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TECHNICAL MEMORANDUM - 2020 LAKE MERCED WATER QUALITY MONITORING REPORT

1.0 BACKGROUND AND SETTING

Lake Merced is a freshwater lake located approximately 0.25 miles east of the Pacific Ocean in the southwestern portion of San Francisco, California. It is bounded by Lake Merced Boulevard to the north and east, and John Muir Drive to the west (Figure 1) and is designated as a non-potable emergency water supply for the City of San Francisco. Lake Merced is a natural habitat for many species of birds and waterfowl and a regional recreational venue offering fishing, boating, bicycling, walking paths, and wildlife viewing.

Prior to the 1870's Lake Merced was a coastal estuary which would fill up with water and overflow during large rain events, creating a stream which connected the lake to the ocean¹. The lake drained an area of 6,320 acres in size, approximately 10 square miles which included Daly City's Westlake, and the Stonestown area of San Francisco.

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.

In 1895, the Spring Valley Water Company (SVWC) built a dam at Lake Merced, disconnecting the lake from the ocean. This allowed the company to use the lake as a source of drinking water. As the city grew in the late 1800's, so did its need to protect its drinking water sources. The sewer system was built to divert the creeks that drained into Lake Merced, protecting the lake from debris and pollution that might otherwise flow into the lake.

After the SVWC was purchased by San Francisco, and Hetch Hetchy water replaced Lake Merced water in 1934, the lake was no longer used as a drinking water source but has since been designated as an emergency non-potable supply for the City of San Francisco. In 1950, the San Francisco Recreation and Park District was given jurisdiction to develop beneficial recreational uses

¹Over a period of hundreds of years, this outlet was closed off by the natural transport of beach and dune sands, and intermittently reopened during extraordinary events, such as high lake levels in unusually wet years or during earthquakes."

at the Lake while maintaining its status as an emergency non-potable water supply with the SFPUC managing the water aspects of the lake.

1.1 Current Lake Conditions

Today, Lake Merced remains a terminal lake which 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.

1.2 Lake Water Levels

Beginning in the late 1980s, Lake Merced's water levels began declining. By the early 1990s, water levels had dropped ten feet below the previous historic averages of the 1950s to 1980s. Declining water levels generated significant concern among stakeholders and SFPUC watershed managers over the long-term health of Lake Merced for recreational, ecological, and emergency water supply uses. Conclusions of various investigations and evaluations commissioned by SFPUC, indicated that these declines were the result of a reduction in stormwater runoff from the historical watershed into the lake due to urbanization, increased groundwater pumping and below average precipitation.

In order to address these significant decreases in lake levels, the SFPUC working with local stakeholders and regulatory agencies implemented a multipronged approach to manage lake levels. This included the short-term addition of regional system water to stabilize declining lake levels and establishing an interim target lake level elevation range between 14 and 16ft NAVD88. In 2002 the SFPUC in coordination with the City of Daly City implemented a test program to evaluate the effectiveness of potentially diverting treated stormwater from the historical watershed back into the lake. Limited addition of stormwater was added to the lake from 2004 to 2006 as part of the Lake Merced Pilot Stormwater Enhancement Project. Hydrogeological studies completed to enhance understanding of how the lake system operated in relation to the regional groundwater aguifers determined that additional impacts to lake levels were the result of groundwater pumping by three golf courses in the near vicinity of the lake. This pumping for golf course irrigation resulted in net outflow from the lake to underlying shallow aquifers further impacting lake levels. To this end, the SFPUC once again in coordination with the City of Daly

City, developed a recycled water project to deliver water to the surrounding golf courses, allowing significant reduction in the amount of groundwater pumped for irrigation.

Ultimately following implementation of these various measures and projects, as well as above average precipitation, lake level increased from 2002 to 2006 and have generally remained above the historical drought and groundwater pumping induced lows observed in the early 2000s.

As part of the ongoing monitoring program, Lake Merced levels are measured daily using pressure transducers located at the Lake Merced Pump Station and connected remotely to the SFPUC's SCADA reporting system. For 2020, lake levels ranged from a low of 4.61 ft City datum or 15.98ft NAVD88 on November 17th, 2020 to 6.36ft City datum or 17.73ft NAVD88 on January 29th 2020. This was compared to 2019, lake levels ranging from 5.27ft to 7.04ft City datum. Measured lake levels for 2020 decreased compared to 2019 values, primarily due to less precipitation and resulting abnormally dry conditions of 2020.

1.3 Lake Merced Climatic Setting

The proximity of Lake Merced to the Pacific Ocean results in a distinct maritime Mediterranean climate primarily influenced by wind, fog, and precipitation. This climate is characterized by cool, foggy summers and mild, rainy winters. In summer and fall, locations adjacent to the ocean, such as Lake Merced, are often enclosed in fog with cool temperatures in the 50s and 60s °F. The Lake Merced area often experiences its warmest weather in late September and early October as a result of less fog and the occasional off-shore breezes.

Based on historical precipitation data from the Lake Merced Pump 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. Average annual rainfall (based on a water year of October through September) at the Lake Merced rain gauge² is approximately 20.4 inches, with a record high of 47.6 inches in 1998 and a record low of 9.5 inches in 1976.

The Lake Merced rain gauge was repaired and returned to service for calendar year 2020, Cumulative rainfall totals collected from the Downtown San Francisco and the Lake Merced rain gauges indicated drought conditions generally recognized across the state. Precipitation measured at the San Francisco Downtown gauge was only 11.6 inches during water year 2020 (October 2019 through September 2020) and just 7.8 inches for the 2020 calendar year. Measured annual precipitation at the Lake Merced gauge for

2020 calendar year was 8.9 inches. The average annual precipitation for the preceding 30 years (1990-2019) at the Downtown San Francisco station is 23.1 inches (NOAA, 2020).

2.0 HISTORICAL LAKE WATER QUALITY MONITORING

Quarterly water quality monitoring, testing and reporting has occurred at Lake Merced since 1997. Lake Merced is considered a terminal, stratified, shallow eutrophic lake; meaning that it is rich in minerals and organic nutrients that promote proliferation of plant life including algae which can lead to depressed dissolved oxygen levels within lower portions of the lake. The lake is on the State of California Clean Water Act (CWA) Section 303 [d] list for pH and dissolved oxygen (DO) with occasional pH levels above 9 and DO levels below 5mg/l specifically in the lower portions of the lake (hypolimnion). DO levels in the upper portion of the lake (epilimnion) typically remain fairly high and well above the 5mg/l threshold for the entire year.

In January 2010, Kennedy/Jenks Consultants finalized the Lake Merced Water Quality Data Organization, Review and Analysis (Kennedy/Jenks Consultants 2010), which provided a review of the water quality data gathered from the lake between 1997 and 2008, evaluated the overall health markers of Lake Merced, and provided recommendations for the monitoring program. Based on the review of the data, seven water quality parameters were chosen to generally represent lake health. Brief descriptions of these parameters are as follows:

• <u>Dissolved oxygen (DO)</u>: Sufficient DO is required for fish habitat and healthy biological processes.

• <u>Secchi depth:</u> Secchi depth is a measurement of lake clarity but can be impacted by algae production and suspended solids.

• <u>Algae, total bioavailable nitrogen, and nitrogen to phosphorus ratio (N:P):</u> These parameters are the limiting macro-nutrients within the lake system and indicators of algal production, which impact long-term lake health. A limiting nutrient in a lake is a nutrient necessary for plant/algae growth which is available in smaller quantities than needed for said plant or algae population to increase their abundance. Once this limiting nutrient is exhausted, the population of algae stops growing. If more of the limiting nutrient is added, larger algal populations will result until their growth is again limited by nutrients or by other environmental factors.

• <u>Total coliform and Esherichia coli (E. coli)</u>: Total coliform and E. coli are indicators of pathogenic microorganisms and fecal contamination.

Results of the 2010 report indicated that based mainly on the parameters listed above, the health of Lake Merced had remained relatively constant between 1997 and 2008 with a slight improvement in lake clarity (Secchi depth). From 2001 to 2005, the Lake appeared to be phosphorous-limited or nitrogen and

phosphorous co-limited. In 2005, the lake shifted to being nitrogen-limited and has generally remained that way to date. Also, during the 1997-2008 sampling period, there were no significant changes in algal biomass levels. The lake continues to exhibit periodic fluctuations in algal biomass concentration due to algae blooms. Dissolved oxygen (DO) levels remained in general above the warm (5 mg/L) and cold (7 mg/L) water habitat criteria for the majority of the data set, however there remained episodes of DO concentrations lower than 5 mg/L during the summer within the deeper portions (hypolimnion) of the lake as a result of weak stratification which is typical of eutrophic lakes.

Additionally, while swimming is prohibited in Lake Merced, and various activities at the lake can result in direct body contact, the bacteria levels (e.g., total coliform and E. coli levels) typically have met State guidelines for the protection of public health in recreational waters (Kennedy/Jenks 2010).

4.0 LAKE MERCED WATER QUALITY MONITORING 2020

The SFPUC's Natural Resources Land Management's Limnology Division conducted quarterly water quality monitoring at Lake Merced in 2020, collecting samples in March, September and December (no samples were collected during the second quarter of 2020 due to impacts of the global pandemic). The historic statistical analyses for each parameter is summarized in Table 1. Figure 1 shows the field sampling locations while, Figures 2 through 8 show representative lake health parameters, with data results presented in Appendix A.

4.1 Statistical Analysis

Table 1 lists the parameters that were measured in Lake Merced from May 1997 to December 2020 and a statistical analysis for each parameter. The number of sampling events is listed for each constituent.

The average values from 1997 to 2009 and the average values from 1997 to 2020 were compared. Results indicate increases in the average values of algal biomass, ammonia-nitrogen (NH3-N), chlorophyll, conductivity, dissolved oxygen, hardness, lead (Pb), orthophosphate (PSO4), total dissolved solids (TDS), , total coliform, total organic carbon (TOC), total phosphorous and turbidity. There were decreases in the average values of E. coli, oxygen reduction potential (ORP) and plankton, however, low ORP values can result in internal nutrient cycling. There were relatively no changes in the average values of iron (Fe), pH, manganese (Mn), nitrate (NO3), Secchi depth and total phosphorus. A summary of findings is presented below as well as in Table 1 attached.

4.2 Dissolved Oxygen (DO)

Dissolved oxygen concentrations in Lake Merced are affected by temperature, algal photosynthetic activity, and diffusion from the atmosphere. DO is an indicator of stratification. Lake Merced is a weakly and intermittently stratified lake, but long-term hypolimnetic anoxia (extended periods of very low DO which typically lead to acute adverse effects on fish) has not been observed at the lake. Additionally, summer stratification is a common phenomenon in natural lakes and ponds. Lake Merced is on the State of California CWA Section 303 [d] list of impaired water bodies for DO and pH. Dissolved oxygen concentrations measured to date in Lake Merced at the surface, 5, 10 and 15ft below the surface are presented in Figure 2a. Figure 2b presents measured DO concentrations at the lake's surface, 5ft and 10ft below the surface as a function of water surface elevation. These show that dissolved oxygen measured at the surface and at 5- and 10-foot depths continue to exceed 5 mg/L, which is the water quality objective for warm water habitat established by the State Water Resources Control Board. For 2020 the lowest measured dissolved oxygen level of 1.4 mg/l was observed at 15 feet below surface in south Lake Merced during the fall event. This was lower that the 3.1mg/l measured during the fall 2019 event at the same depth. Measured DO concentrations at the surface, 5 and 10 ft respectively were also lower than observed concentrations during the 2019 monitoring event. This decrease is likely due in part to the decreased precipitation and increased temperatures resulting in lower lake levels, increased algal biomass and activity resulting in lower DO levels. Dissolved oxygen concentrations measured at surface, 5 and 10 ft intervals remained above the 5 mg/l threshold for 2020.

In 2018 SFPUC implemented an "Aeration Demonstration Project" in the southern portion of South Lake Merced. The demonstration project operated between July 2017 and September 2018 and consisted of twelve (12) 3/4 HP super-duty, Brookwood twin cylinder HighFlow air compressors installed to provide sufficient airflow to the diffusers for aeration of this portion of the lake. The air compressors were housed in three (3) rustproof aluminum outdoor cabinets for protection and to minimize noise. The system was operated continuously (24hrs/day) during the demonstration period. During operation of the demonstration project, DO levels measured at 15 feet below surface remained above 5mg/l and also remained above 7mg/l for the entire year. In 2020 the SFPUC restarted the aeration mixing system on a 6hr per day operational schedule to determine whether similar benefits to lake DO will be observed in the lower levels of the lake without continuous daily operation. During this period, Lake Merced continued to exhibit consistently low DO levels measured at the sediment water interface during summer months due to weak stratification. Following increases as part of the above demonstration project, DO levels while still averaging slightly above average, appear to be returning to historical ranges.

4.3 Secchi Depth

Secchi depth is a measure of lake clarity or lake health and decreases are usually due to increases in algae and/or mineral particles. Secchi depth data, is shown on Figure 3, For 2020 measured Secchi depth averaged 1.9 ft which was the same for 2019.

4.4 Algae and Nitrogen to Phosphorus Ratio (N:P)

Several studies have evaluated the "total nitrogen to total phosphorus ratios" in Lake Merced to determine if the lake is nitrogen-limited. These studies used slightly different approaches to calculating nitrogen to phosphorous ratios. However, in general, all of the studies found nitrogen to be the limiting nutrient in the lake.

Total phosphorous, total nitrogen and total algal biomass are plotted on Figure 4a. Algae blooms typically spike in the fall and the bioavailable nitrogen typically peaks in the winter or spring. The ratio of total inorganic nitrogen (NH3-N + NO3-N) to the bioavailable phosphorus (80% of total phosphorus) is plotted on Figure 4b. Since Lake Merced has high levels of organic nitrogen, it is more appropriate to analyze the bioavailable nitrogen to bioavailable phosphorus ratio. This is because algae can uptake the inorganic forms of nitrogen more easily. Bioavailable nitrogen is the sum of nitrate and ammonia, which is referred to as total inorganic nitrogen (TIN). Bioavailable phosphorus is approximately 80% of total phosphorus (Professor A. Horne, personal communication, November 9, 2010).

This report uses the ratio of bioavailable total nitrogen to bioavailable total phosphorous as described above to calculate nitrogen to phosphorous ratios. Based on this approach Lake Merced is nitrogen limited. However, due to very shallow Secchi depth readings, the lake algal biomass production is arguably light-limited physically, as well as the nutrient limitation.

For 2020, average TIN was 71.3 ug/l which is an increase compared to the 46.3 ug/l average concentration from 2019. Average bioavailable phosphorous was 110 ug/l. Algal biomass concentrations however decreased slightly during this monitoring period (Figure 4A and 4B).

A ratio of TIN to Total Inorganic Phosphorous between 10 and 15 indicates growth is balanced between nitrogen and phosphorus, while a ratio above 15 would indicate that phosphorus is the limiting nutrient. The average ratio of TIN to Total Inorganic Phosphorous (80% of Total P), for Lake Merced in 2020 is 0.65 (71.3 ug/l : 110 ug/l) and well below 10. Compared to an average TIN to TIP ratio of 0.36 in 2019. This indicates that the Lake continues to be strongly nitrogen limited and has been since 2000.

4.5 Total Coliform and Escherichia coli (E. coli)

Results indicate that average total coliform and E. coli concentrations decreased slightly compared to the previous monitoring periods however remain within historical ranges. As shown on Figure 5, coliform levels remain well below the California Department of Public Health threshold guidelines for recreational waters, which are 10,000 per 100 mL total coliform and 235 per 100 mL for E. coli (Table 1 and Figure 5).

4.6 Trophic Status Index (TSI)

Trophic Status Index (TSI) is a measurement that uses Secchi depth (a measure of the clarity of a water body) and chlorophyll-a concentrations to calculate a numeric value of a water body's algal productivity level. This report utilizes the formula TSI= 60-14.41ln (Secchi depth (m)) to calculate the Trophic Status Index. Changes in nutrient levels can cause increases in algal biomass, which can result in changes to lake clarity and Secchi depth readings. The index ranges from 0 to 100, where a value less than 40 is an unproductive lake, a value between 40 and 50 is moderately productive, and a value greater than 50 is highly productive. As demonstrated on Figure 6, over the past 15 years, TSI has historically ranged from about 50 to 75. During the 2020 monitoring period, average TSI remained virtually unchanged at about 68 compared to 2019 values. Between 2010 and 2020, TSI has remained well above 50 indicating that Lake Merced remains moderately to highly productive. Figure 6 shows Secchi depths, Chlorophyll a and TSI for Lake Merced.

4.7 pH

Lake Merced is currently on the State of California CWA Section 303 [d] list of impaired water bodies for pH exceeding 8.5. Lake Merced continues to display high alkalinity with a historical surface pH range of approximately 7.5 to 8.8. The average pH across all depths sampled over time was 8.1, within the range of Basin Plan WQOs of 6.5 to 8.5 and near the level of 8.3 which would result from equilibrium with carbon dioxide in the atmosphere. The higher pH levels in Lake Merced appear to be the result of photosynthesis from algal activity, combined with the elevated alkalinity due to it being a terminal lake, with no regularly occurring outflow since it lost connection to the ocean in 1895. Results of water quality monitoring at Lake Merced from 1997 to 2009 indicated statistically similar values for pH compared to current values. Average surface pH of the lake in 2020 was 8.6, while average pH for the entire lake depths sampled was 8.3 which remains well within historical ranges (Figure 7 and Table 1).

4.8 Lake Levels

Lake Merced water levels have fluctuated significantly since 1997 as shown on Figure 8. Since 2006, Lake levels had remained more consistently between 5 and 7 feet (City Datum). Lake Merced levels peaked in 2011 at an elevation of about 7 feet city datum. Lake levels decreased in 2012 and 2013 and continued to decrease through 2015 due to drought conditions and resulting below average precipitation. Lake levels rebounded in 2016 and 2017 due to increased precipitation. For 2020, lake levels decreased with water levels ranging from 4.61 to 6.36ft city datum compared to a range of 5.3 to 7.0ft city datum for 2019.

Of note for 2020 is increased pumping of groundwater by the surrounding golf courses (Olympic Club, San Francisco Golf Course and the Lake Merced Country Club), which had previously been meeting approximately 80% of their irrigation demand by using recycled water produced at the Daly City Treatment Plant. Due to operational issues, no recycled water was produced during the entire irrigation season, forcing the golf courses to revert to pumping

groundwater. SFPUC will continue to observe measured lake levels in order to determine what if any impact the additional pumping may have on the lake.

Lake Merced Aeration Mixing Project

The SFPUC completed implementation of the Demonstration Aeration Mixing Project in the southern portion of Lake Merced's South Lake. The project entailed installation of up to 1500 ft of pvc tubing, connected to three air compressors located at the Lake Merced Pump Station. Compressed air is pumped through these pipes which are connected to diffusers located along the bottom of the lake. The compressed air released at the bottom of the lake assists in mixing various lake layers, potentially minimizing periods of hypoxia/anoxia that fall below the warm and cold-water quality objectives at lower depths in the lake during the warm summer months. This was expected to result in higher dissolved oxygen levels within the lower layers of the lake and general lake water quality improvement. The system was installed and activated in July 2017 and operated continuously through September 2018. The demonstration project was originally scheduled to operate through February 2018. However due to malfunction of sondes deployed in the deeper portion of the lake, the demonstration project was extended through September 2018.

The Lake Merced aeration demonstration appeared to be successful in raising DO levels in the water column. Overall, measured DO levels during aeration were above the 5 mg/L target 99% of the time during the aeration demonstration compared to 85% of the time prior to the demonstration project. With or without aeration, Lake Merced is relatively well-mixed in the winter months (December to March) and DO levels below 5 mg/L were rarely observed during this time. During aeration, near-bottom DO levels during non-winter months were observed to be above the target DO level 97% of the time as opposed to baseline data where DO levels were above 5 mg/L only 40% of the time.

During aeration, pH values stabilized between the surface and near-bottom as mixing of the water column resulted in a more consistent pH. The pH in Lake Merced is on the high side of the target range of 6.5 to 8.5 with approximately half of collected data during aeration being within this range and approximately half above 8.5. During aeration, the maximum pH measured was 8.9.

The SFPUC is evaluating whether improvement in DO concentrations justifies implementation of a larger scale aeration mixing project.

Additional Water Quality Analysis - Harmful Algal Blooms

Harmful Algal Blooms (HABs) generally refer to large growths of cyanobacteria in lake water environments which typically result in degradation of the water aesthetics. Harmful algal blooms (HABs) are caused by the rapid growth of algae or cyanobacteria (also called blue-green algae) in a water body that can cause harm to people, animals, or the local ecology. HAB's have become an increasing issue in urban lakes and reservoirs across California including Lake Merced. These algal blooms may typically occur as a result of sunlight, high temperatures and availability of nutrients that support their growth. In addition to potential aesthetic degradation of a water body, as cyanobacteria multiply some can produce toxic chemicals called cyanotoxins which can be harmful to animal and human health at elevated concentrations. The California Water Quality Monitoring Council (a joint effort from the California Environmental Protection Agency (CalEPA) and the California Natural Resources Agency) has established various voluntary cyanotoxin screening thresholds for publicly accessible waterbodies to be protective of public health. The SFPUC conducts monthly HAB by-product analysis as part of our lake water quality monitoring program. Results are compared to the Cal EPA HAB voluntary screening levels and appropriate "Notifications" are posted around the lake if sampling results indicate algal toxin concentrations exceed these thresholds. These notifications provide guidance for recreational use based on detected total microcystin concentrations.

For 2020 analysis detected concentrations ranging from 1 ug/l (May 2020) in East Lake to 24 ug/l (December 2020) in North Lake. Analytical testing results are summarized in Table (2). Abnormally dry conditions in 2020 resulted in lower lake levels, and increased temperature within the lake, and likely contributed to increase in algal toxins. Detected concentrations appeared to have generally increased as the dry weather of 2020 persisted. SFPUC in coordination and cooperation with the San Francisco Recreation and Parks Department (SFRPD) maintain notification signage around various access points of Lake Merced in accordance with the State voluntary notification guidelines. SFPUC will also maintain updated voluntary notifications on our Lake Merced website based on these sampling results.

5.0 CONCLUSIONS

Overall, Lake Merced water quality has remained relatively constant from 1997 through 2020. Precipitation decreased in 2020 compared to 2019 resulting in decreases in lake levels for this period. For 2020 Secchi depth remained the same at an average of 1.9ft. Dissolved oxygen (DO) levels across the lake are affected by periods of weak stratification, however DO levels in the upper 5 feet of the lake continue to remain well above the cold and warm water quality objectives of 7 and 5 mg/l respectively.

Following conclusion of the Aeration Mixing Demonstration, there has been a observed decrease in DO levels in the lower portion of South Lake. DO levels in this portion of the lake appear to be reverting back to historical averages compared to the 2018 periods during which the system was operational. Based on these observations, SFPUC restarted the aeration system running on a 6hr per day schedule and will evaluate additional operation for the upcoming year. Results of subsequent monitoring will assist SFPUC staff further fine tune operation while maintaining higher DO concentrations in the hypolimnion.

The Lake continues to be strongly nitrogen-limited, coliform levels remained below the regulatory guidelines and the TSI continued to indicate a moderately to highly productive lake. Average pH levels remained below the fresh water criteria and did not exceed 9.0 during this period. For 2020, sampling detected total microcystin concentrations resulting in various voluntary notifications around Lake Merced. Although HABs and resulting total microcystins can be caused by various conditions, abnormally dry conditions of 2020 which resulted in increased temperatures, and decreases in lake levels appear correlated with higher detected concentrations. SFPUC in cooperation with SFRPD will continue to post physical notifications around the lake and at the SFPUC's *Lake Merced website* based on available sampling data.

The Lake Merced monitoring program will continue to be implemented and the Lake Merced Water Quality Summary Technical Memo will be updated annually.

Attachments

Table 1 – Water Quality Summary Data South Lake Merced

Table 2 - Total Microcystin and Congeners

Figures 1-8

Appendix A – Analytical Results (SFPUC Millbrae Lab and SFPUC NRLMD Limnology Lab)

References

EDAW, 2004, Initiative to Raise and Maintain Lake Level and Improve Water Quality, Task 3 Technical Memorandum, FINAL, September 2004.

Kennedy/Jenks Consultants, 2010, Lake Merced Water Quality Data Organization, Review and Analysis. Prepared for San Francisco Public Utilities Commission, January 2010.

RMC, 2007, John Muir Wetland Conceptual Design Update. Prepared for SFPUC Water Resources Planning, September 17, 2007.

Kennedy Jenks Consultants, 2019, Lake Merced Aeration Demonstration Results. Prepared for San Francisco Public Utilities Commission, June 2019 Tables

Table 1Water Quality Summary Data - Lake Merced Water Quality MonitoringSouth Lake 0-5 Feet

Number of Sampling Dates	Parameter	Units	Average 1997- 2009		Change	Average 1997- 2020	1997-2020 Median	1997-2020 Minimum	1997-2020 Maximum
115	Algal Biomass	ug/L	1879	Î	191	2070	1838	442	6705
193	Ammonia (NH3-N)	mg/L	0.05		0.02	0.07	0.05	ND	0.50
127	Chlorophyll	ug/L	27.0	T	4	31.0	27.3	5	100
201	Conductivity	mmho/cm	580	T	106	686	655	431	1244
197	Dissolved oxygen (DO)	mg/L	7.1	T	2	9.1	9.1	5.0	12.7
152	E.Coli	MPN/100 mL	36.9	ł	-10	26.6	18.0	0.50	100
187	Hardness	mg/L	180	T	28	208	205	145	280
77	Iron (Fe)	mg/L	0.03	\checkmark	0.00	0.024	0.01	ND	0.14
48	Lead (Pb)*	ug/L	0.44		0.10	0.54	0.50	ND	2.0
86	Manganese (Mn)	mg/L	0.06		0.0	0.07	0.04	ND	1.7
191	Nitrate (NO3 ⁻)	mg/L	0.03	♦	-0.01	0.02	0.01	ND	0.62
195	Orthophosphate	mg/L	0.06	T	0.03	0.09	0.08	ND	0.26
197	Oxidation-reduction potential (ORP)	mV	319.0	1	-20	299.0	306.0	-37.6	543
201	pH	-	8.1	T	0.2	8.3	8.3	7.5	8.8
94	Plankton	NU/mL	822.0	Ţ	-205	616.5	576.9	6.48	2511
102	Secchi depth	Feet	1.8	T	0	1.8	1.8	0.50	3.0
201	Temperature	°C	15.8	T	0.4	16.2	16.4	9.80	22.6
75	Total Coliform	MPN/100 mL	925.0	T	103	1027.8	914.0	109.0	2420
195	Total dissolved solids (TDS)	mg/L	372	T	66	438.5	420.0	276.0	809
152	Total Kjeldahl nitrogren (TKN)	mg/L	3.76	\checkmark	-0.1	3.71	2.71	ND	28.2
80	Total organic carbon (TOC)	mg/L	6.7	T	0.8	7.53	7.30	ND	15.18
186	Total phosphorus	mg/L	0.14	T	0.03	0.17	0.16	ND	0.48
189	Turbidity	NTU	13.2	T	0.4	13.58	12.0	2.20	34

Note:

ND* Not detected above laboratory detection limits

Samples summarized above were collected form the surface and 5ft below the surface at the South Lake Pump Station sampling location.

Table 2 Summary of Analytical Results - Surface Water Total Microcystin and Congeners Lake Merced San Francisco California

				Analytes										
			Total Microcystins				Cor	ngeners (Algal Toxins	;)					
Sample Location and Designation	Units	Date Sampled	Total Microcystins	Anatoxin-a	Cylindrospermopsin	Microcystin-LA	Microcystin-LF	Microcystin-LR	Microcystin-LY	Microcystin-RR	Microcystin-YR	Nodularin		
Lake Merced East (E)	ug/l													
		5/12/2020 9/29/2020 12/8/2020 12/17/2020	1 9.1 11 19	ND ND ND	ND ND ND 	ND ND ND	ND ND ND 	ND ND ND 	0.89 0.11 ND 	ND ND ND 	ND ND ND 	ND ND ND 		
Lake Merced North (N)	ug/l													
		05/12/20 09/29/20 12/08/20 12/09/20 12/17/20	1.3 23 9.8 24	ND ND 	ND ND 	ND ND 	ND ND 	ND ND 	ND 0.12 ND 	ND ND 	ND 0.22 ND 	ND ND ND 		
Lake Merced South (R)	ug/l	05/12/20 09/29/20 12/08/20 12/17/20	2.1 7.2 7.5	ND ND ND	ND ND ND	ND ND ND	ND ND ND 	ND ND ND 	ND ND ND	ND ND ND	ND ND ND 	ND ND ND 		
Lake Merced South (S)	ug/l	05/12/20 09/29/20 12/08/20 12/17/20	5.4 8.6 6.8 	ND ND 	ND ND ND	ND ND ND	ND ND ND 	ND ND ND	ND ND ND 	ND ND ND 	ND ND ND 	ND ND ND 		
Trigger Norification Levels ¹ No Advisory Caution Warning Danger	ug/l ug/l ug/l ug/l		<0.8 0.8 6 20	ND Detect 20 90	<1 1 4 17	NE NE NE NE	NE NE NE NE	NE NE NE NE	NE NE NE NE	NE NE NE NE	NE NE NE NE	NE NE NE NE		

Notes:

¹ Trigger Notification Levels established by the California Cyanobacteria and Harmful Algal Bloom Network

² Average result from 3 sampling locations along the shoreline.

ug/l = micrograms per liter

ND = Not Detected

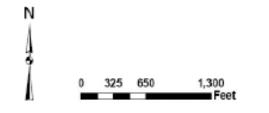
NE = Not Establsihed

-- = Not Analyzed

Sample locatoins shown on Figure 2

Figures

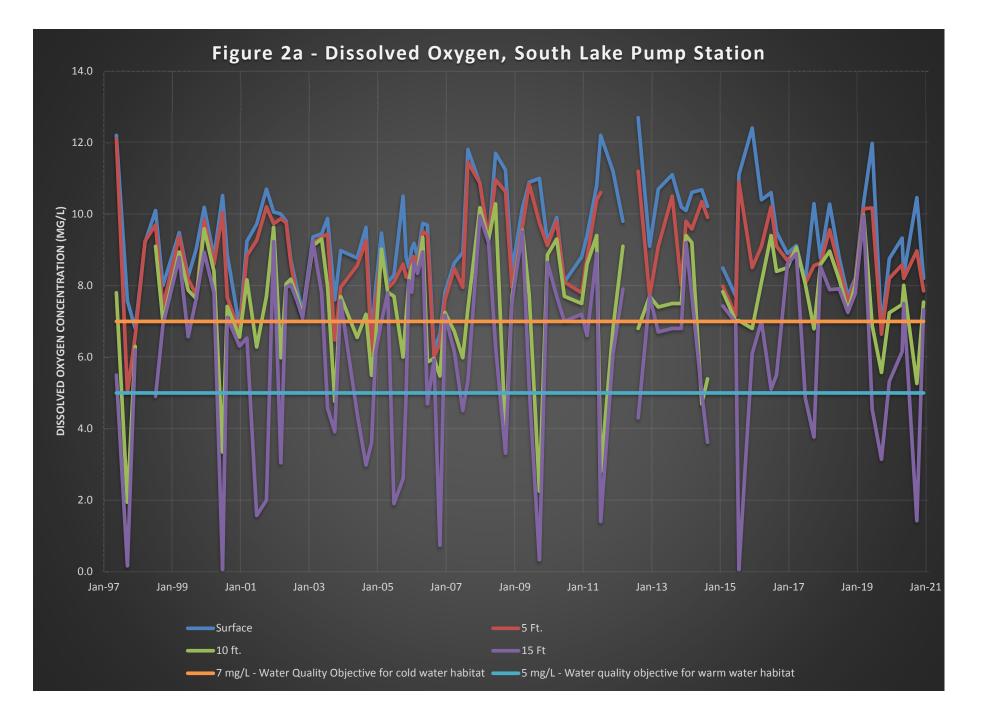


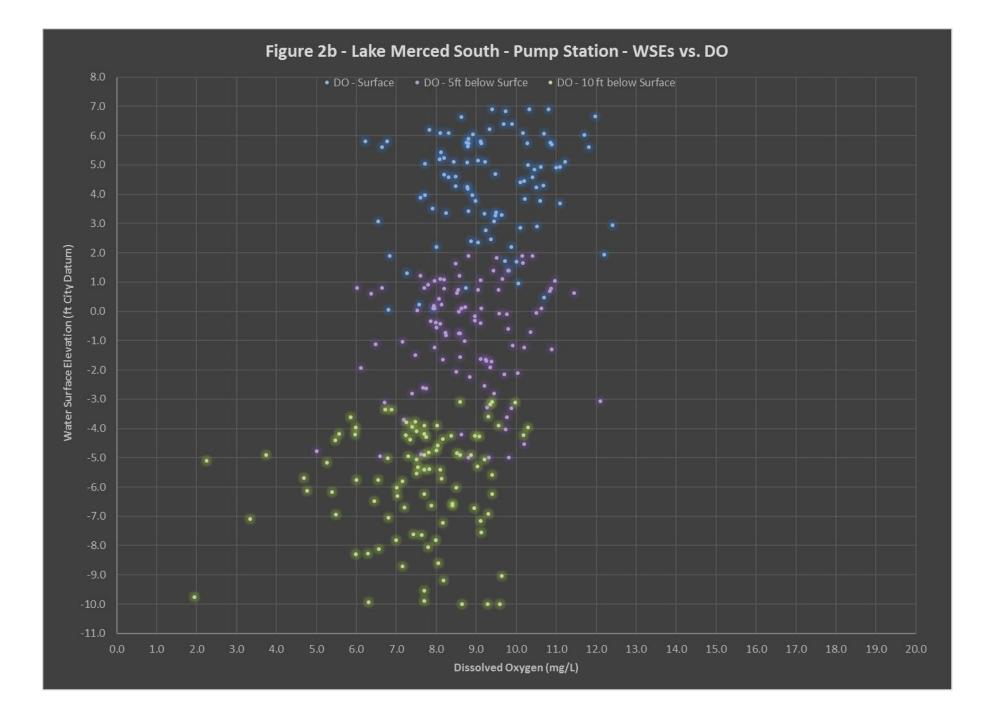


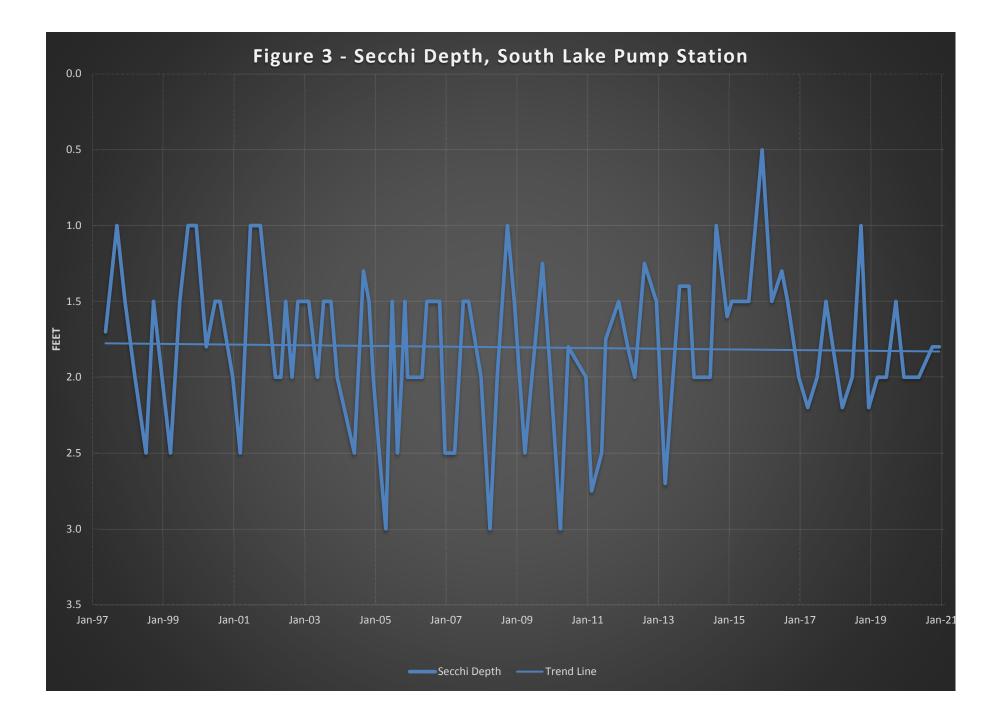
San Francisco Public Utilities Commission Lake Merced Water Quality Summary Report March 2022

