.5	05/14/2019	101804	TMNGUYEN
Naphthalene	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.5	0.5	05/14/2019	101804	TMNGUYEN
Xylene (total: p, m, o)	<0.5	µg/L		0.5	05/14/2019	101804	TMNGUYEN
Internal Standard(s)							
TBA-d9 (IS)	100	µg/L			05/14/2019	101804	TMNGUYEN
Fluorobenzene (IS)	1	µg/L			05/14/2019	101804	TMNGUYEN
Surrogate(s)							
p-Bromofluorobenzene (Surr.)	0.87	µg/L			05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene d- (Surr.)	0.96	µg/L			05/14/2019	101804	TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location	Flag/Comments
MBP_ALK(SM 2320 B) Alkalinity	460	mg/L	1.19	6	05/07/2019	101492 JCOLOMA	dil factor 2
MBP_CHLORIDE(SM 4500-CL- D) Chloride	49.2	mg/L		6	05/07/2019	101493 JCOLOMA	dil factor 2
MBP_COND(SM 2510 B) Specific Conductance	1040	µmhos/cm		1	05/07/2019	101499 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	415	mg/L	0.948	6	05/07/2019	101489 JCOLOMA	dil factor 2
MBP_PH(SM 4500-H+ B) pH	8.03	pH			05/07/2019	101500 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	582	mg/L	13.2	20	05/09/2019	101545 ALEE	>MCL

Lab Sample#: 1952434-02 **Sample Source:** WSB_CAL-31A-280 **External ID:**

Date Collected: 5/7/19 11:32 am **Date Received:** 5/7/19 2:03 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	83.1	mg/L	0.5	2.5	05/07/2019	101498 MAWALLACE	
Nitrate as N	4.83	mg/L	0.17	0.35	05/07/2019	101498 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	56	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	48.7	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	2.37	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	69.2	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBO_524_VOC(EPA 524.2) tert Butyl Alcohol (TBA)	<2	µg/L	0.664	2	05/14/2019	101804 TMNGUYEN	
Dichlorodifluoromethane (F-12)	<0.5	µg/L	0.079	0.5	05/14/2019	101804 TMNGUYEN	
Chloromethane	<0.5	µg/L	0.089	0.5	05/14/2019	101804 TMNGUYEN	
Vinyl chloride	<0.5	µg/L	0.1	0.5	05/14/2019	101804 TMNGUYEN	
Bromomethane	<0.5	µg/L	0.158	0.5	05/14/2019	101804 TMNGUYEN	
Chloroethane	<0.5	µg/L	0.201	0.5	05/14/2019	101804 TMNGUYEN	
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	05/14/2019	101804 TMNGUYEN	
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	05/14/2019	101804 TMNGUYEN	
Methylene chloride	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	05/14/2019	101804 TMNGUYEN	
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	05/14/2019	101804 TMNGUYEN	
Methyl t-butyl ether	<3	µg/L	0.106	3	05/14/2019	101804 TMNGUYEN	
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN	
Diisopropyl ether	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN	
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	05/14/2019	101804 TMNGUYEN	
2,2-Dichloropropane	<0.5	µg/L	0.083	0.5	05/14/2019	101804 TMNGUYEN	
Bromochloromethane	<0.5	µg/L	0.065	0.5	05/14/2019	101804 TMNGUYEN	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Chloroform, THM	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Ethyl tert-Butyl Ether	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	05/14/2019	101804	TMNGUYEN
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,1-Dichloropropene	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Benzene	<0.5	µg/L	0.061	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	05/14/2019	101804	TMNGUYEN
tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5	05/14/2019	101804	TMNGUYEN
Trichloroethylene	1.24	µg/L	0.093	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
Dibromomethane	<0.5	µg/L	0.055	0.5	05/14/2019	101804	TMNGUYEN
Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5	05/14/2019	101804	TMNGUYEN
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	05/14/2019	101804	TMNGUYEN
Toluene	<0.5	µg/L	0.118	0.5	05/14/2019	101804	TMNGUYEN
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropane	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromoethane	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
Chlorobenzene	<0.5	µg/L	0.185	0.5	05/14/2019	101804	TMNGUYEN
1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5	05/14/2019	101804	TMNGUYEN
Ethylbenzene	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
m,p-Xylene	<0.5	µg/L	0.151	0.5	05/14/2019	101804	TMNGUYEN
o-Xylene	<0.5	µg/L	0.076	0.5	05/14/2019	101804	TMNGUYEN
Styrene	<0.5	µg/L	0.053	0.5	05/14/2019	101804	TMNGUYEN
Bromoform, THM	<0.5	µg/L	0.068	0.5	05/14/2019	101804	TMNGUYEN
Isopropylbenzene	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
Bromobenzene	<0.5	µg/L	0.062	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
n-Propylbenzene	<0.5	µg/L	0.104	0.5	05/14/2019	101804	TMNGUYEN
2-Chlorotoluene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
4-Chlorotoluene	<0.5	µg/L	0.094	0.5	05/14/2019	101804	TMNGUYEN
tert-Butylbenzene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5	05/14/2019	101804	TMNGUYEN
sec-Butylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
p-Isopropyltoluene	<0.5	µg/L	0.098	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5	05/14/2019	101804	TMNGUYEN
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
n-Butylbenzene	<0.5	µg/L	0.109	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5	05/14/2019	101804	TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN	
Hexachlorobutadiene	<0.5	µg/L	0.107	0.5	05/14/2019	101804	TMNGUYEN	
Naphthalene	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN	
1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN	
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.5	0.5	05/14/2019	101804	TMNGUYEN	
Xylene (total: p, m, o)	<0.5	µg/L		0.5	05/14/2019	101804	TMNGUYEN	
Internal Standard(s)								
TBA-d9 (IS)	100	µg/L			05/14/2019	101804	TMNGUYEN	
Fluorobenzene (IS)	1	µg/L			05/14/2019	101804	TMNGUYEN	
Surrogate(s)								
p-Bromofluorobenzene (Surr.)	0.89	µg/L			05/14/2019	101804	TMNGUYEN	
1,2-Dichlorobenzene d- (Surr.)	0.91	µg/L			05/14/2019	101804	TMNGUYEN	
MBP_ALK(SM 2320 B)								
Alkalinity	342	mg/L	1.19	6	05/07/2019	101492	JCOLOMA	dil factor 2
MBP_CHLORIDE(SM 4500-CL- D)								
Chloride	52	mg/L		6	05/07/2019	101493	JCOLOMA	dil factor 2
MBP_COND(SM 2510 B)								
Specific Conductance	895	µmhos/cm		1	05/07/2019	101499	ALEE	
MBP_HARDNESS_T(SM 2340 C)								
Hardness, Total, as CaCO3	347	mg/L	0.948	6	05/07/2019	101489	JCOLOMA	dil factor 2
MBP_PH(SM 4500-H+ B)								
pH	7.8	pH			05/07/2019	101500	ALEE	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	537	mg/L	13.2	20	05/09/2019	101545	ALEE	>MCL

Lab Sample#: **1952434-02B** Sample Source: WSB_CAL-31A-280 External ID:

Date Collected: 5/7/19 11:32 am Date Received: 5/7/19 2:03 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_VOC(EPA 524.2)						
Tetrachloroethylene	57.8	µg/L	0.114	0.5	05/15/2019	101905 TMNGUYEN >MCL
Internal Standard(s)						
TBA-d9 (IS)	100	µg/L			05/15/2019	101905 TMNGUYEN
Fluorobenzene (IS)	1	µg/L			05/15/2019	101905 TMNGUYEN
Surrogate(s)						
p-Bromofluorobenzene (Surr.)	0.85	µg/L			05/15/2019	101905 TMNGUYEN
1,2-Dichlorobenzene d- (Surr.)	0.88	µg/L			05/15/2019	101905 TMNGUYEN

Lab Sample#: **1952434-03** Sample Source: WSB_CAL-31A-480 External ID:

Date Collected: 5/7/19 10:27 am Date Received: 5/7/19 2:03 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	<0.5	mg/L	0.1	0.5	05/07/2019	101498 MAWALLACE
Nitrate as N	<0.07	mg/L	0.034	0.07	05/07/2019	101498 MAWALLACE
SEM_200.7_DW(EPA 200.7)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Calcium, Ca	32.4	mg/L	0.01	1	05/13/2019	101726	BTRINH
Magnesium, Mg	40.4	mg/L	0.024	0.2	05/13/2019	101726	BTRINH
Potassium, K	9.38	mg/L	0.035	0.2	05/13/2019	101726	BTRINH
Sodium, Na	57.2	mg/L	0.013	1	05/13/2019	101726	BTRINH
MBO_524_VOC(EPA 524.2)							
tert Butyl Alcohol (TBA)	<2	µg/L	0.664	2	05/14/2019	101804	TMNGUYEN
Dichlorodifluoromethane (F-12)	<0.5	µg/L	0.079	0.5	05/14/2019	101804	TMNGUYEN
Chloromethane	<0.5	µg/L	0.089	0.5	05/14/2019	101804	TMNGUYEN
Vinyl chloride	<0.5	µg/L	0.1	0.5	05/14/2019	101804	TMNGUYEN
Bromomethane	<0.5	µg/L	0.158	0.5	05/14/2019	101804	TMNGUYEN
Chloroethane	<0.5	µg/L	0.201	0.5	05/14/2019	101804	TMNGUYEN
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	05/14/2019	101804	TMNGUYEN
Methylene chloride	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	05/14/2019	101804	TMNGUYEN
Methyl t-butyl ether	<3	µg/L	0.106	3	05/14/2019	101804	TMNGUYEN
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	05/14/2019	101804	TMNGUYEN
Diisopropyl ether	<0.5	µg/L	0.192	0.5	05/14/2019	101804	TMNGUYEN
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	05/14/2019	101804	TMNGUYEN
2,2-Dichloropropane	<0.5	µg/L	0.083	0.5	05/14/2019	101804	TMNGUYEN
Bromochloromethane	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
Chloroform, THM	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Ethyl tert-Butyl Ether	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	05/14/2019	101804	TMNGUYEN
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,1-Dichloropropene	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Benzene	<0.5	µg/L	0.061	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	05/14/2019	101804	TMNGUYEN
tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5	05/14/2019	101804	TMNGUYEN
Trichloroethylene	<0.5	µg/L	0.093	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
Dibromomethane	<0.5	µg/L	0.055	0.5	05/14/2019	101804	TMNGUYEN
Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5	05/14/2019	101804	TMNGUYEN
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	05/14/2019	101804	TMNGUYEN
Toluene	<0.5	µg/L	0.118	0.5	05/14/2019	101804	TMNGUYEN
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
Tetrachloroethylene	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropane	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromoethane	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Chlorobenzene	<0.5	µg/L	0.185	0.5	05/14/2019	101804	TMNGUYEN
1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5	05/14/2019	101804	TMNGUYEN
Ethylbenzene	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
m,p-Xylene	<0.5	µg/L	0.151	0.5	05/14/2019	101804	TMNGUYEN
o-Xylene	<0.5	µg/L	0.076	0.5	05/14/2019	101804	TMNGUYEN
Styrene	<0.5	µg/L	0.053	0.5	05/14/2019	101804	TMNGUYEN
Bromoform, THM	<0.5	µg/L	0.068	0.5	05/14/2019	101804	TMNGUYEN
Isopropylbenzene	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
Bromobenzene	<0.5	µg/L	0.062	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
n-Propylbenzene	<0.5	µg/L	0.104	0.5	05/14/2019	101804	TMNGUYEN
2-Chlorotoluene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
4-Chlorotoluene	<0.5	µg/L	0.094	0.5	05/14/2019	101804	TMNGUYEN
tert-Butylbenzene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5	05/14/2019	101804	TMNGUYEN
sec-Butylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
p-Isopropyltoluene	<0.5	µg/L	0.098	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5	05/14/2019	101804	TMNGUYEN
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
n-Butylbenzene	<0.5	µg/L	0.109	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
Hexachlorobutadiene	<0.5	µg/L	0.107	0.5	05/14/2019	101804	TMNGUYEN
Naphthalene	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.5	0.5	05/14/2019	101804	TMNGUYEN
Xylene (total: p, m, o)	<0.5	µg/L		0.5	05/14/2019	101804	TMNGUYEN
Internal Standard(s)							
TBA-d9 (IS)	100	µg/L			05/14/2019	101804	TMNGUYEN
Fluorobenzene (IS)	1	µg/L			05/14/2019	101804	TMNGUYEN
Surrogate(s)							
p-Bromofluorobenzene (Surr.)	0.82	µg/L			05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene d- (Surr.)	0.86	µg/L			05/14/2019	101804	TMNGUYEN
MBP_ALK(SM 2320 B)							
Alkalinity	373	mg/L	1.19	6	05/07/2019	101492	JCOLOMA dil factor 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	39.3	mg/L		6	05/07/2019	101493	JCOLOMA dil factor 2
MBP_COND(SM 2510 B)							
Specific Conductance	758	µmhos/cm		1	05/07/2019	101499	ALEE
MBP_HARDNESS_T(SM 2340 C)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

Hardness, Total, as CaCO3	247	mg/L	0.948	6	05/07/2019	101489 JCOLOMA	dil factor 2
MBP_PH(SM 4500-H+ B)							
pH	7.48	pH			05/07/2019	101500 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	399	mg/L	13.2	20	05/09/2019	101545 ALEE	

Lab Sample#: 1952434-04 Sample Source: WSB_CAL-31A-595 External ID:

Date Collected: 5/7/19 10:59 am Date Received: 5/7/19 2:03 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	<0.07	mg/L	0.034	0.07	05/07/2019	101498 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	96.8	mg/L	0.01	1	05/13/2019	101726 BTRINH
Magnesium, Mg	47.9	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
Potassium, K	3.61	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
Sodium, Na	88.4	mg/L	0.013	1	05/13/2019	101726 BTRINH
MBO_524_VOC(EPA 524.2)						
tert Butyl Alcohol (TBA)	<2	µg/L	0.664	2	05/14/2019	101804 TMNGUYEN
Dichlorodifluoromethane (F-12)	<0.5	µg/L	0.079	0.5	05/14/2019	101804 TMNGUYEN
Chloromethane	<0.5	µg/L	0.089	0.5	05/14/2019	101804 TMNGUYEN
Vinyl chloride	<0.5	µg/L	0.1	0.5	05/14/2019	101804 TMNGUYEN
Bromomethane	<0.5	µg/L	0.158	0.5	05/14/2019	101804 TMNGUYEN
Chloroethane	<0.5	µg/L	0.201	0.5	05/14/2019	101804 TMNGUYEN
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	05/14/2019	101804 TMNGUYEN
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	05/14/2019	101804 TMNGUYEN
Methylene chloride	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	05/14/2019	101804 TMNGUYEN
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	05/14/2019	101804 TMNGUYEN
Methyl t-butyl ether	<3	µg/L	0.106	3	05/14/2019	101804 TMNGUYEN
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN
Diisopropyl ether	<0.5	µg/L	0.192	0.5	05/14/2019	101804 TMNGUYEN
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	05/14/2019	101804 TMNGUYEN
2,2-Dichloropropane	<0.5	µg/L	0.083	0.5	05/14/2019	101804 TMNGUYEN
Bromochloromethane	<0.5	µg/L	0.065	0.5	05/14/2019	101804 TMNGUYEN
Chloroform, THM	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN
Ethyl tert-Butyl Ether	<0.5	µg/L	0.123	0.5	05/14/2019	101804 TMNGUYEN
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	05/14/2019	101804 TMNGUYEN
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	05/14/2019	101804 TMNGUYEN
1,1-Dichloropropene	<0.5	µg/L	0.058	0.5	05/14/2019	101804 TMNGUYEN
Benzene	<0.5	µg/L	0.061	0.5	05/14/2019	101804 TMNGUYEN
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	05/14/2019	101804 TMNGUYEN
tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5	05/14/2019	101804 TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Trichloroethylene	<0.5	µg/L	0.093	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
Dibromomethane	<0.5	µg/L	0.055	0.5	05/14/2019	101804	TMNGUYEN
Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5	05/14/2019	101804	TMNGUYEN
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	05/14/2019	101804	TMNGUYEN
Toluene	<0.5	µg/L	0.118	0.5	05/14/2019	101804	TMNGUYEN
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
Tetrachloroethylene	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropane	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromoethane	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
Chlorobenzene	<0.5	µg/L	0.185	0.5	05/14/2019	101804	TMNGUYEN
1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5	05/14/2019	101804	TMNGUYEN
Ethylbenzene	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
m,p-Xylene	<0.5	µg/L	0.151	0.5	05/14/2019	101804	TMNGUYEN
o-Xylene	<0.5	µg/L	0.076	0.5	05/14/2019	101804	TMNGUYEN
Styrene	<0.5	µg/L	0.053	0.5	05/14/2019	101804	TMNGUYEN
Bromoform, THM	<0.5	µg/L	0.068	0.5	05/14/2019	101804	TMNGUYEN
Isopropylbenzene	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
Bromobenzene	<0.5	µg/L	0.062	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
n-Propylbenzene	<0.5	µg/L	0.104	0.5	05/14/2019	101804	TMNGUYEN
2-Chlorotoluene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
4-Chlorotoluene	<0.5	µg/L	0.094	0.5	05/14/2019	101804	TMNGUYEN
tert-Butylbenzene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5	05/14/2019	101804	TMNGUYEN
sec-Butylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN
p-Isopropyltoluene	<0.5	µg/L	0.098	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5	05/14/2019	101804	TMNGUYEN
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
n-Butylbenzene	<0.5	µg/L	0.109	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5	05/14/2019	101804	TMNGUYEN
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
Hexachlorobutadiene	<0.5	µg/L	0.107	0.5	05/14/2019	101804	TMNGUYEN
Naphthalene	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.5	0.5	05/14/2019	101804	TMNGUYEN
Xylene (total: p, m, o)	<0.5	µg/L		0.5	05/14/2019	101804	TMNGUYEN
Internal Standard(s)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

TBA-d9 (IS)	100	µg/L			05/14/2019	101804	TMNGUYEN	
Fluorobenzene (IS)	1	µg/L			05/14/2019	101804	TMNGUYEN	
Surrogate(s)								
p-Bromofluorobenzene (Surr.)	0.83	µg/L			05/14/2019	101804	TMNGUYEN	
1,2-Dichlorobenzene d- (Surr.)	0.87	µg/L			05/14/2019	101804	TMNGUYEN	
MBP_ALK(SM 2320 B)								
Alkalinity	264	mg/L	1.19	6	05/07/2019	101492	JCOLOMA	dil factor 2
MBP_CHLORIDE(SM 4500-CL- D)								
Chloride	160	mg/L		6	05/07/2019	101493	JCOLOMA	dil factor 2
MBP_COND(SM 2510 B)								
Specific Conductance	1210	µmhos/cm		1	05/07/2019	101499	ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)								
Hardness, Total, as CaCO3	441	mg/L	0.948	6	05/07/2019	101489	JCOLOMA	dil factor 2
MBP_PH(SM 4500-H+ B)								
pH	7.4	pH			05/07/2019	101500	ALEE	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	748	mg/L	13.2	20	05/09/2019	101545	ALEE	>MCL

Lab Sample#: 1952434-04A **Sample Source:** WSB_CAL-31A-595 **External ID:**

Date Collected: 5/7/19 10:59 am **Date Received:** 5/7/19 2:03 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	170	mg/L	2	10	05/07/2019	101498 MAWALLACE

Lab Sample#: 1952434-05 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 5/7/19 11:46 am **Date Received:** 5/7/19 2:03 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-31-280

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	85.4	mg/L	0.5	2.5	05/07/2019	101498 MAWALLACE
Nitrate as N	4.8	mg/L	0.17	0.35	05/07/2019	101498 MAWALLACE

SEM_200.7_DW(EPA 200.7)								
Calcium, Ca	58.2	mg/L	0.01	1	05/13/2019	101726	BTRINH	
Magnesium, Mg	49.4	mg/L	0.024	0.2	05/13/2019	101726	BTRINH	
Potassium, K	2.38	mg/L	0.035	0.2	05/13/2019	101726	BTRINH	
Sodium, Na	69.8	mg/L	0.013	1	05/13/2019	101726	BTRINH	

MBO_524_VOC(EPA 524.2)								
tert Butyl Alcohol (TBA)	<2	µg/L	0.664	2	05/14/2019	101804	TMNGUYEN	
Dichlorodifluoromethane (F-12)	<0.5	µg/L	0.079	0.5	05/14/2019	101804	TMNGUYEN	
Chloromethane	<0.5	µg/L	0.089	0.5	05/14/2019	101804	TMNGUYEN	
Vinyl chloride	<0.5	µg/L	0.1	0.5	05/14/2019	101804	TMNGUYEN	
Bromomethane	<0.5	µg/L	0.158	0.5	05/14/2019	101804	TMNGUYEN	
Chloroethane	<0.5	µg/L	0.201	0.5	05/14/2019	101804	TMNGUYEN	
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	05/14/2019	101804	TMNGUYEN
Methylene chloride	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	05/14/2019	101804	TMNGUYEN
Methyl t-butyl ether	<3	µg/L	0.106	3	05/14/2019	101804	TMNGUYEN
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	05/14/2019	101804	TMNGUYEN
Diisopropyl ether	<0.5	µg/L	0.192	0.5	05/14/2019	101804	TMNGUYEN
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	05/14/2019	101804	TMNGUYEN
2,2-Dichloropropane	<0.5	µg/L	0.083	0.5	05/14/2019	101804	TMNGUYEN
Bromochloromethane	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
Chloroform, THM	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Ethyl tert-Butyl Ether	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	05/14/2019	101804	TMNGUYEN
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
1,1-Dichloropropene	<0.5	µg/L	0.058	0.5	05/14/2019	101804	TMNGUYEN
Benzene	<0.5	µg/L	0.061	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	05/14/2019	101804	TMNGUYEN
tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5	05/14/2019	101804	TMNGUYEN
Trichloroethylene	1.37	µg/L	0.093	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
Dibromomethane	<0.5	µg/L	0.055	0.5	05/14/2019	101804	TMNGUYEN
Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5	05/14/2019	101804	TMNGUYEN
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	05/14/2019	101804	TMNGUYEN
Toluene	<0.5	µg/L	0.118	0.5	05/14/2019	101804	TMNGUYEN
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	05/14/2019	101804	TMNGUYEN
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	05/14/2019	101804	TMNGUYEN
1,3-Dichloropropane	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN
Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5	05/14/2019	101804	TMNGUYEN
1,2-Dibromoethane	<0.5	µg/L	0.114	0.5	05/14/2019	101804	TMNGUYEN
Chlorobenzene	<0.5	µg/L	0.185	0.5	05/14/2019	101804	TMNGUYEN
1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5	05/14/2019	101804	TMNGUYEN
Ethylbenzene	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
m,p-Xylene	<0.5	µg/L	0.151	0.5	05/14/2019	101804	TMNGUYEN
o-Xylene	<0.5	µg/L	0.076	0.5	05/14/2019	101804	TMNGUYEN
Styrene	<0.5	µg/L	0.053	0.5	05/14/2019	101804	TMNGUYEN
Bromoform, THM	<0.5	µg/L	0.068	0.5	05/14/2019	101804	TMNGUYEN
Isopropylbenzene	<0.5	µg/L	0.073	0.5	05/14/2019	101804	TMNGUYEN
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN
Bromobenzene	<0.5	µg/L	0.062	0.5	05/14/2019	101804	TMNGUYEN
1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5	05/14/2019	101804	TMNGUYEN
n-Propylbenzene	<0.5	µg/L	0.104	0.5	05/14/2019	101804	TMNGUYEN
2-Chlorotoluene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN
1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

4-Chlorotoluene	<0.5	µg/L	0.094	0.5	05/14/2019	101804	TMNGUYEN	
tert-Butylbenzene	<0.5	µg/L	0.078	0.5	05/14/2019	101804	TMNGUYEN	
1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5	05/14/2019	101804	TMNGUYEN	
sec-Butylbenzene	<0.5	µg/L	0.097	0.5	05/14/2019	101804	TMNGUYEN	
p-Isopropyltoluene	<0.5	µg/L	0.098	0.5	05/14/2019	101804	TMNGUYEN	
1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5	05/14/2019	101804	TMNGUYEN	
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	05/14/2019	101804	TMNGUYEN	
n-Butylbenzene	<0.5	µg/L	0.109	0.5	05/14/2019	101804	TMNGUYEN	
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	05/14/2019	101804	TMNGUYEN	
1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5	05/14/2019	101804	TMNGUYEN	
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN	
Hexachlorobutadiene	<0.5	µg/L	0.107	0.5	05/14/2019	101804	TMNGUYEN	
Naphthalene	<0.5	µg/L	0.123	0.5	05/14/2019	101804	TMNGUYEN	
1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5	05/14/2019	101804	TMNGUYEN	
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.5	0.5	05/14/2019	101804	TMNGUYEN	
Xylene (total: p, m, o)	<0.5	µg/L		0.5	05/14/2019	101804	TMNGUYEN	
Internal Standard(s)								
TBA-d9 (IS)	100	µg/L			05/14/2019	101804	TMNGUYEN	
Fluorobenzene (IS)	1	µg/L			05/14/2019	101804	TMNGUYEN	
Surrogate(s)								
p-Bromofluorobenzene (Surr.)	0.92	µg/L			05/14/2019	101804	TMNGUYEN	
1,2-Dichlorobenzene d- (Surr.)	1.01	µg/L			05/14/2019	101804	TMNGUYEN	
MBP_ALK(SM 2320 B)								
Alkalinity	333	mg/L	1.19	6	05/07/2019	101492	JCOLOMA	dil factor 2
MBP_CHLORIDE(SM 4500-CL- D)								
Chloride	51.7	mg/L		6	05/07/2019	101493	JCOLOMA	dil factor 2
MBP_COND(SM 2510 B)								
Specific Conductance	942	µmhos/cm		1	05/07/2019	101499	ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)								
Hardness, Total, as CaCO3	338	mg/L	0.948	6	05/07/2019	101489	JCOLOMA	dil factor 2
MBP_PH(SM 4500-H+ B)								
pH	8.13	pH			05/07/2019	101500	ALEE	
MBP_TDS(SM 2540 C)								
Total Dissolved Solids	552	mg/L	13.2	20	05/09/2019	101545	ALEE	>MCL

Lab Sample#: 1952434-05B **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 5/7/19 11:46 am **Date Received:** 5/7/19 2:03 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-31-280

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_VOC(EPA 524.2)						
Tetrachloroethylene	66.1	µg/L	0.114	0.5	05/15/2019	101905 TMNGUYEN >MCL
Internal Standard(s)						
TBA-d9 (IS)	100	µg/L			05/15/2019	101905 TMNGUYEN
Fluorobenzene (IS)	1	µg/L			05/15/2019	101905 TMNGUYEN
Surrogate(s)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

<i>p-Bromofluorobenzene (Surr.)</i>	0.85	µg/L	05/15/2019	101905 TMNGUYEN
<i>1,2-Dichlorobenzene d- (Surr.)</i>	0.91	µg/L	05/15/2019	101905 TMNGUYEN

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101489 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963618-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963618-03	DUP	Hardness, Total, as CaCO3	17.9	mg/L		1	0.474	3	Splt# 1953201-07 (17.7mg/L)
QC1963618-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	101			3	

QC list for Run#: 101492 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963619-03	DUP	Alkalinity	23.1	mg/L		5	0.593	3	Splt# 1953201-07 (21.8mg/L)
QC1963619-04	LCS	Alkalinity	41	mg/L	102			3	

QC list for Run#: 101493 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963620-03	DUP	Chloride	6.52	mg/L		2	1.16	3	Splt# 1953201-07 (6.66mg/L)
QC1963620-04	LCS	Chloride	39.4	mg/L	98			3	

QC list for Run#: 101498 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963622-01	MRL_CHK	Sulfate	0.528	mg/L	106				
	MRL_CHK	Nitrate as N	0.0733	mg/L	108				
QC1963622-02	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.324	mg/L	95				
QC1963622-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963622-04	LCS	Sulfate	4.91	mg/L	98				
	LCS	Nitrate as N	0.656	mg/L	96				
QC1963622-05	SPK	Sulfate	8.41	mg/L	114				Splt# 1953440-01 (5.6mg/L)
	SPK	Nitrate as N	0.414	mg/L	100				Splt# 1953440-01 (0.077mg/L)
QC1963622-06	SPKD	Sulfate	8.38	mg/L	112	0			Splt# 1953440-01 (5.6mg/L)
	SPKD	Nitrate as N	0.419	mg/L	102	1			Splt# 1953440-01 (0.077mg/L)
QC1963622-07	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.332	mg/L	97				
QC1963622-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

BLK	Nitrate as N	<0.07	mg/L	0.034	0.07
-----	--------------	-------	------	-------	------

QC list for Run#: 101499 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963623-01	MRL_CK	Specific Conductance	10.8	µmhos/cm	108				
QC1963623-02	CCV	Specific Conductance	97.7	µmhos/cm	97			1	
QC1963623-03	DUP	Specific Conductance	939	µmhos/cm		0		1	Splt# 1952434-05 (942µmhos/cm)
QC1963623-04	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 101500 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963624-01	ICV	pH	9.04	pH	100				
QC1963624-02	DUP	pH	9.49	pH		1			Splt# 1952434-05 (8.13pH)
QC1963624-03	CCV	pH	10	pH	100				
QC1963624-04	CCV	pH	10	pH	100				

QC list for Run#: 101545 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963651-01	DUP	Total Dissolved Solids	339	mg/L		1	13.2	20	Splt# 1953274-05 (344mg/L)
QC1963651-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101726 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963775-02	LCS	Calcium, Ca	20	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	100		0.024	0.2	
	LCS	Potassium, K	17.7	mg/L	88		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1963775-03	DUP	Calcium, Ca	36.8	mg/L		1	0.01	1	Splt# 1952431-01 (36.4mg/L)
	DUP	Magnesium, Mg	31.1	mg/L		0	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
	DUP	Potassium, K	1.5	mg/L		0	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
	DUP	Sodium, Na	60.6	mg/L		2	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Result	Units	Rec	RPD	MDL	MRL	Flag/Comments
SPK	Calcium, Ca	57	mg/L	103		0.01	1	Splt# 1952431-01 (36.4mg/L)
SPK	Magnesium, Mg	50.4	mg/L	95		0.024	0.2	Splt# 1952431-01 (31.2mg/L)
SPK	Potassium, K	19	mg/L	87		0.035	0.2	Splt# 1952431-01 (1.5mg/L)
SPK	Sodium, Na	79.5	mg/L	87		0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-05								
SPKD	Calcium, Ca	56.6	mg/L	101	0	0.01	1	Splt# 1952431-01 (36.4mg/L)
SPKD	Magnesium, Mg	49.6	mg/L	91	1	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
SPKD	Potassium, K	18.1	mg/L	83	4	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
SPKD	Sodium, Na	78.3	mg/L	81	1	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-06								
DUP	Calcium, Ca	36.7	mg/L		2	0.01	1	Splt# 1952431-02 (36mg/L)
DUP	Magnesium, Mg	31.5	mg/L		1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
DUP	Potassium, K	1.55	mg/L		2	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
DUP	Sodium, Na	61.6	mg/L		0	0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-07								
SPK	Calcium, Ca	55.9	mg/L	99		0.01	1	Splt# 1952431-02 (36mg/L)
SPK	Magnesium, Mg	51.6	mg/L	103		0.024	0.2	Splt# 1952431-02 (31.1mg/L)
SPK	Potassium, K	18.2	mg/L	83		0.035	0.2	Splt# 1952431-02 (1.5mg/L)
SPK	Sodium, Na	83.3	mg/L	110		0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-08								
SPKD	Calcium, Ca	56.9	mg/L	105	1	0.01	1	Splt# 1952431-02 (36mg/L)
SPKD	Magnesium, Mg	52.6	mg/L	108	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
SPKD	Potassium, K	18.4	mg/L	84	1	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
SPKD	Sodium, Na	83.8	mg/L	113	0	0.013	1	Splt# 1952431-02 (61.2mg/L)

QC list for Run#: 101804 and Test: MBO_524_VOC (EPA 524.2)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963834-01									
	MRL_CK	tert Butyl Alcohol (TBA)	2.67	µg/L	134				
	MRL_CK	m,p-Xylene	0.35	µg/L	87				
	MRL_CK	o-Xylene	0.18	µg/L	90				
Internal Standard	MRL_CK	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	MRL_CK	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	MRL_CK	p-Bromofluorobenzene (Surr.)	0.89	µg/L	89				
Surrogate(s)	MRL_CK	1,2-Dichlorobenzene d- (Surr.)	1	µg/L	100				
QC1963834-02									
	MRL_CK	Dichlorodifluoromethane (F-12)	0.48	µg/L	96				
	MRL_CK	Chloromethane	0.28	µg/L	56				
	MRL_CK	Vinyl chloride	0.5	µg/L	100				
	MRL_CK	Bromomethane	0.57	µg/L	114				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

MRL_CK	Chloroethane	0.54	µg/L	108
MRL_CK	Trichlorofluoromethane (F-11)	0.52	µg/L	104
MRL_CK	1,1-Dichloroethylene	0.57	µg/L	114
MRL_CK	Methylene chloride	0.53	µg/L	106
MRL_CK	1,1,2-Trichloro-1,2,2-trifluoroethane	0.61	µg/L	122
MRL_CK	trans-1,2-Dichloroethylene	0.52	µg/L	104
MRL_CK	Methyl t-butyl ether	0.5	µg/L	100
MRL_CK	1,1-Dichloroethane	0.51	µg/L	102
MRL_CK	Diisopropyl ether	0.47	µg/L	94
MRL_CK	cis-1,2-dichloroethylene	0.51	µg/L	102
MRL_CK	2,2-Dichloropropane	0.67	µg/L	134
MRL_CK	Bromochloromethane	0.54	µg/L	108
MRL_CK	Chloroform, THM	0.55	µg/L	110
MRL_CK	Ethyl tert-Butyl Ether	0.49	µg/L	98
MRL_CK	1,1,1-Trichloroethane	0.56	µg/L	112
MRL_CK	Carbon tetrachloride	0.56	µg/L	112
MRL_CK	1,1-Dichloropropene	0.51	µg/L	102
MRL_CK	Benzene	0.53	µg/L	106
MRL_CK	1,2-Dichloroethane	0.52	µg/L	104
MRL_CK	tert-Methyl Amyl Ether (TAME)	0.51	µg/L	102
MRL_CK	Trichloroethylene	0.53	µg/L	106
MRL_CK	1,2-Dichloropropane	0.51	µg/L	102
MRL_CK	Dibromomethane	0.52	µg/L	104
MRL_CK	Bromodichloromethane, THM	0.5	µg/L	100
MRL_CK	cis-1,3-dichloropropene	0.58	µg/L	116
MRL_CK	Toluene	0.48	µg/L	96
MRL_CK	trans-1,3-Dichloropropene	0.59	µg/L	118
MRL_CK	1,1,2-Trichloroethane	0.51	µg/L	102
MRL_CK	Tetrachloroethylene	0.53	µg/L	106
MRL_CK	1,3-Dichloropropane	0.49	µg/L	98
MRL_CK	Dibromochloromethane, THM	0.57	µg/L	114
MRL_CK	1,2-Dibromoethane	0.48	µg/L	96
MRL_CK	Chlorobenzene	0.47	µg/L	94
MRL_CK	1,1,1,2-Tetrachloroethane	0.49	µg/L	98
MRL_CK	Ethylbenzene	0.46	µg/L	92
MRL_CK	Styrene	0.47	µg/L	94
MRL_CK	Bromoform, THM	0.7	µg/L	140
MRL_CK	Isopropylbenzene	0.46	µg/L	92
MRL_CK	1,1,2,2-Tetrachloroethane	0.52	µg/L	104
MRL_CK	Bromobenzene	0.48	µg/L	96
MRL_CK	1,2,3-Trichloropropane	0.51	µg/L	102
MRL_CK	n-Propylbenzene	0.45	µg/L	90
MRL_CK	2-Chlorotoluene	0.45	µg/L	90
MRL_CK	1,3,5-Trimethylbenzene	0.43	µg/L	86
MRL_CK	4-Chlorotoluene	0.45	µg/L	90
MRL_CK	tert-Butylbenzene	0.41	µg/L	82
MRL_CK	1,2,4-Trimethylbenzene	0.42	µg/L	84
MRL_CK	sec-Butylbenzene	0.45	µg/L	90
MRL_CK	p-Isopropyltoluene	0.43	µg/L	86

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

MRL_CK	1,3-Dichlorobenzene	0.51	µg/L	102		
MRL_CK	1,4-Dichlorobenzene	0.48	µg/L	96		
MRL_CK	n-Butylbenzene	0.43	µg/L	86		
MRL_CK	1,2-Dichlorobenzene	0.51	µg/L	102		
MRL_CK	1,2-Dibromo-3-chloropropane	0.61	µg/L	122		
MRL_CK	1,2,4-Trichlorobenzene	0.46	µg/L	92		
MRL_CK	Hexachlorobutadiene	0.52	µg/L	104		
MRL_CK	Naphthalene	0.42	µg/L	84		
MRL_CK	1,2,3-Trichlorobenzene	0.48	µg/L	96		
Internal Standard	MRL_CK	TBA-d9 (IS)	100	µg/L	100	
Internal Standard	MRL_CK	Fluorobenzene (IS)	1	µg/L	100	
Surrogate(s)	MRL_CK	p-Bromofluorobenzene (Surr.)	0.83	µg/L	83	
Surrogate(s)	MRL_CK	1,2-Dichlorobenzene d- (Surr.)	0.95	µg/L	95	
QC1963834-03						
CCV	tert Butyl Alcohol (TBA)	45.7	µg/L	91	0.664	2
CCV	Dichlorodifluoromethane (F-12)	5.13	µg/L	103	0.079	0.5
CCV	Chloromethane	4.55	µg/L	91	0.089	0.5
CCV	Vinyl chloride	5.06	µg/L	101	0.1	0.5
CCV	Bromomethane	5.02	µg/L	100	0.158	0.5
CCV	Chloroethane	4.85	µg/L	97	0.201	0.5
CCV	Trichlorofluoromethane (F-11)	5.21	µg/L	104	0.052	0.5
CCV	1,1-Dichloroethylene	4.86	µg/L	97	0.075	0.5
CCV	Methylene chloride	4.99	µg/L	99	0.058	0.5
CCV	1,1,2-Trichloro-1,2,2-trifluoroethane	5.37	µg/L	107	0.114	0.5
CCV	trans-1,2-Dichloroethylene	4.95	µg/L	99	0.099	0.5
CCV	Methyl t-butyl ether	4.86	µg/L	97	0.106	3
CCV	1,1-Dichloroethane	4.99	µg/L	99	0.192	0.5
CCV	Diisopropyl ether	4.57	µg/L	91	0.192	0.5
CCV	cis-1,2-dichloroethylene	4.91	µg/L	98	0.111	0.5
CCV	2,2-Dichloropropane	6.1	µg/L	122	0.083	0.5
CCV	Bromochloromethane	5.17	µg/L	103	0.065	0.5
CCV	Chloroform, THM	5.03	µg/L	101	0.058	0.5
CCV	Ethyl tert-Butyl Ether	4.92	µg/L	98	0.123	0.5
CCV	1,1,1-Trichloroethane	5.22	µg/L	104	0.179	0.5
CCV	Carbon tetrachloride	5.47	µg/L	109	0.066	0.5
CCV	1,1-Dichloropropene	4.82	µg/L	96	0.058	0.5
CCV	Benzene	5.01	µg/L	100	0.061	0.5
CCV	1,2-Dichloroethane	4.79	µg/L	95	0.115	0.5
CCV	tert-Methyl Amyl Ether (TAME)	5	µg/L	100	0.155	0.5
CCV	Trichloroethylene	5.34	µg/L	107	0.093	0.5
CCV	1,2-Dichloropropane	4.88	µg/L	97	0.073	0.5
CCV	Dibromomethane	5.27	µg/L	105	0.055	0.5
CCV	Bromodichloromethane, THM	5.08	µg/L	102	0.051	0.5
CCV	cis-1,3-dichloropropene	4.97	µg/L	99	0.07	0.5
CCV	Toluene	4.97	µg/L	99	0.118	0.5
CCV	trans-1,3-Dichloropropene	5.18	µg/L	104	0.213	0.5
CCV	1,1,2-Trichloroethane	5.11	µg/L	102	0.052	0.5
CCV	Tetrachloroethylene	5.27	µg/L	105	0.114	0.5

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

CCV	1,3-Dichloropropane	5.01	µg/L	100	0.082	0.5
CCV	Dibromochloromethane, THM	5.82	µg/L	116	0.065	0.5
CCV	1,2-Dibromoethane	4.99	µg/L	99	0.114	0.5
CCV	Chlorobenzene	4.97	µg/L	99	0.185	0.5
CCV	1,1,1,2-Tetrachloroethane	5.19	µg/L	104	0.232	0.5
CCV	Ethylbenzene	5.07	µg/L	101	0.05	0.5
CCV	m,p-Xylene	10.7	µg/L	107	0.151	0.5
CCV	o-Xylene	5.24	µg/L	105	0.076	0.5
CCV	Styrene	5.12	µg/L	102	0.053	0.5
CCV	Bromoform, THM	5.96	µg/L	119	0.068	0.5
CCV	Isopropylbenzene	5.17	µg/L	103	0.073	0.5
CCV	1,1,2,2-Tetrachloroethane	5.06	µg/L	101	0.066	0.5
CCV	Bromobenzene	5	µg/L	100	0.062	0.5
CCV	1,2,3-Trichloropropane	5.26	µg/L	105	0.05	0.5
CCV	n-Propylbenzene	5.2	µg/L	104	0.104	0.5
CCV	2-Chlorotoluene	5.14	µg/L	103	0.078	0.5
CCV	1,3,5-Trimethylbenzene	5.25	µg/L	105	0.097	0.5
CCV	4-Chlorotoluene	5.22	µg/L	104	0.094	0.5
CCV	tert-Butylbenzene	5	µg/L	100	0.078	0.5
CCV	1,2,4-Trimethylbenzene	5.3	µg/L	106	0.077	0.5
CCV	sec-Butylbenzene	5.31	µg/L	106	0.097	0.5
CCV	p-Isopropyltoluene	5.33	µg/L	107	0.098	0.5
CCV	1,3-Dichlorobenzene	5.25	µg/L	105	0.199	0.5
CCV	1,4-Dichlorobenzene	5.19	µg/L	104	0.082	0.5
CCV	n-Butylbenzene	5.19	µg/L	104	0.109	0.5
CCV	1,2-Dichlorobenzene	5.04	µg/L	101	0.066	0.5
CCV	1,2-Dibromo-3-chloropropane	5.48	µg/L	110	0.134	0.5
CCV	1,2,4-Trichlorobenzene	4.71	µg/L	94	0.084	0.5
CCV	Hexachlorobutadiene	5.3	µg/L	106	0.107	0.5
CCV	Naphthalene	4.86	µg/L	97	0.123	0.5
CCV	1,2,3-Trichlorobenzene	4.97	µg/L	99	0.084	0.5
Internal Standard	CCV	TBA-d9 (IS)	100	µg/L	100	
Internal Standard	CCV	Fluorobenzene (IS)	1	µg/L	100	
Surrogate(s)	CCV	p-Bromofluorobenzene (Surr.)	1.05	µg/L	105	
Surrogate(s)	CCV	1,2-Dichlorobenzene d- (Surr.)	1.04	µg/L	104	
QC1963834-04						
LCS	tert Butyl Alcohol (TBA)	89.7	µg/L	89	0.664	2
LCS	Dichlorodifluoromethane (F-12)	9.11	µg/L	91	0.079	0.5
LCS	Chloromethane	9.35	µg/L	93	0.089	0.5
LCS	Vinyl chloride	9.58	µg/L	95	0.1	0.5
LCS	Bromomethane	8.33	µg/L	83	0.158	0.5
LCS	Chloroethane	9.4	µg/L	94	0.201	0.5
LCS	Trichlorofluoromethane (F-11)	9.98	µg/L	99	0.052	0.5
LCS	1,1-Dichloroethylene	9.44	µg/L	94	0.075	0.5
LCS	Methylene chloride	9.75	µg/L	97	0.058	0.5
LCS	1,1,2-Trichloro-1,2,2-trifluoroethane	10.1	µg/L	101	0.114	0.5
LCS	trans-1,2-Dichloroethylene	9.82	µg/L	98	0.099	0.5
LCS	Methyl t-butyl ether	10.4	µg/L	104	0.106	3

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	1,1-Dichloroethane	9.74	µg/L	97	0.192	0.5
LCS	Diisopropyl ether	9.43	µg/L	94	0.192	0.5
LCS	cis-1,2-dichloroethylene	9.96	µg/L	99	0.111	0.5
LCS	2,2-Dichloropropane	12.4	µg/L	124	0.083	0.5
LCS	Bromochloromethane	9.89	µg/L	98	0.065	0.5
LCS	Chloroform, THM	9.65	µg/L	96	0.058	0.5
LCS	Ethyl tert-Butyl Ether	9.71	µg/L	97	0.123	0.5
LCS	1,1,1-Trichloroethane	10.2	µg/L	102	0.179	0.5
LCS	Carbon tetrachloride	10.7	µg/L	107	0.066	0.5
LCS	1,1-Dichloropropene	9.68	µg/L	96	0.058	0.5
LCS	Benzene	9.86	µg/L	98	0.061	0.5
LCS	1,2-Dichloroethane	9.51	µg/L	95	0.115	0.5
LCS	tert-Methyl Amyl Ether (TAME)	10.2	µg/L	102	0.155	0.5
LCS	Trichloroethylene	10.5	µg/L	105	0.093	0.5
LCS	1,2-Dichloropropane	9.55	µg/L	95	0.073	0.5
LCS	Dibromomethane	10.4	µg/L	104	0.055	0.5
LCS	Bromodichloromethane, THM	10.2	µg/L	102	0.051	0.5
LCS	cis-1,3-dichloropropene	10	µg/L	100	0.07	0.5
LCS	Toluene	10.2	µg/L	102	0.118	0.5
LCS	trans-1,3-Dichloropropene	10.3	µg/L	103	0.213	0.5
LCS	1,1,2-Trichloroethane	10	µg/L	100	0.052	0.5
LCS	Tetrachloroethylene	10.4	µg/L	104	0.114	0.5
LCS	1,3-Dichloropropane	9.72	µg/L	97	0.082	0.5
LCS	Dibromochloromethane, THM	11.3	µg/L	113	0.065	0.5
LCS	1,2-Dibromoethane	10.2	µg/L	102	0.114	0.5
LCS	Chlorobenzene	9.89	µg/L	98	0.185	0.5
LCS	1,1,1,2-Tetrachloroethane	10.6	µg/L	106	0.232	0.5
LCS	Ethylbenzene	10.3	µg/L	103	0.05	0.5
LCS	m,p-Xylene	21.8	µg/L	109	0.151	0.5
LCS	o-Xylene	10.6	µg/L	106	0.076	0.5
LCS	Styrene	10.5	µg/L	105	0.053	0.5
LCS	Bromoform, THM	11.8	µg/L	118	0.068	0.5
LCS	Isopropylbenzene	10.8	µg/L	108	0.073	0.5
LCS	1,1,2,2-Tetrachloroethane	10.4	µg/L	104	0.066	0.5
LCS	Bromobenzene	9.96	µg/L	99	0.062	0.5
LCS	1,2,3-Trichloropropane	10.4	µg/L	104	0.05	0.5
LCS	n-Propylbenzene	10.7	µg/L	107	0.104	0.5
LCS	2-Chlorotoluene	10.4	µg/L	104	0.078	0.5
LCS	1,3,5-Trimethylbenzene	10.8	µg/L	108	0.097	0.5
LCS	4-Chlorotoluene	10.5	µg/L	105	0.094	0.5
LCS	tert-Butylbenzene	10.5	µg/L	105	0.078	0.5
LCS	1,2,4-Trimethylbenzene	10.7	µg/L	107	0.077	0.5
LCS	sec-Butylbenzene	10.9	µg/L	109	0.097	0.5
LCS	p-Isopropyltoluene	11	µg/L	110	0.098	0.5
LCS	1,3-Dichlorobenzene	10.5	µg/L	105	0.199	0.5
LCS	1,4-Dichlorobenzene	10.3	µg/L	103	0.082	0.5
LCS	n-Butylbenzene	10.8	µg/L	108	0.109	0.5
LCS	1,2-Dichlorobenzene	10.2	µg/L	102	0.066	0.5
LCS	1,2-Dibromo-3-chloropropane	11.2	µg/L	112	0.134	0.5

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	1,2,4-Trichlorobenzene	10	µg/L	100		0.084	0.5	
LCS	Hexachlorobutadiene	11	µg/L	110		0.107	0.5	
LCS	Naphthalene	10.7	µg/L	107		0.123	0.5	
LCS	1,2,3-Trichlorobenzene	10.6	µg/L	106		0.084	0.5	
Internal Standard	LCS TBA-d9 (IS)	100	µg/L	100				
Internal Standard	LCS Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	LCS p-Bromofluorobenzene (Surr.)	0.95	µg/L	95				
Surrogate(s)	LCS 1,2-Dichlorobenzene d- (Surr.)	1.05	µg/L	105				
QC1963834-05								
LCS	tert Butyl Alcohol (TBA)	87	µg/L	87	3	0.664	2	Splt# QC1963834-04 (89.7µg/L)
LCS	Dichlorodifluoromethane (F-12)	8.85	µg/L	88	2	0.079	0.5	Splt# QC1963834-04 (9.11µg/L)
LCS	Chloromethane	9.35	µg/L	93	0	0.089	0.5	Splt# QC1963834-04 (9.35µg/L)
LCS	Vinyl chloride	9.56	µg/L	95	0	0.1	0.5	Splt# QC1963834-04 (9.58µg/L)
LCS	Bromomethane	8.34	µg/L	83	0	0.158	0.5	Splt# QC1963834-04 (8.33µg/L)
LCS	Chloroethane	9.59	µg/L	95	2	0.201	0.5	Splt# QC1963834-04 (9.4µg/L)
LCS	Trichlorofluoromethane (F-11)	9.97	µg/L	99	0	0.052	0.5	Splt# QC1963834-04 (9.98µg/L)
LCS	1,1-Dichloroethylene	9.63	µg/L	96	1	0.075	0.5	Splt# QC1963834-04 (9.44µg/L)
LCS	Methylene chloride	9.78	µg/L	97	0	0.058	0.5	Splt# QC1963834-04 (9.75µg/L)
LCS	1,1,2-Trichloro-1,2,2-trifluoroethane	10	µg/L	100	0	0.114	0.5	Splt# QC1963834-04 (10.1µg/L)
LCS	trans-1,2-Dichloroethylene	9.84	µg/L	98	0	0.099	0.5	Splt# QC1963834-04 (9.82µg/L)
LCS	Methyl t-butyl ether	10.1	µg/L	101	2	0.106	3	Splt# QC1963834-04 (10.4µg/L)
LCS	1,1-Dichloroethane	9.79	µg/L	97	0	0.192	0.5	Splt# QC1963834-04 (9.74µg/L)
LCS	Diisopropyl ether	9.31	µg/L	93	1	0.192	0.5	Splt# QC1963834-04 (9.43µg/L)
LCS	cis-1,2-dichloroethylene	10	µg/L	100	0	0.111	0.5	Splt# QC1963834-04 (9.96µg/L)
LCS	2,2-Dichloropropane	12.2	µg/L	122	1	0.083	0.5	Splt# QC1963834-04 (12.4µg/L)
LCS	Bromochloromethane	10	µg/L	100	1	0.065	0.5	Splt# QC1963834-04 (9.89µg/L)
LCS	Chloroform, THM	9.8	µg/L	98	1	0.058	0.5	Splt# QC1963834-04 (9.65µg/L)
LCS	Ethyl tert-Butyl Ether	9.65	µg/L	96	0	0.123	0.5	Splt# QC1963834-04 (9.71µg/L)
LCS	1,1,1-Trichloroethane	10.3	µg/L	103	0	0.179	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	Carbon tetrachloride	10.6	µg/L	106	0	0.066	0.5	Splt# QC1963834-04 (10.7µg/L)
LCS	1,1-Dichloropropene	9.61	µg/L	96	0	0.058	0.5	Splt# QC1963834-04 (9.68µg/L)
LCS	Benzene	9.84	µg/L	98	0	0.061	0.5	Splt# QC1963834-04 (9.86µg/L)
LCS	1,2-Dichloroethane	9.48	µg/L	94	0	0.115	0.5	Splt# QC1963834-04 (9.51µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	tert-Methyl Amyl Ether (TAME)	10.1	µg/L	101	0	0.155	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	Trichloroethylene	9.32	µg/L	93	11	0.093	0.5	Splt# QC1963834-04 (10.5µg/L)
LCS	1,2-Dichloropropane	9.39	µg/L	93	1	0.073	0.5	Splt# QC1963834-04 (9.55µg/L)
LCS	Dibromomethane	10.6	µg/L	106	1	0.055	0.5	Splt# QC1963834-04 (10.4µg/L)
LCS	Bromodichloromethane, THM	9.98	µg/L	99	1	0.051	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	cis-1,3-dichloropropene	9.82	µg/L	98	2	0.07	0.5	Splt# QC1963834-04 (10µg/L)
LCS	Toluene	10	µg/L	100	1	0.118	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	trans-1,3-Dichloropropene	10.2	µg/L	102	0	0.213	0.5	Splt# QC1963834-04 (10.3µg/L)
LCS	1,1,2-Trichloroethane	9.95	µg/L	99	0	0.052	0.5	Splt# QC1963834-04 (10µg/L)
LCS	Tetrachloroethylene	10.4	µg/L	104	0	0.114	0.5	Splt# QC1963834-04 (10.4µg/L)
LCS	1,3-Dichloropropane	9.74	µg/L	97	0	0.082	0.5	Splt# QC1963834-04 (9.72µg/L)
LCS	Dibromochloromethane, THM	11.2	µg/L	112	0	0.065	0.5	Splt# QC1963834-04 (11.3µg/L)
LCS	1,2-Dibromoethane	10.1	µg/L	101	0	0.114	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	Chlorobenzene	9.79	µg/L	97	1	0.185	0.5	Splt# QC1963834-04 (9.89µg/L)
LCS	1,1,1,2-Tetrachloroethane	10.4	µg/L	104	1	0.232	0.5	Splt# QC1963834-04 (10.6µg/L)
LCS	Ethylbenzene	10.3	µg/L	103	0	0.05	0.5	Splt# QC1963834-04 (10.3µg/L)
LCS	m,p-Xylene	21.8	µg/L	109	0	0.151	0.5	Splt# QC1963834-04 (21.8µg/L)
LCS	o-Xylene	10.6	µg/L	106	0	0.076	0.5	Splt# QC1963834-04 (10.6µg/L)
LCS	Styrene	10.6	µg/L	106	0	0.053	0.5	Splt# QC1963834-04 (10.5µg/L)
LCS	Bromoform, THM	11.8	µg/L	118	0	0.068	0.5	Splt# QC1963834-04 (11.8µg/L)
LCS	Isopropylbenzene	10.8	µg/L	108	0	0.073	0.5	Splt# QC1963834-04 (10.8µg/L)
LCS	1,1,2,2-Tetrachloroethane	10.3	µg/L	103	1	0.066	0.5	Splt# QC1963834-04 (10.4µg/L)
LCS	Bromobenzene	9.87	µg/L	98	0	0.062	0.5	Splt# QC1963834-04 (9.96µg/L)
LCS	1,2,3-Trichloropropane	10.3	µg/L	103	0	0.05	0.5	Splt# QC1963834-04 (10.4µg/L)
LCS	n-Propylbenzene	10.7	µg/L	107	0	0.104	0.5	Splt# QC1963834-04 (10.7µg/L)
LCS	2-Chlorotoluene	10.3	µg/L	103	0	0.078	0.5	Splt# QC1963834-04 (10.4µg/L)
LCS	1,3,5-Trimethylbenzene	10.8	µg/L	108	0	0.097	0.5	Splt# QC1963834-04 (10.8µg/L)
LCS	4-Chlorotoluene	10.6	µg/L	106	0	0.094	0.5	Splt# QC1963834-04 (10.5µg/L)
LCS	tert-Butylbenzene	10.4	µg/L	104	0	0.078	0.5	Splt# QC1963834-04 (10.5µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	1,2,4-Trimethylbenzene	10.8	µg/L	108	0	0.077	0.5	Splt# QC1963834-04 (10.7µg/L)
LCS	sec-Butylbenzene	10.8	µg/L	108	1	0.097	0.5	Splt# QC1963834-04 (10.9µg/L)
LCS	p-Isopropyltoluene	11	µg/L	110	0	0.098	0.5	Splt# QC1963834-04 (11µg/L)
LCS	1,3-Dichlorobenzene	10.5	µg/L	105	0	0.199	0.5	Splt# QC1963834-04 (10.5µg/L)
LCS	1,4-Dichlorobenzene	10.4	µg/L	104	0	0.082	0.5	Splt# QC1963834-04 (10.3µg/L)
LCS	n-Butylbenzene	10.8	µg/L	108	0	0.109	0.5	Splt# QC1963834-04 (10.8µg/L)
LCS	1,2-Dichlorobenzene	10.3	µg/L	103	0	0.066	0.5	Splt# QC1963834-04 (10.2µg/L)
LCS	1,2-Dibromo-3-chloropropane	11.1	µg/L	111	1	0.134	0.5	Splt# QC1963834-04 (11.2µg/L)
LCS	1,2,4-Trichlorobenzene	10	µg/L	100	0	0.084	0.5	Splt# QC1963834-04 (10µg/L)
LCS	Hexachlorobutadiene	11	µg/L	110	0	0.107	0.5	Splt# QC1963834-04 (11µg/L)
LCS	Naphthalene	10.8	µg/L	108	0	0.123	0.5	Splt# QC1963834-04 (10.7µg/L)
LCS	1,2,3-Trichlorobenzene	10.7	µg/L	107	1	0.084	0.5	Splt# QC1963834-04 (10.6µg/L)
Internal Standard	LCS	TBA-d9 (IS)	100	µg/L	100	0		Splt# QC1963834-04 (100µg/L)
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100	0		Splt# QC1963834-04 (1µg/L)
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	1.03	µg/L	103	8		Splt# QC1963834-04 (0.95µg/L)
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.09	µg/L	109	3		Splt# QC1963834-04 (1.05µg/L)
QC1963834-06								
BLK	tert Butyl Alcohol (TBA)	<2	µg/L			0.664	2	
BLK	Dichlorodifluoromethane (F-12)	<0.5	µg/L			0.079	0.5	
BLK	Chloromethane	<0.5	µg/L			0.089	0.5	
BLK	Vinyl chloride	<0.5	µg/L			0.1	0.5	
BLK	Bromomethane	<0.5	µg/L			0.158	0.5	
BLK	Chloroethane	<0.5	µg/L			0.201	0.5	
BLK	Trichlorofluoromethane (F-11)	<0.5	µg/L			0.052	0.5	
BLK	1,1-Dichloroethylene	<0.5	µg/L			0.075	0.5	
BLK	Methylene chloride	<0.5	µg/L			0.058	0.5	
BLK	1,1,2-Trichloro-1,2,2-trifluoroethane	<0.5	µg/L			0.114	0.5	
BLK	trans-1,2-Dichloroethylene	<0.5	µg/L			0.099	0.5	
BLK	Methyl t-butyl ether	<3	µg/L			0.106	3	
BLK	1,1-Dichloroethane	<0.5	µg/L			0.192	0.5	
BLK	Diisopropyl ether	<0.5	µg/L			0.192	0.5	
BLK	cis-1,2-dichloroethylene	<0.5	µg/L			0.111	0.5	
BLK	2,2-Dichloropropane	<0.5	µg/L			0.083	0.5	
BLK	Bromochloromethane	<0.5	µg/L			0.065	0.5	
BLK	Chloroform, THM	<0.5	µg/L			0.058	0.5	
BLK	Ethyl tert-Butyl Ether	<0.5	µg/L			0.123	0.5	
BLK	1,1,1-Trichloroethane	<0.5	µg/L			0.179	0.5	
BLK	Carbon tetrachloride	<0.5	µg/L			0.066	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