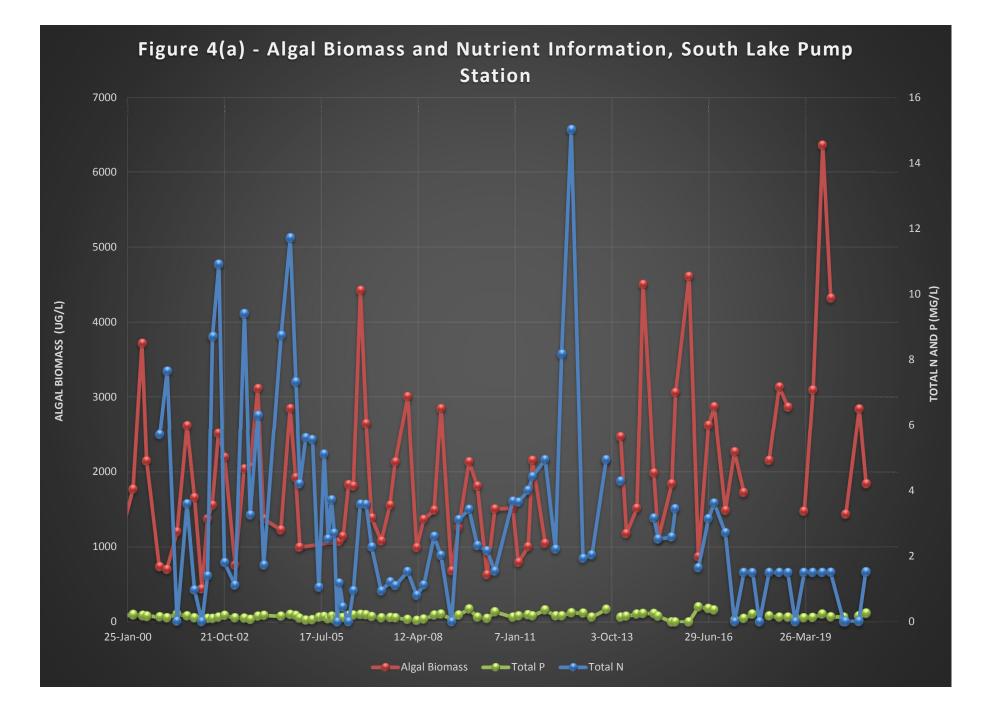
Figure 1 – Vicinity Map

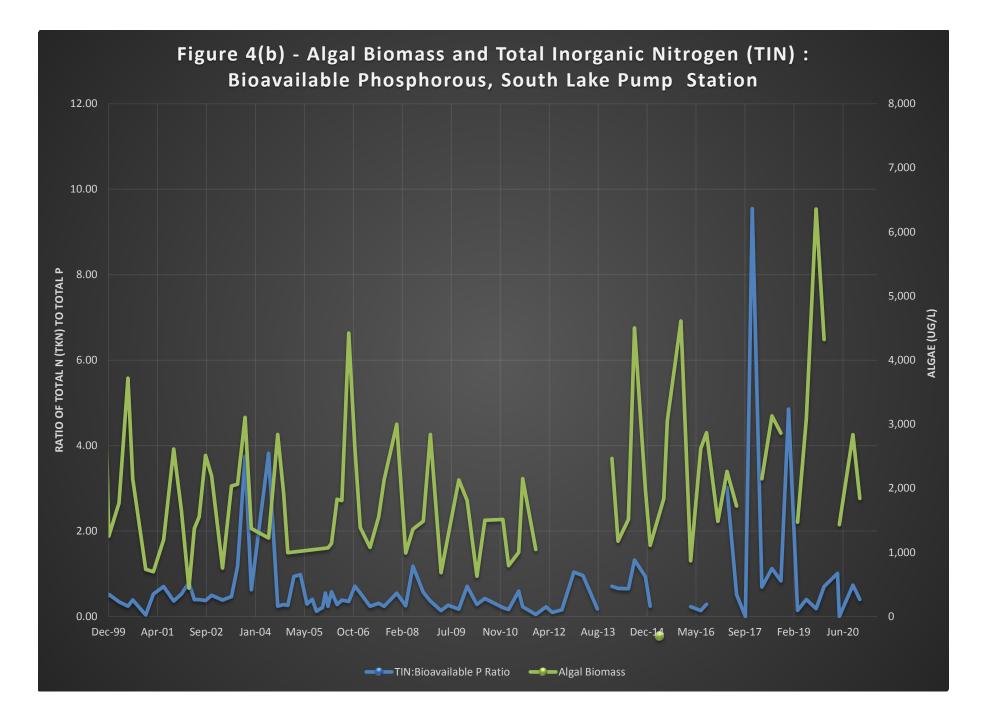


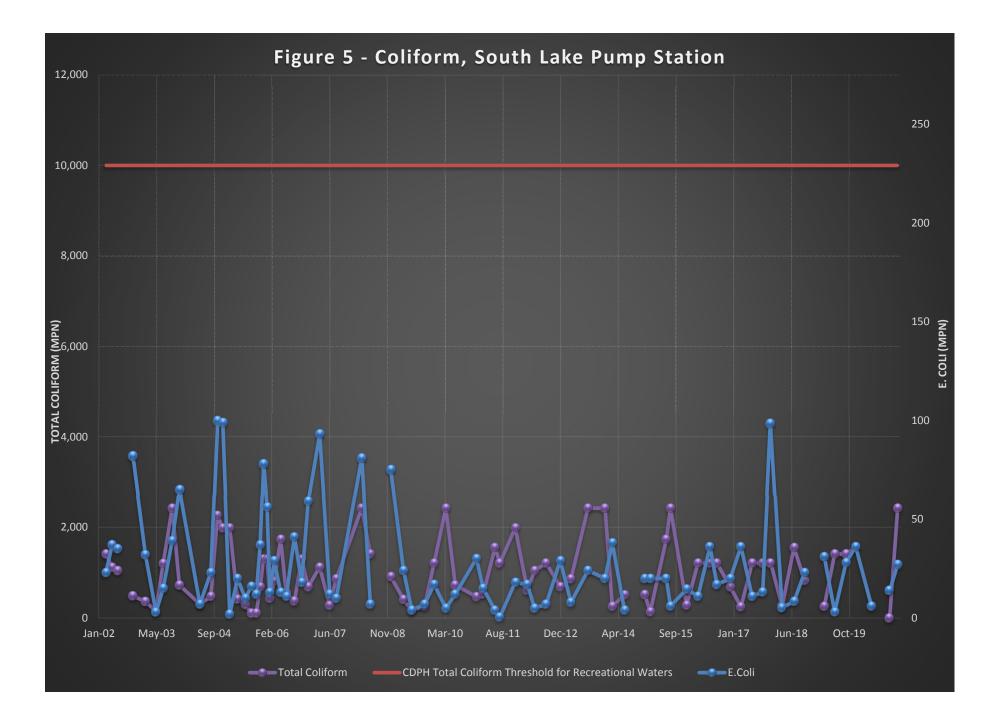


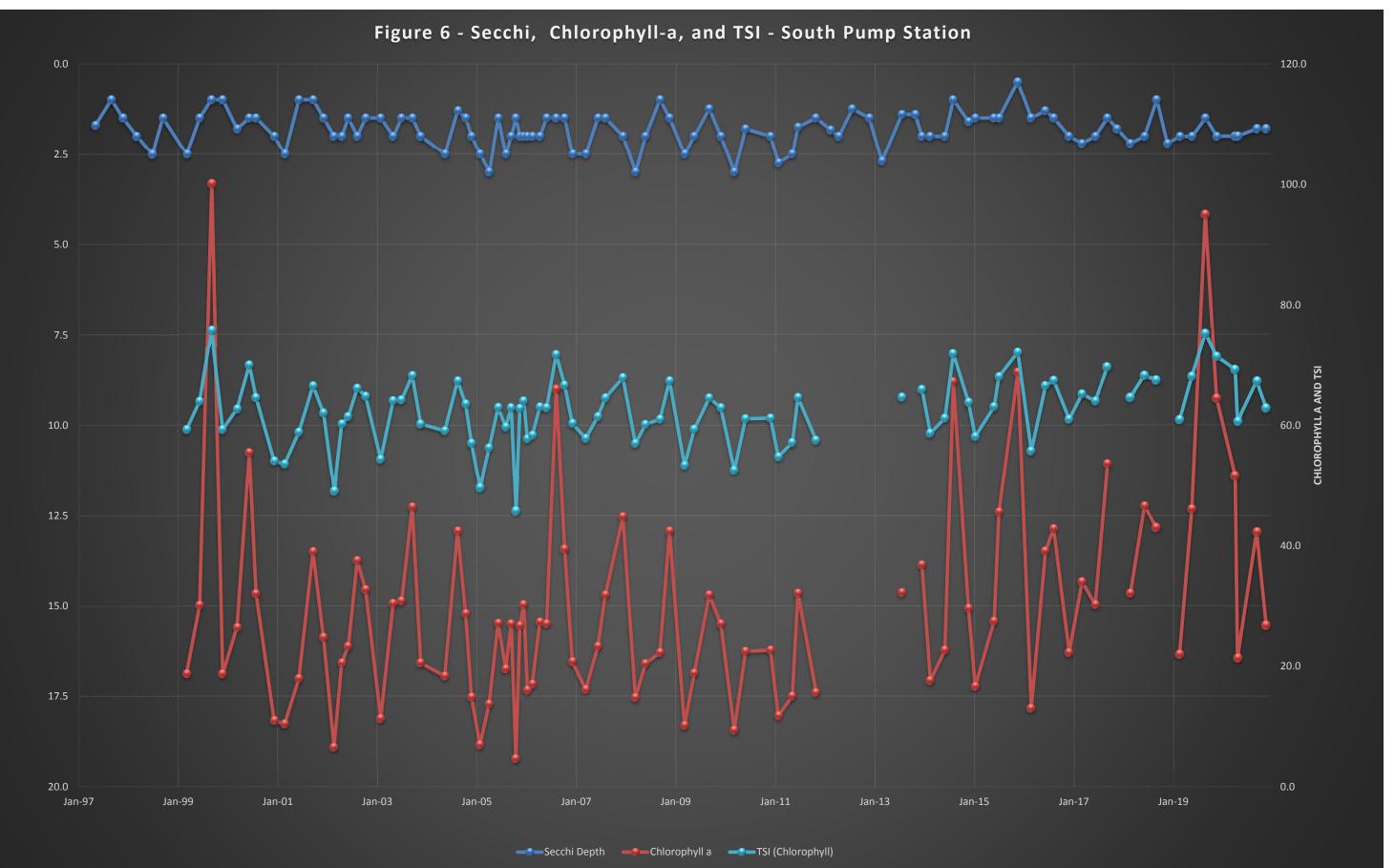












SECCHI DEPTH (FT)

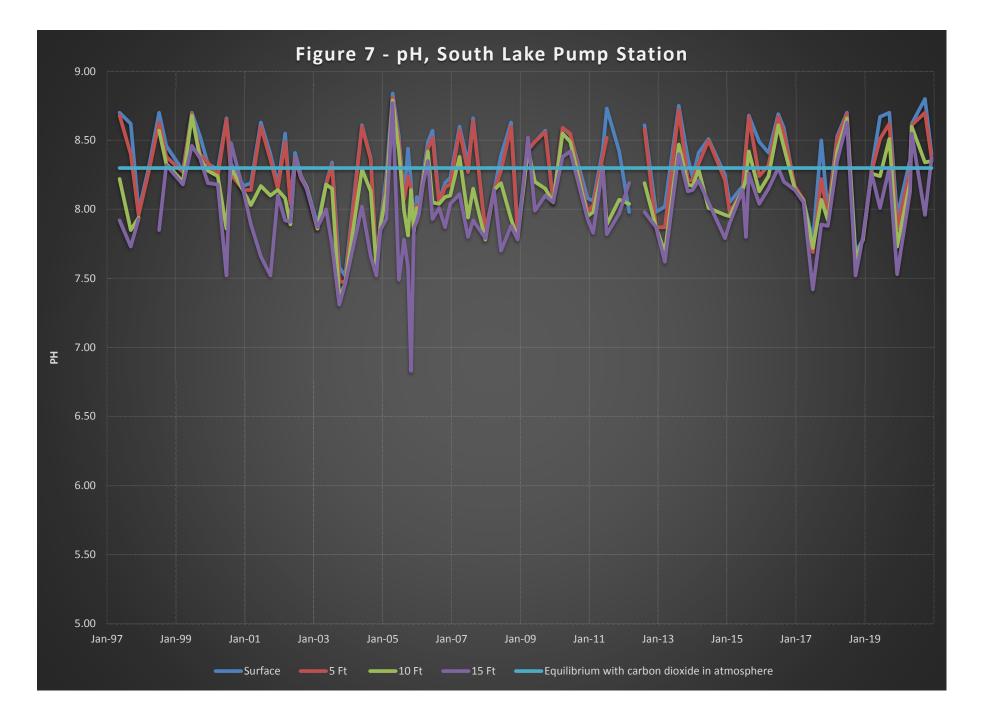
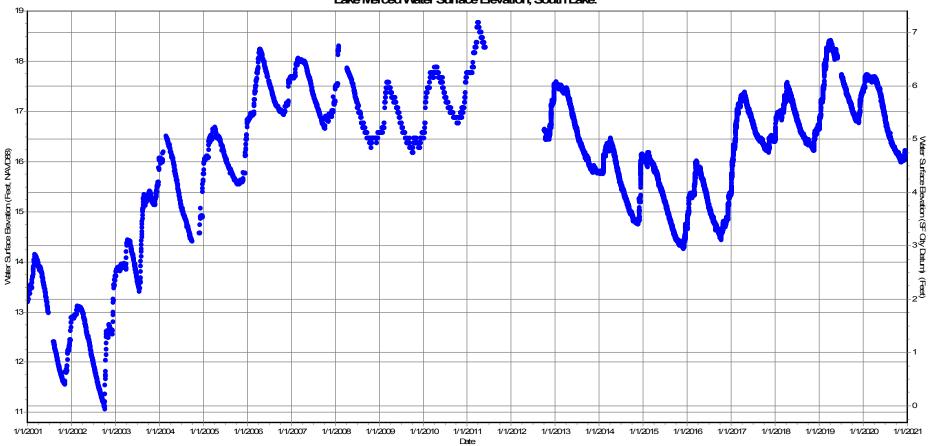


Figure 8 - Water Surface Elevations

Level 1 is equal to Surface Water Level 2 is equal to North Westside Basin Level 3 is in list "Lake Merced","Lake Merced (Wet Well)" Date is between 1/1/2001 and 1/1/2021



Lake Merced Water Surface Elevation, South Lake.

Appendix



Land and Natural Resources - Limnology

Reservoir: Lake Merced - Police Range Date: April 29, 2020



Limnological Profile

	Linnological Fione																
Depth ft.	-	pH pH units	$\underset{\mu\text{S/cm}}{\text{Cond}}$	TDS mg/L	DO mg/L	ORP mV	TKN mg/L	Hard mg/L	NO ₃ -N mg/L	NH ₃ -N mg/L	PO ₄ -P mg/L	Tot P mg/L	Mn mg/L	Fe mg/L	Pb mg/L	TOC mg/L	Turb NTU
0	17.28	8.45	881	573	7.9	-45			< 0.01	0.01	0.12	0.19					11.1
5	16.91	8.37	882	573	6.9	-56			< 0.01	0.12	0.10	0.10					9.3
10	16.73	8.30	883	574	6.0	-69			< 0.01	0.15	0.13						10.2
15	15.88	8.18	885	575	3.3	-108			< 0.01	0.16	0.15						10.3
20	15.54	8.19	886	576	3.6	-122											
21.1	15.43	8.32	878	571	9.4	-89			<0.01	0.14	0.11	0.54					9.3

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0		
5		

Bacteriological Data (MPN)								
Total Coliform								
E. Coli	5.0							

Secchi Disc (ft): 2 Air Temp (°C): 13 Weather: Overcast, Westerly wi Wind: West 5-10mph



				00/00.	total population	/	
Phytoplankter	1 2 3		3	4	Total	Natural Unit/m ³	Natural Unit/mL
Planktothrix	1242	1368	1164	1122	4896	153,000,000	153
Limnothrix	144	156	144	150	594	19,000,000	19
					Total	172,000,000	172



Sample Vol (ml): 210 Tow Vol (m³): 0.048

Summary

	-	

Reservoir: Lake Merced - Pump Station Date: April 29, 2020

Limnologist: RmJ, E. Wong

Limnologist: RmJ, E. Wong

	Limnological Profile																
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	18.16	8.36	881	573	9.33	-30.1			<0.01	0.10	0.13	0.24					9.3
5	17.98	8.28	881	573	8.58	-37.6			< 0.01	0.04	0.11						9.7
10	17.69	8.20	881	573	7.47	-47.9			< 0.01	0.03	0.09	0.53					8.6
15	17.34	8.13	883	574	6.15	-59.6			< 0.01	0.03							9.4
20	15.74	7.96	885	575	2.68	-86.8											
23	15.21	8.10	877	570	10.64	-98.6			<0.01	0.01	0.12	0.52					6.7

Depth	Chlorophyll-a	Algal Biomass
ft.	μg/L	μg/L
0		
5		

Bacteriological Data (MPN)							
Total Coliform							
E. Coli	6.0						

Phytoplankton Count (>98%	of total population)
---------------------------	----------------------

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL
Planktothrix	1570	1460	1505	1470	6005	188,000,000	188
Limnothrix	160 150		170	150 630		20,000,000	20
					Total	208,000,000	208

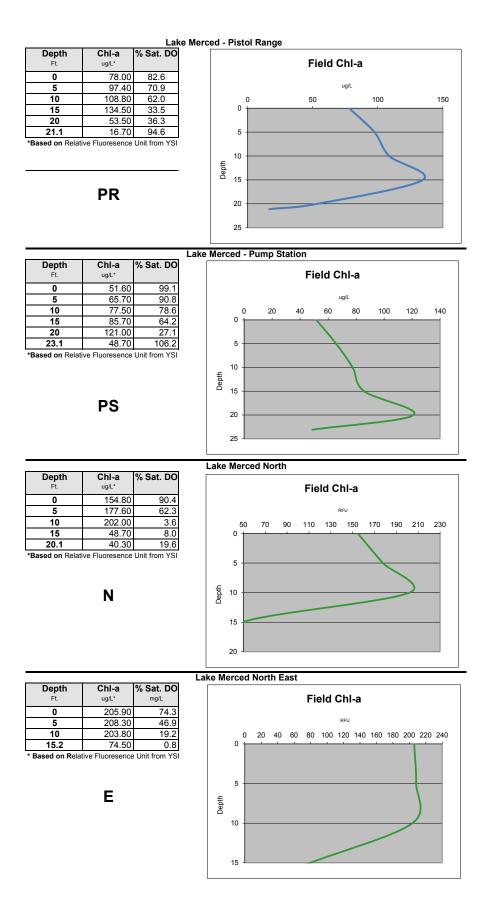


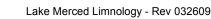
Sample Vol (ml): 185 Tow Vol (m³): 0.048

Secchi Disc (ft): 2.0 Air Temp (°C): 13.0

Weather: Overcast, Wes Wind: West 5-10mpl

Summary





Land and Natural Resources - Limnology

Reservoir: Lake Merced - North Date: April 29, 2020

Limnologist:	RmJ, E. Wong
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Limnological Profile

Dept	h Temp		Cond		DO	ORP	TKN				PO ₄ -P	Tot P	Mn	Fe	Pb	тос	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	18.33	8.69	833	542	8.48	-82.2			< 0.01	0.05	0.28	0.33					20.6
5	18.30	8.53	833	542	5.85	-120			< 0.01	0.13	0.25	0.34					20.4
10	16.66	8.09	840	546	0.35	-224			< 0.01	0.24	0.28						20.0
15	15.01	8.03	844	548	0.80	-257			< 0.01	0.11	0.27	0.32					8.1
18.1	I 14.46	8.09	850	553	1.99	-252			< 0.01	0.27	0.38	0.43					4.9

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0		
5		

ata (MPN)
>2420
12.0

Air Temp (°C):	14
Weather:	Overcast, We:
Wind:	West 5-10mpl

Secchi Disc (ft): 1.5



Sample Vol (ml): 238 Tow Vol (m³): 0.048

Phytoplankton Count (>98% of total population)

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL
Planktothrix	1904	1932	1788	1866	7490	234,000,000	234
Limnothrix	144	138	90	114	486	15,000,000	15
					Total	249,000,000	249

Summary

Reservoir: Lake Merced - North East Date: April 29, 2020

Limnologist: RmJ, E. Wong

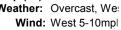
	Limnological Profile																
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	18.11	8.21	822	534	7.00	-67.9			<0.01	0.15	0.29	0.38					16.9
5	18.01	8.13	822	534	4.43	-94.7			< 0.01	0.09	0.31	0.36					17.9
10	17.36	8.00	826	537	1.84	-131.4			< 0.01	0.12	0.27	0.39					17.3
15.2	16.08	7.79	832	541	0.08	-227.0			< 0.01	< 0.01	0.35	0.39					12.6

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0		
5		

Bacteriological	Data (MPN)
Total Coliform	2420.0
E. Coli	16.0



Secchi Disc (ft): 1.8 Air Temp (°C): 14 Weather: Overcast, We



Phytoplankton Count (>98% of total population)
--

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL	Sample Vol (ml): 221
Planktothrix	1904	2070	2106	2052	8132	254,000,000	254	Tow Vol (m ³): 0.032
Limnothrix	126	114	90	72	402	13,000,000	13	
					5	Summary		







Land and Natural Resources - Limnology



Lake Merced Annual Limnology Reservoir: Lake Merced - South Lake (Pistol Range) Date: December 8, 2020 Limnologist: RMJ; EW

Annual Profile

Depth		Hard	CI	FI	MTBE	TDS
ft.	mg/L	mg/L	mg/L	mg/L	μg/mL	mg/L
0	268	264	100	0.18	<0.5	476
5	280	268	100			489
10.1	280	268	102			472
15.1	260	268	102			506
18.3	272	268	102			512

Reservoir: Lake Merced -South Lake (Pump Station)
Date: December 8, 2020
Limnologist: RMJ; EW

Annual Pr	ofile
-----------	-------

Depth ft.	Alk mg/L	Hard mg/L	CI mg/L	FI mg/L	MTBE μg/mL	TDS mg/L									
0	276	264	110	0.18	<0.5	478									
5	264	268	110			515									
10.1	260	276	110			500									
15.2	264	268	110			488									
20															
20.8	276	264	110			535									

Reservoir: Lake Merced - North Date: December 8, 2020

Limnologist: RMJ; EW

Depth ft.	Alk mg/L	Hard mg/L	CI mg/L	FI mg/L	MTBE μg/mL	TDS mg/L
0	260	272	94	0.11	<0.5	444
5	296	280	92			421
10.3	304	292	94			416
15.2	312	288	93			451
17.0	300	284	93			499

Reservoir: Lake Merced - North East Date: December 8, 2020

Limnologist: RMJ; EW

ſ	Depth	Alk	Hard	CI	FI	MTBE	TDS
I	ft.	mg/L	mg/L	mg/L	mg/L	μg/mL	mg/L
ſ	0	292	280	86	0.11	<0.5	441
	5	284	276	92			418
I	10	276	276	89			426
l	14	272	276	87			462



Land and Natural Resources - Limnology



Reservoir: Lake Merced - North Date: December 8, 2020

Limnologist: RmJ, EW

Limnological Profile

Depth ft.	°C	pH pH units	Sp. Cond µS/cm	TDS mg/L	DO mg/L	ORP mV	TKN mg/L	Hard mg/L	NO ₃ -N mg/L	NH ₃ -N mg/L	PO ₄ -P mg/L	Tot P mg/L	Mn mg/L	Fe mg/L	Pb mg/L	TOC mg/L	Turb NTU
0.2	12.82	8.41	857	557	8.02	164.5	<3.00	272	<0.01	0.20	0.33	0.50	0.16	0.043	<0.001		27.0
5.0	12.40	8.37	859	558	7.29	165	<3.00	280	<0.01	0.23	0.23	0.42					29.0
10.3	12.31	8.36	859	559	7.12	164	<3.00	292	<0.01	0.25	0.24	0.41					28.0
15.2	12.24	8.33	860	559	6.52	162	<3.00	288	<0.01	0.27	0.25	0.45					25.0
17.0	12.25	8.35	861	559	6.39	161	4.43	284	<0.01	0.30	0.27	0.42	0.23	0.090	<0.001		28.0

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	47.0	3149
5	57.0	3819

Bacteriological D	ata (MPN)
Total Coliform	201
E. Coli	8.0

Secchi Disc (ft):	1.0
Air Temp (°C):	17
Weather:	Sunny
Wind:	N. 1-3mpł



733906 Sample Vol (ml):

Sample Vol (ml): 204 Tow Vol (m³): 0.048

Phytoplankton Count (>98% of total population)

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL
Planktothrix	1080	1170	1155	1200	4605	256,973,391	256.9733906
-	2	2	-		Total	256,973,391	256.9733906

Summary

North Lake appears to be fully mixed - A temperature differential of 0.5 degrees Celcius separates surface from bottom waters while dissolved oxygen is above 6 mg/l throughout. Plankton community appears to be a mono-culture with Planktothryx at 257 million NU/m3 which is similar to that observed in September (236 million).

Reservoir: Lake Merced - North East Date: December 8, 2020

Limnologist: RmJ, EW

_	Limnological Profile																
Depth	Temp	рΗ	Sp. Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO₄-P	Tot P	Mn	Fe	Pb	тос	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0.3	11.86	8.26	813	529	8.15	131.5	3.14	280	<0.01	0.37	0.21	0.36	0.16	0.084	< 0.001		27.0
5.0	11.45	8.21	814	529	7.14	131.3	<3.00	276	<0.01	0.30	0.20	0.36					27.0
10.0	11.37	8.13	814	529	4.93	133.2	3.14	276	<0.01	0.52	0.19	0.38					27.0
14.0	11.57	7.96	798	519	1.45	141.1	<3.00	276	<0.01	0.25	0.19	0.37	0.17	0.095	< 0.001		27.0

Depth	Chlorophyll-a	Alga	ıl]	Bacteriol	ogical Data (M	PN)	Secchi Disc (ft): 1.3					
		Bioma	iss		Total Col	iform 8	316.0		Air Temp (°C): 17				
ft.	μg/L	μg/L	-		E. Coli	Weather: Sunny							
0	77.1	516	6]					Wind: N. 1-3 mph				
5	59.6	399	3										
Phy	Phyt toplankter	oplankto 1	n Cou	nt (>98 3	3% of tot 4	al population Total) Natural Unit/m ³	Natural Unit/mL	Sample Vol (ml): 250				
Plankte	othrix	3590	3270	3410	3270	13540	755,574,313	755.5743125	Tow Vol (m ³): 0.032				
					<u> </u>	Total	755,574,313	755.5743125					
					_	-	ummarv						

East lake is mostly mixed - A temperature differential of just 0.3 degrees Celcius separates surface from bottom waters and dissolved oxygen in the upper ten feet is betwwen 8-5mg/l although the bottom is still hypoxic with dissolved oxygen below 2mg/l. Plankton community appears to be a mono-culture with Planktothryx at 756 million NU/m3 which is an increase over that observed in September (611 million).





Land and Natural Resources - Limnology

Reservoir: Lake Merced - Police Range Date: December 8, 2020



	Limnological Profile																
Depth	oth Temp pH Sp. Cond TDS DO ORP TKN Hard NO₃-N NH₃-N PO₄-P Tot P Mn Fe Pb TOC Turb											Turb					
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0.2	12.5	8.3	879	571	8.1	152	<3.00	264	0.04	0.07	0.13	0.18	0.044	0.030	<0.001		14.0
4.9	12.4	8.3	878	571	7.9	151	<3.00	268	0.01	0.12	0.13	0.17					14.0
10.1	12.3	8.3	878	571	7.0	150	<3.00	268	0.01	0.11	0.14	0.20					14.0
15.1	12.3	8.2	879	571	6.0	150	<3.00	268	0.01	0.26	0.14	0.18					14.0
18.3	12.4	8.2	863	561	2.8	157	<3.00	268	0.01	0.09	0.10	0.21	0.052	0.052	<0.001		14.0

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	16.5	1105
5	19.5	1306

2370

Bacteriological Data (MPN)							
Total Coliform 2420							
E. Coli	11.0						

Total

9640

Total

Secchi Disc (ft): 2 Air Temp (°C): 16 Weather: Sunny Wind: N. 1-3 mph



Tow Vol (m³): 0.048

Summary

Phytoplankter

Planktothrix

Lake appears to be fully mixed - A temperature differential of just 0.1 degrees Celcius separates surface from bottom waters although dissolved oxygen at the bottom is still low. Plankton community appears to be a mono-culture with Planktothryx at 538 million NU/m3 which is a considerable increase over that observed in September (392 million).

Natural Unit/m³

537,942,125

537,942,125

Natural Unit/mL

537.942125

537.942125

Reservoir: Lake Merced - Pump Station Date: December 8, 2020

Phytoplankton Count (>98% of total population)

3

2850

4

2770

2

2880

2720

Phytoplankton Count (>98% of total population)

2520

4

2490

3

2260

Limnologist: RmJ, EW

Limnologist: RmJ, EW

	Limnological Profile																
Depth	Temp	рΗ	Sp. Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	тос	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0.2	12.4	8.4	878	571	8.20	165	<3.00	264	0.01	0.07	0.16	0.25	0.040	0.024	<0.001		15.0
5.1	12.3	8.4	878	571	7.85	163	<3.00	268	0.01	0.06	0.12	0.18					15.0
10.1	12.2	8.4	879	571	7.54	162	<3.00	276	0.01	0.02	0.12	0.19					14.0
15.2	12.2	8.4	879	571	7.32	159	<3.00	268	0.01	0.16	0.10	0.17					15.0
20.8	12.3	8.4	870	565	5.68	156	<3.00	264	0.01	0.03	0.13	0.20	0.040	0.027	<0.001		15.0

Depth	Chlorophyll-a	Algal
-		Biomass
ft.	μg/L	μg/L
0	27.5	1842
5	28.2	1889

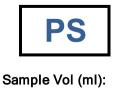
Bacteriological Data (MPN)							
Total Coliform	2420						
E. Coli	27.0						

acteriological Data (WPN)							
otal Coliform	2420						
. Coli	27.0						

Total

11220

Total



222 Tow Vol (m³): 0.048

Secchi Disc (ft): 1.8 **Air Temp (°C):** 16.0 Weather: Sunny

Wind: N. 1-3mph

Lake Merced Limnology - Rev 032609

Summary

Phytoplankter

Planktothrix

Lake appears to be fully mixed - A temperature differential of just 0.1 degrees Celcius separates surface from bottom waters with dissolved oxygen greater than 5mg/l throughout. Plankton community appears to be a mono-culture with Planktothryx at 626 million NU/m3 which is a considerable increase over that observed in September (350 million).

Natural Unit/m³

626,111,063

626,111,063

Sample Vol (ml): 185

Natural Unit/mL

626.111063

626.111063

KorEXO MEASUREMENT DATA FILE EXPORT		1	6	67	4	5	3	2
FILE CREATED: 12/10/2020 22:35								
		ODO		SpCon		TDO // //		
Date (MM/DD/YYYY) Time (HH:mm:ss) Site Name	Chlorophyll RFU Chlorophyll ug/		mg/L	ORP mV µS/cm	RFU ug/L	TDS mg/L pH	pH mV	Temp °C
12/8/2020 10:08:54 <i>lake merced s</i>	0.64 26.		77 8.2		78.3 4.06 4.06		8.4 -7	
12/8/2020 10:08:17 <i>lake merced s</i>	0.76 30.4		73.5 7.85		78.3 6.24 6.24		8.37 -74.	
12/8/2020 10:07:45 <i>lake merced s</i>	0.85 33.4		70.5 7.54		8.6 5.68 5.68		8.35 -74.	
12/8/2020 10:07:05 <i>lake merced s</i>	0.9 35.		68.4 7.32		8.6 5.64 5.64		8.37 -74.	
12/8/2020 10:06:12 <i>lake merced s</i>	2.18 74.	94 20.752	53.2 5.68	3 156.3 86	69.9 4.46 4.46	5 565	8.39 -75.	5 12.286
		ODO		SpCon				
Time (HH:mm:ss) Site Name	Chlorophyll RFU Chlorophyll ug/	-	mg/L	ORP mV µS/cm	RFU ug/L	TDS mg/L pH	pH mV	Temp °C
12/8/2020 10:44:35 <i>lake merced r</i>	0.59 25.		76.5 8.13		'8.7 4.21 4.2'		8.33 -73.	
12/8/2020 10:44:12 <i>lake merced r</i>	0.74 29.3		74.5 7.94		8.4 6.27 6.27		8.32 -72.	
12/8/2020 10:43:28 <i>lake merced r</i>	0.78 31.		66 7.04		78.3 5.58 5.58		8.28 -71.	
12/8/2020 10:43:03 <i>lake merced r</i>	1.22 44.5		55.9 5.97		78.8 5.44 5.44		8.21 -68.	
12/8/2020 10:42:38 <i>lake merced r</i>	1.62 57.5	59 18.311	26.1 2.78	3 156.5 86	62.5 0.88 0.88	3 561	8.18 -66.	9 12.402
		ODO	% ODO	SpCon	d BGA PC BGA PC			
Time (HH:mm:ss) Site Name	Chlorophyll RFU Chlorophyll ug/	L Depth ft sat	mg/L	ORP mV µS/cm	RFU ug/L	TDS mg/L pH	pH mV	Temp °C
12/8/2020 13:28:15 <i>lake merced E</i>	3.34 111.	0.257	75.6 8.15	5 131.5 81	3.3 13.78 13.78	3 529	8.26 -7	0 11.856
12/8/2020 13:27:41 <i>lake merced E</i>	3.75 124.3	5.02	65.6 7.14	l 131.3 81	3.8 16.48 16.48	3 529	8.21 -67.	9 11.449
12/8/2020 13:27:00 <i>lake merced E</i>	2.78 93.	35 10.039	45.2 4.93	3 133.2 81	4.2 13.21 13.21	1 529	8.13 -64.	9 11.371
12/8/2020 13:26:38 <i>lake merced E</i>	0.26 14	.8 14.024	13.4 1.45	5 141.1 79	98.4 -0.99 -0.99	9 519	7.96 -57.	8 11.572
		ODO	% ODO	SpCon	d BGA PC BGA PC			
Time (HH:mm:ss) Site Name	Chlorophyll RFU Chlorophyll ug/	L Depth ft sat	mg/L	ORP mV µS/cm	RFU ug/L	TDS mg/L pH	pH mV	Temp °C
12/8/2020 14:11:30 <i>lake merced N</i>	2.77 93.	•	76 8.02	•	57.2 18.41 18.4 ⁻		8.41 -76.	•
12/8/2020 14:11:08 <i>lake merced N</i>	2.4 81.5	99 5.003	68.5 7.29	9 164.8 85	58.9 17.61 17.6 ⁻	1 558	8.37 -7	5 12.399
12/8/2020 14:10:35 <i>lake merced N</i>	2.05 71.	02 10.309	66.8 7.12	2 164.3 85	9.3 16.64 16.64	4 559	8.36 -74.	6 12.314
12/8/2020 14:08:44 <i>lake merced N</i>	1.98 68.0	67 15.159	61 6.52	2 162.1 8	860 16.54 16.54	4 559	8.33 -73.	3 12.24
12/8/2020 14:08:05 <i>lake merced N</i>	2.12 73.	02 16.992	59.8 6.39	9 161.4 86	0.5 14.26 14.26	559	8.35 -74.	1 12.247

Reservoir:	East Lake	15' Tow = 0.048 m ³
Sample Vol (ml):	250	10' Tow = 0.032 m ³
Tow Vol (m ³):	0.032	

Organism	1	2	3	4	Total	No./m ³	No./mL
Planktothrix	3590	3270	3410	3270	13540	755,574,313	755.5743125

Reservoir:	North Lake
Sample Vol (ml):	204
Tow Vol (m ³):	0.048

15	' Tow = 0.048 m ³ ' Tow = 0.032 m ³	
10	' Tow = 0.032 m ³	

Plankton Count - Dominant Species (>98% of total population)

Organism	1	2	3	4	Total	No./m ³	No./mL
Planktothrix	1080	1170	1155	1200	4605	256,973,391	256.9733906

Reservoir:	Police Range
Sample Vol (ml):	185
Tow Vol (m ³):	0.048

$15' \text{ Tow} = 0.048 \text{ m}^3$
10' Tow = 0.032 m ³

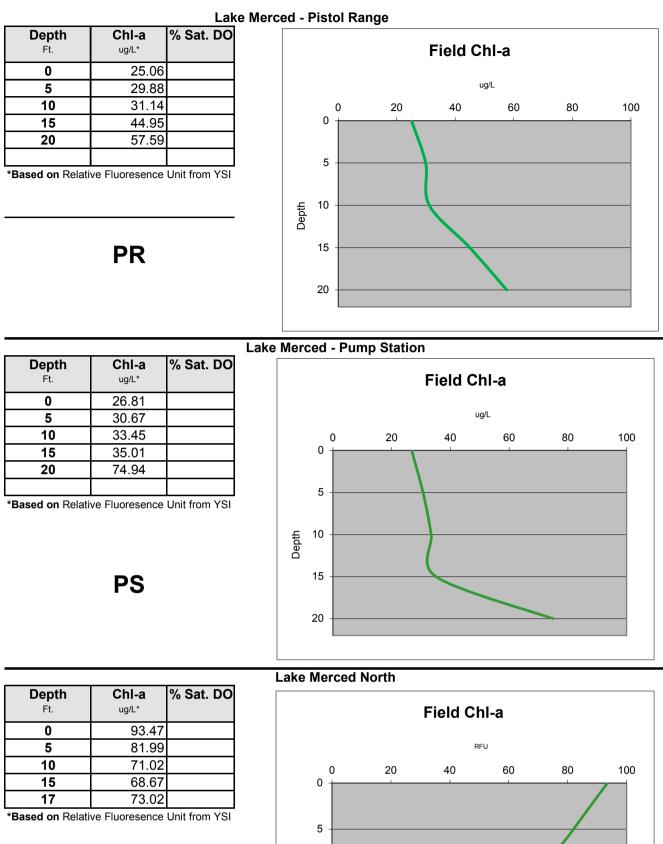
Plankton Count - Dominant Species (>98% of total population)

Organism	1	2	3	4	Total	No./m ³	No./mL
Planktothrix	2370	2260	2520	2490	9640	537,942,125	537.942125

Reservoir:	Pump Station	15' Tow = 0.048 m ³
Sample Vol (ml):	222	10' Tow = 0.032 m ³
Tow Vol (m ³):	0.048	

Plankton Count - Dominant Species (>98% of total population)

Organism	1	2	3	4	Total	No./m ³	No./mL
Planktothrix	2720	2880	2850	2770	11220	626,111,063	626.1110625









20

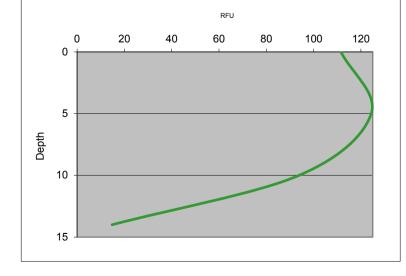
Depth

Depth Ft.	ChI-a ug/L*	% Sat. DO mg/L					
0	111.57						
5	124.38						
10	93.85						
14	14.80						
* Bacad on Bolat	* Pacad on Polative Elucrosones Unit from VSI						

Field Chl-a

* Based on Relative Fluoresence Unit from YSI

Ε



Lake Merced Limnology - Rev 032609



Land and Natural Resources - Limnology

Reservoir: Lake Merced - Police Range Date: May 12, 2020



Limnologist: RmJ, E. Wong

Limnological Profile

Depth	Temp		Cond		DO	ORP	TKN	Hard	NO ₃ -N					Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	18.32	8.66	817	549	8.7	77											10.1
5	18.14	8.63	814	548	8.3	65											
10	18.09	8.62	813	548	8.2	60											
15	18.05	8.55	813	549	7.5	29											
20.2	17.61	7.96	798	544	1.9	-30								_			

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	22.6	1514
5		

1

2

Bacteriological Da	ta (MPN)
Total Coliform	
E. Coli	

Total

Total

Secchi Disc (ft): 2.0' Air Temp (°C): Weather: Partly sunny Wind: slight, SW



Sample Vol (ml): Tow Vol (m³):

Summary

Phytoplankter

Planktothrix

Limnothrix

Natural Unit/m³

0

Natural Unit/mL

0

Reservoir: Lake Merced - Pump Station Date: May 12, 2020

Phytoplankton Count (>98% of total population)

4

3

Phytoplankton Count (>98% of total population)

4

3

Limnologist: RmJ, E. Wong

	Limnological Profile																
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	18.20	8.62	815	549	8.30	84.5											10.8
5	18.14	8.61	814	548	8.20	78.7											
10	18.11	8.60	813	549	8.01	70.3											
15	18.02	8.55	812	548	7.50	63.7											
20	17.83	8.43	809	549	6.36	43.0											
22	17.56	8.06	807	550	2.32	36.2											

Depth	Chlorophyll-a	Algal						
		Biomass						
ft.	μg/L	μg/L						
0	21.4	1434						
5								

1

2

Bacteriological	Dat	ta (MPN)
Total Coliform		
E. Coli		

Bacteriological Da	ta (MPN)
Total Coliform	
E. Coli	

Total

Total

Natural Unit/m³

0

Natural Unit/mL

0

Secchi Disc (ft):	2.0'
Air Temp (°C):	
Weather:	Overcast, mild
Wind:	Slight, SW



Sample Vol (ml): Tow Vol (m³):

Summary

Phytoplankter

Planktothrix Limnothrix



Land and Natural Resources - Limnology

Reservoir: Lake Merced - North Date: May 12, 2020



Limnologist: RmJ, E. Wong

Limnological Profile

Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO₄-P	Tot P	Mn	Fe	Pb	тос	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	19.12	8.78	787	520	7.94	26.9											19.2
5	18.50	8.74	776	519	7.41	10											
10	18.37	8.69	775	520	6.75	-16											
15	16.39	7.89	747	522	0.37	-141											
19.5	15.00	7.70	746	536	0.45	-132											

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	46.3	3105
5		

Bacteriological D	ata (MPN)
Total Coliform	
E. Coli	



Phytoplankton Count (>98% of total population)

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL	
Planktothrix								Sample Vol (ml):
Limnothrix								Tow Vol (m ³):
					Total	0	0	

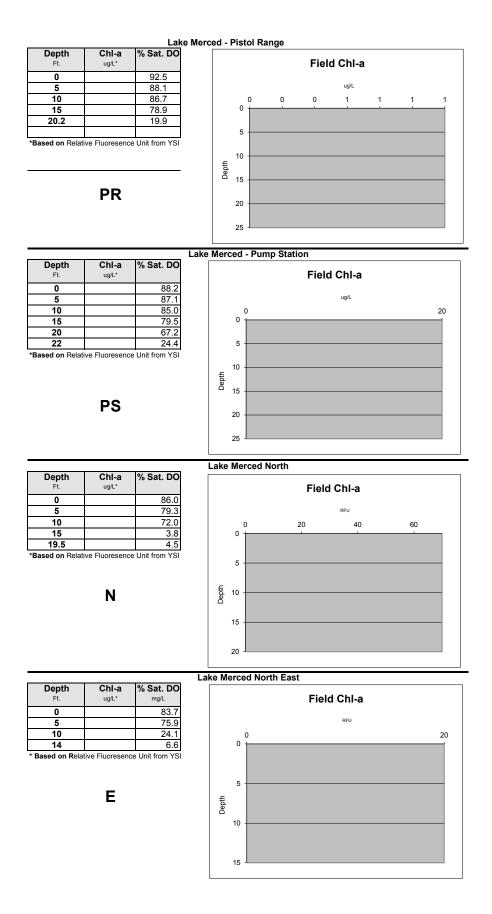
Summary

Reservoir: Lake Merced - North East Date: May 12, 2020

Limnologist: RmJ, E. Wong

							L	imnol	ogica	l Profi	le						
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	19.23	8.48	776	512	7.71	55.9											18.1
5	18.64	8.44	767	512	7.07	41.6											
10	18.30	7.99	764	513	2.26	-69.4											
14	18.04	7.81	765	516	0.63	-124.5											

Depth	Chlorophyll-a		lgal mass		Bacterio Total Co		Data (MPN)	-		Secchi Disc (ft): 1.5' Air Temp (°C):
ft.	μg/L	-	.g/L	1	E. Coli		1			Weather: Mostly sunny
0	45.1		025	1						Wind:
5				1						
		olanki	ton Co	ount (>	>98% of		pulation)			
Phy	/toplankter	1	2	3	4	To	otal Natura	al Unit/m ³	Natural Unit/mL	Sample Vol (ml):
Plankt	othrix		 	1 '						Tow Vol (m ³):
Limnot	thrix									
						Tot	tal	0	0	
							Summa	ary		



Land and Natural Resources - Limnology

Reservoir: Lake Merced - North Date: September 29, 2020

Limnologist: RmJ, JJ

Limnologist: RmJ, JJ

									Lim	nolog	ical P	rofile						
	Depth ft.		pH pH units	Cond µS/cm	TDS mg/L	DO mg/L	ORP mV	TKN mg/L	Hard mg/L	NO ₃ -N mg/L	NH ₃ -N mg/L	PO₄-P mg/L	Tot P mg/L	Mn mg/L	Fe mg/L	Pb mg/L	TOC mg/L	Turb NTU
	0	20.71	9.25	858	550	10.60	-51.5	3.79	276	<0.01	0.23	0.33	0.52	0.05	0.01	<0.01		38.0
	5	20.62	9.17	857	550	9.50	-78	3.65	284	<0.01	0.25	0.30	0.57					48.0
	10	19.29	8.43	854	563	0.44	-109	3.62	284	< 0.01	0.46	0.36	0.47					12.0
	15	18.33	8.12	848	569	0.57	-88		268	<0.01	0.80	0.43	0.54					10.0
	20.1	18.27	8.02	852	572	0.76	-73		272	<0.01	1.20	0.50	0.59	1.00	0.05	<0.01		12.0

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	73.0	4891
5	106.0	7102

Bacteriological D	ata (MPN)
Total Coliform	>2420
E. Coli	13.0

Phytoplankton Count (>98% of total population)

				00/00	total population	.,	
Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL
Planktothrix	5075	5850	5950	6075	22950	234,000,000	234
Dolichospermum	25	0	0	50	75	2,455,338	2.4553375
Asterionella	0	0	0	25	25	818,446	0.818445833
	•			-	Total	236,455,338	236.4553375

Summary

Secchi Disc (ft): 0.8 Air Temp (°C): 15 Weather: Foggy, cool Wind: N/A



Sample Vol (ml): 220 Tow Vol (m³): 0.048

Reservoir: Lake Merced - North East Date: September 29, 2020

								Lim	nolog	ical P	rofile						
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH₃-N	PO₄-P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	20.44	8.99	845	545	8.80	-82.5	3.26	284	<0.01	0.20	0.42	0.50	0.06	0.03	< 0.01		36.0
5	20.33	8.82	845	546	7.37	-107.6	7.21	276	<0.01	0.10	0.43	0.49					36.0
10	19.30	7.87	844	556	0.30	-143.7	<3.00	280	<0.01	0.40	0.48	0.55					13.0
15.2	18.57	7.48	849	568	0.31	-131.7	3.29	268	<0.01	1.50	0.71	0.73	1.20	0.10	< 0.01		12.0

.

. .

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	70.0	4690
5	57.5	3852

Bacteriological D	ata (MPN)
Total Coliform	1986.0
E. Coli	7.0

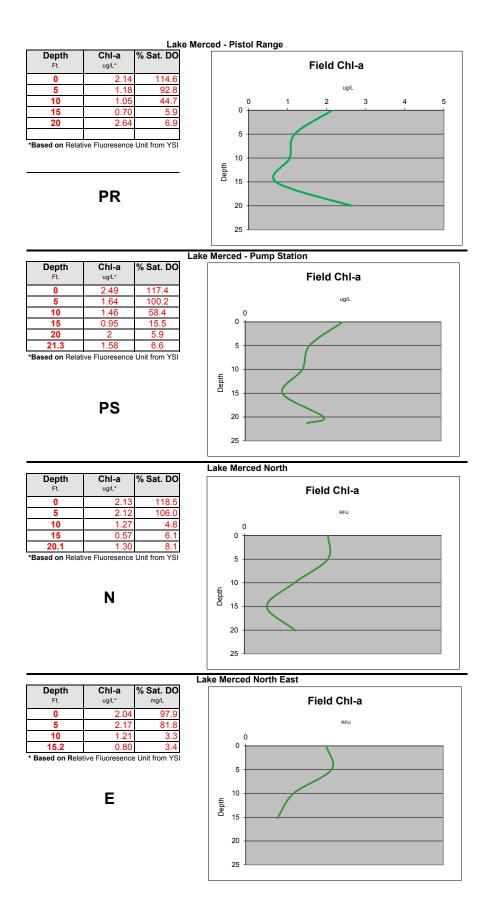


Phytoplankton Count (>98% of total population)

Phytoplankter	1	2	3	4	Total	Natural Unit/m ³	Natural Unit/mL	Sample Vol (ml): 220
Planktothrix	3900	4650	4475	5625	18650	610,560,592	610.5605917	Tow Vol (m ³): 0.032
Asterionella	0	0	25	0	25	818,446	0.818445833	
					Total	611,379,038	611	
						Summary		•









Land and Natural Resources - Limnology

Reservoir: Lake Merced - Police Range Date: September 29, 2020



Limnological Profile

Natural Unit/m³

383,851,096

8,184,458

392,035,554

	9.09.000																
Depth ft.	Temp ℃	pH pH units	$\underset{\mu\text{S/cm}}{\text{Cond}}$	TDS mg/L	DO mg/L	ORP mV	TKN mg/L	Hard mg/L	NO ₃ -N mg/L	NH ₃ -N mg/L	PO ₄ -P mg/L	Tot P mg/L	Mn mg/L	Fe mg/L	Pb mg/L	TOC mg/L	Turb NTU
0	20.39	8.86	893	576	10.3	92		264	0.01	0.06	0.14	0.17	0.07	0.01	< 0.01		18.0
5	20.24	8.73	893	578	8.4	59		256	< 0.01	0.11	0.12	0.17					15.0
10	19.78	8.29	889	580	4.1	3		264	0.01	0.14	0.12	0.17					15.0
15	19.25	7.98	884	583	0.5	-46		264	<0.01	0.31	0.15	0.16					15.0
21.1	19.11	8.01	887	587	0.6	-43		264	<0.01	0.19	0.18	0.22	0.48	0.02	<0.01		14.0

Depth	Chlorophyll-a	Algal
		Biomass
ft.	μg/L	μg/L
0	47.3	3169
5	31.0	2077

Bacteriological Da	Bacteriological Data (MPN)							
Total Coliform	>2420							
E. Coli	13.0							

Total

11725

250

Total

Secchi Disc (ft): 1.5 Air Temp (°C): 14 Weather: Foggy, cool. Wind: NW 1-3mph



Sample Vol (ml): 220 Tow Vol (m³): 0.048

Summary

Phytoplankter

Planktothrix

Limnothrix

Reservoir:	Lake Merced - Pump Station
Date:	September 29, 2020

Phytoplankton Count (>98% of total population)

4

2050

75

3

2650

50

Phytoplankton Count (>98% of total population)

50

4

3250

100

3

2

75

2300 3375 2800

25

Limnologist: RmJ, JJ

Natural Unit/mL

383.851096

8.18445833

392.04

Limnologist: RmJ, JJ

	Limnological Profile																
Depth	Temp	рΗ	Cond	TDS	DO	ORP	TKN	Hard	NO ₃ -N	NH ₃ -N	PO ₄ -P	Tot P	Mn	Fe	Pb	TOC	Turb
ft.	°C	pH units	μS/cm	mg/L	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU
0	20.89	8.80	903	577	10.46	128.0		264	0.01	0.09	0.11	0.17	0.08	0.01	<0.01		16.0
5	20.65	8.70	900	578	8.97	98.8		268	<0.01	0.08	0.11	0.16					16.0
10	20.33	8.34	899	581	5.26	40.6		260	< 0.01	0.06	0.11	0.20					17.0
15	19.46	7.96	887	582	1.42	-32.4		260	< 0.01	0.20	0.13	0.18					13.0
20	19.27	7.88	885	583	0.54	-71.2											
23.1	19.03	7.75	896	593	0.61	-80.8		260	<0.01	0.07	0.20	0.20	0.41	0.01	<0.01		14.0

Depth	Chlorophyll-a	Algal Biomass
ft.	μg/L	μg/L
0	42.3	2837
5	29.8	1997

1

2850

2

2800

125 100

Bacteriological Da	ta (MPN)
Total Coliform	>2420
E. Coli	14.0

Bacteriological Data (MPN)											
Total Coliform	>2420										
E. Coli	14.0										

Total

10350

350

Total

Natural Unit/m³

338,836,575

11,458,242

350,294,817

Natural Unit/mL

338.836575

11.4582417

350.3

Secchi Disc (ft):	1.8
Air Temp (°C):	14.0
Weather:	Foggy, cool
Wind:	NW 1-3mph



Sample Vol (ml): 220 Tow Vol (m³): 0.048

Summary

Phytoplankter

Dolichospermum

Planktothrix

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

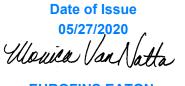


Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

REPORT REVISED, replaces the original report.



EUROFINS EATON ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report.

Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number		
Alabama	41060	Montana	Cert 0035		
Arizona	AZ0778	Nebraska	Certified		
Arkansas	Certified	Nevada	CA000062018		
California	California 2813		2959		
Colorado	Certified	New Jersey *	CA 008		
Connecticut	PH-0107	New Mexico	Certified		
Delaware	CA 006	New York *	11320		
Florida *	E871024	North Carolina	06701		
Georgia	947	North Dakota	R-009		
Guam	18-005R	Oregon *	CA200003-005		
Hawaii	Certified	Pennsylvania *	68-565		
Idaho	Certified	Puerto Rico	Certified		
Illinois *	200033	Rhode Island	LAO00326		
Indiana	C-CA-01	South Carolina	87016		
Iowa - Asbestos	413	South Dakota	Certified		
Kansas *	E-10268	Tennessee	TN02839		
Kentucky	90107	Texas *	T104704230-18-15		
Louisiana *	LA180000	Utah (Primary AB) *	CA00006		
Maine	CA0006	Vermont	VT0114		
Maryland	224	Virginia *	460260		
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838		
Massachusetts	M-CA006	EPA Region 5	Certified		
Michigan	9906	Los Angeles County Sanitation Districts	10264		
Mississippi	Certified				

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

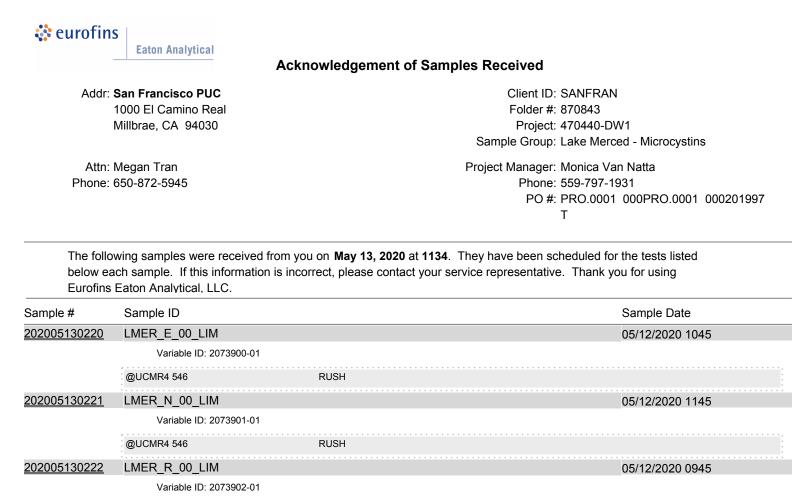
750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	х	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	х		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	t	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		× ×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		x
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20



RUSH

RUSH

@UCMR4 546

@UCMR4 546

Test Description

LMER S 00 LIM

Variable ID: 2073903-01

@UCMR4 546 -- UCMR4 546

202005130223

05/12/2020 0900

	San Francisco Water Power Sewer serves of the San Francisco Public Utilities Commission EMRUPTING - M	John Mal	FRANC sub LA	CISCO PUBLI	SAN FRANCISCO PUBLIC UTILITIES COMMISSION SUB LABORATORY CHAIN OF CUSTODY RECORD	IMISSION ORD	Urosul F	Water Quality Division 1000 El Camino Real Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Driver Partnance FOR LAB USE ONLY Driver Partnance SAMPLE CONDITION UPON RECENT Currents METHOD OF TRANSPORT Conscional SAMPLE CONDITION UPON RECENT Currents Non-constant Contraction SAMPLE CONDITION UPON RECENT Currents Non-constant Contraction SAMPLE CONDITION UPON RECENT Currents Non-constant Contraction Sample Contraction SPECIAL Contraction Sample Contraction District Contraction Sample Contraction Contraction Contraction Sample Contraction District Content and state Content and state State District Content and state Collected Date/Time/By WCD Rec. Date/By LocationNotes/Comments TAT District Collected Date/Time/By WCD Rec. Date/By LocationNotes/Comments TAT Stat/S2/20 Date S/12/20 Date S/12/20 Date District S/12/20 Date S/12/20 Date Z1 Dates Collected Date/Time/By MCD Rec Comments TAT S1 Date S/12/20 Date S/12/20 Date S/12/20 Date S/12/20 Date S/12/20 Date S/12/20 Date <td>Shi</td> <td>ip To:SUB_LAB</td> <td></td> <td>Ship Date: 0</td> <td>15/12/2020</td> <td>Ship Via: FedE</td> <td></td> <td>cing#: 7910 3212 1824</td>	Shi	ip To:SUB_LAB		Ship Date: 0	15/12/2020	Ship Via: FedE		cing#: 7910 3212 1824
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Water Power Sewer	Browner DAIN FRANCISCO FODELO OTILITES CONTINUESION Er Sewer SUB LABORATORY CHAIN OF CUSTODY RECORD		1000 El Camino Real Milibrae, CA 94030 Tei: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4081 Immunimumun	Ship To : SUB_LAB Ship Date: 05/12/2020 Ship Via: FedEx		Tracking#: 7910 3212 1824
	FOR LAB USE ONLY	NLY	
Sample ID 2073900-01	source LMER_E_00_LIM		
Container ID (Rep of 1) 2073900-01-07		Collect 4°C	Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546		
Sample ID 2073901-01	Source LMER N 00 LIM		
Container ID (Rep of 1)		Collect 4°C	Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546) •	
Sample ID 2073902-01	Source LMER R 00 LIM		
Container ID (Rep of 1)		Collect	Collect Method
ZU/ 35UZ-U1-U8 Analvsis: SUB 546 Total Microcystins	Method: EPA 546	ر 4	
Sample ID 2073903-01	Source LMER S 00 LIM		
Container ID (Rep of 1) 2073903-01-06		Collect	Collect Method
Analvsis: SUB 546 Total Microcystins	Method: EPA 546		
Printed on: Tuesday, May 12, 2020		Vertical Pag	Vertical Page Number. Page 2 of 2
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Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Possible matrix effect caused result over 5ppb in raw sample. Dilutions confirmed presence of microcystin at a slightly lower concentration than original test.

Revised report to include the results of samples when diluted. UMVN 05/27/20



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

San Francisco PUC

Megan Tran 1000 El Camino Real Millbrae, CA 94030 Samples Received on: 05/13/2020 1134

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
05/18/2020 15:24	202005130220 Total Microcystins	LMER E 00 LIM	1.0		ug/L	0.30
05/18/2020 15:24	202005130221 Total Microcystins	LMER N 00 LIM	1.3		ug/L	0.30
05/18/2020 15:24	202005130222 Total Microcystins	LMER R 00 LIM	2.1		ug/L	0.30
05/18/2020 15:24	202005130223 Total Microcystins	LMER_S_00_LIM	5.4		ug/L	0.30

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses

Samples Received on:

05/13/2020 1134

Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

San Francisco PUC Megan Tran

Tel: (626) 386-1100

Fax: (866) 988-3757

1 800 566 LABS (1 800 566 5227)

Eaton Analytical

1000 El Camino Real Millbrae, CA 94030

🛟 eurofins

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_E	_00_LIM (20	200513022	<u>))</u>			Sam	pled on 05/12	/2020 104	5
	Variab	le ID: 2073900)-01						
		EPA 546 - I	JCMR4 546						
05/15/20 (05/18/20 15:24	1249409	1248695	(EPA 546)	Total Microcystins	1.0	ug/L	0.30	1
05/15/20 (05/18/20 15:24	1249409	1248695	(EPA 546)	%CV	0.500	%	50.0	1
LMER N	00 LIM (20	200513022	<u>1)</u>			Sam	pled on 05/12	/2020 114	5
	Variab	le ID: 2073901	-01						
		EPA 546 - I	JCMR4 546						
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	Total Microcystins	1.3	ug/L	0.30	1
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	%CV	3.80	%	380	1
LMER R	00 LIM (20	200513022	<u>2)</u>			Sam	pled on 05/12	/2020 094	5
	Variab	le ID: 2073902	2-01						
		EPA 546 - I	JCMR4 546						
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	Total Microcystins	2.1	ug/L	0.30	1
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	%CV	3.00	%	300	1
LMER S	00 LIM (20	200513022	<u>3)</u>			Sam	pled on 05/12	/2020 090	0
	Variab	le ID: 2073903	3-01						
		EPA 546 - I	JCMR4 546						
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	Total Microcystins	5.4	ug/L	0.30	1
05/15/20	05/18/20 15:24	1249409	1248695	(EPA 546)	%CV	8.70	%	870	1



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San Francisco PUC

UCMR4 546

Prep Batch: 1249409	Analytical Batch: 1248695
202005130220	LMER_E_00_LIM
202005130221	LMER_N_00_LIM
202005130222	LMER_R_00_LIM
202005130223	LMER_S_00_LIM

Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

Analysis Date: 05/18/2020

Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

Report: 870843 Project: 470440-DW1 Group: Lake Merced - Microcystins

San Francisco PUC

QC Туре	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546								
Analytical B	atch: 1248695				L.	Analysis D	ate: 05/18/	2020	
LCS1	%CV			1.60	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202005120325	%CV	4.10		ND	%				
MSD2_202005120325	%CV	4.10		ND	%				
LCS1	Total Microcystins		0.5	0.402	ug/L	80	(60-140)		
LCS2	Total Microcystins		0.5	0.349	ug/L	70	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.243	ug/L	81	(50-150)		
MS2_202005120325	Total Microcystins	ND	0.5	0.171	ug/L	<u>31</u>	(60-140)		
MSD2_202005120325	Total Microcystins	ND	0.5	0.208	ug/L	<u>39</u>	(60-140)	40	20

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

Date of Issue 05/20/2020 Monica Van **EUROFINS EATON**

ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 871586 Project: 470440-DW Group: Drinking

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	x	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	x		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	t	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		× ×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		x
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

Acknowledgement of Samples Received

Addr: San Francisco PUC 1000 El Camino Real Millbrae, CA 94030

Attn: Megan Tran Phone: 650-872-5945 Client ID: SANFRAN Folder #: 871586 Project: 470440-DW Sample Group: Drinking

Project Manager: Monica Van Natta Phone: 559-797-1931 PO #: PRO.0001 000PRO.0001 000201997 T

The following samples were received from you on **May 14, 2020** at **09:00**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
202005180024	LMER_E_00_LIM	05/12/2020 1045
	Variable ID: 2073900-01	
	L231_SB	
202005180028	LMER_N_00_LIM	05/12/2020 1145
	Variable ID: 2073901-01	
	L231_SB	
202005180029	LMER_R_00_LIM	05/12/2020 0945
	Variable ID: 2073902-01	
	L231_SB	
202005180030	LMER_S_00_LIM	05/12/2020 0900
	Variable ID: 2073903-01	
	L231_SB	
	3	······································

	Miliofae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407	Tracking#: 4590 3428 8510		PROPRIATE BOXES) SAMPLE STORAGE	TACT LOCATION]		18#5		9 0)	HOBO882	883	688	V 885	ling? it(s) of container ID	Comments: 4704400 (ALGAL_TOXINS by Method	L231/LN INTERACEU). THEASE SEE SUUSEQUEIN pages for analyte details.	Vertical Page Number. Page 1 of 2 Horizontal Page Number: 1
3 989	485143	Ship Via: FedEx	FOR LAB USE ONLY	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)				1XO.	ד_ואם.	1A_8U3 N		21 DAYS 4-6		21 DAYS 5-7	21 DAYS 3-5	Client Provided Sample Container 1 indicates the last digit(s) of container ID	DATE/TIME:	AGENCY:	
ع 1986ء) SAN FRANCISCO PUBLIC UTILITIES COMMISSION	Water FOW SEWER Source ADD CONTRACTORY CHAIN OF CUSTODY RECORD EMPERATORY CHAIN OF CUSTODY RECORD	Ship Date: 05/12/2020 Shi	FOR LAB (METHOD OF TRANSPORT (CHECK ONE) SAMPLE CONDITION	MILLBRAE		TE EDT REQUIRED: Y/N SY				WQD Rec. Date/By	5/12/20 PHOANG Eric	OTHER 5/12/20 PHOANG Eric Wong // 6	OTHER 5/12/20 PHOANG Eric Wong 2,0	OTHER 5/12/20 PHOANG Eric Wong /, b	//C Client Pro	DATE/TIME: RELINQUISHED TO: (Print Name/Sign)	DATE/TIME: SEND REPORT TO:	<i>R</i>
Q	- SEWER WHENE COMMENCEN FINS - 2004	Ship To: SUB_LAB		ιX		: / SPECIAL	צר					VI 5/12/20 1045 OTHER	5/12/20 1145	5/12/20 0945	5/12/20 0900	or signed at	me/stad DATE	messent DATE	160
San Francisco		Out Source#: 4080 Minduanting			SHIPPED BY: VWWWXXX	TYPE: ROUTINE (arde One)					Sample ID Source	I LMER_E_	2073901-01 LMER_N_00_LIM	2073902-01 LMER_R_00_LIM	2073903-01 LMER_S_00_LIM	MC Was not Signed at	RELINQUENED FREED Prime Point	SUB LAB RECEIVED BY; PARA N	Printed on: Tuesday, May 12, 2020

San Francisco	l	RANCI	SAN FRANCISCO PUBLIC UTILITIES COMMISSION	COMMISSION	Water Quality Division 1000 El Camino Real Millbrae, CA 94030
	DEWER That Commission	SUB LAE	SUB LABORATORY CHAIN OF CUSTODY RECORD	N RECORD	Tet. (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4080	Ship To: SUB_LAB		Ship Date: 05/12/2020	Ship Via: FedEx	Tracking#: 4590 3428 8510
				FOR LAB USE ONLY	
Sample ID 2073900-01	Source LMER_E_00_LIM				-
Container ID (Rep of 3) 2073900-01-04 to 2073900-01-05					Collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR		Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073901-01	Source LMER_N_00_LIM				
Container ID (Rep of 3) 2073901-01-03 to 2073901-01-05		•			Collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR		Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073902-01	Source LMER_R_00_LIM				
Container ID (Rep of 3) 2073902-01-05 to 2073902-01-07					Collect Method 4°C
Anaivsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR		Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073903-01	Source LMER_S_00_LIM				
Container ID (Rep of 3) 2073903-01-03 to 2073903-01-05					Collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR		Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR

Printed on: Tuesday, May 12, 2020

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Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 871586 Project: 470440-DW Group: Drinking

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Results for L231 are submitted by Eurofins Eaton Analtyical in Southbend IN

🛟 eurofins

Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030 Laboratory Data

Report: 871586 Project: 470440-DW Group: Drinking

Samples Received on: 05/14/2020 09:00

(EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545)	Anatoxin-a Cylindrospermopsin Microcystin-LA Microcystin-LF Microcystin-LR	Sam ND ND ND	ug/L ug/L	2/ 2020 104	5
(EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545)	Cylindrospermopsin Microcystin-LA Microcystin-LF	ND	-	0.02	
(EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545)	Cylindrospermopsin Microcystin-LA Microcystin-LF	ND	-	0.02	
(EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545)	Cylindrospermopsin Microcystin-LA Microcystin-LF	ND	-	0.02	1
(EPA 545) (EPA 545) (EPA 545) (EPA 545) (EPA 545)	Microcystin-LA Microcystin-LF		ug/L	0.05	1
(EPA 545) (EPA 545) (EPA 545) (EPA 545)	Microcystin-LF		ug/L	0.1	1
(EPA 545) (EPA 545) (EPA 545)		ND	ug/L	0.1	1
(EPA 545) (EPA 545)		ND	ug/L	0.1	1
(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	Microcystin-RR	ND	ug/L	0.1	1
(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
(EPA 545)	Nodularin	ND	ug/L	0.1	1
, , , , , , , , , , , , , , , , , , ,		Sam	npled on 05/12	/2020 114	5
		Cull		/2020 114	0
5					
(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
(EPA 545)	Nodularin	ND	ug/L	0.1	1
		Sam	pled on 05/12	/2020 094	5
5					
			-		1
			-		1
	-		0		1
, ,			0		1
	-		-		1
	-		-		1
(EPA 545)	-		ug/L	0.1	1
				<u>^</u>	
(EPA 545) (EPA 545)	Microcystin-YR Nodularin	ND ND	ug/L ug/L	0.1 0.1	1 1
	(EPA 545) (EPA 545)	(EPA 545)Microcystin-LF(EPA 545)Microcystin-LR(EPA 545)Microcystin-LY(EPA 545)Microcystin-RR(EPA 545)Microcystin-YR(EPA 545)Nodularin(EPA 545)Cylindrospermopsin(EPA 545)Microcystin-LA(EPA 545)Microcystin-LF(EPA 545)Microcystin-LR(EPA 545)Microcystin-LR(EPA 545)Microcystin-LR(EPA 545)Microcystin-LR(EPA 545)Microcystin-LR	(EPA 545)Microcystin-LFND(EPA 545)Microcystin-LRND(EPA 545)Microcystin-LYND(EPA 545)Microcystin-RRND(EPA 545)Microcystin-YRND(EPA 545)NodularinND(EPA 545)Anatoxin-aND(EPA 545)CylindrospermopsinND(EPA 545)Microcystin-LAND(EPA 545)Microcystin-LFND(EPA 545)Microcystin-LRND(EPA 545)Microcystin-LRND(EPA 545)Microcystin-LRND(EPA 545)Microcystin-LRND(EPA 545)Microcystin-LRND	(EPA 545)Microcystin-LFNDug/L(EPA 545)Microcystin-LRNDug/L(EPA 545)Microcystin-RRNDug/L(EPA 545)Microcystin-YRNDug/L(EPA 545)Microcystin-YRNDug/L(EPA 545)NodularinNDug/L(EPA 545)Anatoxin-aNDug/L(EPA 545)CylindrospermopsinNDug/L(EPA 545)Microcystin-LANDug/L(EPA 545)Microcystin-LFNDug/L(EPA 545)Microcystin-LRNDug/L(EPA 545)Microcystin-LRNDug/L(EPA 545)Microcystin-LYNDug/L	(EPA 545) Microcystin-LF ND ug/L 0.1 (EPA 545) Microcystin-LR ND ug/L 0.1 (EPA 545) Microcystin-LY ND ug/L 0.1 (EPA 545) Microcystin-RR ND ug/L 0.1 (EPA 545) Microcystin-YR ND ug/L 0.1 (EPA 545) Nodularin ND ug/L 0.1 (EPA 545) Anatoxin-a ND ug/L 0.02 (EPA 545) Anatoxin-a ND ug/L 0.05 (EPA 545) Microcystin-LF ND ug/L 0.1 (EPA 545) Microcystin-LA ND ug/L 0.1 (EPA 545) Microcystin-LF ND ug/L 0.1 (EPA 545) Microcystin-LR ND ug/L 0.1 (EPA 545) Microcystin-LR ND ug/L 0.1 (EPA 545) Microcystin-RR ND ug/L 0.1

Variable ID: 2073903-01

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Laboratory Data

Report: 871586 Project: 470440-DW Group: Drinking

San Francisco PUC Megan Tran 1000 El Camino Real

Millbrae, CA 94030

Samples Received on: 05/14/2020 09:00

Prepped Analy	zed Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	EPA 545 - /	Algal Toxins						
05/14/20	20:28		(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
05/14/20	20:28		(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
05/14/20	20:28		(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
05/14/20	20:28		(EPA 545)	Nodularin	ND	ug/L	0.1	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies



NELAC NARRATIVE PAGE

Client: Eurofins Eaton Analytical

Report #: 485743NP

Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Karen Fullmer

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

Note: In the Method L231 analysis for Microcystin-LR, the matrix spike duplicate associated with the sample submitted for analysis from site 2073903-01 has a RPD value of 35%, which is outside of EEA's in-house RPD limit of 30%. Both MS and MSD were with acceptable recovery limits and there were no detects in the parent sample.

There were no quality control failures.

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Karen Fullmer ASM

Authorized Signature

05/19/2020

Date

Page 1 of 1



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

Laboratory Report

Client:	Eurofins Eaton Analytical	Report:	485743
Attn:	Jackie Contreras	Priority:	Immediate Written
Aun.	750 Royal Oaks Drive	Status:	Final
	Suite 100	PWS ID:	Not Supplied
	Monrovia, CA 91016		

		Sample Information			
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4626882	202005180024	L231	05/12/20 10:45	Client	05/14/20 09:00
4626883	202005180028	L231	05/12/20 11:45	Client	05/14/20 09:00
4626884	202005180029	L231	05/12/20 09:45	Client	05/14/20 09:00
4626885	202005180030	L231	05/12/20 09:00	Client	05/14/20 09:00
		Report Summary			

Note: Sample containers were provided by the client.

ANote: This report was amended on 05/19/2020 to correct the sample IDs, at the request of the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Karen Fullmer at (574) 233-4777.