BLK	1,1-Dichloropropene	<0.5	µg/L	0.058	0.5
BLK	Benzene	<0.5	µg/L	0.061	0.5
BLK	1,2-Dichloroethane	<0.5	µg/L	0.115	0.5
BLK	tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	0.155	0.5
BLK	Trichloroethylene	<0.5	µg/L	0.093	0.5
BLK	1,2-Dichloropropane	<0.5	µg/L	0.073	0.5
BLK	Dibromomethane	<0.5	µg/L	0.055	0.5
BLK	Bromodichloromethane, THM	<0.5	µg/L	0.051	0.5
BLK	cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5
BLK	Toluene	<0.5	µg/L	0.118	0.5
BLK	trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5
BLK	1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5
BLK	Tetrachloroethylene	<0.5	µg/L	0.114	0.5
BLK	1,3-Dichloropropane	<0.5	µg/L	0.082	0.5
BLK	Dibromochloromethane, THM	<0.5	µg/L	0.065	0.5
BLK	1,2-Dibromoethane	<0.5	µg/L	0.114	0.5
BLK	Chlorobenzene	<0.5	µg/L	0.185	0.5
BLK	1,1,1,2-Tetrachloroethane	<0.5	µg/L	0.232	0.5
BLK	Ethylbenzene	<0.5	µg/L	0.05	0.5
BLK	m,p-Xylene	<0.5	µg/L	0.151	0.5
BLK	o-Xylene	<0.5	µg/L	0.076	0.5
BLK	Styrene	<0.5	µg/L	0.053	0.5
BLK	Bromoform, THM	<0.5	µg/L	0.068	0.5
BLK	Isopropylbenzene	<0.5	µg/L	0.073	0.5
BLK	1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5
BLK	Bromobenzene	<0.5	µg/L	0.062	0.5
BLK	1,2,3-Trichloropropane	<0.5	µg/L	0.05	0.5
BLK	n-Propylbenzene	<0.5	µg/L	0.104	0.5
BLK	2-Chlorotoluene	<0.5	µg/L	0.078	0.5
BLK	1,3,5-Trimethylbenzene	<0.5	µg/L	0.097	0.5
BLK	4-Chlorotoluene	<0.5	µg/L	0.094	0.5
BLK	tert-Butylbenzene	<0.5	µg/L	0.078	0.5
BLK	1,2,4-Trimethylbenzene	<0.5	µg/L	0.077	0.5
BLK	sec-Butylbenzene	<0.5	µg/L	0.097	0.5
BLK	p-Isopropyltoluene	<0.5	µg/L	0.098	0.5
BLK	1,3-Dichlorobenzene	<0.5	µg/L	0.199	0.5
BLK	1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5
BLK	n-Butylbenzene	<0.5	µg/L	0.109	0.5
BLK	1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5
BLK	1,2-Dibromo-3-chloropropane	<0.5	µg/L	0.134	0.5
BLK	1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5
BLK	Hexachlorobutadiene	<0.5	µg/L	0.107	0.5
BLK	Naphthalene	<0.5	µg/L	0.123	0.5
BLK	1,2,3-Trichlorobenzene	<0.5	µg/L	0.084	0.5
Internal Standard	BLK	TBA-d9 (IS)	100	µg/L	100
Internal Standard	BLK	Fluorobenzene (IS)	1	µg/L	100
Surrogate(s)	BLK	p-Bromofluorobenzene (Surr.)	0.88	µg/L	88
Surrogate(s)	BLK	1,2-Dichlorobenzene d- (Surr.)	0.98	µg/L	98

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

QC1963834-07

DUP	tert Butyl Alcohol (TBA)	<2	µg/L	N/A	0.664	2	Splt# 1952434-01 (<2µg/L)
DUP	Dichlorodifluoromethane (F-12)	<0.5	µg/L	N/A	0.079	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Chloromethane	<0.5	µg/L		0.089	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Vinyl chloride	<0.5	µg/L		0.1	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Bromomethane	<0.5	µg/L		0.158	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Chloroethane	<0.5	µg/L		0.201	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Trichlorofluoromethane (F-11)	<0.5	µg/L		0.052	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1-Dichloroethylene	<0.5	µg/L	N/A	0.075	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Methylene chloride	<0.5	µg/L		0.058	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1,2-Trichloro-1,2,2-trifluoroeth	<0.5	µg/L		0.114	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	trans-1,2-Dichloroethylene	<0.5	µg/L		0.099	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Methyl t-butyl ether	<3	µg/L		0.106	3	Splt# 1952434-01 (<3µg/L)
DUP	1,1-Dichloroethane	<0.5	µg/L		0.192	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Diisopropyl ether	<0.5	µg/L	N/A	0.192	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	cis-1,2-dichloroethylene	<0.5	µg/L		0.111	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	2,2-Dichloropropane	<0.5	µg/L		0.083	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Bromochloromethane	<0.5	µg/L		0.065	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Chloroform, THM	<0.5	µg/L		0.058	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Ethyl tert-Butyl Ether	<0.5	µg/L		0.123	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1,1-Trichloroethane	<0.5	µg/L	N/A	0.179	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Carbon tetrachloride	<0.5	µg/L		0.066	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1-Dichloropropene	<0.5	µg/L		0.058	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Benzene	<0.5	µg/L	N/A	0.061	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,2-Dichloroethane	<0.5	µg/L		0.115	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	tert-Methyl Amyl Ether (TAME)	<0.5	µg/L	N/A	0.155	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Trichloroethylene	<0.5	µg/L		0.093	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,2-Dichloropropane	<0.5	µg/L		0.073	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Dibromomethane	<0.5	µg/L		0.055	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Bromodichloromethane, THM	<0.5	µg/L		0.051	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	cis-1,3-dichloropropene	<0.5	µg/L		0.07	0.5	Splt# 1952434-01 (<0.5µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

DUP	Compound	Concentration	Unit	Result	Concentration	Volume	Sample ID
DUP	Toluene	<0.5	µg/L		0.118	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	trans-1,3-Dichloropropene	<0.5	µg/L		0.213	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1,2-Trichloroethane	<0.5	µg/L		0.052	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Tetrachloroethylene	<0.5	µg/L	N/A	0.114	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,3-Dichloropropane	<0.5	µg/L		0.082	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Dibromochloromethane, THM	<0.5	µg/L		0.065	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,2-Dibromoethane	<0.5	µg/L		0.114	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Chlorobenzene	<0.5	µg/L		0.185	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1,1,2-Tetrachloroethane	<0.5	µg/L		0.232	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Ethylbenzene	<0.5	µg/L	N/A	0.05	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	m,p-Xylene	<0.5	µg/L	N/A	0.151	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	o-Xylene	<0.5	µg/L		0.076	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Styrene	<0.5	µg/L		0.053	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Bromoform, THM	<0.5	µg/L		0.068	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Isopropylbenzene	<0.5	µg/L		0.073	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,1,2,2-Tetrachloroethane	<0.5	µg/L		0.066	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	Bromobenzene	<0.5	µg/L	N/A	0.062	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,2,3-Trichloropropane	<0.5	µg/L		0.05	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	n-Propylbenzene	<0.5	µg/L	N/A	0.104	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	2-Chlorotoluene	<0.5	µg/L	N/A	0.078	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,3,5-Trimethylbenzene	<0.5	µg/L		0.097	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	4-Chlorotoluene	<0.5	µg/L	N/A	0.094	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	tert-Butylbenzene	<0.5	µg/L		0.078	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,2,4-Trimethylbenzene	<0.5	µg/L	N/A	0.077	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	sec-Butylbenzene	<0.5	µg/L	N/A	0.097	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	p-Isopropyltoluene	<0.5	µg/L	N/A	0.098	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,3-Dichlorobenzene	<0.5	µg/L	N/A	0.199	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	1,4-Dichlorobenzene	<0.5	µg/L	N/A	0.082	0.5	Splt# 1952434-01 (<0.5µg/L)
DUP	n-Butylbenzene	<0.5	µg/L	N/A	0.109	0.5	Splt# 1952434-01 (<0.5µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

DUP	1,2-Dichlorobenzene	<0.5	µg/L		0.066	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	1,2-Dibromo-3-chloropropane	<0.5	µg/L		0.134	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	1,2,4-Trichlorobenzene	<0.5	µg/L	N/A	0.084	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	Hexachlorobutadiene	<0.5	µg/L	N/A	0.107	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	Naphthalene	<0.5	µg/L	N/A	0.123	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	1,2,3-Trichlorobenzene	<0.5	µg/L	N/A	0.084	0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	1,3-Dichloropropene Total (cis+ tr<0.5		µg/L	N/A		0.5	Splt# 1952434-01		
							(<0.5µg/L)		
DUP	Xylene (total: p, m, o)	<0.5	µg/L	N/A		0.5	Splt# 1952434-01		
							(<0.5µg/L)		
Internal Standard	DUP	TBA-d9 (IS)	100	µg/L	100		Splt# 1952434-01		
							(100µg/L)		
Internal Standard	DUP	Fluorobenzene (IS)	1	µg/L	100		Splt# 1952434-01		
							(1µg/L)		
Surrogate(s)	DUP	p-Bromofluorobenzene (Surr.)	0.87	µg/L	87		Splt# 1952434-01		
							(0.87µg/L)		
Surrogate(s)	DUP	1,2-Dichlorobenzene d- (Surr.)	0.9	µg/L	90		Splt# 1952434-01		
							(0.96µg/L)		

QC list for Run#: 101905 and Test: MBO_524_VOC (EPA 524.2)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963887-01	MRL_CK	Tetrachloroethylene	0.5	µg/L	100				
Internal Standard	MRL_CK	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	MRL_CK	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	MRL_CK	p-Bromofluorobenzene (Surr.)	0.95	µg/L	95				
Surrogate(s)	MRL_CK	1,2-Dichlorobenzene d- (Surr.)	1.04	µg/L	104				
QC1963887-02	MRL_CK	m,p-Xylene	0.37	µg/L	92				
	MRL_CK	o-Xylene	0.18	µg/L	90				
Internal Standard	MRL_CK	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	MRL_CK	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	MRL_CK	p-Bromofluorobenzene (Surr.)	0.92	µg/L	92				
Surrogate(s)	MRL_CK	1,2-Dichlorobenzene d- (Surr.)	0.99	µg/L	99				
QC1963887-03	CCV	Tetrachloroethylene	5.48	µg/L	110		0.114	0.5	
Internal Standard	CCV	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	CCV	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	CCV	p-Bromofluorobenzene (Surr.)	1.06	µg/L	106				
Surrogate(s)	CCV	1,2-Dichlorobenzene d- (Surr.)	1.07	µg/L	107				
QC1963887-04	LCS	Tetrachloroethylene	10	µg/L	100		0.114	0.5	
Internal Standard	LCS	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	1.02	µg/L	102				
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.11	µg/L	111				
QC1963887-05									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Method	Analyte	Result	Units	100	1	0.114	0.5	Notes
	LCS	Tetrachloroethylene	10.2	µg/L	102	1	0.114	0.5	Splt# QC1963887-04 (10µg/L)
Internal Standard	LCS	TBA-d9 (IS)	100	µg/L	100	0			Splt# QC1963887-04 (100µg/L)
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100	0			Splt# QC1963887-04 (1µg/L)
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	0.99	µg/L	99	2			Splt# QC1963887-04 (1.02µg/L)
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.09	µg/L	109	1			Splt# QC1963887-04 (1.11µg/L)
QC1963887-06									
	BLK	Tetrachloroethylene	<0.5	µg/L			0.114	0.5	
Internal Standard	BLK	TBA-d9 (IS)	100	µg/L	100				
Internal Standard	BLK	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	BLK	p-Bromofluorobenzene (Surr.)	0.89	µg/L	89				
Surrogate(s)	BLK	1,2-Dichlorobenzene d- (Surr.)	0.96	µg/L	96				
QC1963887-07									
	DUP	Tetrachloroethylene	72.7	µg/L		22	0.114	0.5	Splt# 1952434-02B (57.8µg/L) RPD outside of control limit, qualify due to not enough sample for re-analysis.
Internal Standard	DUP	TBA-d9 (IS)	100	µg/L	100				Splt# 1952434-02B (100µg/L)
Internal Standard	DUP	Fluorobenzene (IS)	1	µg/L	100				Splt# 1952434-02B (1µg/L)
Surrogate(s)	DUP	p-Bromofluorobenzene (Surr.)	0.92	µg/L	92				Splt# 1952434-02B (0.85µg/L)
Surrogate(s)	DUP	1,2-Dichlorobenzene d- (Surr.)	1	µg/L	100				Splt# 1952434-02B (0.88µg/L)

QC list for Run#: 102131 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1964009-01									
	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1964009-02									
	LCS	Calcium, Ca	19.8	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	19.6	mg/L	98		0.035	0.2	
	LCS	Sodium, Na	21.1	mg/L	105		0.013	1	
QC1964009-03									
	DUP	Calcium, Ca	59.7	mg/L		1	0.01	1	Splt# 1952430-01 (58.7mg/L)
	DUP	Magnesium, Mg	59.5	mg/L		3	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
	DUP	Potassium, K	1.25	mg/L		2	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
	DUP	Sodium, Na	71.7	mg/L		1	0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-04									
	SPK	Calcium, Ca	79.1	mg/L	102		0.01	1	Splt# 1952430-01 (58.7mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952434

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/07/2019

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Result	Method	Concentration	Volume	Notes
SPK	Magnesium, Mg	79.6	mg/L	89		0.024	0.2	Splt# 1952430-01 (61.7mg/L)
	Potassium, K	20.6	mg/L	96		0.035	0.2	Splt# 1952430-01 (1.28mg/L)
	Sodium, Na	91.4	mg/L	92		0.013	1	Splt# 1952430-01 (72.9mg/L)
QC1964009-05								
SPKD	Calcium, Ca	80	mg/L	107	1	0.01	1	Splt# 1952430-01 (58.7mg/L)
SPKD	Magnesium, Mg	81.9	mg/L	101	2	0.024	0.2	Splt# 1952430-01 (61.7mg/L)
SPKD	Potassium, K	20.3	mg/L	95	1	0.035	0.2	Splt# 1952430-01 (1.28mg/L)
SPKD	Sodium, Na	93	mg/L	101	1	0.013	1	Splt# 1952430-01 (72.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952435

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_Daly City

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

Lab Sample#: 1952435-01 **Sample Source:** WSB_JS **External ID:**

Date Collected: 4/10/19 10:00 am **Date Received:** 4/10/19 1:55 pm **Sample Matrix:** Aqueous **Location Desc:** JUNIPER SERRA WELL

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	25.6	mg/L	0.5	2.5	04/10/2019	100054 MAWALLACE
Nitrate as N	8.49	mg/L	0.17	0.35	04/10/2019	100054 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	22.1	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	23.1	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	1.37	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	36.8	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	111	mg/L	0.593	3	04/10/2019	100119 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	50	mg/L		3	04/10/2019	100121 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	488	µmhos/cm		1	04/10/2019	100125 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	158	mg/L	0.474	3	04/10/2019	100122 JCOLOMA
MBP_PH(SM 4500-H+ B)						
pH	8.3	pH			04/10/2019	100126 JCOLOMA
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	281	mg/L	13.2	20	04/12/2019	100171 ALEE

Lab Sample#: 1952435-02 **Sample Source:** WSB_DC06_JEFF **External ID:**

Date Collected: 4/10/19 10:40 am **Date Received:** 4/10/19 1:55 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	11.6	mg/L	0.5	2.5	04/10/2019	100054 MAWALLACE
Nitrate as N	2.39	mg/L	0.17	0.35	04/10/2019	100054 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	20.9	mg/L	0.01	1	04/16/2019	100333 BTRINH
Magnesium, Mg	20.8	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
Potassium, K	1.62	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
Sodium, Na	36.7	mg/L	0.013	1	04/16/2019	100333 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	108	mg/L	0.593	3	04/10/2019	100119 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	62.3	mg/L		3	04/10/2019	100121 JCOLOMA
MBP_COND(SM 2510 B)						
Specific Conductance	455	µmhos/cm		1	04/10/2019	100125 JCOLOMA
MBP_HARDNESS_T(SM 2340 C)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952435

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_Daly City

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>Hardness, Total, as CaCO3</i>	139	mg/L	0.474	3	04/10/2019	100122 JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	8.17	pH			04/10/2019	100126 JCOLOMA
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	256	mg/L	13.2	20	04/12/2019	100171 ALEE
Lab Sample#: 1952435-05 Sample Source: WSB_DC_DUP External ID:						
Date Collected: 4/10/19 10:40 am Date Received: 4/10/19 1:55 pm Sample Matrix: Aqueous Location Desc: DC_06 JEFFERSON WELL						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	11.7	mg/L	0.5	2.5	04/10/2019	100054 MAWALLACE
<i>Nitrate as N</i>	2.39	mg/L	0.17	0.35	04/10/2019	100054 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	21.2	mg/L	0.01	1	04/16/2019	100333 BTRINH
<i>Magnesium, Mg</i>	21	mg/L	0.024	0.2	04/16/2019	100333 BTRINH
<i>Potassium, K</i>	1.6	mg/L	0.035	0.2	04/16/2019	100333 BTRINH
<i>Sodium, Na</i>	36.5	mg/L	0.013	1	04/16/2019	100333 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	108	mg/L	0.593	3	04/10/2019	100119 JCOLOMA
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	62.6	mg/L		3	04/10/2019	100121 JCOLOMA
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	451	µmhos/cm		1	04/10/2019	100125 JCOLOMA
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	138	mg/L	0.474	3	04/10/2019	100122 JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	8.16	pH			04/10/2019	100126 JCOLOMA
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	232	mg/L	13.2	20	04/12/2019	100171 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952435

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_Daly City

Sampling Team: Field

QC list for Run#: 100054 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962722-01	MRL_CK	Sulfate	0.541	mg/L	108				
	MRL_CK	Nitrate as N	0.0724	mg/L	107				
QC1962722-02	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.322	mg/L	94				
QC1962722-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962722-04	LCS	Sulfate	4.84	mg/L	96				
	LCS	Nitrate as N	0.648	mg/L	95				
QC1962722-05	SPK	Sulfate	17.4	mg/L	107				Splt# 1952667-01 (14.8mg/L)
	SPK	Nitrate as N	0.406	mg/L	93				Splt# 1952667-01 (0.0907mg/L)
QC1962722-06	SPKD	Sulfate	17.4	mg/L	104	0			Splt# 1952667-01 (14.8mg/L)
	SPKD	Nitrate as N	0.4	mg/L	92	1			Splt# 1952667-01 (0.0907mg/L)
QC1962722-07	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.332	mg/L	97				
QC1962722-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1962722-09	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.333	mg/L	98				
QC1962722-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 100119 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962754-03	DUP	Alkalinity	10.5	mg/L		4	0.593	3	Splt# 1952164-01 (10.1mg/L)
QC1962754-04	LCS	Alkalinity	40.3	mg/L	101			3	

QC list for Run#: 100121 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962755-03	DUP	Chloride	<3	mg/L		N/A	1.16	3	Splt# 1952164-01 (<3mg/L)
QC1962755-04	LCS	Chloride	39.7	mg/L	99			3	

QC list for Run#: 100122 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
----------	------	---------	--------	-------	-------	-----	-----	-----	---------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952435

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/08/2019

Routine: WSB_S2019_Daly City

Sampling Team: Field

QC1962756-01	BLK	Hardness, Total, as CaCO3	<3	mg/L		0.474	3		
QC1962756-03	DUP	Hardness, Total, as CaCO3	37.3	mg/L		0	0.474	3	Splt# 1952165-07 (36.9mg/L)
QC1962756-04	LCS	Hardness, Total, as CaCO3	39.1	mg/L	97			3	

QC list for Run#: 100125 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962758-01	MRL_CK	Specific Conductance	11	µmhos/cm	110				
QC1962758-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1962758-03	DUP	Specific Conductance	489	µmhos/cm		0		1	Splt# 1952435-01 (488µmhos/cm)
QC1962758-05	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 100126 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962760-01	ICV	pH	9.04	pH	100				
QC1962760-02	DUP	pH	8.25	pH		0			Splt# 1952435-01 (8.3pH)
QC1962760-03	CCV	pH	10	pH	100				
QC1962760-04	CCV	pH	10	pH	100				

QC list for Run#: 100171 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962792-01	DUP	Total Dissolved Solids	264	mg/L		12	13.2	20	Splt# 1952416-03 (299mg/L)
QC1962792-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 100333 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1962846-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1962846-02	LCS	Calcium, Ca	20.1	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	20.6	mg/L	103		0.024	0.2	
	LCS	Potassium, K	18.4	mg/L	91		0.035	0.2	
	LCS	Sodium, Na	21.4	mg/L	107		0.013	1	
QC1962846-03	DUP	Calcium, Ca	59.6	mg/L		2	0.01	1	Splt# 1952265-01 (58.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952435

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_Daly City

Scheduled Sample Date: 04/08/2019

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	DO	pH	Flow	Notes	
DUP	Magnesium, Mg	38.7	mg/L	0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)		
DUP	Potassium, K	2.71	mg/L	0	0.035	0.2	Splt# 1952265-01 (2.72mg/L)		
DUP	Sodium, Na	53.6	mg/L	4	0.013	1	Splt# 1952265-01 (56.2mg/L)		
QC1962846-04	SPK	Calcium, Ca	80.4	mg/L	112	0.01	1	Splt# 1952265-01 (58.1mg/L)	
SPK	Magnesium, Mg	60.1	mg/L	107	0.024	0.2	Splt# 1952265-01 (38.8mg/L)		
SPK	Potassium, K	20.9	mg/L	90	0.035	0.2	Splt# 1952265-01 (2.72mg/L)		
SPK	Sodium, Na	72.1	mg/L	79	0.013	1	Splt# 1952265-01 (56.2mg/L)		
QC1962846-05	SPKD	Calcium, Ca	80.6	mg/L	113	0	0.01	1	Splt# 1952265-01 (58.1mg/L)
SPKD	Magnesium, Mg	59.8	mg/L	105	0	0.024	0.2	Splt# 1952265-01 (38.8mg/L)	
SPKD	Potassium, K	21.6	mg/L	94	3	0.035	0.2	Splt# 1952265-01 (2.72mg/L)	
SPKD	Sodium, Na	74.2	mg/L	89	2	0.013	1	Splt# 1952265-01 (56.2mg/L)	
QC1962846-06	DUP	Calcium, Ca	59.8	mg/L	2	0.01	1	Splt# 1952265-05 (61mg/L)	
DUP	Magnesium, Mg	38.5	mg/L	0	0.024	0.2	Splt# 1952265-05 (38.5mg/L)		
DUP	Potassium, K	2.83	mg/L	2	0.035	0.2	Splt# 1952265-05 (2.74mg/L)		
DUP	Sodium, Na	58.1	mg/L	7	0.013	1	Splt# 1952265-05 (53.7mg/L)		
QC1962846-07	SPK	Calcium, Ca	80.7	mg/L	98	0.01	1	Splt# 1952265-05 (61mg/L)	
SPK	Magnesium, Mg	59	mg/L	103	0.024	0.2	Splt# 1952265-05 (38.5mg/L)		
SPK	Potassium, K	21.4	mg/L	93	0.035	0.2	Splt# 1952265-05 (2.74mg/L)		
SPK	Sodium, Na	73.8	mg/L	100	0.013	1	Splt# 1952265-05 (53.7mg/L)		
QC1962846-08	SPKD	Calcium, Ca	80	mg/L	95	0	0.01	1	Splt# 1952265-05 (61mg/L)
SPKD	Magnesium, Mg	58.3	mg/L	99	1	0.024	0.2	Splt# 1952265-05 (38.5mg/L)	
SPKD	Potassium, K	21.3	mg/L	92	0	0.035	0.2	Splt# 1952265-05 (2.74mg/L)	
SPKD	Sodium, Na	73.2	mg/L	97	0	0.013	1	Splt# 1952265-05 (53.7mg/L)	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Lab Sample#: 1953274-01 **Sample Source:** WSB_CM-23-230 **External ID:**

Date Collected: 5/8/19 10:24 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	46.3	mg/L	1	5	05/08/2019	101562 MAWALLACE	
Nitrate as N	11	mg/L	0.34	0.7	05/08/2019	101562 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	66.2	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	57.1	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.61	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	59.7	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	326	mg/L	1.19	6	05/08/2019	101554 JCOLOMA	DIL FACTOR 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	43.2	mg/L		3	05/08/2019	101555 JCOLOMA	DIL FACTOR 2
MBP_COND(SM 2510 B)							
Specific Conductance	1010	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	395	mg/L	0.948	6	05/08/2019	101553 JCOLOMA	DIL FACTOR 2
MBP_PH(SM 4500-H+ B)							
pH	7.23	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	564	mg/L	13.2	20	05/09/2019	101545 ALEE	>MCL

Lab Sample#: 1953274-02 **Sample Source:** WSB_CM-23-440 **External ID:**

Date Collected: 5/8/19 10:38 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	16.6	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE	
Nitrate as N	3.16	mg/L	0.17	0.35	05/08/2019	101562 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	27.4	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	27.4	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.55	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	40.5	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	149	mg/L	0.593	3	05/08/2019	101554 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	60.4	mg/L		3	05/08/2019	101555 JCOLOMA	
MBP_COND(SM 2510 B)							
Specific Conductance	547	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>Hardness, Total, as CaCO3</i>	185	mg/L	0.474	3	05/08/2019	101553 JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.67	pH			05/08/2019	101540 CCHAPMAN
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	281	mg/L	13.2	20	05/09/2019	101545 ALEE

Lab Sample#: 1953274-03 **Sample Source:** WSB_CM-23-515 **External ID:**

Date Collected: 5/8/19 9:36 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	05/08/2019	101562 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	38.9	mg/L	0.01	1	05/13/2019	101726 BTRINH
<i>Magnesium, Mg</i>	27	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
<i>Potassium, K</i>	2.51	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
<i>Sodium, Na</i>	51.9	mg/L	0.013	1	05/13/2019	101726 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	184	mg/L	0.593	3	05/08/2019	101554 JCOLOMA
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	70.8	mg/L		3	05/08/2019	101555 JCOLOMA
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	653	µmhos/cm		1	05/08/2019	101539 CCHAPMAN
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	208	mg/L	0.474	3	05/08/2019	101553 JCOLOMA
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.44	pH			05/08/2019	101540 CCHAPMAN
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	335	mg/L	13.2	20	05/09/2019	101545 ALEE

Lab Sample#: 1953274-03A **Sample Source:** WSB_CM-23-515 **External ID:**

Date Collected: 5/8/19 9:36 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	37.8	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE

Lab Sample#: 1953274-04 **Sample Source:** WSB_CM-23-600 **External ID:**

Date Collected: 5/8/19 9:52 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	43.7	mg/L	2	10	05/08/2019	101562 MAWALLACE
<i>Nitrate as N</i>	22.5	mg/L	0.68	1.4	05/08/2019	101562 MAWALLACE >MCL
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	44.8	mg/L	0.01	1	05/13/2019	101726 BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>Magnesium, Mg</i>	45.1	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
<i>Potassium, K</i>	1.85	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
<i>Sodium, Na</i>	51.7	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
<i>Alkalinity</i>	176	mg/L	1.19	6	05/08/2019	101554 JCOLOMA	DIL FACTOR 2
MBP_CHLORIDE(SM 4500-CL- D)							
<i>Chloride</i>	37.8	mg/L		3	05/08/2019	101555 JCOLOMA	DIL FACTOR 2
MBP_COND(SM 2510 B)							
<i>Specific Conductance</i>	824	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C)							
<i>Hardness, Total, as CaCO3</i>	292	mg/L	0.948	6	05/08/2019	101553 JCOLOMA	DIL FACTOR 2
MBP_PH(SM 4500-H+ B)							
<i>pH</i>	7.2	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>	476	mg/L	13.2	20	05/09/2019	101545 ALEE	

Lab Sample#: 1953274-05 **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 5/8/19 9:49 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:** WSB_CM-23-515

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	05/08/2019	101562 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
<i>Calcium, Ca</i>	39.9	mg/L	0.01	1	05/13/2019	101726 BTRINH
<i>Magnesium, Mg</i>	26.6	mg/L	0.024	0.2	05/13/2019	101726 BTRINH
<i>Potassium, K</i>	2.67	mg/L	0.035	0.2	05/13/2019	101726 BTRINH
<i>Sodium, Na</i>	51.9	mg/L	0.013	1	05/13/2019	101726 BTRINH
MBP_ALK(SM 2320 B)						
<i>Alkalinity</i>	183	mg/L	0.593	3	05/08/2019	101554 JCOLOMA
MBP_CHLORIDE(SM 4500-CL- D)						
<i>Chloride</i>	70.8	mg/L		3	05/08/2019	101555 JCOLOMA
MBP_COND(SM 2510 B)						
<i>Specific Conductance</i>	662	µmhos/cm		1	05/08/2019	101539 CCHAPMAN
MBP_HARDNESS_T(SM 2340 C)						
<i>Hardness, Total, as CaCO3</i>	212	mg/L	0.474	3	05/08/2019	101553 JCOLOMA
MBP_PH(SM 4500-H+ B)						
<i>pH</i>	7.36	pH			05/08/2019	101540 CCHAPMAN
MBP_TDS(SM 2540 C)						
<i>Total Dissolved Solids</i>	344	mg/L	13.2	20	05/09/2019	101545 ALEE

Lab Sample#: 1953274-05A **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 5/8/19 9:49 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:** WSB_CM-23-515

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
---------------------	---------------	-------------	------------	------------	----------------------	----------------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

MBI_IC_ANIONS_A(EPA 300.0 (A))

Sulfate

38.8

mg/L

0.5

2.5

05/08/2019

101562 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 101539 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963647-01	MRL_CK	Specific Conductance	11	µmhos/cm	110				
QC1963647-02	CCV	Specific Conductance	98	µmhos/cm	98			1	
QC1963647-03	DUP	Specific Conductance	1010	µmhos/cm		0		1	Splt# 1953274-01 (1010µmhos/cm)
QC1963647-04	DUP	Specific Conductance	26	µmhos/cm		0		1	Splt# 1953297-01 (26µmhos/cm)
QC1963647-05	LCS	Specific Conductance	146	µmhos/cm	99			1	

QC list for Run#: 101540 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963648-01	ICV	pH	9.07	pH	100				
QC1963648-02	DUP	pH	9.2	pH		0			Splt# 1953297-01 (9.19pH)
QC1963648-03	CCV	pH	10.1	pH	100				
QC1963648-04	CCV	pH	10.1	pH	100				

QC list for Run#: 101545 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963651-01	DUP	Total Dissolved Solids	339	mg/L		1	13.2	20	Splt# 1953274-05 (344mg/L)
QC1963651-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	

QC list for Run#: 101553 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963658-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1963658-03	DUP	Hardness, Total, as CaCO3	163	mg/L		1	0.474	3	Splt# 1952265-03 (161mg/L)
QC1963658-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	102			3	

QC list for Run#: 101554 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963659-03	DUP	Alkalinity	140	mg/L		0	0.593	3	Splt# 1952265-03 (140mg/L)
QC1963659-04	LCS	Alkalinity	41	mg/L	103			3	

QC list for Run#: 101555 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963660-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

DUP	Chloride	61.8	mg/L	0	1.16	3	Splt# 1952265-03 (61.9mg/L)
QC1963660-04	LCS	Chloride	39.5	mg/L	98	3	

QC list for Run#: 101562 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963666-01	MRL_CK	Sulfate	0.462	mg/L	92				
	MRL_CK	Nitrate as N	0.0643	mg/L	94				
QC1963666-02	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.321	mg/L	94				
QC1963666-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963666-04	LCS	Sulfate	4.9	mg/L	98				
	LCS	Nitrate as N	0.655	mg/L	96				
QC1963666-05	SPK	Sulfate	4.11	mg/L	102				Splt# 1953521-01 (1.58mg/L)
	SPK	Nitrate as N	0.374	mg/L	111				Splt# 1953521-01 (<0.07mg/L)
QC1963666-06	SPKD	Sulfate	3.91	mg/L	94	4			Splt# 1953521-01 (1.58mg/L)
	SPKD	Nitrate as N	0.35	mg/L	104	6			Splt# 1953521-01 (<0.07mg/L)
QC1963666-07	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1963666-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1963666-09	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.325	mg/L	96				
QC1963666-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 101726 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1963775-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1963775-02	LCS	Calcium, Ca	20	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20	mg/L	100		0.024	0.2	
	LCS	Potassium, K	17.7	mg/L	88		0.035	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Conductivity	Turbidity	Other
LCS	Sodium, Na	21.1	mg/L	105	0.013	1	
QC1963775-03	DUP	Calcium, Ca	36.8	mg/L	1	0.01	1 Splt# 1952431-01 (36.4mg/L)
DUP	Magnesium, Mg	31.1	mg/L	0	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
DUP	Potassium, K	1.5	mg/L	0	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
DUP	Sodium, Na	60.6	mg/L	2	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-04	SPK	Calcium, Ca	57	mg/L	103	0.01	1 Splt# 1952431-01 (36.4mg/L)
SPK	Magnesium, Mg	50.4	mg/L	95	0.024	0.2	Splt# 1952431-01 (31.2mg/L)
SPK	Potassium, K	19	mg/L	87	0.035	0.2	Splt# 1952431-01 (1.5mg/L)
SPK	Sodium, Na	79.5	mg/L	87	0.013	1	Splt# 1952431-01 (62mg/L)
QC1963775-05	SPKD	Calcium, Ca	56.6	mg/L	101	0	0.01 1 Splt# 1952431-01 (36.4mg/L)
SPKD	Magnesium, Mg	49.6	mg/L	91	1	0.024	0.2 Splt# 1952431-01 (31.2mg/L)
SPKD	Potassium, K	18.1	mg/L	83	4	0.035	0.2 Splt# 1952431-01 (1.5mg/L)
SPKD	Sodium, Na	78.3	mg/L	81	1	0.013	1 Splt# 1952431-01 (62mg/L)
QC1963775-06	DUP	Calcium, Ca	36.7	mg/L	2	0.01	1 Splt# 1952431-02 (36mg/L)
DUP	Magnesium, Mg	31.5	mg/L	1	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
DUP	Potassium, K	1.55	mg/L	2	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
DUP	Sodium, Na	61.6	mg/L	0	0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-07	SPK	Calcium, Ca	55.9	mg/L	99	0.01	1 Splt# 1952431-02 (36mg/L)
SPK	Magnesium, Mg	51.6	mg/L	103	0.024	0.2	Splt# 1952431-02 (31.1mg/L)
SPK	Potassium, K	18.2	mg/L	83	0.035	0.2	Splt# 1952431-02 (1.5mg/L)
SPK	Sodium, Na	83.3	mg/L	110	0.013	1	Splt# 1952431-02 (61.2mg/L)
QC1963775-08	SPKD	Calcium, Ca	56.9	mg/L	105	1	0.01 1 Splt# 1952431-02 (36mg/L)
SPKD	Magnesium, Mg	52.6	mg/L	108	1	0.024	0.2 Splt# 1952431-02 (31.1mg/L)
SPKD	Potassium, K	18.4	mg/L	84	1	0.035	0.2 Splt# 1952431-02 (1.5mg/L)
SPKD	Sodium, Na	83.8	mg/L	113	0	0.013	1 Splt# 1952431-02 (61.2mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Qualifiers Legend:

Flag

Code	Description
B	Analyte Detected in Blank
NFC	Not For Compliance. Method specification(s) not met.
T6	Sample was received at above 6°C
UJ	Analyzed, but not detected, the quantitation limit is an estimated quantity
V	Result in violation
U	Analyzed, but not detected
TIC	Tentatively Identified Compound
R	Data unusable
NS	Not Sampled
UD	Analyzed, but result is undetermined
E	Exceeds Calibration Range, to be used as minimum
J	The numerical value is an estimated quantity
EST	Estimated value
N	Not used in diversity analyses
NA	Not Analyzed
ND	No Data

RQualifier

Code	Description
>	Greater Than
<	Less Than
-	Negative
+	Positive
A	Bacti result, absent
P	Bacti result, present
I	Bacti result, Invalid value
DNQ	Detected, but Not Quantified
=	Equals

QC Type

Code	Description
BLK	Method Blank Sample
CAL	Calibration Sample
CCV	Continuing Calibration Verification Sample
DUP	Duplicate Sample
ICV	Initial Calibration Verification Sample
LCS	Laboratory Control Standard Sample
LCS D	Laboratory Control Standard Duplicate Sample
MRL CK	Method Reporting Level Check Sample
SPK	Matrix Spike Sample
SPK D	Matrix Spike Duplicate Sample

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Reported By: Megan Tran



Reported On: 6-Jun-2019

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

MILLBRAE 1449

Water Quality Laboratory

SEWPCP 1721

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/15/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1957599-01 Sample Source: WSB_SF10_LM3D External ID:

Date Collected: 10/15/19 12:00 p Date Received: 10/15/19 2:59 pm Sample Matrix: Aqueous Location Desc: SF#10 - LMMW3D

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	9.9	mg/L	0.1	0.5	10/15/2019	109447 JCOLOMA
Nitrate as N	<0.07	mg/L	0.034	0.07	10/15/2019	109447 JCOLOMA
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	27.9	mg/L	0.01	1	10/25/2019	109948 BTRINH
Magnesium, Mg	30.6	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
Potassium, K	2.05	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
Sodium, Na	47.9	mg/L	0.013	1	10/25/2019	109948 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	193	mg/L	0.593	3	10/15/2019	109482 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	69.6	mg/L		3	10/15/2019	109483 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	585	µmhos/cm		1	10/15/2019	109449 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	199	mg/L	0.474	3	10/15/2019	109484 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.62	pH			10/15/2019	109467 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	317	mg/L	13.2	20	10/17/2019	109459 PWARNER

Lab Sample#: 1957599-02 Sample Source: WSB_SF11_LM3S External ID:

Date Collected: 10/15/19 11:20 a Date Received: 10/15/19 2:59 pm Sample Matrix: Aqueous Location Desc: SF#11 - LMMW3S

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	8.14	mg/L	0.1	0.5	10/15/2019	109447 JCOLOMA
Nitrate as N	<0.07	mg/L	0.034	0.07	10/15/2019	109447 JCOLOMA
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	56.4	mg/L	0.01	1	10/25/2019	109948 BTRINH
Magnesium, Mg	60.8	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
Potassium, K	2.68	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
Sodium, Na	37.8	mg/L	0.013	1	10/25/2019	109948 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	372	mg/L	0.593	3	10/15/2019	109482 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	61.8	mg/L		3	10/15/2019	109483 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	867	µmhos/cm		1	10/15/2019	109449 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	391	mg/L	0.474	3	10/15/2019	109484 ALEE
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/15/2019

Sampling Team: Field

<i>pH</i>	7.22	<i>pH</i>			10/15/2019	109467 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	464	mg/L	13.2	20	10/17/2019	109459 PWARNER

Lab Sample#: 1957599-03 **Sample Source:** WSB_SF15_LM6D **External ID:**

Date Collected: 10/15/19 2:15 pm **Date Received:** 10/15/19 2:59 pm **Sample Matrix:** Aqueous **Location Desc:** SF#15 - LMMW6D

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	26.1	mg/L	0.5	2.5	10/15/2019	109447 JCOLOMA
<i>Nitrate as N</i>	4.97	mg/L	0.17	0.35	10/15/2019	109447 JCOLOMA
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	30.8	mg/L	0.01	1	10/25/2019	109948 BTRINH
<i>Magnesium, Mg</i>	31.3	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
<i>Potassium, K</i>	1.82	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
<i>Sodium, Na</i>	43.4	mg/L	0.013	1	10/25/2019	109948 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	174	mg/L	0.593	3	10/15/2019	109482 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	57.8	mg/L		3	10/15/2019	109483 ALEE
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	599	µmhos/cm		1	10/15/2019	109449 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	211	mg/L	0.474	3	10/15/2019	109484 ALEE
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.9	pH			10/15/2019	109467 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	328	mg/L	13.2	20	10/17/2019	109459 PWARNER

Lab Sample#: 1957599-04 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/15/19 12:00 pm **Date Received:** 10/15/19 2:59 pm **Sample Matrix:** Aqueous **Location Desc:** SF#10 - LMMW3D

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	9.87	mg/L	0.1	0.5	10/15/2019	109447 JCOLOMA
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	10/15/2019	109447 JCOLOMA
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	29	mg/L	0.01	1	10/25/2019	109948 BTRINH
<i>Magnesium, Mg</i>	30.4	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
<i>Potassium, K</i>	2.02	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
<i>Sodium, Na</i>	46.9	mg/L	0.013	1	10/25/2019	109948 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	191	mg/L	0.593	3	10/15/2019	109482 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	68.6	mg/L		3	10/15/2019	109483 ALEE
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	597	µmhos/cm		1	10/15/2019	109449 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/15/2019

Sampling Team: Field

<i>MBP_HARDNESS_T(SM 2340 C)</i>								
<i>Hardness, Total, as CaCO3</i>	202	mg/L	0.474	3	10/15/2019	109484	ALEE	
<i>MBP_PH(SM 4500-H+ B)</i>								
<i>pH</i>	7.62	pH			10/15/2019	109467	ALEE	
<i>MBP_TDS(SM 2540 C)</i>								
<i>Total Dissolved Solids</i>	315	mg/L	13.2	20	10/17/2019	109459	PWARNER	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/15/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 109447 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968569-02	CCV	Sulfate	2.42	mg/L	97				
	CCV	Nitrate as N	0.316	mg/L	93				
QC1968569-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968569-04	LCS	Sulfate	4.97	mg/L	99				
	LCS	Nitrate as N	0.651	mg/L	96				
QC1968569-05	SPK	Sulfate	6.95	mg/L	110				Splt# 1957754-01 (4.21mg/L)
	SPK	Nitrate as N	0.502	mg/L	105				Splt# 1957754-01 (0.148mg/L)
QC1968569-06	SPKD	Sulfate	6.96	mg/L	111	0			Splt# 1957754-01 (4.21mg/L)
	SPKD	Nitrate as N	0.5	mg/L	105	0			Splt# 1957754-01 (0.148mg/L)
QC1968569-07	CCV	Sulfate	2.44	mg/L	97				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1968569-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968569-09	CCV	Sulfate	2.44	mg/L	97				
	CCV	Nitrate as N	0.324	mg/L	95				
QC1968569-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968569-11	DUP	Sulfate	4.25	mg/L		0	0.1	0.5	Splt# 1957957-05 (4.22mg/L)
	DUP	Nitrate as N	0.151	mg/L		1	0.034	0.07	Splt# 1957957-05 (0.149mg/L)

QC list for Run#: 109449 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968571-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968571-03	DUP	Specific Conductance	92.4	µmhos/cm		0		1	Splt# 1957969-02 (92.8µmhos/cm)
QC1968571-04	DUP	Specific Conductance	92.3	µmhos/cm		0		1	Splt# 1957697-04 (92.8µmhos/cm)
QC1968571-05	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 109459 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
----------	------	---------	--------	-------	-------	-----	-----	-----	---------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/15/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968574-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968574-02	LCS	Total Dissolved Solids	81	mg/L	85		13.2	20	
QC1968574-03	DUP	Total Dissolved Solids	324	mg/L		1	13.2	20	Splt# 1957599-03 (328mg/L)

QC list for Run#: 109467 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968578-01	ICV	pH	9.09	pH	101				
QC1968578-02	DUP	pH	9.36	pH		0			Splt# 1957697-04 (9.36pH)
QC1968578-03	CCV	pH	10.1	pH	100				
QC1968578-04	CCV	pH	10.1	pH	100				
QC1968578-05	CAL	pH	10.1	pH	101				
QC1968578-06	CAL	pH	7.01	pH	100				
QC1968578-07	CAL	pH	4.01	pH	100				

QC list for Run#: 109482 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968585-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1968585-03	DUP	Alkalinity	25.4	mg/L		0	0.593	3	Splt# 1957697-04 (25.6mg/L)
QC1968585-04	LCS	Alkalinity	44.4	mg/L	111			3	

QC list for Run#: 109483 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968586-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968586-03	DUP	Chloride	7.97	mg/L		0	1.16	3	Splt# 1957697-04 (8.04mg/L)
QC1968586-04	LCS	Chloride	39.7	mg/L	99			3	

QC list for Run#: 109484 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968587-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1968587-03	DUP	Hardness, Total, as CaCO3	22.3	mg/L		0	0.474	3	Splt# 1957697-04 (22.3mg/L)
QC1968587-04	LCS	Hardness, Total, as CaCO3	40.2	mg/L	101			3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957599

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/15/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 109948 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968868-01									
	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1968868-02									
	LCS	Calcium, Ca	19.8	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20.3	mg/L	101		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
	LCS	Sodium, Na	21.2	mg/L	106		0.013	1	
QC1968868-03									
	DUP	Calcium, Ca	28.6	mg/L		2	0.01	1	Splt# 1957599-01 (27.9mg/L)
	DUP	Magnesium, Mg	30.8	mg/L		0	0.024	0.2	Splt# 1957599-01 (30.6mg/L)
	DUP	Potassium, K	2.13	mg/L		3	0.035	0.2	Splt# 1957599-01 (2.05mg/L)
	DUP	Sodium, Na	47.7	mg/L		0	0.013	1	Splt# 1957599-01 (47.9mg/L)
QC1968868-04									
	SPK	Calcium, Ca	48.2	mg/L	102		0.01	1	Splt# 1957599-01 (27.9mg/L)
	SPK	Magnesium, Mg	50.6	mg/L	100		0.024	0.2	Splt# 1957599-01 (30.6mg/L)
	SPK	Potassium, K	21.5	mg/L	97		0.035	0.2	Splt# 1957599-01 (2.05mg/L)
	SPK	Sodium, Na	68.9	mg/L	105		0.013	1	Splt# 1957599-01 (47.9mg/L)
QC1968868-05									
	SPKD	Calcium, Ca	50	mg/L	111	3	0.01	1	Splt# 1957599-01 (27.9mg/L)
	SPKD	Magnesium, Mg	51.7	mg/L	106	2	0.024	0.2	Splt# 1957599-01 (30.6mg/L)
	SPKD	Potassium, K	21.9	mg/L	99	1	0.035	0.2	Splt# 1957599-01 (2.05mg/L)
	SPKD	Sodium, Na	70	mg/L	111	1	0.013	1	Splt# 1957599-01 (47.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/16/2019

Sampling Team: Field

Lab Sample#: 1957602-01 **Sample Source:** WSB_SF07_LM1S **External ID:**

Date Collected: 10/16/19 11:00 a **Date Received:** 10/16/19 1:17 pm **Sample Matrix:** Aqueous **Location Desc:** SF#07 - LMMW1S

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	81.4	mg/L	1	5	10/16/2019	109521 JCOLOMA	
Nitrate as N	21.2	mg/L	0.34	0.7	10/16/2019	109521 JCOLOMA	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	62.5	mg/L	0.01	1	10/25/2019	109948 BTRINH	
Magnesium, Mg	93.3	mg/L	0.024	0.2	10/25/2019	109948 BTRINH	
Potassium, K	3.02	mg/L	0.035	0.2	10/25/2019	109948 BTRINH	
Sodium, Na	185	mg/L	0.013	1	10/25/2019	109948 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	310	mg/L	2.96	15	10/16/2019	109557 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	372	mg/L		15	10/16/2019	109559 ALEE	>MCL
MBP_COND(SM 2510 B)							
Specific Conductance	1950	µmhos/cm		1	10/16/2019	109533 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	526	mg/L	2.37	15	10/16/2019	109560 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	6.75	pH			10/16/2019	109534 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	1030	mg/L	13.2	20	10/17/2019	109459 PWARNER	>MCL

Lab Sample#: 1957602-02 **Sample Source:** WSB_SF08_LM2D **External ID:**

Date Collected: 10/16/19 11:57 a **Date Received:** 10/17/19 3:43 pm **Sample Matrix:** Aqueous **Location Desc:** SF#08 - LMMW2D

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	49.8	mg/L	1	5	10/17/2019	109629 JCOLOMA	
Nitrate as N	3	mg/L	0.34	0.7	10/17/2019	109629 JCOLOMA	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	49	mg/L	0.01	1	10/25/2019	109948 BTRINH	
Magnesium, Mg	50.8	mg/L	0.024	0.2	10/25/2019	109948 BTRINH	
Potassium, K	2.83	mg/L	0.035	0.2	10/25/2019	109948 BTRINH	
Sodium, Na	62.6	mg/L	0.013	1	10/25/2019	109948 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	213	mg/L	2.96	15	10/17/2019	109631 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	150	mg/L		15	10/18/2019	109632 ALEE	
MBP_COND(SM 2510 B)							
Specific Conductance	966	µmhos/cm		1	10/17/2019	109627 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	374	mg/L	2.37	15	10/17/2019	109633 ALEE	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/16/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

<i>pH</i>	7.67	<i>pH</i>			10/17/2019	109628	ALEE	
<i>MBP_TDS(SM 2540 C)</i>								
<i>Total Dissolved Solids</i>	530	mg/L	13.2	20	10/23/2019	109658	ALEE	>MCL

Lab Sample#: 1957602-03 **Sample Source:** WSB_SF09_LM2S **External ID:**

Date Collected: 10/16/19 10:40 a **Date Received:** 10/17/19 3:43 pm **Sample Matrix:** Aqueous **Location Desc:** SF#09 - LMMW2S

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	51.5	mg/L	1	5	10/17/2019	109629 JCOLOMA
<i>Nitrate as N</i>	5.61	mg/L	0.34	0.7	10/17/2019	109629 JCOLOMA
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	59.3	mg/L	0.01	1	10/25/2019	109948 BTRINH
<i>Magnesium, Mg</i>	55.1	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
<i>Potassium, K</i>	2.95	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
<i>Sodium, Na</i>	105	mg/L	0.013	1	10/25/2019	109948 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	266	mg/L	2.96	15	10/17/2019	109631 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	218	mg/L		15	10/18/2019	109632 ALEE
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1240	µmhos/cm		1	10/17/2019	109627 ALEE >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	405	mg/L	2.37	15	10/17/2019	109633 ALEE
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.51	pH			10/17/2019	109628 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	689	mg/L	13.2	20	10/23/2019	109658 ALEE >MCL

Lab Sample#: 1957602-04 **Sample Source:** WSB_SF63_LM1D **External ID:**

Date Collected: 10/16/19 12:15 p **Date Received:** 10/16/19 1:17 pm **Sample Matrix:** Aqueous **Location Desc:** SF#63 - LMMW1D

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	28.6	mg/L	1	5	10/16/2019	109521 JCOLOMA
<i>Nitrate as N</i>	10.8	mg/L	0.34	0.7	10/16/2019	109521 JCOLOMA >MCL
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	31.7	mg/L	0.01	1	10/25/2019	109948 BTRINH
<i>Magnesium, Mg</i>	47.6	mg/L	0.024	0.2	10/25/2019	109948 BTRINH
<i>Potassium, K</i>	3.02	mg/L	0.035	0.2	10/25/2019	109948 BTRINH
<i>Sodium, Na</i>	52.4	mg/L	0.013	1	10/25/2019	109948 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	169	mg/L	1.19	6	10/16/2019	109557 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	109	mg/L		6	10/16/2019	109559 ALEE
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	809	µmhos/cm		1	10/16/2019	109533 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/16/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	279	mg/L	0.948	6	10/16/2019	109560 ALEE	
MBP_PH(SM 4500-H+ B) pH	7.92	pH			10/16/2019	109534 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	427	mg/L	13.2	20	10/17/2019	109459 PWARNER	
Lab Sample#: 1957602-05 Sample Source: WSB_SF_DUP External ID:							
Date Collected: 10/16/19 10:55 a Date Received: 10/16/19 1:17 pm Sample Matrix: Aqueous Location Desc: SF#07 - LMMW1S							
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	80.6	mg/L	1	5	10/16/2019	109521 JCOLOMA	
Nitrate as N	21.1	mg/L	0.34	0.7	10/16/2019	109521 JCOLOMA	>MCL
SEM_200.7_DW(EPA 200.7) Calcium, Ca	63.3	mg/L	0.01	1	10/25/2019	109948 BTRINH	
Magnesium, Mg	94.5	mg/L	0.024	0.2	10/25/2019	109948 BTRINH	
Potassium, K	3.15	mg/L	0.035	0.2	10/25/2019	109948 BTRINH	
Sodium, Na	186	mg/L	0.013	1	10/25/2019	109948 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	303	mg/L	2.96	15	10/16/2019	109557 ALEE	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	362	mg/L		15	10/16/2019	109559 ALEE	>MCL
MBP_COND(SM 2510 B) Specific Conductance	1950	µmhos/cm		1	10/16/2019	109533 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	563	mg/L	2.37	15	10/16/2019	109560 ALEE	
MBP_PH(SM 4500-H+ B) pH	6.75	pH			10/16/2019	109534 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	1080	mg/L	13.2	20	10/17/2019	109459 PWARNER	>MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/16/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 109459 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968574-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968574-02	LCS	Total Dissolved Solids	81	mg/L	85		13.2	20	
QC1968574-03	DUP	Total Dissolved Solids	324	mg/L		1	13.2	20	Splt# 1957599-03 (328mg/L)