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aren hillmer ASM

 Authorized Signature

 Client Name:
 Eurofins Eaton Analytical

 Report #:
 485743

Title

05/19/2020

Date

Sampling Point: 202005180024

PWS ID: Not Supplied

		I	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		05/14/20 19:48	4626882
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		05/14/20 19:48	4626882
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		05/14/20 19:48	4626882

Sampling Point: 202005180028

PWS ID: Not Supplied

		E	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		05/14/20 20:01	4626883
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		05/14/20 20:01	4626883
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		05/14/20 20:01	4626883

Sampling Point: 202005180029

PWS ID: Not Supplied

		I	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		05/14/20 20:15	4626884
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		05/14/20 20:15	4626884
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		05/14/20 20:15	4626884

Sampling Point: 202005180030

PWS ID: Not Supplied

		l	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		05/14/20 20:28	4626885
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		05/14/20 20:28	4626885
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		05/14/20 20:28	4626885

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

		Date Time Page 1 of 3	Date Time Page 1 of 3	Received by:
			Sample Control	Relinquished by:
An Acknowledgement of Receipt is requested to attn: Jackie Contreras	An Acknowledgement of Receipt is	Date 514-30 Hime 900	of even to drugths	Received by:
ED OUTSIDE OF 0-6 CELSIUS	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS	Date	Sample Control	Relinquished by:
le Container	Client Provided Sample Container			
		4030894	Algal Toxins	EPA 545
			Prep Method Analysis Requested	Method
Static ID:	Sample Point ID:	Facility ID: San	Sample Event:	Sample type:
ncode PWSID JLS	Date & Time Matrix PWS Systemcode 05/12/20 0945 DW	Sample Date 05/12	Client Sample ID for reference onl LMER_R_00_LIM	Sample ID 202005180029
		46.36836.04	Algal Toxins	EPA 545
			Prep Method Analysis Requested	Method
Static ID:	Sample Point ID:	Facility ID: San	Sample Event:	Sample type:
ncode PWSID JLS	Date & Time Matrix PWS Systemcode 05/12/20 1145 DV	Sample Date & 05/12/20	Client Sample ID for reference onl LMER_N_00_LIM	Sample ID 202005180028
		889894	Algal Toxins	EPA 545
			Prep Method Analysis Requested	Method
Static ID:	Sample Point ID:	Facility ID: San	Sample Event:	Sample type:
ncode PWSID JLS	8 Time Matrix PWS Systemcode	Sample Date & 05/12/20	Client Sample ID for reference onl LMER_E_00_LIM	Sample ID 202005180024
			Report Due: 06/12/2020	Folder #: R 871586 0
			4345 Fax: 574-233-8207	Phone: 800-332-4345
Samples from: CALIFORNIA	6) 386-1122 nalytical, LLC a, Lancaster, PA 17605	Phone (626) 386-1165 Fax (626) 386-1122 Invoices to: Eurofins Eaton Analytical, LLC Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605		South Bend, IN 46617-2702
Provide in each Report the Specified StateCertification # and Exp Date for requested tests + matrix.	acting Administrator urofinsus.com suite 100 Monrovia CA 91016	Reports: Jackie Contreras Sub-Contracting Administrator EMAIL TO: us20_subcontract@eurofinsus.com aton Analytical 11.0.750 Royal Oaks Drive Suite 100 Morrovia CA 91016	ytical Eurofins F	Eurofins Eaton Analytical 110 South Hill Street
ed) and Method reference on the report.	dates analyzed. Date extracted (if extraction bignature.	Report all quality control data according to Method, Include dates analyzed. Date extracted (if extracted) and Method reference on the report. Results must have Complete data & QC with Approval Signature.	Report all quality c Results must hav	Ship To:
ト <i>そらフ</i> イ・ジ Date: 5/18/2020 der different Folder Numbers!	al Form & & & & & & & & & & & & & & & & & & &	Submittal Form \mathcal{HSDTHS} Date: EQUIRMENTS: Do Not Combine Reports with any other samples submitted under different Folder Numbers! must have the Folder # 871586 Job # 1000014	*REPORTING REC Report & Invoice m	🐝 eurofins
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202005180030	LMER_S_00_LIN	LMER_S_00_LIM			LINN SYSTEMCODE PUNNIN	JLS
Sample type:		Sample Event:	Facility ID:	Sample Point ID:	Static ID:	
Method	Prep Method	Analysis Requested				
EPA 545		Algal Toxins	4626			
					outers 1 withou ample Container	
Relinquished by: Received by:	Sample Control	for a marths	Sittau		NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS An Acknowledgement of Receipt is requested to attn: Jackie Contreras	ntreras
Relinquished by:	Sample Control		Date Time Date Time			

Page 18 of 26 pages

pages for analyte details.	AGENCY: pages for a		SEND REPORT TO:	S/14/2020		CEIVED BY; (Print Name/Sign)	6 45UB LAB RECEIVED BY; Print 0 01 000000000000000000000000000000000
Comments: 4704400 (ALGAL_TOXINS by Method 1231/1K MERCED). Plasse see subservient	ЧЕ:	(Print Name/Sign)		DATE/TIME:	~	HED FROMM: [Print Name/Sign]	RELINQUISHED FROM
ner ID	Client Provided Sample Container ↑ indicates the last digit(s) of container ID	C Client	1.6		Grient	cocwas not signed at	
					1		
885	21 DAYS 3-5	Eric Wong 1, 6	5/12/20 PHOANG Eric	0900 OTHER	5/12/20	LMER_S_00_LIM	2073903-01
188		Eric Wong $\mathcal{A}_i\mathcal{O}$	5/12/20 PHOANG Eric	0945 OTHER		LMER_R_00_LIM	2073902-01
883	21 DAYS 3-5	Eric Wong // 6	5/12/20 PHOANG Eric	1145 OTHER		LMER_N_00_LIM	2073901-01
282	21 DAYS 4-6 46 882	Eric Wong /, 8	5/12/20 PHOANG Eric	5/12/20 1045 OTHER	5/12/20		2073900-01
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		SYTEM	STATE EDT REQUIRED: Y / N ID:	STATE EDI ID:			
REFRIG#	 CONTAINER INTACT # OF SAMPLES MATCH COC HEADSPACE (VOA) COOLER TEMPERATURE (0-6°C): 	D SEALED SEAL INTACT PRESERVED	MOCCASIN COURIER OTHER		SPECIAL	ROUTINE /	TYPE: (Circle One)
SAMPLE STORAGE	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	SAMPLE COND	METHOD OF TRANSPORT (CHECK ONE)		- 1	Muonette	CHIDDED RV.
	FOR LAB USE ONLY	FOR		(DW)	W) D 470440(DW)	Index Code: 0921021(WW)/920901(WW)	tex Code: E
Tracking#: 4590 3428 8510	Ship Via: FedEx Tr	12/2020	Ship Date: 05/12/2020	LAB	Ship To : SUB		Out Source#: 4080
Milliprae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407	окр 485743	I OF CUSTODY RECC	SUB LABORATORY CHAIN OF CUSTODY RECORD	Ar Bend	- NO	VUDUCE FOWER DEWER	
Water Quality Division	MISSION	PUBLIC UTILITIES COMMISSION		SAN FRANCISCO		San Francisco	S

San Francisco Water POVEr Sewer		SAN FRANCISCO PUBLIC UTILITIES COMMISSION SUB LABORATORY CHAIN OF CUSTODY RECORD	COMMISSION DY RECORD	1000 El Camino Real Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4080	Ship To: SUB_LAB	Ship Date: 05/12/2020	Ship Via: FedEx	Tracking#: 4590 3428 8510
			FOR LAB USE ONLY	
Sample ID 2073900-01	Source LMER_E_00_LIM			
Container ID (Rep of 3) 2073900-01-04 to 2073900-01-06		•		collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073901-01	Source LMER_N_00_LIM			
Container ID (Rep of 3) 2073901-01-03 to 2073901-01-05				Collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073902-01	Source LMER_R_00_LIM			
Container ID (Rep of 3) 2073902-01-05 to 2073902-01-07				Collect Method 4°C
Analvsis: SUB ALGAL TOXIN Anatoxin Microcystin-LY	Method: Default Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Sample ID 2073903-01 Container ID (Rep of 3)	source LMER_S_00_LIM			Collect Method
2073903-01-03 to 2073903-01-05 Analvsis: SUB ALGAL TOXIN	Method: Default			4°C
Anatoxin Microcystin-LY	Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Page 20 c				
L Printed on: Tuesday, May 12, 2020				Vertical Page Number: Page 2 of 2
				Horizontal Page Number: 1

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Eaton Analytical

Eurofins Eaton Analytical Run Log Run ID: 274697 Method: L231

Type	Sample Id	Sample Site	Matrix	Instrument ID	<u>Analysis Date</u>	Calibration File
LMB	4627913		RW	DQ	05/14/2020 19:35	051420L231a.mdb
FS	4626882	202005180024	SW	DQ	05/14/2020 19:48	051420L231a.mdb
FS	4626883	202005180028	SW	DQ	05/14/2020 20:01	051420L231a.mdb
FS	4626884	202005180029	SW	DQ	05/14/2020 20:15	051420L231a.mdb
FS	4626885	202005180030	SW	DQ	05/14/2020 20:28	051420L231a.mdb
MS	4627914	202005180030	SW	DQ	05/14/2020 20:41	051420L231a.mdb
MSD	4627915	202005180030	SW	DQ	05/14/2020 20:54	051420L231a.mdb
CCC	4627916		RW	DQ	05/14/2020 21:21	051420L231a.mdb

Under Andrei Mathem Mathm Mathm Mathm	Sector Matrix Matrix<						S S S S S	Summary	y Report	t								
Und Schemplanettic Und	Und Example Und Und <thund<< th=""><th>Sample Type</th><th>Analyte</th><th>Method</th><th>MRL</th><th>Client ID</th><th>Result Flag</th><th>Amount</th><th>Target</th><th>Units</th><th>% Recover</th><th></th><th>RPD</th><th></th><th>Dil actor</th><th>Extracted</th><th></th><th>EA D #</th></thund<<>	Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recover		RPD		Dil actor	Extracted		EA D #
10.0 6.0 0.0 <td>Und Exploration Und <thund< th=""> Und Und <thu< td=""><td>LMB</td><td>IS-L-phenylalanine-d5</td><td>L231</td><td>N/A</td><td></td><td></td><td>50434</td><td>57114</td><td>ng/L</td><td>88</td><td>50 - 150</td><td> </td><td> </td><td>1.0</td><td>-</td><td></td><td>27913</td></thu<></thund<></td>	Und Exploration Und Und <thund< th=""> Und Und <thu< td=""><td>LMB</td><td>IS-L-phenylalanine-d5</td><td>L231</td><td>N/A</td><td></td><td></td><td>50434</td><td>57114</td><td>ng/L</td><td>88</td><td>50 - 150</td><td> </td><td> </td><td>1.0</td><td>-</td><td></td><td>27913</td></thu<></thund<>	LMB	IS-L-phenylalanine-d5	L231	N/A			50434	57114	ng/L	88	50 - 150			1.0	-		27913
1 1	UL Elementative interval Elementative i	LMB	IS-Microcystin-LR-15N10	L231	N/A	ł		777	855	ng/L	91	50 - 150	1	1	1.0	-		27913
10 0.00000000000000000000000000000000000	1 1	LMB	IS-Microcystin-RR-15N13	L231	N/A	-		9309	9674	ng/L	96	50 - 150		1	1.0	1		27913
10.0.00000000000000000000000000000000000	(10) (10) <th< td=""><td>LMB</td><td>IS-Microcystin-YR-15N10</td><td>L231</td><td>N/A</td><td>-</td><td></td><td>3474</td><td>3646</td><td>ng/L</td><td>95</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>-</td><td></td><td>27913</td></th<>	LMB	IS-Microcystin-YR-15N10	L231	N/A	-		3474	3646	ng/L	95	50 - 150	1	1	1.0	-		27913
10 matrix 12 0<	10 <td>LMB</td> <td>IS-Uracil-d4</td> <td>L231</td> <td>N/A</td> <td></td> <td></td> <td>4704</td> <td>4756</td> <td>ng/L</td> <td>66</td> <td>50 - 150</td> <td>1</td> <td>1</td> <td>1.0</td> <td></td> <td></td> <td>27913</td>	LMB	IS-Uracil-d4	L231	N/A			4704	4756	ng/L	66	50 - 150	1	1	1.0			27913
(1) (1) <td>Use Controlmententen 1231 0.33 12 0.33 12 0.34 12 0.34 12 0.34</td> <td>LMB</td> <td>Anatoxin-a</td> <td>L231</td> <td>0.02</td> <td></td> <td>v</td> <td>0.02</td> <td></td> <td>ng/L</td> <td>-</td> <td>-</td> <td>1</td> <td>1</td> <td>1.0</td> <td></td> <td></td> <td>27913</td>	Use Controlmententen 1231 0.33 12 0.33 12 0.34 12 0.34 12 0.34	LMB	Anatoxin-a	L231	0.02		v	0.02		ng/L	-	-	1	1	1.0			27913
1.0(monolished,(2) </td <td>Understant, 1 <th1< th=""> 1 <th1< td=""><td>LMB</td><td>Cylindrospermopsin</td><td>L231</td><td>0.05</td><td></td><td>v</td><td>0.05</td><td></td><td>ng/L</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1.0</td><td></td><td></td><td>27913</td></th1<></th1<></td>	Understant, 1 <th1< th=""> 1 <th1< td=""><td>LMB</td><td>Cylindrospermopsin</td><td>L231</td><td>0.05</td><td></td><td>v</td><td>0.05</td><td></td><td>ng/L</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1.0</td><td></td><td></td><td>27913</td></th1<></th1<>	LMB	Cylindrospermopsin	L231	0.05		v	0.05		ng/L	1	1	1	1	1.0			27913
(b) (b) (b) (c) (c) <td>Und Memoninult Dist Dist</td> <td>LMB</td> <td>Microcystin-LA</td> <td>L231</td> <td>0.1</td> <td></td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1.0</td> <td></td> <td></td> <td>27913</td>	Und Memoninult Dist	LMB	Microcystin-LA	L231	0.1		v	0.1		ng/L	1	1	1	1	1.0			27913
Image: black Lot P <	Image Matrix Lip 0 1 - 0 1 0 1 0 1 0 1 0 1 0 1 0 </td <td>LMB</td> <td>Microcystin-LF</td> <td>L231</td> <td>0.1</td> <td>I</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td>1</td> <td>I</td> <td>1</td> <td>1</td> <td>1.0</td> <td>1</td> <td></td> <td>27913</td>	LMB	Microcystin-LF	L231	0.1	I	v	0.1		ng/L	1	I	1	1	1.0	1		27913
(10) Manopenely (23) (21)	Image Matrix 121 01 12 01 12 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01	LMB	Microcystin-LR	L231	0.1	ł	v	0.1		ng/L	1	1	1	1	1.0	I		27913
Udb Monopulation (231) 0.1 1 0.1 0 1 1 0 1 </td <td>Under Monopolity 221 01 0 01 01 01 01 01 01 01 01 01 01 01 01 01 01</td> <td>LMB</td> <td>Microcystin-LY</td> <td>L231</td> <td>0.1</td> <td>I</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td>1</td> <td>I</td> <td>1</td> <td>1</td> <td>1.0</td> <td>1</td> <td></td> <td>27913</td>	Under Monopolity 221 01 0 01 01 01 01 01 01 01 01 01 01 01 01 01 01	LMB	Microcystin-LY	L231	0.1	I	v	0.1		ng/L	1	I	1	1	1.0	1		27913
Understand Used	Und Monopolity (k) (22) (2) (LMB	Microcystin-RR	L231	0.1	I	v	0.1		ng/L			1	1	1.0	1		27913
10 Notation (221) (21) () () () () () () () () () () () () () () () (Und Temponent U23 U14 Temponent U24 U14	LMB	Microcystin-YR	L231	0.1	ł	v	0.1		ng/L	1	1	1	1	1.0	1		27913
(3) (3) <td>i iscanination is a constant of a constant of</td> <td>LMB</td> <td>Nodularin</td> <td>L231</td> <td>0.1</td> <td>ł</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1.0</td> <td>I</td> <td></td> <td>27913</td>	i iscanination is a constant of	LMB	Nodularin	L231	0.1	ł	v	0.1		ng/L	1	1	1	1	1.0	I		27913
(5) Sideospendik-Filtio (23) (M) 2000540004 (5)<	1 6. Macorgan-RP. FM (0 123 M 2.0005 60044 1 2.001 6. M 2.0005 60044 1 2.011 0.011 1	FS	IS-L-phenylalanine-d5	L231	N/A	202005180024		56061	57114	ng/L	86	50 - 150	1	1	1.0	I		26882
Fig SelenceptineRt, fix1.3 L23 NA Z2005180024 I 013 Z66 C <thc< th=""> C C <thc< th=""></thc<></thc<>	1 Simbolic generality 221 NM 2200510024 1 103 964 961 105 10	FS	IS-Microcystin-LR-15N10	L231	N/A	202005180024		936	855	ng/L	109	50 - 150	1	1	1.0	I		26882
Fig Schwenosymer/Re: Fallo IXI Z2006 FB0024 IXI Z4014 IXI IXI<	i Skincopain-Nat/Sh(10) L231 Na Zecols Book Zecols Bo	FS	IS-Microcystin-RR-15N13	L231	N/A	202005180024		10138	9674	ng/L	105	50 - 150	1	1	1.0	I		26882
Fig Ubmediate Land Land Name Land	Fig Ubuedied L3 NM 22006 90024 Fig Fig NM NM Pig Fig NM NM<	FS	IS-Microcystin-YR-15N10	L231	N/A	202005180024		3621	3646	ng/L	66	50 - 150	1	1	1.0	1		26882
F Amenoles (231 (022 22005/6024 (< 0.02 mode (<th< td=""><td>1 Anatome 1231 0.02 2020510024 1 0.02 0.04 0.01</td><td>FS</td><td>IS-Uracil-d4</td><td>L231</td><td>N/A</td><td>202005180024</td><td></td><td>4733</td><td>4756</td><td>ng/L</td><td>100</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>1</td><td></td><td>26882</td></th<>	1 Anatome 1231 0.02 2020510024 1 0.02 0.04 0.01	FS	IS-Uracil-d4	L231	N/A	202005180024		4733	4756	ng/L	100	50 - 150	1	1	1.0	1		26882
File Op/indrogeneropsin L33 0.06 L2200516024 c 0.06 upple imple	File Opinitary List	FS	Anatoxin-a	L231	0.02	202005180024	v	0.02		ng/L	1	1	1	1	1.0	1		26882
R Macrospin-LA 223 0.1 20206180024 0.1 20206180024 0.1	i Microsent-L L23 01 22006180024 c 01 mode mod mode <	FS	Cylindrospermopsin	L231	0.05	202005180024	v	0.05		ng/L	I	I	1	1	1.0	1		26882
Field Macrosynth(F L231 01 22006160024 c 011 work mode mod mod mode	1 Microsystin-LF 223 0.1 20206180024 0.1 20206180024 0.1 20206180024 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 20206180024 0.1 <th< td=""><td>FS</td><td>Microcystin-LA</td><td>L231</td><td>0.1</td><td>202005180024</td><td>v</td><td>0.1</td><td></td><td>ng/L</td><td>1</td><td>I</td><td>1</td><td>1</td><td>1.0</td><td>1</td><td></td><td>26882</td></th<>	FS	Microcystin-LA	L231	0.1	202005180024	v	0.1		ng/L	1	I	1	1	1.0	1		26882
R Macrospin-LR L231 0.1 22006180024 c 0.1 0.901 m m 1	1 Mercospin-LR 121 01 22200516024 1 01 200 10 </td <td>FS</td> <td>Microcystin-LF</td> <td>L231</td> <td>0.1</td> <td>202005180024</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td>1</td> <td>I</td> <td>I</td> <td>1</td> <td>1.0</td> <td>I</td> <td>05/14/2020 19:48 462</td> <td>26882</td>	FS	Microcystin-LF	L231	0.1	202005180024	v	0.1		ng/L	1	I	I	1	1.0	I	05/14/2020 19:48 462	26882
F3 Wincoysin-IX L231 0.1 2200618024 0.1 0.0 0.1 0.0	1 Microcyetine/fit 1231 0.1 20200516024 < 0.1 0.01 20200516024 0.01 0.0	FS	Microcystin-LR	L231	0.1	202005180024	v	0.1		ng/L	1	I	1	1	1.0	-		26882
F3 menoseneral L33 0.1 2200518024 0.1 2020518024 0.1	F3 Microsystin-RR L231 0.1 2200618024 0.1 0.01<	FS	Microcystin-LY	L231	0.1	202005180024	v	0.1		ng/L	1	1	1	1	1.0	I		26882
F3 Microsystim-YR L231 0.1 20206180024 0.1 901 microsystim microsystim<	F8 Microostin YR L231 0.1 2200518024 0.1 2200518024 0.1	FS	Microcystin-RR	L231	0.1	202005180024	v	0.1		ng/L	1	I	I	1	1.0	I		26882
Kit Modularin L33 0.1 20206360024 0.1 0.014 modularin	F8 Modularin L231 0.1 2020618024 0.1 901	FS	Microcystin-YR	L231	0.1	202005180024	v	0.1		ng/L	1	1	1	1	1.0	I		26882
FS(S-Lphenylatanine-d5)(L231(NA) 20200516028 (NA) 55544 5714 $ug1$ 07 $60-150$ (m) 10^{-1} 10	F5 (B2L-phenylatanine-d5) (L231) (NA) 202063180028 (F) 5554 5714 ugL (F)	FS	Nodularin	L231	0.1	202005180024	v	0.1		ng/L	1	1	I	1	1.0	1		26882
FS G-Microcystin-RR-15N10 L231 N/A Z2006180028 974 855 ug/L 104 50-150 1.0 05/14/202 20:01 FS IS-Microcystin-RR-15N13 L231 N/A Z2006180028 952 9674 ug/L 99 60-150 1.0 05/14/202 20:01 FS IS-Microcystin-RR-15N13 L231 N/A Z2005180028 474 4756 ug/L 100 50-150 1.0 05/14/202 20:01 FS IS-Microcystin-RR-15N10 L231 N/A Z2005180028 474 4756 ug/L 100 50 10 10 57/14/202 20:01 FS Microcystin-RR-15N13 L231 N/A Z2005180028 - 474 4756 ug/L 100 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50 50	FS B-Microcystin-LR-1S110 L231 N/A 2200518028 974 855 ugl 114 50-150 1-0 <th< td=""><td>FS</td><td>IS-L-phenylalanine-d5</td><td>L231</td><td>N/A</td><td>202005180028</td><td></td><td>55594</td><td>57114</td><td>ng/L</td><td>97</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>1</td><td></td><td>26883</td></th<>	FS	IS-L-phenylalanine-d5	L231	N/A	202005180028		55594	57114	ng/L	97	50 - 150	1	1	1.0	1		26883
FS IS-Microsyntin-RR-15N13 L231 N/A 2220518028 9523 9674 ug/L 99 50-150 m 10 m 10 m 101<	FS IS-Midrocystin-RR-15N13 L231 N/A 22006180028 9532 9674 ugl 99 50-150 i= 10 i=	FS	IS-Microcystin-LR-15N10	L231	N/A	202005180028		974	855	ng/L	114	50 - 150	1	1	1.0	-		26883
FSIS-Microcystin-YR-15N10L231N/A 2020518028 3666 3646 ug/L 100 $50-150$ -1 10 0 -1 10 -1 10 0 -1 10 0 -1 10 0 -1 10 -1 10 0 -1 10 -1 10 0 -1 0 0 -1 0 0 0 -1 0 -1 0 0 -1 0 0 -1 0 0 -1 0 -1 0 0 -1 0 0 -1 0 0 -1 0 -1 0 0 -1 0 0 -1 0 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 <th< td=""><td>FS IS-Microcystin-YR-15N10 L231 N/A 22205180228 3646 ug/L 100 50-150 1-0 1-0 0-1 1-0 0-1 0-1 0-1 0-1 0514/2022001 FS IS-Uracil-d4 L231 N/A 22205180228 7 4474 4756 ug/L 94 50-150 1-0 1-0 1-0 0-1</td><td>FS</td><td>IS-Microcystin-RR-15N13</td><td>L231</td><td>N/A</td><td>202005180028</td><td></td><td>9532</td><td>9674</td><td>ng/L</td><td>66</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>1</td><td></td><td>26883</td></th<>	FS IS-Microcystin-YR-15N10 L231 N/A 22205180228 3646 ug/L 100 50-150 1-0 1-0 0-1 1-0 0-1 0-1 0-1 0-1 0514/2022001 FS IS-Uracil-d4 L231 N/A 22205180228 7 4474 4756 ug/L 94 50-150 1-0 1-0 1-0 0-1	FS	IS-Microcystin-RR-15N13	L231	N/A	202005180028		9532	9674	ng/L	66	50 - 150	1	1	1.0	1		26883
FSIS-Uracil-d4L231NA2220518028 $=$ 44744756ug/L $=$ <td>FS IS-Unacti-d4 L231 N/A 220205180228 4774 4776 ug/L 94 60-150 in- 10 in- 10 in- 101<td>FS</td><td>IS-Microcystin-YR-15N10</td><td>L231</td><td>N/A</td><td>202005180028</td><td></td><td>3656</td><td>3646</td><td>ng/L</td><td>100</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>-</td><td></td><td>26883</td></td>	FS IS-Unacti-d4 L231 N/A 220205180228 4774 4776 ug/L 94 60-150 in- 10 in- 10 in- 101 <td>FS</td> <td>IS-Microcystin-YR-15N10</td> <td>L231</td> <td>N/A</td> <td>202005180028</td> <td></td> <td>3656</td> <td>3646</td> <td>ng/L</td> <td>100</td> <td>50 - 150</td> <td>1</td> <td>1</td> <td>1.0</td> <td>-</td> <td></td> <td>26883</td>	FS	IS-Microcystin-YR-15N10	L231	N/A	202005180028		3656	3646	ng/L	100	50 - 150	1	1	1.0	-		26883
FS Anatoxina L231 0.02 202005180028 0 ug/L ··· ··· ··· ··· ··· 10 ··· 101/14/2020 20:01 FS Cylindrospermopsin L231 0.05 202005180028 0 0.05 mg/L ··· ··· ··· 10 ··· 05/14/2020 20:01 FS Microcystin-LA L231 0.01 202005180028 0 0.05 mg/L ··· ··· 10 ··· 05/14/2020 20:01 Microcystin-LA L231 0.1 202005180028 0 ··· 10/L ··· 10 ··· 05/14/2020 20:01 Microcystin-LF L231 0.1 202005180028 0 ··· 10/L ··· 10 ··· 05/14/2020 20:01 Microcystin-LF L231 0.1 202005180028 0 10/L ··· 10 ··· 10/L 10 ··· 10/L 10/L <td< td=""><td>F8 matoxina L231 0.02 20206180028 001 001 matoxina matorial matorial</td><td>FS</td><td>IS-Uracil-d4</td><td>L231</td><td>N/A</td><td>202005180028</td><td></td><td>4474</td><td>4756</td><td>ng/L</td><td>94</td><td>50 - 150</td><td>1</td><td>1</td><td>1.0</td><td>1</td><td></td><td>26883</td></td<>	F8 matoxina L231 0.02 20206180028 001 001 matoxina matorial	FS	IS-Uracil-d4	L231	N/A	202005180028		4474	4756	ng/L	94	50 - 150	1	1	1.0	1		26883
FS O/Indrospermopsin L231 0.05 202005180028 c 0.05 ug/L ··· ··· ··· ··· 10 ··· 101 101 101 101 </td <td>FS Cylindrospermopsin L231 0.05 222005180228 0.05<</td> <td>FS</td> <td>Anatoxin-a</td> <td>L231</td> <td>0.02</td> <td>202005180028</td> <td>v</td> <td>0.02</td> <td></td> <td>ng/L</td> <td> </td> <td>!</td> <td> </td> <td>1</td> <td>1.0</td> <td>I</td> <td></td> <td>26883</td>	FS Cylindrospermopsin L231 0.05 222005180228 0.05<	FS	Anatoxin-a	L231	0.02	202005180028	v	0.02		ng/L		!		1	1.0	I		26883
FS Microcystin-LA L231 0.1 202005180028 < 0.1 0.1 222005180028 < 0.1	Microcystin-LA L231 0.1 202005180028 < 0.1 0.1 202005180028 < 0.1 0.	FS	Cylindrospermopsin	L231	0.05	202005180028	v	0.05		ng/L	1	1		1	1.0	I		26883
dd Fs Microcystin-LF L231 0.1 202005180028 < 0.1 <td>Derivative BFS Microcystin-LF L231 0.1 202005180028 < 0.1 0.1 202005180028 < 0.1 0.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 </td> <td>ES Bo</td> <td></td> <td>L231</td> <td>0.1</td> <td>202005180028</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td></td> <td></td> <td></td> <td>1</td> <td>1.0</td> <td>1</td> <td></td> <td>26883</td>	Derivative BFS Microcystin-LF L231 0.1 202005180028 < 0.1 0.1 202005180028 < 0.1 0.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ES Bo		L231	0.1	202005180028	v	0.1		ng/L				1	1.0	1		26883
DFS Microcystin-LR L231 0.1 202005180028 < 0.1 ug/L 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Br Microcystin-LR L231 0.1 202005180028 < 0.1 0.1 202005180028 < 0.1 0.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ST Pa		L231	0.1	202005180028	v	0.1		ng/L	1	1	1	1	1.0	-		26883
C FS Microcystin-LY L231 0.1 202005180028 0.1 ug/L 1.0	CFS Microcystin-LY L231 0.1 202005180028 < 0.1 0.1 1.0 </td <td>SE SE</td> <td></td> <td>L231</td> <td>0.1</td> <td>202005180028</td> <td>v</td> <td>0.1</td> <td></td> <td>ng/L</td> <td> </td> <td>1</td> <td>1</td> <td>1</td> <td>1.0</td> <td>-</td> <td></td> <td>26883</td>	SE SE		L231	0.1	202005180028	v	0.1		ng/L		1	1	1	1.0	-		26883
G FS Microcystin-RR L231 0.1 202005180028 < 0.1 ug/L 1.0 1.0	g Fs Microcystin-RR L231 0.1 202005180028 < 0.1	ନ୍ଧ 13		L231	0.1	202005180028	v	0.1		ng/L	1	1	1	1	1.0	-	05/14/2020 20:01 462	26883
	고Page 2 of 4 EEA Run ID	S2 of		L231	0.1	202005180028	v	0.1		ng/L	1	1	1	1	1.0	I	05/14/2020 20:01 462	26883

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Sample Type	Analyte	Method	MRL	- Client ID	Re	Result Amo Flag	Amount	Target	Units	% Recovery	Recovery y Limits		RPD RPD Limit	Dil Tactor	Extracted	Analyzed	EEA ID #
FS	Microcystin-YR	L231	0.1	202005180028		v	0.1		ng/L					1.0	1	05/14/2020 20:01	4626883
FS	Nodularin	L231	0.1	202005180028	v l	v	0.1		ng/L	1				1.0		05/14/2020 20:01	4626883
FS	IS-L-phenylalanine-d5	L231	N/A	202005180029		55	55136	57114	ng/L	97	50 - 150	50 -		1.0	1	05/14/2020 20:15	4626884
FS	IS-Microcystin-LR-15N10	L231	N/A	202005180029		6	908	855	ng/L	106	50 - 150	50 -		1.0	1	05/14/2020 20:15	4626884
FS	IS-Microcystin-RR-15N13	L231	N/A	202005180029		10:	10212	9674	ng/L	106	50 - 150	- 20		1.0	1	05/14/2020 20:15	4626884
FS	IS-Microcystin-YR-15N10	L231	N/A	202005180029		36	3860	3646	ng/L	106	50 - 150	50 -		1.0	1	05/14/2020 20:15	4626884
FS	IS-Uracil-d4	L231	N/A	202005180029		46	4601	4756	ng/L	97	50 - 150	50 -		1.0	1	05/14/2020 20:15	4626884
FS	Anatoxin-a	L231	0.02	202005180029	V	< 0.	0.02		ng/L					1.0	1	05/14/2020 20:15	4626884
FS	Cylindrospermopsin	L231	0.05	202005180029	V	< 0.	0.05		ng/L	1				1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-LA	L231	0.1	202005180029		v	0.1		ng/L	1				1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-LF	L231	0.1	202005180029	V	v	0.1		ng/L	1	-			1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-LR	L231	0.1	202005180029	V	v	0.1		ng/L	1				1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-LY	L231	0.1	202005180029	V	v	0.1		ng/L	1		1		1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-RR	L231	0.1	202005180029		v	0.1		ng/L	1		1		1.0	1	05/14/2020 20:15	4626884
FS	Microcystin-YR	L231	0.1	202005180029	v	v	0.1		ng/L					1.0	1	05/14/2020 20:15	4626884
FS	Nodularin	L231	0.1	202005180029	V	v	0.1		ng/L	1		1		1.0	1	05/14/2020 20:15	4626884
FS	IS-L-phenylalanine-d5	L231	N/A	202005180030		54	54444	57114	ng/L	92	50 - 150	50 -		1.0	-	05/14/2020 20:28	4626885
FS	IS-Microcystin-LR-15N10	L231	N/A	202005180030		1	1141	855	ng/L	133	50 - 150	- 20		1.0	1	05/14/2020 20:28	4626885
FS	IS-Microcystin-RR-15N13	L231	N/A	202005180030		6	9789	9674	ng/L	101	50 - 150	50 -		1.0		05/14/2020 20:28	4626885
FS	IS-Microcystin-YR-15N10	L231	N/A	202005180030		37	3755	3646	ng/L	103	50 - 150	50 -		1.0		05/14/2020 20:28	4626885
FS	IS-Uracil-d4	L231	N/A	202005180030		43	4393	4756	ng/L	92	50 - 150	- 20		1.0	-	05/14/2020 20:28	4626885
FS	Anatoxin-a	L231	0.02	202005180030	v	°.	0.02		ng/L					1.0	-	05/14/2020 20:28	4626885
FS	Cylindrospermopsin	L231	0.05	202005180030	V	<	0.05		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Microcystin-LA	L231	0.1	202005180030	v	v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Microcystin-LF	L231	0.1	202005180030	v	v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Microcystin-LR	L231	0.1	202005180030		v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Microcystin-LY	L231	0.1	202005180030	v	v	0.1		ng/L					1.0	-	05/14/2020 20:28	4626885
FS	Microcystin-RR	L231	0.1	202005180030		v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Microcystin-YR	L231	0.1	202005180030	•	v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
FS	Nodularin	L231	0.1	202005180030		v	0.1		ng/L					1.0	1	05/14/2020 20:28	4626885
MS	IS-L-phenylalanine-d5	L231	N/A	202005180030		58	58660	57114	ng/L	103	50 - 150	- 20		1.0	1	05/14/2020 20:41	4627914
MS	IS-Microcystin-LR-15N10	L231	N/A	202005180030		6	984	855	ng/L	115	50 - 150	50		1.0	1	05/14/2020 20:41	4627914
MS	IS-Microcystin-RR-15N13	L231	N/A	202005180030		10(10068	9674	ng/L	104	50 - 150	- 20		1.0	I	05/14/2020 20:41	4627914
MS	IS-Microcystin-YR-15N10	L231	N/A	202005180030		36	3849	3646	ng/L	106	50 - 150	50 -		1.0	1	05/14/2020 20:41	4627914
MS	IS-Uracil-d4	L231	N/A	202005180030		47	4727	4756	ng/L	66	50 - 150	50 -		1.0	1	05/14/2020 20:41	4627914
MS	Anatoxin-a	L231	0.02	202005180030		0.1	0.1947	0.2	ng/L	97	70 - 130	30		1.0	1	05/14/2020 20:41	4627914
MS	Cylindrospermopsin	L231	0.05	202005180030		0.4	0.4817	0.5	ng/L	96	70 - 130	30		1.0	1	05/14/2020 20:41	4627914
ß	Microcystin-LA	L231	0.1	202005180030		0.7	0.7973	1.0	ng/L	80	70 - 130	30		1.0	1	05/14/2020 20:41 4627914	4627914
s⊮ ag	Microcystin-LF	L231	0.1	202005180030		0.8	0.8233	1.0	ng/L	82	70 - 130	30		1.0	I	05/14/2020 20:41	4627914
S	Microcystin-LR	L231	0.1	202005180030		0.8	0.8650	1.0	ng/L	86	70 - 130	30		1.0	1	05/14/2020 20:41 4627914	4627914
ų	Microcvstin-LY	L231	0.1	202005180030		0.7	0.7615	1.0	na/L	76	70 - 130	30		1.0	1	05/14/2020 20:41 4627914	4627914

EEA Run ID 274697 / EEA Report # 485743

Antiple Antiple Method Metho						QC S	QC Summary Report (cont.	port (cont.)									
Macrostin-RR L231 D11 Z2006180000 D3434 L10 QpL Ch T0 D1 D2 Macrostin-RR L231 D1 Z2006180000 D3434 10 QpL CH D2	Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recover		RPD		Dil Factor	Extracted	Analyzed	EEA ID #
Macrosinic-Rit L21 Q1 Z200816000 Q8400 Q10 Q10<	MS	Microcystin-RR	L231	0.1	202005180030		0.9434	1.0	ng/L	94	70 - 130	1		1.0	-	05/14/2020 20:41	4627914
Mondatime L231 0.1 2200818000 0.844 1.0 0.60 67 1.0	WS	Microcystin-YR	L231	0.1	202005180030		0.8840	1.0	ng/L	88	70 - 130	1	1	1.0	I	05/14/2020 20:41 4627914	4627914
Skintensystammetic L231 NA Z200616000 P 5768 5714 0p1 60-10 10 10 10 Skintensystammetic L231 NA Z200616000 P 857 695 695 695 697 60-10 10 10 10 Skintensystamyet-NFL18110 L231 NA Z200616000 P 8713 864 6947 6947 6976 10 <t< td=""><td>MS</td><td>Nodularin</td><td>L231</td><td>0.1</td><td>202005180030</td><td></td><td>0.9484</td><td>1.0</td><td>ng/L</td><td>95</td><td>70 - 130</td><td>1</td><td>1</td><td>1.0</td><td>I</td><td>05/14/2020 20:41</td><td>4627914</td></t<>	MS	Nodularin	L231	0.1	202005180030		0.9484	1.0	ng/L	95	70 - 130	1	1	1.0	I	05/14/2020 20:41	4627914
Kincrostinu.R: 5M(10) L211 NM Z2005 80000 R28 R26 R26 R2	MSD	IS-L-phenylalanine-d5	L231	N/A	202005180030		57608	57114	ng/L	101	50 - 150	1	1	1.0	-	05/14/2020 20:54	4627915
Image: Matrix	MSD	IS-Microcystin-LR-15N10	L231	N/A	202005180030		826	855	ng/L	97	50 - 150	1	1	1.0	1	05/14/2020 20:54	4627915
Image: Simple interval into the second	MSD	IS-Microcystin-RR-15N13	L231	N/A	202005180030		9875	9674	ng/L	102	50 - 150	1		1.0	I	05/14/2020 20:54	4627915
IS-Urschield L231 NA Z2200516030 Q 4756 QGL G0 G0-150 L3-1 Aratkoun-a L231 0.02 Z200516030 D 0.933 UP PO	MSD	IS-Microcystin-YR-15N10	L231	N/A	202005180030		3713	3646	ng/L	102	50 - 150	1	1	1.0	1	05/14/2020 20:54	4627915
Materian L231 0.02 22200516000 0 0123 0.02 0.01 0700 0700	MSD	IS-Uracil-d4	L231	N/A	202005180030		4283	4756	ng/L	60	50 - 150	1	1	1.0		05/14/2020 20:54	4627915
Cylindrospernospin L231 0.05 22200516000 0 0.5448 0.5 0.90. 70-130 50-	MSD	Anatoxin-a	L231	0.02	202005180030		0.1923	0.2	ng/L	96	70 - 130	1.2	30	1.0	-	05/14/2020 20:54	4627915
Microcysin-Lk L231 0.1 22005160300 0 0.2230 0.1 2200516030 0 0.4	MSD	Cylindrospermopsin	L231	0.05	202005180030		0.5148	0.5	ng/L	103	70 - 130	6.6	30	1.0		05/14/2020 20:54	4627915
Mercostin-LF L231 Q:1 2200518030 I 10644 I Q:0 I Q:0	MSD	Microcystin-LA	L231	0.1	202005180030		0.9293	1.0	ng/L	93	70 - 130	15	30	1.0	-	05/14/2020 20:54	4627915
Microcystin-LK L231 0.1 22006160030 1.2382 1.0 0gL 724 70 26 30 Microcystin-LY L231 0.1 22006160030 0 0.9759 1.0 0gL 98 70 26 30 30 Microcystin-LK L231 0.1 22006160030 0 0.9759 1.0 0gL 98 70 26 30 30 Microcystin-RK L231 0.1 22006160030 0 0.9739 1.0 0gL 98 70 10 20	MSD	Microcystin-LF	L231	0.1	202005180030		1.0464	1.0	ng/L	105	70 - 130	24	30	1.0	1	05/14/2020 20:54	4627915
Microopsin-LY L231 0.1 Z0200518030 0 0.9759 1.0 with 28 70-130 26 30 Microopsin-RK L231 0.1 Z0200518030 0 0.9839 1.0 with 96 70-130 24 20 Microopsin-RK L231 0.1 Z02005180300 0 0.9839 1.0 with 77-130 24 20 10 10 10 10 12 10 <td>MSD</td> <td>Microcystin-LR</td> <td>L231</td> <td>0.1</td> <td>202005180030</td> <td></td> <td>1.2382</td> <td>1.0</td> <td>ng/L</td> <td>124</td> <td>70 - 130</td> <td>35</td> <td>30</td> <td>1.0</td> <td>1</td> <td>05/14/2020 20:54</td> <td>4627915</td>	MSD	Microcystin-LR	L231	0.1	202005180030		1.2382	1.0	ng/L	124	70 - 130	35	30	1.0	1	05/14/2020 20:54	4627915
Microcystin-RR L231 0.1 22020510030 0	MSD	Microcystin-LY	L231	0.1	202005180030		0.9759	1.0	ng/L	98	70 - 130	25	30	1.0		05/14/2020 20:54	4627915
Microcystin-YR L231 0.1 22205180030 0 07229 10 wgll 70-130 98 30 Nodularin L231 0.1 22205180030 11730 1.0 wgll 70-130 21 30 IS-Lphenylalanine-d5 L231 NA 55313 5714 wgll 70-130 21 30 IS-Lphenylalanine-d5 L231 NA 55313 5714 wgll 70-130 21 30 IS-Microsystin-RF-15N10 L231 NA 912 8553 9574 wgll 71 70	MSD	Microcystin-RR	L231	0.1	202005180030		0.9839	1.0	ng/L	98	70 - 130	4.2	30	1.0	-	05/14/2020 20:54	4627915
Nodularin L231 0.1 22005180300 0 1.1730 107 70-130 21 30 Sk-phenylalanine-d5 L231 NA 55313 5714 0glt 97 60-150 <td>MSD</td> <td>Microcystin-YR</td> <td>L231</td> <td>0.1</td> <td>202005180030</td> <td></td> <td>0.9729</td> <td>1.0</td> <td>ng/L</td> <td>97</td> <td>70 - 130</td> <td>9.6</td> <td>30</td> <td>1.0</td> <td>-</td> <td>05/14/2020 20:54</td> <td>4627915</td>	MSD	Microcystin-YR	L231	0.1	202005180030		0.9729	1.0	ng/L	97	70 - 130	9.6	30	1.0	-	05/14/2020 20:54	4627915
ISL-phenylatnine-d5 L231 N/A 55313 5714 ug/L 97 60-150 1 IS-Microcystin-RR-15N10 L231 N/A 912 855 ug/L 107 50-150 1<	MSD	Nodularin	L231	0.1	202005180030		1.1730	1.0	ng/L	117	70 - 130	21	30	1.0	I	05/14/2020 20:54	4627915
IS-Microcystin-LR-15/10 L231 NA 912 855 ugt 107 50-150 IS-Microcystin-RR-15/13 L231 NA 8963 9674 ugt 93 50-150 1 1 IS-Microcystin-RR-15/13 L231 NA 8963 9674 ugt 93 50-150 1 1 IS-Microcystin-RR-15/13 L231 NA 8963 9674 ugt 93 50-150 1 1 1 IS-Microcystin-R4 L231 NA 2430 0-1 92 50-150 1 1 1 IS-Microcystin-LA L231 0.02 0-130 0-13 10-1 1	ccc	IS-L-phenylalanine-d5	L231	N/A	I		55313	57114	ng/L	97	50 - 150	1	1	1.0	1	05/14/2020 21:21	4627916
IS-Microcystin-RR-15N13 L231 N/A 8863 9674 ug/L 93 60-160 1 IS-Microcystin-RR-15N10 L231 N/A 3477 3646 ug/L 95 50-150 1 IS-Microcystin-RR-15N10 L231 N/A 3477 3646 ug/L 95 50-150 1 IS-Microcystin-RR-15N10 L231 N/A 4380 4756 ug/L 95 50-150 1	ccc	IS-Microcystin-LR-15N10	L231	N/A	I		912	855	ng/L	107	50 - 150	1		1.0	I	05/14/2020 21:21	4627916
IS-Microcystin-YR-15N10 L231 N/A 3477 3646 ug/L 95 50-150 IS-Uracil-d4 L231 N/A 4380 4756 ug/L 95 50-150	ccc	IS-Microcystin-RR-15N13	L231	N/A	I		8963	9674	ng/L	93	50 - 150	1	1	1.0	I	05/14/2020 21:21	4627916
IS-Uracil.d4 L231 N/A 4380 4756 ug/L 92 50 - 150 Anatoxin-a L231 0.02 0.1958 0.2 ug/L 98 70 - 130	ccc	IS-Microcystin-YR-15N10	L231	N/A	I		3477	3646	ng/L	95	50 - 150	1	1	1.0	I	05/14/2020 21:21	4627916
Anatoxin-a L231 0.02 0.156 0.2 ug/L 98 70-130 Cylindrospermopsin L231 0.05 0.5044 0.5 ug/L 98 70-130 1 1 Microcystin-LA L231 0.1 0.5044 0.5 ug/L 83 70-130 1 1 Microcystin-LA L231 0.1 0.5044 0.5 ug/L 83 70-130 1 1 1 Microcystin-LA L231 0.1 0.8317 1.0 ug/L 83 70-130 1 1 Microcystin-LK L231 0.1 0.8372 1.0 ug/L 86 70-130 1 1 1 Microcystin-LK L231 0.1 10.0 10.041 10 10 1 1 1 Microcystin-KK L231 0.1	ccc	IS-Uracil-d4	L231	N/A	I		4380	4756	ng/L	92	50 - 150	1	1	1.0	I	05/14/2020 21:21	4627916
Cylindrospermopsin L231 0.05 0.544 0.5 ug/L 101 70-130 Microcystin-LA L231 0.1 0.3317 1.0 ug/L 83 70-130	ccc	Anatoxin-a	L231	0.02	I		0.1958	0.2	ng/L	98	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Microcystin-LA L231 0.1 0.8317 1.0 ug/L 83 70-130	ccc	Cylindrospermopsin	L231	0.05	I		0.5044	0.5	ng/L	101	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Microcystin-LF L231 0.1 0.8572 1.0 ug/L 86 70-130	ccc	Microcystin-LA	L231	0.1	I		0.8317	1.0	ng/L	83	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Microcystin-LR L231 0.1 1.0412 1.0 ug/L 70-130	ccc	Microcystin-LF	L231	0.1	I		0.8572	1.0	ng/L	86	70 - 130	1	1	1.0	ł	05/14/2020 21:21	4627916
Microcystin-LY L231 0.1 0.9542 1.0 ug/L 95 70-130	ccc	Microcystin-LR	L231	0.1	I		1.0412	1.0	ng/L	104	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Microcystin-RR L231 0.1 1.0356 1.0 ug/L 70 - 130 <td>ccc</td> <td>Microcystin-LY</td> <td>L231</td> <td>0.1</td> <td>I</td> <td></td> <td>0.9542</td> <td>1.0</td> <td>ng/L</td> <td>95</td> <td>70 - 130</td> <td>1</td> <td>1</td> <td>1.0</td> <td>I</td> <td>05/14/2020 21:21</td> <td>4627916</td>	ccc	Microcystin-LY	L231	0.1	I		0.9542	1.0	ng/L	95	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Microcystin-YR L231 0.1 1.0044 1.0 ug/L 100 70 - 130 Nodularin L231 0.1 0.3568 1.0 ug/L 96 70 - 130	ccc	Microcystin-RR	L231	0.1	I		1.0356	1.0	ng/L	104	70 - 130	1	1	1.0	I	05/14/2020 21:21	4627916
Nodularin L231 0.1 0.9568 1.0 ug/L 96 70-130	000	Microcystin-YR	L231	0.1	I		1.0044	1.0	ng/L	100	70 - 130	1	1	1.0	1	05/14/2020 21:21 4627916	4627916
	ccc	Nodularin	L231	0.1			0.9568	1.0	ng/L	96	70 - 130	1	1	1.0		05/14/2020 21:21	4627916