QC list for Run#: 109521 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968622-02	CCV	Sulfate	2.44	mg/L	97				
	CCV	Nitrate as N	0.323	mg/L	95				
QC1968622-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968622-04	LCS	Sulfate	4.95	mg/L	99				
	LCS	Nitrate as N	0.656	mg/L	96				
QC1968622-05	SPK	Sulfate	7.12	mg/L	99				Splt# 1958013-01 (4.65mg/L)
	SPK	Nitrate as N	0.491	mg/L	94				Splt# 1958013-01 (0.175mg/L)
QC1968622-06	SPKD	Sulfate	7.13	mg/L	99	0			Splt# 1958013-01 (4.65mg/L)
	SPKD	Nitrate as N	0.497	mg/L	95	1			Splt# 1958013-01 (0.175mg/L)
QC1968622-07	CCV	Sulfate	2.45	mg/L	98				
	CCV	Nitrate as N	0.323	mg/L	95				
QC1968622-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 109533 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968625-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1968625-03	DUP	Specific Conductance	44.1	µmhos/cm		0		1	Splt# 1957693-06 (43.9µmhos/cm)
QC1968625-04	DUP	Specific Conductance	42.5	µmhos/cm		0		1	Splt# 1957693-07 (42.8µmhos/cm)
QC1968625-05	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 109534 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968626-01	ICV	pH	9.09	pH	101				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/16/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC ID	Type	Parameter	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968626-02	DUP	pH	9.59	pH		0			Splt# 1957693-07 (9.58pH)
QC1968626-03	CCV	pH	10.1	pH	100				
QC1968626-04	CCV	pH	10.1	pH	100				
QC1968626-05	CAL	pH	10.1	pH	101				
QC1968626-06	CAL	pH	7.01	pH	100				
QC1968626-07	CAL	pH	4.01	pH	100				

QC list for Run#: 109557 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968632-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1968632-03	DUP	Alkalinity	26.9	mg/L		1	0.593	3	Splt# 1958012-01 (26.6mg/L)
QC1968632-04	LCS	Alkalinity	44.2	mg/L	110			3	

QC list for Run#: 109559 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968633-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968633-03	DUP	Chloride	8.18	mg/L		3	1.16	3	Splt# 1958012-01 (8.49mg/L)
QC1968633-04	LCS	Chloride	40	mg/L	100			3	

QC list for Run#: 109560 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968634-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1968634-03	DUP	Hardness, Total, as CaCO3	23.7	mg/L		0	0.474	3	Splt# 1958012-01 (23.4mg/L)
QC1968634-04	LCS	Hardness, Total, as CaCO3	40.3	mg/L	101			3	

QC list for Run#: 109627 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968672-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968672-03	DUP	Specific Conductance	133	µmhos/cm		0		1	Splt# 1958054-06 (132µmhos/cm)
QC1968672-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 109628 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968673-01									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/16/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
ICV		pH	9.08	pH	101				
QC1968673-02	DUP	pH	9.11	pH		0			Splt# 1958054-06 (9.11pH)
QC1968673-03	CCV	pH	10	pH	100				
QC1968673-04	CCV	pH	10.1	pH	100				

QC list for Run#: 109629 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968674-02	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.307	mg/L	90				
QC1968674-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968674-04	LCS	Sulfate	4.79	mg/L	95				
	LCS	Nitrate as N	0.622	mg/L	91				
QC1968674-05	SPK	Sulfate	3.9	mg/L	103				Splt# 1958095-01 (1.34mg/L)
	SPK	Nitrate as N	0.37	mg/L	110				Splt# 1958095-01 (<0.07mg/L)
QC1968674-06	SPKD	Sulfate	3.89	mg/L	103	0			Splt# 1958095-01 (1.34mg/L)
	SPKD	Nitrate as N	0.368	mg/L	110	0			Splt# 1958095-01 (<0.07mg/L)
QC1968674-07	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.316	mg/L	93				
QC1968674-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 109631 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968676-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1968676-03	DUP	Alkalinity	265	mg/L		0	2.96	15	Splt# 1957602-03 (266mg/L)
QC1968676-04	LCS	Alkalinity	44	mg/L	110			3	

QC list for Run#: 109632 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968677-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968677-03	DUP	Chloride	217	mg/L		0	5.78	15	Splt# 1957602-03 (218mg/L)
QC1968677-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/16/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

LCS Chloride 39.8 mg/L 99 3

QC list for Run#: 109633 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968678-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1968678-03	DUP	Hardness, Total, as CaCO3	399	mg/L		1	2.37	15	Splt# 1957602-03 (405mg/L)
QC1968678-04	LCS	Hardness, Total, as CaCO3	40.1	mg/L	100			3	

QC list for Run#: 109658 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968701-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968701-02	DUP	Total Dissolved Solids	236	mg/L		0	13.2	20	Splt# 1957605-05 (234mg/L)
QC1968701-03	LCS	Total Dissolved Solids	101	mg/L	106		13.2	20	

QC list for Run#: 109948 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968868-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1968868-02	LCS	Calcium, Ca	19.8	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	20.3	mg/L	101		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
	LCS	Sodium, Na	21.2	mg/L	106		0.013	1	
QC1968868-03	DUP	Calcium, Ca	28.6	mg/L		2	0.01	1	Splt# 1957599-01 (27.9mg/L)
	DUP	Magnesium, Mg	30.8	mg/L		0	0.024	0.2	Splt# 1957599-01 (30.6mg/L)
	DUP	Potassium, K	2.13	mg/L		3	0.035	0.2	Splt# 1957599-01 (2.05mg/L)
	DUP	Sodium, Na	47.7	mg/L		0	0.013	1	Splt# 1957599-01 (47.9mg/L)
QC1968868-04	SPK	Calcium, Ca	48.2	mg/L	102		0.01	1	Splt# 1957599-01 (27.9mg/L)
	SPK	Magnesium, Mg	50.6	mg/L	100		0.024	0.2	Splt# 1957599-01 (30.6mg/L)
	SPK	Potassium, K	21.5	mg/L	97		0.035	0.2	Splt# 1957599-01 (2.05mg/L)
	SPK	Sodium, Na	68.9	mg/L	105		0.013	1	Splt# 1957599-01 (47.9mg/L)
QC1968868-05	SPKD	Calcium, Ca	50	mg/L	111	3	0.01	1	Splt# 1957599-01 (27.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1957602

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/16/2019

Sampling Team: Field

SPKD	Magnesium, Mg	51.7	mg/L	106	2	0.024	0.2	Splt# 1957599-01 (30.6mg/L)
SPKD	Potassium, K	21.9	mg/L	99	1	0.035	0.2	Splt# 1957599-01 (2.05mg/L)
SPKD	Sodium, Na	70	mg/L	111	1	0.013	1	Splt# 1957599-01 (47.9mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957603

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/17/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1957603-01 **Sample Source:** WSB_SF57_SWD57 **External ID:**

Date Collected: 10/17/19 2:05 pm **Date Received:** 10/17/19 3:38 pm **Sample Matrix:** Aqueous **Location Desc:** SF#57 - USGS SOUTH WINDMILL N

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	140	mg/L		15	10/18/2019	109632 ALEE
MBP_COND(SM 2510 B) Specific Conductance	1110	µmhos/cm		1	10/17/2019	109627 ALEE >MCL
MBP_TDS(SM 2540 C) Total Dissolved Solids	665	mg/L	13.2	20	10/23/2019	109658 ALEE >MCL

Lab Sample#: 1957603-02 **Sample Source:** WSB_SF58_SWD140 **External ID:**

Date Collected: 10/17/19 1:55 pm **Date Received:** 10/17/19 3:38 pm **Sample Matrix:** Aqueous **Location Desc:** SF#58 - USGS SOUTH WINDMILL N

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	46.2	mg/L		6	10/18/2019	109632 ALEE
MBP_COND(SM 2510 B) Specific Conductance	610	µmhos/cm		1	10/17/2019	109627 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	394	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957603-04 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/17/19 1:55 pm **Date Received:** 10/17/19 3:38 pm **Sample Matrix:** Aqueous **Location Desc:** SF#57 - USGS SOUTH WINDMILL N

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	148	mg/L		15	10/18/2019	109632 ALEE
MBP_COND(SM 2510 B) Specific Conductance	1110	µmhos/cm		1	10/17/2019	109627 ALEE >MCL
MBP_TDS(SM 2540 C) Total Dissolved Solids	667	mg/L	13.2	20	10/23/2019	109658 ALEE >MCL

Lab Sample#: 1957603-05 **Sample Source:** WSB_SF70_SWM3 **External ID:**

Date Collected: 10/22/19 1:45 pm **Date Received:** 10/22/19 3:23 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF70, GGP SWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	39.6	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	482	µmhos/cm		1	10/22/2019	109854 PWARNER
MBP_TDS(SM 2540 C) Total Dissolved Solids	283	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957603-06 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/22/19 1:50 pm **Date Received:** 10/22/19 3:23 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF70, GGP SWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	39.5	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957603

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC

Scheduled Sample Date: 10/17/2019

Sampling Team: Field

<i>Specific Conductance</i>	483	µmhos/cm		1	10/22/2019	109854 PWARNER
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	286	mg/L	13.2	20	10/23/2019	109658 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957603

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/17/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

QC list for Run#: 109627 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968672-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968672-03	DUP	Specific Conductance	133	µmhos/cm		0		1	Splt# 1958054-06 (132µmhos/cm)
QC1968672-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 109632 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968677-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968677-03	DUP	Chloride	217	mg/L		0	5.78	15	Splt# 1957602-03 (218mg/L)
QC1968677-04	LCS	Chloride	39.8	mg/L	99			3	

QC list for Run#: 109658 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968701-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968701-02	DUP	Total Dissolved Solids	236	mg/L		0	13.2	20	Splt# 1957605-05 (234mg/L)
QC1968701-03	LCS	Total Dissolved Solids	101	mg/L	106		13.2	20	

QC list for Run#: 109852 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968818-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968818-03	DUP	Chloride	7.34	mg/L		0	1.16	3	Splt# 1957864-04 (7.27mg/L)
QC1968818-04	LCS	Chloride	40.1	mg/L	100			3	

QC list for Run#: 109854 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968819-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968819-03	DUP	Specific Conductance	298	µmhos/cm		0		1	Splt# 1957612-04 (297µmhos/cm)
QC1968819-04	DUP	Specific Conductance	276	µmhos/cm		0		1	Splt# 1957612-05 (275µmhos/cm)
QC1968819-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957605

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/21/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1957605-01 **Sample Source:** WSB_SF34_KIR130 **External ID:**

Date Collected: 10/21/19 10:50 a **Date Received:** 10/21/19 3:06 pm **Sample Matrix:** Aqueous **Location Desc:** SF#34 - GRT HWY/KIRKHAM MW1

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	33.8	mg/L		3	10/21/2019	109782 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	398	µmhos/cm		1	10/21/2019	109777 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	260	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957605-02 **Sample Source:** WSB_SF35_KIR255 **External ID:**

Date Collected: 10/21/19 11:45 a **Date Received:** 10/21/19 3:06 pm **Sample Matrix:** Aqueous **Location Desc:** SF#35 - GRT HWY/KIRKHAM MW2

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	41.2	mg/L		3	10/21/2019	109782 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	496	µmhos/cm		1	10/21/2019	109777 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	299	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957605-03 **Sample Source:** WSB_SF36_KIR385 **External ID:**

Date Collected: 10/21/19 1:30 pm **Date Received:** 10/21/19 3:06 pm **Sample Matrix:** Aqueous **Location Desc:** SF#36 - GRT HWY/KIRKHAM MW3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	37.3	mg/L		3	10/21/2019	109782 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	460	µmhos/cm		1	10/21/2019	109777 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	292	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957605-04 **Sample Source:** WSB_SF37_KIR435 **External ID:**

Date Collected: 10/21/19 1:10 pm **Date Received:** 10/21/19 3:06 pm **Sample Matrix:** Aqueous **Location Desc:** SF#36 - GRT HWY/KIRKHAM MW4

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	29.8	mg/L		3	10/21/2019	109782 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	427	µmhos/cm		1	10/21/2019	109777 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	281	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957605-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/21/19 10:55 a **Date Received:** 10/21/19 3:06 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF34_KIR130 - SF#34 - GRT

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	33.7	mg/L		3	10/21/2019	109782 ABALALIO
MBP_COND(SM 2510 B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957605

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/21/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

<i>Specific Conductance</i>	402	µmhos/cm	1	10/21/2019	109777	ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	234	mg/L	13.2	20	10/23/2019	109658 ALEE

QC list for Run#: 109658 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968701-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968701-02	DUP	Total Dissolved Solids	236	mg/L		0	13.2	20	Splt# 1957605-05 (234mg/L)
QC1968701-03	LCS	Total Dissolved Solids	101	mg/L	106		13.2	20	

QC list for Run#: 109777 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968773-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1968773-03	DUP	Specific Conductance	406	µmhos/cm		0		1	Splt# 1957605-05 (402µmhos/cm)
QC1968773-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 109782 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968776-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968776-03	DUP	Chloride	5.27	mg/L		6	1.16	3	Splt# 1957869-01 (5.62mg/L)
QC1968776-04	LCS	Chloride	40	mg/L	100			3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957612

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/22/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

Lab Sample#: 1957612-01 **Sample Source:** WSB_SF30_ORT125 **External ID:**

Date Collected: 10/22/19 10:35 a **Date Received:** 10/22/19 3:36 pm **Sample Matrix:** Aqueous **Location Desc:** SF#30 - GRT HWY/ORTEGA MW12

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	31.9	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	455	µmhos/cm		1	10/22/2019	109854 PWARNER
MBP_TDS(SM 2540 C) Total Dissolved Solids	277	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957612-02 **Sample Source:** WSB_SF31_ORT265 **External ID:**

Date Collected: 10/22/19 10:55 a **Date Received:** 10/22/19 3:36 pm **Sample Matrix:** Aqueous **Location Desc:** SF#31 - GRT HWY/ORTEGA MW26

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	23.8	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	258	µmhos/cm		1	10/22/2019	109854 PWARNER
MBP_TDS(SM 2540 C) Total Dissolved Solids	172	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957612-03 **Sample Source:** WSB_SF32_ORT400 **External ID:**

Date Collected: 10/22/19 12:00 p **Date Received:** 10/22/19 3:36 pm **Sample Matrix:** Aqueous **Location Desc:** SF#32 - GRT HWY/ORTEGA MW40

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	25.1	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	275	µmhos/cm		1	10/22/2019	109854 PWARNER
MBP_TDS(SM 2540 C) Total Dissolved Solids	183	mg/L	13.2	20	10/23/2019	109658 ALEE

Lab Sample#: 1957612-04 **Sample Source:** WSB_SF33_ORT475 **External ID:**

Date Collected: 10/22/19 12:10 p **Date Received:** 10/22/19 3:36 pm **Sample Matrix:** Aqueous **Location Desc:** SF#33 - GRT HWY/ORTEGA MW47

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	29.6	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	297	µmhos/cm		1	10/22/2019	109854 PWARNER
MBP_TDS(SM 2540 C) Total Dissolved Solids	162	mg/L	13.2	20	10/25/2019	109972 ALEE

Lab Sample#: 1957612-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/22/19 12:05 p **Date Received:** 10/22/19 3:36 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF32_ORT400 - SF#32 - GRT

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	25.1	mg/L		3	10/22/2019	109852 ABALALIO
MBP_COND(SM 2510 B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957612

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/22/2019

Routine: WSB_S2019_SFPUC

Sampling Team: Field

<i>Specific Conductance</i>	275	µmhos/cm	1	10/22/2019	109854	PWARNER
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	155	mg/L	13.2	20	10/25/2019	109972 ALEE

QC list for Run#: 109658 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968701-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968701-02	DUP	Total Dissolved Solids	236	mg/L		0	13.2	20	Splt# 1957605-05 (234mg/L)
QC1968701-03	LCS	Total Dissolved Solids	101	mg/L	106		13.2	20	

QC list for Run#: 109852 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968818-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968818-03	DUP	Chloride	7.34	mg/L		0	1.16	3	Splt# 1957864-04 (7.27mg/L)
QC1968818-04	LCS	Chloride	40.1	mg/L	100			3	

QC list for Run#: 109854 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968819-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968819-03	DUP	Specific Conductance	298	µmhos/cm		0		1	Splt# 1957612-04 (297µmhos/cm)
QC1968819-04	DUP	Specific Conductance	276	µmhos/cm		0		1	Splt# 1957612-05 (275µmhos/cm)
QC1968819-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 109972 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968899-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968899-02	LCS	Total Dissolved Solids	91	mg/L	95		13.2	20	
QC1968899-03	DUP	Total Dissolved Solids	241	mg/L		0	13.2	20	Splt# 1957613-03 (241mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957613

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/23/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1957613-01 **Sample Source:** WSB_SF68_GGPNL1 **External ID:**

Date Collected: 10/23/19 10:45 a **Date Received:** 10/23/19 3:22 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF68, GGP NORTH LAKE ROA

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	27	mg/L		3	10/23/2019	109903 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	409	µmhos/cm		1	10/23/2019	109908 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	234	mg/L	13.2	20	10/25/2019	109972 ALEE

Lab Sample#: 1957613-02 **Sample Source:** WSB_SF69_NWM3 **External ID:**

Date Collected: 10/23/19 11:05 a **Date Received:** 10/23/19 3:22 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF69, GGP NWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	39.9	mg/L		3	10/23/2019	109903 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	417	µmhos/cm		1	10/23/2019	109908 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	231	mg/L	13.2	20	10/25/2019	109972 ALEE

Lab Sample#: 1957613-03 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/23/19 11:15 a **Date Received:** 10/23/19 3:22 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF69, GGP NWM-3

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	40.3	mg/L		3	10/23/2019	109903 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	429	µmhos/cm		1	10/23/2019	109908 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	241	mg/L	13.2	20	10/25/2019	109972 ALEE

Lab Sample#: 1957613-04 **Sample Source:** WSB_SF67_GGPSF1 **External ID:**

Date Collected: 10/23/19 1:22 pm **Date Received:** 10/23/19 3:22 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF69, GGP SOCCER FIELD SF

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	43.2	mg/L		3	10/23/2019	109903 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	559	µmhos/cm		1	10/23/2019	109908 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	292	mg/L	13.2	20	10/25/2019	109972 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957613

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/23/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 109903 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968852-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1968852-03	DUP	Chloride	<3	mg/L		N/A	1.16	3	Splt# 1958154-01 (<3mg/L)
QC1968852-04	LCS	Chloride	40.1	mg/L	100			3	

QC list for Run#: 109908 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968854-02	CCV	Specific Conductance	102	µmhos/cm	102			1	
QC1968854-03	DUP	Specific Conductance	413	µmhos/cm		0		1	Splt# 1957613-01 (409µmhos/cm)
QC1968854-04	LCS	Specific Conductance	149	µmhos/cm	101			1	

QC list for Run#: 109972 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968899-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968899-02	LCS	Total Dissolved Solids	91	mg/L	95		13.2	20	
QC1968899-03	DUP	Total Dissolved Solids	241	mg/L		0	13.2	20	Splt# 1957613-03 (241mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/24/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1957615-01 **Sample Source:** WSB_SF41_WSPLAY **External ID:**

Date Collected: 10/24/19 11:28 a **Date Received:** 10/24/19 2:05 pm **Sample Matrix:** Aqueous **Location Desc:** SF#41 - WEST SUNSET PLAYGROU

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	51.5	mg/L	1	5	10/25/2019	109958 JCOLOMA
Nitrate as N	2.48	mg/L	0.34	0.7	10/25/2019	109958 JCOLOMA
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	23.1	mg/L	0.01	1	11/05/2019	110407 BTRINH
Magnesium, Mg	37.5	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
Potassium, K	1.2	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
Sodium, Na	35.2	mg/L	0.013	1	11/05/2019	110407 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	162	mg/L	0.593	3	10/24/2019	109963 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	41.9	mg/L		3	10/24/2019	109966 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	562	µmhos/cm		1	10/24/2019	109952 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	214	mg/L	0.474	3	10/24/2019	109960 PWARNER
MBP_PH(SM 4500-H+ B)						
pH	8.13	pH			10/24/2019	109954 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	305	mg/L	13.2	20	10/25/2019	109972 ALEE

Lab Sample#: 1957615-02 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/24/19 11:51 a **Date Received:** 10/24/19 2:05 pm **Sample Matrix:** Aqueous **Location Desc:** SF#41 - WEST SUNSET PLAYGROU

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	51.3	mg/L	1	5	10/25/2019	109958 JCOLOMA
Nitrate as N	2.44	mg/L	0.34	0.7	10/25/2019	109958 JCOLOMA
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	22.9	mg/L	0.01	1	11/05/2019	110407 BTRINH
Magnesium, Mg	38.7	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
Potassium, K	1.16	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
Sodium, Na	36.2	mg/L	0.013	1	11/05/2019	110407 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	163	mg/L	0.593	3	10/24/2019	109963 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	41.8	mg/L		3	10/24/2019	109966 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	562	µmhos/cm		1	10/24/2019	109952 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	216	mg/L	0.474	3	10/24/2019	109960 PWARNER
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 10/24/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	7.96	pH			10/24/2019	109954 ALEE
MBP_TDS(SM 2540 C) <i>Total Dissolved Solids</i>	306	mg/L	13.2	20	10/25/2019	109972 ALEE
Lab Sample#: 1957615-03 Sample Source: WSB_SB-M-1 External ID:						
Date Collected: 10/24/19 10:05 a Date Received: 10/24/19 2:05 pm Sample Matrix: Aqueous Location Desc: GSR_SB_CUP-M-1, MILLBRAE COR						
MBI_IC_ANIONS_A(EPA 300.0 (A)) <i>Sulfate</i>	21.3	mg/L	1	5	10/25/2019	109958 JCOLOMA
<i>Nitrate as N</i>	4.7	mg/L	0.34	0.7	10/25/2019	109958 JCOLOMA
SEM_200.7_DW(EPA 200.7) <i>Calcium, Ca</i>	27.4	mg/L	0.01	1	11/05/2019	110407 BTRINH
<i>Magnesium, Mg</i>	19.5	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
<i>Potassium, K</i>	1.65	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
<i>Sodium, Na</i>	31.1	mg/L	0.013	1	11/05/2019	110407 BTRINH
MBP_ALK(SM 2320 B) <i>Alkalinity</i>	122	mg/L	0.593	3	10/24/2019	109963 PWARNER
MBP_CHLORIDE(SM 4500-CL- D) <i>Chloride</i>	39.8	mg/L		3	10/24/2019	109966 PWARNER
MBP_COND(SM 2510 B) <i>Specific Conductance</i>	446	µmhos/cm		1	10/24/2019	109952 ALEE
MBP_HARDNESS_T(SM 2340 C) <i>Hardness, Total, as CaCO3</i>	150	mg/L	0.474	3	10/24/2019	109960 PWARNER
MBP_PH(SM 4500-H+ B) <i>pH</i>	7.04	pH			10/24/2019	109954 ALEE
MBP_TDS(SM 2540 C) <i>Total Dissolved Solids</i>	261	mg/L	13.2	20	10/25/2019	109972 ALEE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/24/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 109952 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968887-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1968887-03	DUP	Specific Conductance	98.8	µmhos/cm		0		1	Splt# 1957863-01 (98.7µmhos/cm)
QC1968887-04	DUP	Specific Conductance	99	µmhos/cm		0		1	Splt# 1957863-02 (98.7µmhos/cm)
QC1968887-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 109954 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968889-01	ICV	pH	9.07	pH	100				
QC1968889-02	DUP	pH	9.17	pH		0			Splt# 1957863-02 (9.16pH)
QC1968889-03	CCV	pH	10.1	pH	100				
QC1968889-04	CCV	pH	10.1	pH	100				
QC1968889-05	CAL	pH	10	pH	100				
QC1968889-06	CAL	pH	7.01	pH	100				
QC1968889-07	CAL	pH	4.01	pH	100				

QC list for Run#: 109958 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968893-02	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.332	mg/L	98				
QC1968893-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968893-04	LCS	Sulfate	5.09	mg/L	102				
	LCS	Nitrate as N	0.672	mg/L	99				
QC1968893-05	SPK	Sulfate	3.74	mg/L	97				Splt# 1958336-01 (1.32mg/L)
	SPK	Nitrate as N	0.36	mg/L	107				Splt# 1958336-01 (<0.07mg/L)
QC1968893-06	SPKD	Sulfate	3.74	mg/L	97	0			Splt# 1958336-01 (1.32mg/L)
	SPKD	Nitrate as N	0.358	mg/L	106	0			Splt# 1958336-01 (<0.07mg/L)
QC1968893-07	CCV	Sulfate	2.54	mg/L	102				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/24/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968893-08	CCV	Nitrate as N	0.334	mg/L	98				
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1968893-09	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.339	mg/L	100				
QC1968893-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 109960 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968894-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1968894-03	DUP	Hardness, Total, as CaCO3	25.1	mg/L		0	0.474	3	Splt# 1957863-02 (25.2mg/L)
QC1968894-04	LCS	Hardness, Total, as CaCO3	39.3	mg/L	98			3	

QC list for Run#: 109963 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968895-03	DUP	Alkalinity	25.7	mg/L		2	0.593	3	Splt# 1957863-02 (25.1mg/L)
QC1968895-04	LCS	Alkalinity	43.2	mg/L	108			3	

QC list for Run#: 109966 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968896-03	DUP	Chloride	8.93	mg/L		2	1.16	3	Splt# 1957863-02 (8.7mg/L)
QC1968896-04	LCS	Chloride	39.9	mg/L	99			3	

QC list for Run#: 109972 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968899-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1968899-02	LCS	Total Dissolved Solids	91	mg/L	95		13.2	20	
QC1968899-03	DUP	Total Dissolved Solids	241	mg/L		0	13.2	20	Splt# 1957613-03 (241mg/L)

QC list for Run#: 110407 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969179-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969179-02	LCS	Calcium, Ca	20.4	mg/L	102		0.01	1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/24/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

	LCS	Magnesium, Mg	19.7	mg/L	98	0.024	0.2		
	LCS	Potassium, K	19	mg/L	95	0.035	0.2		
	LCS	Sodium, Na	21.4	mg/L	107	0.013	1		
QC1969179-03	DUP	Calcium, Ca	23.1	mg/L	0	0.01	1	Splt# 1957615-01 (23.1mg/L)	
	DUP	Magnesium, Mg	38.1	mg/L	1	0.024	0.2	Splt# 1957615-01 (37.5mg/L)	
	DUP	Potassium, K	1.21	mg/L	1	0.035	0.2	Splt# 1957615-01 (1.2mg/L)	
	DUP	Sodium, Na	35.4	mg/L	0	0.013	1	Splt# 1957615-01 (35.2mg/L)	
QC1969179-04	SPK	Calcium, Ca	43.4	mg/L	102	0.01	1	Splt# 1957615-01 (23.1mg/L)	
	SPK	Magnesium, Mg	58.2	mg/L	103	0.024	0.2	Splt# 1957615-01 (37.5mg/L)	
	SPK	Potassium, K	20.4	mg/L	95	0.035	0.2	Splt# 1957615-01 (1.2mg/L)	
	SPK	Sodium, Na	57	mg/L	109	0.013	1	Splt# 1957615-01 (35.2mg/L)	
QC1969179-05	SPKD	Calcium, Ca	44.6	mg/L	108	2	0.01	1	Splt# 1957615-01 (23.1mg/L)
	SPKD	Magnesium, Mg	57.8	mg/L	101	0	0.024	0.2	Splt# 1957615-01 (37.5mg/L)
	SPKD	Potassium, K	20.8	mg/L	98	2	0.035	0.2	Splt# 1957615-01 (1.2mg/L)
	SPKD	Sodium, Na	58.3	mg/L	116	2	0.013	1	Splt# 1957615-01 (35.2mg/L)
QC1969179-06	DUP	Calcium, Ca	27.5	mg/L	0	0.01	1	Splt# 1957615-03 (27.4mg/L)	
	DUP	Magnesium, Mg	19.2	mg/L	1	0.024	0.2	Splt# 1957615-03 (19.5mg/L)	
	DUP	Potassium, K	1.76	mg/L	6	0.035	0.2	Splt# 1957615-03 (1.65mg/L)	
	DUP	Sodium, Na	31.6	mg/L	1	0.013	1	Splt# 1957615-03 (31.1mg/L)	
QC1969179-07	SPK	Calcium, Ca	48.1	mg/L	103	0.01	1	Splt# 1957615-03 (27.4mg/L)	
	SPK	Magnesium, Mg	38.6	mg/L	95	0.024	0.2	Splt# 1957615-03 (19.5mg/L)	
	SPK	Potassium, K	20.7	mg/L	95	0.035	0.2	Splt# 1957615-03 (1.65mg/L)	
	SPK	Sodium, Na	54.2	mg/L	116	0.013	1	Splt# 1957615-03 (31.1mg/L)	
QC1969179-08	SPKD	Calcium, Ca	49.2	mg/L	109	2	0.01	1	Splt# 1957615-03 (27.4mg/L)
	SPKD	Magnesium, Mg	40.3	mg/L	104	4	0.024	0.2	Splt# 1957615-03 (19.5mg/L)
	SPKD	Potassium, K	21.2	mg/L	97	2	0.035	0.2	Splt# 1957615-03 (1.65mg/L)
	SPKD	Sodium, Na	54.7	mg/L	118	0	0.013	1	Splt# 1957615-03 (31.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

SEWPCP 1721

MILLBRAE 1449

FOLDER ID: 1957615

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 10/24/2019

Sampling Team: Field

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957616

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/28/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1957616-01 **Sample Source:** WSB_SF26_TAR145 **External ID:**

Date Collected: 10/28/19 11:00 a **Date Received:** 10/28/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** SF#26 - GRT HWY/TARAVAL MW1.

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	43.1	mg/L		3	10/28/2019	110110 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	460	µmhos/cm		1	10/28/2019	110099 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	269	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957616-02 **Sample Source:** WSB_SF27_TAR240 **External ID:**

Date Collected: 10/28/19 10:33 a **Date Received:** 10/28/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** SF#27 - GRT HWY/TARAVAL MW2.

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	34.2	mg/L		3	10/28/2019	110110 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	381	µmhos/cm		1	10/28/2019	110099 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	219	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957616-03 **Sample Source:** WSB_SF28_TAR400 **External ID:**

Date Collected: 10/28/19 11:24 a **Date Received:** 10/28/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** SF#28 - GRT HWY/TARAVAL MW4

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	30.5	mg/L		3	10/28/2019	110110 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	329	µmhos/cm		1	10/28/2019	110099 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	176	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957616-04 **Sample Source:** WSB_SF29_TAR530 **External ID:**

Date Collected: 10/28/19 12:25 p **Date Received:** 10/28/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** SF#29 - GRT HWY/TARAVAL MW5

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	26.6	mg/L		3	10/28/2019	110110 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	353	µmhos/cm		1	10/28/2019	110099 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	192	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957616-05 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/28/19 11:40 a **Date Received:** 10/28/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** WSB_SF28_TAR400 - SF#28 - GRT

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	30.7	mg/L		3	10/28/2019	110110 PWARNER
MBP_COND(SM 2510 B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957616

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/28/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

<i>Specific Conductance</i>	329	µmhos/cm		1	10/28/2019	110099 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	170	mg/L	13.2	20	10/30/2019	110147 PWARNER

QC list for Run#: 110099 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968981-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1968981-03	DUP	Specific Conductance	330	µmhos/cm		0		1	Splt# 1957616-05 (329µmhos/cm)
QC1968981-04	DUP	Specific Conductance	51.7	µmhos/cm		0		1	Splt# 1958155-01 (51.7µmhos/cm)
QC1968981-05	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 110110 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1968988-03	DUP	Chloride	4.21	mg/L		2	1.16	3	Splt# 1958115-01 (4.33mg/L)
QC1968988-04	LCS	Chloride	39.5	mg/L	98			3	

QC list for Run#: 110147 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969012-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969012-02	DUP	Total Dissolved Solids	266	mg/L		1	13.2	20	Splt# 1957616-01 (269mg/L)
QC1969012-03	LCS	Total Dissolved Solids	85	mg/L	89		13.2	20	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957617

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1957617-01 **Sample Source:** WSB_SF42_ZOO275 **External ID:**

Date Collected: 10/29/19 11:16 a **Date Received:** 10/29/19 1:04 pm **Sample Matrix:** Aqueous **Location Desc:** SF#42 - ZOO MW275

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	74.6	mg/L		3	10/29/2019	110189 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	519	µmhos/cm		1	10/29/2019	110164 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	269	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957617-02 **Sample Source:** WSB_SF43_ZOO450 **External ID:**

Date Collected: 10/29/19 12:00 p **Date Received:** 10/29/19 1:04 pm **Sample Matrix:** Aqueous **Location Desc:** SF#43 - ZOO MW450

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	46.8	mg/L		3	10/29/2019	110189 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	531	µmhos/cm		1	10/29/2019	110164 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	282	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957617-03 **Sample Source:** WSB_SF45_ZOO565 **External ID:**

Date Collected: 10/29/19 10:24 a **Date Received:** 10/29/19 1:04 pm **Sample Matrix:** Aqueous **Location Desc:** SF#45 - ZOO MW565

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	49.7	mg/L		3	10/29/2019	110189 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	427	µmhos/cm		1	10/29/2019	110164 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	194	mg/L	13.2	20	10/30/2019	110147 PWARNER

Lab Sample#: 1957617-04 **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 10/29/19 11:16 a **Date Received:** 10/29/19 1:04 pm **Sample Matrix:** Aqueous **Location Desc:** SF#42 - ZOO MW275

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_CHLORIDE(SM 4500-CL- D) Chloride	74.2	mg/L		3	10/29/2019	110189 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	521	µmhos/cm		1	10/29/2019	110164 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	257	mg/L	13.2	20	10/30/2019	110147 PWARNER

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957617

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/29/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 110147 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969012-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969012-02	DUP	Total Dissolved Solids	266	mg/L		1	13.2	20	Splt# 1957616-01 (269mg/L)
QC1969012-03	LCS	Total Dissolved Solids	85	mg/L	89		13.2	20	

QC list for Run#: 110164 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969021-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969021-03	DUP	Specific Conductance	71.7	µmhos/cm		0		1	Splt# 1958398-01 (71.5µmhos/cm)
QC1969021-04	LCS	Specific Conductance	147	µmhos/cm	100			1	
QC1969021-05	DUP	Specific Conductance	61.1	µmhos/cm		0		1	Splt# 1958123-04 (61µmhos/cm)

QC list for Run#: 110189 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969032-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969032-03	DUP	Chloride	6.63	mg/L		5	1.16	3	Splt# 1958109-04 (6.3mg/L)
QC1969032-04	LCS	Chloride	40.1	mg/L	100			3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 10/30/2019

Sampling Team: Field

Lab Sample#: 1957618-01 **Sample Source:** WSB_SB-44-1-190 **External ID:**

Date Collected: 10/30/19 11:28 a **Date Received:** 10/30/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_SB_CUP-44-1-190, GG NATIC

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	103	mg/L	1	5	10/30/2019	110250 JCOLOMA	
Nitrate as N	6.86	mg/L	0.34	0.7	10/30/2019	110250 JCOLOMA	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	50.7	mg/L	0.01	1	11/05/2019	110407 BTRINH	
Magnesium, Mg	34.5	mg/L	0.024	0.2	11/05/2019	110407 BTRINH	
Potassium, K	1.46	mg/L	0.035	0.2	11/05/2019	110407 BTRINH	
Sodium, Na	125	mg/L	0.013	1	11/05/2019	110407 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	258	mg/L	2.96	15	10/30/2019	110246 ABALALIO	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	97.8	mg/L		15	10/30/2019	110247 ABALALIO	
MBP_COND(SM 2510 B)							
Specific Conductance	1050	µmhos/cm		1	10/30/2019	110234 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	265	mg/L	2.37	15	10/30/2019	110236 ABALALIO	
MBP_PH(SM 4500-H+ B)							
pH	6.62	pH			10/30/2019	110244 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	599	mg/L	13.2	20	11/01/2019	110294 ABALALIO	>MCL

Lab Sample#: 1957618-02 **Sample Source:** WSB_SB-44-1-300 **External ID:**

Date Collected: 10/30/19 10:40 a **Date Received:** 10/30/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_SB_CUP-44-1-300, GG NATIC

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	102	mg/L	1	5	10/30/2019	110250 JCOLOMA	
Nitrate as N	6.71	mg/L	0.34	0.7	10/30/2019	110250 JCOLOMA	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	49.9	mg/L	0.01	1	11/05/2019	110407 BTRINH	
Magnesium, Mg	34.3	mg/L	0.024	0.2	11/05/2019	110407 BTRINH	
Potassium, K	1.47	mg/L	0.035	0.2	11/05/2019	110407 BTRINH	
Sodium, Na	121	mg/L	0.013	1	11/05/2019	110407 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	252	mg/L	2.96	15	10/30/2019	110246 ABALALIO	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	95.9	mg/L		15	10/30/2019	110247 ABALALIO	
MBP_COND(SM 2510 B)							
Specific Conductance	1020	µmhos/cm		1	10/30/2019	110234 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	259	mg/L	2.37	15	10/30/2019	110236 ABALALIO	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 10/30/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	6.58	pH			10/30/2019	110244 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	584	mg/L	13.2	20	11/01/2019	110294 ABALALIO >MCL
Lab Sample#: 1957618-03 Sample Source: WSB_SB-44-1-460 External ID:						
Date Collected: 10/30/19 9:25 ar Date Received: 10/30/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_SB_CUP-44-1-460, GG NATIC						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	81.6	mg/L	1	5	10/30/2019	110250 JCOLOMA
<i>Nitrate as N</i>	3.04	mg/L	0.34	0.7	10/30/2019	110250 JCOLOMA
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	49	mg/L	0.01	1	11/05/2019	110407 BTRINH
<i>Magnesium, Mg</i>	40.5	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
<i>Potassium, K</i>	2.97	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
<i>Sodium, Na</i>	66.2	mg/L	0.013	1	11/05/2019	110407 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	155	mg/L	2.96	15	10/30/2019	110246 ABALALIO
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	113	mg/L		15	10/30/2019	110247 ABALALIO
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	832	µmhos/cm		1	10/30/2019	110234 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	277	mg/L	2.37	15	10/30/2019	110236 ABALALIO
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.03	pH			10/30/2019	110244 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	472	mg/L	13.2	20	11/01/2019	110294 ABALALIO
Lab Sample#: 1957618-04 Sample Source: WSB_SB-44-1-580 External ID:						
Date Collected: 10/30/19 9:55 ar Date Received: 10/30/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_SB_CUP-44-1-580, GG NATIC						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	10/30/2019	110250 JCOLOMA
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	113	mg/L	0.01	1	11/05/2019	110407 BTRINH
<i>Magnesium, Mg</i>	97.5	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
<i>Potassium, K</i>	5.48	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
<i>Sodium, Na</i>	108	mg/L	0.013	1	11/05/2019	110407 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	258	mg/L	2.96	15	10/30/2019	110246 ABALALIO
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	194	mg/L		15	10/30/2019	110247 ABALALIO
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1680	µmhos/cm		1	10/30/2019	110234 ALEE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	737	mg/L	2.37	15	10/31/2019	110301	ALEE
MBP_PH(SM 4500-H+ B)							
pH	7.35	pH			10/30/2019	110244	ALEE
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	1090	mg/L	13.2	20	11/01/2019	110294	ABALALIO >MCL
Lab Sample#: 1957618-04A Sample Source: WSB_SB-44-1-580 External ID:							
Date Collected: 10/30/19 9:55 ar Date Received: 10/30/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_SB_CUP-44-1-580, GG NATI							
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date		Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	391	mg/L	2	10	11/01/2019	110296	MAWALLACE >MCL
Lab Sample#: 1957618-05 Sample Source: WSB_SB_DUP External ID:							
Date Collected: 10/30/19 9:40 ar Date Received: 10/30/19 1:57 pm Sample Matrix: Aqueous Location Desc: WSB_SB-44-1-460 - GSR_SB_CUP-							
Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date		Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	81.7	mg/L	1	5	10/30/2019	110250	JCOLOMA
Nitrate as N	3.05	mg/L	0.34	0.7	10/30/2019	110250	JCOLOMA
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	47.6	mg/L	0.01	1	11/05/2019	110407	BTRINH
Magnesium, Mg	39	mg/L	0.024	0.2	11/05/2019	110407	BTRINH
Potassium, K	2.95	mg/L	0.035	0.2	11/05/2019	110407	BTRINH
Sodium, Na	64.1	mg/L	0.013	1	11/05/2019	110407	BTRINH
MBP_ALK(SM 2320 B)							
Alkalinity	156	mg/L	2.96	15	10/30/2019	110246	ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	114	mg/L		15	10/30/2019	110247	ABALALIO
MBP_COND(SM 2510 B)							
Specific Conductance	826	µmhos/cm		1	10/30/2019	110234	ALEE
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	276	mg/L	2.37	15	10/30/2019	110236	ABALALIO
MBP_PH(SM 4500-H+ B)							
pH	7	pH			10/30/2019	110244	ALEE
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	474	mg/L	13.2	20	11/01/2019	110294	ABALALIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110234 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969063-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969063-03	DUP	Specific Conductance	42.7	µmhos/cm		0		1	Splt# 1958105-07 (42.6µmhos/cm)
QC1969063-04	DUP	Specific Conductance	827	µmhos/cm		0		1	Splt# 1957618-05 (826µmhos/cm)
QC1969063-05	LCS	Specific Conductance	148	µmhos/cm	100			1	

QC list for Run#: 110236 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969062-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969062-03	DUP	Hardness, Total, as CaCO3	3.46	mg/L		0	0.474	3	Splt# 1958152-01 (3.49mg/L)
QC1969062-04	LCS	Hardness, Total, as CaCO3	40.4	mg/L	101			3	

QC list for Run#: 110244 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969066-01	ICV	pH	9.09	pH	101				
QC1969066-02	DUP	pH	6.99	pH		0			Splt# 1957618-05 (7pH)
QC1969066-03	CCV	pH	10.1	pH	100				
QC1969066-04	CCV	pH	10.1	pH	100				
QC1969066-05	CAL	pH	10.1	pH	101				
QC1969066-06	CAL	pH	7.01	pH	100				
QC1969066-07	CAL	pH	4.01	pH	100				

QC list for Run#: 110246 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969065-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969065-03	DUP	Alkalinity	4.69	mg/L		0	0.593	3	Splt# 1958152-01 (4.65mg/L)
QC1969065-04	LCS	Alkalinity	42.7	mg/L	107			3	

QC list for Run#: 110247 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969067-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969067-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

DUP	Chloride	<3	mg/L	N/A	1.16	3	Splt# 1958152-01 (<3mg/L)
QC1969067-04							
LCS	Chloride	39.7	mg/L	99		3	

QC list for Run#: 110250 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969071-02	CCV	Sulfate	2.44	mg/L	97				
	CCV	Nitrate as N	0.318	mg/L	94				
QC1969071-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969071-04	LCS	Sulfate	4.96	mg/L	99				
	LCS	Nitrate as N	0.649	mg/L	95				
QC1969071-05	SPK	Sulfate	3.88	mg/L	102				Splt# 1958475-01 (1.34mg/L)
	SPK	Nitrate as N	0.377	mg/L	112				Splt# 1958475-01 (<0.07mg/L)
QC1969071-06	SPKD	Sulfate	3.88	mg/L	102	0			Splt# 1958475-01 (1.34mg/L)
	SPKD	Nitrate as N	0.375	mg/L	111	0			Splt# 1958475-01 (<0.07mg/L)
QC1969071-07	CCV	Sulfate	2.45	mg/L	98				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1969071-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969071-09	CCV	Sulfate	2.46	mg/L	98				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1969071-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 110294 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969097-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969097-02	DUP	Total Dissolved Solids	608	mg/L		1	13.2	20	Splt# 1957618-01 (599mg/L)
QC1969097-03	LCS	Total Dissolved Solids	87	mg/L	91		13.2	20	

QC list for Run#: 110296 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969101-02	CCV	Sulfate	2.47	mg/L	99				
	CCV	Nitrate as N	0.322	mg/L	95				
QC1969101-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
BLK	Sulfate		<0.5	mg/L			0.1	0.5	
BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	
QC1969101-04	LCS	Sulfate	5	mg/L	100				
LCS	Nitrate as N		0.651	mg/L	96				
QC1969101-05	SPK	Sulfate	2.88	mg/L	61				Splt# 1958499-01 (1.36mg/L)
SPK	Nitrate as N		0.239	mg/L	71				Splt# 1958499-01 (<0.07mg/L)
QC1969101-06	SPKD	Sulfate	2.51	mg/L	46	13			Splt# 1958499-01 (1.36mg/L)
SPKD	Nitrate as N		0.192	mg/L	57	22			Splt# 1958499-01 (<0.07mg/L)
QC1969101-07	CCV	Sulfate	2.52	mg/L	101				
CCV	Nitrate as N		0.327	mg/L	96				
QC1969101-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	
QC1969101-09	CCV	Sulfate	2.49	mg/L	99				
CCV	Nitrate as N		0.327	mg/L	96				
QC1969101-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	

QC list for Run#: 110301 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969105-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969105-03	DUP	Hardness, Total, as CaCO3	28.6	mg/L		1	0.474	3	Splt# 1958146-02 (29mg/L)
QC1969105-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	101			3	

QC list for Run#: 110407 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969179-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
BLK	Magnesium, Mg		<0.2	mg/L			0.024	0.2	
BLK	Potassium, K		<0.2	mg/L			0.035	0.2	
BLK	Sodium, Na		<1	mg/L			0.013	1	
QC1969179-02	LCS	Calcium, Ca	20.4	mg/L	102		0.01	1	
LCS	Magnesium, Mg		19.7	mg/L	98		0.024	0.2	
LCS	Potassium, K		19	mg/L	95		0.035	0.2	
LCS	Sodium, Na		21.4	mg/L	107		0.013	1	
QC1969179-03	DUP	Calcium, Ca	23.1	mg/L		0	0.01	1	Splt# 1957615-01 (23.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957618

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 10/30/2019

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Count	Concentration	Volume	Notes
DUP	Magnesium, Mg	38.1	mg/L	1	0.024	0.2	Splt# 1957615-01 (37.5mg/L)
DUP	Potassium, K	1.21	mg/L	1	0.035	0.2	Splt# 1957615-01 (1.2mg/L)
DUP	Sodium, Na	35.4	mg/L	0	0.013	1	Splt# 1957615-01 (35.2mg/L)
QC1969179-04							
SPK	Calcium, Ca	43.4	mg/L	102	0.01	1	Splt# 1957615-01 (23.1mg/L)
SPK	Magnesium, Mg	58.2	mg/L	103	0.024	0.2	Splt# 1957615-01 (37.5mg/L)
SPK	Potassium, K	20.4	mg/L	95	0.035	0.2	Splt# 1957615-01 (1.2mg/L)
SPK	Sodium, Na	57	mg/L	109	0.013	1	Splt# 1957615-01 (35.2mg/L)
QC1969179-05							
SPKD	Calcium, Ca	44.6	mg/L	108	2	0.01	1 Splt# 1957615-01 (23.1mg/L)
SPKD	Magnesium, Mg	57.8	mg/L	101	0	0.024	0.2 Splt# 1957615-01 (37.5mg/L)
SPKD	Potassium, K	20.8	mg/L	98	2	0.035	0.2 Splt# 1957615-01 (1.2mg/L)
SPKD	Sodium, Na	58.3	mg/L	116	2	0.013	1 Splt# 1957615-01 (35.2mg/L)
QC1969179-06							
DUP	Calcium, Ca	27.5	mg/L	0	0.01	1	Splt# 1957615-03 (27.4mg/L)
DUP	Magnesium, Mg	19.2	mg/L	1	0.024	0.2	Splt# 1957615-03 (19.5mg/L)
DUP	Potassium, K	1.76	mg/L	6	0.035	0.2	Splt# 1957615-03 (1.65mg/L)
DUP	Sodium, Na	31.6	mg/L	1	0.013	1	Splt# 1957615-03 (31.1mg/L)
QC1969179-07							
SPK	Calcium, Ca	48.1	mg/L	103	0.01	1	Splt# 1957615-03 (27.4mg/L)
SPK	Magnesium, Mg	38.6	mg/L	95	0.024	0.2	Splt# 1957615-03 (19.5mg/L)
SPK	Potassium, K	20.7	mg/L	95	0.035	0.2	Splt# 1957615-03 (1.65mg/L)
SPK	Sodium, Na	54.2	mg/L	116	0.013	1	Splt# 1957615-03 (31.1mg/L)
QC1969179-08							
SPKD	Calcium, Ca	49.2	mg/L	109	2	0.01	1 Splt# 1957615-03 (27.4mg/L)
SPKD	Magnesium, Mg	40.3	mg/L	104	4	0.024	0.2 Splt# 1957615-03 (19.5mg/L)
SPKD	Potassium, K	21.2	mg/L	97	2	0.035	0.2 Splt# 1957615-03 (1.65mg/L)
SPKD	Sodium, Na	54.7	mg/L	118	0	0.013	1 Splt# 1957615-03 (31.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

Lab Sample#: 1957849-01 **Sample Source:** WSB_SS-36-1-160

External ID:

Date Collected: 10/31/19 11:01 a **Date Received:** 10/31/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	115	mg/L	1	5	11/01/2019	110296 MAWALLACE	
Nitrate as N	9.47	mg/L	0.34	0.7	11/01/2019	110296 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	67.3	mg/L	0.01	1	11/05/2019	110407 BTRINH	
Magnesium, Mg	33	mg/L	0.024	0.2	11/05/2019	110407 BTRINH	
Potassium, K	2.56	mg/L	0.035	0.2	11/05/2019	110407 BTRINH	
Sodium, Na	93.3	mg/L	0.013	1	11/05/2019	110407 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	232	mg/L	2.96	15	10/31/2019	110298 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	99.6	mg/L		15	10/31/2019	110300	
MBP_COND(SM 2510 B)							
Specific Conductance	1010	µmhos/cm		1	10/31/2019	107659 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	327	mg/L	2.37	15	10/31/2019	110301 ALEE	
MBP_PH(SM 4500-H+ B)							
pH	7.03	pH			10/31/2019	110304 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	603	mg/L	13.2	20	11/01/2019	110294 ABALALIO	>MCL

Lab Sample#: 1957849-02 **Sample Source:** WSB_SS-36-1-270

External ID:

Date Collected: 10/31/19 10:23 a **Date Received:** 10/31/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	24.3	mg/L	1	5	11/01/2019	110296 MAWALLACE	
Nitrate as N	1.77	mg/L	0.34	0.7	11/01/2019	110296 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	34.9	mg/L	0.01	1	11/05/2019	110407 BTRINH	
Magnesium, Mg	30.3	mg/L	0.024	0.2	11/05/2019	110407 BTRINH	
Potassium, K	2.2	mg/L	0.035	0.2	11/05/2019	110407 BTRINH	
Sodium, Na	60.9	mg/L	0.013	1	11/05/2019	110407 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	141	mg/L	1.19	6	10/31/2019	110298 ALEE	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	124	mg/L		6	10/31/2019	110300	
MBP_COND(SM 2510 B)							
Specific Conductance	708	µmhos/cm		1	10/31/2019	107659 ALEE	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	220	mg/L	0.948	6	10/31/2019	110301 ALEE	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

<i>pH</i>	7.35	<i>pH</i>	10/31/2019	110304	ALEE
<i>MBP_TDS(SM 2540 C)</i>					
<i>Total Dissolved Solids</i>	432	mg/L	13.2	20	11/01/2019 110294 ABALALIO

Lab Sample#: 1957849-03 **Sample Source:** WSB_SS-36-1-455 **External ID:**

Date Collected: 10/31/19 9:10 ar **Date Received:** 10/31/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	<0.5	mg/L	0.1	0.5	11/01/2019	110296 MAWALLACE
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	11/01/2019	110296 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	41.2	mg/L	0.01	1	11/05/2019	110407 BTRINH
<i>Magnesium, Mg</i>	24	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
<i>Potassium, K</i>	4.73	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
<i>Sodium, Na</i>	63.6	mg/L	0.013	1	11/05/2019	110407 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	232	mg/L	1.19	6	10/31/2019	110298 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	88.9	mg/L		6	10/31/2019	110300
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	694	µmhos/cm		1	10/31/2019	107659 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	202	mg/L	0.948	6	10/31/2019	110301 ALEE
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.37	pH			10/31/2019	110304 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	335	mg/L	13.2	20	11/01/2019	110294 ABALALIO

Lab Sample#: 1957849-04 **Sample Source:** WSB_SS-36-1-585 **External ID:**

Date Collected: 10/31/19 9:27 ar **Date Received:** 10/31/19 1:41 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	11/01/2019	110296 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	99.2	mg/L	0.01	1	11/05/2019	110407 BTRINH
<i>Magnesium, Mg</i>	49.3	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
<i>Potassium, K</i>	3.49	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
<i>Sodium, Na</i>	74	mg/L	0.013	1	11/05/2019	110407 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	226	mg/L	2.96	15	10/31/2019	110298 ALEE
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	168	mg/L		15	10/31/2019	110300
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1180	µmhos/cm		1	10/31/2019	107659 ALEE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

<i>MBP_HARDNESS_T(SM 2340 C)</i>								
Hardness, Total, as CaCO3	485	mg/L	2.37	15	10/31/2019	110301	ALEE	
<i>MBP_PH(SM 4500-H+ B)</i>								
pH	7.14	pH			10/31/2019	110304	ALEE	
<i>MBP_TDS(SM 2540 C)</i>								
Total Dissolved Solids	702	mg/L	13.2	20	11/01/2019	110294	ABALALIO	>MCL

Lab Sample#: 1957849-04A Sample Source: WSB_SS-36-1-585 External ID:

Date Collected: 10/31/19 9:27 ar Date Received: 10/31/19 1:41 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
Sulfate	180	mg/L	1	5	11/01/2019	110296 MAWALLACE

Lab Sample#: 1957849-05 Sample Source: WSB_SS_DUP External ID:

Date Collected: 10/31/19 9:27 ar Date Received: 10/31/19 1:41 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
Nitrate as N	<0.07	mg/L	0.034	0.07	11/01/2019	110296 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
Calcium, Ca	95.5	mg/L	0.01	1	11/05/2019	110407 BTRINH
Magnesium, Mg	48.9	mg/L	0.024	0.2	11/05/2019	110407 BTRINH
Potassium, K	3.69	mg/L	0.035	0.2	11/05/2019	110407 BTRINH
Sodium, Na	74	mg/L	0.013	1	11/05/2019	110407 BTRINH

<i>MBP_ALK(SM 2320 B)</i>								
Alkalinity	222	mg/L	2.96	15	10/31/2019	110298	ALEE	

<i>MBP_CHLORIDE(SM 4500-CL- D)</i>								
Chloride	164	mg/L		15	10/31/2019	110300		