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	Sar	Sample Type Key	
Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCC	Continuing Calibration Check		
FS	Field Sample		
LMB	Laboratory Method Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

END OF REPORT

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

Date of Issue 10/23/2020 Monica Van **EUROFINS EATON**

ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 895439 Project: 470440-DW1 Group: Algal Toxins

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	x	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	х		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	t	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		x
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

Acknowledgement of Samples Received

Addr: San Francisco PUC 1000 El Camino Real Millbrae, CA 94030

Attn: Megan Tran Phone: 650-872-5945 Client ID: SANFRAN Folder #: 895439 Project: 470440-DW1 Sample Group: Algal Toxins

Project Manager: Monica Van Natta Phone: 559-797-1931 PO #: PRO.0165 PO-000043463 TO#01

The following samples were received from you on **September 30, 2020** at **1126**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID		Sample Date
202009300254	LMER_E_00_LIM		09/29/2020 1200
	Variable ID: 2076535-01		
	@LCMS-ALGALTOX - LOW	@UCMR4 546	
<u>202009300255</u>	LMER_N_00_LIM		09/29/2020 1300
	Variable ID: 2076536-01		
	@LCMS-ALGALTOX - LOW	@UCMR4 546	
202009300256	LMER_R_00_LIM		09/29/2020 0900
	Variable ID: 2076537-01		
	@LCMS-ALGALTOX - LOW	@UCMR4 546	
202009300257	LMER_S_00_LIM		09/29/2020 1000
	Variable ID: 2076538-01		
	@LCMS-ALGALTOX - LOW	@UCMR4 546	

Test Description

@LCMS-ALGALTOX - LOW -- Algal-toxins by LCMS Low

@UCMR4 546 -- UCMR4 546

S		SAN FRANCISCO PUBLIC UTILITIES COMMISSION	ITILITIES COMMIS	SSION	Water Quality I	Water Quality Division
	Water Power Sewer Services of the San Francisco Public Utilities Commission	SUB LABORATORY CHAIN OF CUSTODY RECORD	OF CUSTODY RECORD	395436	Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407	4030 2-5945 2-3407
Out Source#: 4349	ource#: 4349 Ship To : SUB_LAB	AB Ship Date: 09/29/2020		Ship Via: FedEx	Tracking#: 7711 0278 2750	1 0278 2750
Index Code: C			FOR LAB	FOR LAB USE ONLY		
		METHOD OF TRANSPORT (CHECK ONE)	SAMPLE CONDITION	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	_	SAMPLE STORAGE
SHIPPED BY:	N V V ST L C C S S S S S S S S S S S S S S S S S	D MILLBRAE	CHILLED	CONTAINER INTACT	NTACT LOCATION	NO
TVDF.	-	D MOCCASIN		H OF SAMPLE	# OF SAMPLES MATCH COC REFRIG#	
(Circle One)	KUUTINE / SPECIAL	COURIER	SEAL INTACT PRESERVED		HEADSPACE (VOA) SHELF# COOLER TEMPERATURE (0-6°C): OTHERS	
		TE E	E		Ī	
				פחפ ^ד ערפעו פחפ ^ד פ י פ	N	
Sample ID	Source Collected Da	Rec. Date/By	LocationNotes/Comments			
2076535-01	LMER_E_00_LIM 9/29/20 120	1200 RMJOHNSO 9/29/20 PHOANG		21 DAYS 10	2-98	
2076536-01	LMER_N_00_LIM 9/29/20 1300	RMJ		21 DAYS 10	5-6-2	
2076537-01	LMER_R_00_LIM 9/29/20 0900	0 RMJOHNSO 9/29/20 PHOANG		21 DAYS 10	<u>\$6-2</u>	
2076538-01	LMER_S_00_LIM 9/29/20 1000	RMJ	>	21 DAYS 10	<u>\$6-2</u>	
					(or 150/5-412)	
	Y					
	771	7711 0278 2750				
				\uparrow indicates the last digit(s) of container ID	git(s) of container ID	
RELINQUISHED FROM:		RELINQUISHED TO:	(Print Name/Sign)	DATE/TIME:	Comments:	
Page	NHZ. WWH	1206	1		470440DW: /sijr 546/sijr algal toxin/ik Mercen	XIN/IK MERCED
SUB LAB RECEIVED BY:	(Print Name/Sign)	DATE/TIME: SEND REPORT TO:		AGENCY:	: Please see subsequent pages for analyte	ages for analyte
Printed on: Tueso	Printed on: Tuesday, September 29, 2020		-		Vertical Page Number: Pag Horizontal Page Number:	: Page 1 of 3 umber: 1

Out Source#: 4349 Shi				Fax: (650) 952-3407
	Ship To : SUB_LAB	Ship Date: 09/29/2020	Ship Via: FedEx	Tracking#: 7711 0278 2750
			FOR LAB USE ONLY	
Sample ID 2076535-01	Source LMER_E_00_LIM			
Container ID (Kep of 3) 2076535-01-07 to 2076535-01-09 Analysis-511B ALGAL TOVIN	Mathod: Dofault			Collect Method 4°C
	Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Container ID (Rep of 1) 2076535-01-10 Analvsis: SUB 546 Total Microcystins	Method: EPA 546			Collect Method 4°C
Sample ID 2076536-01 Container ID (Rep of 3) 2076536-01-07 to 2076536-01-09	Source LMER_N_00_LIM			Collect Method 4°C
	Method: Default Cylindrospermopsin Microsocia DB	Microcystin-LA Microcycein-VB	Microcystin-LF Modularia	Microcystin-LR
Rep of 1)) 3 546 tins	Method: EPA 546			Collect Method 4°C
Sample ID 2076537-01 Container ID (Rep of 3) 2076537-01-07 to 2076537-01-09	Source LMER_R_00_LIM			Collect Method 4°C
	Microcystin-RR Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR Collect Method 4°C
Total Microcystins	Metriou: EFA 340 Source LMER_S_00_LIM			Collect Method

Services of the San Francisco Public Utilities Commission	Utilities Commission	SUB LABORATORY CHAIN OF CUSTODY RECORD	JDY RECORD	Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4349	Ship To : SUB_LAB	Ship Date: 09/29/2020	Ship Via: FedEx	Tracking#: 7711 0278 2750
2076538-01-07 to 2076538-01-09			FOR LAB USE ONLY	4°C
Analvsis: SUB ALGAL TUXIN Anatoxin Microcystin-LY Container ID (Rep of 1) 2076538-01-10	Metroo: Delaut Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546			
Printed on: Tuesday, September 29, 2020	0			Vertical Page Number Page 3 of 3

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Eaton Analytical SAMPLE TEMP RECEIVED: EEA Folder Number: $g < 5 \cdot 4$ ($3 \cdot 4$) SAMPLE TEMP RECEIVED: Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not. SAMPLE TEMP RECEIVED: Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not. IR Gun ID = $\mathcal{O}(M)$ (Observation= $\frac{3}{2} \cdot \frac{1}{2}$, °C) (Corr. Factor $\frac{2}{2}$, °C) (Final = $\frac{2}{2} \cdot \frac{1}{2}$ °C)	
TYPE OF ICE: Real Synthetic / No Ice CONDITION OF ICE: Frozen / Partially Frozen Thawed N/A	
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:	
1) Chemistry: >0, ≤6°C, not frozen (NELAP) (if received after 24 hrs of sample collection)	
2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C if received on ice the same day as sample collection, within 8 hours)	
3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)	
*C) (Cont-Factor *C) (Final = *C)	
3 = (Observation= *c) (corr Factor *c) (Final = *c) *c) 4 = (Observation= *c) (corr Factor *c) (Final = *c) 4 Dioxin (1613 or 2.3.7.8 TCDD): must be between 0-4 °C, not frozen (if received after 24 hrs of sample collection)	
5) pH Check. Manufacturer: Lot Number: pH strip type: 0 - 14 or Expiration Date Results: 6) Chlorine check. Manufacturer: Sansafa Lot No Expiration Date: Results.	sults:
Ispace:	
Headspace: Headspace Documentation (use additional VOC and Radon Internal COFC for additional bottles) Exempt from headspace concerns: Methods 515.4, HAA(6251, 552), 505, S7ME, @CH, 532LCMS, 555, 535, Anatoxin, LCMS methods using 40 ml vials, International clie	
Samp ID Bottle # None/<6 >6mm mm Camp ID Bottle # None/<6 >6mm Cam	
Note Sample IDs which have dissimilar headspace (i.e. potential sampling errors):	
SIGNATURE PRINT NAME COMPANYITILE DATE TIME	[
RECEIVED BY: The continue and Analytical 7/30/200 1/126	9
QA F0 0083.8 (QA F0-FRM5504) (8/25/20) Ver 8	Pageof

Page 8 of 17 pages



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Flags Legend:

V1 - CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC

Megan Tran 1000 El Camino Real Millbrae, CA 94030 Samples Received on: 09/30/2020 1126

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	202009300254	LMER E 00 LIM				
10/16/2020 0:25	Microcystin-LY (MC-LY)		0.11		ug/L	0.10
10/09/2020 11:38	Total Microcystins		9.1		ug/L	30
	202009300255	LMER N 00 LIM				
10/16/2020 0:38	Microcystin-LY (MC-LY)		0.12		ug/L	0.10
10/22/2020 13:20	Microcystin-YR (MC-YR)		0.22		ug/L	0.10
10/09/2020 11:38	Total Microcystins		23		ug/L	30
	202009300256	LMER_R_00_LIM				
10/09/2020 11:38	Total Microcystins		7.2		ug/L	30
	202009300257	LMER S 00 LIM				
10/09/2020 11:38	Total Microcystins		8.6		ug/L	30

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Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030 Laboratory Data

Report: 895439 Project: 470440-DW1 Group: Algal Toxins

Samples Received on: 09/30/2020 1126

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_	E_00_LIM (20	200930025	<u>4)</u>			Samp	oled on 09/29	/2020 120	0
	Variat	ole ID: 207653							
09/30/20	10/00/20 11:28		UCMR4 546		Total Migropusting	9.1		30	10
	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins		ug/L %		
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	1.10	%	110	1
10/22/20	10/22/20 12:08	1283309	- Algal-toxins I 1282281	(LC-MS-MS)	Anatoxin a	ND	ug/L	0.020	1
10/22/20	10/22/20 12:08	1283309	1282281	(LC-MS-MS)	Cylindrospermopsin	ND	ug/L	0.020	1
10/22/20	10/22/20 12:00	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.000	1
10/15/20	10/16/20 0:25	1281780	1281820	. ,	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:25	1281780	1281820	(LC-MS-MS)		ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR) Microcystin-LY (MC-LY)	0.11		0.10	1
10/15/20	10/16/20 0:25	1281780	1281820	(LC-MS-MS)		ND	ug/L	0.10	1
				(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L		1
10/22/20	10/22/20 12:08	1283309	1282281	(LC-MS-MS)	Microcystin-YR (MC-YR)		ug/L	0.10	•
10/15/20	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER_	N_00_LIM (20					Samp	oled on 09/29	/2020 130	0
	Valla	DIE ID: 2076536	UCMR4 546						
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	23	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	3.90	%	390	1
		LC-MS-MS	- Algal-toxins I	. ,					
10/22/20	10/22/20 13:20	1283309	1282281	(LC-MS-MS)	Anatoxin a	ND	ug/L	0.020	1
10/22/20	10/22/20 13:20	1283309	1282281	(LC-MS-MS)	Cylindrospermopsin	ND	ug/L	0.050	1
10/15/20	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/22/20	10/22/20 13:20	1283309	1282281	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	0.12	ug/L	0.10	1
10/15/20	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/22/20	10/22/20 13:20	1283309	1282281	(LC-MS-MS)	Microcystin-YR (MC-YR)	0.22	ug/L	0.10	1
10/15/20	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER	R 00 LIM (20	200930025	6)	. ,		Samp	led on 09/29	/2020 090	0
		ole ID: 2076537							•
		EPA 546 -	UCMR4 546						
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	7.2	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	0.200	%	20.0	1
		LC-MS-MS	- Algal-toxins I	by LCMS Low					
10/22/20	10/22/20 13:39	1283309	1282281	(LC-MS-MS)	Anatoxin a	ND	ug/L	0.020	1
10/22/20	10/22/20 13:39	1283309	1282281	(LC-MS-MS)	Cylindrospermopsin	ND	ug/L	0.050	1
Roundina on	totals after summation	1							

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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San Francisco PUC					
Megan Tran					
1000 El Camino Real					

Millbrae, CA 94030

Report: 895439 Project: 470440-DW1 Group: Algal Toxins

Samples Received on: 09/30/2020 1126

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/22/20	10/22/20 13:39	1283309	1282281	(LC-MS-MS)	Microcystin-YR (MC-YR)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER	S 00 LIM (20)	2009300257	<u>7)</u>			Samp	led on 09/29	/2020 100	0
	Variab	le ID: 2076538	3-01						
		EPA 546 - l	JCMR4 546						
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	8.6	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	3.20	%	320	1
		LC-MS-MS	- Algal-toxins b	by LCMS Low					
10/22/20	10/22/20 13:55	1283309	1282281	(LC-MS-MS)	Anatoxin a	ND	ug/L	0.020	1
10/22/20	10/22/20 13:55	1283309	1282281	(LC-MS-MS)	Cylindrospermopsin	ND	ug/L	0.050	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-YR (MC-YR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



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San Francisco PUC

UCMR4 546

Prep Batch: 1277783	Analytical Batch: 1280234
202009300254	LMER_E_00_LIM
202009300255	LMER_N_00_LIM
202009300256	LMER_R_00_LIM
202009300257	LMER_S_00_LIM

Algal-toxins by LCMS Low

Prep Batch: 1281780 Analytical Batch: 1281820

202009300254	LMER_E_00_LIM
202009300255	LMER_N_00_LIM
202009300256	LMER_R_00_LIM
202009300257	LMER_S_00_LIM

Algal-toxins by LCMS Low

Prep Batch: 1283309 Analytical Batch: 1282281

202009300254	LMER_E_00_LIM
202009300255	LMER_N_00_LIM
202009300256	LMER_R_00_LIM
202009300257	LMER_S_00_LIM

Report: 895439 Project: 470440-DW1 Group: Algal Toxins

Analysis Date: 10/09/2020

Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF

Analysis Date: 10/16/2020

Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG

Analysis Date: 10/22/2020

Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546								
Analytical Ba	atch: 1280234					Analysis D	ate: 10/09/	2020	
LCS1	%CV			2.80	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202010050529	%CV	2.20		ND	%				
MSD2_202010050529	%CV	2.20		ND	%				
LCS1	Total Microcystins		0.5	0.472	ug/L	94	(60-140)		
LCS2	Total Microcystins		0.5	0.479	ug/L	96	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.252	ug/L	84	(50-150)		
MS2_202010050529	Total Microcystins	ND	0.5	0.229	ug/L	<u>34</u>	(60-140)		
MSD2_202010050529	Total Microcystins	ND	0.5	0.207	ug/L	<u>29</u>	(60-140)	40	10
Algal-toxins by LC	MS Low by LC-MS-MS								
	atch: 1281820					Analysis D	ate: 10/15/	2020	
LCS1	Anatoxin a		0.2	0.131	ug/L	<u>66</u>	(70-130)		
LCS2	Anatoxin a		0.2	0.133	ug/L	<u>67</u>	(70-130)	30	1.5
MBLK	Anatoxin a			<0.02	ug/L				
MBLK	Anatoxin a			<0.02	ug/L				
MRL_CHK	Anatoxin a		0.02	0.0150	ug/L	75	(50-150)		
LCS1	Cylindrospermopsin		0.5	0.363	ug/L	73	(70-130)		
LCS2	Cylindrospermopsin		0.5	0.326	ug/L	<u>65</u>	(70-130)	30	11
MBLK	Cylindrospermopsin			<0.05	ug/L				
MBLK	Cylindrospermopsin			<0.05	ug/L				
MRL_CHK	Cylindrospermopsin		0.05	0.0460	ug/L	92	(50-150)		
MS_202010100112	Cylindrospermopsin	ND	0.5	0.378	ug/L	76	(60-140)		
MSD_202010100112	Cylindrospermopsin	ND	0.5	0.371	ug/L	74	(60-140)	30	1.9
LCS1	Microcystin-LA (MC-LA)		1	0.897	ug/L	90	(70-130)		
LCS2	Microcystin-LA (MC-LA)		1	0.950	ug/L	95	(70-130)	30	5.7
MBLK	Microcystin-LA (MC-LA)			<0.1	ug/L				
MBLK	Microcystin-LA (MC-LA)			<0.1	ug/L				
MRL_CHK	Microcystin-LA (MC-LA)		0.1	0.115	ug/L	115	(50-150)		
MS_202010100112	Microcystin-LA (MC-LA)	0.24	1	1.08	ug/L	84	(60-140)		

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



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Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

RPD QC Type Spiked RPD% Analyte Native Recovered Units Yield(%) Limits (%) Limit(%) MSD 202010100112 Microcystin-LA (MC-LA) 0.24 1 1.06 ug/L 82 (60-140) 30 2.3 LCS1 Microcystin-LF (MC-LF) 1 0.797 ug/L 80 (70-130) LCS2 Microcystin-LF (MC-LF) 1 0.825 ug/L 83 (70-130) 30 3.5 ug/L MBLK Microcystin-LF (MC-LF) <0.1 ug/L MBLK Microcystin-LF (MC-LF) <0.1 ug/L MRL CHK Microcystin-LF (MC-LF) 0.1 0.133 133 (50-150)MS_202010100112 Microcystin-LF (MC-LF) ND 1 0.660 ug/L 60 (60-140) MSD_202010100112 ND ug/L Microcystin-LF (MC-LF) 1 0.751 69 (60-140) 30 13 LCS1 0.864 Microcystin-LR (MC-LR) 1 ug/L 86 (70-130) LCS2 1 0.905 91 Microcystin-LR (MC-LR) ug/L (70 - 130)30 4.6 MBI K Microcystin-LR (MC-LR) <0.1 ug/L MBLK Microcystin-LR (MC-LR) <0.1 ug/L MRL_CHK Microcystin-LR (MC-LR) 0.1 0.172 ug/L 172 (50-150) MS_202010100112 Microcystin-LR (MC-LR) ND 1 1.07 ug/L 99 (60-140) MSD_202010100112 ND 1 89 Microcystin-LR (MC-LR) 0.972 ug/L (60-140) 30 9.4 LCS1 Microcystin-LY (MC-LY) 1 0.825 ug/L 83 (70-130) LCS2 0.733 (70-130) Microcystin-LY (MC-LY) 1 ug/L 73 30 12 MBLK Microcystin-LY (MC-LY) <0.1 ug/L MBLK Microcystin-LY (MC-LY) <0.1 ug/L MRL_CHK Microcystin-LY (MC-LY) 0.1 0.0960 ug/L 96 (50-150) MS_202010100112 Microcystin-LY (MC-LY) ND 1 1.03 ug/L 103 (60-140) MSD 202010100112 Microcystin-LY (MC-LY) ND 1 0.857 ug/L 86 (60-140) 30 18 LCS1 Microcystin-RR (MC-RR) 1 0.842 84 (70-130) ug/L LCS2 0.862 Microcystin-RR (MC-RR) 1 ug/L 86 (70-130) 30 2.4 MBLK Microcystin-RR (MC-RR) < 0.1 ug/L MBLK Microcystin-RR (MC-RR) <0.1 ug/L MRL_CHK Microcystin-RR (MC-RR) 0.1 0.103 ug/L 103 (50-150) MS_202010100112 Microcystin-RR (MC-RR) ND 1 0.969 92 (60-140) ug/L MSD_202010100112 Microcystin-RR (MC-RR) ND 1 0.821 ug/L 78 (60-140) 30 17 LCS1 Microcystin-YR (MC-YR) 1 0.852 ug/L 85 (70-130) LCS2 1 0.782 78 (70-130) Microcystin-YR (MC-YR) ug/L 30 8.6 MBLK Microcystin-YR (MC-YR) < 0.1 ug/L MBLK Microcystin-YR (MC-YR) <0.1 ug/L ug/L MRL_CHK Microcystin-YR (MC-YR) 0.1 0.176 <u>176</u> (50-150)MS_202010100112 Microcystin-YR (MC-YR) ND 1 100 1.08 ug/L (60-140) Microcystin-YR (MC-YR) ND MSD_202010100112 1 1.18 ug/L 110 (60-140) 30 85 LCS1 Nodularin (NOD) 1 1 0 5 ug/L 105 (70-130)

1

1.02

ug/L

102

(70-130)

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used.

Nodularin (NOD)

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.(I) - Indicates internal standard compound.

LCS2

(i) - indicates internal standard compound.

2.9

30



Laboratory QC

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Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
MBLK	Nodularin (NOD)			<0.1	ug/L				
MBLK	Nodularin (NOD)			<0.1	ug/L				
MRL_CHK	Nodularin (NOD)		0.1	0.138	ug/L	138	(50-150)		
MS_202010100112	Nodularin (NOD)	ND	1	1.02	ug/L	99	(60-140)		
MSD_202010100112	Nodularin (NOD)	ND	1	1.13	ug/L	110	(60-140)	30	9.9
Algal-toxins by L	CMS Low by LC-MS-MS								
Analytical B	atch: 1282281				A	Analysis D	ate: 10/22/	2020	
LCS1	Anatoxin a		0.2	0.169	ug/L	85	(70-130)		
LCS2	Anatoxin a		0.2	0.166	ug/L	83	(70-130)	30	1.8
MBLK	Anatoxin a			<0.02	ug/L				
MRL_CHK	Anatoxin a		0.02	0.0140	ug/L	70	(50-150)		
MS_202010230054	Anatoxin a	ND	0.2	0.154	ug/L	73	(60-140)		
MSD_202010230054	Anatoxin a	ND	0.2	0.140	ug/L	66	(60-140)	30	9.5
LCS1	Cylindrospermopsin		0.5	0.521	ug/L	104	(70-130)		
LCS2	Cylindrospermopsin		0.5	0.590	ug/L	118	(70-130)	30	12
MBLK	Cylindrospermopsin			<0.05	ug/L				
MRL_CHK	Cylindrospermopsin		0.05	0.0400	ug/L	80	(50-150)		
MS_202010230054	Cylindrospermopsin	ND	0.5	0.314	ug/L	63	(60-140)		
MSD_202010230054	Cylindrospermopsin	ND	0.5	0.263	ug/L	<u>53</u>	(60-140)	30	18
LCS1	Microcystin-LA (MC-LA)		1	0.847	ug/L	85	(70-130)		
LCS2	Microcystin-LA (MC-LA)		1	0.867	ug/L	87	(70-130)	30	2.3
MBLK	Microcystin-LA (MC-LA)			<0.1	ug/L				
MRL_CHK	Microcystin-LA (MC-LA)		0.1	0.0800	ug/L	80	(50-150)		
MS_202010230054	Microcystin-LA (MC-LA)	ND	1	0.762	ug/L	76	(60-140)		
MSD_202010230054	Microcystin-LA (MC-LA)	ND	1	0.763	ug/L	76	(60-140)	30	0.13
LCS1	Microcystin-LF (MC-LF)		1	0.980	ug/L	98	(70-130)		
LCS2	Microcystin-LF (MC-LF)		1	1.22	ug/L	122	(70-130)	30	22
MBLK	Microcystin-LF (MC-LF)			<0.1	ug/L				
MRL_CHK	Microcystin-LF (MC-LF)		0.1	0.102	ug/L	102	(50-150)		
MS_202010230054	Microcystin-LF (MC-LF)	ND	1	1.06	ug/L	106	(60-140)		
MSD_202010230054	Microcystin-LF (MC-LF)	ND	1	0.927	ug/L	93	(60-140)	30	13
LCS1	Microcystin-LR (MC-LR)		1	0.729	ug/L	73	(70-130)		
LCS2	Microcystin-LR (MC-LR)		1	0.874	ug/L	87	(70-130)	30	18
MBLK	Microcystin-LR (MC-LR)			<0.1	ug/L				
MRL_CHK	Microcystin-LR (MC-LR)		0.1	0.132	ug/L	132	(50-150)		
MS_202010230054	Microcystin-LR (MC-LR)	ND	1	0.824	ug/L	76	(60-140)		
MSD_202010230054	Microcystin-LR (MC-LR)	ND	1	0.706	ug/L	65	(60-140)	30	15

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



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Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
LCS1	Microcystin-LY (MC-LY)		1	0.868	ug/L	87	(70-130)		
LCS2	Microcystin-LY (MC-LY)		1	1.08	ug/L	108	(70-130)	30	22
MBLK	Microcystin-LY (MC-LY)			<0.1	ug/L				
MRL_CHK	Microcystin-LY (MC-LY)		0.1	0.0520	ug/L	52	(50-150)		
MS_202010230054	Microcystin-LY (MC-LY)	ND	1	0.992	ug/L	99	(60-140)		
MSD_202010230054	Microcystin-LY (MC-LY)	ND	1	0.980	ug/L	98	(60-140)	30	1.2
LCS1	Microcystin-RR (MC-RR)		1	0.915	ug/L	92	(70-130)		
LCS2	Microcystin-RR (MC-RR)		1	0.911	ug/L	91	(70-130)	30	0.44
MBLK	Microcystin-RR (MC-RR)			<0.1	ug/L				
MRL_CHK	Microcystin-RR (MC-RR)		0.1	0.0860	ug/L	86	(50-150)		
MS_202010230054	Microcystin-RR (MC-RR)	ND	1	0.748	ug/L	75	(60-140)		
MSD_202010230054	Microcystin-RR (MC-RR)	ND	1	0.805	ug/L	80	(60-140)	30	7.3
LCS1	Microcystin-YR (MC-YR)		1	1.02	ug/L	102	(70-130)		
LCS2	Microcystin-YR (MC-YR)		1	1.13	ug/L	113	(70-130)	30	9.3
MBLK	Microcystin-YR (MC-YR)			<0.1	ug/L				
MRL_CHK	Microcystin-YR (MC-YR)		0.1	0.0980	ug/L	98	(50-150)		
MS_202010230054	Microcystin-YR (MC-YR)	ND	1	0.930	ug/L	93	(60-140)		
MSD_202010230054	Microcystin-YR (MC-YR)	ND	1	0.881	ug/L	88	(60-140)	30	5.4
LCS1	Nodularin (NOD)		1	0.830	ug/L	83	(70-130)		
LCS2	Nodularin (NOD)		1	0.761	ug/L	76	(70-130)	30	8.7
MBLK	Nodularin (NOD)			<0.1	ug/L				
MRL_CHK	Nodularin (NOD)		0.1	0.0810	ug/L	81	(50-150)		
MS_202010230054	Nodularin (NOD)	ND	1	0.618	ug/L	<u>59</u>	(60-140)		
MSD_202010230054	Nodularin (NOD)	ND	1	0.590	ug/L	<u>57</u>	(60-140)	30	4.6

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



Laboratory Comments

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030 **Folder Comments** Flags Legend: V1 - CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

Laboratory Hits



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030 Samples Received on: 09/30/2020 1126

nalyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	202009300254	LMER E 00 LIM				
0/16/2020 0:25	Microcystin-LY (MC-LY)		0.11		ug/L	0.10
0/09/2020 11:38	Total Microcystins		9.1		ug/L	30
	202009300255	LMER N 00 LIM				
0/16/2020 0:38	Microcystin-LY (MC-LY)		0.12		ug/L	0.10
0/09/2020 11:38	Total Microcystins		23		ug/L	30
	202009300256	LMER R 00 LIM				
0/09/2020 11:38	Total Microcystins		7.2		ug/L	30
	202009300257	LMER S 00 LIM				
0/09/2020 11:38	Total Microcystins		8.6		ug/L	30
		ININ				

Laboratory Data

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Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030				Samples Received on: 09/30/2020 1126					
Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_E	_00_LIM (20	2009300254	4)			Sam	led on 09/29	/2020 120	0
	Variab	ole ID: 2076535	i-01						
		EPA 546 - l							
	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	9.1	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	1.10	%	110	1
			- Algal-toxins b	-					
	:	1281780		(LC-MS-MS)	Anatoxin a		ug/L		1
10/15/20	:	1281780		(LC-MS-MS)	Cylindrospermopsin		ug/L		1
	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND (V1)	ug/L	0.10	1
	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	0.11	ug/L	0.10	1
	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/15/20	:	1281780		(LC-MS-MS)	Microcystin-YR (MC-YR)		ug/L		1
10/15/20	10/16/20 0:25	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER_N	1_00_LIM (20	2009300255	<u>5)</u>			Samp	oled on 09/29	/2020 130	0
	Variab	ole ID: 2076536							
00/00/00	10/00/00 11/00	EPA 546 - L			Table Name and Same	00		00	10
	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	23	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	3.90	%	390	1
10/15/00			- Algal-toxins b	-	Anatovia a				4
	:	1281780		(LC-MS-MS)	Anatoxin a		ug/L		1
	:	1281780	4004000	(LC-MS-MS)	Cylindrospermopsin	ND	ug/L	0.40	1
	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
	:	1281780	1001000	(LC-MS-MS)	Microcystin-LR (MC-LR)	0.40	ug/L	0.40	1
	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	0.12	ug/L	0.10	1
	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/15/20		1281780	1001000	(LC-MS-MS)	Microcystin-YR (MC-YR)	ND	ug/L	0.40	1
	10/16/20 0:38	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER R	<u>R 00 LIM (20</u>					Samp	oled on 09/29	/2020 090	0
	Variab	e ID: 2076537 EPA 546 - L							
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	7.2	ug/L	30	10
	10/09/20 11:38	1277783	1280234	(EPA 546) (EPA 546)	%CV	0.200	%	20.0	1
55/00/20	10/03/20 11:00				,	0.200	70	20.0	
10/15/20		1281780	- Algal-toxins b	(LC-MS-MS)	Anatoxin a		ug/L		1
10/15/20		1281780		(LC-MS-MS)	Cylindrospermopsin		ug/L		1
10/10/20	•	1201700		(LO-1010-1010)	C find openhopenh		ug/L		'

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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	San Francis Megan Tran 1000 El Cam Millbrae, CA	iino Real					ples Receive	ed on:	
Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	ND	ug/L	0.10	1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/15/20	:	1281780		(LC-MS-MS)	Microcystin-YR (MC-YR)		ug/L		1
10/15/20	10/16/20 0:50	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
LMER \$	S 00 LIM (20	200930025	7)			Samp	led on 09/29	/2020 100	0
	Variab	le ID: 2076538							
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	Total Microcystins	8.6	ug/L	30	10
09/30/20	10/09/20 11:38	1277783	1280234	(EPA 546)	%CV	3.20	«g/ _ %	320	1
			- Algal-toxins b	. ,			,		
10/15/20	:	1281780	, ngui textine i	(LC-MS-MS)	Anatoxin a		ug/L		1
10/15/20	:	1281780		(LC-MS-MS)	Cylindrospermopsin		ug/L		1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LA (MC-LA)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LF (MC-LF)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LR (MC-LR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-LY (MC-LY)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-RR (MC-RR)	ND	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Microcystin-YR (MC-YR)	ND (V1)	ug/L	0.10	1
10/15/20	10/16/20 1:02	1281780	1281820	(LC-MS-MS)	Nodularin (NOD)	ND	ug/L	0.10	1
		R							

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



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San Francisco PUC

UCMR4 546

Prep Batch: 1277783 Analytical Batch: 1280234

202009300254	LMER_E_00_LIM
202009300255	LMER_N_00_LIM
202009300256	LMER_R_00_LIM
202009300257	LMER_S_00_LIM

Algal-toxins by LCMS Low

Prep Batch: 1281780 Analytical Batch: 1281820

202009300254 202009300255 202009300256 202009300257	LMER_E_00_LIM LMER_N_00_LIM LMER_R_00_LIM LMER_S_00_LIM	4
		2

Analysis Date: 10/09/2020 Analyzed by: M8OF Analyzed by: M8OF

Analyzed by: M8OF Analyzed by: M8OF

Analysis Date: 10/16/2020

Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG Analyzed by: CWG



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Report: 895439 Project: 470440-DW1 Group: Algal Toxins