<i>MBP_COND(SM 2510 B)</i>								
Specific Conductance	1190	µmhos/cm		1	10/31/2019	107659	ALEE	>MCL

<i>MBP_HARDNESS_T(SM 2340 C)</i>								
Hardness, Total, as CaCO3	493	mg/L	2.37	15	10/31/2019	110301	ALEE	

<i>MBP_PH(SM 4500-H+ B)</i>								
pH	7.12	pH			10/31/2019	110304	ALEE	

<i>MBP_TDS(SM 2540 C)</i>								
Total Dissolved Solids	713	mg/L	13.2	20	11/01/2019	110294	ABALALIO	>MCL

Lab Sample#: 1957849-05A Sample Source: WSB_SS_DUP External ID:

Date Collected: 10/31/19 9:27 ar Date Received: 10/31/19 1:41 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
Sulfate	180	mg/L	1	5	11/01/2019	110296 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

QC list for Run#: 107659 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1967448-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1967448-03	DUP	Specific Conductance	1200	µmhos/cm		0		1	Splt# 1957849-05 (1190µmhos/cm)
QC1967448-04	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 110294 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969097-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969097-02	DUP	Total Dissolved Solids	608	mg/L		1	13.2	20	Splt# 1957618-01 (599mg/L)
QC1969097-03	LCS	Total Dissolved Solids	87	mg/L	91		13.2	20	

QC list for Run#: 110296 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969101-02	CCV	Sulfate	2.47	mg/L	99				
	CCV	Nitrate as N	0.322	mg/L	95				
QC1969101-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969101-04	LCS	Sulfate	5	mg/L	100				
	LCS	Nitrate as N	0.651	mg/L	96				
QC1969101-05	SPK	Sulfate	2.88	mg/L	61				Splt# 1958499-01 (1.36mg/L)
	SPK	Nitrate as N	0.239	mg/L	71				Splt# 1958499-01 (<0.07mg/L)
QC1969101-06	SPKD	Sulfate	2.51	mg/L	46	13			Splt# 1958499-01 (1.36mg/L)
	SPKD	Nitrate as N	0.192	mg/L	57	22			Splt# 1958499-01 (<0.07mg/L)
QC1969101-07	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1969101-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969101-09	CCV	Sulfate	2.49	mg/L	99				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1969101-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

QC list for Run#: 110298 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969100-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969100-03	DUP	Alkalinity	30	mg/L		0	0.593	3	Splt# 1958146-02 (30.2mg/L)
QC1969100-04	LCS	Alkalinity	42.6	mg/L	106			3	

QC list for Run#: 110300 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969103-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969103-03	DUP	Chloride	10.1	mg/L		1	1.16	3	Splt# 1958146-02 (10.2mg/L)
QC1969103-04	LCS	Chloride	39.6	mg/L	99			3	

QC list for Run#: 110301 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969105-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969105-03	DUP	Hardness, Total, as CaCO3	28.6	mg/L		1	0.474	3	Splt# 1958146-02 (29mg/L)
QC1969105-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	101			3	

QC list for Run#: 110304 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969106-01	ICV	pH	9.08	pH	101				
QC1969106-02	DUP	pH	7.13	pH		0			Splt# 1957849-05 (7.12pH)
QC1969106-03	CCV	pH	10.1	pH	101				
QC1969106-04	CAL	pH	10.1	pH	101				
QC1969106-05	CAL	pH	7.01	pH	100				
QC1969106-06	CAL	pH	4.01	pH	100				

QC list for Run#: 110407 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969179-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969179-02	LCS	Calcium, Ca	20.4	mg/L	102		0.01	1	
	LCS	Magnesium, Mg	19.7	mg/L	98		0.024	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1957849

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 10/31/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team:

Sample ID	Parameter	Value	Unit	Temp	Conductivity	pH	Other
LCS	Potassium, K	19	mg/L	95	0.035	0.2	
LCS	Sodium, Na	21.4	mg/L	107	0.013	1	
QC1969179-03							
DUP	Calcium, Ca	23.1	mg/L	0	0.01	1	Splt# 1957615-01 (23.1mg/L)
DUP	Magnesium, Mg	38.1	mg/L	1	0.024	0.2	Splt# 1957615-01 (37.5mg/L)
DUP	Potassium, K	1.21	mg/L	1	0.035	0.2	Splt# 1957615-01 (1.2mg/L)
DUP	Sodium, Na	35.4	mg/L	0	0.013	1	Splt# 1957615-01 (35.2mg/L)
QC1969179-04							
SPK	Calcium, Ca	43.4	mg/L	102	0.01	1	Splt# 1957615-01 (23.1mg/L)
SPK	Magnesium, Mg	58.2	mg/L	103	0.024	0.2	Splt# 1957615-01 (37.5mg/L)
SPK	Potassium, K	20.4	mg/L	95	0.035	0.2	Splt# 1957615-01 (1.2mg/L)
SPK	Sodium, Na	57	mg/L	109	0.013	1	Splt# 1957615-01 (35.2mg/L)
QC1969179-05							
SPKD	Calcium, Ca	44.6	mg/L	108	2	0.01	1 Splt# 1957615-01 (23.1mg/L)
SPKD	Magnesium, Mg	57.8	mg/L	101	0	0.024	0.2 Splt# 1957615-01 (37.5mg/L)
SPKD	Potassium, K	20.8	mg/L	98	2	0.035	0.2 Splt# 1957615-01 (1.2mg/L)
SPKD	Sodium, Na	58.3	mg/L	116	2	0.013	1 Splt# 1957615-01 (35.2mg/L)
QC1969179-06							
DUP	Calcium, Ca	27.5	mg/L	0	0.01	1	Splt# 1957615-03 (27.4mg/L)
DUP	Magnesium, Mg	19.2	mg/L	1	0.024	0.2	Splt# 1957615-03 (19.5mg/L)
DUP	Potassium, K	1.76	mg/L	6	0.035	0.2	Splt# 1957615-03 (1.65mg/L)
DUP	Sodium, Na	31.6	mg/L	1	0.013	1	Splt# 1957615-03 (31.1mg/L)
QC1969179-07							
SPK	Calcium, Ca	48.1	mg/L	103	0.01	1	Splt# 1957615-03 (27.4mg/L)
SPK	Magnesium, Mg	38.6	mg/L	95	0.024	0.2	Splt# 1957615-03 (19.5mg/L)
SPK	Potassium, K	20.7	mg/L	95	0.035	0.2	Splt# 1957615-03 (1.65mg/L)
SPK	Sodium, Na	54.2	mg/L	116	0.013	1	Splt# 1957615-03 (31.1mg/L)
QC1969179-08							
SPKD	Calcium, Ca	49.2	mg/L	109	2	0.01	1 Splt# 1957615-03 (27.4mg/L)
SPKD	Magnesium, Mg	40.3	mg/L	104	4	0.024	0.2 Splt# 1957615-03 (19.5mg/L)
SPKD	Potassium, K	21.2	mg/L	97	2	0.035	0.2 Splt# 1957615-03 (1.65mg/L)
SPKD	Sodium, Na	54.7	mg/L	118	0	0.013	1 Splt# 1957615-03 (31.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/04/2019

Sampling Team: Field

Lab Sample#: 1958444-01 **Sample Source:** WSB_SS11SSLP120 **External ID:**

Date Collected: 11/4/19 11:05 am **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#11 - SS LINEAR PARK MW - 12C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	11/04/2019	110429 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	65.1	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	45.2	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	3.07	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	94.3	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	284	mg/L	2.96	15	11/04/2019	110422 ALEE
MBP_CHLORIDE(SM 4500-CL- D) Chloride	139	mg/L		15	11/04/2019	110426 ALEE
MBP_COND(SM 2510 B) Specific Conductance	1100	µmhos/cm		1	11/04/2019	110428 ABALALIO >MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	346	mg/L	2.37	15	11/04/2019	110419 ALEE
MBP_PH(SM 4500-H+ B) pH	7.2	pH			11/04/2019	110425 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	607	mg/L	13.2	20	11/06/2019	110471 PWARNER >MCL

Lab Sample#: 1958444-01A **Sample Source:** WSB_SS11SSLP120 **External ID:**

Date Collected: 11/4/19 11:05 am **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#11 - SS LINEAR PARK MW - 12C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	68.3	mg/L	0.5	2.5	11/04/2019	110429 MAWALLACE

Lab Sample#: 1958444-02 **Sample Source:** WSB_SS12SSLP220 **External ID:**

Date Collected: 11/4/19 11:15 am **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#12 - SS LINEAR PARK MW - 22C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	0.744	mg/L	0.034	0.07	11/04/2019	110429 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	31.2	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	26.5	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.22	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	54.5	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	128	mg/L	1.19	6	11/04/2019	110422 ALEE
MBP_CHLORIDE(SM 4500-CL- D) Chloride	102	mg/L		6	11/04/2019	110426 ALEE
MBP_COND(SM 2510 B) Specific Conductance	650	µmhos/cm		1	11/04/2019	110428 ABALALIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/04/2019

Sampling Team: Field

MBP_HARDNESS_T(SM 2340 C)							
<i>Hardness, Total, as CaCO3</i>							
	182	mg/L	0.948	6	11/04/2019	110419	ALEE
MBP_PH(SM 4500-H+ B)							
<i>pH</i>							
	7.21	pH			11/04/2019	110425	ABALALIO
MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>							
	268	mg/L	13.2	20	11/06/2019	110471	PWARNER
Lab Sample#: 1958444-02A Sample Source: WSB_SS12SSLP220 External ID:							
Date Collected: 11/4/19 11:15 am Date Received: 11/4/19 1:34 pm Sample Matrix: Aqueous Location Desc: SS#12 - SS LINEAR PARK MW - 22C							
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>		<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))							
<i>Sulfate</i>							
	20.2	mg/L	0.2	1	11/04/2019	110429	MAWALLACE
Lab Sample#: 1958444-03 Sample Source: WSB_SS13SSLP440 External ID:							
Date Collected: 11/4/19 12:14 pm Date Received: 11/4/19 1:34 pm Sample Matrix: Aqueous Location Desc: SS#13 - SS LINEAR PARK MW - 44C							
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>		<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))							
<i>Sulfate</i>							
	<0.5	mg/L	0.1	0.5	11/04/2019	110429	MAWALLACE
<i>Nitrate as N</i>							
	<0.07	mg/L	0.034	0.07	11/04/2019	110429	MAWALLACE
SEM_200.7_DW(EPA 200.7)							
<i>Calcium, Ca</i>							
	27.7	mg/L	0.01	1	11/08/2019	110662	BTRINH
<i>Magnesium, Mg</i>							
	21.9	mg/L	0.024	0.2	11/08/2019	110662	BTRINH
<i>Potassium, K</i>							
	5.18	mg/L	0.035	0.2	11/08/2019	110662	BTRINH
<i>Sodium, Na</i>							
	59.6	mg/L	0.013	1	11/08/2019	110662	BTRINH
MBP_ALK(SM 2320 B)							
<i>Alkalinity</i>							
	208	mg/L	1.19	6	11/04/2019	110422	ALEE
MBP_CHLORIDE(SM 4500-CL- D)							
<i>Chloride</i>							
	64.3	mg/L		6	11/04/2019	110426	ALEE
MBP_COND(SM 2510 B)							
<i>Specific Conductance</i>							
	612	µmhos/cm		1	11/04/2019	110428	ABALALIO
MBP_HARDNESS_T(SM 2340 C)							
<i>Hardness, Total, as CaCO3</i>							
	163	mg/L	0.948	6	11/04/2019	110419	ALEE
MBP_PH(SM 4500-H+ B)							
<i>pH</i>							
	7.53	pH			11/04/2019	110425	ABALALIO
MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>							
	356	mg/L	13.2	20	11/06/2019	110471	PWARNER
Lab Sample#: 1958444-04 Sample Source: WSB_SS14SSLP520 External ID:							
Date Collected: 11/4/19 12:15 pm Date Received: 11/4/19 1:34 pm Sample Matrix: Aqueous Location Desc: SS#14 - SS LINEAR PARK MW-520							
<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>		<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))							
<i>Nitrate as N</i>							
	<0.07	mg/L	0.034	0.07	11/04/2019	110429	MAWALLACE
SEM_200.7_DW(EPA 200.7)							
<i>Calcium, Ca</i>							
	42.8	mg/L	0.01	1	11/08/2019	110662	BTRINH
<i>Magnesium, Mg</i>							
	15.2	mg/L	0.024	0.2	11/08/2019	110662	BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/04/2019

Sampling Team: Field

Potassium, K	3.44	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	95.4	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	192	mg/L	1.19	6	11/04/2019	110422 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	90.7	mg/L		6	11/04/2019	110426 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	773	µmhos/cm		1	11/04/2019	110428 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	164	mg/L	0.948	6	11/04/2019	110419 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.29	pH			11/04/2019	110425 ABALALIO
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	384	mg/L	13.2	20	11/06/2019	110471 PWARNER

Lab Sample#: 1958444-04A **Sample Source:** WSB_SS14SSLP520 **External ID:**

Date Collected: 11/4/19 12:15 pm **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#14 - SS LINEAR PARK MW-520

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	44.4	mg/L	0.5	2.5	11/04/2019	110429 MAWALLACE

Lab Sample#: 1958444-05 **Sample Source:** WSB_SS_DUP **External ID:**

Date Collected: 11/4/19 12:25 pm **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#14 - SS LINEAR PARK MW-520

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	<0.07	mg/L	0.034	0.07	11/04/2019	110429 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	43.9	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	15.4	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	3.51	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	97.1	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	197	mg/L	1.19	6	11/04/2019	110422 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	93.5	mg/L		6	11/04/2019	110426 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	778	µmhos/cm		1	11/04/2019	110428 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	165	mg/L	0.948	6	11/04/2019	110419 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.41	pH			11/04/2019	110425 ABALALIO
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	400	mg/L	13.2	20	11/06/2019	110471 PWARNER

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

SEWPCP 1721

MILLBRAE 1449

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/04/2019

Sampling Team: Field

Lab Sample#: 1958444-05A

Sample Source: WSB_SS_DUP

External ID:

Date Collected: 11/4/19 12:25 pm **Date Received:** 11/4/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** SS#14 - SS LINEAR PARK MW-520

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	45.6	mg/L	0.5	2.5	11/04/2019	110429 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/04/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110419 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969186-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969186-03	LCS	Hardness, Total, as CaCO3	40.3	mg/L	101			3	
QC1969186-04	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969186-05	DUP	Hardness, Total, as CaCO3	10.1	mg/L		1	0.474	3	Splt# 1958287-01 (10mg/L)
QC1969186-06	DUP	Hardness, Total, as CaCO3	57.2	mg/L		0	0.474	3	Splt# 1958307-05 (56.8mg/L)
QC1969186-07	LCS	Hardness, Total, as CaCO3	40.6	mg/L	101			3	

QC list for Run#: 110422 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969188-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969188-03	DUP	Alkalinity	49.5	mg/L		0	0.593	3	Splt# 1958307-05 (49.8mg/L)
QC1969188-04	LCS	Alkalinity	42.6	mg/L	107			3	

QC list for Run#: 110425 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969189-01	ICV	pH	9.08	pH	101				
QC1969189-02	DUP	pH	9.29	pH		0			Splt# 1958297-01 (9.27pH)
QC1969189-03	CCV	pH	10.1	pH	100				
QC1969189-04	CCV	pH	10.1	pH	100				
QC1969189-05	CAL	pH	10.1	pH	101				
QC1969189-06	CAL	pH	7.01	pH	100				
QC1969189-07	CAL	pH	4.01	pH	100				

QC list for Run#: 110426 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969190-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969190-03	DUP	Chloride	13	mg/L		0	1.16	3	Splt# 1958307-05 (13.1mg/L)
QC1969190-04	LCS	Chloride	39.6	mg/L	99			3	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/04/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110428 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969193-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969193-03	DUP	Specific Conductance	72.6	µmhos/cm		0		1	Splt# 1958315-01 (72.6µmhos/cm)
QC1969193-04	DUP	Specific Conductance	1380	µmhos/cm		0		1	Splt# 1958306-07 (1390µmhos/cm)
QC1969193-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 110429 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969192-02	CCV	Sulfate	2.48	mg/L	99				
	CCV	Nitrate as N	0.322	mg/L	95				
QC1969192-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969192-04	LCS	Sulfate	5.03	mg/L	101				
	LCS	Nitrate as N	0.654	mg/L	96				
QC1969192-05	SPK	Sulfate	4.67	mg/L	135				Splt# 1958550-01 (1.32mg/L)
	SPK	Nitrate as N	0.47	mg/L	140				Splt# 1958550-01 (<0.07mg/L)
QC1969192-06	SPKD	Sulfate	3.76	mg/L	98	21			Splt# 1958550-01 (1.32mg/L)
	SPKD	Nitrate as N	0.361	mg/L	107	26			Splt# 1958550-01 (<0.07mg/L)
QC1969192-07	CCV	Sulfate	2.52	mg/L	101				
	CCV	Nitrate as N	0.331	mg/L	97				
QC1969192-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 110471 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969221-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969221-02	LCS	Total Dissolved Solids	87	mg/L	91		13.2	20	
QC1969221-03	DUP	Total Dissolved Solids	606	mg/L		0	13.2	20	Splt# 1958444-01 (607mg/L)

QC list for Run#: 110662 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969345-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958444

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/04/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Filter	Flow	Conductivity	Temp	Notes
BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969345-02								
LCS	Calcium, Ca	20.3	mg/L	101		0.01	1	
LCS	Magnesium, Mg	20.3	mg/L	102		0.024	0.2	
LCS	Potassium, K	19	mg/L	95		0.035	0.2	
LCS	Sodium, Na	21.5	mg/L	108		0.013	1	
QC1969345-03								
DUP	Calcium, Ca	65.1	mg/L	0		0.01	1	Splt# 1958444-01 (65.1mg/L)
DUP	Magnesium, Mg	44.9	mg/L	0		0.024	0.2	Splt# 1958444-01 (45.2mg/L)
DUP	Potassium, K	3.04	mg/L	0		0.035	0.2	Splt# 1958444-01 (3.07mg/L)
DUP	Sodium, Na	96.7	mg/L	2		0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-04								
SPK	Calcium, Ca	85.7	mg/L	103		0.01	1	Splt# 1958444-01 (65.1mg/L)
SPK	Magnesium, Mg	64.2	mg/L	94		0.024	0.2	Splt# 1958444-01 (45.2mg/L)
SPK	Potassium, K	22.2	mg/L	95		0.035	0.2	Splt# 1958444-01 (3.07mg/L)
SPK	Sodium, Na	108	mg/L	69		0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-05								
SPKD	Calcium, Ca	87.7	mg/L	113	2	0.01	1	Splt# 1958444-01 (65.1mg/L)
SPKD	Magnesium, Mg	65.7	mg/L	103	2	0.024	0.2	Splt# 1958444-01 (45.2mg/L)
SPKD	Potassium, K	22.4	mg/L	96	0	0.035	0.2	Splt# 1958444-01 (3.07mg/L)
SPKD	Sodium, Na	111	mg/L	82	2	0.013	1	Splt# 1958444-01 (94.3mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Lab Sample#: 1958445-01 **Sample Source:** WSB_CM-23-230 **External ID:**

Date Collected: 11/5/19 12:55 pm **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-230, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	44.6	mg/L	1	5	11/06/2019	110521 MAWALLACE
Nitrate as N	10.9	mg/L	0.34	0.7	11/06/2019	110521 MAWALLACE >MCL
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	62.4	mg/L	0.01	1	11/15/2019	110903 BTRINH
Magnesium, Mg	57.4	mg/L	0.024	0.2	11/15/2019	110903 BTRINH
Potassium, K	2.11	mg/L	0.035	0.2	11/15/2019	110903 BTRINH
Sodium, Na	59.1	mg/L	0.013	1	11/15/2019	110903 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	310	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	85.4	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	1030	µmhos/cm		1	11/05/2019	110499 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	403	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B)						
pH	6.18	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	568	mg/L	13.2	20	11/06/2019	110471 PWARNER >MCL

Lab Sample#: 1958445-02 **Sample Source:** WSB_CM-23-440 **External ID:**

Date Collected: 11/5/19 12:16 pm **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-440, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	16.6	mg/L	1	5	11/06/2019	110521 MAWALLACE
Nitrate as N	3.44	mg/L	0.34	0.7	11/06/2019	110521 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	25.1	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	25.8	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	1.72	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	39	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	137	mg/L	0.593	3	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	58.5	mg/L		3	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	516	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	170	mg/L	0.474	3	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	7.61	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	286	mg/L	13.2	20	11/06/2019	110471 PWARNER
Lab Sample#: 1958445-03 Sample Source: WSB_CM-23-515 External ID:						
Date Collected: 11/5/19 11:30 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-515, TI TRAILER						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	11/06/2019	110521 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	40.4	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	27.2	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.97	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	49.8	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	171	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	70.5	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	654	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	212	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.37	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	338	mg/L	13.2	20	11/06/2019	110471 PWARNER
Lab Sample#: 1958445-03A Sample Source: WSB_CM-23-515 External ID:						
Date Collected: 11/5/19 11:30 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-515, TI TRAILER						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	43.2	mg/L	1	5	11/06/2019	110521 MAWALLACE
Lab Sample#: 1958445-04 Sample Source: WSB_CM-23-600 External ID:						
Date Collected: 11/5/19 10:35 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-600, TI TRAILER						
SEM_200.7_DW(EPA 200.7) Calcium, Ca	44.5	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	45.7	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.15	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	51.2	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	181	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.5	mg/L		6	11/05/2019	110516 ABALALIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_COND(SM 2510 B) Specific Conductance	839	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	303	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.45	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	446	mg/L	13.2	20	11/06/2019	110471 PWARNER

Lab Sample#: 1958445-04A **Sample Source:** WSB_CM-23-600 **External ID:**

Date Collected: 11/5/19 10:35 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	19.9	mg/L	1.7	3.5	11/06/2019	110578 MAWALLACE >MCL

Lab Sample#: 1958445-05 **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 11/5/19 10:48 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7) Calcium, Ca	45.7	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	45.2	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.1	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	51.4	mg/L	0.013	1	11/08/2019	110662 BTRINH

MBP_ALK(SM 2320 B) Alkalinity	180	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.3	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	841	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	303	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.48	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	481	mg/L	13.2	20	11/06/2019	110471 PWARNER

Lab Sample#: 1958445-05A **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 11/5/19 10:48 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	19.9	mg/L	1.7	3.5	11/06/2019	110578 MAWALLACE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110471 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969221-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969221-02	LCS	Total Dissolved Solids	87	mg/L	91		13.2	20	
QC1969221-03	DUP	Total Dissolved Solids	606	mg/L		0	13.2	20	Splt# 1958444-01 (607mg/L)

QC list for Run#: 110499 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969232-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969232-03	DUP	Specific Conductance	842	µmhos/cm		0		1	Splt# 1958445-05 (841µmhos/cm)
QC1969232-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 110502 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969234-01	ICV	pH	9.08	pH	100				
QC1969234-02	DUP	pH	7.5	pH		0			Splt# 1958445-05 (7.48pH)
QC1969234-03	CCV	pH	10.1	pH	100				

QC list for Run#: 110513 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969244-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969244-03	DUP	Alkalinity	17	mg/L		0	0.593	3	Splt# 1958282-04 (17mg/L)
QC1969244-04	LCS	Alkalinity	42.6	mg/L	106			3	

QC list for Run#: 110516 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969245-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969245-03	DUP	Chloride	6.25	mg/L		0	1.16	3	Splt# 1958282-04 (6.28mg/L)
QC1969245-04	LCS	Chloride	39.4	mg/L	98			3	

QC list for Run#: 110518 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969246-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969246-03	DUP	Hardness, Total, as CaCO3	15.7	mg/L		0	0.474	3	Splt# 1958282-04 (15.6mg/L)
QC1969246-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS Hardness, Total, as CaCO3 40.9 mg/L 102 3

QC list for Run#: 110521 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969247-01	CAL	Chloride	0.513	mg/L	103		0.2		
	CAL	Sulfate	0.514	mg/L	103		0.1		
	CAL	Nitrate as N	0.0705	mg/L	104		0.034		
QC1969247-02	CAL	Chloride	0.786	mg/L	98		0.2		
	CAL	Sulfate	0.797	mg/L	99		0.1		
	CAL	Nitrate as N	0.107	mg/L	98		0.034		
QC1969247-03	CAL	Chloride	0.978	mg/L	97		0.2		
	CAL	Sulfate	0.973	mg/L	97		0.1		
	CAL	Nitrate as N	0.131	mg/L	96		0.034		
QC1969247-04	CAL	Chloride	2.43	mg/L	97		0.2		
	CAL	Sulfate	2.38	mg/L	95		0.1		
	CAL	Nitrate as N	0.32	mg/L	94		0.034		
QC1969247-05	CAL	Chloride	5.05	mg/L	101		0.2		
	CAL	Sulfate	4.81	mg/L	96		0.1		
	CAL	Nitrate as N	0.644	mg/L	95		0.034		
QC1969247-06	CAL	Chloride	10.5	mg/L	105		0.2		
	CAL	Sulfate	10	mg/L	100		0.1		
	CAL	Nitrate as N	1.37	mg/L	101		0.034		
QC1969247-07	CAL	Chloride	19.7	mg/L	98		0.2		
	CAL	Sulfate	21.5	mg/L	107		0.1		
	CAL	Nitrate as N	2.92	mg/L	108		0.034		
QC1969247-08	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969247-09	ICV	Chloride	2.46	mg/L	98		0.2	1	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10
	ICV	Sulfate	2.34	mg/L	93		0.1	0.5	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10
	ICV	Nitrate as N	0.321	mg/L	100		0.34	0.07	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC	Code	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969247-11	CCV	Sulfate	2.39	mg/L	95				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1969247-12	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969247-13	LCS	Sulfate	4.83	mg/L	96				
	LCS	Nitrate as N	0.661	mg/L	97				
QC1969247-14	SPK	Sulfate	7.1	mg/L	123				Splt# 1958553-01 (4.06mg/L)
	SPK	Nitrate as N	0.594	mg/L	121				Splt# 1958553-01 (0.188mg/L)
QC1969247-15	SPKD	Sulfate	7.46	mg/L	137	5			Splt# 1958553-01 (4.06mg/L)
	SPKD	Nitrate as N	0.624	mg/L	130	4			Splt# 1958553-01 (0.188mg/L)
QC1969247-16	CCV	Sulfate	2.4	mg/L	95				
	CCV	Nitrate as N	0.329	mg/L	97				
QC1969247-17	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 110578 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969282-02	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.324	mg/L	95				
QC1969282-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969282-04	LCS	Sulfate	4.84	mg/L	96				
	LCS	Nitrate as N	0.659	mg/L	97				
QC1969282-05	SPK	Sulfate	3.79	mg/L	94				Splt# 1958622-01 (1.44mg/L)
	SPK	Nitrate as N	0.348	mg/L	103				Splt# 1958622-01 (<0.07mg/L)
QC1969282-06	SPKD	Sulfate	3.73	mg/L	92	1			Splt# 1958622-01 (1.44mg/L)
	SPKD	Nitrate as N	0.34	mg/L	101	2			Splt# 1958622-01 (<0.07mg/L)
QC1969282-07	CCV	Sulfate	2.42	mg/L	96				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1969282-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110662 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969345-01									
	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969345-02									
	LCS	Calcium, Ca	20.3	mg/L	101		0.01	1	
	LCS	Magnesium, Mg	20.3	mg/L	102		0.024	0.2	
	LCS	Potassium, K	19	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	21.5	mg/L	108		0.013	1	
QC1969345-03									
	DUP	Calcium, Ca	65.1	mg/L		0	0.01	1	Splt# 1958444-01 (65.1mg/L)
	DUP	Magnesium, Mg	44.9	mg/L		0	0.024	0.2	Splt# 1958444-01 (45.2mg/L)
	DUP	Potassium, K	3.04	mg/L		0	0.035	0.2	Splt# 1958444-01 (3.07mg/L)
	DUP	Sodium, Na	96.7	mg/L		2	0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-04									
	SPK	Calcium, Ca	85.7	mg/L	103		0.01	1	Splt# 1958444-01 (65.1mg/L)
	SPK	Magnesium, Mg	64.2	mg/L	94		0.024	0.2	Splt# 1958444-01 (45.2mg/L)
	SPK	Potassium, K	22.2	mg/L	95		0.035	0.2	Splt# 1958444-01 (3.07mg/L)
	SPK	Sodium, Na	108	mg/L	69		0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-05									
	SPKD	Calcium, Ca	87.7	mg/L	113	2	0.01	1	Splt# 1958444-01 (65.1mg/L)
	SPKD	Magnesium, Mg	65.7	mg/L	103	2	0.024	0.2	Splt# 1958444-01 (45.2mg/L)
	SPKD	Potassium, K	22.4	mg/L	96	0	0.035	0.2	Splt# 1958444-01 (3.07mg/L)
	SPKD	Sodium, Na	111	mg/L	82	2	0.013	1	Splt# 1958444-01 (94.3mg/L)

QC list for Run#: 110903 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969477-01									
	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969477-02									
	LCS	Calcium, Ca	19.9	mg/L	99		0.01	1	
	LCS	Magnesium, Mg	19.7	mg/L	98		0.024	0.2	
	LCS	Potassium, K	19.4	mg/L	96		0.035	0.2	
	LCS	Sodium, Na	19.3	mg/L	96		0.013	1	
QC1969477-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

DUP	Calcium, Ca	63.7	mg/L	2	0.01	1	Splt# 1958445-01 (62.4mg/L)
DUP	Magnesium, Mg	56.8	mg/L	0	0.024	0.2	Splt# 1958445-01 (57.4mg/L)
DUP	Potassium, K	2.16	mg/L	2	0.035	0.2	Splt# 1958445-01 (2.11mg/L)
DUP	Sodium, Na	55.7	mg/L	5	0.013	1	Splt# 1958445-01 (59.1mg/L)
QC1969477-04							
SPK	Calcium, Ca	83.9	mg/L	108	0.01	1	Splt# 1958445-01 (62.4mg/L)
SPK	Magnesium, Mg	76.4	mg/L	95	0.024	0.2	Splt# 1958445-01 (57.4mg/L)
SPK	Potassium, K	22.7	mg/L	103	0.035	0.2	Splt# 1958445-01 (2.11mg/L)
SPK	Sodium, Na	73.7	mg/L	73	0.013	1	Splt# 1958445-01 (59.1mg/L)
QC1969477-05							
SPKD	Calcium, Ca	85.5	mg/L	116	0.01	1	Splt# 1958445-01 (62.4mg/L)
SPKD	Magnesium, Mg	78.5	mg/L	106	0.024	0.2	Splt# 1958445-01 (57.4mg/L)
SPKD	Potassium, K	22.6	mg/L	103	0.035	0.2	Splt# 1958445-01 (2.11mg/L)
SPKD	Sodium, Na	76.4	mg/L	86	0.013	1	Splt# 1958445-01 (59.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/06/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1958450-01 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/6/19 10:22 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-690, ROW AT SI

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	80.4	mg/L	0.5	2.5	11/06/2019	110578 MAWALLACE
Nitrate as N	3.77	mg/L	0.17	0.35	11/06/2019	110578 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	55.8	mg/L	0.01	1	11/12/2019	110771 BTRINH
Magnesium, Mg	34.7	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
Potassium, K	2.1	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
Sodium, Na	51.7	mg/L	0.013	1	11/12/2019	110771 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	153	mg/L	1.19	6	11/06/2019	110572 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	103	mg/L		6	11/06/2019	110574 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	801	µmhos/cm		1	11/06/2019	110565 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	281	mg/L	0.948	6	11/06/2019	110575 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.28	pH			11/06/2019	110580 ABALALIO
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	457	mg/L	13.2	20	11/12/2019	110604 PWARNER

Lab Sample#: 1958450-02 **Sample Source:** WSB_CAL-19-475 **External ID:**

Date Collected: 11/6/19 11:53 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-475, ROW AT SI

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Nitrate as N	0.722	mg/L	0.034	0.07	11/06/2019	110578 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	38.8	mg/L	0.01	1	11/12/2019	110771 BTRINH
Magnesium, Mg	34.6	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
Potassium, K	2.51	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
Sodium, Na	47.5	mg/L	0.013	1	11/12/2019	110771 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	147	mg/L	1.19	6	11/06/2019	110572 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	106	mg/L		6	11/06/2019	110574 ALEE
MBP_COND(SM 2510 B)						
Specific Conductance	714	µmhos/cm		1	11/06/2019	110565 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	242	mg/L	0.948	6	11/06/2019	110575 ALEE
MBP_PH(SM 4500-H+ B)						
pH	7.59	pH			11/06/2019	110580 ABALALIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 11/06/2019

Sampling Team: Field

MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>	404	mg/L	13.2	20	11/12/2019	110604	PWARNER

Lab Sample#: 1958450-02A **Sample Source:** WSB_CAL-19-475 **External ID:**

Date Collected: 11/6/19 11:53 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-475, ROW AT SI

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))						
<i>Sulfate</i>	40	mg/L	0.5	2.5	11/06/2019	110578 MAWALLACE

Lab Sample#: 1958450-03 **Sample Source:** WSB_CAL-19-600 **External ID:**

Date Collected: 11/6/19 11:18 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-600, ROW AT SI

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))						
<i>Nitrate as N</i>	0.118	mg/L	0.034	0.07	11/06/2019	110578 MAWALLACE

SEM_200.7_DW(EPA 200.7)						
<i>Calcium, Ca</i>	46.9	mg/L	0.01	1	11/12/2019	110771 BTRINH
<i>Magnesium, Mg</i>	39.5	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
<i>Potassium, K</i>	2.85	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
<i>Sodium, Na</i>	57.4	mg/L	0.013	1	11/12/2019	110771 BTRINH

MBP_ALK(SM 2320 B)						
<i>Alkalinity</i>	191	mg/L	1.19	6	11/06/2019	110572 ALEE

MBP_CHLORIDE(SM 4500-CL- D)						
<i>Chloride</i>	108	mg/L		6	11/06/2019	110574 ALEE

MBP_COND(SM 2510 B)						
<i>Specific Conductance</i>	804	µmhos/cm		1	11/06/2019	110565 ABALALIO

MBP_HARDNESS_T(SM 2340 C)						
<i>Hardness, Total, as CaCO3</i>	272	mg/L	0.948	6	11/06/2019	110575 ALEE

MBP_PH(SM 4500-H+ B)						
<i>pH</i>	7.45	pH			11/06/2019	110580 ABALALIO

MBP_TDS(SM 2540 C)						
<i>Total Dissolved Solids</i>	436	mg/L	13.2	20	11/12/2019	110604 PWARNER

Lab Sample#: 1958450-03A **Sample Source:** WSB_CAL-19-600 **External ID:**

Date Collected: 11/6/19 11:18 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-600, ROW AT SI

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))						
<i>Sulfate</i>	46.5	mg/L	1	5	11/06/2019	110578 MAWALLACE

Lab Sample#: 1958450-04 **Sample Source:** WSB_CAL-19-690 **External ID:**

Date Collected: 11/6/19 10:05 am **Date Received:** 11/6/19 1:34 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-19-690, ROW AT SI

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
MBI_IC_ANIONS_A(EPA 300.0 (A))						
<i>Sulfate</i>	80.2	mg/L	0.5	2.5	11/06/2019	110578 MAWALLACE
<i>Nitrate as N</i>	3.97	mg/L	0.17	0.35	11/06/2019	110578 MAWALLACE

SEM_200.7_DW(EPA 200.7)						
<i>Calcium, Ca</i>	56.4	mg/L	0.01	1	11/12/2019	110771 BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/06/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

<i>Magnesium, Mg</i>	35.2	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
<i>Potassium, K</i>	2.16	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
<i>Sodium, Na</i>	53.2	mg/L	0.013	1	11/12/2019	110771 BTRINH
MBP_ALK(SM 2320 B)						
<i>Alkalinity</i>	149	mg/L	1.19	6	11/06/2019	110572 ALEE
MBP_CHLORIDE(SM 4500-CL- D)						
<i>Chloride</i>	101	mg/L		6	11/06/2019	110574 ALEE
MBP_COND(SM 2510 B)						
<i>Specific Conductance</i>	793	µmhos/cm		1	11/06/2019	110565 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
<i>Hardness, Total, as CaCO3</i>	272	mg/L	0.948	6	11/06/2019	110575 ALEE
MBP_PH(SM 4500-H+ B)						
<i>pH</i>	7.32	pH			11/06/2019	110580 ABALALIO
MBP_TDS(SM 2540 C)						
<i>Total Dissolved Solids</i>	438	mg/L	13.2	20	11/12/2019	110604 PWARNER

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/06/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 110565 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969276-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969276-03	DUP	Specific Conductance	74.2	µmhos/cm		0		1	Splt# 1958275-01 (74.3µmhos/cm)
QC1969276-04	DUP	Specific Conductance	100	µmhos/cm		0		1	Splt# 1958275-06 (101µmhos/cm)
QC1969276-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 110572 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969278-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969278-03	DUP	Alkalinity	150	mg/L		1	1.19	6	Splt# 1958450-01 (153mg/L)
QC1969278-04	LCS	Alkalinity	42.4	mg/L	106			3	

QC list for Run#: 110574 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969279-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969279-03	DUP	Chloride	101	mg/L		1	2.31	6	Splt# 1958450-01 (103mg/L)
QC1969279-04	LCS	Chloride	39.3	mg/L	98			3	

QC list for Run#: 110575 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969280-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969280-03	DUP	Hardness, Total, as CaCO3	277	mg/L		1	0.948	6	Splt# 1958450-01 (281mg/L)
QC1969280-04	LCS	Hardness, Total, as CaCO3	41.2	mg/L	103			3	

QC list for Run#: 110578 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969282-02	CCV	Sulfate	2.4	mg/L	96				
	CCV	Nitrate as N	0.324	mg/L	95				
QC1969282-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969282-04	LCS	Sulfate	4.84	mg/L	96				
	LCS	Nitrate as N	0.659	mg/L	97				
QC1969282-05									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/06/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
SPK	Sulfate		3.79	mg/L	94				Splt# 1958622-01 (1.44mg/L)
SPK	Nitrate as N		0.348	mg/L	103				Splt# 1958622-01 (<0.07mg/L)
QC1969282-06									
SPKD	Sulfate		3.73	mg/L	92	1			Splt# 1958622-01 (1.44mg/L)
SPKD	Nitrate as N		0.34	mg/L	101	2			Splt# 1958622-01 (<0.07mg/L)
QC1969282-07									
CCV	Sulfate		2.42	mg/L	96				
CCV	Nitrate as N		0.328	mg/L	96				
QC1969282-08									
BLK	Sulfate		<0.5	mg/L			0.1	0.5	
BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	

QC list for Run#: 110580 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969284-01									
ICV	pH		9.07	pH	100				
QC1969284-02									
DUP	pH		7.59	pH		0			Splt# 1958450-02 (7.59pH)
QC1969284-03									
CCV	pH		10.1	pH	100				

QC list for Run#: 110604 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969305-01									
LCS	Total Dissolved Solids		93	mg/L	97		13.2	20	
QC1969305-02									
BLK	Total Dissolved Solids		<20	mg/L			13.2	20	
QC1969305-03									
DUP	Total Dissolved Solids		421	mg/L		3	13.2	20	Splt# 1958450-03 (436mg/L)

QC list for Run#: 110771 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969413-01									
BLK	Calcium, Ca		<1	mg/L			0.01	1	
BLK	Magnesium, Mg		<0.2	mg/L			0.024	0.2	
BLK	Potassium, K		<0.2	mg/L			0.035	0.2	
BLK	Sodium, Na		<1	mg/L			0.013	1	
QC1969413-02									
LCS	Calcium, Ca		20.3	mg/L	102		0.01	1	
LCS	Magnesium, Mg		20.2	mg/L	101		0.024	0.2	
LCS	Potassium, K		19.5	mg/L	97		0.035	0.2	
LCS	Sodium, Na		21	mg/L	105		0.013	1	
QC1969413-03									
DUP	Calcium, Ca		39.3	mg/L		1	0.01	1	Splt# 1958450-02 (38.8mg/L)
DUP	Magnesium, Mg		35.2	mg/L		1	0.024	0.2	Splt# 1958450-02 (34.6mg/L)
DUP	Potassium, K		2.46	mg/L		1	0.035	0.2	Splt# 1958450-02 (2.51mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

ELAP Cert #:
MILLBRAE 1449
SEWPCP 1721

FOLDER ID: 1958450

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.B

Scheduled Sample Date: 11/06/2019

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Flow	Conduct	Depth	Split #	Notes
QC1969413-04	DUP Sodium, Na	46.7	mg/L			1	0.013	1	Splt# 1958450-02 (47.5mg/L)
	SPK Calcium, Ca	59.8	mg/L	105			0.01	1	Splt# 1958450-02 (38.8mg/L)
	SPK Magnesium, Mg	54.8	mg/L	101			0.024	0.2	Splt# 1958450-02 (34.6mg/L)
	SPK Potassium, K	22.4	mg/L	99			0.035	0.2	Splt# 1958450-02 (2.51mg/L)
	SPK Sodium, Na	66	mg/L	92			0.013	1	Splt# 1958450-02 (47.5mg/L)
QC1969413-05	SPKD Calcium, Ca	61.2	mg/L	112	2		0.01	1	Splt# 1958450-02 (38.8mg/L)
	SPKD Magnesium, Mg	55.3	mg/L	103	0		0.024	0.2	Splt# 1958450-02 (34.6mg/L)
	SPKD Potassium, K	22.3	mg/L	98	0		0.035	0.2	Splt# 1958450-02 (2.51mg/L)
	SPKD Sodium, Na	63.7	mg/L	81	3		0.013	1	Splt# 1958450-02 (47.5mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/07/2019

Sampling Team: Field

Lab Sample#: 1958451-01 **Sample Source:** WSB_CAL-22A-290 **External ID:**

Date Collected: 11/7/19 10:00 am **Date Received:** 11/7/19 10:42 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-290, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	61.8	mg/L	1	5	11/07/2019	110622 MAWALLACE
Nitrate as N	10.6	mg/L	0.34	0.7	11/07/2019	110622 MAWALLACE >MCL
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	60	mg/L	0.01	1	11/12/2019	110771 BTRINH
Magnesium, Mg	45.5	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
Potassium, K	2.54	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
Sodium, Na	63.7	mg/L	0.013	1	11/12/2019	110771 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	232	mg/L	1.19	6	11/07/2019	110621 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	97.6	mg/L		6	11/07/2019	110623 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	918	µmhos/cm		1	11/07/2019	110630 ABALALIO >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	327	mg/L	0.948	6	11/07/2019	110624 ABALALIO
MBP_PH(SM 4500-H+ B)						
pH	7.4	pH			11/07/2019	110629 ABALALIO
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	534	mg/L	13.2	20	11/12/2019	110604 PWARNER >MCL

Lab Sample#: 1958451-02 **Sample Source:** WSB_CAL-22A-440 **External ID:**

Date Collected: 11/7/19 9:10 am **Date Received:** 11/7/19 10:42 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-440, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	57.1	mg/L	1	5	11/07/2019	110622 MAWALLACE
Nitrate as N	8.1	mg/L	0.34	0.7	11/07/2019	110622 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	53.5	mg/L	0.01	1	11/12/2019	110771 BTRINH
Magnesium, Mg	40.2	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
Potassium, K	2.58	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
Sodium, Na	60.4	mg/L	0.013	1	11/12/2019	110771 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	216	mg/L	1.19	6	11/07/2019	110621 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	93.4	mg/L		6	11/07/2019	110623 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	850	µmhos/cm		1	11/07/2019	110630 ABALALIO
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	301	mg/L	0.948	6	11/07/2019	110624 ABALALIO
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/07/2019

Sampling Team: Field

<i>pH</i>	7.41	<i>pH</i>	11/07/2019	110629	ABALALIO
<i>MBP_TDS(SM 2540 C)</i>					
<i>Total Dissolved Solids</i>	431	mg/L	13.2	20	11/12/2019 110604 PWARNER

Lab Sample#: 1958451-03 **Sample Source:** WSB_CAL-22A-545 **External ID:**

Date Collected: 11/7/19 9:00 am **Date Received:** 11/7/19 10:42 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	116	mg/L	1	5	11/07/2019	110622 MAWALLACE
<i>Nitrate as N</i>	6.2	mg/L	0.34	0.7	11/07/2019	110622 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	74.7	mg/L	0.01	1	11/12/2019	110771 BTRINH
<i>Magnesium, Mg</i>	52.8	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
<i>Potassium, K</i>	3.25	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
<i>Sodium, Na</i>	81.7	mg/L	0.013	1	11/12/2019	110771 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	305	mg/L	2.96	15	11/07/2019	110621 ABALALIO
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	110	mg/L		15	11/07/2019	110623 ABALALIO
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1120	µmhos/cm		1	11/07/2019	110630 ABALALIO >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	394	mg/L	2.37	15	11/07/2019	110624 ABALALIO
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	6.81	pH			11/07/2019	110629 ABALALIO
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	656	mg/L	13.2	20	11/12/2019	110604 PWARNER >MCL

Lab Sample#: 1958451-04 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/7/19 9:35 am **Date Received:** 11/7/19 10:42 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	117	mg/L	1	5	11/07/2019	110622 MAWALLACE
<i>Nitrate as N</i>	6.24	mg/L	0.34	0.7	11/07/2019	110622 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	73.2	mg/L	0.01	1	11/12/2019	110771 BTRINH
<i>Magnesium, Mg</i>	52.6	mg/L	0.024	0.2	11/12/2019	110771 BTRINH
<i>Potassium, K</i>	3.17	mg/L	0.035	0.2	11/12/2019	110771 BTRINH
<i>Sodium, Na</i>	80.4	mg/L	0.013	1	11/12/2019	110771 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	306	mg/L	2.96	15	11/07/2019	110621 ABALALIO
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	110	mg/L		15	11/07/2019	110623 ABALALIO
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1120	µmhos/cm		1	11/07/2019	110630 ABALALIO >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

MILLBRAE 1449

SEWPCP 1721

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/07/2019

Sampling Team: Field

<i>MBP_HARDNESS_T(SM 2340 C)</i>								
<i>Hardness, Total, as CaCO3</i>	394	mg/L	2.37	15	11/07/2019	110624	ABALALIO	
<i>MBP_PH(SM 4500-H+ B)</i>								
<i>pH</i>	6.79	pH			11/07/2019	110629	ABALALIO	
<i>MBP_TDS(SM 2540 C)</i>								
<i>Total Dissolved Solids</i>	637	mg/L	13.2	20	11/12/2019	110604	PWARNER	>MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110604 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969305-01	LCS	Total Dissolved Solids	93	mg/L	97		13.2	20	
QC1969305-02	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969305-03	DUP	Total Dissolved Solids	421	mg/L		3	13.2	20	Splt# 1958450-03 (436mg/L)

QC list for Run#: 110621 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969315-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969315-03	DUP	Alkalinity	28.7	mg/L		1	0.593	3	Splt# 1958303-01 (29.1mg/L)
QC1969315-04	LCS	Alkalinity	42.8	mg/L	107			3	

QC list for Run#: 110622 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969314-02	CCV	Sulfate	2.39	mg/L	95				
	CCV	Nitrate as N	0.321	mg/L	94				
QC1969314-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969314-04	LCS	Sulfate	4.86	mg/L	97				
	LCS	Nitrate as N	0.654	mg/L	96				
QC1969314-05	SPK	Sulfate	3.87	mg/L	97				Splt# 1958684-01 (1.45mg/L)
	SPK	Nitrate as N	0.37	mg/L	110				Splt# 1958684-01 (<0.07mg/L)
QC1969314-06	SPKD	Sulfate	3.86	mg/L	97	0			Splt# 1958684-01 (1.45mg/L)
	SPKD	Nitrate as N	0.36	mg/L	107	2			Splt# 1958684-01 (<0.07mg/L)
QC1969314-07	CCV	Sulfate	2.43	mg/L	97				
	CCV	Nitrate as N	0.327	mg/L	96				
QC1969314-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 110623 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969316-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969316-03	DUP	Chloride	10.4	mg/L		0	1.16	3	Splt# 1958303-01 (10.3mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/07/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC1969316-04

LCS	Chloride	39.5	mg/L	98				3
-----	----------	------	------	----	--	--	--	---

QC list for Run#: 110624 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969317-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969317-03	DUP	Hardness, Total, as CaCO3	29.1	mg/L		0	0.474	3	Splt# 1958303-01 (29.2mg/L)
QC1969317-04	LCS	Hardness, Total, as CaCO3	40.6	mg/L	101			3	

QC list for Run#: 110629 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969319-01	ICV	pH	9.07	pH	100				
QC1969319-02	DUP	pH	7.39	pH		0			Splt# 1958451-01 (7.4pH)
QC1969319-03	CCV	pH	10.1	pH	100				

QC list for Run#: 110630 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969320-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969320-03	DUP	Specific Conductance	922	µmhos/cm		0		1	Splt# 1958451-01 (918µmhos/cm)
QC1969320-04	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 110771 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969413-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969413-02	LCS	Calcium, Ca	20.3	mg/L	102		0.01	1	
	LCS	Magnesium, Mg	20.2	mg/L	101		0.024	0.2	
	LCS	Potassium, K	19.5	mg/L	97		0.035	0.2	
	LCS	Sodium, Na	21	mg/L	105		0.013	1	
QC1969413-03	DUP	Calcium, Ca	39.3	mg/L		1	0.01	1	Splt# 1958450-02 (38.8mg/L)
	DUP	Magnesium, Mg	35.2	mg/L		1	0.024	0.2	Splt# 1958450-02 (34.6mg/L)
	DUP	Potassium, K	2.46	mg/L		1	0.035	0.2	Splt# 1958450-02 (2.51mg/L)
	DUP	Sodium, Na	46.7	mg/L		1	0.013	1	Splt# 1958450-02 (47.5mg/L)
QC1969413-04	SPK	Calcium, Ca	59.8	mg/L	105		0.01	1	Splt# 1958450-02 (38.8mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958451

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/07/2019

Sampling Team: Field

	SPK	Magnesium, Mg	54.8	mg/L	101		0.024	0.2	Splt# 1958450-02 (34.6mg/L)
	SPK	Potassium, K	22.4	mg/L	99		0.035	0.2	Splt# 1958450-02 (2.51mg/L)
	SPK	Sodium, Na	66	mg/L	92		0.013	1	Splt# 1958450-02 (47.5mg/L)
QC1969413-05	SPKD	Calcium, Ca	61.2	mg/L	112	2	0.01	1	Splt# 1958450-02 (38.8mg/L)
	SPKD	Magnesium, Mg	55.3	mg/L	103	0	0.024	0.2	Splt# 1958450-02 (34.6mg/L)
	SPKD	Potassium, K	22.3	mg/L	98	0	0.035	0.2	Splt# 1958450-02 (2.51mg/L)
	SPKD	Sodium, Na	63.7	mg/L	81	3	0.013	1	Splt# 1958450-02 (47.5mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/12/2019

Sampling Team: Field

Lab Sample#: 1958466-01 **Sample Source:** WSB_DC-10A-160 **External ID:**

Date Collected: 11/12/19 11:18 a **Date Received:** 11/12/19 1:15 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	49.6	mg/L	1	5	11/12/2019	110834 MAWALLACE	
Nitrate as N	11.8	mg/L	0.34	0.7	11/12/2019	110834 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	59.4	mg/L	0.01	1	12/06/2019	111980 BTRINH	
Magnesium, Mg	60	mg/L	0.024	0.2	12/06/2019	111980 BTRINH	
Potassium, K	1.35	mg/L	0.035	0.2	12/06/2019	111980 BTRINH	
Sodium, Na	73.6	mg/L	0.013	1	12/06/2019	111980 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	262	mg/L	1.19	6	11/12/2019	110835 PWARNER	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	128	mg/L		6	11/12/2019	110836 PWARNER	
MBP_COND(SM 2510 B)							
Specific Conductance	1110	µmhos/cm		1	11/12/2019	110812 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	379	mg/L	0.948	6	11/12/2019	110817 PWARNER	
MBP_PH(SM 4500-H+ B)							
pH	6.92	pH			11/12/2019	110813 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	632	mg/L	13.2	20	11/14/2019	110828 ABALALIO	>MCL

Lab Sample#: 1958466-03 **Sample Source:** WSB_DC-10A-500 **External ID:**

Date Collected: 11/12/19 9:49 ar **Date Received:** 11/12/19 1:15 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	80.4	mg/L	1	5	11/12/2019	110834 MAWALLACE	
Nitrate as N	9.7	mg/L	0.34	0.7	11/12/2019	110834 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	60.6	mg/L	0.01	1	11/20/2019	111228 BTRINH	
Magnesium, Mg	59.9	mg/L	0.024	0.2	11/20/2019	111228 BTRINH	
Potassium, K	1.38	mg/L	0.035	0.2	11/20/2019	111228 BTRINH	
Sodium, Na	70.1	mg/L	0.013	1	11/20/2019	111228 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	240	mg/L	1.19	6	11/12/2019	110835 PWARNER	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	123	mg/L		6	11/12/2019	110836 PWARNER	
MBP_COND(SM 2510 B)							
Specific Conductance	1100	µmhos/cm		1	11/12/2019	110812 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	393	mg/L	0.948	6	11/12/2019	110817 PWARNER	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/12/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
<i>pH</i>	6.76	pH			11/12/2019	110813 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	665	mg/L	13.2	20	11/14/2019	110828 ABALALIO	>MCL
Lab Sample#: 1958466-04 Sample Source: WSB_DC-10A-710 External ID:							
Date Collected: 11/12/19 10:25 a Date Received: 11/12/19 1:15 pm Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	11/12/2019	110834 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	72.1	mg/L	0.01	1	11/20/2019	111228 BTRINH	
Magnesium, Mg	47.3	mg/L	0.024	0.2	11/20/2019	111228 BTRINH	
Potassium, K	3.96	mg/L	0.035	0.2	11/20/2019	111228 BTRINH	
Sodium, Na	83.2	mg/L	0.013	1	11/20/2019	111228 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	220	mg/L	1.19	6	11/12/2019	110835 PWARNER	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	187	mg/L		6	11/12/2019	110836 PWARNER	
MBP_COND(SM 2510 B) Specific Conductance	1210	µmhos/cm		1	11/12/2019	110812 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	373	mg/L	0.948	6	11/12/2019	110817 PWARNER	
MBP_PH(SM 4500-H+ B) pH	7.26	pH			11/12/2019	110813 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	653	mg/L	13.2	20	11/14/2019	110828 ABALALIO	>MCL
Lab Sample#: 1958466-04A Sample Source: WSB_DC-10A-710 External ID:							
Date Collected: 11/12/19 10:25 a Date Received: 11/12/19 1:15 pm Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	88.9	mg/L	1	5	11/12/2019	110834 MAWALLACE	
Lab Sample#: 1958466-05 Sample Source: WSB_DC_DUP External ID:							
Date Collected: 11/12/19 10:20 a Date Received: 11/12/19 1:15 pm Sample Matrix: Aqueous Location Desc: GSR_DC_CUP-10A-500 ROW AT SF							
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	79.9	mg/L	1	5	11/12/2019	110834 MAWALLACE	
Nitrate as N	9.74	mg/L	0.34	0.7	11/12/2019	110834 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	59.3	mg/L	0.01	1	11/20/2019	111228 BTRINH	
Magnesium, Mg	60.9	mg/L	0.024	0.2	11/20/2019	111228 BTRINH	
Potassium, K	1.52	mg/L	0.035	0.2	11/20/2019	111228 BTRINH	
Sodium, Na	70.2	mg/L	0.013	1	11/20/2019	111228 BTRINH	
MBP_ALK(SM 2320 B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/12/2019

Sampling Team: Field

<i>Alkalinity</i>	246	mg/L	1.19	6	11/12/2019	110835	PWARNER	
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>								
<i>Chloride</i>	126	mg/L		6	11/12/2019	110836	PWARNER	
<i>MBP_COND(SM 2510 B)</i>								
<i>Specific Conductance</i>	1100	µmhos/cm		1	11/12/2019	110812	ALEE	>MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>								
<i>Hardness, Total, as CaCO3</i>	387	mg/L	0.948	6	11/12/2019	110817	PWARNER	
<i>MBP_PH(SM 4500-H+ B)</i>								
<i>pH</i>	6.76	pH			11/12/2019	110813	ALEE	
<i>MBP_TDS(SM 2540 C)</i>								
<i>Total Dissolved Solids</i>	633	mg/L	13.2	20	11/14/2019	110828	ABALALIO	>MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/12/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110812 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969440-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969440-03	DUP	Specific Conductance	71.5	µmhos/cm		0		1	Splt# 1958402-04 (71.5µmhos/cm)
QC1969440-04	DUP	Specific Conductance	1100	µmhos/cm		0		1	Splt# 1958466-05 (1100µmhos/cm)
QC1969440-05	LCS	Specific Conductance	147	µmhos/cm	100			1	

QC list for Run#: 110813 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969441-01	ICV	pH	9.07	pH	100				
QC1969441-02	DUP	pH	6.76	pH		0			Splt# 1958466-05 (6.76pH)
QC1969441-03	CCV	pH	10.1	pH	100				
QC1969441-04	CCV	pH	10.1	pH	100				
QC1969441-05	CAL	pH	10.1	pH	101				
QC1969441-06	CAL	pH	7.01	pH	100				
QC1969441-07	CAL	pH	4.01	pH	100				

QC list for Run#: 110817 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969445-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969445-03	DUP	Hardness, Total, as CaCO3	17	mg/L		2	0.474	3	Splt# 1958778-02 (17.4mg/L)
QC1969445-04	LCS	Hardness, Total, as CaCO3	40.4	mg/L	101			3	

QC list for Run#: 110828 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969449-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969449-02	LCS	Total Dissolved Solids	102	mg/L	107		13.2	20	
QC1969449-03	DUP	Total Dissolved Solids	608	mg/L		3	13.2	20	Splt# 1958466-01 (632mg/L)

QC list for Run#: 110834 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969451-02	CCV	Sulfate	2.36	mg/L	94				
	CCV	Nitrate as N	0.314	mg/L	92				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/12/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC	Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969451-03	BLK	Sulfate		<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	
QC1969451-04	LCS	Sulfate		4.79	mg/L	95				
	LCS	Nitrate as N		0.64	mg/L	94				
QC1969451-05	SPK	Sulfate		3.47	mg/L	95				Splt# 1958784-01 (1.1mg/L)
	SPK	Nitrate as N		0.356	mg/L	106				Splt# 1958784-01 (<0.07mg/L)
QC1969451-06	SPKD	Sulfate		3.43	mg/L	93	1			Splt# 1958784-01 (1.1mg/L)
	SPKD	Nitrate as N		0.355	mg/L	106	0			Splt# 1958784-01 (<0.07mg/L)
QC1969451-07	CCV	Sulfate		2.4	mg/L	95				
	CCV	Nitrate as N		0.326	mg/L	96				
QC1969451-08	BLK	Sulfate		<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	

QC list for Run#: 110835 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969452-03	DUP	Alkalinity	17.8	mg/L		1	0.593	3	Splt# 1958778-02 (18.1mg/L)
QC1969452-04	LCS	Alkalinity	42.1	mg/L	105			3	

QC list for Run#: 110836 and Test: MBP_CHLORIDE (SM 4500-CL-D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969453-03	DUP	Chloride	5.98	mg/L		2	1.16	3	Splt# 1958778-02 (6.13mg/L)
QC1969453-04	LCS	Chloride	39.2	mg/L	98			3	

QC list for Run#: 111228 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969717-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969717-02	LCS	Calcium, Ca	19.5	mg/L	97		0.01	1	
	LCS	Magnesium, Mg	19.5	mg/L	97		0.024	0.2	
	LCS	Potassium, K	19.2	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	19.5	mg/L	97		0.013	1	
QC1969717-03	DUP	Calcium, Ca	60.2	mg/L		0	0.01	1	Splt# 1958466-03 (60.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/12/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC	Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
	DUP	Magnesium, Mg	59	mg/L	1	0.024	0.2	Splt# 1958466-03 (59.9mg/L)		
	DUP	Potassium, K	1.37	mg/L	1	0.035	0.2	Splt# 1958466-03 (1.38mg/L)		
	DUP	Sodium, Na	67.7	mg/L	3	0.013	1	Splt# 1958466-03 (70.1mg/L)		
QC1969717-04	SPK	Calcium, Ca	80.9	mg/L	102	0.01	1	Splt# 1958466-03 (60.6mg/L)		
	SPK	Magnesium, Mg	78.3	mg/L	91	0.024	0.2	Splt# 1958466-03 (59.9mg/L)		
	SPK	Potassium, K	21.1	mg/L	98	0.035	0.2	Splt# 1958466-03 (1.38mg/L)		
	SPK	Sodium, Na	80.2	mg/L	50	0.013	1	Splt# 1958466-03 (70.1mg/L)		
QC1969717-05	SPKD	Calcium, Ca	82.1	mg/L	107	1	0.01	1	Splt# 1958466-03 (60.6mg/L)	
	SPKD	Magnesium, Mg	81.2	mg/L	106	3	0.024	0.2	Splt# 1958466-03 (59.9mg/L)	
	SPKD	Potassium, K	20.7	mg/L	96	2	0.035	0.2	Splt# 1958466-03 (1.38mg/L)	
	SPKD	Sodium, Na	82	mg/L	59	2	0.013	1	Splt# 1958466-03 (70.1mg/L)	
QC1969717-06	DUP	Calcium, Ca	71.6	mg/L	0	0.01	1	Splt# 1958466-04 (72.1mg/L)		
	DUP	Magnesium, Mg	47.1	mg/L	0	0.024	0.2	Splt# 1958466-04 (47.3mg/L)		
	DUP	Potassium, K	4	mg/L	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)		
	DUP	Sodium, Na	83.4	mg/L	0	0.013	1	Splt# 1958466-04 (83.2mg/L)		
QC1969717-07	SPK	Calcium, Ca	92.1	mg/L	100	0.01	1	Splt# 1958466-04 (72.1mg/L)		
	SPK	Magnesium, Mg	66.6	mg/L	96	0.024	0.2	Splt# 1958466-04 (47.3mg/L)		
	SPK	Potassium, K	23.6	mg/L	98	0.035	0.2	Splt# 1958466-04 (3.96mg/L)		
	SPK	Sodium, Na	103	mg/L	96	0.013	1	Splt# 1958466-04 (83.2mg/L)		
QC1969717-08	SPKD	Calcium, Ca	92.6	mg/L	103	0	0.01	1	Splt# 1958466-04 (72.1mg/L)	
	SPKD	Magnesium, Mg	68.4	mg/L	105	2	0.024	0.2	Splt# 1958466-04 (47.3mg/L)	
	SPKD	Potassium, K	23.5	mg/L	97	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)	
	SPKD	Sodium, Na	101	mg/L	88	1	0.013	1	Splt# 1958466-04 (83.2mg/L)	

QC list for Run#: 111980 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1970149-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958466

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/12/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Method	Parameter	Result	Unit	Flow (MGD)	Concentration (mg/L)	Volume (L)	Notes
QC1970149-02	BLK	Sodium, Na	<1	mg/L		0.013	1	
QC1970149-02	LCS	Calcium, Ca	19.6	mg/L	98	0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99	0.024	0.2	
	LCS	Potassium, K	20	mg/L	100	0.035	0.2	
	LCS	Sodium, Na	19.8	mg/L	99	0.013	1	
QC1970149-03	DUP	Calcium, Ca	58.5	mg/L	1	0.01	1	Splt# 1958466-01 (59.4mg/L)
	DUP	Magnesium, Mg	59.4	mg/L	0	0.024	0.2	Splt# 1958466-01 (60mg/L)
	DUP	Potassium, K	1.4	mg/L	3	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	DUP	Sodium, Na	72.9	mg/L	1	0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-04	SPK	Calcium, Ca	79.8	mg/L	102	0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPK	Magnesium, Mg	80.2	mg/L	101	0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPK	Potassium, K	21.9	mg/L	103	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPK	Sodium, Na	86.3	mg/L	63	0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-05	SPKD	Calcium, Ca	82.2	mg/L	114	0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPKD	Magnesium, Mg	81.4	mg/L	107	0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPKD	Potassium, K	22.3	mg/L	105	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPKD	Sodium, Na	88.2	mg/L	73	0.013	1	Splt# 1958466-01 (73.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Lab Sample#: 1958467-01 **Sample Source:** WSB_CAL-18-230 **External ID:**

Date Collected: 11/13/19 10:56 a **Date Received:** 11/13/19 11:50 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	36.7	mg/L	0.5	2.5	11/13/2019	110901 MAWALLACE
Nitrate as N	2.72	mg/L	0.17	0.35	11/13/2019	110901 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	35.8	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	31.4	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	1.76	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	62.1	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	151	mg/L	0.593	3	11/13/2019	110911 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	108	mg/L		3	11/13/2019	110914 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	775	µmhos/cm		1	11/13/2019	110896 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	222	mg/L	0.474	3	11/13/2019	110909 PWARNER
MBP_PH(SM 4500-H+ B)						
pH	5.94	pH			11/13/2019	110898 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	436	mg/L	13.2	20	11/14/2019	110828 ABALALIO

Lab Sample#: 1958467-02 **Sample Source:** WSB_CAL-18-425 **External ID:**

Date Collected: 11/13/19 9:42 ar **Date Received:** 11/13/19 11:50 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	36.2	mg/L	0.5	2.5	11/13/2019	110901 MAWALLACE
Nitrate as N	2.58	mg/L	0.17	0.35	11/13/2019	110901 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	35.4	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	32.5	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	1.81	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	62.9	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	162	mg/L	0.593	3	11/13/2019	110911 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	104	mg/L		3	11/13/2019	110914 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	772	µmhos/cm		1	11/13/2019	110896 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	227	mg/L	0.474	3	11/13/2019	110909 PWARNER
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	6.65	pH			11/13/2019	110898 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	425	mg/L	13.2	20	11/14/2019	110828 ABALALIO
Lab Sample#: 1958467-03 Sample Source: WSB_CAL-18-490 External ID:						
Date Collected: 11/19/19 11:45 a Date Received: 11/19/19 1:38 pm Sample Matrix: Aqueous Location Desc: /NO FLOW/Sample collected 11/1						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	35.5	mg/L	0.5	2.5	11/19/2019	111196 PWARNER
Nitrate as N	2.61	mg/L	0.17	0.35	11/19/2019	111196 PWARNER
SEM_200.7_DW(EPA 200.7) Calcium, Ca	35.7	mg/L	0.01	1	12/06/2019	111980 BTRINH
Magnesium, Mg	32.6	mg/L	0.024	0.2	12/06/2019	111980 BTRINH
Potassium, K	1.89	mg/L	0.035	0.2	12/06/2019	111980 BTRINH
Sodium, Na	64	mg/L	0.013	1	12/06/2019	111980 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	164	mg/L	1.19	6	11/19/2019	111192 ALEE
MBP_CHLORIDE(SM 4500-CL- D) Chloride	107	mg/L		6	11/19/2019	111193 ALEE
MBP_COND(SM 2510 B) Specific Conductance	764	µmhos/cm		1	11/19/2019	111182 ABALALIO
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	224	mg/L	0.948	6	11/19/2019	111194 ALEE
MBP_PH(SM 4500-H+ B) pH	6.78	pH			11/19/2019	111206 ABALALIO
MBP_TDS(SM 2540 C) Total Dissolved Solids	412	mg/L	13.2	20	11/26/2019	111252 LCS failed low for bo
Lab Sample#: 1958467-04 Sample Source: WSB_CAL-18-595 External ID:						
Date Collected: 11/13/19 9:42 ar Date Received: 11/13/19 11:50 am Sample Matrix: Aqueous Location Desc:						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	2.01	mg/L	0.034	0.07	11/13/2019	110901 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	55.8	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	47.9	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	3.17	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	58.2	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	211	mg/L	0.593	3	11/13/2019	110911 PWARNER
MBP_CHLORIDE(SM 4500-CL- D) Chloride	124	mg/L		3	11/13/2019	110914 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	972	µmhos/cm		1	11/13/2019	110896 ALEE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	337	mg/L	0.474	3	11/13/2019	110909 PWARNER
MBP_PH(SM 4500-H+ B) pH	7.29	pH			11/13/2019	110898 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	525	mg/L	13.2	20	11/14/2019	110828 ABALALIO >MCL

Lab Sample#: 1958467-04A **Sample Source:** WSB_CAL-18-595 **External ID:**

Date Collected: 11/13/19 9:42 ar **Date Received:** 11/13/19 11:50 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	73.8	mg/L	1	5	11/13/2019	110901 MAWALLACE

Lab Sample#: 1958467-05 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/13/19 10:08 a **Date Received:** 11/13/19 11:50 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-18-595, ROW AT C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	1.63	mg/L	0.034	0.07	11/13/2019	110901 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	53.9	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	46.3	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	3.1	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	57.5	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	208	mg/L	0.593	3	11/13/2019	110911 PWARNER
MBP_CHLORIDE(SM 4500-CL- D) Chloride	121	mg/L		3	11/13/2019	110914 PWARNER
MBP_COND(SM 2510 B) Specific Conductance	956	µmhos/cm		1	11/13/2019	110896 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	338	mg/L	0.474	3	11/13/2019	110909 PWARNER
MBP_PH(SM 4500-H+ B) pH	7.28	pH			11/13/2019	110898 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	498	mg/L	13.2	20	11/14/2019	110828 ABALALIO

Lab Sample#: 1958467-05A **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/13/19 10:08 a **Date Received:** 11/19/19 1:52 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-18-595, ROW AT C

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	73.7	mg/L	1	5	11/13/2019	110901 MAWALLACE

Lab Sample#: 1958467-07 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/19/19 12:00 p **Date Received:** 11/19/19 8:46 am **Sample Matrix:** Aqueous **Location Desc:** Dup 11/19/19 CAL-18- 490- Chris I

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

<i>Sulfate</i>	35.3	mg/L	0.5	2.5	11/19/2019	111196	PWARNER
<i>Nitrate as N</i>	2.9	mg/L	0.17	0.35	11/19/2019	111196	PWARNER
SEM_200.7_DW(EPA 200.7)							
<i>Calcium, Ca</i>	35.7	mg/L	0.01	1	12/06/2019	111980	BTRINH
<i>Magnesium, Mg</i>	32.5	mg/L	0.024	0.2	12/06/2019	111980	BTRINH
<i>Potassium, K</i>	1.98	mg/L	0.035	0.2	12/06/2019	111980	BTRINH
<i>Sodium, Na</i>	64.4	mg/L	0.013	1	12/06/2019	111980	BTRINH
MBP_ALK(SM 2320 B)							
<i>Alkalinity</i>	166	mg/L	1.19	6	11/19/2019	111192	ALEE
MBP_CHLORIDE(SM 4500-CL- D)							
<i>Chloride</i>	107	mg/L		6	11/19/2019	111193	ALEE
MBP_COND(SM 2510 B)							
<i>Specific Conductance</i>	760	µmhos/cm		1	11/19/2019	111182	ABALALIO
MBP_HARDNESS_T(SM 2340 C)							
<i>Hardness, Total, as CaCO3</i>	231	mg/L	0.948	6	11/19/2019	111194	ALEE
MBP_PH(SM 4500-H+ B)							
<i>pH</i>	6.78	pH			11/19/2019	111206	ABALALIO
MBP_TDS(SM 2540 C)							
<i>Total Dissolved Solids</i>	414	mg/L	13.2	20	11/26/2019	111252	LCS failed low for bo

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 110828 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969449-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969449-02	LCS	Total Dissolved Solids	102	mg/L	107		13.2	20	
QC1969449-03	DUP	Total Dissolved Solids	608	mg/L		3	13.2	20	Splt# 1958466-01 (632mg/L)

QC list for Run#: 110896 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969493-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969493-03	DUP	Specific Conductance	75.9	µmhos/cm		0		1	Splt# 1958583-04 (75.5µmhos/cm)
QC1969493-04	DUP	Specific Conductance	126	µmhos/cm		1		1	Splt# 1958583-05 (125µmhos/cm)
QC1969493-05	LCS	Specific Conductance	148	µmhos/cm	100			1	

QC list for Run#: 110898 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969495-01	ICV	pH	9.07	pH	100				
QC1969495-02	DUP	pH	9.19	pH		0			Splt# 1958590-07 (9.63pH)
QC1969495-03	CCV	pH	10.1	pH	100				
QC1969495-04	CCV	pH	10.1	pH	100				
QC1969495-05	CAL	pH	10.1	pH	101				
QC1969495-06	CAL	pH	7.01	pH	100				
QC1969495-07	CAL	pH	4.01	pH	100				

QC list for Run#: 110901 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969497-02	CCV	Sulfate	2.36	mg/L	94				
	CCV	Nitrate as N	0.32	mg/L	94				
QC1969497-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969497-04	LCS	Sulfate	4.81	mg/L	96				
	LCS	Nitrate as N	0.642	mg/L	94				
QC1969497-05									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
SPK	Sulfate		3.4	mg/L	92				Splt# 1958859-01 (1.11mg/L)
SPK	Nitrate as N		0.344	mg/L	102				Splt# 1958859-01 (<0.07mg/L)
QC1969497-06									
SPKD	Sulfate		3.91	mg/L	113	14			Splt# 1958859-01 (1.11mg/L)
SPKD	Nitrate as N		0.419	mg/L	125	19			Splt# 1958859-01 (<0.07mg/L)
QC1969497-07									
CCV	Sulfate		2.4	mg/L	96				
CCV	Nitrate as N		0.327	mg/L	96				
QC1969497-08									
BLK	Sulfate		<0.5	mg/L			0.1	0.5	
BLK	Nitrate as N		<0.07	mg/L			0.034	0.07	

QC list for Run#: 110909 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969501-01									
BLK	Hardness, Total, as CaCO3		<3	mg/L			0.474	3	
QC1969501-03									
DUP	Hardness, Total, as CaCO3		29.2	mg/L		1	0.474	3	Splt# 1958789-06 (28.9mg/L)
QC1969501-04									
LCS	Hardness, Total, as CaCO3		40.6	mg/L	101			3	

QC list for Run#: 110911 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969503-03									
DUP	Alkalinity		30.5	mg/L		0	0.593	3	Splt# 1958789-06 (30.3mg/L)
QC1969503-04									
LCS	Alkalinity		40.2	mg/L	101			3	

QC list for Run#: 110914 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969505-03									
DUP	Chloride		9.99	mg/L		0	1.16	3	Splt# 1958789-06 (9.97mg/L)
QC1969505-04									
LCS	Chloride		39.5	mg/L	98			3	

QC list for Run#: 111182 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969687-01									
BLK	Specific Conductance		<1	µmhos/cm				1	
QC1969687-03									
CCV	Specific Conductance		101	µmhos/cm	101			1	
QC1969687-04									
DUP	Specific Conductance		207	µmhos/cm		0		1	Splt# 1958588-01 (206µmhos/cm)
QC1969687-05									
DUP	Specific Conductance		164	µmhos/cm		0		1	Splt# 1958631-02 (164µmhos/cm)
QC1969687-06									
LCS	Specific Conductance		147	µmhos/cm	99			1	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC list for Run#: 111192 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969692-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969692-04	LCS	Alkalinity	43.4	mg/L	108			3	
QC1969692-05	SPK	Alkalinity	59.8	mg/L	105			3	Splt# 1958596-04 (17.6mg/L)
QC1969692-06	SPKD	Alkalinity	60.1	mg/L	106	0		3	Splt# 1958596-04 (17.6mg/L)

QC list for Run#: 111193 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969693-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969693-03	LCS	Chloride	40	mg/L	99			3	
QC1969693-04	SPK	Chloride	46.4	mg/L	98			3	Splt# 1958596-04 (7.08mg/L)
QC1969693-05	SPKD	Chloride	46.4	mg/L	98	0		3	Splt# 1958596-04 (7.08mg/L)

QC list for Run#: 111194 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969694-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969694-03	DUP	Hardness, Total, as CaCO3	16.3	mg/L		0	0.474	3	Splt# 1958596-04 (16.2mg/L)
QC1969694-04	LCS	Hardness, Total, as CaCO3	41.2	mg/L	103			3	

QC list for Run#: 111196 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969695-02	CCV	Chloride	2.35	mg/L	94				
	CCV	Sulfate	2.34	mg/L	93				
	CCV	Nitrate as N	0.311	mg/L	91				
QC1969695-03	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969695-04	LCS	Chloride	4.96	mg/L	99				
	LCS	Sulfate	4.75	mg/L	94				
	LCS	Nitrate as N	0.628	mg/L	92				
QC1969695-05	SPK	Sulfate	12.5	mg/L	104				Splt# 1958954-03 (9.9mg/L)
	SPK	Nitrate as N	0.413	mg/L	92				Splt# 1958954-03 (0.102mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

QC#	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969695-06	SPKD	Sulfate	12.6	mg/L	108	0			Splt# 1958954-03 (9.9mg/L)
	SPKD	Nitrate as N	0.429	mg/L	97	3			Splt# 1958954-03 (0.102mg/L)
QC1969695-07	CCV	Chloride	2.48	mg/L	99				
	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.324	mg/L	95				
QC1969695-08	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969695-09	LCS	Chloride	5.13	mg/L	103				
	LCS	Sulfate	4.86	mg/L	97				
	LCS	Nitrate as N	0.66	mg/L	97				
QC1969695-10	LCS	Chloride	5.21	mg/L	104				
	LCS	Sulfate	4.87	mg/L	97				
	LCS	Nitrate as N	0.665	mg/L	98				
QC1969695-11	LCS	Chloride	5.15	mg/L	103				
	LCS	Sulfate	4.82	mg/L	96				
	LCS	Nitrate as N	0.658	mg/L	97				

QC list for Run#: 111206 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969698-01	ICV	pH	9.04	pH	100				
QC1969698-02	DUP	pH	9.11	pH		0			Splt# 1958954-01 (9.11pH)
QC1969698-03	CCV	pH	10	pH	100				
QC1969698-04	CCV	pH	10	pH	100				

QC list for Run#: 111228 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969717-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969717-02	LCS	Calcium, Ca	19.5	mg/L	97		0.01	1	
	LCS	Magnesium, Mg	19.5	mg/L	97		0.024	0.2	
	LCS	Potassium, K	19.2	mg/L	95		0.035	0.2	
	LCS	Sodium, Na	19.5	mg/L	97		0.013	1	
QC1969717-03	DUP	Calcium, Ca	60.2	mg/L		0	0.01	1	Splt# 1958466-03 (60.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
DUP	Magnesium, Mg		59	mg/L		1	0.024	0.2	Splt# 1958466-03 (59.9mg/L)
DUP	Potassium, K		1.37	mg/L		1	0.035	0.2	Splt# 1958466-03 (1.38mg/L)
DUP	Sodium, Na		67.7	mg/L		3	0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-04	SPK	Calcium, Ca	80.9	mg/L	102		0.01	1	Splt# 1958466-03 (60.6mg/L)
	SPK	Magnesium, Mg	78.3	mg/L	91		0.024	0.2	Splt# 1958466-03 (59.9mg/L)
	SPK	Potassium, K	21.1	mg/L	98		0.035	0.2	Splt# 1958466-03 (1.38mg/L)
	SPK	Sodium, Na	80.2	mg/L	50		0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-05	SPKD	Calcium, Ca	82.1	mg/L	107	1	0.01	1	Splt# 1958466-03 (60.6mg/L)
	SPKD	Magnesium, Mg	81.2	mg/L	106	3	0.024	0.2	Splt# 1958466-03 (59.9mg/L)
	SPKD	Potassium, K	20.7	mg/L	96	2	0.035	0.2	Splt# 1958466-03 (1.38mg/L)
	SPKD	Sodium, Na	82	mg/L	59	2	0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-06	DUP	Calcium, Ca	71.6	mg/L		0	0.01	1	Splt# 1958466-04 (72.1mg/L)
	DUP	Magnesium, Mg	47.1	mg/L		0	0.024	0.2	Splt# 1958466-04 (47.3mg/L)
	DUP	Potassium, K	4	mg/L		0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)
	DUP	Sodium, Na	83.4	mg/L		0	0.013	1	Splt# 1958466-04 (83.2mg/L)
QC1969717-07	SPK	Calcium, Ca	92.1	mg/L	100		0.01	1	Splt# 1958466-04 (72.1mg/L)
	SPK	Magnesium, Mg	66.6	mg/L	96		0.024	0.2	Splt# 1958466-04 (47.3mg/L)
	SPK	Potassium, K	23.6	mg/L	98		0.035	0.2	Splt# 1958466-04 (3.96mg/L)
	SPK	Sodium, Na	103	mg/L	96		0.013	1	Splt# 1958466-04 (83.2mg/L)
QC1969717-08	SPKD	Calcium, Ca	92.6	mg/L	103	0	0.01	1	Splt# 1958466-04 (72.1mg/L)
	SPKD	Magnesium, Mg	68.4	mg/L	105	2	0.024	0.2	Splt# 1958466-04 (47.3mg/L)
	SPKD	Potassium, K	23.5	mg/L	97	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)
	SPKD	Sodium, Na	101	mg/L	88	1	0.013	1	Splt# 1958466-04 (83.2mg/L)

QC list for Run#: 111252 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969729-01									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958467

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/13/2019

Routine: WSB_S2019_SFPUC+Consult.B

Sampling Team: Field

DUP	Total Dissolved Solids	416	mg/L	0	13.2	20	Splt# 1958467-07 (414mg/L) LCS failed low for both 1st and 2nd attempt. Data report as is since this is not regulatory sample.
QC1969729-02	BLK	Total Dissolved Solids	<20	mg/L		13.2	20
QC1969729-03	LCS	Total Dissolved Solids	75	mg/L	78	13.2	20

QC list for Run#: 111980 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1970149-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1970149-02	LCS	Calcium, Ca	19.6	mg/L	98		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	20	mg/L	100		0.035	0.2	
	LCS	Sodium, Na	19.8	mg/L	99		0.013	1	
QC1970149-03	DUP	Calcium, Ca	58.5	mg/L		1	0.01	1	Splt# 1958466-01 (59.4mg/L)
	DUP	Magnesium, Mg	59.4	mg/L		0	0.024	0.2	Splt# 1958466-01 (60mg/L)
	DUP	Potassium, K	1.4	mg/L		3	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	DUP	Sodium, Na	72.9	mg/L		1	0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-04	SPK	Calcium, Ca	79.8	mg/L	102		0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPK	Magnesium, Mg	80.2	mg/L	101		0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPK	Potassium, K	21.9	mg/L	103		0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPK	Sodium, Na	86.3	mg/L	63		0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-05	SPKD	Calcium, Ca	82.2	mg/L	114	2	0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPKD	Magnesium, Mg	81.4	mg/L	107	1	0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPKD	Potassium, K	22.3	mg/L	105	1	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPKD	Sodium, Na	88.2	mg/L	73	2	0.013	1	Splt# 1958466-01 (73.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1958468-01 **Sample Source:** WSB_CAL-31A-145 **External ID:**

Date Collected: 11/14/19 3:00 pm **Date Received:** 11/14/19 4:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	55.3	mg/L	0.5	2.5	11/15/2019	111015 MAWALLACE	
Nitrate as N	1.7	mg/L	0.17	0.35	11/15/2019	111015 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	67.2	mg/L	0.01	1	12/06/2019	111980 BTRINH	
Magnesium, Mg	57	mg/L	0.024	0.2	12/06/2019	111980 BTRINH	
Potassium, K	3.6	mg/L	0.035	0.2	12/06/2019	111980 BTRINH	
Sodium, Na	70.5	mg/L	0.013	1	12/06/2019	111980 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	432	mg/L	1.19	6	11/14/2019	110986 PWARNER	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	46.4	mg/L		6	11/14/2019	110987 PWARNER	
MBP_COND(SM 2510 B)							
Specific Conductance	1030	µmhos/cm		1	11/14/2019	110992 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	412	mg/L	0.948	6	11/14/2019	110983 PWARNER	
MBP_PH(SM 4500-H+ B)							
pH	6.87	pH			11/14/2019	110993 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	578	mg/L	13.2	20	11/18/2019	111031 ALEE	>MCL

Lab Sample#: 1958468-02 **Sample Source:** WSB_CAL-31A-280 **External ID:**

Date Collected: 11/14/19 2:38 pm **Date Received:** 11/14/19 4:11 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	77.8	mg/L	1	5	11/15/2019	111015 MAWALLACE	
Nitrate as N	4.36	mg/L	0.34	0.7	11/15/2019	111015 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	52.8	mg/L	0.01	1	11/20/2019	111228 BTRINH	
Magnesium, Mg	48.5	mg/L	0.024	0.2	11/20/2019	111228 BTRINH	
Potassium, K	2.8	mg/L	0.035	0.2	11/20/2019	111228 BTRINH	
Sodium, Na	67.7	mg/L	0.013	1	11/20/2019	111228 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	309	mg/L	1.19	6	11/14/2019	110986 PWARNER	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	46.3	mg/L		6	11/14/2019	110987 PWARNER	
MBP_COND(SM 2510 B)							
Specific Conductance	917	µmhos/cm		1	11/14/2019	110992 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	340	mg/L	0.948	6	11/14/2019	110983 PWARNER	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/14/2019

Sampling Team: Field

<i>pH</i>	7.02	<i>pH</i>	11/14/2019	110993	ALEE	
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	546	mg/L	13.2	20	11/18/2019	111031 ALEE >MCL

Lab Sample#: 1958468-03 **Sample Source:** WSB_CAL-31A-480 **External ID:**

Date Collected: 11/14/19 1:49 pm **Date Received:** 11/14/19 4:11 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	<0.5	mg/L	0.1	0.5	11/15/2019	111015 MAWALLACE
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	11/15/2019	111015 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	30.1	mg/L	0.01	1	11/20/2019	111228 BTRINH
<i>Magnesium, Mg</i>	39.7	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
<i>Potassium, K</i>	10.4	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
<i>Sodium, Na</i>	52.9	mg/L	0.013	1	11/20/2019	111228 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	337	mg/L	0.593	3	11/14/2019	110986 PWARNER
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	39.2	mg/L		3	11/14/2019	110987 PWARNER
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	753	µmhos/cm		1	11/14/2019	110992 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	243	mg/L	0.474	3	11/14/2019	110983 PWARNER
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	7.45	pH			11/14/2019	110993 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	400	mg/L	13.2	20	11/18/2019	111031 ALEE

Lab Sample#: 1958468-04 **Sample Source:** WSB_CAL-31A-595 **External ID:**

Date Collected: 11/14/19 1:45 pm **Date Received:** 11/14/19 4:11 pm **Sample Matrix:** Aqueous **Location Desc:**

<u>Test/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>MRL</u>	<u>Analyzed Date</u>	<u>Flag/Comments</u>
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	<0.07	mg/L	0.034	0.07	11/15/2019	111015 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	94.9	mg/L	0.01	1	11/20/2019	111228 BTRINH
<i>Magnesium, Mg</i>	48.8	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
<i>Potassium, K</i>	4.34	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
<i>Sodium, Na</i>	82.2	mg/L	0.013	1	11/20/2019	111228 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	243	mg/L	1.19	6	11/14/2019	110986 PWARNER
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	155	mg/L		6	11/14/2019	110987 PWARNER
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1260	µmhos/cm		1	11/14/2019	110992 ALEE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>MBP_HARDNESS_T(SM 2340 C)</i>							
Hardness, Total, as CaCO3	447	mg/L	0.948	6	11/14/2019	110983	PWARNER
<i>MBP_PH(SM 4500-H+ B)</i>							
pH	7.3	pH			11/14/2019	110993	ALEE
<i>MBP_TDS(SM 2540 C)</i>							
Total Dissolved Solids	760	mg/L	13.2	20	11/18/2019	111031	ALEE >MCL

Lab Sample#: 1958468-04A Sample Source: WSB_CAL-31A-595 External ID:

Date Collected: 11/14/19 1:45 pm Date Received: 11/14/19 4:11 pm Sample Matrix: Aqueous Location Desc:

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
Sulfate	175	mg/L	2	10	11/15/2019	111015 MAWALLACE

Lab Sample#: 1958468-05 Sample Source: WSB_CAL_DUP External ID:

Date Collected: 11/14/19 3:01 pm Date Received: 11/14/19 4:11 pm Sample Matrix: Aqueous Location Desc: GSR_CAL_CUP-31-280

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
Sulfate	79.3	mg/L	1	5	11/15/2019	111015 MAWALLACE
Nitrate as N	4.31	mg/L	0.34	0.7	11/15/2019	111015 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
Calcium, Ca	55.5	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	49.6	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	2.98	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	69.5	mg/L	0.013	1	11/20/2019	111228 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
Alkalinity	314	mg/L	1.19	6	11/14/2019	110986 PWARNER
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
Chloride	47.1	mg/L		6	11/14/2019	110987 PWARNER
<i>MBP_COND(SM 2510 B)</i>						
Specific Conductance	924	µmhos/cm		1	11/14/2019	110992 ALEE >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
Hardness, Total, as CaCO3	333	mg/L	0.948	6	11/14/2019	110983 PWARNER
<i>MBP_PH(SM 4500-H+ B)</i>						
pH	7.08	pH			11/14/2019	110993 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
Total Dissolved Solids	548	mg/L	13.2	20	11/18/2019	111031 ALEE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110983 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969550-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969550-03	DUP	Hardness, Total, as CaCO3	34.9	mg/L		0	0.474	3	Splt# 1958866-03 (35.1mg/L)
QC1969550-04	LCS	Hardness, Total, as CaCO3	40.2	mg/L	101			3	
QC1969550-05	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969550-06	DUP	Hardness, Total, as CaCO3	334	mg/L		0	0.948	6	Splt# 1958468-05 (333mg/L)
QC1969550-07	LCS	Hardness, Total, as CaCO3	39.9	mg/L	99			3	

QC list for Run#: 110986 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969551-03	DUP	Alkalinity	36.7	mg/L		0	0.593	3	Splt# 1958866-03 (36.6mg/L)
QC1969551-04	LCS	Alkalinity	42.4	mg/L	106			3	
QC1969551-05	DUP	Alkalinity	306	mg/L		2	1.19	6	Splt# 1958468-05 (314mg/L)

QC list for Run#: 110987 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969552-03	DUP	Chloride	11.6	mg/L		0	1.16	3	Splt# 1958866-03 (11.6mg/L)
QC1969552-04	LCS	Chloride	39.4	mg/L	98			3	
QC1969552-05	DUP	Chloride	46.5	mg/L		1	2.31	6	Splt# 1958468-05 (47.1mg/L)

QC list for Run#: 110992 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969554-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969554-03	DUP	Specific Conductance	925	µmhos/cm		0		1	Splt# 1958468-05 (924µmhos/cm)
QC1969554-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 110993 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969555-01	ICV	pH	9.07	pH	100				
QC1969555-02	DUP	pH	7.05	pH		0			Splt# 1958468-05 (7.08pH)
QC1969555-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

CCV pH 10.1 pH 100

QC list for Run#: 111015 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969576-02	CCV	Sulfate	2.34	mg/L	93				
	CCV	Nitrate as N	0.315	mg/L	93				
QC1969576-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969576-04	LCS	Sulfate	4.75	mg/L	95				
	LCS	Nitrate as N	0.638	mg/L	94				
QC1969576-05	SPK	Sulfate	2.46	mg/L	99				Splt# 1958468-03 (<0.5mg/L)
	SPK	Nitrate as N	0.317	mg/L	94				Splt# 1958468-03 (<0.07mg/L)
QC1969576-06	SPKD	Sulfate	2.48	mg/L	100	0			Splt# 1958468-03 (<0.5mg/L)
	SPKD	Nitrate as N	0.324	mg/L	96	2			Splt# 1958468-03 (<0.07mg/L)
QC1969576-07	CCV	Sulfate	2.36	mg/L	94				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1969576-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969576-09	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1969576-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 111031 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969588-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969588-02	DUP	Total Dissolved Solids	542	mg/L		1	13.2	20	Splt# 1958468-05 (548mg/L)
QC1969588-03	LCS	Total Dissolved Solids	91	mg/L	95		13.2	20	

QC list for Run#: 111228 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969717-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969717-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Residual	Conductivity	Turbidity	Notes
LCS	Calcium, Ca	19.5	mg/L	97	0.01	1		
LCS	Magnesium, Mg	19.5	mg/L	97	0.024	0.2		
LCS	Potassium, K	19.2	mg/L	95	0.035	0.2		
LCS	Sodium, Na	19.5	mg/L	97	0.013	1		
QC1969717-03								
DUP	Calcium, Ca	60.2	mg/L	0	0.01	1	Splt# 1958466-03 (60.6mg/L)	
DUP	Magnesium, Mg	59	mg/L	1	0.024	0.2	Splt# 1958466-03 (59.9mg/L)	
DUP	Potassium, K	1.37	mg/L	1	0.035	0.2	Splt# 1958466-03 (1.38mg/L)	
DUP	Sodium, Na	67.7	mg/L	3	0.013	1	Splt# 1958466-03 (70.1mg/L)	
QC1969717-04								
SPK	Calcium, Ca	80.9	mg/L	102	0.01	1	Splt# 1958466-03 (60.6mg/L)	
SPK	Magnesium, Mg	78.3	mg/L	91	0.024	0.2	Splt# 1958466-03 (59.9mg/L)	
SPK	Potassium, K	21.1	mg/L	98	0.035	0.2	Splt# 1958466-03 (1.38mg/L)	
SPK	Sodium, Na	80.2	mg/L	50	0.013	1	Splt# 1958466-03 (70.1mg/L)	
QC1969717-05								
SPKD	Calcium, Ca	82.1	mg/L	107	1	0.01	1	Splt# 1958466-03 (60.6mg/L)
SPKD	Magnesium, Mg	81.2	mg/L	106	3	0.024	0.2	Splt# 1958466-03 (59.9mg/L)
SPKD	Potassium, K	20.7	mg/L	96	2	0.035	0.2	Splt# 1958466-03 (1.38mg/L)
SPKD	Sodium, Na	82	mg/L	59	2	0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-06								
DUP	Calcium, Ca	71.6	mg/L	0	0.01	1	Splt# 1958466-04 (72.1mg/L)	
DUP	Magnesium, Mg	47.1	mg/L	0	0.024	0.2	Splt# 1958466-04 (47.3mg/L)	
DUP	Potassium, K	4	mg/L	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)	
DUP	Sodium, Na	83.4	mg/L	0	0.013	1	Splt# 1958466-04 (83.2mg/L)	
QC1969717-07								
SPK	Calcium, Ca	92.1	mg/L	100	0.01	1	Splt# 1958466-04 (72.1mg/L)	
SPK	Magnesium, Mg	66.6	mg/L	96	0.024	0.2	Splt# 1958466-04 (47.3mg/L)	
SPK	Potassium, K	23.6	mg/L	98	0.035	0.2	Splt# 1958466-04 (3.96mg/L)	
SPK	Sodium, Na	103	mg/L	96	0.013	1	Splt# 1958466-04 (83.2mg/L)	
QC1969717-08								
SPKD	Calcium, Ca	92.6	mg/L	103	0	0.01	1	Splt# 1958466-04 (72.1mg/L)
SPKD	Magnesium, Mg	68.4	mg/L	105	2	0.024	0.2	Splt# 1958466-04 (47.3mg/L)
SPKD	Potassium, K	23.5	mg/L	97	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958468

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

SPKD	Sodium, Na	101	mg/L	88	1	0.013	1	Splt# 1958466-04 (83.2mg/L)
------	------------	-----	------	----	---	-------	---	--------------------------------

QC list for Run#: 111980 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1970149-01									
	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1970149-02									
	LCS	Calcium, Ca	19.6	mg/L	98		0.01	1	
	LCS	Magnesium, Mg	19.9	mg/L	99		0.024	0.2	
	LCS	Potassium, K	20	mg/L	100		0.035	0.2	
	LCS	Sodium, Na	19.8	mg/L	99		0.013	1	
QC1970149-03									
	DUP	Calcium, Ca	58.5	mg/L		1	0.01	1	Splt# 1958466-01 (59.4mg/L)
	DUP	Magnesium, Mg	59.4	mg/L		0	0.024	0.2	Splt# 1958466-01 (60mg/L)
	DUP	Potassium, K	1.4	mg/L		3	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	DUP	Sodium, Na	72.9	mg/L		1	0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-04									
	SPK	Calcium, Ca	79.8	mg/L	102		0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPK	Magnesium, Mg	80.2	mg/L	101		0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPK	Potassium, K	21.9	mg/L	103		0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPK	Sodium, Na	86.3	mg/L	63		0.013	1	Splt# 1958466-01 (73.6mg/L)
QC1970149-05									
	SPKD	Calcium, Ca	82.2	mg/L	114	2	0.01	1	Splt# 1958466-01 (59.4mg/L)
	SPKD	Magnesium, Mg	81.4	mg/L	107	1	0.024	0.2	Splt# 1958466-01 (60mg/L)
	SPKD	Potassium, K	22.3	mg/L	105	1	0.035	0.2	Splt# 1958466-01 (1.35mg/L)
	SPKD	Sodium, Na	88.2	mg/L	73	2	0.013	1	Splt# 1958466-01 (73.6mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/14/2019

Sampling Team: Field

Lab Sample#: 1958477-01 **Sample Source:** WSB_SF71_PP195 **External ID:**

Date Collected: 11/14/19 9:15 ar **Date Received:** 11/14/19 4:08 pm **Sample Matrix:** Aqueous **Location Desc:** SF#71 - PARK PLAZA MW195

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	194	mg/L	2	10	11/15/2019	111015 MAWALLACE
Nitrate as N	8.54	mg/L	0.68	1.4	11/15/2019	111015 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	103	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	82	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	4.08	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	87.8	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	443	mg/L	2.96	15	11/14/2019	110986 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	98.8	mg/L		15	11/14/2019	110987 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	1530	µmhos/cm		1	11/14/2019	110992 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	627	mg/L	2.37	15	11/14/2019	110983 PWARNER
MBP_PH(SM 4500-H+ B)						
pH	7.13	pH			11/14/2019	110993 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	907	mg/L	13.2	20	11/18/2019	111031 ALEE >MCL

Lab Sample#: 1958477-02 **Sample Source:** WSB_SF50_PP460 **External ID:**

Date Collected: 11/14/19 9:13 ar **Date Received:** 11/14/19 4:08 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	57.5	mg/L	1	5	11/15/2019	111015 MAWALLACE
Nitrate as N	5.86	mg/L	0.34	0.7	11/15/2019	111015 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	40.3	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	41.8	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	1.84	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	46.7	mg/L	0.013	1	11/20/2019	111228 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	213	mg/L	0.593	3	11/14/2019	110986 PWARNER
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	62.3	mg/L		3	11/14/2019	110987 PWARNER
MBP_COND(SM 2510 B)						
Specific Conductance	736	µmhos/cm		1	11/14/2019	110992 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	278	mg/L	0.474	3	11/14/2019	110983 PWARNER
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	7.42	pH			11/14/2019	110993 ALEE
<i>MBP_TDS(SM 2540 C)</i> Total Dissolved Solids	404	mg/L	13.2	20	11/18/2019	111031 ALEE
Lab Sample#: 1958477-03 Sample Source: WSB_SF51_PP620 External ID:						
Date Collected: 11/14/19 10:28 a Date Received: 11/14/19 4:08 pm Sample Matrix: Aqueous Location Desc:						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i> Nitrate as N	<0.07	mg/L	0.034	0.07	11/15/2019	111015 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i> Calcium, Ca	36.5	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	32	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	2.44	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	47.8	mg/L	0.013	1	11/20/2019	111228 BTRINH
<i>MBP_ALK(SM 2320 B)</i> Alkalinity	160	mg/L	0.593	3	11/14/2019	110986 PWARNER
<i>MBP_CHLORIDE(SM 4500-CL- D)</i> Chloride	82	mg/L		3	11/14/2019	110987 PWARNER
<i>MBP_COND(SM 2510 B)</i> Specific Conductance	688	µmhos/cm		1	11/14/2019	110992 ALEE
<i>MBP_HARDNESS_T(SM 2340 C)</i> Hardness, Total, as CaCO3	231	mg/L	0.474	3	11/14/2019	110983 PWARNER
<i>MBP_PH(SM 4500-H+ B)</i> pH	7.93	pH			11/14/2019	110993 ALEE
<i>MBP_TDS(SM 2540 C)</i> Total Dissolved Solids	372	mg/L	13.2	20	11/18/2019	111031 ALEE
Lab Sample#: 1958477-03A Sample Source: WSB_SF51_PP620 External ID:						
Date Collected: 11/14/19 10:28 a Date Received: 11/14/19 4:08 pm Sample Matrix: Aqueous Location Desc:						
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i> Sulfate	62.1	mg/L	0.5	2.5	11/15/2019	111015 MAWALLACE
Lab Sample#: 1958477-04 Sample Source: WSB_SF_DUP External ID:						
Date Collected: 11/14/19 9:31 ar Date Received: 11/14/19 4:08 pm Sample Matrix: Aqueous Location Desc: SF#50 - PARK PLAZA MW460						
<i>SEM_200.7_DW(EPA 200.7)</i> Calcium, Ca	39.6	mg/L	0.01	1	11/20/2019	111228 BTRINH
Magnesium, Mg	41.3	mg/L	0.024	0.2	11/20/2019	111228 BTRINH
Potassium, K	1.84	mg/L	0.035	0.2	11/20/2019	111228 BTRINH
Sodium, Na	46.1	mg/L	0.013	1	11/20/2019	111228 BTRINH
<i>MBP_ALK(SM 2320 B)</i> Alkalinity	209	mg/L	0.593	3	11/14/2019	110986 PWARNER
<i>MBP_CHLORIDE(SM 4500-CL- D)</i> Chloride	61.5	mg/L		3	11/14/2019	110987 PWARNER

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_COND(SM 2510 B) Specific Conductance	749	µmhos/cm			11/14/2019	110992 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	274	mg/L	0.474		11/14/2019	110983 PWARNER
MBP_PH(SM 4500-H+ B) pH	7.4	pH			11/14/2019	110993 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	421	mg/L	13.2		11/18/2019	111031 ALEE

Lab Sample#: 1958477-04A **Sample Source:** WSB_SF_DUP **External ID:**

Date Collected: 11/14/19 9:31 ar **Date Received:** 11/14/19 4:08 pm **Sample Matrix:** Aqueous **Location Desc:** SF#50 - PARK PLAZA MW460

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	59.6	mg/L	0.5	2.5	11/15/2019	111015 MAWALLACE
Nitrate as N	6.03	mg/L	0.17	0.35	11/15/2019	111015 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110983 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969550-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969550-03	DUP	Hardness, Total, as CaCO3	34.9	mg/L		0	0.474	3	Splt# 1958866-03 (35.1mg/L)
QC1969550-04	LCS	Hardness, Total, as CaCO3	40.2	mg/L	101			3	
QC1969550-05	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969550-06	DUP	Hardness, Total, as CaCO3	334	mg/L		0	0.948	6	Splt# 1958468-05 (333mg/L)
QC1969550-07	LCS	Hardness, Total, as CaCO3	39.9	mg/L	99			3	

QC list for Run#: 110986 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969551-03	DUP	Alkalinity	36.7	mg/L		0	0.593	3	Splt# 1958866-03 (36.6mg/L)
QC1969551-04	LCS	Alkalinity	42.4	mg/L	106			3	
QC1969551-05	DUP	Alkalinity	306	mg/L		2	1.19	6	Splt# 1958468-05 (314mg/L)

QC list for Run#: 110987 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969552-03	DUP	Chloride	11.6	mg/L		0	1.16	3	Splt# 1958866-03 (11.6mg/L)
QC1969552-04	LCS	Chloride	39.4	mg/L	98			3	
QC1969552-05	DUP	Chloride	46.5	mg/L		1	2.31	6	Splt# 1958468-05 (47.1mg/L)

QC list for Run#: 110992 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969554-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969554-03	DUP	Specific Conductance	925	µmhos/cm		0		1	Splt# 1958468-05 (924µmhos/cm)
QC1969554-04	LCS	Specific Conductance	147	µmhos/cm	99			1	

QC list for Run#: 110993 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969555-01	ICV	pH	9.07	pH	100				
QC1969555-02	DUP	pH	7.05	pH		0			Splt# 1958468-05 (7.08pH)
QC1969555-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

CCV pH 10.1 pH 100

QC list for Run#: 111015 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969576-02	CCV	Sulfate	2.34	mg/L	93				
	CCV	Nitrate as N	0.315	mg/L	93				
QC1969576-03	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969576-04	LCS	Sulfate	4.75	mg/L	95				
	LCS	Nitrate as N	0.638	mg/L	94				
QC1969576-05	SPK	Sulfate	2.46	mg/L	99				Splt# 1958468-03 (<0.5mg/L)
	SPK	Nitrate as N	0.317	mg/L	94				Splt# 1958468-03 (<0.07mg/L)
QC1969576-06	SPKD	Sulfate	2.48	mg/L	100	0			Splt# 1958468-03 (<0.5mg/L)
	SPKD	Nitrate as N	0.324	mg/L	96	2			Splt# 1958468-03 (<0.07mg/L)
QC1969576-07	CCV	Sulfate	2.36	mg/L	94				
	CCV	Nitrate as N	0.328	mg/L	96				
QC1969576-08	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969576-09	CCV	Sulfate	2.38	mg/L	95				
	CCV	Nitrate as N	0.326	mg/L	96				
QC1969576-10	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	

QC list for Run#: 111031 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969588-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969588-02	DUP	Total Dissolved Solids	542	mg/L		1	13.2	20	Splt# 1958468-05 (548mg/L)
QC1969588-03	LCS	Total Dissolved Solids	91	mg/L	95		13.2	20	

QC list for Run#: 111228 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969717-01	BLK	Calcium, Ca	<1	mg/L			0.01	1	
	BLK	Magnesium, Mg	<0.2	mg/L			0.024	0.2	
	BLK	Potassium, K	<0.2	mg/L			0.035	0.2	
	BLK	Sodium, Na	<1	mg/L			0.013	1	
QC1969717-02									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/14/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Sample ID	Parameter	Value	Unit	Temp	Flow	Conduct	DO	Notes
LCS	Calcium, Ca	19.5	mg/L	97		0.01	1	
LCS	Magnesium, Mg	19.5	mg/L	97		0.024	0.2	
LCS	Potassium, K	19.2	mg/L	95		0.035	0.2	
LCS	Sodium, Na	19.5	mg/L	97		0.013	1	
QC1969717-03								
DUP	Calcium, Ca	60.2	mg/L	0		0.01	1	Splt# 1958466-03 (60.6mg/L)
DUP	Magnesium, Mg	59	mg/L	1		0.024	0.2	Splt# 1958466-03 (59.9mg/L)
DUP	Potassium, K	1.37	mg/L	1		0.035	0.2	Splt# 1958466-03 (1.38mg/L)
DUP	Sodium, Na	67.7	mg/L	3		0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-04								
SPK	Calcium, Ca	80.9	mg/L	102		0.01	1	Splt# 1958466-03 (60.6mg/L)
SPK	Magnesium, Mg	78.3	mg/L	91		0.024	0.2	Splt# 1958466-03 (59.9mg/L)
SPK	Potassium, K	21.1	mg/L	98		0.035	0.2	Splt# 1958466-03 (1.38mg/L)
SPK	Sodium, Na	80.2	mg/L	50		0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-05								
SPKD	Calcium, Ca	82.1	mg/L	107	1	0.01	1	Splt# 1958466-03 (60.6mg/L)
SPKD	Magnesium, Mg	81.2	mg/L	106	3	0.024	0.2	Splt# 1958466-03 (59.9mg/L)
SPKD	Potassium, K	20.7	mg/L	96	2	0.035	0.2	Splt# 1958466-03 (1.38mg/L)
SPKD	Sodium, Na	82	mg/L	59	2	0.013	1	Splt# 1958466-03 (70.1mg/L)
QC1969717-06								
DUP	Calcium, Ca	71.6	mg/L	0		0.01	1	Splt# 1958466-04 (72.1mg/L)
DUP	Magnesium, Mg	47.1	mg/L	0		0.024	0.2	Splt# 1958466-04 (47.3mg/L)
DUP	Potassium, K	4	mg/L	0		0.035	0.2	Splt# 1958466-04 (3.96mg/L)
DUP	Sodium, Na	83.4	mg/L	0		0.013	1	Splt# 1958466-04 (83.2mg/L)
QC1969717-07								
SPK	Calcium, Ca	92.1	mg/L	100		0.01	1	Splt# 1958466-04 (72.1mg/L)
SPK	Magnesium, Mg	66.6	mg/L	96		0.024	0.2	Splt# 1958466-04 (47.3mg/L)
SPK	Potassium, K	23.6	mg/L	98		0.035	0.2	Splt# 1958466-04 (3.96mg/L)
SPK	Sodium, Na	103	mg/L	96		0.013	1	Splt# 1958466-04 (83.2mg/L)
QC1969717-08								
SPKD	Calcium, Ca	92.6	mg/L	103	0	0.01	1	Splt# 1958466-04 (72.1mg/L)
SPKD	Magnesium, Mg	68.4	mg/L	105	2	0.024	0.2	Splt# 1958466-04 (47.3mg/L)
SPKD	Potassium, K	23.5	mg/L	97	0	0.035	0.2	Splt# 1958466-04 (3.96mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

ELAP Cert #:

SEWPCP 1721

MILLBRAE 1449

FOLDER ID: 1958477

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/14/2019

Sampling Team: Field

SPKD	Sodium, Na	101	mg/L	88	1	0.013	1	Splt# 1958466-04 (83.2mg/L)
------	------------	-----	------	----	---	-------	---	--------------------------------

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Lab Sample#: 1959001-01 **Sample Source:** WSB_CAL-31A-145 **External ID:**

Date Collected: 11/21/19 12:08 p **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_T22(EPA 524.2)						
Vinyl chloride	<0.5	µg/L	0.1	0.5	11/22/2019	111356 DREGGIO
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	11/22/2019	111356 DREGGIO
Methylene chloride	<0.5	µg/L	0.058	0.5	11/22/2019	111356 DREGGIO
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	11/22/2019	111356 DREGGIO
Methyl t-butyl ether	<3	µg/L	0.106	3	11/22/2019	111356 DREGGIO
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	11/22/2019	111356 DREGGIO
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	11/22/2019	111356 DREGGIO
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	11/22/2019	111356 DREGGIO
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
Benzene	<0.5	µg/L	0.061	0.5	11/22/2019	111356 DREGGIO
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	11/22/2019	111356 DREGGIO
Trichloroethylene	<0.5	µg/L	0.093	0.5	11/22/2019	111356 DREGGIO
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	11/22/2019	111356 DREGGIO
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	11/22/2019	111356 DREGGIO
Toluene	<0.5	µg/L	0.118	0.5	11/22/2019	111356 DREGGIO
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	11/22/2019	111356 DREGGIO
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
Tetrachloroethylene	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
Chlorobenzene	<0.5	µg/L	0.185	0.5	11/22/2019	111356 DREGGIO
Ethylbenzene	<0.5	µg/L	0.05	0.5	11/22/2019	111356 DREGGIO
m,p-Xylene	<0.5	µg/L	0.151	0.5	11/22/2019	111356 DREGGIO
o-Xylene	<0.5	µg/L	0.076	0.5	11/22/2019	111356 DREGGIO
Styrene	<0.5	µg/L	0.053	0.5	11/22/2019	111356 DREGGIO
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	11/22/2019	111356 DREGGIO
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	11/22/2019	111356 DREGGIO
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
Xylene (total: p, m, o)	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
Internal Standard(s)						
Fluorobenzene (IS)	1	µg/L			11/22/2019	111356 DREGGIO
Surrogate(s)						
p-Bromofluorobenzene (Surr.)	0.87	µg/L			11/22/2019	111356 DREGGIO
1,2-Dichlorobenzene d- (Surr.)	0.97	µg/L			11/22/2019	111356 DREGGIO