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546					. (
Analytical B	atch: 1280234					Analysis D	ate: 10/09/	/2020	
LCS1	%CV			2.80	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202010050529	%CV	2.20		ND	%				
MSD2_202010050529	%CV	2.20		ND	%				
LCS1	Total Microcystins		0.5	0.472	ug/L	94	(60-140)		
LCS2	Total Microcystins		0.5	0.479	ug/L	96	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.252	ug/L	84	(50-150)		
MS2_202010050529	Total Microcystins	ND	0.5	0.229	ug/L	<u>34</u>	(60-140)		
MSD2_202010050529	Total Microcystins	ND	0.5	0.207	ug/L	<u>29</u>	(60-140)	40	10
Algal-toxins by LC	MS Low by LC-MS-MS								
Analytical B	atch: 1281820				1	Analysis D	ate: 10/15/	/2020	
LCS1	Anatoxin a		0.2	0.131	ug/L	<u>66</u>	(70-130)		
LCS2	Anatoxin a		0.2	0.133	ug/L	<u>67</u>	(70-130)	30	1.5
MBLK	Anatoxin a			<0.02	ug/L				
MBLK	Anatoxin a	•		<0.02	ug/L				
MRL_CHK	Anatoxin a		0.02	0.0150	ug/L	75	(50-150)		
LCS1	Cylindrospermopsin		0.5	0.363	ug/L	73	(70-130)		
LCS2	Cylindrospermopsin		0.5	0.326	ug/L	<u>65</u>	(70-130)	30	11
MBLK	Cylindrospermopsin			<0.05	ug/L				
MBLK	Cylindrospermopsin			<0.05	ug/L				
MRL_CHK	Cylindrospermopsin		0.05	0.0460	ug/L	92	(50-150)		
MS_202010100112	Cylindrospermopsin	ND	0.5	0.378	ug/L	76	(60-140)		
MSD_202010100112	Cylindrospermopsin	ND	0.5	0.371	ug/L	74	(60-140)	30	1.9
LCS1	Microcystin-LA (MC-LA)		1	0.897	ug/L	90	(70-130)		
LCS2	Microcystin-LA (MC-LA)		1	0.950	ug/L	95	(70-130)	30	5.7
MBLK	Microcystin-LA (MC-LA)			<0.1	ug/L				
MBLK	Microcystin-LA (MC-LA)			<0.1	ug/L				
MRL_CHK	Microcystin-LA (MC-LA)		0.1	0.115	ug/L	115	(50-150)		
MS_202010100112	Microcystin-LA (MC-LA)	0.24	1	1.08	ug/L	84	(60-140)		

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



San Francisco PUC

Eaton Analytical

Laboratory QC

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 895439 Project: 470440-DW1 Group: Algal Toxins

RPD QC Type Analyte Native Spiked Recovered Units Yield(%) Limits (%) RPD% Limit(%) MSD 202010100112 Microcystin-LA (MC-LA) 0.24 (60-140)1 1.06 ug/L 82 30 2.3 LCS1 0.797 80 (70-130) Microcystin-LF (MC-LF) 1 ug/L (70-130) LCS2 Microcystin-LF (MC-LF) 1 0.825 ug/L 83 30 3.5 ug/L MBLK Microcystin-LF (MC-LF) <0.1 ug/比 MBLK Microcystin-LF (MC-LF) <0.1 133 MRL CHK Microcystin-LF (MC-LF) 0.1 0.133 (50-150) ug/L MS_202010100112 Microcystin-LF (MC-LF) ND 1 0.660 60 (60-140) ug/ MSD_202010100112 ND 1 69 Microcystin-LF (MC-LF) 0.751 (60-140) 30 13 ug/L LCS1 Microcystin-LR (MC-LR) 0.864 86 (70-130) 1 ug/L LCS2 1 0.905 91 (70-130) 30 Microcystin-LR (MC-LR) ug/L 46 <0.1 MBLK Microcystin-LR (MC-LR) ug/L <0.1 MBLK Microcystin-LR (MC-LR) ug/L MRL_CHK Microcystin-LR (MC-LR) 0.172 ug/L 172 (50-150) MS_202010100112 Microcystin-LR (MC-LR) ND 1.07 ug/L 99 (60-140) MSD_202010100112 Microcystin-LR (MC-LR) ND 0.972 ug/L 89 (60-140) 30 9.4 LCS1 Microcystin-LY (MC-LY) 0.825 ug/L 83 (70-130) LCS2 Microcystin-LY (MC-LY) 0.733 73 (70-130) ug/L 30 12 MBLK Microcystin-LY (MC-LY) <0.1 ug/L MBLK Microcystin-LY (MC-LY) <0.1 ug/L MRL_CHK Microcystin-LY (MC-LY) 0.1 0.0960 ug/L 96 (50-150) MS_202010100112 Microcystin-LY (MC-LY) ND 1 1.03 ug/L 103 (60-140) MSD 202010100112 Microcystin-LY (MC-LY) ND 1 0.857 ug/L 86 (60-140) 30 18 LCS1 Microcystin-RR (MC-RR) 1 0.842 ug/L 84 (70-130) LCS2 Microcystin-RR (MC-RR) 0.862 (70-130) 1 ug/L 86 30 2.4 MBLK Microcystin-RR (MC-RR) <0.1 ug/L MBLK Microcystin-RR (MC-RR) <0.1 ug/L MRL CHK Microcystin-RR (MC-RR) 0.1 0.103 ug/L 103 (50-150) Microcystin-RR (MC-RR) ug/L MS_202010100112 ND 1 0.969 92 (60-140) MSD 202010100112 Microcystin-RR (MC-RR) ND 1 0.821 ug/L 78 (60-140) 30 17 LCS1 Microcystin-YR (MC-YR) 1 0.852 ug/L 85 (70-130) LCS2 Microcystin-YR (MC-YR) 1 0.782 78 (70-130) 30 ug/L 8.6 ug/L MBLK Microcystin-YR (MC-YR) < 0.1 MBLK <0.1 Microcystin-YR (MC-YR) ug/L 0.1 0.176 MRL_CHK Microcystin-YR (MC-YR) ug/L <u>176</u> (50-150) MS_202010100112 Microcystin-YR (MC-YR) ND 1 1.08 100 ug/L (60-140) MSD_202010100112 ND ug/L Microcystin-YR (MC-YR) 1 1.18 110 (60-140) 30 85 LCS1 Nodularin (NOD) 1 105 1 0 5 ug/L (70-130) LCS2 Nodularin (NOD) 1 1.02 ug/L 102 (70-130) 30 2.9

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used.

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level). (S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.



Laboratory QC

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Report: 895439 Project: 470440-DW1 Group: Algal Toxins

San Francisco PUC

MBLK Nodularin (NOD) <0.1	MBLK Nodularin (NOD) <0.1	QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
MRL_CHK Nodularin (NOD) 0.1 0.138 ug/L 138 (50-150) MS_202010100112 Nodularin (NOD) ND 1 1.02 ug/L 99 (60-140)	MRL_CHK Nodularin (NOD) 0.1 0.138 ug/L 138 (50-150) MS_202010100112 Nodularin (NOD) ND 1 1.02 ug/L 99 (60-140)	MBLK	Nodularin (NOD)			<0.1	ug/L	(
MS_202010100112 Nodularin (NOD) ND 1 1.02 ug/L 99 (60-140)	MS_202010100112 Nodularin (NOD) ND 1 1.02 ug/L 99 (60-140)	MBLK	Nodularin (NOD)			<0.1	ug/L				
		MRL_CHK	Nodularin (NOD)		0.1	0.138	ug/L	138	(50-150)		
MSD_202010100112 Nodularin (NOD) ND 1 1.13 ug/E 110 (60-140) 30 9.9	MSD_202010100112 Nodularin (NOD) ND 1 1.13 ug/tb 110 (60-140) 30 9.9	MS_202010100112	Nodularin (NOD)		1		ug/L	99			
	MMARKE	MSD_202010100112	Nodularin (NOD)	ND	1	1.13	ug/L	110	(60-140)	30	9.9
				Ż	1	24	?				

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

Date of Issue 01/04/2021 Monica Van **EUROFINS EATON**

ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report:907916 Project:470440-DW1 Group:Microcystins-Lake Merced

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	х	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	x		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	1	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		× ×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		x
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

Acknowledgement of Samples Received

Addr: San Francisco PUC 1000 El Camino Real Millbrae, CA 94030

Attn: Megan Tran Phone: 650-872-5945 Client ID: SANFRAN Folder #: 907916 Project: 470440-DW1 Sample Group: Microcystins-Lake Merced

Project Manager: Monica Van Natta Phone: 559-797-1931 PO #: PRO.0165 PO-000043463 TO#01

The following samples were received from you on **December 10, 2020** at **1143**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID		Sample Date
202012100362	LMER_E_00_LIM		12/08/2020 1400
	Variable ID: 2079121-01		
	@UCMR4 546	L231_SB	
202012100363	LMER_N_00_LIM		12/08/2020 1500
	Variable ID: 2079123-01		
	@UCMR4 546		
202012100364	LMER_N_00_LIM		12/09/2020 1200
	Variable ID: 2079123-07		
	L231_SB		
202012100365	LMER_R_00_LIM		12/08/2020 1000
	Variable ID: 2079125-01		
	@UCMR4 546	L231_SB	
202012100366	LMER_S_00_LIM		12/08/2020 0900
	Variable ID: 2079127-01		
	@UCMR4 546	L231_SB	

Test Description

@UCMR4 546 -- UCMR4 546

S	San Francisco		FRANC	SISCO PUBLIC	SAN FRANCISCO PUBLIC UTILITIES COMMISSION	IISSION		N 001	Water Quality Division
	Water Power Sewer services of the San Francisco Public Utilities Commission	Wer	SUB L	ABORATORY CHAII	SUB LABORATORY CHAIN OF CUSTODY RECORD	Q	99	astration Fax	Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500	- Sector	Ship To: SUB_LAB		Ship Date: 12/09/2020		Ship Via: FedEx	dEx	Trackir	Tracking#: 121103155778
Codo:					FORL	FOR LAB USE ONLY			
	MMAN W TH	8		METHOD OF TRANSPORT (CHECK ONE)	SAMPLE CONDIT	TION UPON RECE	IPT (CHECK	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	SAMPLE STORAGE
SHIPPED BY:	Charlemand	11.0 1.		MILLBRAE		E	CONTAINER INTACT	INTACT	LOCATION
				MOCCASIN		0#	JF SAMPL	# OF SAMPLES MATCH COC	REFRIG#
IYPE: (Circle One)	KOUTINE / S	SPECIAL	COURIE OTHER	COURIER OTHER	D SEAL INTACT		HEADSPACE (VOA) COOLER TEMPERA	HEADSPACE (VOA) COOLER TEMPERATURE (0-6°C):	SHELF# OTHERS
			STATE EDT	STATE EDT REQUIRED: Y / N	SYTEM				
								יר־נסצו	
							975 ans	N N	
Sample ID	Source	Collected Date	/Time/By	Collected Date/Time/By WQD Rec. Date/By	LocationNotes/Comments	ts TAT			
2079121-01	LMER_E_00_LIM	12/8/20 1400	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
	3		2	12/9/20 PHOANG		21 DAYS		6	
2079123-01	LMER_N_00_LIM	12/8/20 1500	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10		
2079123-07	LMER_N_00_LIM	12/9/20 1200	SDELEO	12/9/20 JMITTRY		21 DAYS		7-8	
2079125-01	LMER_R_00_LIM	12/8/20 1000	RMJ0	12/8/20 PHOANG		21 DAYS	10	7-8	
			2	12/9/20 PHOANG		21 DAYS		6	
2079127-01	LMER_S_00_LIM	12/8/20 0900	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
			2			† indicates	the last	f indicates the last digit(s) of container ID	
RELINOU	ISHED FROM: (Print Name/Sgal)		DATE/TIME:	RELINQUISHED TO:	(Print Name/Sign)	DATE/TIME	'TIME:	Comments: 470440DW: /stile_546/stile_/	Comments: 470440DW: Kellig SA6/SUIR ALGAL TOVIN/LK MEDCED
o SUB LAB RECEIVED BY:	CEIVED BY: (Print Name/Sign)	6	DATE/TIME:	SEND REPORT TO:		AGENCY:	κ	: Please see subs	CODE_340/300_ALOACE_IOANIY_LN MICHACEUT : Please see subsequent pages for analyte Aetails
Printed on: Wed	Printed on: Wednesday, December 9, 2020							Vertical Page Number: Horizontal Page Nu	tical Page Number: Page 1 of 3 Horizontal Page Number: 1

es

San Francisco	co SAN FRANCISCO	ISCO PUBLIC UTILITIES COMMISSION	NOISSIMMO	Water Quality Division 1000 El Camino Real
Water POWEr Sewers of the Servers of		SUB LABORATORY CHAIN OF CUSTODY RECORD	RECORD	Milliorae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500 [[[B]@[[B]@[]]@[]]	Ship To: SUB_LAB	Ship Date: 12/09/2020	Ship Via: FedEx	Tracking#: 121103155778
2079127-01	LMER_S_00_LIM		FOR LAB USE ONLY	
Container ID (Rep of 3) 2079127-01-07 to 2079127-01-09				Collect Method 4°C
Analvsis: SUB Algal I UXIN Anatoxin Microcystin-LY	Wetnog: Deraur. Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Container ID (Rep of 1) 2079127-01-10				Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546	•		
Page				
6 of 28				
December 9, 2020 Second on: Wednesday, December 9, 2020	2020		·	Vertical Page Number: Page 3 of 3 Horizontal Page Number: 1

		1211 0315 5778					, ,				ą	Page of
laiysis or not.	NIA	12110		ارم = اهم الم		Results:	lional clients: None/46	Bottle # mm	TIME	11:43		
RECORD mine whether to proceed with ar	en Thawed	• .	iction, within 8 hours)	. [0] (Corr.Factor	(u	Explration Date	tee below): (ional bottles) tusing 40 ml vias, interna	Bamp ID	DATE	12/10/20		
JAL CHAIN OF CUSTODY RECORD SAMPLE TEMP RECEIVED: Note of temperature range, let the ASMA know, ASMA will defermine whether to proceed with analysis or not BAMPLEB REC'D DAY OF COLLECTION? Yes I NO	*C) (Final =*C) CE: Frozen Partlally Frozen / Top Line / Other:	action) .	he same day as sample colle on)	inal =	fter 24 hrs of sample collectio	pH strip type: 0 - 14 or	Bamples with Headspace (see below): don Internal COFC for additional bottle , 666, 636, Anatoxín, LCMS methods using 40 ml v Monace	Samp ID Boilde # Froncer >6mm	COMPANYITTLE	Eurolins Ealon Analylical	×	
INTERN	C) (Corr.Factor C) CONDITION OF IC	ω	2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C If received on ice the same day as sample collection, within 8 hours) 3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)	amples of each 3 = [Observation=0] (Oorr,Factor0) (Flati= 3 = [Observation=0] (Oorr,Factor0) (Flati=	4 Dloxin (1613 or 2,3,7,8 TCDD): must be between 0-4 °C, not frozen (lf received after 24 hrs of sample collection)	Lot No.: Expire	e: ddltlonal VOC and Ra sos, sPME, @CH, s32LCMS	Bottle # Twitter o >6mm	dspace (i.e. potential sampling errors): PRINT NAME	1017		
Eaton Ar Leville	TYPE OF ICE: Real SyntheticNo los MeTHOD OF BHIPMENT: Pick-Up / Vvalk-In / FedEx	Compliance Acceptance Criteria: 1) Chemistry: >0, ≤ 6°C, not frozen (NE	2) Microbiology, Distribution: <10°C, 3) Microbiology, Surface Water: <10°C	If oul of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record auch temperature of the quadrants	4 Dloxin (1813 or 2,3,7,8 TCDD): must	 pH Check. Manufacturer: Chlorine check. Manufacturer: Sansafe. 	7) VOA and Radon No Sam Headspace: Headspace Do	Bamp ID Bottlie # muner-ou-s6mm	Note Sample IDs which have dissimilar headspace ™everune	REDEIVED BY:		QA FO 0003.0 (QA FO-FRM5504) (8/25/20) Ver B

3.

Page 7 of 28 pages



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Analtyical results for L231 are submitted by Eurofins Eaton Analytical in Southbend IN



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran

1000 El Camino Real Millbrae, CA 94030 Samples Received on: 12/10/2020 1143

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/14/2020 14:48	202012100362 Total Microcystins	LMER E 00 LIM	11		ug/L	0.30
12/22/2020 14:27	202012100363 Total Microcystins	LMER N 00 LIM	9.8		ug/L	0.30
12/14/2020 14:48	202012100365 Total Microcystins	LMER R 00 LIM	7.5		ug/L	0.30
12/14/2020 14:48	202012100366 Total Microcystins	LMER S 00 LIM	6.8		ug/L	0.30

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Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Laboratory Data

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_E_00_LIM (20					Sam	pled on 12/08	/2020 140	0
Varial	ble ID: 2079121-							
12/10/20 12/14/20 14:48	EPA 546 - U 1293501	1294106	(EPA 546)	Total Microcystins	11	ug/L	0.30	1
2/10/20 12/14/20 14:48		1294106	(EPA 546)	%CV	1.80	%	180	1
2/10/20 12/14/20 14.40	EPA 545 - A		(LFA 340)	700 V	1.00	70	100	
12/15/20 18:02		ligar roxins	(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:02			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:02			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Nodularin	ND	ug/L	0.1	1
MER N 00 LIM (20	02012100363	5)			Sam	pled on 12/08	/2020 150	0
	ble ID: 2079123-					p		-
	EPA 546 - U	ICMR4 546						
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	Total Microcystins	9.8	ug/L	0.30	1
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	%CV	3.70	%	370	1
_MER_N_00_LIM (20	02012100364	<u>.)</u>			Sam	pled on 12/09	/2020 120	0
Varial	ble ID: 2079123-							
40/45/00 40:45	EPA 545 - A	lgal Toxins		Anatovia	ND		0.00	4
12/15/20 18:15			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:15			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:15			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1 1
12/15/20 18:15 12/15/20 18:15			(EPA 545)	Microcystin-LF Microcystin-LR	ND ND	ug/L	0.1 0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LY	ND	ug/L ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545) (EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Nodularin	ND	ug/L	0.1	1
		`	(LFA 343)	Nodulaliti		•		
LMER_R_00_LIM (20	Die ID: 2079125-				Sam	pled on 12/08	/2020 100	0
valia	EPA 546 - U							
2/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	7.5	ug/L	0.30	1
2/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	1.40	%	140	1
	EPA 545 - A	laal Toyine						

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Eaton Analytical

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San Francisco PUC

Megan Tran 1000 El Camino Real Millbrae, CA 94030 Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/15/20 18:29			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:29			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:29			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Nodularin	ND	ug/L	0.1	1
LMER :	S 00 LIM (20	2012100366	<u>6)</u>			Sam	pled on 12/08	/2020 090	0
		le ID: 2079127							
			JCMR4 546						
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	6.8	ug/L	0.30	1
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	2.70	%	270	1
		EPA 545 - /	Algal Toxins						
	12/15/20 18:42			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:42			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:42			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Nodularin	ND	ug/L	0.1	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



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San Francisco PUC

UCMR4 546

	Prep Batch: 1293501	Analytical Batch: 1294106
	202012100362	LMER_E_00_LIM
	202012100365	LMER_R_00_LIM
	202012100366	LMER_S_00_LIM
~		

UCMR4 546

Prep Batch: 1293501 Analytical Batch: 1295128

202012100363 LI	MER_N_00_LIM
-----------------	--------------

Laboratory QC Summary

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Analysis Date: 12/14/2020

Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF

Analysis Date: 12/22/2020

Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC

QC Туре	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546								
Analytical Ba	atch: 1294106					Analysis Da	ate: 12/14/	2020	
LCS1	%CV			2.10	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202011300070	%CV	1.60		ND	%				
MSD2_202011300070	%CV	1.60		ND	%				
LCS1	Total Microcystins		0.5	0.603	ug/L	121	(60-140)		
LCS2	Total Microcystins		0.5	0.548	ug/L	110	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.345	ug/L	115	(50-150)		
MS2_202011300070	Total Microcystins	ND	0.5	0.512	ug/L	94	(60-140)		
MSD2_202011300070	Total Microcystins	ND	0.5	0.637	ug/L	119	(60-140)	40	22
UCMR4 546 by EP	A 546								
Analytical Ba	atch: 1295128					Analysis Da	ate: 12/22/	2020	
LCS1	%CV			1.90	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202012180093	%CV	1.10		ND	%				
MSD2_202012180093	%CV	1.10		ND	%				
LCS1	Total Microcystins		0.5	0.502	ug/L	100	(60-140)		
LCS2	Total Microcystins		0.5	0.443	ug/L	89	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.303	ug/L	101	(50-150)		
MS2_202012180093	Total Microcystins	19	0.5	28.9	ug/L	<u>1890</u>	(60-140)		
MSD2_202012180093	Total Microcystins	19	0.5	35.5	ug/L	<u>3210</u>	(60-140)	40	21

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida(Primary AB)*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon*	4156
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035	·	

*NELAP/TNI Recognized Accreditation Bodies



NELAC NARRATIVE PAGE

Client: Eurofins Eaton Analytical

Report #: 506146NP

Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Karen Fullmer

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

There were no quality control failures.

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Karen Fullmer ASM

Authorized Signature

12/17/2020

Date

Page 1 of 1



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

Laboratory Report

Client:	Eurofins Eaton Analytical	Report:	506146
Attn:	Jackie Contreras	Priority:	Standard Written
Aun.	750 Royal Oaks Drive	Status:	Final
	Suite 100	PWS ID:	Not Supplied
	Monrovia, CA 91016		

		Sample Information			
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4795813	202012100362	L231	12/08/20 14:00	Client	12/12/20 09:45
4795814	202012100364	L231	12/09/20 12:00	Client	12/12/20 09:45
4795815	202012100365	L231	12/08/20 10:00	Client	12/12/20 09:45
4795816	202012100366	L231	12/08/20 09:00	Client	12/12/20 09:45
		Report Summary			

Note: Sample containers were provided by the client.

Samples came in bottles for Method 545. Samples were transferred to L231 vials and mixed well.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Karen Fullmer at (574) 233-4777.

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aren hillmer ASM

 Authorized Signature

 Client Name:
 Eurofins Eaton Analytical

 Report #:
 506146

Title

12/17/2020

Date

Sampling Point: 202012100362

PWS ID: Not Supplied

		I	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:02	4795813
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:02	4795813
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813

Sampling Point: 202012100364

PWS ID: Not Supplied

		E	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:15	4795814
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:15	4795814
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814

Sampling Point: 202012100365

PWS ID: Not Supplied

		I	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:29	4795815
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:29	4795815
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815

Sampling Point: 202012100366

PWS ID: Not Supplied

		l	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:42	4795816
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:42	4795816
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

🐝 eurofins		*REPORTING REQUIR	S MENTS: Do Not Combin	Submittal Form Bate: 1 *REPORTING REQUIRMENTS: Do Not Combine Reports with any other samples submitted under different Folder Numberel	s submitted under	Date: 12/11/2020	12020
	Eaton Analytical	Report & Invoice must h	Report all quality control data according to Method. Include dates	Report & Invoice must have the Folder # 907916 Job # 1000014 $\mathbb{S}_{\text{Report}}$ and the extracted (if extracted) and Method reference on the renort Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the renort	is submitted under tracted)	ametent rolder Numbersi	to
Ship To:		Results must have Co	Results must have Complete data & QC with Approval Signature.	Approval Signature.			
Eurofins Eaton Ana 110 South Hill Street South Bend, IN 4661	<u>></u> r	Rep EM Eurofins Eaton A Accour	orts: Jackie Contreras AlL TO: Eaton-Monrovia nalytical, LLC 750 Roya Phone (626) 386-11 Invoices to: Eurofin ts Payable 2425 New H	Reports: Jackie Contreras Sub-Contracting Administrator EMAIL TO: Eaton-MonroviaSubContract@eurofinset.com Eurofins Eaton Analytical, LLC 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Phone (626) 386-1165 Fax (626) 386-1122 Invoices to: Eurofins Eaton Analytical, LLC Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605	, CA 91016	Provide in each Report the Specified StateCertification # and Exp Date for requested tests + matrix Samples from: CALIFORNIA	, xi
Phone: 800-332-4345	132-4345 Fax: 574-233-8207				Cilent Pre	When	
Folder #: 907916	Report Due: 01/12/2021					and Sample Contest	
Sample ID 202012100362	Client Sample ID for reference on LMER_E_00_LIM	rence on!	San	Sample Date & Time Matrix 12/08/20 1400 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795813	
Method	Prep Method An	Analysis Requested					
EPA 545	Alg	Algal Toxins					
Sample ID (3) 202012100364	Client Sample ID for reference on LMER_N_00_LIM	rence on!	San	Sample Date & Time Matrix 12/09/20 1200 DW	PWS Systemcode	de PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795 814	
Method	Prep Method An	Analysis Requested	6				
EPA 545	Alg	Algal Toxins					
Sample ID (2 (202012100365	Client Sample ID for reference on LMER_R_00_LIM	ence onl	San	Sample Date & Time Matrix 12/08/20 1000 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	static ID: UT95 85	
Method	Prep Method An	Analysis Requested	T(a				
EPA 545		Algal Toxins	~			1.0 DUI	
Relinquished by:	Sample Control	up let they D	Date 11/11/20 Time 6953		JIRED IF RECEIVED O	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS	
Received by:			Date Time	An Acknowledgeme	ent of Receipt is requ	An Acknowledgement of Receipt is requested to attn: Jackie Contreras	
e Breinquished by:	Sample Control		Date Time Time	52-20			
f 15	750 Royal Oaks Drive, Su	uite 100, Monrovia, CA {	Page 1 of 2 91016 Tel (626) 386-11	Page 1 of 2 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton	EurofinsUS.com/E	aton	

Page 21 of 28 pages

Sample ID 202012100366	Client Sample ID for reference on LMER_S_00_LIM	for reference onl	Sample D	Sample Date & Time Matrix PWS Systemcode PWSID 12/08/20 0900 DW JLS
Sample type:	Sami	Sample Event:	Facility ID: S	Sample Point ID: いうならとし Static ID: いうならをに
Method	Prep Method	Analysis Requested	Terrer 1	
EPA 545		Algal Toxins		
Relinquished by:	Sample Control	trol py led for	Date $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{20}$ Time $\frac{14}{15}$	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS An Acknowledgement of Receipt is requested to attri- Jackie Contreras
be accelered by:	Sample Control	Itol	2-12-2020	
of 15 28 pages	750 Royal Oaks D	Drive, Suite 100, Monrovia, C		750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton

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Eaton Analytical

Eurofins Eaton Analytical Run Log Run ID: 283359 Method: L231

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
LMB	4796653		RW	DQ	12/15/2020 17:09	121520L231a.mdb
FS	4795813	202012100362	SW	Q	12/15/2020 18:02	121520L231a.mdb
FS	4795814	202012100364	SW	Q	12/15/2020 18:15	121520L231a.mdb
FS	4795815	202012100365	SW	Q	12/15/2020 18:29	121520L231a.mdb
FS	4795816	202012100366	SW	QQ	12/15/2020 18:42	121520L231a.mdb
MS	4796654	202012100366	SW	DQ	12/15/2020 18:55	121520L231a.mdb
MSD	4796655	202012100366	SW	Q	12/15/2020 19:09	121520L231a.mdb
ccc	4796656		RW	DQ	12/15/2020 19:22	121520L231a.mdb

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery v Limits	r RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LMB	IS-L-phenylalanine-d5	L231	N/A			41036	42923	ng/L	96	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-LR-15N10	L231	N/A	-		793	938	ng/L	85	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-RR-15N13	L231	N/A	1		12696	12368	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	IS-Microcystin-YR-15N10	L231	N/A			3231	3295	ng/L	98	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Uracil-d4	L231	N/A	-		5085	4925	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 17:09	4796653
LMB	Anatoxin-a	L231	0.02		v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 17:09	4796653
LMB	Cylindrospermopsin	L231	0.05	-	v	0.05		ng/L	1	I	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LA	L231	0.1	-	v	0.1		ng/L	1	1	1		1.0	I	12/15/2020 17:09	4796653
LMB	Microcystin-LF	L231	0.1	1	v	0.1		ng/L	-	1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LR	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LY	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-RR	L231	0.1	1	v	0.1		ng/L			1	1	1.0	-	12/15/2020 17:09	4796653
LMB	Microcystin-YR	L231	0.1	1	v	0.1		ng/L			1	1	1.0		12/15/2020 17:09	4796653
LMB	Nodularin	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
FS	IS-L-phenylalanine-d5	L231	N/A	202012100362		44596	42923	ng/L	104	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100362		935	938	ng/L	100	50 - 150	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100362		12659	12368	ng/L	102	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100362		3397	3295	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 18:02	4795813
FS	IS-Uracil-d4	L231	N/A	202012100362		4270	4925	ng/L	87	50 - 150	I	I	1.0	I	12/15/2020 18:02	4795813
FS	Anatoxin-a	L231	0.02	202012100362	v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Cylindrospermopsin	L231	0.05	202012100362	v	0.05		ng/L	1	1	1	I	1.0	1	12/15/2020 18:02	4795813
FS	Microcystin-LA	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LF	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LR	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LY	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-RR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-YR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Nodularin	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-L-phenylalanine-d5	L231	N/A	202012100364		44554	42923	ng/L	104	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100364		916	938	ng/L	98	50 - 150	1	1	1.0	I	12/15/2020 18:15	4795814
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100364		14307	12368	ng/L	116	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100364		3540	3295	ng/L	107	50 - 150	1	1	1.0	ł	12/15/2020 18:15	4795814
FS	IS-Uracil-d4	L231	N/A	202012100364		4496	4925	ng/L	91	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	Anatoxin-a	L231	0.02	202012100364	v	0.02		ng/L		-	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Cylindrospermopsin	L231	0.05	202012100364	v	0.05		ng/L	-	1	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Microcystin-LA	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LF	L231	0.1	202012100364	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LR	L231	0.1	202012100364	v	0.1		ng/L		1	1		1.0	I	12/15/2020 18:15 4795814	179581
ମ୍ମ 11	Microcystin-LY	L231	0.1	202012100364	v	0.1		ng/L		1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-RR	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:15 4795814	179581

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Sample Type	Analyte	Method	MRL	Client ID	Result Flag	ult Amount g	Target	Units	% Recovery	Recovery / Limits	y RPD	o RPD Limit	Dil Factor	Extracted	Analyzed	EEA D#
FS	Microcystin-YR	L231	0.1	202012100364	v	0.1		ng/L	-	1		1	1.0		12/15/2020 18:15	5 4795814
FS	Nodularin	L231	0.1	202012100364	v	0.1		ng/L		-		1	1.0	-	12/15/2020 18:15	5 4795814
FS	IS-L-phenylalanine-d5	L231	N/A	202012100365		43970	42923	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:29	4795815
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100365		006	938	ng/L	96	50 - 150		I	1.0	I	12/15/2020 18:29	9 4795815
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100365		12708	12368	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100365		3277	3295	ng/L	66	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Uracil-d4	L231	N/A	202012100365		4341	4925	ng/L	88	50 - 150	1	1	1.0	I	12/15/2020 18:29	9 4795815
FS	Anatoxin-a	L231	0.02	202012100365	v	0.02		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Cylindrospermopsin	L231	0.05	202012100365	v	0.05		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Microcystin-LA	L231	0.1	202012100365	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-LF	L231	0.1	202012100365	v	0.1		ng/L	I	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LY	L231	0.1	202012100365	v	0.1		ng/L	1	I	1	1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-RR	L231	0.1	202012100365	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-YR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Nodularin	L231	0.1	202012100365	v	0.1		ng/L	1	1	1		1.0	-	12/15/2020 18:29	9 4795815
FS	IS-L-phenylalanine-d5	L231	N/A	202012100366		43433	42923	ng/L	101	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		831	938	ng/L	89	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12980	12368	ng/L	105	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3369	3295	ng/L	102	50 - 150	1	1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Uracil-d4	L231	N/A	202012100366		4352	4925	ng/L	88	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	Anatoxin-a	L231	0.02	202012100366	v	0.02		ng/L		1			1.0	-	12/15/2020 18:42	2 4795816
FS	Cylindrospermopsin	L231	0.05	202012100366	v	0.05		ng/L					1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LA	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LF	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LR	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LY	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-RR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-YR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Nodularin	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
MS	IS-L-phenylalanine-d5	L231	N/A	202012100366		44173	42923	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:55	4796654
MS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		956	938	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12676	12368	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3240	3295	ng/L	98	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Uracil-d4	L231	N/A	202012100366		4347	4925	ng/L	88	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Anatoxin-a	L231	0.02	202012100366		0.1819	0.2	ng/L	91	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Cylindrospermopsin	L231	0.05	202012100366		0.5276	0.5	ng/L	106	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Microcystin-LA	L231	0.1	202012100366		0.9923	1.0	ng/L	66	70 - 130		1	1.0	1	12/15/2020 18:55	4796654
s⊮ age	Microcystin-LF	L231	0.1	202012100366		0.9706	1.0	ng/L	97	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Microcystin-LR	L231	0.1	202012100366		0.9565	1.0	ng/L	96	70 - 130	1	1	1.0	1	12/15/2020 18:55 4796654	5 479665
MS	Microcystin-LY	L231	0.1	202012100366		0.9061	1.0	ng/L	91	70 - 130		1	1.0	I	12/15/2020 18:55 4796654	5 4796654

SampleAnalyteTypeMicrocystin-RRMSMicrocystin-RRMSMicrocystin-RrMSDS-L-phenylalanine-d5MSDIS-L-phenylalanine-d5MSDIS-Microcystin-Rr-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-RR-15N10MSDIS-Microcystin-LAMSDMicrocystin-LAMSDMicrocystin-LR	Method 1231	MRL			1	Toract				ᄠᆖ	RPD				
	L231		Client ID	Result Flag	Amount	l al yet	Units	% Recovery	y Limits	КРО		Factor	Extracted	Analyzed	EEA ID #
		0.1	202012100366		0.9693	1.0	ng/L	97	70 - 130	1	1	1.0	-	12/15/2020 18:55	4796654
	L231	0.1	202012100366		1.0620	1.0	ng/L	106	70 - 130	I	I	1.0	1	12/15/2020 18:55	4796654
	L231	0.1	202012100366		0.9864	1.0	ng/L	66	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
	L231	N/A	202012100366		44602	42923	ng/L	104	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	L231	N/A	202012100366		887	938	ng/L	95	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	L231	N/A	202012100366		12402	12368	ng/L	100	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	L231	N/A	202012100366		3251	3295	ng/L	66	50 - 150	1	1	1.0	1	12/15/2020 19:09	4796655
	L231	N/A	202012100366		4094	4925	ng/L	83	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	L231	0.02	202012100366		0.2070	0.2	ng/L	104	70 - 130	13	30	1.0		12/15/2020 19:09	4796655
	L231	0.05	202012100366		0.5058	0.5	ng/L	101	70 - 130	4.2	30	1.0	1	12/15/2020 19:09 4796655	796655
	L231	0.1	202012100366		1.0732	1.0	ng/L	107	70 - 130	7.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0422	1.0	ng/L	104	70 - 130	7.1	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0445	1.0	ng/L	104	70 - 130	8.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.1240	1.0	ng/L	112	70 - 130	21	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0212	1.0	ng/L	102	70 - 130	5.2	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0379	1.0	ng/L	104	70 - 130	2.3	30	1.0	-	12/15/2020 19:09	4796655
MSD	L231	0.1	202012100366		1.0663	1.0	ng/L	107	70 - 130	7.8	30	1.0	-	12/15/2020 19:09	4796655
CCC IS-L-phenylalanine-d5	L231	N/A	I		43418	42923	ng/L	101	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-LR-15N10	L231	N/A	1		869	938	ng/L	93	50 - 150	I	I	1.0	-	12/15/2020 19:22	4796656
CCC IS-Microcystin-RR-15N13	L231	N/A	I		13290	12368	ng/L	107	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-YR-15N10	L231	N/A	1		3267	3295	ng/L	66	50 - 150	I	1	1.0	-	12/15/2020 19:22	4796656
CCC IS-Uracil-d4	L231	N/A	I		5079	4925	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Anatoxin-a	L231	0.02	I		0.2142	0.2	ng/L	107	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Cylindrospermopsin	L231	0.05	I		0.5425	0.5	ng/L	109	70 - 130		1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LA	L231	0.1	I		1.1356	1.0	ng/L	114	70 - 130	1	1	1.0	-	12/15/2020 19:22	4796656
CCC Microcystin-LF	L231	0.1	I		1.0353	1.0	ng/L	104	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LR	L231	0.1	I		1.0789	1.0	ng/L	108	70 - 130	1	1	1.0	-	12/15/2020 19:22	4796656
CCC Microcystin-LY	L231	0.1	I		1.0980	1.0	ng/L	110	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-RR	L231	0.1	I		0.9754	1.0	ng/L	98	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-YR	L231	0.1	I		0.9805	1.0	ng/L	98	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Nodularin	L231	0.1	1		1.0539	1.0	ng/L	105	70 - 130	1	1	1.0		12/15/2020 19:22	4796656

	Sample	Sample Type Key	
Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCC	Continuing Calibration Check		
FS	Field Sample		
LMB	Laboratory Method Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

END OF REPORT

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

REPORT REVISED, replaces the original report.



ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	x		x
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	x	Legionella	Legiolert	х		x
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	х		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	x
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		x
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	1	x		Perchlorate	EPA 331.0	х	-	x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		×
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x		x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	pH	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Pseudomonas	IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	×
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	х		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	x	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	x			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	х	-	x
Endothall	EPA 548.1	x		x	Total Coliform	SM 9221B	~	х	~
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	х			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9230B	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glumbosata	EPA 547	v		v	Degradates	EDA 100 1	v	v	~
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	x	X	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	х		x
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		x
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		x
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

Acknowledgement of Samples Received

Addr: San Francisco PUC 1000 El Camino Real Millbrae, CA 94030

Attn: Megan Tran Phone: 650-872-5945 Client ID: SANFRAN Folder #: 907916 Project: 470440-DW1 Sample Group: Microcystins-Lake Merced

Project Manager: Monica Van Natta Phone: 559-797-1931 PO #: PRO.0165 PO-000043463 TO#01

The following samples were received from you on **December 10, 2020** at **1143**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID		Sample Date
202012100362	LMER_E_00_LIM		12/08/2020 1400
	Variable ID: 2079121-01		
	@UCMR4 546	L231_SB	
©L 202012100363 LM 202012100364 LM L2: 202012100365 LM @L	LMER_N_00_LIM		12/08/2020 1500
	Variable ID: 2079123-01		
	@UCMR4 546		
@UCMR4 546 02012100364 LMER_N_00_L Variable ID L231_SB 02012100365 LMER_R_00_L	LMER_N_00_LIM		12/09/2020 1200
	Variable ID: 2079123-07		
	L231_SB		
202012100365	LMER_R_00_LIM		12/08/2020 1000
	Variable ID: 2079125-01		
	@UCMR4 546	L231_SB	
202012100363 LMI @U 202012100364 LMI L23 202012100365 LMI @U 202012100366 LMI	LMER_S_00_LIM		12/08/2020 0900
	Variable ID: 2079127-01		
	@UCMR4 546	L231_SB	

Test Description

@UCMR4 546 -- UCMR4 546

S	San Francisco		FRAN	CISCO PUBLIC	SAN FRANCISCO PUBLIC UTILITIES COMMISSION	NOISSIN		N 001	Water Quality Division
	Water Power Sewer services of the San Francisco Public Utilities Commission	Wer	SUB L	ABORATORY CHAII	SUB LABORATORY CHAIN OF CUSTODY RECORD	RD	99	asture Fax	Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500	- Sector	Ship To: SUB_LAB		Ship Date: 12/09/2020	0202/60	Ship Via: FedEx	dEx	Trackir	Tracking#: 121103155778
Codo:					FOR	FOR LAB USE ONLY			
	MMAN W TH	8		METHOD OF TRANSPORT (CHECK ONE)		SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	EIPT (CHEC)	APPROPRIATE BOXES)	SAMPLE STORAGE
SHIPPED BY:	Charlemand	11.07.		MILLBRAE	CHILLED	E	CONTAINER INTACT	INTACT	LOCATION
				MOCCASIN		Ŧ	DF SAMPL	# OF SAMPLES MATCH COC	REFRIG#
Circle One)	KUUTINE / 3	SPECIAL		COURIER	D SEAL INTACT		HEADSPACE (VOA) COOLER TEMPERA	HEADSPACE (VOA) COOLER TEMPERATURE (P-6°C):	SHELF# OTHERS
			STATE EDT	STATE EDT REQUIRED: Y / N	SYTEM				
							9 7 5_8US	Abia_aus N	
Sample ID	Source	Collected Date	/Time/By	Collected Date/Time/By WQD Rec. Date/By	LocationNotes/Comments	nts TAT			
2079121-01	LMER_E_00_LIM	12/8/20 1400	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
	3		2	12/9/20 PHOANG		21 DAYS		6	
2079123-01	LMER_N_00_LIM	12/8/20 1500	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10		
2079123-07	LMER_N_00_LIM	12/9/20 1200	SDELEO	12/9/20 JMITTRY		21 DAYS		7-8	
2079125-01	LMER_R_00_LIM	12/8/20 1000	RMJ0	12/8/20 PHOANG		21 DAYS	10	7-8	
		11	2	12/9/20 PHOANG		21 DAYS		6	
2079127-01	LMER_S_00_LIM	12/8/20 0900	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
			2			† indicates	the last	1 indicates the last digit(s) of container ID	
RELINOU	ISHED FROM: (Print Name/Sgal)		DATE/TIME:	RELINQUISHED TO:	(Print Name/Sign)	DATE	DATE/TIME:	Comments: 470440DW: /sub_546./sub_	Comments: 470440DW: Kellis SA6/SUB ALGAL TOXIM/LY MEDCED
o SUB LAB RECEIVED BY:	CEIVED BY: (Print Name/Sign)		PATE/TIME:	SEND REPORT TO:		AGENCY:	cY:	: Please see subs	(300_340)300_460461 00100 (300_340) : Please see subsequent pages for analyte details
Printed on: Wed	Printed on: Wednesday, December 9, 2020							Vertical Page Number: Horizontal Page Nu	tical Page Number: Page 1 of 3 Horizontal Page Number: 1

es

San Francisco	SAN FRANCISCO	ISCO PUBLIC UTILITIES COMMISSION	NOISSIMMC	Water Quality Division 1000 El Camino Real
Water POWEr Sewers of the Servers of		SUB LABORATORY CHAIN OF CUSTODY RECORD	RECORD	Milliorae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500 [[[B]@][B]@][[]@][]	Ship To:SUB_LAB	Ship Date: 12/09/2020	Ship Via: FedEx	Tracking#: 121103155778
2079127-01	LMER_S_00_LIM	-	FOR LAB USE ONLY	
Container ID (Rep of 3) 2079127-01-07 to 2079127-01-09				Collect Method 4°C
Anatoxin Anatoxin Mirrowstin-1Y	Metroa: Delaur Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Container ID (Rep of 1) 2079127-01-10				Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546	••		
Pag				
e 6 of 2				
8 Printed on: Wednesday, December 9, 2020 second	, 2020			Vertical Page Number: Page 3 of 3 Horizontal Page Number: 1

		1211 0315 5778					, mmð			Ху Н	Page of
ialysis or not.	N/A	1211 0		(0)=u	×.	Results:	ltonal cllents: Bottle # None/<6	TIME	11:43		
RECORD mine whether to proceed with at	enThawed		iction, within 8 hours)	. [] (Corr,Faolor	(Li	Expiration Date	tional bottles)	DATE	12/10/20		
VAL CHAIN OF CUSTODY RECORD SAMPLE TEMP RECEIVED: Note it's amples are out of temperature range, let the ASM4 know, ASM4 will determine whether to proceed with analysis or not BAMPLER REC'D DAY OF COLLECTION? Yes / No.	*C) (Final = $\frac{1}{1, 2}$ *C) CE: Frozen \swarrow Partially Frozen	Ð	he same day as sample colle on)	inal - '0) 2 = (Observation- inal - '0) 4 = (Observation-	tter 24 hrs of sample collectio	pH strip type: 0 - 14 or	Bamples with Headspace (see below): don Internal COFC for additional bottl , 666, 636, Anatoxin, LCMS methods using 40 ml v Bernp ID Bottle # Nonel<6 >6mm		Eurolins Ealon Analylloal	×	
INTERN	1, <u>)</u> °C) (G(/ UPS / elved after	2) Microbiology, Distribution: <10°C, not frozen (can be ≥10°C If received on ice the same day as sample collection, within 8 hours) 3) Microbiology, Surface Water: <10°C (if received after 2 hours of sample collection)	of eacht 3 = (Observation=	frozen (lf r	Lot Number: Expire	ace: addltlonal VOC and Ra 2), 505, 5PME, @CH, 532LCMS	dspace (I.e. potential sampling errors):	1017	8	
EarFolder Number:	IR Gun ID = 6 CM (Observation=	METHOD OF BHIPMENT: Pick-Up / Walk-In / FedEx Compliance Acceptance Criteria: 1) Chemistry: >0, <8°C, not frozen (NELAP) (If rec	2) Microbiology, Distribution: <10°C, 3) Microbiology, Surface Water: <10°C	If oul of lemperature range for both Chemistry and Microbiology samples and lemperature does not confirm, then measure the lemperature of each quadrant and record each lemperature of the quadrants	4 Dloxin (1813 or 2,3,7,8 TCDD): must	 pH Check. Manufacturer: Chlorine check. Manufacturer: Sansafe. 	7) VOA and Radon No Sam Headspace: Headspace Do Sampi from headspace concerns: Meth Bampi D Boille # ^{Nonel < 6} 56mm	Note Sample IDs which have dissimilar headspace	REDEIVED BY:		QA FO 0083.8 (QA FU-FRM5504) (8/25/20) Ver 8

3.

Page 7 of 28 pages



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Analtyical results for L231 are submitted by Eurofins Eaton Analytical in Southbend IN

Revised report to edit dilution factors. UMVN, 01/05/2021



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran

1000 El Camino Real Millbrae, CA 94030 Samples Received on: 12/10/2020 1143

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/14/2020 14:48	202012100362 Total Microcystins	LMER E 00 LIM	11		ug/L	3.0
12/22/2020 14:27	202012100363 Total Microcystins	LMER N 00 LIM	9.8		ug/L	6.0
12/14/2020 14:48	202012100365 Total Microcystins	LMER R 00 LIM	7.5		ug/L	3.0
12/14/2020 14:48	202012100366 Total Microcystins	LMER S 00 LIM	6.8		ug/L	3.0

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Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Laboratory Data

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilutior
LMER_E_00_LIM (202					Sam	pled on 12/08	/2020 140	0
	e ID: 2079121-0							
12/10/20 12/14/20 14:48	EPA 546 - U 1293501	1294106	(EPA 546)	Total Microcystins	11	ug/L	3.0	10
12/10/20 12/14/20 14:48	1293501	1294100	(EPA 546) (EPA 546)	%CV	1.80	09/L %	3.0 180	10
			(EFA 540)	/0CV	1.00	70	100	1
12/15/20 18:02	EPA 545 - Al	iyai toxins	(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:02			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:02			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Nodularin	ND	ug/L	0.1	1
MER N 00 LIM (202	2012100363)		. ,		Sam	pled on 12/08	/2020 150	0
	e ID: 2079123-0				Cum			•
ſ	EPA 546 - U	CMR4 546						
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	Total Microcystins	9.8	ug/L	6.0	20
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	%CV	3.70	%	370	1
_MER_N_00_LIM (202	2012100364)	<u> </u>			Sam	pled on 12/09	/2020 120	0
	e ID: 2079123-0							
	EPA 545 - Al	lgal Toxins	/== • • · · · ·					
12/15/20 18:15			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:15			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:15			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1 1
12/15/20 18:15			(EPA 545)	Microcystin-YR	ND ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Nodularin		ug/L	0.1	
<u>_MER_R_00_LIM (202</u>					Sam	pled on 12/08	/2020 100	0
	e ID: 2079125-0 E PA 546 - U							
12/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	7.5	ug/L	3.0	10
12/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	1.40	%	140	1
	EPA 545 - Al		(,					

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Eaton Analytical

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San Francisco PUC

Megan Tran 1000 El Camino Real Millbrae, CA 94030 Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/15/20 18:29			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:29			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:29			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Nodularin	ND	ug/L	0.1	1
LMER :	S 00 LIM (20	2012100366	<u>6)</u>			Sam	pled on 12/08	/2020 090	0
		le ID: 2079127							
			JCMR4 546						
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	6.8	ug/L	3.0	10
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	2.70	%	270	1
		EPA 545 - /	Algal Toxins						
	12/15/20 18:42			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:42			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:42			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Nodularin	ND	ug/L	0.1	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



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San Francisco PUC

UCMR4 546

	Prep Batch: 1293501	Analytical Batch: 1294106
	202012100362	LMER_E_00_LIM
	202012100365	LMER_R_00_LIM
	202012100366	LMER_S_00_LIM
~		

UCMR4 546

Prep Batch: 1293501 Analytical Batch: 1295128

202012100363 LI	MER_N_00_LIM
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Laboratory QC Summary

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Analysis Date: 12/14/2020

Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF

Analysis Date: 12/22/2020

Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC

			Spiked	Recovered	Units	field(%)	Limits (%)	Limit(%)	RPD%
UCMR4 546 by EF	PA 546								
Analytical B	atch: 1294106					Analysis Da	ate: 12/14/	2020	
LCS1	%CV			2.10	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202011300070	%CV	1.60		ND	%				
MSD2_202011300070	%CV	1.60		ND	%				
LCS1	Total Microcystins		0.5	0.603	ug/L	121	(60-140)		
LCS2	Total Microcystins		0.5	0.548	ug/L	110	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.345	ug/L	115	(50-150)		
MS2_202011300070	Total Microcystins	ND	0.5	0.512	ug/L	94	(60-140)		
MSD2_202011300070	Total Microcystins	ND	0.5	0.637	ug/L	119	(60-140)	40	22
UCMR4 546 by EF	PA 546								
Analytical B	atch: 1295128					Analysis Da	ate: 12/22/	2020	
LCS1	%CV			1.90	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202012180093	%CV	1.10		ND	%				
MSD2_202012180093	%CV	1.10		ND	%				
LCS1	Total Microcystins		0.5	0.502	ug/L	100	(60-140)		
LCS2	Total Microcystins		0.5	0.443	ug/L	89	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.303	ug/L	101	(50-150)		
MS2_202012180093	Total Microcystins	19	5	28.9	ug/L	<u>1890</u>	(60-140)		
MSD2_202012180093	Total Microcystins	19	5	35.5	ug/L	<u>3210</u>	(60-140)	40	21

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida(Primary AB)*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon*	4156
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035	·	

*NELAP/TNI Recognized Accreditation Bodies



NELAC NARRATIVE PAGE

Client: Eurofins Eaton Analytical

Report #: 506146NP

Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Karen Fullmer

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

There were no quality control failures.

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Karen Fullmer ASM

Authorized Signature

12/17/2020

Date

Page 1 of 1



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

Laboratory Report

Client:	Eurofins Eaton Analytical	Report:	506146
Attn:	Jackie Contreras	Priority:	Standard Written
Aun.	750 Royal Oaks Drive	Status:	Final
	Suite 100	PWS ID:	Not Supplied
	Monrovia, CA 91016		

	Sample Information									
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time					
4795813	202012100362	L231	12/08/20 14:00	Client	12/12/20 09:45					
4795814	202012100364	L231	12/09/20 12:00	Client	12/12/20 09:45					
4795815	202012100365	L231	12/08/20 10:00	Client	12/12/20 09:45					
4795816	202012100366	L231	12/08/20 09:00	Client	12/12/20 09:45					
		Report Summary								

Note: Sample containers were provided by the client.

Samples came in bottles for Method 545. Samples were transferred to L231 vials and mixed well.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Karen Fullmer at (574) 233-4777.

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aren hillmer ASM

 Authorized Signature

 Client Name:
 Eurofins Eaton Analytical

 Report #:
 506146

Title

12/17/2020

Date

Sampling Point: 202012100362

PWS ID: Not Supplied

	EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #	
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:02	4795813	
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:02	4795813	
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813	

Sampling Point: 202012100364

PWS ID: Not Supplied

	EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #	
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:15	4795814	
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:15	4795814	
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814	

Sampling Point: 202012100365

PWS ID: Not Supplied

	EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #	
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:29	4795815	
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:29	4795815	
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815	

Sampling Point: 202012100366

PWS ID: Not Supplied

	EEA Methods										
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #		
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:42	4795816		
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:42	4795816		
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816		

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

🐝 eurofins		*REPORTING REQUIR	S MENTS: Do Not Combin	Submittal Form Bate: 1 *REPORTING REQUIRMENTS: Do Not Combine Reports with any other samples submitted under different Folder Numberel	s submitted under	Date: 12/11/2020	12020
	Eaton Analytical	Report & Invoice must h	Report all quality control data according to Method. Include dates	Report & Invoice must have the Folder # 907916 Job # 1000014 $\mathbb{S}_{\text{Report}}$ and the extracted (if extracted) and Method reference on the renort Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the renort	is submitted under tracted)	ametent rolder Numbersi	to
Ship To:		Results must have Co	Results must have Complete data & QC with Approval Signature.	Approval Signature.			
Eurofins Eaton Ana 110 South Hill Street South Bend, IN 4661	<u>></u> r	Rep EM Eurofins Eaton A Accour	orts: Jackie Contreras AlL TO: Eaton-Monrovia nalytical, LLC 750 Roya Phone (626) 386-11 Invoices to: Eurofin ts Payable 2425 New H	Reports: Jackie Contreras Sub-Contracting Administrator EMAIL TO: Eaton-MonroviaSubContract@eurofinset.com Eurofins Eaton Analytical, LLC 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Phone (626) 386-1165 Fax (626) 386-1122 Invoices to: Eurofins Eaton Analytical, LLC Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605	, CA 91016	Provide in each Report the Specified StateCertification # and Exp Date for requested tests + matrix Samples from: CALIFORNIA	, xi
Phone: 800-332-4345	132-4345 Fax: 574-233-8207				Cilent Pre	When	
Folder #: 907916	Report Due: 01/12/2021					and Sample Contest	
Sample ID 202012100362	Client Sample ID for reference on LMER_E_00_LIM	rence on!	San	Sample Date & Time Matrix 12/08/20 1400 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795813	
Method	Prep Method An	Analysis Requested					
EPA 545	Alg	Algal Toxins					
Sample ID (3) 202012100364	Client Sample ID for reference on LMER_N_00_LIM	rence on!	San	Sample Date & Time Matrix 12/09/20 1200 DW	PWS Systemcode	de PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795 814	
Method	Prep Method An	Analysis Requested	6				
EPA 545	Alg	Algal Toxins					
Sample ID (2 (202012100365	Client Sample ID for reference on LMER_R_00_LIM	ence onl	San	Sample Date & Time Matrix 12/08/20 1000 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	static ID: UT95 85	
Method	Prep Method An	Analysis Requested	T(a				
EPA 545		Algal Toxins	~			~0 DU	
Relinquished by:	Sample Control	up let they D	Date 11/11/20 Time 6953		JIRED IF RECEIVED O	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS	
Received by:			Date Time	An Acknowledgeme	ent of Receipt is requ	An Acknowledgement of Receipt is requested to attn: Jackie Contreras	
e Breinquished by:	Sample Control		Date Time Time	52-20			
f 15	750 Royal Oaks Drive, Su	uite 100, Monrovia, CA {	Page 1 of 2 91016 Tel (626) 386-11	Page 1 of 2 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton	EurofinsUS.com/E	aton	

Page 21 of 28 pages

Sample ID 202012100366	Client Sample ID for reference on LMER_S_00_LIM	for reference onl	Sample D	Sample Date & Time Matrix PWS Systemcode PWSID 12/08/20 0900 DW JLS
Sample type:	Sami	Sample Event:	Facility ID: S	Sample Point ID: いうならとし Static ID: いうならをに
Method	Prep Method	Analysis Requested	Terrer 1	
EPA 545		Algal Toxins		
Relinquished by:	Sample Control	trol py led for	Date $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{20}$ Time $\frac{14}{15}$	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS An Acknowledgement of Receipt is requested to attri- Jackie Contreras
be accelered by:	Sample Control	Itol	2-12-2020	
of 15 28 pages	750 Royal Oaks D	Drive, Suite 100, Monrovia, C		750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton

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Eaton Analytical

Eurofins Eaton Analytical Run Log Run ID: 283359 Method: L231

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
LMB	4796653		RW	DQ	12/15/2020 17:09	121520L231a.mdb
FS	4795813	202012100362	SW	Q	12/15/2020 18:02	121520L231a.mdb
FS	4795814	202012100364	SW	Q	12/15/2020 18:15	121520L231a.mdb
FS	4795815	202012100365	SW	Q	12/15/2020 18:29	121520L231a.mdb
FS	4795816	202012100366	SW	QQ	12/15/2020 18:42	121520L231a.mdb
MS	4796654	202012100366	SW	DQ	12/15/2020 18:55	121520L231a.mdb
MSD	4796655	202012100366	SW	Q	12/15/2020 19:09	121520L231a.mdb
CCC	4796656		RW	DQ	12/15/2020 19:22	121520L231a.mdb

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery v Limits	r RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LMB	IS-L-phenylalanine-d5	L231	N/A			41036	42923	ng/L	96	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-LR-15N10	L231	N/A			793	938	ng/L	85	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-RR-15N13	L231	N/A	1		12696	12368	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	IS-Microcystin-YR-15N10	L231	N/A			3231	3295	ng/L	98	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Uracil-d4	L231	N/A	-		5085	4925	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 17:09	4796653
LMB	Anatoxin-a	L231	0.02		v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 17:09	4796653
LMB	Cylindrospermopsin	L231	0.05	-	v	0.05		ng/L	1	I	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LA	L231	0.1	-	v	0.1		ng/L	1	1	1		1.0	I	12/15/2020 17:09	4796653
LMB	Microcystin-LF	L231	0.1	1	v	0.1		ng/L	-	1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LR	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LY	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-RR	L231	0.1	1	v	0.1		ng/L			1	1	1.0	-	12/15/2020 17:09	4796653
LMB	Microcystin-YR	L231	0.1	1	v	0.1		ng/L			1	1	1.0		12/15/2020 17:09	4796653
LMB	Nodularin	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
FS	IS-L-phenylalanine-d5	L231	N/A	202012100362		44596	42923	ng/L	104	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100362		935	938	ng/L	100	50 - 150	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100362		12659	12368	ng/L	102	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100362		3397	3295	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 18:02	4795813
FS	IS-Uracil-d4	L231	N/A	202012100362		4270	4925	ng/L	87	50 - 150	I	I	1.0	I	12/15/2020 18:02	4795813
FS	Anatoxin-a	L231	0.02	202012100362	v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Cylindrospermopsin	L231	0.05	202012100362	v	0.05		ng/L	1	1	1	I	1.0	1	12/15/2020 18:02	4795813
FS	Microcystin-LA	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LF	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LR	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LY	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-RR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-YR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Nodularin	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-L-phenylalanine-d5	L231	N/A	202012100364		44554	42923	ng/L	104	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100364		916	938	ng/L	98	50 - 150	1	1	1.0	I	12/15/2020 18:15	4795814
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100364		14307	12368	ng/L	116	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100364		3540	3295	ng/L	107	50 - 150	1	1	1.0	ł	12/15/2020 18:15	4795814
FS	IS-Uracil-d4	L231	N/A	202012100364		4496	4925	ng/L	91	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	Anatoxin-a	L231	0.02	202012100364	v	0.02		ng/L		-	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Cylindrospermopsin	L231	0.05	202012100364	v	0.05		ng/L	-	1	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Microcystin-LA	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LF	L231	0.1	202012100364	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LR	L231	0.1	202012100364	v	0.1		ng/L		1	1		1.0	I	12/15/2020 18:15 4795814	179581
ମ୍ମ 11	Microcystin-LY	L231	0.1	202012100364	v	0.1		ng/L		1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-RR	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:15 4795814	179581

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Sample Type	Analyte	Method	MRL	Client ID	Result Flag	ult Amount g	Target	Units	% Recovery	Recovery / Limits	y RPD	o RPD Limit	Dil Factor	Extracted	Analyzed	EEA D#
FS	Microcystin-YR	L231	0.1	202012100364	v	0.1		ng/L	-	1		1	1.0		12/15/2020 18:15	5 4795814
FS	Nodularin	L231	0.1	202012100364	v	0.1		ng/L		-		1	1.0	-	12/15/2020 18:15	5 4795814
FS	IS-L-phenylalanine-d5	L231	N/A	202012100365		43970	42923	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:29	4795815
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100365		006	938	ng/L	96	50 - 150		I	1.0	I	12/15/2020 18:29	9 4795815
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100365		12708	12368	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100365		3277	3295	ng/L	66	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Uracil-d4	L231	N/A	202012100365		4341	4925	ng/L	88	50 - 150	1	1	1.0	I	12/15/2020 18:29	9 4795815
FS	Anatoxin-a	L231	0.02	202012100365	v	0.02		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Cylindrospermopsin	L231	0.05	202012100365	v	0.05		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Microcystin-LA	L231	0.1	202012100365	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-LF	L231	0.1	202012100365	v	0.1		ng/L	I	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LY	L231	0.1	202012100365	v	0.1		ng/L	1	I	1	1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-RR	L231	0.1	202012100365	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-YR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Nodularin	L231	0.1	202012100365	v	0.1		ng/L	1	1	1		1.0	-	12/15/2020 18:29	9 4795815
FS	IS-L-phenylalanine-d5	L231	N/A	202012100366		43433	42923	ng/L	101	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		831	938	ng/L	89	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12980	12368	ng/L	105	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3369	3295	ng/L	102	50 - 150	1	1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Uracil-d4	L231	N/A	202012100366		4352	4925	ng/L	88	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	Anatoxin-a	L231	0.02	202012100366	v	0.02		ng/L		1			1.0	-	12/15/2020 18:42	2 4795816
FS	Cylindrospermopsin	L231	0.05	202012100366	v	0.05		ng/L					1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LA	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LF	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LR	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LY	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-RR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-YR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Nodularin	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
MS	IS-L-phenylalanine-d5	L231	N/A	202012100366		44173	42923	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:55	4796654
MS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		956	938	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12676	12368	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3240	3295	ng/L	98	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Uracil-d4	L231	N/A	202012100366		4347	4925	ng/L	88	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Anatoxin-a	L231	0.02	202012100366		0.1819	0.2	ng/L	91	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Cylindrospermopsin	L231	0.05	202012100366		0.5276	0.5	ng/L	106	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Microcystin-LA	L231	0.1	202012100366		0.9923	1.0	ng/L	66	70 - 130		1	1.0	1	12/15/2020 18:55	4796654
s⊮ age	Microcystin-LF	L231	0.1	202012100366		0.9706	1.0	ng/L	97	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Microcystin-LR	L231	0.1	202012100366		0.9565	1.0	ng/L	96	70 - 130	1	1	1.0	1	12/15/2020 18:55 4796654	5 479665
MS	Microcystin-LY	L231	0.1	202012100366		0.9061	1.0	ng/L	91	70 - 130		1	1.0	I	12/15/2020 18:55 4796654	5 4796654

Sample Analyte Type Microcystin-RR MS Microcystin-RR MS Microcystin-RR MS Nodularin MSD IS-Lphenylalanine-d5 MSD IS-Microcystin-LR-15N10 MSD IS-Microcystin-RR-15N13 MSD IS-Microcystin-LR-15N13 MSD IS-Microcystin-LR-15N13 MSD IS-Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13	Method									ᄩᆖ					
		MIKL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery y Limits	кро	RPD Limit F	Dil Factor	Extracted	Analyzed	EEA ID #
	L231	0.1	202012100366		0.9693	1.0	ng/L	97	70 - 130		1	1.0	1	12/15/2020 18:55	4796654
	L231	0.1	202012100366		1.0620	1.0	ng/L	106	70 - 130	I	1	1.0	1	12/15/2020 18:55	4796654
	L231	0.1	202012100366		0.9864	1.0	ng/L	66	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
	L231	N/A	202012100366		44602	42923	ng/L	104	50 - 150	1	1	1.0	-	12/15/2020 19:09	4796655
	0 L231	N/A	202012100366		887	938	ng/L	95	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	3 L231	N/A	202012100366		12402	12368	ng/L	100	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	0 L231	N/A	202012100366		3251	3295	ng/L	66	50 - 150	1	1	1.0	1	12/15/2020 19:09	4796655
	L231	N/A	202012100366		4094	4925	ng/L	83	50 - 150	1	1	1.0	-	12/15/2020 19:09	4796655
	L231	0.02	202012100366		0.2070	0.2	ng/L	104	70 - 130	13	30	1.0	1	12/15/2020 19:09	4796655
	L231	0.05	202012100366		0.5058	0.5	ng/L	101	70 - 130	4.2	30	1.0	1	12/15/2020 19:09 4796655	1796655
	L231	0.1	202012100366		1.0732	1.0	ng/L	107	70 - 130	7.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0422	1.0	ng/L	104	70 - 130	7.1	30	1.0	-	12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0445	1.0	ng/L	104	70 - 130	8.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.1240	1.0	ng/L	112	70 - 130	21	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0212	1.0	ng/L	102	70 - 130	5.2	30	1.0		12/15/2020 19:09	4796655
MSD Microcystin-YR	L231	0.1	202012100366		1.0379	1.0	ng/L	104	70 - 130	2.3	30	1.0	-	12/15/2020 19:09	4796655
MSD Nodularin	L231	0.1	202012100366		1.0663	1.0	ng/L	107	70 - 130	7.8	30	1.0	-	12/15/2020 19:09	4796655
CCC IS-L-phenylalanine-d5	L231	N/A	I		43418	42923	ng/L	101	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-LR-15N10	0 L231	N/A	I		869	938	ng/L	93	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-RR-15N13	3 L231	N/A	I		13290	12368	ng/L	107	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-YR-15N10	0 L231	N/A	I		3267	3295	ng/L	66	50 - 150	1		1.0	-	12/15/2020 19:22	4796656
CCC IS-Uracil-d4	L231	N/A	I		5079	4925	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Anatoxin-a	L231	0.02	I		0.2142	0.2	ng/L	107	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Cylindrospermopsin	L231	0.05	I		0.5425	0.5	ng/L	109	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-LA	L231	0.1	I		1.1356	1.0	ng/L	114	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LF	L231	0.1	I		1.0353	1.0	ng/L	104	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LR	L231	0.1	-		1.0789	1.0	ng/L	108	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LY	L231	0.1	I		1.0980	1.0	ng/L	110	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-RR	L231	0.1	I		0.9754	1.0	ng/L	98	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-YR	L231	0.1	I		0.9805	1.0	ng/L	98	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Nodularin	L231	0.1	-		1.0539	1.0	ng/L	105	70 - 130	1	1	1.0	-	12/15/2020 19:22	4796656

	Sample	Sample Type Key	
Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCC	Continuing Calibration Check		
FS	Field Sample		
LMB	Laboratory Method Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

END OF REPORT

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

REPORT REVISED, replaces the original report.



ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	x	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	х		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	1	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	х			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		х
Heterotrophic Bacteria	SM 9215 B	х		x	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

Acknowledgement of Samples Received

Addr: San Francisco PUC 1000 El Camino Real Millbrae, CA 94030

Attn: Megan Tran Phone: 650-872-5945 Client ID: SANFRAN Folder #: 907916 Project: 470440-DW1 Sample Group: Microcystins-Lake Merced

Project Manager: Monica Van Natta Phone: 559-797-1931 PO #: PRO.0165 PO-000043463 TO#01

The following samples were received from you on **December 10, 2020** at **1143**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID		Sample Date
202012100362	LMER_E_00_LIM		12/08/2020 1400
	Variable ID: 2079121-01		
	@UCMR4 546	L231_SB	
202012100363	LMER_N_00_LIM		12/08/2020 1500
	Variable ID: 2079123-01		
	@UCMR4 546		
202012100364	LMER_N_00_LIM		12/09/2020 1200
	Variable ID: 2079123-07		
	L231_SB		
202012100365	LMER_R_00_LIM		12/08/2020 1000
	Variable ID: 2079125-01		
	@UCMR4 546	L231_SB	
202012100366	LMER_S_00_LIM		12/08/2020 0900
	Variable ID: 2079127-01		
	@UCMR4 546	L231_SB	

Test Description

@UCMR4 546 -- UCMR4 546

S	San Francisco		FRANC	SISCO PUBLIC	SAN FRANCISCO PUBLIC UTILITIES COMMISSION	IISSION		N 001	Water Quality Division
	Water Power Sewer services of the San Francisco Public Utilities Commission	Wer	SUB L	ABORATORY CHAII	SUB LABORATORY CHAIN OF CUSTODY RECORD	Q	99	astration Fax	Millbrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500	- Sector	Ship To: SUB_LAB		Ship Date: 12/09/2020		Ship Via: FedEx	dEx	Trackir	Tracking#: 121103155778
Codo:					FORL	FOR LAB USE ONLY			
	MMAN W TH	8		METHOD OF TRANSPORT (CHECK ONE)	SAMPLE CONDIT	TION UPON RECE	IPT (CHECK	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	SAMPLE STORAGE
SHIPPED BY:	Charlemand	11.0 1.		MILLBRAE		E	CONTAINER INTACT	INTACT	LOCATION
				MOCCASIN		0#	JF SAMPL	# OF SAMPLES MATCH COC	REFRIG#
IYPE: (Circle One)	KOUTINE / S	SPECIAL	COURIE OTHER	COURIER OTHER	D SEAL INTACT		HEADSPACE (VOA) COOLER TEMPERA	HEADSPACE (VOA) COOLER TEMPERATURE (0-6°C):	SHELF# OTHERS
			STATE EDT	STATE EDT REQUIRED: Y / N	SYTEM				
								יר־נסצו	
							975 ans	NN	
Sample ID	Source	Collected Date	/Time/By	Collected Date/Time/By WQD Rec. Date/By	LocationNotes/Comments	ts TAT			
2079121-01	LMER_E_00_LIM	12/8/20 1400	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
	3		2	12/9/20 PHOANG		21 DAYS		6	
2079123-01	LMER_N_00_LIM	12/8/20 1500	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10		
2079123-07	LMER_N_00_LIM	12/9/20 1200	SDELEO	12/9/20 JMITTRY		21 DAYS		7-8	
2079125-01	LMER_R_00_LIM	12/8/20 1000	RMJ0	12/8/20 PHOANG		21 DAYS	10	7-8	
			2	12/9/20 PHOANG		21 DAYS		6	
2079127-01	LMER_S_00_LIM	12/8/20 0900	RMJOHNSO 12/8/20	12/8/20 PHOANG		21 DAYS	10	7-8	
			2			† indicates	the last	f indicates the last digit(s) of container ID	
RELINOU	ISHED FROM: (Print Name/Sgal)		DATE/TIME:	RELINQUISHED TO:	(Print Name/Sign)	DATE/TIME	'TIME:	Comments: 470440DW: /stile_546/stile_/	Comments: 470440DW: Kellig SA6/SUIR ALGAL TOVIN/LK MEDCED
o SUB LAB RECEIVED BY:	CEIVED BY: (Print Name/Sign)	6	DATE/TIME:	SEND REPORT TO:		AGENCY:	κ	: Please see subs	CODE_340/300_ALOACE_IOANIY_LN MICHACEUT : Please see subsequent pages for analyte Aetails
Printed on: Wed	Printed on: Wednesday, December 9, 2020							Vertical Page Number: Horizontal Page Nu	tical Page Number: Page 1 of 3 Horizontal Page Number: 1

es

San Francisco	co SAN FRANCISCO	ISCO PUBLIC UTILITIES COMMISSION	NOISSIMMO	Water Quality Division 1000 El Camino Real
Water POWEr Sewers of the Servers of		SUB LABORATORY CHAIN OF CUSTODY RECORD	RECORD	Milliorae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4500 [[[B]@[[B]@[]]@[]]	Ship To: SUB_LAB	Ship Date: 12/09/2020	Ship Via: FedEx	Tracking#: 121103155778
2079127-01	LMER_S_00_LIM		FOR LAB USE ONLY	
Container ID (Rep of 3) 2079127-01-07 to 2079127-01-09				Collect Method 4°C
Analvsis: SUB Algal I UXIN Anatoxin Microcystin-LY	Wetnog: Deraur. Cylindrospermopsin Microcystin-RR	Microcystin-LA Microcystin-YR	Microcystin-LF Nodularin	Microcystin-LR
Container ID (Rep of 1) 2079127-01-10				Collect Method 4°C
Analvsis: SUB 546 Total Microcystins	Method: EPA 546	•		
Page				
6 of 28				
December 9, 2020 Second on: Wednesday, December 9, 2020	2020		·	Vertical Page Number: Page 3 of 3 Horizontal Page Number: 1

		1211 0315 5778					, ,				ą	Page of
laiysis or not.	NIA	12110		ارم = اهم الم		Results:	lional clients: None/46	Bottle # mm	TIME	11:43		
RECORD mine whether to proceed with ar	en Thawed	• .	iction, within 8 hours)	. [0] (Corr.Factor	(u	Explration Date	tee below): (ional bottles) tusing 40 ml vias, interna	Bamp ID	DATE	12/10/20		
JAL CHAIN OF CUSTODY RECORD SAMPLE TEMP RECEIVED: Note of temperature range, let the ASMA know, ASMA will defermine whether to proceed with analysis or not BAMPLEB REC'D DAY OF COLLECTION? Yes I NO	*C) (Final =*C) 2E: Frozen Partlally Frozen / Top Line / Other:	action) .	he same day as sample colle on)	inal =	fter 24 hrs of sample collectio	pH strip type: 0 - 14 or	Bamples with Headspace (see below): don Internal COFC for additional bottl , 666, 636, Anatoxín, LCMS methods using 40 ml v Monace	Samp ID Boilde # Froncer >6mm	COMPANYITTLE	Eurolins Ealon Analylical	×	
INTERN	C) (Corr.Factor C) CONDITION OF IC	ω	2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C If received on ice the same day as sample collection, within 8 hours) 3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)	amples of each 3 = [Observation=0] (Oorr,Factor0) (Flati= 3 = [Observation=0] (Oorr,Factor0) (Flati=	4 Dloxin (1613 or 2,3,7,8 TCDD): must be between 0-4 °C, not frozen (lf received after 24 hrs of sample collection)	Lot No.: Expire	e: ddltlonal VOC and Ra sos, sPME, @CH, s32LCMS	Bottle # wuter o >6mm	dspace (i.e. potential sampling errors): PRINT NAME	1017		
Eaton Ar Leville	TYPE OF ICE: Real SyntheticNo los MeTHOD OF BHIPMENT: Pick-Up / Vvalk-In / FedEx	Compliance Acceptance Criteria: 1) Chemistry: >0, ≤ 6°C, not frozen (NE	2) Microbiology, Distribution: <10°C, 3) Microbiology, Surface Water: <10°C	If oul of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record auch temperature of the quadrants	4 Dloxin (1813 or 2,3,7,8 TCDD): must	 pH Check. Manufacturer: Chlorine check. Manufacturer: Sansafe. 	7) VOA and Radon No Sam Headspace: Headspace Do	Bamp ID Bottlie # muner-ou-s6mm	Note Sample IDs which have dissimilar headspace ™everune	REDEIVED BY:		QA FO 0003.0 (QA FO-FRM5504) (8/25/20) Ver B

3.