Lab Sample#: 1959001-02 **Sample Source:** WSB_CAL-31A-280 **External ID:**

Date Collected: 11/21/19 11:55 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:** 1x

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_T22(EPA 524.2)						
Vinyl chloride	<0.5	µg/L	0.1	0.5	11/26/2019	111518 DREGGIO
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	11/26/2019	111518 DREGGIO
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	11/26/2019	111518 DREGGIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
Methylene chloride	<0.5	µg/L	0.058	0.5	11/26/2019	111518 DREGGIO	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	11/26/2019	111518 DREGGIO	
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	11/26/2019	111518 DREGGIO	
Methyl t-butyl ether	<3	µg/L	0.106	3	11/26/2019	111518 DREGGIO	
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	11/26/2019	111518 DREGGIO	
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	11/26/2019	111518 DREGGIO	
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	11/26/2019	111518 DREGGIO	
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	11/26/2019	111518 DREGGIO	
Benzene	<0.5	µg/L	0.061	0.5	11/26/2019	111518 DREGGIO	
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	11/26/2019	111518 DREGGIO	
Trichloroethylene	1.61	µg/L	0.093	0.5	11/26/2019	111518 DREGGIO	
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	11/26/2019	111518 DREGGIO	
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	11/26/2019	111518 DREGGIO	
Toluene	<0.5	µg/L	0.118	0.5	11/26/2019	111518 DREGGIO	
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	11/26/2019	111518 DREGGIO	
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	11/26/2019	111518 DREGGIO	
Chlorobenzene	<0.5	µg/L	0.185	0.5	11/26/2019	111518 DREGGIO	
Ethylbenzene	<0.5	µg/L	0.05	0.5	11/26/2019	111518 DREGGIO	
m,p-Xylene	<0.5	µg/L	0.151	0.5	11/26/2019	111518 DREGGIO	
o-Xylene	<0.5	µg/L	0.076	0.5	11/26/2019	111518 DREGGIO	
Styrene	<0.5	µg/L	0.053	0.5	11/26/2019	111518 DREGGIO	
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	11/26/2019	111518 DREGGIO	
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	11/26/2019	111518 DREGGIO	
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	11/26/2019	111518 DREGGIO	
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	11/26/2019	111518 DREGGIO	
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L		0.5	11/26/2019	111518 DREGGIO	
Xylene (total: p, m, o)	<0.5	µg/L		0.5	11/26/2019	111518 DREGGIO	
Internal Standard(s)							
Fluorobenzene (IS)	1	µg/L			11/26/2019	111518 DREGGIO	
Surrogate(s)							
p-Bromofluorobenzene (Surr.)	1.05	µg/L			11/26/2019	111518 DREGGIO	
1,2-Dichlorobenzene d- (Surr.)	1.16	µg/L			11/26/2019	111518 DREGGIO	

Lab Sample#: 1959001-02A **Sample Source:** WSB_CAL-31A-280 **External ID:**

Date Collected: 11/21/19 11:55 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:** 10x

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBO_524_T22(EPA 524.2)							
Tetrachloroethylene	173	µg/L	1.14	5	11/22/2019	111356 DREGGIO	>MCL
Internal Standard(s)							
Fluorobenzene (IS)	1	µg/L			11/22/2019	111356 DREGGIO	
Surrogate(s)							
p-Bromofluorobenzene (Surr.)	0.89	µg/L			11/22/2019	111356 DREGGIO	
1,2-Dichlorobenzene d- (Surr.)	0.99	µg/L			11/22/2019	111356 DREGGIO	

Lab Sample#: 1959001-03 **Sample Source:** WSB_CAL-31A-480 **External ID:**

Date Collected: 11/21/19 11:12 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBO_524_T22(EPA 524.2)							
Vinyl chloride	<0.5	µg/L	0.1	0.5	11/26/2019	111518 DREGGIO	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	11/26/2019	111518	DREGGIO
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	11/26/2019	111518	DREGGIO
Methylene chloride	<0.5	µg/L	0.058	0.5	11/26/2019	111518	DREGGIO
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	11/26/2019	111518	DREGGIO
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	11/26/2019	111518	DREGGIO
Methyl t-butyl ether	<3	µg/L	0.106	3	11/26/2019	111518	DREGGIO
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	11/26/2019	111518	DREGGIO
cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	11/26/2019	111518	DREGGIO
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	11/26/2019	111518	DREGGIO
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	11/26/2019	111518	DREGGIO
Benzene	<0.5	µg/L	0.061	0.5	11/26/2019	111518	DREGGIO
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	11/26/2019	111518	DREGGIO
Trichloroethylene	<0.5	µg/L	0.093	0.5	11/26/2019	111518	DREGGIO
1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	11/26/2019	111518	DREGGIO
cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	11/26/2019	111518	DREGGIO
Toluene	<0.5	µg/L	0.118	0.5	11/26/2019	111518	DREGGIO
trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	11/26/2019	111518	DREGGIO
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	11/26/2019	111518	DREGGIO
Tetrachloroethylene	<0.5	µg/L	0.114	0.5	11/26/2019	111518	DREGGIO
Chlorobenzene	<0.5	µg/L	0.185	0.5	11/26/2019	111518	DREGGIO
Ethylbenzene	<0.5	µg/L	0.05	0.5	11/26/2019	111518	DREGGIO
m,p-Xylene	<0.5	µg/L	0.151	0.5	11/26/2019	111518	DREGGIO
o-Xylene	<0.5	µg/L	0.076	0.5	11/26/2019	111518	DREGGIO
Styrene	<0.5	µg/L	0.053	0.5	11/26/2019	111518	DREGGIO
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	11/26/2019	111518	DREGGIO
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	11/26/2019	111518	DREGGIO
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	11/26/2019	111518	DREGGIO
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	11/26/2019	111518	DREGGIO
1,3-Dichloropropene Total (cis+ trans)	<0.5	µg/L	0.05	0.5	11/26/2019	111518	DREGGIO
Xylene (total: p, m, o)	<0.5	µg/L	0.5	0.5	11/26/2019	111518	DREGGIO
Internal Standard(s)							
Fluorobenzene (IS)	1	µg/L			11/26/2019	111518	DREGGIO
Surrogate(s)							
p-Bromofluorobenzene (Surr.)	1.04	µg/L			11/26/2019	111518	DREGGIO
1,2-Dichlorobenzene d- (Surr.)	1.1	µg/L			11/26/2019	111518	DREGGIO

Lab Sample#: 1959001-04

Sample Source: WSB_CAL-31A-595

External ID:

Date Collected: 11/21/19 11:04 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_T22(EPA 524.2)						
Vinyl chloride	<0.5	µg/L	0.1	0.5	11/22/2019	111356 DREGGIO
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	11/22/2019	111356 DREGGIO
Methylene chloride	<0.5	µg/L	0.058	0.5	11/22/2019	111356 DREGGIO
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	11/22/2019	111356 DREGGIO
Methyl t-butyl ether	<3	µg/L	0.106	3	11/22/2019	111356 DREGGIO
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	11/22/2019	111356 DREGGIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>cis-1,2-dichloroethylene</i>	<0.5	µg/L	0.111	0.5	11/22/2019	111356 DREGGIO
<i>1,1,1-Trichloroethane</i>	<0.5	µg/L	0.179	0.5	11/22/2019	111356 DREGGIO
<i>Carbon tetrachloride</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>Benzene</i>	<0.5	µg/L	0.061	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichloroethane</i>	<0.5	µg/L	0.115	0.5	11/22/2019	111356 DREGGIO
<i>Trichloroethylene</i>	<0.5	µg/L	0.093	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichloropropane</i>	<0.5	µg/L	0.073	0.5	11/22/2019	111356 DREGGIO
<i>cis-1,3-dichloropropene</i>	<0.5	µg/L	0.07	0.5	11/22/2019	111356 DREGGIO
<i>Toluene</i>	<0.5	µg/L	0.118	0.5	11/22/2019	111356 DREGGIO
<i>trans-1,3-Dichloropropene</i>	<0.5	µg/L	0.213	0.5	11/22/2019	111356 DREGGIO
<i>1,1,2-Trichloroethane</i>	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
<i>Tetrachloroethylene</i>	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
<i>Chlorobenzene</i>	<0.5	µg/L	0.185	0.5	11/22/2019	111356 DREGGIO
<i>Ethylbenzene</i>	<0.5	µg/L	0.05	0.5	11/22/2019	111356 DREGGIO
<i>m,p-Xylene</i>	<0.5	µg/L	0.151	0.5	11/22/2019	111356 DREGGIO
<i>o-Xylene</i>	<0.5	µg/L	0.076	0.5	11/22/2019	111356 DREGGIO
<i>Styrene</i>	<0.5	µg/L	0.053	0.5	11/22/2019	111356 DREGGIO
<i>1,1,2,2-Tetrachloroethane</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>1,4-Dichlorobenzene</i>	<0.5	µg/L	0.082	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichlorobenzene</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>1,2,4-Trichlorobenzene</i>	<0.5	µg/L	0.084	0.5	11/22/2019	111356 DREGGIO
<i>1,3-Dichloropropene Total (cis+ trans)</i>	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
<i>Xylene (total: p, m, o)</i>	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
Internal Standard(s)						
<i>Fluorobenzene (IS)</i>	1	µg/L			11/22/2019	111356 DREGGIO
Surrogate(s)						
<i>p-Bromofluorobenzene (Surr.)</i>	0.94	µg/L			11/22/2019	111356 DREGGIO
<i>1,2-Dichlorobenzene d- (Surr.)</i>	1.01	µg/L			11/22/2019	111356 DREGGIO

Lab Sample#: 1959001-05 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/21/19 11:57 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:** 1x

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBO_524_T22(EPA 524.2)						
<i>Vinyl chloride</i>	<0.5	µg/L	0.1	0.5	11/22/2019	111356 DREGGIO
<i>Trichlorofluoromethane (F-11)</i>	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
<i>1,1-Dichloroethylene</i>	<0.5	µg/L	0.075	0.5	11/22/2019	111356 DREGGIO
<i>Methylene chloride</i>	<0.5	µg/L	0.058	0.5	11/22/2019	111356 DREGGIO
<i>1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)</i>	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
<i>trans-1,2-Dichloroethylene</i>	<0.5	µg/L	0.099	0.5	11/22/2019	111356 DREGGIO
<i>Methyl t-butyl ether</i>	<3	µg/L	0.106	3	11/22/2019	111356 DREGGIO
<i>1,1-Dichloroethane</i>	<0.5	µg/L	0.192	0.5	11/22/2019	111356 DREGGIO
<i>cis-1,2-dichloroethylene</i>	<0.5	µg/L	0.111	0.5	11/22/2019	111356 DREGGIO
<i>1,1,1-Trichloroethane</i>	<0.5	µg/L	0.179	0.5	11/22/2019	111356 DREGGIO
<i>Carbon tetrachloride</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>Benzene</i>	<0.5	µg/L	0.061	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichloroethane</i>	<0.5	µg/L	0.115	0.5	11/22/2019	111356 DREGGIO
<i>Trichloroethylene</i>	1.92	µg/L	0.093	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichloropropane</i>	<0.5	µg/L	0.073	0.5	11/22/2019	111356 DREGGIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
<i>cis</i> -1,3-dichloropropene	<0.5	µg/L	0.07	0.5	11/22/2019	111356 DREGGIO	
Toluene	<0.5	µg/L	0.118	0.5	11/22/2019	111356 DREGGIO	
<i>trans</i> -1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	11/22/2019	111356 DREGGIO	
1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO	
Chlorobenzene	<0.5	µg/L	0.185	0.5	11/22/2019	111356 DREGGIO	
Ethylbenzene	<0.5	µg/L	0.05	0.5	11/22/2019	111356 DREGGIO	
<i>m,p</i> -Xylene	<0.5	µg/L	0.151	0.5	11/22/2019	111356 DREGGIO	
<i>o</i> -Xylene	<0.5	µg/L	0.076	0.5	11/22/2019	111356 DREGGIO	
Styrene	<0.5	µg/L	0.053	0.5	11/22/2019	111356 DREGGIO	
1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO	
1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	11/22/2019	111356 DREGGIO	
1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO	
1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	11/22/2019	111356 DREGGIO	
1,3-Dichloropropene Total (<i>cis</i> + <i>trans</i>)	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO	
Xylene (total: <i>p</i> , <i>m</i> , <i>o</i>)	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO	
Internal Standard(s)							
Fluorobenzene (IS)	1	µg/L			11/22/2019	111356 DREGGIO	
Surrogate(s)							
<i>p</i> -Bromofluorobenzene (Surr.)	0.98	µg/L			11/22/2019	111356 DREGGIO	
1,2-Dichlorobenzene <i>d</i> - (Surr.)	1.09	µg/L			11/22/2019	111356 DREGGIO	

Lab Sample#: 1959001-05A **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 11/21/19 11:57 a **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:** 10x

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBO_524_T22(EPA 524.2)							
Tetrachloroethylene	165	µg/L	1.14	5	11/26/2019	111518 DREGGIO	>MCL
Internal Standard(s)							
Fluorobenzene (IS)	1	µg/L			11/26/2019	111518 DREGGIO	
Surrogate(s)							
<i>p</i> -Bromofluorobenzene (Surr.)	1.1	µg/L			11/26/2019	111518 DREGGIO	
1,2-Dichlorobenzene <i>d</i> - (Surr.)	1.12	µg/L			11/26/2019	111518 DREGGIO	

Lab Sample#: 1959001-06 **Sample Source:** QC_TRIP_BLANK **External ID:**

Date Collected: 11/20/19 3:19 pm **Date Received:** 11/21/19 1:50 pm **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBO_524_T22(EPA 524.2)							
Vinyl chloride	<0.5	µg/L	0.1	0.5	11/22/2019	111356 DREGGIO	
Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO	
1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	11/22/2019	111356 DREGGIO	
Methylene chloride	<0.5	µg/L	0.058	0.5	11/22/2019	111356 DREGGIO	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO	
<i>trans</i> -1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	11/22/2019	111356 DREGGIO	
Methyl <i>t</i> -butyl ether	<3	µg/L	0.106	3	11/22/2019	111356 DREGGIO	
1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	11/22/2019	111356 DREGGIO	
<i>cis</i> -1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	11/22/2019	111356 DREGGIO	
1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	11/22/2019	111356 DREGGIO	
Carbon tetrachloride	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO	
Benzene	<0.5	µg/L	0.061	0.5	11/22/2019	111356 DREGGIO	
1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	11/22/2019	111356 DREGGIO	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>Trichloroethylene</i>	<0.5	µg/L	0.093	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichloropropane</i>	<0.5	µg/L	0.073	0.5	11/22/2019	111356 DREGGIO
<i>cis-1,3-dichloropropene</i>	<0.5	µg/L	0.07	0.5	11/22/2019	111356 DREGGIO
<i>Toluene</i>	<0.5	µg/L	0.118	0.5	11/22/2019	111356 DREGGIO
<i>trans-1,3-Dichloropropene</i>	<0.5	µg/L	0.213	0.5	11/22/2019	111356 DREGGIO
<i>1,1,2-Trichloroethane</i>	<0.5	µg/L	0.052	0.5	11/22/2019	111356 DREGGIO
<i>Tetrachloroethylene</i>	<0.5	µg/L	0.114	0.5	11/22/2019	111356 DREGGIO
<i>Chlorobenzene</i>	<0.5	µg/L	0.185	0.5	11/22/2019	111356 DREGGIO
<i>Ethylbenzene</i>	<0.5	µg/L	0.05	0.5	11/22/2019	111356 DREGGIO
<i>m,p-Xylene</i>	<0.5	µg/L	0.151	0.5	11/22/2019	111356 DREGGIO
<i>o-Xylene</i>	<0.5	µg/L	0.076	0.5	11/22/2019	111356 DREGGIO
<i>Styrene</i>	<0.5	µg/L	0.053	0.5	11/22/2019	111356 DREGGIO
<i>1,1,2,2-Tetrachloroethane</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>1,4-Dichlorobenzene</i>	<0.5	µg/L	0.082	0.5	11/22/2019	111356 DREGGIO
<i>1,2-Dichlorobenzene</i>	<0.5	µg/L	0.066	0.5	11/22/2019	111356 DREGGIO
<i>1,2,4-Trichlorobenzene</i>	<0.5	µg/L	0.084	0.5	11/22/2019	111356 DREGGIO
<i>1,3-Dichloropropene Total (cis+ trans)</i>	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
<i>Xylene (total: p, m, o)</i>	<0.5	µg/L		0.5	11/22/2019	111356 DREGGIO
Internal Standard(s)						
<i>Fluorobenzene (IS)</i>	1	µg/L			11/22/2019	111356 DREGGIO
Surrogate(s)						
<i>p-Bromofluorobenzene (Surr.)</i>	0.9	µg/L			11/22/2019	111356 DREGGIO
<i>1,2-Dichlorobenzene d- (Surr.)</i>	0.95	µg/L			11/22/2019	111356 DREGGIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 111356 and Test: MBO_524_T22 (EPA 524.2)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969803-03	CCV	Vinyl chloride	4.55	µg/L	91		0.1	0.5	
	CCV	Trichlorofluoromethane (F-11)	5	µg/L	100		0.052	0.5	
	CCV	1,1-Dichloroethylene	5.08	µg/L	102		0.075	0.5	
	CCV	Methylene chloride	5.54	µg/L	111		0.058	0.5	
	CCV	1,1,2-Trichloro-1,2,2-trifluoroethane	4.92	µg/L	98		0.114	0.5	
	CCV	trans-1,2-Dichloroethylene	4.93	µg/L	98		0.099	0.5	
	CCV	Methyl t-butyl ether	4.6	µg/L	92		0.106	3	
	CCV	1,1-Dichloroethane	5.14	µg/L	103		0.192	0.5	
	CCV	cis-1,2-dichloroethylene	5.21	µg/L	104		0.111	0.5	
	CCV	1,1,1-Trichloroethane	4.92	µg/L	98		0.179	0.5	
	CCV	Carbon tetrachloride	4.96	µg/L	99		0.066	0.5	
	CCV	Benzene	5.13	µg/L	103		0.061	0.5	
	CCV	1,2-Dichloroethane	5.26	µg/L	105		0.115	0.5	
	CCV	Trichloroethylene	5.32	µg/L	106		0.093	0.5	
	CCV	1,2-Dichloropropane	5.25	µg/L	105		0.073	0.5	
	CCV	cis-1,3-dichloropropene	4.69	µg/L	93		0.07	0.5	
	CCV	Toluene	5.28	µg/L	106		0.118	0.5	
	CCV	trans-1,3-Dichloropropene	4.94	µg/L	98		0.213	0.5	
	CCV	1,1,2-Trichloroethane	5.56	µg/L	111		0.052	0.5	
	CCV	Tetrachloroethylene	5.35	µg/L	107		0.114	0.5	
	CCV	Chlorobenzene	5.25	µg/L	105		0.185	0.5	
	CCV	Ethylbenzene	4.87	µg/L	97		0.05	0.5	
	CCV	m,p-Xylene	11	µg/L	110		0.151	0.5	
	CCV	o-Xylene	5.65	µg/L	113		0.076	0.5	
	CCV	Styrene	5.22	µg/L	104		0.053	0.5	
	CCV	1,1,2,2-Tetrachloroethane	5.36	µg/L	107		0.066	0.5	
	CCV	1,4-Dichlorobenzene	5.51	µg/L	110		0.082	0.5	
	CCV	1,2-Dichlorobenzene	5.34	µg/L	107		0.066	0.5	
	CCV	1,2,4-Trichlorobenzene	4.99	µg/L	99		0.084	0.5	
Internal Standard	CCV	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	CCV	p-Bromofluorobenzene (Surr.)	1.1	µg/L	110				
Surrogate(s)	CCV	1,2-Dichlorobenzene d- (Surr.)	1.07	µg/L	107				
QC1969803-04	LCS	Vinyl chloride	9.24	µg/L	92		0.1	0.5	
	LCS	Trichlorofluoromethane (F-11)	10.6	µg/L	106		0.052	0.5	
	LCS	1,1-Dichloroethylene	10	µg/L	100		0.075	0.5	
	LCS	Methylene chloride	10	µg/L	100		0.058	0.5	
	LCS	1,1,2-Trichloro-1,2,2-trifluoroethane	9.66	µg/L	96		0.114	0.5	
	LCS	trans-1,2-Dichloroethylene	9.57	µg/L	95		0.099	0.5	
	LCS	Methyl t-butyl ether	9.82	µg/L	98		0.106	3	
	LCS	1,1-Dichloroethane	9.53	µg/L	95		0.192	0.5	
	LCS	cis-1,2-dichloroethylene	9.9	µg/L	99		0.111	0.5	
	LCS	1,1,1-Trichloroethane	9.84	µg/L	98		0.179	0.5	
	LCS	Carbon tetrachloride	10.2	µg/L	102		0.066	0.5	
	LCS	Benzene	10.1	µg/L	101		0.061	0.5	
	LCS	1,2-Dichloroethane	9.34	µg/L	93		0.115	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS	Trichloroethylene	10	µg/L	100		0.093	0.5		
LCS	1,2-Dichloropropane	9.68	µg/L	96		0.073	0.5		
LCS	cis-1,3-dichloropropene	9.18	µg/L	91		0.07	0.5		
LCS	Toluene	10.6	µg/L	106		0.118	0.5		
LCS	trans-1,3-Dichloropropene	9.55	µg/L	95		0.213	0.5		
LCS	1,1,2-Trichloroethane	9.88	µg/L	98		0.052	0.5		
LCS	Tetrachloroethylene	9.74	µg/L	97		0.114	0.5		
LCS	Chlorobenzene	10.1	µg/L	101		0.185	0.5		
LCS	Ethylbenzene	10.2	µg/L	102		0.05	0.5		
LCS	m,p-Xylene	22.8	µg/L	114		0.151	0.5		
LCS	o-Xylene	11.4	µg/L	114		0.076	0.5		
LCS	Styrene	10.8	µg/L	108		0.053	0.5		
LCS	1,1,2,2-Tetrachloroethane	9.95	µg/L	99		0.066	0.5		
LCS	1,4-Dichlorobenzene	10.2	µg/L	102		0.082	0.5		
LCS	1,2-Dichlorobenzene	10.1	µg/L	101		0.066	0.5		
LCS	1,2,4-Trichlorobenzene	9.98	µg/L	99		0.084	0.5		
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100				
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	1.12	µg/L	112				
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.12	µg/L	112				
QC1969803-05	LCS								
LCS	LCS	Vinyl chloride	9.51	µg/L	95	2	0.1	0.5	Splt# QC1969803-04 (9.24µg/L)
LCS	LCS	Trichlorofluoromethane (F-11)	10.6	µg/L	106	0	0.052	0.5	Splt# QC1969803-04 (10.6µg/L)
LCS	LCS	1,1-Dichloroethylene	10.4	µg/L	104	3	0.075	0.5	Splt# QC1969803-04 (10µg/L)
LCS	LCS	Methylene chloride	10.3	µg/L	103	3	0.058	0.5	Splt# QC1969803-04 (10µg/L)
LCS	LCS	1,1,2-Trichloro-1,2,2-trifluoroethane	9.77	µg/L	97	1	0.114	0.5	Splt# QC1969803-04 (9.66µg/L)
LCS	LCS	trans-1,2-Dichloroethylene	9.77	µg/L	97	2	0.099	0.5	Splt# QC1969803-04 (9.57µg/L)
LCS	LCS	Methyl t-butyl ether	10.5	µg/L	105	6	0.106	3	Splt# QC1969803-04 (9.82µg/L)
LCS	LCS	1,1-Dichloroethane	9.75	µg/L	97	2	0.192	0.5	Splt# QC1969803-04 (9.53µg/L)
LCS	LCS	cis-1,2-dichloroethylene	10.1	µg/L	101	1	0.111	0.5	Splt# QC1969803-04 (9.9µg/L)
LCS	LCS	1,1,1-Trichloroethane	9.74	µg/L	97	1	0.179	0.5	Splt# QC1969803-04 (9.84µg/L)
LCS	LCS	Carbon tetrachloride	10.2	µg/L	102	0	0.066	0.5	Splt# QC1969803-04 (10.2µg/L)
LCS	LCS	Benzene	10.2	µg/L	102	1	0.061	0.5	Splt# QC1969803-04 (10.1µg/L)
LCS	LCS	1,2-Dichloroethane	9.8	µg/L	98	4	0.115	0.5	Splt# QC1969803-04 (9.34µg/L)
LCS	LCS	Trichloroethylene	10.3	µg/L	103	2	0.093	0.5	Splt# QC1969803-04 (10µg/L)
LCS	LCS	1,2-Dichloropropane	10	µg/L	100	3	0.073	0.5	Splt# QC1969803-04 (9.68µg/L)
LCS	LCS	cis-1,3-dichloropropene	9.53	µg/L	95	3	0.07	0.5	Splt# QC1969803-04 (9.18µg/L)
LCS	LCS	Toluene	10.8	µg/L	108	1	0.118	0.5	Splt# QC1969803-04 (10.6µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/25/2019

Sampling Team: Field

LCS	trans-1,3-Dichloropropene	9.82	µg/L	98	2	0.213	0.5	Splt# QC1969803-04 (9.55µg/L)
LCS	1,1,2-Trichloroethane	10.3	µg/L	103	4	0.052	0.5	Splt# QC1969803-04 (9.88µg/L)
LCS	Tetrachloroethylene	9.99	µg/L	99	2	0.114	0.5	Splt# QC1969803-04 (9.74µg/L)
LCS	Chlorobenzene	10.4	µg/L	104	2	0.185	0.5	Splt# QC1969803-04 (10.1µg/L)
LCS	Ethylbenzene	10.5	µg/L	105	2	0.05	0.5	Splt# QC1969803-04 (10.2µg/L)
LCS	m,p-Xylene	23.3	µg/L	116	1	0.151	0.5	Splt# QC1969803-04 (22.8µg/L)
LCS	o-Xylene	11.6	µg/L	116	1	0.076	0.5	Splt# QC1969803-04 (11.4µg/L)
LCS	Styrene	10.9	µg/L	109	1	0.053	0.5	Splt# QC1969803-04 (10.8µg/L)
LCS	1,1,2,2-Tetrachloroethane	10.3	µg/L	103	3	0.066	0.5	Splt# QC1969803-04 (9.95µg/L)
LCS	1,4-Dichlorobenzene	10.5	µg/L	105	2	0.082	0.5	Splt# QC1969803-04 (10.2µg/L)
LCS	1,2-Dichlorobenzene	10.4	µg/L	104	2	0.066	0.5	Splt# QC1969803-04 (10.1µg/L)
LCS	1,2,4-Trichlorobenzene	10.7	µg/L	107	6	0.084	0.5	Splt# QC1969803-04 (9.98µg/L)
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100	0		Splt# QC1969803-04 (1µg/L)
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	1.1	µg/L	110	1		Splt# QC1969803-04 (1.12µg/L)
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.06	µg/L	106	5		Splt# QC1969803-04 (1.12µg/L)
QC1969803-06								
BLK	Vinyl chloride	<0.5	µg/L			0.1	0.5	
BLK	Trichlorofluoromethane (F-11)	<0.5	µg/L			0.052	0.5	
BLK	1,1-Dichloroethylene	<0.5	µg/L			0.075	0.5	
BLK	Methylene chloride	<0.5	µg/L			0.058	0.5	
BLK	1,1,2-Trichloro-1,2,2-trifluoroeth	<0.5	µg/L			0.114	0.5	
BLK	trans-1,2-Dichloroethylene	<0.5	µg/L			0.099	0.5	
BLK	Methyl t-butyl ether	<3	µg/L			0.106	3	
BLK	1,1-Dichloroethane	<0.5	µg/L			0.192	0.5	
BLK	cis-1,2-dichloroethylene	<0.5	µg/L			0.111	0.5	
BLK	1,1,1-Trichloroethane	<0.5	µg/L			0.179	0.5	
BLK	Carbon tetrachloride	<0.5	µg/L			0.066	0.5	
BLK	Benzene	<0.5	µg/L			0.061	0.5	
BLK	1,2-Dichloroethane	<0.5	µg/L			0.115	0.5	
BLK	Trichloroethylene	<0.5	µg/L			0.093	0.5	
BLK	1,2-Dichloropropane	<0.5	µg/L			0.073	0.5	
BLK	cis-1,3-dichloropropene	<0.5	µg/L			0.07	0.5	
BLK	Toluene	<0.5	µg/L			0.118	0.5	
BLK	trans-1,3-Dichloropropene	<0.5	µg/L			0.213	0.5	
BLK	1,1,2-Trichloroethane	<0.5	µg/L			0.052	0.5	
BLK	Tetrachloroethylene	<0.5	µg/L			0.114	0.5	
BLK	Chlorobenzene	<0.5	µg/L			0.185	0.5	
BLK	Ethylbenzene	<0.5	µg/L			0.05	0.5	
BLK	m,p-Xylene	<0.5	µg/L			0.151	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

	BLK	o-Xylene	<0.5	µg/L		0.076	0.5	
	BLK	Styrene	<0.5	µg/L		0.053	0.5	
	BLK	1,1,2,2-Tetrachloroethane	<0.5	µg/L		0.066	0.5	
	BLK	1,4-Dichlorobenzene	<0.5	µg/L		0.082	0.5	
	BLK	1,2-Dichlorobenzene	<0.5	µg/L		0.066	0.5	
	BLK	1,2,4-Trichlorobenzene	<0.5	µg/L		0.084	0.5	
Internal Standard	BLK	Fluorobenzene (IS)	1	µg/L	100			
Surrogate(s)	BLK	p-Bromofluorobenzene (Surr.)	0.81	µg/L	81			
Surrogate(s)	BLK	1,2-Dichlorobenzene d- (Surr.)	0.96	µg/L	96			
QC1969803-07								
	DUP	Vinyl chloride	<0.5	µg/L		0.1	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Trichlorofluoromethane (F-11)	<0.5	µg/L		0.052	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,1-Dichloroethylene	<0.5	µg/L	N/A	0.075	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Methylene chloride	<0.5	µg/L		0.058	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,1,2-Trichloro-1,2,2-trifluoroeth	<0.5	µg/L		0.114	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	trans-1,2-Dichloroethylene	<0.5	µg/L	N/A	0.099	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Methyl t-butyl ether	<3	µg/L		0.106	3	Splt# 1959001-01 (<3µg/L)
	DUP	1,1-Dichloroethane	<0.5	µg/L		0.192	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	cis-1,2-dichloroethylene	<0.5	µg/L		0.111	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,1,1-Trichloroethane	<0.5	µg/L		0.179	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Carbon tetrachloride	<0.5	µg/L		0.066	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Benzene	<0.5	µg/L		0.061	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,2-Dichloroethane	<0.5	µg/L		0.115	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Trichloroethylene	<0.5	µg/L		0.093	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,2-Dichloropropane	<0.5	µg/L		0.073	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	cis-1,3-dichloropropene	<0.5	µg/L		0.07	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Toluene	<0.5	µg/L		0.118	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	trans-1,3-Dichloropropene	<0.5	µg/L		0.213	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	1,1,2-Trichloroethane	<0.5	µg/L		0.052	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Tetrachloroethylene	<0.5	µg/L	N/A	0.114	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Chlorobenzene	<0.5	µg/L		0.185	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	Ethylbenzene	<0.5	µg/L		0.05	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	m,p-Xylene	<0.5	µg/L		0.151	0.5	Splt# 1959001-01 (<0.5µg/L)
	DUP	o-Xylene	<0.5	µg/L		0.076	0.5	Splt# 1959001-01 (<0.5µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

DUP	Styrene	<0.5	µg/L	0.053	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	1,3-Dichloropropene Total (cis+ tr<0.5	<0.5	µg/L	N/A	0.5	Splt# 1959001-01 (<0.5µg/L)
DUP	Xylene (total: p, m, o)	<0.5	µg/L	N/A	0.5	Splt# 1959001-01 (<0.5µg/L)
Internal Standard	DUP Fluorobenzene (IS)	1	µg/L	0		Splt# 1959001-01 (1µg/L)
Surrogate(s)	DUP p-Bromofluorobenzene (Surr.)	0.83	µg/L	83		Splt# 1959001-01 (0.87µg/L)
Surrogate(s)	DUP 1,2-Dichlorobenzene d- (Surr.)	0.95	µg/L	95		Splt# 1959001-01 (0.97µg/L)

QC list for Run#: 111518 and Test: MBO_524_T22 (EPA 524.2)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969903-03	CCV	Vinyl chloride	5.4	µg/L	108		0.1	0.5	
	CCV	Trichlorofluoromethane (F-11)	5.81	µg/L	116		0.052	0.5	
	CCV	1,1-Dichloroethylene	5.58	µg/L	112		0.075	0.5	
	CCV	Methylene chloride	5.4	µg/L	108		0.058	0.5	
	CCV	1,1,2-Trichloro-1,2,2-trifluoroethane	5.82	µg/L	116		0.114	0.5	
	CCV	trans-1,2-Dichloroethylene	5.45	µg/L	109		0.099	0.5	
	CCV	Methyl t-butyl ether	5.42	µg/L	108		0.106	3	
	CCV	1,1-Dichloroethane	5.28	µg/L	106		0.192	0.5	
	CCV	cis-1,2-dichloroethylene	5.2	µg/L	104		0.111	0.5	
	CCV	1,1,1-Trichloroethane	5.56	µg/L	111		0.179	0.5	
	CCV	Carbon tetrachloride	5.74	µg/L	115		0.066	0.5	
	CCV	Benzene	5.17	µg/L	103		0.061	0.5	
	CCV	1,2-Dichloroethane	5.22	µg/L	104		0.115	0.5	
	CCV	Trichloroethylene	5.27	µg/L	105		0.093	0.5	
	CCV	1,2-Dichloropropane	5.3	µg/L	106		0.073	0.5	
	CCV	cis-1,3-dichloropropene	5.33	µg/L	107		0.07	0.5	
	CCV	Toluene	5.28	µg/L	106		0.118	0.5	
	CCV	trans-1,3-Dichloropropene	5.42	µg/L	108		0.213	0.5	
	CCV	1,1,2-Trichloroethane	5.33	µg/L	107		0.052	0.5	
	CCV	Tetrachloroethylene	5.39	µg/L	108		0.114	0.5	
	CCV	Chlorobenzene	5.38	µg/L	108		0.185	0.5	
	CCV	Ethylbenzene	5.45	µg/L	109		0.05	0.5	
	CCV	m,p-Xylene	11.1	µg/L	111		0.151	0.5	
	CCV	o-Xylene	5.62	µg/L	112		0.076	0.5	
	CCV	Styrene	5.42	µg/L	108		0.053	0.5	
	CCV	1,1,2,2-Tetrachloroethane	5.4	µg/L	108		0.066	0.5	
	CCV	1,4-Dichlorobenzene	5.71	µg/L	114		0.082	0.5	
	CCV	1,2-Dichlorobenzene	5.65	µg/L	113		0.066	0.5	
	CCV	1,2,4-Trichlorobenzene	5.12	µg/L	102		0.084	0.5	
Internal Standard	CCV	Fluorobenzene (IS)	1	µg/L	100				

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Surrogate(s)	CCV	Concentration	Unit	Value	Value	Value	Value	
Surrogate(s)	CCV	p-Bromofluorobenzene (Surr.)	µg/L	1.17				
Surrogate(s)	CCV	1,2-Dichlorobenzene d- (Surr.)	µg/L	1.14				
QC1969903-04								
LCS		Vinyl chloride	µg/L	11.1	111	0.1	0.5	
LCS		Trichlorofluoromethane (F-11)	µg/L	11.4	114	0.052	0.5	
LCS		1,1-Dichloroethylene	µg/L	11.8	118	0.075	0.5	
LCS		Methylene chloride	µg/L	11	110	0.058	0.5	
LCS		1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	11	110	0.114	0.5	
LCS		trans-1,2-Dichloroethylene	µg/L	10.8	108	0.099	0.5	
LCS		Methyl t-butyl ether	µg/L	10.9	109	0.106	3	
LCS		1,1-Dichloroethane	µg/L	10.6	106	0.192	0.5	
LCS		cis-1,2-dichloroethylene	µg/L	10.5	105	0.111	0.5	
LCS		1,1,1-Trichloroethane	µg/L	11	110	0.179	0.5	
LCS		Carbon tetrachloride	µg/L	11.5	115	0.066	0.5	
LCS		Benzene	µg/L	10.5	105	0.061	0.5	
LCS		1,2-Dichloroethane	µg/L	10.1	101	0.115	0.5	
LCS		Trichloroethylene	µg/L	10.6	106	0.093	0.5	
LCS		1,2-Dichloropropane	µg/L	10.5	105	0.073	0.5	
LCS		cis-1,3-dichloropropene	µg/L	11	110	0.07	0.5	
LCS		Toluene	µg/L	11	110	0.118	0.5	
LCS		trans-1,3-Dichloropropene	µg/L	11.4	114	0.213	0.5	
LCS		1,1,2-Trichloroethane	µg/L	10.9	109	0.052	0.5	
LCS		Tetrachloroethylene	µg/L	11.1	111	0.114	0.5	
LCS		Chlorobenzene	µg/L	10.8	108	0.185	0.5	
LCS		Ethylbenzene	µg/L	11.3	113	0.05	0.5	
LCS		m,p-Xylene	µg/L	23.1	116	0.151	0.5	
LCS		o-Xylene	µg/L	11.6	116	0.076	0.5	
LCS		Styrene	µg/L	11.9	119	0.053	0.5	
LCS		1,1,2,2-Tetrachloroethane	µg/L	11.2	112	0.066	0.5	
LCS		1,4-Dichlorobenzene	µg/L	11.5	115	0.082	0.5	
LCS		1,2-Dichlorobenzene	µg/L	11.5	115	0.066	0.5	
LCS		1,2,4-Trichlorobenzene	µg/L	10.9	109	0.084	0.5	
Internal Standard	LCS	Fluorobenzene (IS)	µg/L	1	100			
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	µg/L	1.17	117			
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	µg/L	1.18	118			
QC1969903-05								
LCS		Vinyl chloride	µg/L	9.89	98	11	0.1	Splt# QC1969903-04 (11.1µg/L)
LCS		Trichlorofluoromethane (F-11)	µg/L	10.3	103	9	0.052	0.5 Splt# QC1969903-04 (11.4µg/L)
LCS		1,1-Dichloroethylene	µg/L	10.8	108	9	0.075	0.5 Splt# QC1969903-04 (11.8µg/L)
LCS		Methylene chloride	µg/L	10.5	105	4	0.058	0.5 Splt# QC1969903-04 (11µg/L)
LCS		1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	9.46	94	14	0.114	0.5 Splt# QC1969903-04 (11µg/L)
LCS		trans-1,2-Dichloroethylene	µg/L	10.2	102	5	0.099	0.5 Splt# QC1969903-04 (10.8µg/L)
LCS		Methyl t-butyl ether	µg/L	11.1	111	1	0.106	3 Splt# QC1969903-04 (10.9µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/25/2019

Sampling Team: Field

LCS	1,1-Dichloroethane	10	µg/L	100	5	0.192	0.5	Splt# QC1969903-04 (10.6µg/L)
LCS	cis-1,2-dichloroethylene	10.1	µg/L	101	3	0.111	0.5	Splt# QC1969903-04 (10.5µg/L)
LCS	1,1,1-Trichloroethane	10.4	µg/L	104	5	0.179	0.5	Splt# QC1969903-04 (11µg/L)
LCS	Carbon tetrachloride	11	µg/L	110	4	0.066	0.5	Splt# QC1969903-04 (11.5µg/L)
LCS	Benzene	10.2	µg/L	102	2	0.061	0.5	Splt# QC1969903-04 (10.5µg/L)
LCS	1,2-Dichloroethane	10.1	µg/L	101	0	0.115	0.5	Splt# QC1969903-04 (10.1µg/L)
LCS	Trichloroethylene	9.99	µg/L	99	6	0.093	0.5	Splt# QC1969903-04 (10.6µg/L)
LCS	1,2-Dichloropropane	10.1	µg/L	101	3	0.073	0.5	Splt# QC1969903-04 (10.5µg/L)
LCS	cis-1,3-dichloropropene	10.9	µg/L	109	1	0.07	0.5	Splt# QC1969903-04 (11µg/L)
LCS	Toluene	10.6	µg/L	106	3	0.118	0.5	Splt# QC1969903-04 (11µg/L)
LCS	trans-1,3-Dichloropropene	11.2	µg/L	112	1	0.213	0.5	Splt# QC1969903-04 (11.4µg/L)
LCS	1,1,2-Trichloroethane	10.6	µg/L	106	2	0.052	0.5	Splt# QC1969903-04 (10.9µg/L)
LCS	Tetrachloroethylene	10.3	µg/L	103	7	0.114	0.5	Splt# QC1969903-04 (11.1µg/L)
LCS	Chlorobenzene	10.4	µg/L	104	3	0.185	0.5	Splt# QC1969903-04 (10.8µg/L)
LCS	Ethylbenzene	10.7	µg/L	107	5	0.05	0.5	Splt# QC1969903-04 (11.3µg/L)
LCS	m,p-Xylene	22.2	µg/L	111	3	0.151	0.5	Splt# QC1969903-04 (23.1µg/L)
LCS	o-Xylene	11.2	µg/L	112	3	0.076	0.5	Splt# QC1969903-04 (11.6µg/L)
LCS	Styrene	11.5	µg/L	115	3	0.053	0.5	Splt# QC1969903-04 (11.9µg/L)
LCS	1,1,2,2-Tetrachloroethane	11.3	µg/L	113	1	0.066	0.5	Splt# QC1969903-04 (11.2µg/L)
LCS	1,4-Dichlorobenzene	11	µg/L	110	4	0.082	0.5	Splt# QC1969903-04 (11.5µg/L)
LCS	1,2-Dichlorobenzene	10.9	µg/L	109	5	0.066	0.5	Splt# QC1969903-04 (11.5µg/L)
LCS	1,2,4-Trichlorobenzene	10.1	µg/L	101	8	0.084	0.5	Splt# QC1969903-04 (10.9µg/L)
Internal Standard	LCS	Fluorobenzene (IS)	1	µg/L	100	0		Splt# QC1969903-04 (1µg/L)
Surrogate(s)	LCS	p-Bromofluorobenzene (Surr.)	1.15	µg/L	115	1		Splt# QC1969903-04 (1.17µg/L)
Surrogate(s)	LCS	1,2-Dichlorobenzene d- (Surr.)	1.21	µg/L	121	2		Splt# QC1969903-04 (1.18µg/L)
QC1969903-06								
BLK	Vinyl chloride	<0.5	µg/L			0.1	0.5	
BLK	Trichlorofluoromethane (F-11)	<0.5	µg/L			0.052	0.5	
BLK	1,1-Dichloroethylene	<0.5	µg/L			0.075	0.5	
BLK	Methylene chloride	<0.5	µg/L			0.058	0.5	
BLK	1,1,2-Trichloro-1,2,2-trifluoroeth	<0.5	µg/L			0.114	0.5	
BLK	trans-1,2-Dichloroethylene	<0.5	µg/L			0.099	0.5	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/25/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

BLK	Methyl t-butyl ether	<3	µg/L	0.106	3	
BLK	1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	
BLK	cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	
BLK	1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	
BLK	Carbon tetrachloride	<0.5	µg/L	0.066	0.5	
BLK	Benzene	<0.5	µg/L	0.061	0.5	
BLK	1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	
BLK	Trichloroethylene	<0.5	µg/L	0.093	0.5	
BLK	1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	
BLK	cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	
BLK	Toluene	<0.5	µg/L	0.118	0.5	
BLK	trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	
BLK	1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	
BLK	Tetrachloroethylene	<0.5	µg/L	0.114	0.5	
BLK	Chlorobenzene	<0.5	µg/L	0.185	0.5	
BLK	Ethylbenzene	<0.5	µg/L	0.05	0.5	
BLK	m,p-Xylene	<0.5	µg/L	0.151	0.5	
BLK	o-Xylene	<0.5	µg/L	0.076	0.5	
BLK	Styrene	<0.5	µg/L	0.053	0.5	
BLK	1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	
BLK	1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	
BLK	1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	
BLK	1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	
Internal Standard	BLK	Fluorobenzene (IS)	1	µg/L	100	
Surrogate(s)	BLK	p-Bromofluorobenzene (Surr.)	0.97	µg/L	97	
Surrogate(s)	BLK	1,2-Dichlorobenzene d- (Surr.)	1.09	µg/L	109	
QC1969903-07						
DUP	Vinyl chloride	<0.5	µg/L	0.1	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Trichlorofluoromethane (F-11)	<0.5	µg/L	0.052	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,1-Dichloroethylene	<0.5	µg/L	0.075	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Methylene chloride	<0.5	µg/L	0.058	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,1,2-Trichloro-1,2,2-trifluoroeth	<0.5	µg/L	0.114	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	trans-1,2-Dichloroethylene	<0.5	µg/L	0.099	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Methyl t-butyl ether	<3	µg/L	0.106	3	Splt# 1959001-03 (<3µg/L)
DUP	1,1-Dichloroethane	<0.5	µg/L	0.192	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	cis-1,2-dichloroethylene	<0.5	µg/L	0.111	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,1,1-Trichloroethane	<0.5	µg/L	0.179	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Carbon tetrachloride	<0.5	µg/L	0.066	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Benzene	<0.5	µg/L	0.061	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,2-Dichloroethane	<0.5	µg/L	0.115	0.5	Splt# 1959001-03 (<0.5µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/25/2019

Sampling Team: Field

DUP	Trichloroethylene	<0.5	µg/L	0.093	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,2-Dichloropropane	<0.5	µg/L	0.073	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	cis-1,3-dichloropropene	<0.5	µg/L	0.07	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Toluene	<0.5	µg/L	0.118	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	trans-1,3-Dichloropropene	<0.5	µg/L	0.213	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,1,2-Trichloroethane	<0.5	µg/L	0.052	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Tetrachloroethylene	<0.5	µg/L	0.114	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Chlorobenzene	<0.5	µg/L	0.185	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Ethylbenzene	<0.5	µg/L	0.05	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	m,p-Xylene	<0.5	µg/L	0.151	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	o-Xylene	<0.5	µg/L	0.076	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Styrene	<0.5	µg/L	0.053	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,1,2,2-Tetrachloroethane	<0.5	µg/L	0.066	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,4-Dichlorobenzene	<0.5	µg/L	0.082	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,2-Dichlorobenzene	<0.5	µg/L	0.066	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,2,4-Trichlorobenzene	<0.5	µg/L	0.084	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	1,3-Dichloropropene Total (cis+ tr<0.5	<0.5	µg/L	N/A	0.5	Splt# 1959001-03 (<0.5µg/L)
DUP	Xylene (total: p, m, o)	<0.5	µg/L	N/A	0.5	Splt# 1959001-03 (<0.5µg/L)
Internal Standard	DUP	Fluorobenzene (IS)	1	µg/L	0	Splt# 1959001-03 (1µg/L)
Surrogate(s)	DUP	p-Bromofluorobenzene (Surr.)	1.02	µg/L	102	Splt# 1959001-03 (1.04µg/L)
Surrogate(s)	DUP	1,2-Dichlorobenzene d- (Surr.)	1.12	µg/L	112	Splt# 1959001-03 (1.1µg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/25/2019

Sampling Team: Field

Qualifiers Legend:

Flag

Code	Description
B	Analyte Detected in Blank
NFC	Not For Compliance. Method specification(s) not met.
T6	Sample was received at above 6°C
UJ	Analyzed, but not detected, the quantitation limit is an estimated quantity
V	Result in violation
U	Analyzed, but not detected
TIC	Tentatively Identified Compound
R	Data unusable
NS	Not Sampled
UD	Analyzed, but result is undetermined
E	Exceeds Calibration Range, to be used as minimum
J	The numerical value is an estimated quantity
EST	Estimated value
N	Not used in diversity analyses
NA	Not Analyzed
ND	No Data

RQualifier

Code	Description
>	Greater Than
<	Less Than
-	Negative
+	Positive
A	Bacti result, absent
P	Bacti result, present
I	Bacti result, Invalid value
DNQ	Detected, but Not Quantified
=	Equals

QC Type

Code	Description
BLK	Method Blank Sample
CAL	Calibration Sample
CCV	Continuing Calibration Verification Sample
DUP	Duplicate Sample
ICV	Initial Calibration Verification Sample
LCS	Laboratory Control Standard Sample
LCS D	Laboratory Control Standard Duplicate Sample
MRL CK	Method Reporting Level Check Sample
SPK	Matrix Spike Sample
SPK D	Matrix Spike Duplicate Sample

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1959001

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/25/2019

Sampling Team: Field

Reported By: Megan Tran



Reported On: 20-Dec-2019

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/30/2019

Sampling Team: Field

Lab Sample#: 1952429-01 **Sample Source:** WSB_CAL-22A-290 **External ID:**

Date Collected: 4/30/19 10:22 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	9.26	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	58.9	mg/L	0.01	1	05/06/2019	101377 BTRINH	
Magnesium, Mg	41.8	mg/L	0.024	0.2	05/06/2019	101377 BTRINH	
Potassium, K	2.17	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
Sodium, Na	61.4	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	223	mg/L	1.19	6	04/30/2019	101136 JCOLOMA	DIL FACTOR: 2
MBP_CHLORIDE(SM 4500-CL- D) Chloride	92.4	mg/L		6	04/30/2019	101137 JCOLOMA	DIL FACTOR: 2
MBP_COND(SM 2510 B) Specific Conductance	903	µmhos/cm		1	04/30/2019	101119 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	312	mg/L	0.948	6	04/30/2019	101135 JCOLOMA	dil factor: 2
MBP_PH(SM 4500-H+ B) pH	7.38	pH			04/30/2019	101120 ALEE	
MBP_TDS(SM 2540 C) Total Dissolved Solids	494	mg/L	13.2	20	05/01/2019	101095 ALEE	

Lab Sample#: 1952429-01A **Sample Source:** WSB_CAL-22A-290 **External ID:**

Date Collected: 4/30/19 10:22 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	48.7	mg/L	1	5	04/30/2019	101145 MAWALLACE	

Lab Sample#: 1952429-02 **Sample Source:** WSB_CAL-22A-440 **External ID:**

Date Collected: 4/30/19 9:52 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	17.8	mg/L	0.5	2.5	04/30/2019	101145 MAWALLACE	
Nitrate as N	1.68	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	32.9	mg/L	0.01	1	05/06/2019	101377 BTRINH	
Magnesium, Mg	23.7	mg/L	0.024	0.2	05/06/2019	101377 BTRINH	
Potassium, K	1.82	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
Sodium, Na	48.1	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	141	mg/L	0.593	3	04/30/2019	101136 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	71.4	mg/L		3	04/30/2019	101137 JCOLOMA	
MBP_COND(SM 2510 B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 04/30/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

<i>Specific Conductance</i>	550	µmhos/cm		1	04/30/2019	101119 ALEE	
<i>MBP_HARDNESS_T(SM 2340 C)</i>							
<i>Hardness, Total, as CaCO3</i>	181	mg/L	0.474	3	04/30/2019	101135 JCOLOMA	
<i>MBP_PH(SM 4500-H+ B)</i>							
<i>pH</i>	7.34	pH			04/30/2019	101120 ALEE	
<i>MBP_TDS(SM 2540 C)</i>							
<i>Total Dissolved Solids</i>	304	mg/L	13.2	20	05/01/2019	101095 ALEE	

Lab Sample#: 1952429-03 **Sample Source:** WSB_CAL-22A-545 **External ID:**

Date Collected: 4/30/19 9:15 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	5.06	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	72.4	mg/L	0.01	1	05/06/2019	101377 BTRINH
<i>Magnesium, Mg</i>	49.1	mg/L	0.024	0.2	05/06/2019	101377 BTRINH
<i>Potassium, K</i>	2.74	mg/L	0.035	0.2	05/06/2019	101377 BTRINH
<i>Sodium, Na</i>	80.8	mg/L	0.013	1	05/06/2019	101377 BTRINH
<i>MBP_ALK(SM 2320 B)</i>						
<i>Alkalinity</i>	304	mg/L	1.19	6	04/30/2019	101136 JCOLOMA DIL FACTOR: 2
<i>MBP_CHLORIDE(SM 4500-CL- D)</i>						
<i>Chloride</i>	108	mg/L		6	04/30/2019	101137 JCOLOMA DIL FACTOR: 2
<i>MBP_COND(SM 2510 B)</i>						
<i>Specific Conductance</i>	1110	µmhos/cm		1	04/30/2019	101119 ALEE >MCL
<i>MBP_HARDNESS_T(SM 2340 C)</i>						
<i>Hardness, Total, as CaCO3</i>	386	mg/L	0.948	6	04/30/2019	101135 JCOLOMA dil factor: 2
<i>MBP_PH(SM 4500-H+ B)</i>						
<i>pH</i>	6.81	pH			04/30/2019	101120 ALEE
<i>MBP_TDS(SM 2540 C)</i>						
<i>Total Dissolved Solids</i>	656	mg/L	13.2	20	05/01/2019	101095 ALEE >MCL

Lab Sample#: 1952429-03A **Sample Source:** WSB_CAL-22A-545 **External ID:**

Date Collected: 4/30/19 9:15 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Sulfate</i>	97.7	mg/L	1	5	04/30/2019	101145 MAWALLACE

Lab Sample#: 1952429-04 **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 4/30/19 9:35 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>MBI_IC_ANIONS_A(EPA 300.0 (A))</i>						
<i>Nitrate as N</i>	5.09	mg/L	0.17	0.35	04/30/2019	101145 MAWALLACE
<i>SEM_200.7_DW(EPA 200.7)</i>						
<i>Calcium, Ca</i>	72.5	mg/L	0.01	1	05/06/2019	101377 BTRINH
<i>Magnesium, Mg</i>	50.6	mg/L	0.024	0.2	05/06/2019	101377 BTRINH

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/30/2019

Sampling Team: Field

Potassium, K	2.81	mg/L	0.035	0.2	05/06/2019	101377 BTRINH	
Sodium, Na	80.8	mg/L	0.013	1	05/06/2019	101377 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	309	mg/L	1.19	6	04/30/2019	101136 JCOLOMA	DIL FACTOR: 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	110	mg/L		6	04/30/2019	101137 JCOLOMA	DIL FACTOR: 2
MBP_COND(SM 2510 B)							
Specific Conductance	1120	µmhos/cm		1	04/30/2019	101119 ALEE	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	384	mg/L	0.948	6	04/30/2019	101135 JCOLOMA	dil factor: 2
MBP_PH(SM 4500-H+ B)							
pH	6.81	pH			04/30/2019	101120 ALEE	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	653	mg/L	13.2	20	05/03/2019	101269 CCHAPMAN	>MCL

Lab Sample#: 1952429-04A **Sample Source:** WSB_CAL_DUP **External ID:**

Date Collected: 4/30/19 9:35 am **Date Received:** 4/30/19 11:14 am **Sample Matrix:** Aqueous **Location Desc:** GSR_CAL_CUP-22A-545, ROW AT :

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	97.5	mg/L	1	5	04/30/2019	101145 MAWALLACE

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/30/2019

Sampling Team: Field

Qualifiers Legend:

Flag

Code	Description
B	Analyte Detected in Blank
NFC	Not For Compliance. Method specification(s) not met.
T6	Sample was received at above 6°C
UJ	Analyzed, but not detected, the quantitation limit is an estimated quantity
V	Result in violation
U	Analyzed, but not detected
TIC	Tentatively Identified Compound
R	Data unusable
NS	Not Sampled
UD	Analyzed, but result is undetermined
E	Exceeds Calibration Range, to be used as minimum
J	The numerical value is an estimated quantity
EST	Estimated value
N	Not used in diversity analyses
NA	Not Analyzed
ND	No Data

RQualifier

Code	Description
>	Greater Than
<	Less Than
-	Negative
+	Positive
A	Bacti result, absent
P	Bacti result, present
I	Bacti result, Invalid value
DNQ	Detected, but Not Quantified
=	Equals

QC Type

Code	Description
BLK	Method Blank Sample
CAL	Calibration Sample
CCV	Continuing Calibration Verification Sample
DUP	Duplicate Sample
ICV	Initial Calibration Verification Sample
LCS	Laboratory Control Standard Sample
LCS D	Laboratory Control Standard Duplicate Sample
MRL CK	Method Reporting Level Check Sample
SPK	Matrix Spike Sample
SPK D	Matrix Spike Duplicate Sample

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

ELAP Cert #:
MILLBRAE 1449
SEWPCP 1721

FOLDER ID: 1952429

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 04/30/2019

Sampling Team: Field

Reported By: Megan Tran



Reported On: 14-Apr-2020

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Lab Sample#: 1953274-01 **Sample Source:** WSB_CM-23-230 **External ID:**

Date Collected: 5/8/19 10:24 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	46.3	mg/L	1	5	05/08/2019	101562 MAWALLACE	
Nitrate as N	11	mg/L	0.34	0.7	05/08/2019	101562 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	66.2	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	57.1	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.61	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	59.7	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	326	mg/L	1.19	6	05/08/2019	101554 JCOLOMA	DIL FACTOR 2
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	86.4	mg/L		6	05/08/2019	101555 JCOLOMA	DIL FACTOR 2
MBP_COND(SM 2510 B)							
Specific Conductance	1010	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	>MCL
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	395	mg/L	0.948	6	05/08/2019	101553 JCOLOMA	DIL FACTOR 2
MBP_PH(SM 4500-H+ B)							
pH	7.23	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	564	mg/L	13.2	20	05/09/2019	101545 ALEE	>MCL

Lab Sample#: 1953274-02 **Sample Source:** WSB_CM-23-440 **External ID:**

Date Collected: 5/8/19 10:38 am **Date Received:** 5/8/19 11:39 am **Sample Matrix:** Aqueous **Location Desc:**

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	16.6	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE	
Nitrate as N	3.16	mg/L	0.17	0.35	05/08/2019	101562 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	27.4	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	27.4	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.55	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	40.5	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	149	mg/L	0.593	3	05/08/2019	101554 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	60.4	mg/L		3	05/08/2019	101555 JCOLOMA	
MBP_COND(SM 2510 B)							
Specific Conductance	547	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	185	mg/L	0.474	3	05/08/2019	101553 JCOLOMA	
MBP_PH(SM 4500-H+ B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	Flag/Comments
pH	7.67	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	281	mg/L	13.2	20	05/09/2019	101545 ALEE	
Lab Sample#: 1953274-03 Sample Source: WSB_CM-23-515 External ID:							
Date Collected: 5/8/19 9:36 am Date Received: 5/8/19 11:39 am Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Nitrate as N	<0.07	mg/L	0.034	0.07	05/08/2019	101562 MAWALLACE	
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	38.9	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	27	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	2.51	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	51.9	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							
Alkalinity	184	mg/L	0.593	3	05/08/2019	101554 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D)							
Chloride	70.8	mg/L		3	05/08/2019	101555 JCOLOMA	
MBP_COND(SM 2510 B)							
Specific Conductance	653	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C)							
Hardness, Total, as CaCO3	208	mg/L	0.474	3	05/08/2019	101553 JCOLOMA	
MBP_PH(SM 4500-H+ B)							
pH	7.44	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C)							
Total Dissolved Solids	335	mg/L	13.2	20	05/09/2019	101545 ALEE	
Lab Sample#: 1953274-03A Sample Source: WSB_CM-23-515 External ID:							
Date Collected: 5/8/19 9:36 am Date Received: 5/8/19 11:39 am Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	37.8	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE	
Lab Sample#: 1953274-04 Sample Source: WSB_CM-23-600 External ID:							
Date Collected: 5/8/19 9:52 am Date Received: 5/8/19 11:39 am Sample Matrix: Aqueous Location Desc:							
MBI_IC_ANIONS_A(EPA 300.0 (A))							
Sulfate	43.7	mg/L	2	10	05/08/2019	101562 MAWALLACE	
Nitrate as N	22.5	mg/L	0.68	1.4	05/08/2019	101562 MAWALLACE	>MCL
SEM_200.7_DW(EPA 200.7)							
Calcium, Ca	44.8	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	45.1	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	1.85	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	51.7	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B)							

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 05/08/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	External ID
Alkalinity	176	mg/L	1.19	6	05/08/2019	101554 JCOLOMA	DIL FACTOR 2
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.5	mg/L		6	05/08/2019	101555 JCOLOMA	DIL FACTOR 2
MBP_COND(SM 2510 B) Specific Conductance	824	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	292	mg/L	0.948	6	05/08/2019	101553 JCOLOMA	DIL FACTOR 2
MBP_PH(SM 4500-H+ B) pH	7.2	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C) Total Dissolved Solids	476	mg/L	13.2	20	05/09/2019	101545 ALEE	

Lab Sample#: 1953274-05

Sample Source: WSB_CM_DUP

External ID:

Date Collected: 5/8/19 9:49 am Date Received: 5/8/19 11:39 am Sample Matrix: Aqueous Location Desc: WSB_CM-23-515

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	External ID
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	05/08/2019	101562 MAWALLACE	
SEM_200.7_DW(EPA 200.7) Calcium, Ca	39.9	mg/L	0.01	1	05/13/2019	101726 BTRINH	
Magnesium, Mg	26.6	mg/L	0.024	0.2	05/13/2019	101726 BTRINH	
Potassium, K	2.67	mg/L	0.035	0.2	05/13/2019	101726 BTRINH	
Sodium, Na	51.9	mg/L	0.013	1	05/13/2019	101726 BTRINH	
MBP_ALK(SM 2320 B) Alkalinity	183	mg/L	0.593	3	05/08/2019	101554 JCOLOMA	
MBP_CHLORIDE(SM 4500-CL- D) Chloride	70.8	mg/L		3	05/08/2019	101555 JCOLOMA	
MBP_COND(SM 2510 B) Specific Conductance	662	µmhos/cm		1	05/08/2019	101539 CCHAPMAN	
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	212	mg/L	0.474	3	05/08/2019	101553 JCOLOMA	
MBP_PH(SM 4500-H+ B) pH	7.36	pH			05/08/2019	101540 CCHAPMAN	
MBP_TDS(SM 2540 C) Total Dissolved Solids	344	mg/L	13.2	20	05/09/2019	101545 ALEE	

Lab Sample#: 1953274-05A

Sample Source: WSB_CM_DUP

External ID:

Date Collected: 5/8/19 9:49 am Date Received: 5/8/19 11:39 am Sample Matrix: Aqueous Location Desc: WSB_CM-23-515

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Location Desc	External ID
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	38.8	mg/L	0.5	2.5	05/08/2019	101562 MAWALLACE	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Qualifiers Legend:

Flag

Code	Description
B	Analyte Detected in Blank
NFC	Not For Compliance. Method specification(s) not met.
T6	Sample was received at above 6°C
UJ	Analyzed, but not detected, the quantitation limit is an estimated quantity
V	Result in violation
U	Analyzed, but not detected
TIC	Tentatively Identified Compound
R	Data unusable
NS	Not Sampled
UD	Analyzed, but result is undetermined
E	Exceeds Calibration Range, to be used as minimum
J	The numerical value is an estimated quantity
EST	Estimated value
N	Not used in diversity analyses
NA	Not Analyzed
ND	No Data

RQualifier

Code	Description
>	Greater Than
<	Less Than
-	Negative
+	Positive
A	Bacti result, absent
P	Bacti result, present
I	Bacti result, Invalid value
DNQ	Detected, but Not Quantified
=	Equals

QC Type

Code	Description
BLK	Method Blank Sample
CAL	Calibration Sample
CCV	Continuing Calibration Verification Sample
DUP	Duplicate Sample
ICV	Initial Calibration Verification Sample
LCS	Laboratory Control Standard Sample
LCS D	Laboratory Control Standard Duplicate Sample
MRL CK	Method Reporting Level Check Sample
SPK	Matrix Spike Sample
SPK D	Matrix Spike Duplicate Sample

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

ELAP Cert #:
MILLBRAE 1449
SEWPCP 1721

FOLDER ID: 1953274

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 05/08/2019

Sampling Team: Field

Reported By: Megan Tran



Reported On: 14-Apr-2020

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Lab Sample#: 1958445-01 **Sample Source:** WSB_CM-23-230 **External ID:**

Date Collected: 11/5/19 12:55 pm **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-230, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	44.6	mg/L	1	5	11/06/2019	110521 MAWALLACE
Nitrate as N	10.9	mg/L	0.34	0.7	11/06/2019	110521 MAWALLACE >MCL
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	62.4	mg/L	0.01	1	11/15/2019	110903 BTRINH
Magnesium, Mg	57.4	mg/L	0.024	0.2	11/15/2019	110903 BTRINH
Potassium, K	2.11	mg/L	0.035	0.2	11/15/2019	110903 BTRINH
Sodium, Na	59.1	mg/L	0.013	1	11/15/2019	110903 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	310	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	85.4	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	1030	µmhos/cm		1	11/05/2019	110499 ALEE >MCL
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	403	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B)						
pH	6.18	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C)						
Total Dissolved Solids	568	mg/L	13.2	20	11/06/2019	110471 PWARNER >MCL

Lab Sample#: 1958445-02 **Sample Source:** WSB_CM-23-440 **External ID:**

Date Collected: 11/5/19 12:16 pm **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-440, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A))						
Sulfate	16.6	mg/L	1	5	11/06/2019	110521 MAWALLACE
Nitrate as N	3.44	mg/L	0.34	0.7	11/06/2019	110521 MAWALLACE
SEM_200.7_DW(EPA 200.7)						
Calcium, Ca	25.1	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	25.8	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	1.72	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	39	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B)						
Alkalinity	137	mg/L	0.593	3	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D)						
Chloride	58.5	mg/L		3	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B)						
Specific Conductance	516	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C)						
Hardness, Total, as CaCO3	170	mg/L	0.474	3	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B)						

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
<i>pH</i>	7.61	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	286	mg/L	13.2	20	11/06/2019	110471 PWARNER
Lab Sample#: 1958445-03 Sample Source: WSB_CM-23-515 External ID:						
Date Collected: 11/5/19 11:30 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-515, TI TRAILER						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Nitrate as N	<0.07	mg/L	0.034	0.07	11/06/2019	110521 MAWALLACE
SEM_200.7_DW(EPA 200.7) Calcium, Ca	40.4	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	27.2	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.97	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	49.8	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	171	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	70.5	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	654	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	212	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.37	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	338	mg/L	13.2	20	11/06/2019	110471 PWARNER
Lab Sample#: 1958445-03A Sample Source: WSB_CM-23-515 External ID:						
Date Collected: 11/5/19 11:30 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-515, TI TRAILER						
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	43.2	mg/L	1	5	11/06/2019	110521 MAWALLACE
Lab Sample#: 1958445-04 Sample Source: WSB_CM-23-600 External ID:						
Date Collected: 11/5/19 10:35 an Date Received: 11/5/19 1:57 pm Sample Matrix: Aqueous Location Desc: GSR_CM_CUP-23-600, TI TRAILER						
SEM_200.7_DW(EPA 200.7) Calcium, Ca	44.5	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	45.7	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.15	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	51.2	mg/L	0.013	1	11/08/2019	110662 BTRINH
MBP_ALK(SM 2320 B) Alkalinity	181	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.5	mg/L		6	11/05/2019	110516 ABALALIO

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBP_COND(SM 2510 B) Specific Conductance	839	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	303	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.45	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	446	mg/L	13.2	20	11/06/2019	110471 PWARNER

Lab Sample#: 1958445-04A **Sample Source:** WSB_CM-23-600 **External ID:**

Date Collected: 11/5/19 10:35 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	43.1	mg/L	5	25	11/06/2019	110578 MAWALLACE
Nitrate as N	19.9	mg/L	1.7	3.5	11/06/2019	110578 MAWALLACE >MCL

Lab Sample#: 1958445-05 **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 11/5/19 10:48 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
SEM_200.7_DW(EPA 200.7) Calcium, Ca	45.7	mg/L	0.01	1	11/08/2019	110662 BTRINH
Magnesium, Mg	45.2	mg/L	0.024	0.2	11/08/2019	110662 BTRINH
Potassium, K	2.1	mg/L	0.035	0.2	11/08/2019	110662 BTRINH
Sodium, Na	51.4	mg/L	0.013	1	11/08/2019	110662 BTRINH

MBP_ALK(SM 2320 B) Alkalinity	180	mg/L	1.19	6	11/05/2019	110513 ABALALIO
MBP_CHLORIDE(SM 4500-CL- D) Chloride	75.3	mg/L		6	11/05/2019	110516 ABALALIO
MBP_COND(SM 2510 B) Specific Conductance	841	µmhos/cm		1	11/05/2019	110499 ALEE
MBP_HARDNESS_T(SM 2340 C) Hardness, Total, as CaCO3	303	mg/L	0.948	6	11/05/2019	110518 ABALALIO
MBP_PH(SM 4500-H+ B) pH	7.48	pH			11/05/2019	110502 ALEE
MBP_TDS(SM 2540 C) Total Dissolved Solids	481	mg/L	13.2	20	11/06/2019	110471 PWARNER

Lab Sample#: 1958445-05A **Sample Source:** WSB_CM_DUP **External ID:**

Date Collected: 11/5/19 10:48 am **Date Received:** 11/5/19 1:57 pm **Sample Matrix:** Aqueous **Location Desc:** GSR_CM_CUP-23-600, TI TRAILER

Test/Analyte	Result	Unit	MDL	MRL	Analyzed Date	Flag/Comments
MBI_IC_ANIONS_A(EPA 300.0 (A)) Sulfate	45.1	mg/L	5	25	11/06/2019	110578 MAWALLACE
Nitrate as N	19.9	mg/L	1.7	3.5	11/06/2019	110578 MAWALLACE >MCL

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110471 and Test: MBP_TDS (SM 2540 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969221-01	BLK	Total Dissolved Solids	<20	mg/L			13.2	20	
QC1969221-02	LCS	Total Dissolved Solids	87	mg/L	91		13.2	20	
QC1969221-03	DUP	Total Dissolved Solids	606	mg/L		0	13.2	20	Splt# 1958444-01 (607mg/L)

QC list for Run#: 110499 and Test: MBP_COND (SM 2510 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969232-02	CCV	Specific Conductance	101	µmhos/cm	101			1	
QC1969232-03	DUP	Specific Conductance	842	µmhos/cm		0		1	Splt# 1958445-05 (841µmhos/cm)
QC1969232-04	LCS	Specific Conductance	148	µmhos/cm	101			1	

QC list for Run#: 110502 and Test: MBP_PH (SM 4500-H+ B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969234-01	ICV	pH	9.08	pH	100				
QC1969234-02	DUP	pH	7.5	pH		0			Splt# 1958445-05 (7.48pH)
QC1969234-03	CCV	pH	10.1	pH	100				

QC list for Run#: 110513 and Test: MBP_ALK (SM 2320 B)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969244-01	BLK	Alkalinity	<3	mg/L			0.593	3	
QC1969244-03	DUP	Alkalinity	17	mg/L		0	0.593	3	Splt# 1958282-04 (17mg/L)
QC1969244-04	LCS	Alkalinity	42.6	mg/L	106			3	

QC list for Run#: 110516 and Test: MBP_CHLORIDE (SM 4500-CL- D)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969245-01	BLK	Chloride	<3	mg/L			1.16	3	
QC1969245-03	DUP	Chloride	6.25	mg/L		0	1.16	3	Splt# 1958282-04 (6.28mg/L)
QC1969245-04	LCS	Chloride	39.4	mg/L	98			3	

QC list for Run#: 110518 and Test: MBP_HARDNESS_T (SM 2340 C)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969246-01	BLK	Hardness, Total, as CaCO3	<3	mg/L			0.474	3	
QC1969246-03	DUP	Hardness, Total, as CaCO3	15.7	mg/L		0	0.474	3	Splt# 1958282-04 (15.6mg/L)
QC1969246-04									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

LCS Hardness, Total, as CaCO3 40.9 mg/L 102 3

QC list for Run#: 110521 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969247-01	CAL	Chloride	0.513	mg/L	103		0.2		
	CAL	Sulfate	0.514	mg/L	103		0.1		
	CAL	Nitrate as N	0.0705	mg/L	104		0.034		
QC1969247-02	CAL	Chloride	0.786	mg/L	98		0.2		
	CAL	Sulfate	0.797	mg/L	99		0.1		
	CAL	Nitrate as N	0.107	mg/L	98		0.034		
QC1969247-03	CAL	Chloride	0.978	mg/L	97		0.2		
	CAL	Sulfate	0.973	mg/L	97		0.1		
	CAL	Nitrate as N	0.131	mg/L	96		0.034		
QC1969247-04	CAL	Chloride	2.43	mg/L	97		0.2		
	CAL	Sulfate	2.38	mg/L	95		0.1		
	CAL	Nitrate as N	0.32	mg/L	94		0.034		
QC1969247-05	CAL	Chloride	5.05	mg/L	101		0.2		
	CAL	Sulfate	4.81	mg/L	96		0.1		
	CAL	Nitrate as N	0.644	mg/L	95		0.034		
QC1969247-06	CAL	Chloride	10.5	mg/L	105		0.2		
	CAL	Sulfate	10	mg/L	100		0.1		
	CAL	Nitrate as N	1.37	mg/L	101		0.034		
QC1969247-07	CAL	Chloride	19.7	mg/L	98		0.2		
	CAL	Sulfate	21.5	mg/L	107		0.1		
	CAL	Nitrate as N	2.92	mg/L	108		0.034		
QC1969247-08	BLK	Chloride	<1	mg/L			0.2	1	
	BLK	Sulfate	<0.5	mg/L			0.1	0.5	
	BLK	Nitrate as N	<0.07	mg/L			0.034	0.07	
QC1969247-09	ICV	Chloride	2.46	mg/L	98		0.2	1	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10
	ICV	Sulfate	2.34	mg/L	93		0.1	0.5	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10
	ICV	Nitrate as N	0.321	mg/L	100		0.34	0.07	Used Manual True Value due to assigned wrong FV on standard creation which caused TV to be off by a factor of 10

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC1969247-11							
CCV	Sulfate	2.39	mg/L	95			
CCV	Nitrate as N	0.328	mg/L	96			
QC1969247-12							
BLK	Sulfate	<0.5	mg/L		0.1	0.5	
BLK	Nitrate as N	<0.07	mg/L		0.034	0.07	
QC1969247-13							
LCS	Sulfate	4.83	mg/L	96			
LCS	Nitrate as N	0.661	mg/L	97			
QC1969247-14							
SPK	Sulfate	7.1	mg/L	123			Splt# 1958553-01 (4.06mg/L)
SPK	Nitrate as N	0.594	mg/L	121			Splt# 1958553-01 (0.188mg/L)
QC1969247-15							
SPKD	Sulfate	7.46	mg/L	137	5		Splt# 1958553-01 (4.06mg/L)
SPKD	Nitrate as N	0.624	mg/L	130	4		Splt# 1958553-01 (0.188mg/L)
QC1969247-16							
CCV	Sulfate	2.4	mg/L	95			
CCV	Nitrate as N	0.329	mg/L	97			
QC1969247-17							
BLK	Sulfate	<0.5	mg/L		0.1	0.5	
BLK	Nitrate as N	<0.07	mg/L		0.034	0.07	

QC list for Run#: 110578 and Test: MBI_IC_ANIONS_A (EPA 300.0 (A))

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969282-02									
CCV	Sulfate	2.4	mg/L	96					
CCV	Nitrate as N	0.324	mg/L	95					
QC1969282-03									
BLK	Sulfate	<0.5	mg/L				0.1	0.5	
BLK	Nitrate as N	<0.07	mg/L				0.034	0.07	
QC1969282-04									
LCS	Sulfate	4.84	mg/L	96					
LCS	Nitrate as N	0.659	mg/L	97					
QC1969282-05									
SPK	Sulfate	3.79	mg/L	94					Splt# 1958622-01 (1.44mg/L)
SPK	Nitrate as N	0.348	mg/L	103					Splt# 1958622-01 (<0.07mg/L)
QC1969282-06									
SPKD	Sulfate	3.73	mg/L	92	1				Splt# 1958622-01 (1.44mg/L)
SPKD	Nitrate as N	0.34	mg/L	101	2				Splt# 1958622-01 (<0.07mg/L)
QC1969282-07									
CCV	Sulfate	2.42	mg/L	96					
CCV	Nitrate as N	0.328	mg/L	96					
QC1969282-08									
BLK	Sulfate	<0.5	mg/L				0.1	0.5	
BLK	Nitrate as N	<0.07	mg/L				0.034	0.07	

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Scheduled Sample Date: 11/05/2019

Routine: WSB_S2019_SFPUC+Consult.A

Sampling Team: Field

QC list for Run#: 110662 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969345-01									
BLK		Calcium, Ca	<1	mg/L			0.01	1	
BLK		Magnesium, Mg	<0.2	mg/L			0.024	0.2	
BLK		Potassium, K	<0.2	mg/L			0.035	0.2	
BLK		Sodium, Na	<1	mg/L			0.013	1	
QC1969345-02									
LCS		Calcium, Ca	20.3	mg/L	101		0.01	1	
LCS		Magnesium, Mg	20.3	mg/L	102		0.024	0.2	
LCS		Potassium, K	19	mg/L	95		0.035	0.2	
LCS		Sodium, Na	21.5	mg/L	108		0.013	1	
QC1969345-03									
DUP		Calcium, Ca	65.1	mg/L		0	0.01	1	Splt# 1958444-01 (65.1mg/L)
DUP		Magnesium, Mg	44.9	mg/L		0	0.024	0.2	Splt# 1958444-01 (45.2mg/L)
DUP		Potassium, K	3.04	mg/L		0	0.035	0.2	Splt# 1958444-01 (3.07mg/L)
DUP		Sodium, Na	96.7	mg/L		2	0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-04									
SPK		Calcium, Ca	85.7	mg/L	103		0.01	1	Splt# 1958444-01 (65.1mg/L)
SPK		Magnesium, Mg	64.2	mg/L	94		0.024	0.2	Splt# 1958444-01 (45.2mg/L)
SPK		Potassium, K	22.2	mg/L	95		0.035	0.2	Splt# 1958444-01 (3.07mg/L)
SPK		Sodium, Na	108	mg/L	69		0.013	1	Splt# 1958444-01 (94.3mg/L)
QC1969345-05									
SPKD		Calcium, Ca	87.7	mg/L	113	2	0.01	1	Splt# 1958444-01 (65.1mg/L)
SPKD		Magnesium, Mg	65.7	mg/L	103	2	0.024	0.2	Splt# 1958444-01 (45.2mg/L)
SPKD		Potassium, K	22.4	mg/L	96	0	0.035	0.2	Splt# 1958444-01 (3.07mg/L)
SPKD		Sodium, Na	111	mg/L	82	2	0.013	1	Splt# 1958444-01 (94.3mg/L)

QC list for Run#: 110903 and Test: SEM_200.7_DW (EPA 200.7)

Sample #	Name	Analyte	Result	Units	% Rec	RPD	MDL	MRL	Flag/Comments
QC1969477-01									
BLK		Calcium, Ca	<1	mg/L			0.01	1	
BLK		Magnesium, Mg	<0.2	mg/L			0.024	0.2	
BLK		Potassium, K	<0.2	mg/L			0.035	0.2	
BLK		Sodium, Na	<1	mg/L			0.013	1	
QC1969477-02									
LCS		Calcium, Ca	19.9	mg/L	99		0.01	1	
LCS		Magnesium, Mg	19.7	mg/L	98		0.024	0.2	
LCS		Potassium, K	19.4	mg/L	96		0.035	0.2	
LCS		Sodium, Na	19.3	mg/L	96		0.013	1	
QC1969477-03									

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

DUP	Calcium, Ca	63.7	mg/L	2	0.01	1	Splt# 1958445-01 (62.4mg/L)	
DUP	Magnesium, Mg	56.8	mg/L	0	0.024	0.2	Splt# 1958445-01 (57.4mg/L)	
DUP	Potassium, K	2.16	mg/L	2	0.035	0.2	Splt# 1958445-01 (2.11mg/L)	
DUP	Sodium, Na	55.7	mg/L	5	0.013	1	Splt# 1958445-01 (59.1mg/L)	
QC1969477-04								
SPK	Calcium, Ca	83.9	mg/L	108	0.01	1	Splt# 1958445-01 (62.4mg/L)	
SPK	Magnesium, Mg	76.4	mg/L	95	0.024	0.2	Splt# 1958445-01 (57.4mg/L)	
SPK	Potassium, K	22.7	mg/L	103	0.035	0.2	Splt# 1958445-01 (2.11mg/L)	
SPK	Sodium, Na	73.7	mg/L	73	0.013	1	Splt# 1958445-01 (59.1mg/L)	
QC1969477-05								
SPKD	Calcium, Ca	85.5	mg/L	116	1	0.01	1	Splt# 1958445-01 (62.4mg/L)
SPKD	Magnesium, Mg	78.5	mg/L	106	2	0.024	0.2	Splt# 1958445-01 (57.4mg/L)
SPKD	Potassium, K	22.6	mg/L	103	0	0.035	0.2	Splt# 1958445-01 (2.11mg/L)
SPKD	Sodium, Na	76.4	mg/L	86	3	0.013	1	Splt# 1958445-01 (59.1mg/L)

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water Quality Laboratory

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Qualifiers Legend:

Flag

Code	Description
B	Analyte Detected in Blank
NFC	Not For Compliance. Method specification(s) not met.
T6	Sample was received at above 6°C
UJ	Analyzed, but not detected, the quantitation limit is an estimated quantity
V	Result in violation
U	Analyzed, but not detected
TIC	Tentatively Identified Compound
R	Data unusable
NS	Not Sampled
UD	Analyzed, but result is undetermined
E	Exceeds Calibration Range, to be used as minimum
J	The numerical value is an estimated quantity
EST	Estimated value
N	Not used in diversity analyses
NA	Not Analyzed
ND	No Data

RQualifier

Code	Description
>	Greater Than
<	Less Than
-	Negative
+	Positive
A	Bacti result, absent
P	Bacti result, present
I	Bacti result, Invalid value
DNQ	Detected, but Not Quantified
=	Equals

QC Type

Code	Description
BLK	Method Blank Sample
CAL	Calibration Sample
CCV	Continuing Calibration Verification Sample
DUP	Duplicate Sample
ICV	Initial Calibration Verification Sample
LCS	Laboratory Control Standard Sample
LCS D	Laboratory Control Standard Duplicate Sample
MRL CK	Method Reporting Level Check Sample
SPK	Matrix Spike Sample
SPK D	Matrix Spike Duplicate Sample

SAN FRANCISCO PUBLIC UTILITIES COMMISSION
Water Quality Laboratory

ELAP Cert #:
SEWPCP 1721
MILLBRAE 1449

FOLDER ID: 1958445

Client: SF_PUC_PLANNING

Project: WESTSIDE_BASIN

Routine: WSB_S2019_SFPUC+Consult.A

Scheduled Sample Date: 11/05/2019

Sampling Team: Field

Reported By: Megan Tran



Reported On: 17-Apr-2020

Bay Side Groundwater Monitoring Laboratory Analytical Results



Alpha

Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

28 February 2020

San Bruno, City of - DW

Attn: Steve Salazar

225 Huntington Avenue

San Bruno, CA 94066

RE: SF Intrusion Project

Work Order: 19C2606

Enclosed are the results of analyses for samples received by the laboratory on 03/21/19 21:52. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips

Project Manager



Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
02/27/20 11:27

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego Service Center: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SFO-D	19C2606-01	Water	03/21/19 09:30	03/21/19 21:52
SFO-S	19C2606-02	Water	03/21/19 09:40	03/21/19 21:52
Burlingame - D	19C2606-03	Water	03/21/19 08:20	03/21/19 21:52
Burlingame - M	19C2606-04	Water	03/21/19 08:25	03/21/19 21:52
Burlingame - S	19C2606-05	Water	03/21/19 08:30	03/21/19 21:52

This represents an amended copy of the original report.

Sodium dilution factor and result for 19C2606-02 corrected.



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
02/27/20 11:27

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
SFO-D (19C2606-01)									
		Sample Type: Water			Sampled: 03/21/19 09:30				
Metals by EPA 200 Series Methods									
Boron	ND mg/L	0.20	1	AD93028	04/03/19 10:00	04/04/19 12:06	1551	EPA 200.7	P-02
Calcium	120 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:06	1551	EPA 200.7	
Magnesium	110 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:06	1551	EPA 200.7	
Potassium	12 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:06	1551	EPA 200.7	
Sodium	630 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:06	1551	EPA 200.7	
Conventional Chemistry Parameters by APHA/EPA Methods									
Bicarbonate	300 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Orthophosphate as P	0.22 mg/L	0.10	1	AC94233	03/22/19 14:30	03/22/19 15:49	1551	SM4500-P E	
pH	7.47 pH Units	1.68	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	4600 umhos/cm	20	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM2510B	
Total Dissolved Solids	2500 mg/L	10	1	AC94205	03/22/19 08:13	03/28/19 12:24	1551	SM2540C	
Bicarbonate Alkalinity as CaCO3	250 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Total Alkalinity as CaCO3	250 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Anions by EPA Method 300.0									
Chloride	1300 mg/L	50	100	AC94217	03/22/19 17:43	03/26/19 00:21	1551	EPA 300.0	
Nitrate as N	ND mg/L	0.40	2	AC94217	03/22/19 18:00	03/22/19 18:00	1551	EPA 300.0	R-01
Sulfate as SO4	110 mg/L	25	50	AC94217	03/22/19 17:43	03/22/19 17:43	1551	EPA 300.0	
Anions by EPA Method 300.1									
Bromide	3.4 mg/L	1.2	25	AC94381	03/29/19 14:00	03/29/19 14:00	1551	EPA 300.1	
Surrogate: Dichloroacetate	97.2 %	90-115		AC94381	03/29/19 14:00	03/29/19 14:00	1551	EPA 300.1	
SFO-S (19C2606-02)									
		Sample Type: Water			Sampled: 03/21/19 09:40				
Metals by EPA 200 Series Methods									
Boron	0.92 mg/L	0.20	1	AD93028	04/03/19 10:00	04/04/19 12:13	1551	EPA 200.7	P-02
Calcium	510 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:13	1551	EPA 200.7	
Magnesium	610 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:13	1551	EPA 200.7	
Potassium	91 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:13	1551	EPA 200.7	
Sodium	4200 mg/L	20	20	AD93028	04/03/19 10:00	04/05/19 15:24	1551	EPA 200.7	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
 Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
 225 Huntington Avenue
 San Bruno, CA 94066

Project Manager: Steve Salazar
 Project: SF Intrusion Project
 Project Number: [none]

Reported:
 02/27/20 11:27

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Burlingame - D (19C2606-03)		Sample Type: Water			Sampled: 03/21/19 08:20				
Conventional Chemistry Parameters by APHA/EPA Methods									
Bicarbonate	170 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Orthophosphate as P	0.11 mg/L	0.10	1	AC94233	03/22/19 14:30	03/22/19 15:49	1551	SM4500-P E	
pH	7.52 pH Units	1.68	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	430 umhos/cm	20	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM2510B	
Total Dissolved Solids	260 mg/L	10	1	AC94205	03/22/19 08:13	03/27/19 13:04	1551	SM2540C	
Bicarbonate Alkalinity as CaCO3	140 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Total Alkalinity as CaCO3	140 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Anions by EPA Method 300.0									
Chloride	41 mg/L	2.5	5	AC94217	03/25/19 23:32	03/25/19 23:32	1551	EPA 300.0	
Nitrate as N	ND mg/L	0.20	1	AC94217	03/22/19 16:38	03/22/19 16:38	1551	EPA 300.0	
Sulfate as SO4	17 mg/L	0.50	1	AC94217	03/22/19 16:38	03/22/19 16:38	1551	EPA 300.0	
Anions by EPA Method 300.1									
Bromide	0.096 mg/L	0.050	1	AC94381	03/29/19 01:06	03/29/19 01:06	1551	EPA 300.1	
Surrogate: Dichloroacetate	85.6 %	90-115		AC94381	03/29/19 01:06	03/29/19 01:06	1551	EPA 300.1	S-09
Burlingame - M (19C2606-04)		Sample Type: Water			Sampled: 03/21/19 08:25				
Metals by EPA 200 Series Methods									
Boron	ND mg/L	0.20	1	AD93028	04/03/19 10:00	04/04/19 12:23	1551	EPA 200.7	P-02
Calcium	20 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:23	1551	EPA 200.7	
Magnesium	8.6 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:23	1551	EPA 200.7	
Potassium	2.7 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:23	1551	EPA 200.7	
Sodium	30 mg/L	1.0	1	AD93028	04/03/19 10:00	04/04/19 12:23	1551	EPA 200.7	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
02/27/20 11:27

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	ELAP#	Method	Note
Burlingame - S (19C2606-05)									
Sample Type: Water									
Sampled: 03/21/19 08:30									
Conventional Chemistry Parameters by APHA/EPA Methods									
Bicarbonate	520 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Orthophosphate as P	0.23 mg/L	0.10	1	AC94233	03/22/19 14:30	03/22/19 15:49	1551	SM4500-P E	
pH	7.36 pH Units	1.68	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM4500-H+ B	T-14
Specific Conductance (EC)	4300 umhos/cm	20	1	AC94391	03/22/19 16:00	03/22/19 17:00	1551	SM2510B	
Total Dissolved Solids	2400 mg/L	10	1	AC94205	03/22/19 08:13	03/28/19 12:24	1551	SM2540C	
Bicarbonate Alkalinity as CaCO3	420 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Total Alkalinity as CaCO3	420 mg/L	5.0	1	AD93147	04/03/19 08:00	04/03/19 16:48	1551	SM2320B	
Anions by EPA Method 300.0									
Chloride	1200 mg/L	50	100	AC94217	03/26/19 00:04	03/26/19 00:04	1551	EPA 300.0	
Nitrate as N	ND mg/L	0.40	2	AC94217	03/22/19 17:27	03/22/19 17:27	1551	EPA 300.0	R-01
Sulfate as SO4	43 mg/L	1.0	2	AC94217	03/22/19 17:27	03/22/19 17:27	1551	EPA 300.0	
Anions by EPA Method 300.1									
Bromide	3.7 mg/L	1.2	25	AC94381	03/29/19 15:37	03/29/19 15:37	1551	EPA 300.1	
Surrogate: Dichloroacetate	99.5 %	90-115		AC94381	03/29/19 15:37	03/29/19 15:37	1551	EPA 300.1	



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
02/27/20 11:27

Notes and Definitions

- P-02 Sample acidified to pH <2 and allowed to sit 24 hours before further processing.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- S-09 The surrogate recovery for this sample is outside of established control limits due to matrix interference.
- T-14 Residual chlorine, dissolved oxygen, sulfite, and pH must be analyzed in the field to meet the EPA specified 15 minute hold time.
- ND Analyte NOT DETECTED at or above the reporting limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

1.2 °C which

Work Order

Chain of Custody Record

Lab No. 19C2606 Page of

Name: City of San Bruno - Drinking Water		Project No: SF Intrusion Project		Signature below authorizes work under terms stated on reverse side.										Analysis Request		Sample Notes		TAT					
Mailing Address: 225 Huntington Avenue San Bruno, CA 94066		Project ID:																24 hr <input type="radio"/>					
Project Contact (Hardcopy or PDF to): Steve Salazar ssalazar@sanbruno.ca.gov		PO#																48 hr <input type="radio"/>					
Phone/Fax: ssalazar@sanbruno.ca.gov		Bill to:														1 wk <input type="radio"/>		Lab Approval Required For Rush					
Field Sampler - Print Name & Signature																2 wk (standard) <input type="radio"/>							
Sample Identification		Sample Collection		Container				Preservative				Matrix		B, Ca, Mg, Na, K, Bicarbonate		Sulfate, Chloride, TDS, Alkalinity		Nitrate as N, Orthophosphate as P		pH, Conductance		Bromide	
		Date Time		40ml VOA	Poly	Amber	Sleeve	HCL	HNO3	H2SO4	other	None	Water	Soil									
SFO-D		3/21/19 930			2						X	X	X		X	X	X	X	X				
SFO-S		3/21/19 940			2						X	X	X		X	X	X	X	X				
BURLINGAME -D		3/21/19 820			2						X	X	X		X	X	X	X	X				
BURLINGAME-M		3/21/19 825			2						X	X	X		X	X	X	X	X				
BURLINGAME-S		3/21/19 830			2						X	X	X		X	X	X	X	X				
Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i>		Date		Time																	
Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i>		3/21/19		12:50																	
Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i>		3-21-19		19:20																	
Relinquished by: <i>[Signature]</i>		Received by: <i>[Signature]</i>		3-21-19		21:53																	
Relinquished by:		Received for Laboratory by:		Date		Time																	



Alpha

Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

03 September 2019

San Bruno, City of - DW

Attn: Steve Salazar

225 Huntington Avenue

San Bruno, CA 94066

RE: SF Intrusion Project

Work Order: 19H1957

Enclosed are the results of analyses for samples received by the laboratory on 08/15/19 22:23. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips

Project Manager



Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

Bay Area: 262 Rickenbacker Circle | Livermore, CA 94551 | T: 925-828-6226 | F: 925-828-6309 | ELAP# 2728
Central Valley: 9090 Union Park Way Suite 113 | Elk Grove, CA 95624 | T: 916-686-5190 | F: 916-686-5192 | ELAP# 2922
North Bay: 110 Liberty Street | Petaluma, CA 94952 | T: 707-769-3128 | F: 707-769-8093 | ELAP# 2303
San Diego Service Center: 2722 Loker Avenue West Suite A | Carlsbad, CA 92010 | T: 760-930-2555 | F: 760-930-2510

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SFO-D	19H1957-01	Water	08/15/19 10:35	08/15/19 22:23
SFO-S	19H1957-02	Water	08/15/19 10:30	08/15/19 22:23
Burlingame - D	19H1957-03	Water	08/15/19 07:50	08/15/19 22:23
Burlingame - M	19H1957-04	Water	08/15/19 07:45	08/15/19 22:23
Burlingame - S	19H1957-05	Water	08/15/19 07:40	08/15/19 22:23



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	Method	Note
SFO-D (19H1957-01)		Sample Type: Water			Sampled: 08/15/19 10:35			
Metals by EPA 200 Series Methods								
Boron	ND mg/L	0.20	1	AH94276	08/23/19 14:00	08/26/19 16:12	EPA 200.7	P-02
Calcium	120 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:12	EPA 200.7	
Magnesium	100 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:12	EPA 200.7	
Potassium	12 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:12	EPA 200.7	
Sodium	570 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:12	EPA 200.7	
Conventional Chemistry Parameters by APHA/EPA Methods								
Bicarbonate	300 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Orthophosphate as P	0.13 mg/L	0.10	1	AH93898	08/16/19 15:50	08/16/19 16:50	SM4500-PE	
pH	7.63 pH Units	1.68	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM4500-H+ B	T-14
Specific Conductance (EC)	4100 umhos/cm	20	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM2510B	
Total Dissolved Solids	2300 mg/L	10	1	AH94118	08/21/19 11:00	08/28/19 14:30	SM2540C	
Bicarbonate Alkalinity as CaCO3	240 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Total Alkalinity as CaCO3	240 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Anions by EPA Method 300.0								
Chloride	1200 mg/L	50	100	AH93914	08/16/19 23:27	08/16/19 23:27	EPA 300.0	
Nitrate as N	ND mg/L	1.0	5	AH93914	08/16/19 23:44	08/16/19 23:44	EPA 300.0	R-01
Sulfate as SO4	110 mg/L	2.5	5	AH93914	08/16/19 23:44	08/16/19 23:44	EPA 300.0	
Anions by EPA Method 300.1								
Bromide	3.0 mg/L	1.0	20	AH94390	08/28/19 05:53	08/28/19 05:53	EPA 300.1	
Surrogate: Dichloroacetate	110 %	90-115		AH94390	08/28/19 05:53	08/28/19 05:53	EPA 300.1	
SFO-S (19H1957-02)		Sample Type: Water			Sampled: 08/15/19 10:30			
Metals by EPA 200 Series Methods								
Boron	0.90 mg/L	0.20	1	AH94276	08/23/19 14:00	08/26/19 16:19	EPA 200.7	P-02
Calcium	540 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:19	EPA 200.7	
Magnesium	640 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:19	EPA 200.7	
Potassium	81 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:19	EPA 200.7	
Sodium	4800 mg/L	10	10	AH94276	08/23/19 14:00	09/03/19 14:07	EPA 200.7	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	Method	Note
SFO-S (19H1957-02)		Sample Type: Water			Sampled: 08/15/19 10:30			
Conventional Chemistry Parameters by APHA/EPA Methods								
Bicarbonate	810 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Orthophosphate as P	ND mg/L	0.10	1	AH93898	08/16/19 15:50	08/16/19 16:50	SM4500-P E	
pH	7.21 pH Units	1.68	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM4500-H+ B	T-14
Specific Conductance (EC)	26000 umhos/cm	20	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM2510B	
Total Dissolved Solids	18000 mg/L	10	1	AH94118	08/21/19 11:00	08/27/19 10:30	SM2540C	
Bicarbonate Alkalinity as CaCO3	660 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Total Alkalinity as CaCO3	660 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Anions by EPA Method 300.0								
Chloride	10000 mg/L	500	1000	AH93914	08/20/19 13:02	08/20/19 13:02	EPA 300.0	
Nitrate as N	ND mg/L	4.0	20	AH93914	08/16/19 22:05	08/16/19 22:05	EPA 300.0	R-01
Sulfate as SO4	730 mg/L	10	20	AH93914	08/16/19 22:05	08/16/19 22:05	EPA 300.0	
Anions by EPA Method 300.1								
Bromide	33 mg/L	10	200	AH94390	08/28/19 06:41	08/28/19 06:41	EPA 300.1	
Surrogate: Dichloroacetate	111 %	90-115		AH94390	08/28/19 06:41	08/28/19 06:41	EPA 300.1	
Burlingame - D (19H1957-03)		Sample Type: Water			Sampled: 08/15/19 07:50			
Metals by EPA 200 Series Methods								
Boron	ND mg/L	0.20	1	AH94276	08/23/19 14:00	08/26/19 16:26	EPA 200.7	P-02
Calcium	37 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:26	EPA 200.7	
Magnesium	16 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:26	EPA 200.7	
Potassium	1.9 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:26	EPA 200.7	
Sodium	46 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:26	EPA 200.7	



Alpha Analytical Laboratories, Inc. email: clientservices@alpha-labs.com
 Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW 225 Huntington Avenue San Bruno, CA 94066	Project Manager: Steve Salazar Project: SF Intrusion Project Project Number: [none]	Reported: 09/03/19 16:25
---	---	-----------------------------

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	Method	Note	
Burlingame - D (19H1957-03)		Sample Type: Water			Sampled: 08/15/19 07:50				
Conventional Chemistry Parameters by APHA/EPA Methods									
Bicarbonate	200 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Orthophosphate as P	ND mg/L	0.10	1	AH93898	08/16/19 15:50	08/16/19 16:50	SM4500-P E		
pH	7.68 pH Units	1.68	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM4500-H+ B	T-14	
Specific Conductance (EC)	450 umhos/cm	20	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM2510B		
Total Dissolved Solids	270 mg/L	10	1	AH94118	08/21/19 11:00	08/27/19 10:30	SM2540C		
Bicarbonate Alkalinity as CaCO3	160 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Total Alkalinity as CaCO3	160 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Anions by EPA Method 300.0									
Chloride	43 mg/L	5.0	10	AH93914	08/16/19 21:16	08/16/19 21:16	EPA 300.0		
Nitrate as N	ND mg/L	0.20	1	AH93914	08/16/19 21:32	08/16/19 21:32	EPA 300.0		
Sulfate as SO4	20 mg/L	0.50	1	AH93914	08/16/19 21:32	08/16/19 21:32	EPA 300.0		
Anions by EPA Method 300.1									
Bromide	0.12 mg/L	0.050	1	AH94390	08/28/19 03:28	08/28/19 03:28	EPA 300.1		
Surrogate: Dichloroacetate	93.5 %	90-115		AH94390	08/28/19 03:28	08/28/19 03:28	EPA 300.1		
Burlingame - M (19H1957-04)		Sample Type: Water			Sampled: 08/15/19 07:45				
Metals by EPA 200 Series Methods									
Boron	ND mg/L	0.20	1	AH94276	08/23/19 14:00	08/26/19 16:30	EPA 200.7	P-02	
Calcium	17 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:30	EPA 200.7		
Magnesium	5.7 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:30	EPA 200.7		
Potassium	2.6 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:30	EPA 200.7		
Sodium	19 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:30	EPA 200.7		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	Method	Note
Burlingame - M (19H1957-04)		Sample Type: Water			Sampled: 08/15/19 07:45			
Conventional Chemistry Parameters by APHA/EPA Methods								
Bicarbonate	66 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Orthophosphate as P	0.15 mg/L	0.10	1	AH93898	08/16/19 15:50	08/16/19 16:50	SM4500-P E	
pH	6.96 pH Units	1.68	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM4500-H+ B	T-14
Specific Conductance (EC)	230 umhos/cm	20	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM2510B	
Total Dissolved Solids	86 mg/L	10	1	AH94118	08/21/19 11:00	08/27/19 10:30	SM2540C	
Bicarbonate Alkalinity as CaCO3	54 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Total Alkalinity as CaCO3	54 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B	
Anions by EPA Method 300.0								
Chloride	32 mg/L	5.0	10	AH93914	08/19/19 13:43	08/19/19 13:43	EPA 300.0	
Nitrate as N	ND mg/L	0.20	1	AH93914	08/16/19 19:37	08/16/19 19:37	EPA 300.0	
Sulfate as SO4	5.9 mg/L	0.50	1	AH93914	08/16/19 19:37	08/16/19 19:37	EPA 300.0	
Anions by EPA Method 300.1								
Bromide	0.055 mg/L	0.050	1	AH94390	08/28/19 07:30	08/28/19 07:30	EPA 300.1	
Surrogate: Dichloroacetate	108 %	90-115		AH94390	08/28/19 07:30	08/28/19 07:30	EPA 300.1	
Burlingame - S (19H1957-05)		Sample Type: Water			Sampled: 08/15/19 07:40			
Metals by EPA 200 Series Methods								
Boron	ND mg/L	0.20	1	AH94276	08/23/19 14:00	08/26/19 16:34	EPA 200.7	P-02
Calcium	110 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:34	EPA 200.7	
Magnesium	81 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:34	EPA 200.7	
Potassium	8.2 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:34	EPA 200.7	
Sodium	610 mg/L	1.0	1	AH94276	08/23/19 14:00	08/26/19 16:34	EPA 200.7	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

	Result	Reporting Limit	Dilution	Batch	Prepared	Analyzed	Method	Note	
Burlingame - S (19H1957-05)		Sample Type: Water			Sampled: 08/15/19 07:40				
Conventional Chemistry Parameters by APHA/EPA Methods									
Bicarbonate	540 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Orthophosphate as P	ND mg/L	0.10	1	AH93898	08/16/19 15:50	08/16/19 16:50	SM4500-P E		
pH	7.53 pH Units	1.68	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM4500-H+ B	T-14	
Specific Conductance (EC)	4100 umhos/cm	20	1	AH94138	08/16/19 16:00	08/16/19 17:00	SM2510B		
Total Dissolved Solids	2300 mg/L	10	1	AH94118	08/21/19 11:00	08/27/19 10:30	SM2540C		
Bicarbonate Alkalinity as CaCO3	440 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Carbonate Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Hydroxide Alkalinity as CaCO3	ND mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Total Alkalinity as CaCO3	440 mg/L	5.0	1	AH94041	08/21/19 08:00	08/21/19 17:00	SM2320B		
Anions by EPA Method 300.0									
Chloride	1200 mg/L	50	100	AH93914	08/16/19 18:48	08/16/19 18:48	EPA 300.0		
Nitrate as N	ND mg/L	1.0	5	AH93914	08/16/19 19:21	08/16/19 19:21	EPA 300.0	R-01	
Sulfate as SO4	47 mg/L	2.5	5	AH93914	08/16/19 19:21	08/16/19 19:21	EPA 300.0		
Anions by EPA Method 300.1									
Bromide	4.4 mg/L	1.0	20	AH94390	08/28/19 08:18	08/28/19 08:18	EPA 300.1		
Surrogate: Dichloroacetate	100 %	90-115		AH94390	08/28/19 08:18	08/28/19 08:18	EPA 300.1		



Alpha Analytical Laboratories, Inc.

email: clientservices@alpha-labs.com

Corporate: 208 Mason Street | Ukiah, CA 95482 | T: 707-468-0401 | F: 707-468-5267 | ELAP# 1551

San Bruno, City of - DW
225 Huntington Avenue
San Bruno, CA 94066

Project Manager: Steve Salazar
Project: SF Intrusion Project
Project Number: [none]

Reported:
09/03/19 16:25

Notes and Definitions

- P-02 Sample acidified to pH <2 and allowed to sit 24 hours before further processing.
- QM-01 The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- T-14 Residual chlorine, dissolved oxygen, sulfite, and pH must be analyzed in the field to meet the EPA specified 15 minute hold time.
- ND Analyte NOT DETECTED at or above the reporting limit
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Appendix C
Westside Basin Groundwater Monitoring Manual of Procedures

Westside Basin Groundwater Monitoring Manual of Procedures

Final

March 2014

Foreword

The San Francisco Public Utilities Commission (SFPUC) has authorized two new groundwater projects to help meet the SFPUC's regular and dry year water supply needs. The San Francisco Groundwater Supply Project (SFGW) will provide a total of up to 4 mgd from 6 wells in San Francisco as a regular water supply to supplement the existing surface water supply in San Francisco. The Regional Groundwater Storage and Recovery (GSR) Project will pump up to 7.2 mgd from 16 wells in northern San Mateo County as a regional dry year water supply.

Over the past 15 years, the SFPUC has worked with the Dal City, San Bruno and Cal Water to develop a network of monitoring and test wells and a sampling program to characterize groundwater quality and water levels in the Westside Basin. This program allows basin users to monitor the long-term condition of the basin; helps establish baseline conditions prior to implementation of the SFPUC's projects; and will inform future basin operations.

This document outlines the technical procedures for the SFPUC groundwater sampling programs in the Westside Basin. The Water Quality Division (WQD) will complete sampling and coordination with the Water Resources Division (WRD) according to standards and programmatic details described in this manual. WRD will continue to provide groundwater project management, data analysis, and reporting.

This formal program description applies to routine monitoring and sampling. Additional monitoring Standard Operating Procedures (SOPs) for environmental assessments and remediation, environmental discharges for future drinking wells, and other special studies will require alternative sampling procedures. The SFPUC Water Quality Division would like to acknowledge and thank the following individuals who have contributed to this project:

SFPUC – Water Quality Division

Andrew DeGraca, P.E.

Manouchehr Boozarpour, P.E.

Alan R. Wong, P.E.

Roberto V. Gonzales, P.G.

Karen Chu, E.I.T.

Ryan Gabriel, P.E.

SFPUC – Water Resources Division

Greg Bartow, C.E.G., C.HG.

Jeff Gilman, C.E.G., C.HG.

Carolyn Cooper, P.G.

SFPUC – Natural Resources Division

Jason Bielski

Scott Taylor

Baseline Environmental Consulting

William K. Scott, P.G., C.E.G., C.HG

Monika Krupa

Section 1: Introduction

1.1. OVERVIEW	1
1.2. BACKGROUND.....	1
1.3. GOVERNING REGULATIONS.....	3
PROJECT OBJECTIVE	4
WELL LOCATIONS AND DESCRIPTIONS.....	5
MONITORING SCHEDULE	7
STAFFING	7
MAJOR EQUIPMENT	9
LEVEL TAPE AND REEL.....	9
WELL PUMP.....	9
TUBING 10	
GENERATOR.....	10
MULTI-PARAMETER WATER QUALITY INSTRUMENT	10
LEVELoader.....	10
5.1 GROUNDWATER SAMPLING PROTOCOL.....	11
5.2 MONITORING AND SAMPLING OVERVIEW.....	11
MEASUREMENTS OF GROUNDWATER INDICATOR PARAMETERS.....	14
pH	14
CONDUCTIVITY.....	14
TEMPERATURE.....	14
DISSOLVED OXYGEN (DO)	15
TURBIDITY.....	15
OXIDATION REDUCTION POTENTIAL METER	15
PURGE STABILIZATION CRITERIA	15
PROCEDURAL PRECAUTIONS.....	17
SPECIAL SAMPLING CONSIDERATIONS	17
VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSIS	17
SAMPLE HANDLING AND PRESERVATION REQUIREMENTS.....	17
QUALITY CONTROL	18
FIELD PROCEDURES	19
ACCESSING THE WELL.....	19
LEVEL READINGS	19
DATA LOGGERS	20
DECONTAMINATION	20
PURGING REQUIREMENTS	21
PURGE VOLUME DETERMINATION AND PURGE ADEQUACY	21
EQUIPMENT CONSIDERATIONS FOR PURGING	21
WELL PURGING AND SAMPLING STANDARD OPERATING PROCEDURE	22
SAMPLING FOR LABORATORY ANALYSIS.....	26

DOCUMENTATION AND FIELD FORMS	26
REFERENCES	28

Appendices

Appendix A: Well Descriptions and Locations

Appendix B: Groundwater Sampling Procedure Flow Chart and Summary

Appendix C: General Supply and Equipment Checklist

Appendix D: Title 22 Constituents with Additional Parameters of Concern for
Groundwater Sampling

Appendix E: Field Forms

Appendix F: Individual Well Site Maps and Photos

Appendix G: Operations Manual, Calibration, and Maintenance Procedures

1.1. Overview

The San Francisco Public Utilities Commission (SFPUC) has developed a groundwater monitoring program for the Westside Basin in support of its groundwater management goals and various planned groundwater projects. Monitoring of groundwater elevations and water quality is conducted to evaluate the potential for seawater intrusion, determine water quality and groundwater conditions in areas of potential groundwater development, define lake-aquifer interaction, assess general conditions in the Westside Basin resulting from historical and ongoing pumping, and establish baseline groundwater conditions prior to and during implementation of various groundwater projects.

This manual provides formal procedures and program descriptions of Westside Groundwater Basin monitoring for SFPUC staff involved with the sampling and field analytical measurement, as well as for the data analysis and reporting for the various groundwater programs. The manual does not, however, include any environmental assessment protocols that may affect groundwater quality. This information can be referenced from the latest Drinking Water Source Assessment Program documents for the proposed San Francisco Groundwater (SFGW) Project as well as the proposed Regional Groundwater Storage and Recovery (GSR) Project.

1.2. Background

The Westside Basin is composed of a series of aquifers with its north boundary located in Golden Gate Park in San Francisco stretching to its southern boundary in the City of Burlingame in San Mateo County. The City of Daly City, California Water Service Company (Cal Water), and the City of San Bruno currently operate a series of wells that distribute groundwater from the Westside Basin to their respective systems. These entities also receive water from the SFPUC's Regional Water System.

As with the agencies noted above, the SFPUC plans to supplement existing surface water supplies with groundwater. The SFGW project was developed to supply up to four million gallons per day (MGD) from the North Westside Basin from six production wells. These wells will be operated continuously in order to increase the long term availability of water in San Francisco. The GSR project was designed to supply up to 7.2 MGD of groundwater from the South Westside Basin during drought conditions.

In 2000, the San Mateo County Environmental Health Services Agency initiated the effort in sampling and testing groundwater conditions throughout the Westside Basin. In 2004, the program coordination was shifted to the SFPUC in cooperation with Daly City, San Bruno, and Cal Water (Partner Agencies). The SFPUC continues to lead the monitoring and sampling programs in the Westside Basin based on groundwater management goals and any supporting data needed for the SFGW and GSR projects.

Water quality and level sampling is currently handled by the Natural Resources Division (NRD) and an outside consulting firm with oversight and coordination by the Water Resources Division (WRD). The Water Quality Division will assume the role of sampling during fall of 2013. Water quality samples are processed through Millbrae Laboratories and select samples are sent to subcontracted laboratories for analysis.

All well locations are sampled from a network of existing monitoring and production wells located throughout the Westside Basin. A complete list of individual well sites and map locations can be found in Appendix F.

This document is not intended to cover monitoring procedures for any future potable water well facilities.

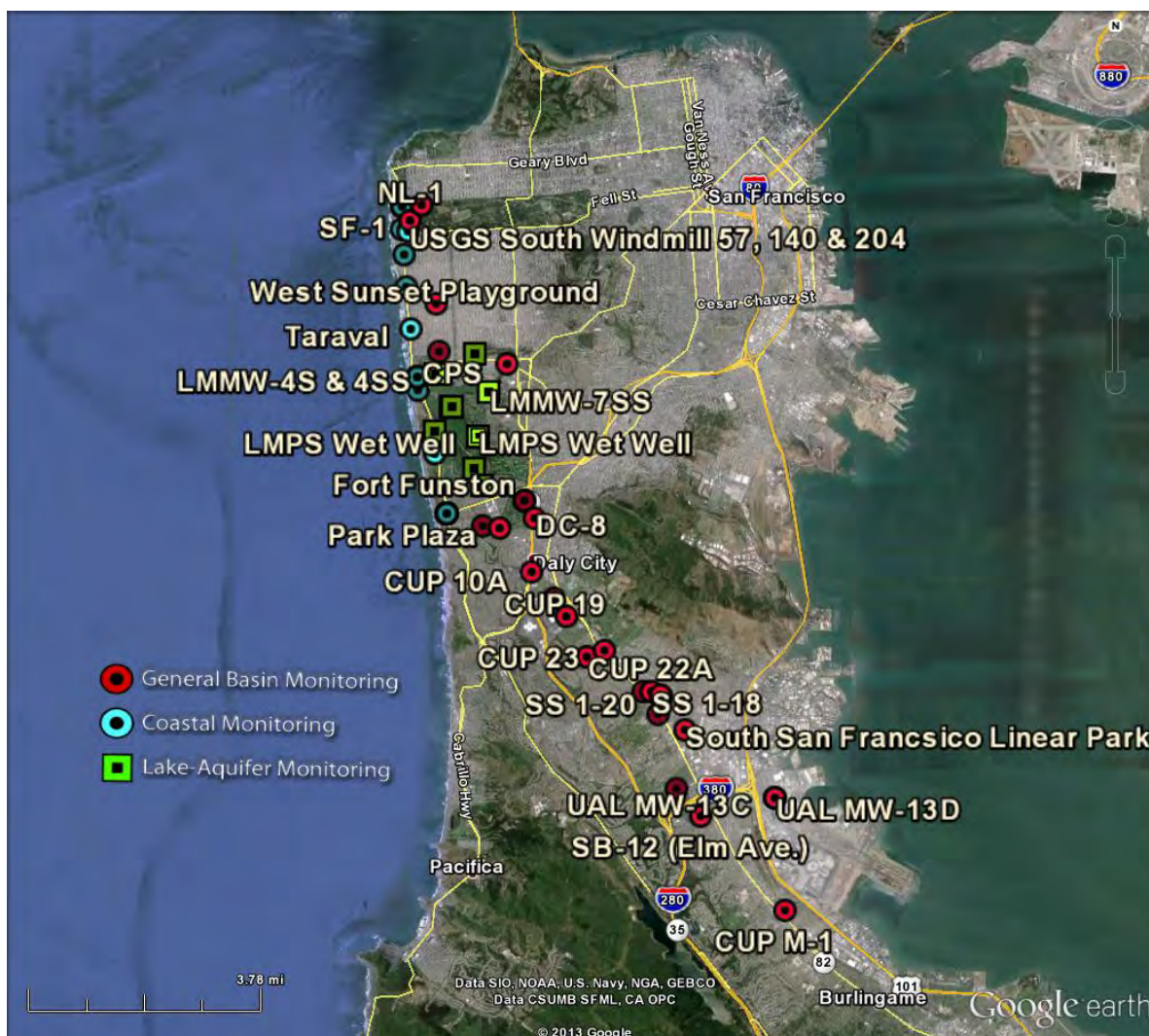


Figure 1: Westside Basin Groundwater Well Location Overview

1.3. Governing Regulations

Groundwater regulations and guidance materials for the procedures listed in this manual were researched from available literature, web search of regulatory sites and through contact with the local California Department of Public Health. Existing practices already in use by Water Resources & Natural Resources Divisions and various consultants were also considered.

No specific regulations were identified governing monitoring well sample techniques, operations and maintenance. Most of the available guidelines were found from U.S. EPA, Region 9 (Western Region) and Region 4 Science, Ecosystem Support Division (SESD, Southeast Region based in Atlanta). The latter SESD document was dated 2013 and referenced several other research and guidance recommendations found online.

Summaries of key regulations and guidelines governing monitoring well sampling, operations and maintenance, sorted by agency, are as follows:

United States Environmental Protection Agency (U.S. EPA), Region 9 and Region 4. No regulations were found, however several guidance documents were published on sampling and operating procedure, well and depth measurement, decontamination and field equipment cleaning.

California Department of Water Resources (CA DWR). Published regulations for monitoring well construction, disinfection and destruction/abandonment in DWR Bulletin 74 and Bulletin 91. No specific regulations or guidance were found for operations, sampling or monitoring of wells. DWR permits monitoring wells, and construction data must be submitted to DWR and assigned a state well number.

California Regional Water Quality Control Board. Governs discharges to state water bodies and reinjection of water into the aquifer. No specific regulations or guidance were found for operations, sampling or monitoring of wells.

California Department of Public Health. Oversees drinking water regulations and statutes in California Code of Regulations Title 22. Regulations cite aquifer protection and prevention of groundwater contamination. No specific regulations or guidance found for operations, or sampling or monitoring of wells.

San Francisco Department of Public Health. Provides local jurisdiction of wells and enforces City and County of San Francisco regulations. Regulations in Article 12B of the San Francisco Health Code include language regarding prohibiting contamination of groundwater and well/boring construction and destruction requirements. No specific regulations or guidance were found for operations, sampling or monitoring of wells.

Project Objective

The objective of this project is to create a Manual of Procedures (MOP) for the various groundwater sampling and monitoring programs for the Westside Basin. It includes details and descriptions for each monitoring program, locations for each well site, coordinates and direction data for each well, and standard operating procedures (SOPs) for water quality, water level sampling, and the various types of equipment used for groundwater sampling.

The basin monitoring programs are divided into five categories. The description for each category is as follows:

Table 2.1-1: Well Monitoring Categories and Objectives

Category	Objective
General Basin Monitoring	Hydrogeologic dynamics of groundwater conditions (levels)
Coastal Monitoring	Detection of seawater intrusion at coastal and bayside locations
Lake-Aquifer Monitoring	Characterization of lake-aquifer interactions around Lake Merced
Groundwater Supply	Assessment of groundwater conditions at proposed local and regional drinking water well locations
Miscellaneous Projects	Sampling support for all other groundwater-related projects (e.g. Contaminants of Emerging Concern (CEC) Study)

Well Locations and Descriptions

Wells used for the various sampling protocols for the Westside Basin are located locally throughout Golden Gate Park, Sunset District, and Lake Merced, as well as in Daly City, Colma, South San Francisco, Millbrae, Burlingame, and San Bruno. These wells include various monitoring wells and existing wells developed by SFPUC and Partner Agencies along the Peninsula. Appendix A lists each well sampling location along with its associated physical parameters that may aid in the sampling process. These parameters include:

- Well type
- Sample method
- Geospatial coordinates
- Location
- Water level from previous sampling event
- Case diameter
- Total depth of casing, below top of casing (BTOC)
- Measured total depth of casing, BTOC
- Screen interval
- Year Installed
- Additional comments (well condition, special access or location information)

Table 3.1-1 below tabulates typical sampling and analyses for well sites in the Westside Basin. Additional constituents are added on an as-needed basis.

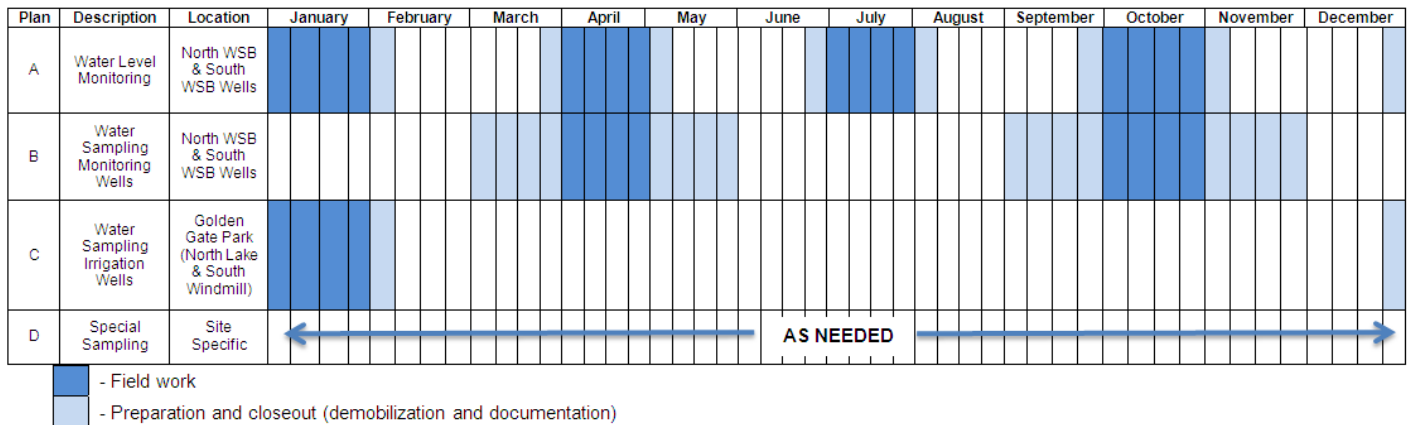
Table 3.1-1: Analyses and Associated Well Sites

Analyses	Well Names
Chloride, TDS, Specific Conductance	USGS South Windmill MW57, 140 Kirkham MW130, 255, 385, 435 Ortega MW125, 265, 400, 475 Taraval MW145, 240, 400, 530 Zoo MW275, 450, 565
Total Alkalinity, pH, Specific Conductance, TDS, Hardness, Calcium, Magnesium, Sodium, Potassium, Bicarbonate as CaCO ₃ , Chloride, Sulfate, and Nitrate	NL-1 SF-1 NWM-3 SWM-3 West Sunset Playground LMMW-1S, 1D, 2S, 2D, 3S, 3D, 6D

Analyses	Well Names
<p>Total Alkalinity, pH, Specific Conductance, TDS, Hardness, Calcium, Magnesium, Sodium, Potassium, Bicarbonate as CaCO₃, Chloride, Sulfate, Nitrate, Total and Dissolved Iron and Manganese</p>	<p>CUP 3A MW180, 240, 450, 580 CUP 10A MW160, 250, 500 CUP 18A MW230, 425, 490 CUP 19 MW475, 600, 690 CUP 22A MW290, 440, 545 CUP 23 MW230, 440, 515, 600 CUP 31A MW145, 280, 480, 595 CUP 36-1 MW160, 270, 455, 585 CUP 44-1 MW190, 300, 460, 580 CUP MW-M1 Park Plaza MW195, 460, 620 SSFLP MW120, 220, 440, 520</p>
<p>Water Level</p>	<p>CPS MW190, 270 CUP 3A MW180, 240, 450, 580 CUP 10A MW160, 250, 500, 710 CUP 18A MW230, 425, 490, 595 CUP 19 MW180, 475, 600, 690 CUP 22A MW140, 290, 440, 545 CUP 23 MW230, 440, 515, 600 CUP 31A MW145, 280, 480, 595 CUP 36-1 MW160, 270, 455, 585 CUP 44-1 MW190, 300, 460, 580 CUP MW-M1 DC-1 (Westlake) DC-8 Fort Funston S, M, D LMMW 1S, 1D, 2S, 2D, 2SS, 3S, 3SS, 3D, 4S, 4SS, 5S, 5SS, 6D 7SS, 8SS, 9SS LMPS MW155, 270, 440, 575 LMPS Wet Well NL-1 NWM-3 Ortega MW125, 265, 400, 475 Park Plaza MW135, 190, 460, 620 Kirkham MW130, 255, 385, 435 SB-12 SF-1 SS 1-02, SS 1-18, SS 1-20 SSFLP MW120, 220, 440, 520 SWM-3 Taraval MW145, 240, 400, 530 Thornton Beach MW225, 360, 670 UAL MW13C, 13D USGS South Windmill 57, 140 West Sunset Playground Zoo MW275, 450, 565</p>

Monitoring Schedule

A monitoring schedule has been implemented to accommodate the various sampling events throughout the calendar year. The program list includes Semi-Annual (water quality, level), Quarterly, Annual Production (Title 22 for various test/monitoring wells), Specific Sampling (repeat sampling for detected contaminants of concern), and Special Projects. Figure 2 shows the overall Basin monitoring schedule.



- Plan A - Quarterly Water Level Monitoring:** Water level measurements and downloading transducers (levelloggers and barologgers)
- Plan B - Semi-Annual Water Sampling and Water Level Monitoring:** Plan A activities and groundwater sampling for well specific constituents
- Plan C - Annual Water Sampling:** Groundwater sampling for full Title 22 constituents (test wells and regulatory wells)
- Plan D - Special Groundwater Sampling:** usually conducted with regular scheduled well sampling

Figure 2: Groundwater Sampling and Monitoring Schedule

Staffing

WQD will maintain field sampling equipment, conduct field sampling, compile field sampling records, coordinate pick-up and drop-off of sample containers, and coordinate with WRD according to the standards and programmatic details described in this manual. WRD will provide project management, data analysis, and reporting.

A minimum of one engineer/scientist and one senior technician from WQD will be needed to conduct the field work for each sampling event. The engineer/ scientist will review & analyze data, reporting and program development. The scientist will manage equipment, scheduling, and preparation for sampling, and perform field work and analysis with assistance from the team.

Note: The field work component of the prior water sampling events required two full-time scientists from the Natural Resource Division (NRD) for two weeks for shallow well sampling and two full-time staff members from Baseline Environmental Consulting for two weeks for deep

well sampling. Coordination and program management by one scientist from WRD remains unchanged for the new program.

Major Equipment

Westside Groundwater Basin monitoring and sampling requires mechanical and electrical equipment to measure water level and well depths, and extract water from the well. These equipment are sized to fit within the 2" diameter well casing, and needs to be securely fastened so that the equipment can be retrieved after measurement and sampling.

A multi-parameter field analyzer is needed to monitor the water quality during the purging process, where specific parameters are measured for stability and consistency.

Equipment is bulky and heavy and requires a large vehicle for transport. Operations, maintenance and safety protocols are provided in Appendix G. Key equipment are listed and briefly discussed below:

Level Tape and Reel

Tape measures to 0.01 feet and is attached to a probe with an electrode sensor to detect water depth, with either a manual hand crank or automated reel. Westside Basin monitoring requires tape lengths of 500' to 750'. Tape should be decontaminated and cleaned between uses.

Well Pump

Groundwater can be extracted from wells by hand bailers or pump-tubing systems. Pumps allow the sampler to purge standing well water and obtain fresh groundwater from the source aquifer. For the Westside Basin monitoring, two pump systems are used.

Submersible Pump – (e.g. Grundfos RediFlo2 electrical submersible pump, Portable Purge and Sampling Pump System, 100ml/min to 9gpm, 5.5lbs. 5HP. 220V 5.5amps; 1.8 in diameter). This multistage centrifugal pump provides a higher flow to purge shallow wells (280' or less), and provide continuous flow for sampling. Pump placement should be within the top 3 to 5' of the water surface so that the casing can be purged of at least 3 well casing volumes of water. The pump and tubing/ hose reel assembly is operated with a VFD flow controller. A stainless steel wireline cable is attached to the pump to ensure retrieval from well.

Bladder Pump – (e.g. Geotech bladder pump). This pump, equipped with small diameter tubing (1/4 in and 3/8 in OD) is used to sample deeper wells (up to 1000' depth), and provides continuous low flow (at 100 – 500 ml/min) for sampling. The pump operates with pressurized CO₂ gas to expand and compress the bladder to suction lift the sample to the surface. Gas does not come into contact with the sample. The pump fits within 2" diameter monitoring wells. Pump placement should be at mid-screen depth so that formation water is extracted directly from the target aquifer. Purging of water inside the sample tubing is required (to at least 3 tubing volumes). Other equipment used in conjunction with the bladder pump include: flow controller,

CO₂ cylinder with pressure regulator and stainless steel cable to ensure retrieval from the well.

Other Pumps – Other types of pumps include bailers, peristaltic pumps, and hydra-sleeves. A peristaltic pump may be used to purge and sample shallow wells (to about 25 feet). Also, it is used when decontaminating the tubing and pump.

Tubing

Silicon Silicone Tubing (1/2" ID, 5/8" OD, 300'). Stain, corrosion and ozone/UV resistant tubing used to purge and sample wells. Tubing is odorless and inert, but susceptible to high temperatures and should be replaced if gummy. NSF61 certified. For use with submersible pump.

Polyethylene tubing (1/4" ID, 3/8" OD, 1000')

Teflon Tubing (Teflon® and Silastic® or Tygon®, PTFE Type 1, Grade E5, 150 psi, 1/4" OD x 0.040 wall and 3/8"OD x 0.062 wall/SS nuts and fittings or equivalent)

Generator

A gas generator is used to power the submersible pump. A Honda 2000i EU Inverter is available for use. This unit provides 2000 watts, 120V, 9.6 hours run time for 1 gal of gas. Weight: 47 lbs.

Multi-parameter Water Quality instrument

Field parameters such as pH, conductivity, DO, ORP, temperature and turbidity are measured and monitored when purging wells. Multi-parameter water quality meter used include: YSI 556, YSI Professional Plus, Horiba U-10, Hach MP-6, Hach 40-D, and Hach 2100P Turbidimeter. The multi-parameter meters are recommended for use with a flow-through cell unit.

Leveloader

Some of the wells are equipped with transducers/data loggers that continuously monitor water level and temperature. In particular, Solinst Leveloggers and Barologgers may be found suspended on a wire line cable or coaxial "direct read cables" inside the well. The table in Appendix A indicates the wells that currently have transducers and/or barologgers installed in them. Connecting the cable end of the data loggers to a Leveloader allows viewing of the data, downloading and/or programming in the field.

5.1 Groundwater Sampling Protocol

This section describes general and specific procedures, methods and considerations to be used and observed in the collection and documentation of groundwater well data and groundwater samples for field screening and laboratory analysis, during its quarterly, semi-annual and annual schedules.

5.2 Monitoring and Sampling Overview

The following list highlights key procedures when planning any groundwater monitoring and sampling activities:

Determine monitoring/sampling schedule as calendared

Determine and coordinate activity requirements (inter-agency services, e.g. access, sample bottles from the laboratory, and equipment)

Understand field safety procedures, undergo training as necessary, and make available field safety equipment and PPE

Know proper safety protocols when handling and operating field equipment and appurtenances

Review well construction data and sampling history including purge stabilization data such as pump rates/ flow control adjustments, and water level data.

Coordinate sampling event with Millbrae Laboratory. Providing type of sampling (e.g. regulatory Title 22, basin study), well and analyte lists, QA/QC samples (field, equipment and trip blanks, and duplicates needed), as well as transportation and receiving procedures and deadlines.

Complete, check, calibrate, test and decontaminate monitoring and sampling equipment

Understand and manage applicable purge method and water sampling practices

Apply proper sampling protocol and field analytical techniques

Know proper field activity logging, recording, chain-of-custody procedures, and reporting

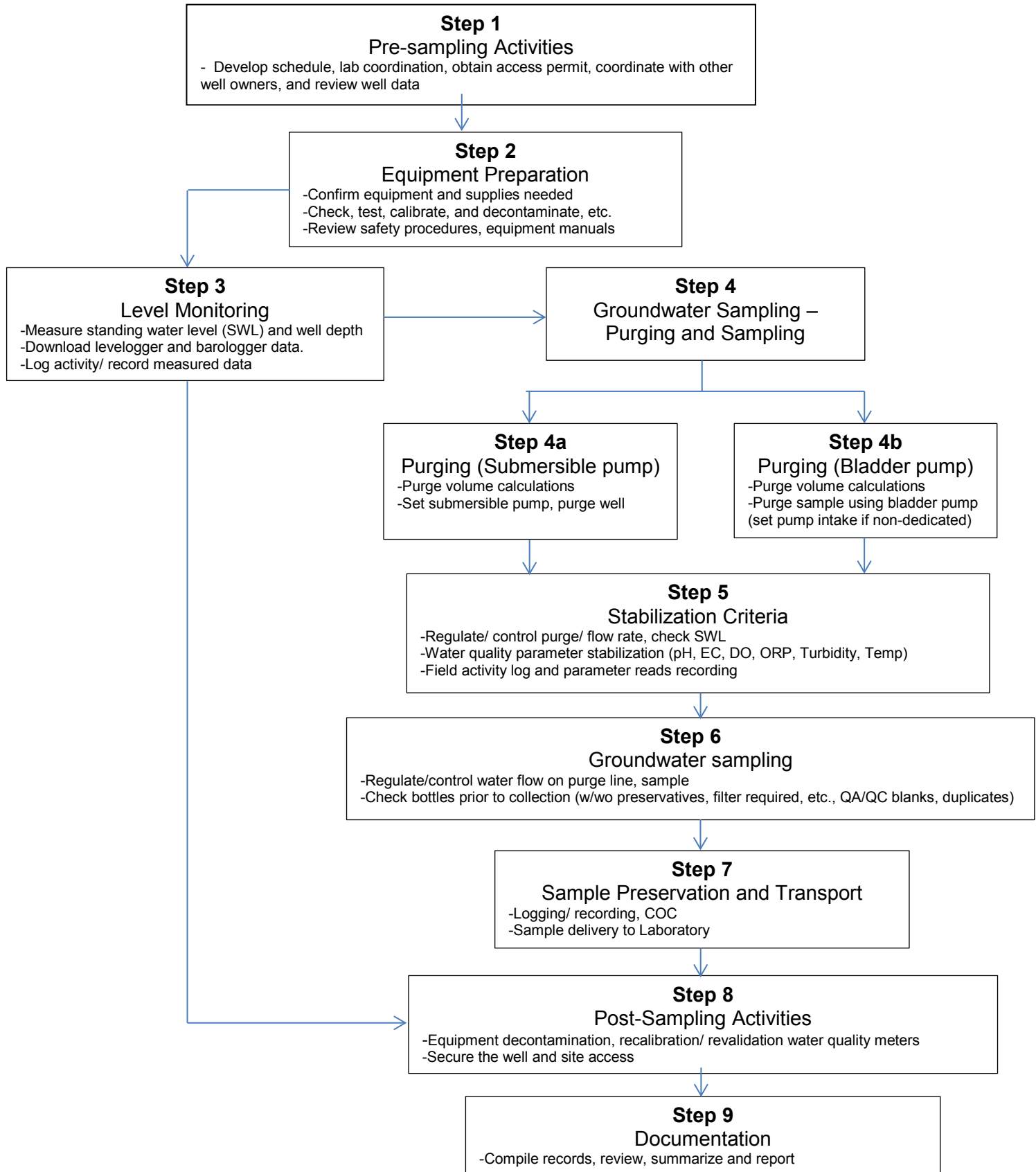


Figure 3: Groundwater Monitoring and Sampling Flow Chart

Table 5.2-1: Groundwater Monitoring and Sampling Plan Summary

<u>Step(s)</u>	<u>Procedure</u>	<u>Materials/Equipment</u>
Step 1 & 2: Pre-sampling Activity/ Mobilization	<p>Determine monitoring/ sampling schedule. Review last well data (level, purging and sampling data), and safety protocols. Schedule field activities and lab requirements, coordinate well access/ permits Confirm schedule, goals, and analytes with groundwater project managers List and procure monitoring/sampling and safety equipment/ supplies (sample bottles, preservatives, filters, cooler, ice, etc.) Complete, clean, calibrate, test, check batteries, and decontaminate sampling equipment Site inspection</p>	<p>SOP manual, well sampling data from last monitoring event Equipment and supply list</p>
Step 3: Level Monitoring	<p>Open well cover and cap, note integrity. Clean and de-water if necessary Measure and record water level and well depth (reference point as marked/or north side of top of casing) Download data, if data loggers are present. Decontaminate submerged meter and probe Secure well if only doing level monitoring.</p>	<p>Set of keys, tools Water Level meter Levellogger Barologger Leveloader Field record sheets</p>
Step 4 & 5: Well Purging and Recording	<p>Install submersible pump or bladder pump to intake depth. Pump water to a minimum of 3x standing water volume. *If using bladder pump, purge a minimum of 3x line/tubing volumes as calculated. Regulate flow and monitor water quality parameters until stable: pH, EC, DO, ORP, Temperature, Turbidity. Refer to stabilization criteria Record water quality data and pump data</p>	<p>Submersible pump (lift range to 300 ft.) Generator Bladder pump (used with deeper wells and/or if dedicated tube is present) Water level meter Laptop</p>
Step 6: Sample Collection and Recording	<p>Regulate water flow, use sample purge line for sampling. Use filter only if required. Check sample bottles to use with type of analysis (w/ or w/o preservative), field blanks, standards. Water level meter re-validation/ calibration (last sampling site) Equipment decontamination (pump, hose and tubing in contact with groundwater). Complete COC</p>	<p>Field blanks (Travel & Equipment blank, if necessary) Sample labels Duplicate samples and bottles Field forms, COC</p>
Step 7: Sample Preservation, Storage and Transport	<p>Place samples in cooler and keep chilled during transport to the laboratory. Preservation includes cooling the sample to 4°C (40°F) during transport, shipping and storage. It is best to deliver the samples to the laboratory on the same day as sampling.</p>	<p>Cooler Ice packs and chemical preservatives (if necessary)</p>
Step 8: Post Sampling Activity	<p>WQ meter/ probe calibration/revalidation). Clean and pack equipment and supplies Brush/ clean inside casing protector (if necessary) and secure the well.</p>	
Step 9: Documentation	<p>Compile data and review results Summarize results for sampling/monitoring event and report</p>	

Measurements of Groundwater Indicator Parameters

Indicator parameters are measured in the field to evaluate well flow stabilization during purging, provide information on general ground water quality, and to help evaluate well construction, or indicate when well maintenance is needed. Indicator parameters measured during well purging and sampling activities include specific conductance, pH, dissolved oxygen, oxidation-reduction potential, turbidity and temperature. These are reliably measured using multi-parameter water quality meters, or a combination of available meters and probes. Calibration procedures vary with each meter. Hence, it is important to follow the operating instructions supplied for each piece of equipment.

Calibration of instruments should be conducted prior to each day of monitoring/ sampling activity. Although calibration is preferred to be done in the field as close to the time of use, it may be conducted in a controlled environment that is in the laboratory or field office. It is always a good practice to re-calibrate and validate all instruments used after the last sampling location to compare with the initial calibration results while noting any significant deviations.

pH

Measurement of pH is conducted to determine the acid balance of the water on a scale of 1 (being strongly acid) to 14 (being strongly alkaline). It is ideally measured on site at the time of sampling.

Conductivity

Conductivity is a measure of the ability of water to conduct electricity. This is directly related to the concentration of dissolved ions; thus, it is a reasonable indication of the concentration of dissolved solids in the water. Like pH, conductivity is ideally measured in the field.

Temperature

Temperature is not necessarily an indicator of ground water chemical stabilization, and is generally not very sensitive in distinguishing between stagnant casing water and formation water. Nevertheless, temperature is important for data interpretation. Groundwater temperature is subject to rapid changes when collected for parameter measurement. Its usefulness is subject to question for the purpose of determining parameter stability. However, it is still advisable to record the sample temperature, along with the other groundwater chemistry parameters during well purging, as it may be needed to interpret other chemical parameter results in some situations.

Dissolved Oxygen (DO)

Dissolved oxygen (DO) has been noted to be a reliable indicator of the chemical stabilization of purge water under most ground water purging and sampling circumstances. DO is a good indicator when sampling for volatile organic compounds (VOCs), because erratic or elevated DO readings may reflect procedures that are causing excessive agitation and aeration of the ground water being drawn from the well and subsequent loss of VOCs. Artificially aerated ground water may also adversely affect dissolved metals analyses.

Turbidity

Turbidity is not an indicator of ground water chemical stabilization and does not distinguish between stagnant casing water and formation water. However, turbidity can be useful to measure during purging. Relatively high or erratic measurements may indicate improper sampling procedures, such as purging at an excessive rate that exceeds the well yield. Purging and sampling in a manner that produces low-turbidity water is particularly important when analyzing for total metals. When sampling for contaminants or parameters that may be biased by turbidity, stabilizing the turbidity readings at or below 10 Nephelometric Turbidity Units (NTUs) is recommended.

Oxidation Reduction Potential Meter

Oxidation-reduction potential (ORP), also referred to as redox potential or Eh, is a numerical index of the intensity of the oxidizing or reducing conditions within an aqueous solution such as groundwater. Oxidizing conditions are indicated by positive potentials and reducing conditions are indicated by negative potentials. ORP measurements are generally expressed in millivolts (mV).

Purge Stabilization Criteria

An adequate purge is achieved when the pH and specific conductance of the ground water have stabilized, and the turbidity has either stabilized or is below 10 NTUs. Although 10 NTUs is normally considered the minimum goal for most ground water sampling objectives, lower turbidity has been shown to be easily achievable in most situations and reasonable attempts should be made to achieve these lower levels.

Stabilization occurs when, for at least three consecutive measurements, the pH remains constant within 0.1 Standard Unit (SU) and specific conductance varies no more than approximately 5 percent. Other parameters, such as dissolved oxygen (DO), may also be used as a purge adequacy parameter. Normal goals for DO are 0.2 mg/L or 10% saturation, whichever is greater. DO measurements must be conducted using either a flow-through cell or an over-topping cell to minimize or reduce any oxygenation of the sample during measurement. Oxidation Reduction Potential (ORP) should not be used as a purge stabilization parameter but

may be measured during purging to obtain the measurement of record for ORP for the sampling event (see Table 3 – Stabilization Criteria).

If the chemical parameters have not stabilized according to the above criteria after three well volumes have been removed, purging should continue up to five well volumes. If the parameters have not stabilized within five volumes, it is at the discretion of the project leader whether or not to collect a sample or to continue purging. If, after five well volumes, pH and conductivity have stabilized and the turbidity is still decreasing and approaching an acceptable level, additional purging should be considered to obtain the best sample possible, with respect to turbidity. The conditions of sampling should be noted in the field log.

Table 5.4-1: Stabilization Criteria (Note: ORP is for reference only and not recommended for use to determine stabilization)

Parameter	Stabilization Criteria
pH	± 0.1 standard units
Specific Conductance	± 5%
Oxidation-Reduction Potential (ORP)	± 10 millivolts
Turbidity	± 10% (when > 10 NTUs); maintained at <10 NTUs, consider stabilized
Dissolved Oxygen (DO)	± 0.2 milligrams per liter or 10% saturation; If 3 DO values < 0.5 mg/L, consider stabilized

Note: Stabilization criteria based on U.S. EPA Groundwater Sampling Operating Procedure (Science and Ecosystem Support Division (SESD), SESDPROC-301-R3 section 3.2.1.1.2, effective March 6, 2013).

Procedural Precautions

The following precautions should be considered when collecting groundwater samples:

- Avoid contaminating samples, start sampling from least suspected contaminated site.
- Always wear new clean sterile gloves per sample site, or as necessary.
- Always wash/spray wash the water level/depth level measuring probe and/or line, and pumping equipment with a phosphate free detergent (ex. Alconox), rinse with distilled or de-ionized water, and wipe clean each time it is used in a well. This minimizes the opportunity for cross-contamination to occur during sampling.
- Sample as soon as possible after purging
- Always document field events (e.g. well access, monitoring, purging and sampling procedural deviations) in a field logbook or appropriate field form.
- Chain-of-custody documents shall be filled out and remain with the samples until custody is relinquished.

Special Sampling Considerations

Volatile Organic Compounds (VOC) Analysis

Groundwater samples for VOC analysis are typically collected in 40 ml glass vials that are preserved with concentrated hydrochloric acid. Absolutely no bubbles or headspace should be present in the vial after it is capped.

After the cap is securely tightened, the vial should be inverted to see if any undetected bubbles are present. If a bubble or bubbles are present, the vial should be topped off with care so as not to flush any preservative out of the vial. If bubbles are still present after capping, a new vial should be obtained and the sample re-collected.

Groundwater producing large amount of fine bubbles will render the sample unacceptable. In this case, unpreserved vials should be used and arrangements must be made with the laboratory to meet the sample holding times.

Note: VOC analysis based on U.S. EPA Groundwater Sampling Operating Procedure (SESDPROC-301-R3 section 2.1, effective March 6, 2013).

Sample Handling and Preservation Requirements

All sample vessels that do not contain preservatives should be rinsed twice with sample water. Groundwater samples will typically be collected from the discharge line of a pump. Reduce the flow from either the pump discharge line during sample collection to minimize sample agitation.

During sample collection, make sure that the pump discharge line does not come in contact with the sample container.

Samples may be collected from either designated tubing or reused tubing after purging decontamination.

Place the sample into appropriate, labeled containers. Samples collected for VOC, acidity and alkalinity analysis must **not** have any headspace. All other sample containers can be filled with headspace.

Quality Control

To assure adequate QA/QC in the field, the sampling plan should be followed consistently. The laboratory typically provides the tools to verify if procedures are contaminating water samples, hence, a variety of samples and blanks need to be collected and analyzed. The following are typical checks:

Field Duplicate - Field duplicates are prepared by the laboratory to be collected at a frequency of one per sampling event (or one a day) or one (1) per 10 sampling locations. Field forms should note the wells from which field duplicates were collected.

Trip Blanks - Trip blanks are generally prepared by the laboratory and are included in each cooler containing VOC samples. At a minimum, at least one trip blank should accompany each sampling event. Trip blanks are never opened in the field.

Equipment Blanks - Whenever non-dedicated sampling equipment is used, equipment/field blanks should be collected. An equipment/field blank is obtained by passing analyte-free, distilled or deionized water through a cleaned sampling apparatus (pump, bailer, filtration gear, etc.) and collecting it in a clean container. This blank is used to assess the effectiveness of the decontamination procedures implemented between sampling locations.

Immediately after sampling, well data measurements shall be recorded in a field logbook or field monitoring/sampling form, and Chain-of-Custody documentation shall be completed.

Field Procedures

Accessing the Well

Monitoring wells are usually secured with a locking cover or bolted metal housing, either at ground level in well box or inside a 2- to 3- foot tall metal pipe housing. Inside the housing, the actual monitoring well (usually a 2- or 4-inch PVC pipe) is sealed with an expandable rubber plug that can be locked tight. The plug is sometimes sealed with a keyed padlock. Specific entities will need to be notified in order to access certain wells/properties and to schedule site work.

After completion of monitoring and sampling activities, all locking covers, locks, housing covers, and access gates should be secured safely to ensure protection of the well. Any maintenance or improvement needs should be recorded and reported to the supervisor and WRD.

Level readings

Groundwater level and well depth measurements are needed to determine the volume of water or drawdown in the well casing for proper purging. These measurements also provide indication of the well condition.

All groundwater level and well depth measurements are made relative to an established reference point on the well casing documented in the field records. This reference point is usually identified by a permanent marker for PVC wells, or by a notch at the top of casing. By convention, this marking is usually placed on the north side of the top of casing. If no mark is apparent, the person performing the measurements should take both water level and depth measurements from the north side of the top of casing and note this procedure in the field logbook

Water levels should be allowed to equilibrate prior to measurement after removing sealing caps. When the sounding probe comes in contact with the water, the circuit is closed and a meter light and/or audible buzzer attached to the spool will signal contact. At least two readings are made. Measurements should be made and recorded to the nearest 0.01 foot.

The well sounder, a weighted tape or electronic water level indicators can be used to determine water level and the total well depth. Measuring well depth is accomplished by lowering the tape or cable until the weighted end is felt resting on the bottom of the well. The operator may find it easier to allow the weight to touch bottom and then detect the 'tug' on the tape while lifting the weight off the well bottom. Well depths do not need to be measured when we are only checking water levels (i.e., not sampling).

As a cautionary note, when measuring well depths with the electronic water level indicators, the person performing the measurement should initially check if the water level probe has its circuit closing electrode referenced to the tape distance markings and specific for water level

sounding. In some instances, one must measure and add the length of the probe beneath the circuit closing electrodes to the depth measured to obtain the true depth

Note: Level reading procedures based on U.S. EPA Groundwater Level and Well Depth Measurement Operating Procedure (SESDPROC-105-R2, effective January 29, 2013).

Data Loggers

Solinst Levelloggers and Barologgers may be found suspended on a wire line cable or coaxial “direct read cables” inside the well. The table in Appendix A indicates the wells that currently have transducers and/or barologgers installed in them. Additionally, prior to each water level measurement event, WRD will provide a list of water level measurements from the previous event; the list will also include a notation of which wells have transducers and/or barologgers installed in them. Connecting the cable end of the data loggers to a Leveloader allows viewing of the data, downloading and/or programming in the field. It is important to record the lapsed time real-time data logging was disturbed for later data interpretation.

After removing the data logging unit from the well, the water level is allowed to equilibrate/stabilize and is then measured using a water level sounder. After water level and depth measurements, purging and groundwater sampling are conducted the Levelogger and Barologger are placed back in the well as previously set.

Decontamination

Equipment and tools shall be kept cleaned and decontaminated throughout the groundwater sampling activities. Equipment in direct contact with groundwater such as water level meter tapes, probes, tubings, pumps, and protective sheaths will be new or decontaminated using at least the following process: Phosphate free soap (Alconox, Liquinox or equivalent) and water wash, and DI water rinse. Soap and DI water bath and sprays may be used for the process. Decontamination wastes such as rinsates, liquid spray, soil, nitrile gloves and other debris should be fully contained and collected for proper waste management and disposal.

Note: Decontamination procedures based on U.S. EPA Field Equipment Cleaning and Decontamination (SESD, SESDPROC-205-R2, effective December 20, 2011).

Purging Requirements

Prior to sampling a monitoring well, the well must be purged to remove standing water from the well. Purging also serves to rinse and condition the sampling equipment with well water.

Purge Volume Determination and Purge Adequacy

Prior to initiating the purge, the amount of water standing in the well should be determined. To do this, the diameter of the well/ casing must be determined and the water level and total depth of the well should be measured and recorded. Measuring the depth of a well indicates the amount of siltation that has occurred. Natural siltation can block water from entering, which could lead to erroneous water level measurements and bias analytical results by increasing sample turbidity. Checking depth also provides a check on casing integrity.

Once this information is obtained, calculate the approximate volume of water in the well using the following equation:

$$V = 0.041 \times d^2 \times h$$

Where:

h = length of water column* (ft)

d = diameter of well (in)

V = volume of water (gal)

*The length of the water column (h) is the total depth of the well minus the depth to water. Multiply the calculated volume (V) by the desired number of well volumes to determine the purge volume, in gallons.

With respect to volume, an adequate purge is normally achieved when three to five well volumes have been removed. The field notes should reflect the single well volume calculation, and a reference to the appropriate multiplication of that volume, i.e., a minimum three well volumes, identified as a purge volume goal.

Equipment Considerations for Purging

Monitoring well purging is accomplished by using in-place plumbing and dedicated pumps or by using portable pumps/equipment when dedicated systems are not present. The equipment utilized consists of a variable speed submersible pump and dedicated/ in-place bladder pumps. Standard operating procedures for these 2 methods are discussed in the following sections. In addition, the manufacturer's manual on operation, calibration and maintenance manuals for all groundwater monitoring and sampling equipment used by our crew are included in Appendix G.

Well Purging and Sampling Standard Operating Procedure

Method 1 – Submersible Pump

When a submersible pump, e.g. Grundfos RediFlo2, is used for well purging/ sampling, the pump itself is lowered into the water column. The pump/hose assembly used in purging should be lowered into the top of the standing water column, but not deep into the column. This is done so that the purging will "pull" water from the formation into the screened area of the well and up through the casing so that the entire static volume can be removed. If the pump is placed deep into the water column, the water above the pump may not be removed, and the subsequent samples may not be representative of the aquifer conditions. The pump should be lowered no more than three to five feet into the water column. If the recovery rate of the well is faster than the pump rate and no observable drawdown occurs, the pump should be raised until the intake is within one foot of the top of the water column for the duration of purging. If the pump rate exceeds the recovery rate of the well, the pump will have to be lowered, as needed, to accommodate the drawdown.

Before purging begins, prepare the necessary field forms. Review past well data, including pump depth placement and Variable Flow Drive (VFD) settings. Complete the field form including the type of equipment being used. Lay plastic sheeting around the well to prevent contaminating the equipment.

1. Using a water level meter, measure and record the depth to static/standing water level and the depth of the well inside the casing.
2. Calculate and record the well water volume (multiply by 3 to get purge volume).
3. In the monitoring well, lower the submersible pump followed by a water-level sensor to the desired location of the pump intake. Lower the equipment slowly and smoothly to avoid stirring up particulates. Position the pump intake between 3 ft (~0.9 m) below static water surface and a minimum distance above the top of the open/screened interval. The water-level sensor should be a maximum of 1 ft (~0.3 m) below water surface.
4. Start the generator. Connect the pump terminals to the generator, then run the pump using the VFD keypad controls. Gradually increase and (or) adjust the pumping rate to limit drawdown to between 0.5 and 1.0 ft (~0.15 to ~0.3 m). Measure the water level as purging progresses. The pumping rate for a pump can be determined by collecting the discharge from the pump in a bucket of known volume and timing how long it takes to fill the bucket. The pumping rate is recorded in gallons per minute.
5. If the final intake position is above the screened or open interval, the final pumping rate should be about 500 to 1,000 milliliters per minute. Do not exceed 1 ft of drawdown.
6. If the final intake position is within the screened or open interval, the final pumping rate should be about 200 to 500 milliliters per minute. Do not exceed 0.5 ft of drawdown. After approximately one to two well volumes are removed, a flow-through cell may be hooked-up to the discharge tubing of the pump.
7. If the pump and intake position are fixed, as in a supply well, control the rate of flow for field measurements through flow-splitting valve(s). Do not move the pump during

purging or sample collection after the intake has been set at the final location.

8. Throughout purging, monitor and record field-measurement readings. Check for special instructions regarding field-measurement or field-analysis requirements. Consult criteria for establishing field-measurement stabilization.
9. Record field measurements at regular time intervals, about 3 to 5 minutes apart. For deep wells, the time intervals could be 15 minutes or longer. The time intervals selected will depend on the well characteristics and hydraulic properties of the aquifer, but the intervals must be sufficiently spaced to yield results representative of aquifer properties.
10. Purge a minimum of three well volumes or the purge volume dictated by study.
11. As the third or last well volume is purged, when the final field measurements are recorded, adjust the purge rate to the pumping rate to be used during sampling.
12. If criteria are being met--record at least five sequential measurements and report the median value.
13. If criteria are not being met, consult the study requirements and objectives. Extend the purge time if readings still do not stabilize; report the median value of the last five or more sequential measurements.
14. Contain purge water as required by Federal, State, or local regulations.
15. Complete field forms and report the data. Report the median of the recorded field-measurement readings as the final well volume is purged. Record anomalies, difficulties, and adjustments on the field form. Record the purge volume, rate of pumping, initial and final intake locations, and time and respective reading of sequential field measurements.
16. Prepare the sample bottles and collect groundwater samples using the same purge tubing. Place bottles in coolers and add ice/ ice packs in sealed bags.
17. Turn off pump, shut off generator. Slowly pull out the pump/hose assembly. Wipe dry the portion of the submerged hose and pump, and set up to decontaminate as per SOP (see section 5.8.4). Bag or wrap the pump with clean plastic prior to storage.

Note: Purging and sampling procedure based on U.S. EPA Groundwater Sampling Operating Procedure (SESDPROC-301-R3 section 3.3.1, effective March 6, 2013).

Method 2 - Bladder Pump

The following describes the purging and sampling procedures for the collection of ground-water samples when using a bladder pump. These procedures describe steps for both dedicated and non-dedicated systems. Some WSB monitoring wells have dedicated bladder pumps installed at set depths. Two surface tubing lines (air supply line and intake line) are required to hook up to the Micro Purge Basics Controller (Model MP-10 Controller).

Before purging begins, lay out plastic sheeting around the well to minimize the likelihood of contamination of sampling/purging equipment from the soil. Place monitoring, purging and sampling equipment on the sheeting.

1. Measure water level depth and well casing depth (to nearest 0.01 feet, and at least twice to confirm) relative to a reference measuring point on the well casing with an electronic water level indicator and record in logbook or ground-water sampling log.
2. Calculate the volume of the water inside the tubing that extends from the top of the monitoring well to the depth of the intake.
3. For a dedicated system – The pump (a QED P1101M bladder pump) has already been installed. Refer to the available monitoring well data from the last purge/ sampling and enter pertinent information into the new blank form (Baseline Environmental Consulting Groundwater Sampling Form). Note purge data, including pump intake depth, purge volume and (MP-10) controller settings
4. For a non-dedicated system - Place the pump and support equipment at the wellhead and slowly lower the pump and tubing down into the monitoring well until the location of the pump intake is set at a pre-determined location within the screen interval. The placement of the pump intake should be positioned with a calibrated sampling pump hose, sounded with a weighted-tape, or using a pre-measured hose. Measure the depth of the pump intake while lowering the pump into location. Record pump location in a field logbook or sampling log.
5. For both non-dedicated system and dedicated systems, the following procedure applies - Measure the water level and record information on the ground-water sampling log, leave water level indicator probe in the monitoring well.
6. For both non-dedicated and dedicated systems - Connect the discharge line from the pump to a flow-through cell. A “T” connection is recommended prior to the flow cell to allow for the collection of water for the turbidity measurements. The discharge line from the flow-through cell must be directed to a container to contain the purge water during the purging and sampling of the monitoring well.

7. Non-dedicated and dedicated system – Connect all tubing/ fittings to air supply and pump to controller. Set air supply pressure (max 125 psi), set cycle and discharge values, set air intake psi and cycle frequency in the MP-10 Controller. Turn on pump and throttle/ adjust refill and discharge flow rates. Start pumping the well at a low flow rate (0.2 to 0.5 liter per minute) and slowly increase the speed. Check water level. Maintain a steady flow rate while maintaining a drawdown of less than 0.33 feet. If drawdown is greater than 0.33 feet lower the flow rate. Measure the discharge rate of the pump with a graduated cylinder and a stop watch. Also, measure the water level and record both flow rate and water level on the groundwater sampling log.
8. Non-dedicated and dedicated system - Continue purging, monitor and record water level and pump rate every three to five minutes during purging. Pumping rates should be kept at minimal flow to ensure minimal drawdown in the monitoring well.
9. Non-dedicated and dedicated system - During the purging, a minimum of one tubing volume (including the volume of water in the pump and flow cell) must be purged prior to recording the water-quality indicator parameters. Then monitor and record the water-quality indicator parameters every three to five minutes.
10. Once the criteria have been successfully met indicating that the water quality indicator parameters have stabilized, then sample collection can take place. If two tubing volumes (including the volume of water in the pump and flow cell) have been removed during purging then sampling can proceed. All information should be noted in the field notebook and groundwater sampling form with an explanation if a different purging and sampling procedure was conducted.
11. Prepare the sample bottles and collect groundwater samples using the same purge tubing. Place bottles in coolers and add ice/ ice packs in sealed bags.
12. After sampling, recording and properly storing the samples, turn off pump and air supply, and disconnect fittings. In a non-dedicated system slowly pull out/ remove the pump and tubing assembly from the monitoring well. Decontaminate the pump and tubing.
13. For a dedicated system, disconnect all surface tubing that extends from the plate at the wellhead (or cap). Rinse, bag and seal for future use in the same well. Also, decontaminate the tubing if to be used in other wells.

Note: Purging and sampling procedure based on U.S. EPA Groundwater Sampling Operating Procedure (SESDPROC-301-R3 section 3.3.2, effective March 6, 2013).

Sampling for Laboratory Analysis

For monitoring wells, the same pump should be used for purging and sampling without stopping or removing the pump. Samples should be collected directly from the discharge port of the pump tubing prior to passing through the flow-through cell. Alternatively, disconnect the pump's tubing from the flow-through-cell so that the samples are collected from the pump's discharge tubing.

The sequence of the samples is immaterial unless filtered (dissolved) samples are collected and they must be collected last. However, the preferred order of sampling is metals first, followed by other inorganic analytes, extractable organic compounds and volatile organic compounds. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

Access to production wells can be more difficult. Ideally, sample water should be collected directly from the well. A sample valve or spigot will be located in the water pipeline at a point in the distribution system that comes before the water enters any treatment and as close to the well as possible. In some cases it may be possible to gain access to the well casing through an access pipe. If you are sampling directly from a production well by means of a portable submersible pump, considerable care must be taken to avoid tangling or wedging the sampling/testing equipment between the production line, cables, and other equipment typically suspended in a well casing.

Documentation and Field Forms

As mentioned previously, all field documentation should be accurately recorded. Accurate records are critical for historical purposes, including regulatory and liability issues. Appendix E lists all field forms related to all groundwater sampling activities.

We have two (2) level monitoring and groundwater sampling forms adapted from previous works: (1) the SFPUC Groundwater Level Data Field Form which is used for level monitoring survey only, and (2) the Groundwater Sampling Form, which includes more well data than the SFPUC Well Sampling Form used when purging/ sampling with the Grundfos submersible pump. This second form is adapted from Baseline Environmental Consulting for continuity. Because it is available in an electronic program, it is easier to determine when purge stabilization has been achieved. It is necessary to review and copy previous data for reference and guidance in setting flow controls for purging, sampling, and recording. Additional information or issues such as well/site condition and maintenance requirements should be recorded in the comments section.

A Field Daily Activity Log is kept on site and updated with all activities and events. The form is self-explanatory and is completed by filling in the box items such as changes from plans and procedures, important decisions made pertaining to water level monitoring, purging and

sampling, weather conditions, visitors on site, notes on well site number, sample number/ label collected, QA/QC field duplicates collected, personnel on site, etc.

Chain-of-Custody (COC) forms are provided with the sample bottles by the laboratory and accompany the samples collected at all times. The forms are updated as soon as samples have been collected, checked and stored, prior to moving to the next sampling site or finally transporting and submitting all samples to the laboratory.

References

U.S. EPA Groundwater Sampling Operating Procedure, Science and Ecosystem Studies Division (SESD), SESDPROC-301-R3, effective March 6, 2013.

U.S. EPA Groundwater Level and Well Depth Measurement Operating Procedure, SESD, SESDPROC-105-R2, effective January 29, 2013.

U.S. EPA Field Equipment Cleaning and Decontamination, SESD, SESDPROC-205-R2, effective December 20, 2011.

CS-179 Groundwater Monitoring Program: Agreement between the City and County of San Francisco and Baseline Environmental Consulting – Westside Basin Services to be provided by Contractor.

Field Procedures – Westside Basin Monitoring Project, SFPUC Natural Resources Division – Limnology

Groundwater Quality Monitoring – Sampling and Testing Protocol for Westside Basin, Luhdorf and Scalmanini Consulting Engineers, November 2006

Appendix D
Summary of New Well Activity in the Westside Basin for 2019

Summary of New Well Activity in the Westside Basin for 2019

Well Name	Type	Source	Location (City)	Casing Material	Casing Diameter (in.)	Depth Drilled (ft bgs)	Casing Depth (ft bgs)	Screened Interval (ft bgs)	Installation Year
LMMW-9S	Monitoring Well	Avila, 2020	San Francisco	Schedule 40 PVC	2 in.	80	80	55-75	2019

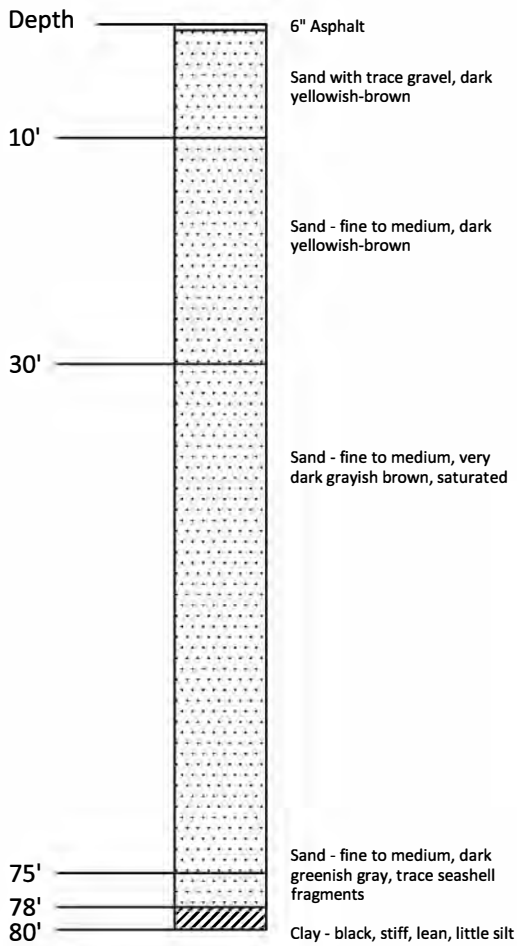
Abbreviations:

bgs = below ground surface

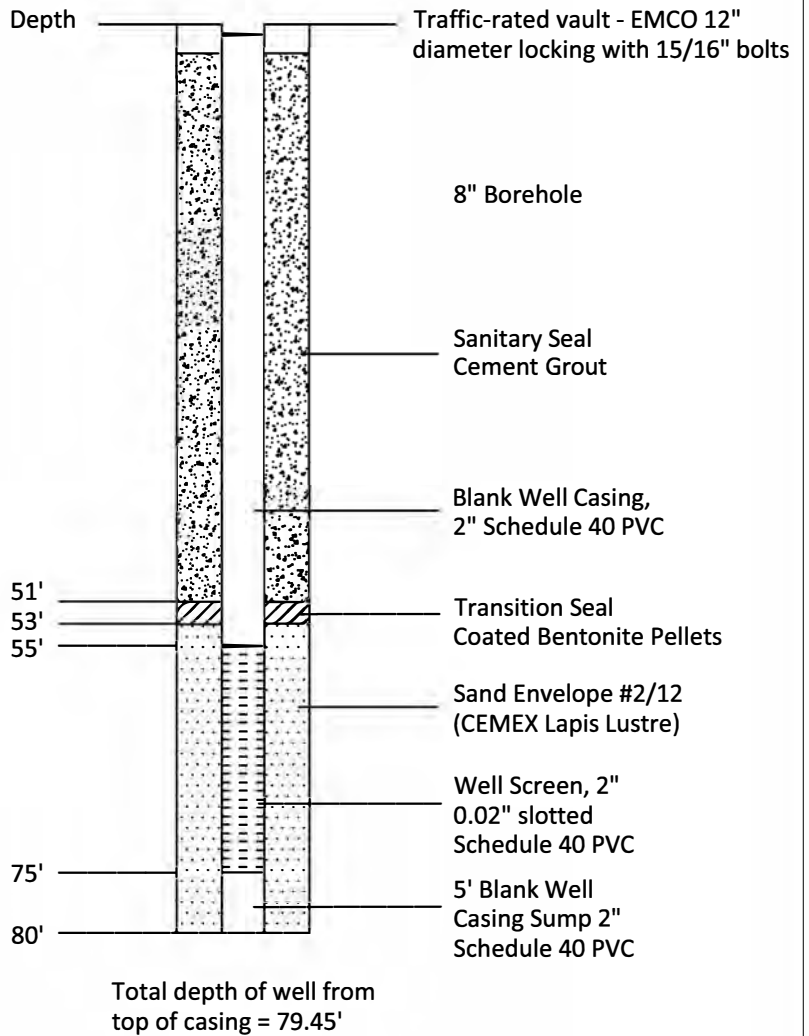
ft = feet

in. = inches

**Monitoring Well LMMW-9S
Borehole Lithology**



**Monitoring Well LMMW-9S
Well Profile**



Drilled by Hollow Stem Auger on December 5 & 6, 2019
 Samples collected every 5 feet
 Munsell Color Chart Designations