Page 7 of 28 pages



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Folder Comments

Analtyical results for L231 are submitted by Eurofins Eaton Analytical in Southbend IN

Revised report to edit dilution factors. UMVN, 01/05/2021



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran

1000 El Camino Real Millbrae, CA 94030 Samples Received on: 12/10/2020 1143

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/14/2020 14:48	202012100362 Total Microcystins	LMER E 00 LIM	11		ug/L	3.0
12/22/2020 14:27	202012100363 Total Microcystins	LMER N 00 LIM	9.8		ug/L	6.0
12/14/2020 14:48	202012100365 Total Microcystins	LMER R 00 LIM	7.5		ug/L	3.0
12/14/2020 14:48	202012100366 Total Microcystins	LMER S 00 LIM	6.8		ug/L	3.0

🛟 eurofins

Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Laboratory Data

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilutior
LMER_E_00_LIM (202					Sam	pled on 12/08	/2020 140	0
	e ID: 2079121-0							
12/10/20 12/14/20 14:48	EPA 546 - U 1293501	1294106	(EPA 546)	Total Microcystins	11	ug/L	3.0	10
12/10/20 12/14/20 14:48	1293501	1294100	(EPA 546) (EPA 546)	%CV	1.80	%	180	10
			(EFA 540)	/0CV	1.00	76	100	
12/15/20 18:02	EPA 545 - Al	iyai toxins	(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:02			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:02			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
12/15/20 18:02			(EPA 545)	Nodularin	ND	ug/L	0.1	1
MER N 00 LIM (202	2012100363)		. ,		Sam	pled on 12/08	/2020 150	0
	e ID: 2079123-0				Cum			•
ſ	EPA 546 - U	CMR4 546						
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	Total Microcystins	9.8	ug/L	6.0	20
2/10/20 12/22/20 14:27	1293501	1295128	(EPA 546)	%CV	3.70	%	370	1
_MER_N_00_LIM (202	2012100364)	<u> </u>			Sam	pled on 12/09	/2020 120	0
	e ID: 2079123-0							
	EPA 545 - Al	lgal Toxins	(
12/15/20 18:15			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
12/15/20 18:15			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
12/15/20 18:15			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1 1
12/15/20 18:15			(EPA 545)	Microcystin-YR	ND ND	ug/L	0.1	1
12/15/20 18:15			(EPA 545)	Nodularin		ug/L	0.1	
<u>_MER_R_00_LIM (202</u>					Sam	pled on 12/08	/2020 100	0
	e ID: 2079125-0 E PA 546 - U							
2/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	7.5	ug/L	3.0	10
2/10/20 12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	1.40	%	140	1
	EPA 545 - Al		()					

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

🛟 eurofins

Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC

Megan Tran 1000 El Camino Real Millbrae, CA 94030 Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/10/2020 1143

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/15/20 18:29			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:29			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:29			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:29			(EPA 545)	Nodularin	ND	ug/L	0.1	1
LMER :	S 00 LIM (20	2012100366	<u>6)</u>			Sam	pled on 12/08	/2020 090	0
		le ID: 2079127							
			JCMR4 546						
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	Total Microcystins	6.8	ug/L	3.0	10
12/10/20	12/14/20 14:48	1293501	1294106	(EPA 546)	%CV	2.70	%	270	1
		EPA 545 - /	Algal Toxins						
	12/15/20 18:42			(EPA 545)	Anatoxin-a	ND	ug/L	0.02	1
	12/15/20 18:42			(EPA 545)	Cylindrospermopsin	ND	ug/L	0.05	1
	12/15/20 18:42			(EPA 545)	Microcystin-LA	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LF	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-LY	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-RR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Microcystin-YR	ND	ug/L	0.1	1
	12/15/20 18:42			(EPA 545)	Nodularin	ND	ug/L	0.1	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.



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San Francisco PUC

UCMR4 546

	Prep Batch: 1293501	Analytical Batch: 1294106
	202012100362	LMER_E_00_LIM
	202012100365	LMER_R_00_LIM
	202012100366	LMER_S_00_LIM
~		

UCMR4 546

Prep Batch: 1293501 Analytical Batch: 1295128

202012100363 LI	MER_N_00_LIM
-----------------	--------------

Laboratory QC Summary

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

Analysis Date: 12/14/2020

Analyzed by: M8OF Analyzed by: M8OF Analyzed by: M8OF

Analysis Date: 12/22/2020

Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

Report: 907916 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC

			Spiked	Recovered	Units	field(%)	Limits (%)	Limit(%)	RPD%
UCMR4 546 by EF	PA 546								
Analytical B	atch: 1294106					Analysis Da	ate: 12/14/	2020	
LCS1	%CV			2.10	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202011300070	%CV	1.60		ND	%				
MSD2_202011300070	%CV	1.60		ND	%				
LCS1	Total Microcystins		0.5	0.603	ug/L	121	(60-140)		
LCS2	Total Microcystins		0.5	0.548	ug/L	110	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.345	ug/L	115	(50-150)		
MS2_202011300070	Total Microcystins	ND	0.5	0.512	ug/L	94	(60-140)		
MSD2_202011300070	Total Microcystins	ND	0.5	0.637	ug/L	119	(60-140)	40	22
UCMR4 546 by EF	PA 546								
Analytical B	atch: 1295128					Analysis Da	ate: 12/22/	2020	
LCS1	%CV			1.90	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202012180093	%CV	1.10		ND	%				
MSD2_202012180093	%CV	1.10		ND	%				
LCS1	Total Microcystins		0.5	0.502	ug/L	100	(60-140)		
LCS2	Total Microcystins		0.5	0.443	ug/L	89	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.303	ug/L	101	(50-150)		
MS2_202012180093	Total Microcystins	19	5	28.9	ug/L	<u>1890</u>	(60-140)		
MSD2_202012180093	Total Microcystins	19	5	35.5	ug/L	<u>3210</u>	(60-140)	40	21

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.



LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida(Primary AB)*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon*	4156
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035	·	

*NELAP/TNI Recognized Accreditation Bodies



NELAC NARRATIVE PAGE

Client: Eurofins Eaton Analytical

Report #: 506146NP

Eurofins Eaton Analytical, LLC is a NELAP accredited laboratory. All reported results meet the requirements of the NELAC standards, unless otherwise noted.

EEA contact person: Karen Fullmer

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

There were no quality control failures.

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Karen Fullmer ASM

Authorized Signature

12/17/2020

Date

Page 1 of 1



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

Laboratory Report

Client:	Eurofins Eaton Analytical	Report:	506146
Attn:	Jackie Contreras	Priority:	Standard Written
Aun.	750 Royal Oaks Drive	Status:	Final
	Suite 100	PWS ID:	Not Supplied
	Monrovia, CA 91016		

	Sample Information										
EEA ID #	Client ID			Collected By:	Received Date / Time						
4795813	202012100362	L231	12/08/20 14:00	Client	12/12/20 09:45						
4795814	202012100364	L231	12/09/20 12:00	Client	12/12/20 09:45						
4795815	202012100365	L231	12/08/20 10:00	Client	12/12/20 09:45						
4795816	202012100366	L231	12/08/20 09:00	Client	12/12/20 09:45						
	Report Summary										

Note: Sample containers were provided by the client.

Samples came in bottles for Method 545. Samples were transferred to L231 vials and mixed well.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Karen Fullmer at (574) 233-4777.

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aren hillmer ASM

 Authorized Signature

 Client Name:
 Eurofins Eaton Analytical

 Report #:
 506146

Title

12/17/2020

Date

Sampling Point: 202012100362

PWS ID: Not Supplied

	EEA Methods											
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #			
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:02	4795813			
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:02	4795813			
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:02	4795813			

Sampling Point: 202012100364

PWS ID: Not Supplied

	EEA Methods												
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #				
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:15	4795814				
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:15	4795814				
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:15	4795814				

Sampling Point: 202012100365

PWS ID: Not Supplied

EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:29	4795815
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:29	4795815
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:29	4795815

Sampling Point: 202012100366

PWS ID: Not Supplied

		l	EEA Met	hods					
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
64285-06-9	Anatoxin-a	L231		0.02	< 0.02	ug/L		12/15/20 18:42	4795816
143545-90-8	Cylindrospermopsin	L231		0.05	< 0.05	ug/L		12/15/20 18:42	4795816
96180-79-9	Microcystin-LA	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
154037-70-4	Microcystin-LF	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
101043-37-2	Microcystin-LR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
123304-10-9	Microcystin-LY	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
111755-37-4	Microcystin-RR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
101064-48-6	Microcystin-YR	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816
118399-22-7	Nodularin	L231		0.1	< 0.1	ug/L		12/15/20 18:42	4795816

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: (MS or MSD value - Sample value) * 100 / spike target / dilution factor = **Recovery %**

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

🐝 eurofins		*REPORTING REQUIR	S MENTS: Do Not Combin	Submittal Form Bate: 1 *REPORTING REQUIRMENTS: Do Not Combine Reports with any other samples submitted under different Folder Numberel	s submitted under	Date: 12/11/2020	12020
	Eaton Analytical	Report & Invoice must h	Report all quality control data according to Method. Include dates	Report & Invoice must have the Folder # 907916 Job # 1000014 $\mathbb{S}_{\text{Report}}$ and the extracted (if extracted) and Method reference on the renort Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the renort	is submitted under tracted)	ametent rolder Numbersi	to
Ship To:		Results must have Co	Results must have Complete data & QC with Approval Signature.	Approval Signature.			
Eurofins Eaton Ana 110 South Hill Street South Bend, IN 4661	<u>></u> r	Rep EM Eurofins Eaton A Accour	orts: Jackie Contreras AlL TO: Eaton-Monrovia nalytical, LLC 750 Roya Phone (626) 386-11 Invoices to: Eurofin ts Payable 2425 New H	Reports: Jackie Contreras Sub-Contracting Administrator EMAIL TO: Eaton-MonroviaSubContract@eurofinset.com Eurofins Eaton Analytical, LLC 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Phone (626) 386-1165 Fax (626) 386-1122 Invoices to: Eurofins Eaton Analytical, LLC Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605	, CA 91016	Provide in each Report the Specified StateCertification # and Exp Date for requested tests + matrix Samples from: CALIFORNIA	, xi
Phone: 800-332-4345	132-4345 Fax: 574-233-8207				Cilent Pre	When	
Folder #: 907916	Report Due: 01/12/2021					and Sample Contest	
Sample ID 202012100362	Client Sample ID for reference on LMER_E_00_LIM	rence on!	San	Sample Date & Time Matrix 12/08/20 1400 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795813	
Method	Prep Method An	Analysis Requested					
EPA 545	Alg	Algal Toxins					
Sample ID (3) 202012100364	Client Sample ID for reference on LMER_N_00_LIM	rence on!	San	Sample Date & Time Matrix 12/09/20 1200 DW	PWS Systemcode	de PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	Static ID: 4795 814	
Method	Prep Method An	Analysis Requested	6				
EPA 545	Alg	Algal Toxins					
Sample ID (2 (202012100365	Client Sample ID for reference on LMER_R_00_LIM	ence onl	San	Sample Date & Time Matrix 12/08/20 1000 DW	PWS Systemcode	ode PWSID	JLS
Sample type:	Sample Event:	nt:	Facility ID:	Sample Point ID:	Stat	static ID: UT95 85	
Method	Prep Method An	Analysis Requested	T(a				
EPA 545		Algal Toxins	~			1.0 DUI	
Relinquished by:	Sample Control	up let they D	Date 11/11/20 Time 6953		JIRED IF RECEIVED O	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS	
Received by:			Date Time	An Acknowledgeme	ent of Receipt is requ	An Acknowledgement of Receipt is requested to attn: Jackie Contreras	
e Breinquished by:	Sample Control		Date Time Time	52-20			
f 15	750 Royal Oaks Drive, Su	uite 100, Monrovia, CA {	Page 1 of 2 91016 Tel (626) 386-11	Page 1 of 2 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton	EurofinsUS.com/E	aton	

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Sample ID 202012100366	Client Sample ID for reference on LMER_S_00_LIM	for reference onl	Sample D	Sample Date & Time Matrix PWS Systemcode PWSID 12/08/20 0900 DW JLS
Sample type:	Sami	Sample Event:	Facility ID: S	Sample Point ID: いうならとし Static ID: いうならをに
Method	Prep Method	Analysis Requested	Terrer 1	
EPA 545		Algal Toxins		
Relinquished by:	Sample Control	trol py led for	Date $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{20}$ Time $\frac{14}{15}$	NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS An Acknowledgement of Receipt is requested to attri- Jackie Contreras
be accelered by:	Sample Control	Itol	2-12-2020	
of 15 28 pages	750 Royal Oaks D	Drive, Suite 100, Monrovia, C		750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 www.EurofinsUS.com/Eaton

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Eaton Analytical

Eurofins Eaton Analytical Run Log Run ID: 283359 Method: L231

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
LMB	4796653		RW	DQ	12/15/2020 17:09	121520L231a.mdb
FS	4795813	202012100362	SW	Q	12/15/2020 18:02	121520L231a.mdb
FS	4795814	202012100364	SW	Q	12/15/2020 18:15	121520L231a.mdb
FS	4795815	202012100365	SW	Q	12/15/2020 18:29	121520L231a.mdb
FS	4795816	202012100366	SW	QQ	12/15/2020 18:42	121520L231a.mdb
MS	4796654	202012100366	SW	DQ	12/15/2020 18:55	121520L231a.mdb
MSD	4796655	202012100366	SW	Q	12/15/2020 19:09	121520L231a.mdb
CCC	4796656		RW	DQ	12/15/2020 19:22	121520L231a.mdb

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery v Limits	r RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LMB	IS-L-phenylalanine-d5	L231	N/A			41036	42923	ng/L	96	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-LR-15N10	L231	N/A	-		793	938	ng/L	85	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Microcystin-RR-15N13	L231	N/A	1		12696	12368	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	IS-Microcystin-YR-15N10	L231	N/A			3231	3295	ng/L	98	50 - 150	1	1	1.0		12/15/2020 17:09	4796653
LMB	IS-Uracil-d4	L231	N/A	-		5085	4925	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 17:09	4796653
LMB	Anatoxin-a	L231	0.02		v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 17:09	4796653
LMB	Cylindrospermopsin	L231	0.05	-	v	0.05		ng/L	1	I	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LA	L231	0.1	-	v	0.1		ng/L	1	1	1		1.0	I	12/15/2020 17:09	4796653
LMB	Microcystin-LF	L231	0.1	1	v	0.1		ng/L	-	1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LR	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-LY	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
LMB	Microcystin-RR	L231	0.1	1	v	0.1		ng/L			1	1	1.0	-	12/15/2020 17:09	4796653
LMB	Microcystin-YR	L231	0.1	1	v	0.1		ng/L			1	1	1.0		12/15/2020 17:09	4796653
LMB	Nodularin	L231	0.1	1	v	0.1		ng/L		1	1	1	1.0	1	12/15/2020 17:09	4796653
FS	IS-L-phenylalanine-d5	L231	N/A	202012100362		44596	42923	ng/L	104	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100362		935	938	ng/L	100	50 - 150	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100362		12659	12368	ng/L	102	50 - 150	1	1	1.0	I	12/15/2020 18:02	4795813
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100362		3397	3295	ng/L	103	50 - 150	1	1	1.0	ł	12/15/2020 18:02	4795813
FS	IS-Uracil-d4	L231	N/A	202012100362		4270	4925	ng/L	87	50 - 150	I	I	1.0	I	12/15/2020 18:02	4795813
FS	Anatoxin-a	L231	0.02	202012100362	v	0.02		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Cylindrospermopsin	L231	0.05	202012100362	v	0.05		ng/L	1	1	1	I	1.0	1	12/15/2020 18:02	4795813
FS	Microcystin-LA	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LF	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LR	L231	0.1	202012100362	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-LY	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-RR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	Microcystin-YR	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:02	4795813
FS	Nodularin	L231	0.1	202012100362	v	0.1		ng/L	1	1	1	I	1.0	I	12/15/2020 18:02	4795813
FS	IS-L-phenylalanine-d5	L231	N/A	202012100364		44554	42923	ng/L	104	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100364		916	938	ng/L	98	50 - 150	1	1	1.0	I	12/15/2020 18:15	4795814
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100364		14307	12368	ng/L	116	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100364		3540	3295	ng/L	107	50 - 150	1	1	1.0	ł	12/15/2020 18:15	4795814
FS	IS-Uracil-d4	L231	N/A	202012100364		4496	4925	ng/L	91	50 - 150	1	1	1.0	1	12/15/2020 18:15	4795814
FS	Anatoxin-a	L231	0.02	202012100364	v	0.02		ng/L		-	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Cylindrospermopsin	L231	0.05	202012100364	v	0.05		ng/L	-	1	1	1	1.0	-	12/15/2020 18:15	4795814
FS	Microcystin-LA	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LF	L231	0.1	202012100364	v	0.1		ng/L	1	I	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-LR	L231	0.1	202012100364	v	0.1		ng/L		1	1		1.0	I	12/15/2020 18:15 4795814	179581
ମ୍ମ 11	Microcystin-LY	L231	0.1	202012100364	v	0.1		ng/L		1	1	1	1.0	I	12/15/2020 18:15	4795814
FS	Microcystin-RR	L231	0.1	202012100364	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:15 4795814	179581

			ĺ						ŕ							
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	ult Amount g	Target	Units	% Recovery	Recovery / Limits	y RPD	o RPD Limit	Dil Factor	Extracted	Analyzed	EEA D#
FS	Microcystin-YR	L231	0.1	202012100364	v	0.1		ng/L	-	1		1	1.0		12/15/2020 18:15	5 4795814
FS	Nodularin	L231	0.1	202012100364	v	0.1		ng/L		-		1	1.0	-	12/15/2020 18:15	5 4795814
FS	IS-L-phenylalanine-d5	L231	N/A	202012100365		43970	42923	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:29	4795815
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100365		006	938	ng/L	96	50 - 150		I	1.0	I	12/15/2020 18:29	9 4795815
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100365		12708	12368	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100365		3277	3295	ng/L	66	50 - 150	1	1	1.0	I	12/15/2020 18:29	4795815
FS	IS-Uracil-d4	L231	N/A	202012100365		4341	4925	ng/L	88	50 - 150	1	1	1.0	I	12/15/2020 18:29	9 4795815
FS	Anatoxin-a	L231	0.02	202012100365	v	0.02		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Cylindrospermopsin	L231	0.05	202012100365	v	0.05		ng/L		1	1	1	1.0	1	12/15/2020 18:29	4795815
FS	Microcystin-LA	L231	0.1	202012100365	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-LF	L231	0.1	202012100365	v	0.1		ng/L	I	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-LY	L231	0.1	202012100365	v	0.1		ng/L	1	I	1	1	1.0	-	12/15/2020 18:29	9 4795815
FS	Microcystin-RR	L231	0.1	202012100365	v	0.1		ng/L	1	1	1	1	1.0	1	12/15/2020 18:29	9 4795815
FS	Microcystin-YR	L231	0.1	202012100365	v	0.1		ng/L	1	1		1	1.0	-	12/15/2020 18:29	9 4795815
FS	Nodularin	L231	0.1	202012100365	v	0.1		ng/L	1	1	1		1.0	-	12/15/2020 18:29	9 4795815
FS	IS-L-phenylalanine-d5	L231	N/A	202012100366		43433	42923	ng/L	101	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		831	938	ng/L	89	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12980	12368	ng/L	105	50 - 150		1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3369	3295	ng/L	102	50 - 150	1	1	1.0		12/15/2020 18:42	2 4795816
FS	IS-Uracil-d4	L231	N/A	202012100366		4352	4925	ng/L	88	50 - 150		1	1.0	-	12/15/2020 18:42	2 4795816
FS	Anatoxin-a	L231	0.02	202012100366	v	0.02		ng/L		1			1.0	-	12/15/2020 18:42	2 4795816
FS	Cylindrospermopsin	L231	0.05	202012100366	v	0.05		ng/L					1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LA	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LF	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LR	L231	0.1	202012100366	v	0.1		ng/L	1	1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-LY	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-RR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Microcystin-YR	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
FS	Nodularin	L231	0.1	202012100366	v	0.1		ng/L		1			1.0	1	12/15/2020 18:42	2 4795816
MS	IS-L-phenylalanine-d5	L231	N/A	202012100366		44173	42923	ng/L	103	50 - 150	1	1	1.0	I	12/15/2020 18:55	4796654
MS	IS-Microcystin-LR-15N10	L231	N/A	202012100366		956	938	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-RR-15N13	L231	N/A	202012100366		12676	12368	ng/L	102	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Microcystin-YR-15N10	L231	N/A	202012100366		3240	3295	ng/L	98	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	IS-Uracil-d4	L231	N/A	202012100366		4347	4925	ng/L	88	50 - 150	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Anatoxin-a	L231	0.02	202012100366		0.1819	0.2	ng/L	91	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Cylindrospermopsin	L231	0.05	202012100366		0.5276	0.5	ng/L	106	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
MS	Microcystin-LA	L231	0.1	202012100366		0.9923	1.0	ng/L	66	70 - 130		1	1.0	1	12/15/2020 18:55	4796654
s⊮ age	Microcystin-LF	L231	0.1	202012100366		0.9706	1.0	ng/L	97	70 - 130	1	1	1.0	I	12/15/2020 18:55	4796654
MS	Microcystin-LR	L231	0.1	202012100366		0.9565	1.0	ng/L	96	70 - 130	1	1	1.0	1	12/15/2020 18:55 4796654	5 479665
MS	Microcystin-LY	L231	0.1	202012100366		0.9061	1.0	ng/L	91	70 - 130		1	1.0	I	12/15/2020 18:55 4796654	5 4796654

Sample Analyte Type Microcystin-RR MS Microcystin-RR MS Microcystin-RR MS Nodularin MSD IS-Lphenylalanine-d5 MSD IS-Microcystin-LR-15N10 MSD IS-Microcystin-RR-15N13 MSD IS-Microcystin-LR-15N13 MSD IS-Microcystin-LR-15N13 MSD IS-Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13 MSD Microcystin-LR-15N13	Method									ᄩᆖ					
		MIKL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery y Limits	кро	RPD Limit F	Dil Factor	Extracted	Analyzed	EEA ID #
	L231	0.1	202012100366		0.9693	1.0	ng/L	97	70 - 130		1	1.0	1	12/15/2020 18:55	4796654
	L231	0.1	202012100366		1.0620	1.0	ng/L	106	70 - 130	I	1	1.0	1	12/15/2020 18:55	4796654
	L231	0.1	202012100366		0.9864	1.0	ng/L	66	70 - 130	1	1	1.0	1	12/15/2020 18:55	4796654
	L231	N/A	202012100366		44602	42923	ng/L	104	50 - 150	1	1	1.0	-	12/15/2020 19:09	4796655
	0 L231	N/A	202012100366		887	938	ng/L	95	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	3 L231	N/A	202012100366		12402	12368	ng/L	100	50 - 150	1	1	1.0		12/15/2020 19:09	4796655
	0 L231	N/A	202012100366		3251	3295	ng/L	66	50 - 150	1	1	1.0	1	12/15/2020 19:09	4796655
	L231	N/A	202012100366		4094	4925	ng/L	83	50 - 150	1	1	1.0	-	12/15/2020 19:09	4796655
	L231	0.02	202012100366		0.2070	0.2	ng/L	104	70 - 130	13	30	1.0	1	12/15/2020 19:09	4796655
	L231	0.05	202012100366		0.5058	0.5	ng/L	101	70 - 130	4.2	30	1.0	1	12/15/2020 19:09 4796655	1796655
	L231	0.1	202012100366		1.0732	1.0	ng/L	107	70 - 130	7.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0422	1.0	ng/L	104	70 - 130	7.1	30	1.0	-	12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0445	1.0	ng/L	104	70 - 130	8.8	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.1240	1.0	ng/L	112	70 - 130	21	30	1.0		12/15/2020 19:09	4796655
	L231	0.1	202012100366		1.0212	1.0	ng/L	102	70 - 130	5.2	30	1.0		12/15/2020 19:09	4796655
MSD Microcystin-YR	L231	0.1	202012100366		1.0379	1.0	ng/L	104	70 - 130	2.3	30	1.0	-	12/15/2020 19:09	4796655
MSD Nodularin	L231	0.1	202012100366		1.0663	1.0	ng/L	107	70 - 130	7.8	30	1.0	-	12/15/2020 19:09	4796655
CCC IS-L-phenylalanine-d5	L231	N/A	I		43418	42923	ng/L	101	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-LR-15N10	0 L231	N/A	I		869	938	ng/L	93	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-RR-15N13	3 L231	N/A	I		13290	12368	ng/L	107	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC IS-Microcystin-YR-15N10	0 L231	N/A	I		3267	3295	ng/L	66	50 - 150	1		1.0	-	12/15/2020 19:22	4796656
CCC IS-Uracil-d4	L231	N/A	I		5079	4925	ng/L	103	50 - 150	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Anatoxin-a	L231	0.02	I		0.2142	0.2	ng/L	107	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Cylindrospermopsin	L231	0.05	I		0.5425	0.5	ng/L	109	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-LA	L231	0.1	I		1.1356	1.0	ng/L	114	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LF	L231	0.1	I		1.0353	1.0	ng/L	104	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LR	L231	0.1	-		1.0789	1.0	ng/L	108	70 - 130	1	1	1.0	1	12/15/2020 19:22	4796656
CCC Microcystin-LY	L231	0.1	I		1.0980	1.0	ng/L	110	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-RR	L231	0.1	I		0.9754	1.0	ng/L	98	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Microcystin-YR	L231	0.1	I		0.9805	1.0	ng/L	98	70 - 130	1	1	1.0	I	12/15/2020 19:22	4796656
CCC Nodularin	L231	0.1	-		1.0539	1.0	ng/L	105	70 - 130	1	1	1.0	-	12/15/2020 19:22	4796656

	Sample	Sample Type Key	
Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCC	Continuing Calibration Check		
FS	Field Sample		
LMB	Laboratory Method Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

END OF REPORT

Eaton Analytical

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

REPORT REVISED, replaces the original report.



ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

- * Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.
- * Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,
- Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
- * Test results relate only to the sample(s) tested.
- * Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).
- * This report shall not be reproduced except in full, without the written approval of the laboratory.
- * This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.





Eaton Analytical

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

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ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	x	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	x		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	1	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	х	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		х
Heterotrophic Bacteria	SM 9215 B	х		х	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

	Actiowied	Igement of Samples Received
Addr:	San Francisco PUC	Client ID: SANFRAN
	1000 El Camino Real	Folder #: 909317
	Millbrae, CA 94030	Project: 470440-DW1
		Sample Group: Microcystins-Lake Merced
Attn:	Megan Tran	Project Manager: Monica Van Natta
Phone:	650-872-5945	Phone: 559-797-1931
		PO #: PRO.0165 PO-0000443463 TO#01
tests list for using	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC.	Exember 18, 2020 at 1058 . They have been scheduled for the incorrect, please contact your service representative. Thank you
tests list for using	ed below each sample. If this information is i	
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC.	ncorrect, please contact your service representative. Thank you
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample # 02012180093	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample # 02012180093	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01 @UCMR4 546	Incorrect, please contact your service representative. Thank you Sample Date 12/17/2020 0926
tests list	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using Sample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01 @UCMR4 546 LMER_N_00_LIM	Incorrect, please contact your service representative. Thank you Sample Date 12/17/2020 0926

@UCMR4 546 -- UCMR4 546

S	San Francisco		NF	SAN FRANCISCO		PUBLIC	UTIL	PUBLIC UTILITIES COMMISSION	VIISSIO	z	N	Water Quality Division 1000 El Camino Real
es <	VALET FOWET SEWER Services of the San Francisco Public Utilities Commission			SUB LA	BORAT	ORY CHA	IN OF (SUB LABORATORY CHAIN OF CUSTODY RECORD)RD	418 Pch		Milibrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4534	ource#: 4534	Ship To:SUB_LAB	4 B		Ship	Ship Date: 12/17/2020	/17/20	20	Ship Via: FedEx	FedEx	Trackin	Tracking#: 121103155620
Index Code.	UWW)100000000000000000000000000000000000	1001(WW) 0 470440(DW)					•	FOR	FOR LAB USE ONLY	۲۷		
		5		METHOD (JF TRANSI	METHOD OF TRANSPORT (CHECK ONE)		SAMPLE CONE	ITION UPON	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	(OPRIATE BOXES)	SAMPLE STORAGE
SHIPPED BY:	A anni I	N N N			MILLBRAE			Э		CONTAINER INTACT	ACT	LOCATION
TYPE:	ROUTINE	E / SPECIAL		D MOCCASI	MOCCASIN			SEALED SEALINTACT		# OF SAMPLES MATCH COC HEADSPACE (VOA)	1ATCH COC A)	REFRIG# SHELF#
(Circle One)			_		ж					COOLER TEMPERATURE (0-6°C):	ATURE (0-6°C):	OTHERS
			STA	STATE EDT REQUIRED: SPECIAL INSTRUCTIONS:	RUCTIC	D: Y/N DNS:	SYT	SYTEM ID:				
										9 7 5_8US		
Sample ID	Source		te/Tim	e/By W	•	. Date/By	Locati	LocationNotes/Comments		-		
2079603-01	LMER_E_00_LIM	M 12/17/20 0926 RMJOHNSO12/17/20 N	6 RM	IOHNSO1		PHOANG			21 DAYS	1 I I		
2079604-01	LMER_N_00_LIM	IM 12/17/20 0932		RMJOHNSO 12/17/20 N	2/17/20	PHOANG			21 DAYS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
									↑ indic	ites the last digit	1 indicates the last digit(s) of container ID	
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SUBI	AB RECEIVED BY: (Printwan	in water Ster) Duil	DATE/1	IME:	SEND F	SEND REPORT TO:			AG	AGENCY:	details.	ducint pages for arranges
Printed on: Thurs	Printed on: Thursday, December 17, 2020	2020	2								Vertical Page Number: Horizontal Page Nu	tical Page Number: Page 1 of 2 Horizontal Page Number: 1

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Eaton Analytical

UCMR4 INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder Number:	9093	13				
			DLLECTION TIME?		1	FedEx
		/				IRK# 1211 0245 500
TYPE OF ICE: Rea						0221 1211 0315 5620
CONDITION OF ICE	E: Frozer	n 📝 Partially F	rozen Tha	wed N/A	7	
CONDITION OF SA	MPLE: Fr	rozen Partia	ly Frozen	Not Frozen 🔜 🗸		
METHOD OF SHIP	MENT: Pi	ick-Up / Walk-In	FedEx / UPS	/ DHL / Area Fa	ast / Top	Line / Other:
Compliance Accep	tance Cri	teria:				
If sample(s) r	eceived:					
1) on the same of	lay as the	collection day; sa	mple temperature	may be ≥10°C w	ith eviden	ice of cooling
Los Contras representados de las mesonas res	• // •• · · · ·			-		
,,						t 200.8) and not frozen (except 546), and nd not frozen (except 546), and not
			and shipment doc			
			Contraction of the second s	Starting and a start of the start of the start of the	CONTRACTOR OF THE OWNER OF	
						tle that is checked does not meet the cted for that method is checked to determined if
a valid sample w	as received.		07960	2-01-1	21	
Facility ID & Unio	que Field Sar	mple ID	- 1. je	1.01.0		
IR Gun ID = _	640	1A				
Method	Container ID		ection Final (*C) or (*C)	Method	Container ID	Observation Correction Final (*C) (* C) Factor (*C)
UCMR4 2008	1	+	=	UCMR4 544	1	+ =
UCMR4 525.3	1	+	=		2	+ =
	2	+	-		3	+ =
	3	+	=	UCMR4 545	1	2 1 -2 2 - 2 0
UCMR4 530	1	+	=	UCMR4 546	1	3.0, -0. L= L-8
	2	+	=			
	3	+	=			
	1	+	=			
UCMR4 541	2	+	=			
	3	+	=			
UCMR4 552.3		+	=			
TOC (5310C)	1	+	=			
Bromide (300.0		+	=]		

Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not.
SIGNATURE PRINT NAME COMPANY/ITTLE



QA FO 00104.1 (FRM 17965) (01/10/18) Ver 2

Page ____ of ____



Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Laboratory Comments

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Revised report to edit dilution factors. UMVN, 01/05/2021

The Comments Report may be blank if there are no comments for this report.



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Samples Received on: 12/18/2020 1058

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/22/2020 14:27	202012180093 Total Microcystins	LMER E 00 LIM	19		ug/L	3.0
12/22/2020 14:27	202012180094 Total Microcystins	LMER N 00 LIM	24		ug/L	3.0



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Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/18/2020 1058

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_I	E_00_LIM (202	2012180093)				Samp	led on 12/17	/2020 092	6
	Variable	e ID: 2079603-	01						
	1	EPA 546 - U	CMR4 546						
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	Total Microcystins	19	ug/L	3.0	10
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	%CV	1.10	%	110	1
LMER I	N 00 LIM (202	2012180094	<u>)</u>			Samp	led on 12/17	/2020 093	2
	Variable	e ID: 2079604-	01						
	I	EPA 546 - U	CMR4 546						
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	Total Microcystins	24	ug/L	3.0	10
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	%CV	2.00	%	200	1



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC

UCMR4 546

Prep Batch: 1295215 Analytical Batch: 1295128 202012180093 LMER_E_00_LIM

202012180093	LMER_E_00_LIM
202012180094	LMER_N_00_LIM

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

Analysis Date: 12/22/2020

Analyzed by: M8OF Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757

1 800 566 LABS (1 800 566 5227)

Laboratory QC

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546								
Analytical B	atch: 1295128				4	Analysis D	ate: 12/22/	2020	
LCS1	%CV			1.90	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202012180093	%CV	1.10		ND	%				
MSD2_202012180093	%CV	1.10		ND	%				
LCS1	Total Microcystins		0.5	0.502	ug/L	100	(60-140)		
LCS2	Total Microcystins		0.5	0.443	ug/L	89	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.303	ug/L	101	(50-150)		
MS2_202012180093	Total Microcystins	19	5	28.9	ug/L	<u>1890</u>	(60-140)		
MSD2_202012180093	Total Microcystins	19	5	35.5	ug/L	<u>3210</u>	(60-140)	40	21

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.

Eaton Analytical

750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)



Laboratory Report

for

San Francisco PUC 1000 El Camino Real Millbrae, CA 94030 Attention: Megan Tran

REPORT REVISED, replaces the original report.



ANALYTICAL, LLC

UMVN: Monica Van Natta

Project Manager

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

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Eaton Analytical

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

Eurofins Eaton Analytical, LLC

750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629 T | 626-386-1100 F | 866-988-3757 www.EurofinsUS.com/Eaton

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA. Refer to Certificate and scope of accreditation (5890) found at: https://www.eurofinsus.com/Eaton

		Environ-	Environ-			-	Environ-	Environ-	
SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water	SPECIFIC TESTS	METHOD OR TECHNIQUE USED	mental (Drinking Water)	mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x	Hexavalent Chromium	EPA 218.7	x		x
1,4-Dioxane	EPA 522	х		x	Hexavalent Chromium	SM 3500-Cr B		х	
2.3.7.8-TCDD	Modified EPA 1613B	x		x	Hormones	EPA 539	х	~	x
Acrylamide	In House Method (2440)	x		x	Hydroxide as OH Calc.	SM 2330B	х		х
Algal Toxins/Microcystin	In House Method (3570)				Kjeldahl Nitrogen	EPA 351.2		х	
Alkalinity	SM 2320B	x	х	х	Legionella	Legiolert	х		х
Ammonia	EPA 350.1		х	х	Mercury	EPA 200.8	х		х
Ammonia	SM 4500-NH3 H		х	х	Metals	EPA 200.7 / 200.8	х	х	х
Anions and DBPs by IC	EPA 300.0	х	х	х	Microcystin LR	ELISA (2360)	x		х
Anions and DBPs by IC	EPA 300.1	х		х	Microcystin, Total	EPA 546	х		х
Asbestos	EPA 100.2	x	х		NDMA	EEA/Agilent 521.1	x		x
		~				In house method (2425)			
BOD / CBOD	SM 5210B		х	x	Nitrate/Nitrite Nitrogen	EPA 353.2	х	х	х
Bromate	In House Method (2447)	x		x	OCL, Pesticides/PCB	EPA 505	х		x
Carbamates	EPA 531.2	х		x	Ortho Phosphate	EPA 365.1	х	х	x
Carbonate as CO3	SM 2330B	х	х	x	Ortho Phosphorous Oxyhalides Disinfection	SM 4500P E	х		х
Carbonyls	EPA 556	x		x	Byproducts	EPA 317.0	х		x
COD	EPA 410.4 / SM 5220D	1	x		Perchlorate	EPA 331.0	x		x
Chloramines	SM 4500-CL G	x	x	x	Perchlorate (low and high)	EPA 314.0	x		x
Chlorinated Acids	EPA 515.4	x		x	Perfluorinated Alkyl Acids	EPA 537	x		x
Chlorinated Acids	EPA 555	x	1	x	Perfluorinated Polutant	In house Method (2434)	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x	рН	EPA 150.1	x		
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x	рН	SM 4500-H+B	x	x	x
Conductivity	EPA 120.1	1	x		Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Conductivity	SM 2510B	x	x	x	Herbicides Pseudomonas	532 (2448) IDEXX Pseudalert (2461)	x		x
Corrosivity (Langelier Index)	SM 2330B	x	~	x	Radium-226	GA Institute of Tech	x		x
Cyanide, Amenable	SM 4500-CN G	x	x		Radium-228	GA Institute of Tech	x		x
Cyanide, Free	SM 4500-CN G	x	x	x	Radon-222	SM 7500RN	x		x
Cyanide, Total	EPA 335.4	x	x	x	Residue, Filterable	SM 2540C	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x	~	x	Residue, Non-filterable	SM 2540D	~	x	~
Diquat and Paraquat	EPA 549.2	x		x	Residue, Total	SM 2540B		x	x
DBP/HAA	SM 6251B	x		x	Residue, Volatile	EPA 160.4		x	~
Dissolved Oxygen	SM 4500-O G		х	x	Semi-VOC	EPA 525.2	x		x
DOC	SM 5310C	x		х	Silica	SM 4500-Si D	х	х	
E. Coli	(MTF/EC+MUG)	х		х	Silica	SM 4500-SiO2 C	х	х	
	· · · · · ·						~		-
E. Coli	CFR 141.21(f)(6)(i)	x		x	Sulfide	SM 4500-S ⁼ D		х	
E. Coli	SM 9223		х		Sulfite	SM 4500-SO ³ B	х	х	x
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	х		х	Surfactants	SM 5540C	x	х	х
E. Coli (Enumeration)	SM 9223B	х		х	Taste and Odor Analytes	SM 6040E	х		х
EDB/DCBP	EPA 504.1	х			Total Coliform (P/A)	SM 9221 A, B	х		х
EDB/DBCP and DBP	EPA 551.1	x		x	Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
EDTA and NTA	In House Method (2454)	x		x	Total Coliform / E. coli	Colisure SM 9223	x		x
Endothall	EPA 548.1	x		×	Total Coliform	SM 9221B	^	х	^
Endothall	In-house Method (2445)	x		х	Total Coliform with Chlorine Present	SM 9221B		x	
Enterococci	SM 9230B	x	х		Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
Fecal Coliform	SM 9221 E (MTF/EC)	x			TOC	SM 5310C	x	x	x
Fecal Coliform	SM 9221C, E (MTF/EC)		x		TOX	SM 5320B		x	1
Fecal Coliform	SM 9221E, E (MTF/EC)	x		x	Total Phenols	EPA 420.1		x	
(Enumeration) Fecal Coliform with	SM 9221E		x		Total Phenols	EPA 420.4	x	x	x
Chlorine Present Fecal Streptococci	SM 9221E	x	×		Total Phosphorous	SM 4500 P E	^	x	^
Fluoride	SM 4500-F C	x	x	x	Triazine Pesticides &	In House (3617)	x		x
Glyphosata	EPA 547	v		×	Degradates	EDA 190 1	v	v	v
Glyphosate AMPA		x		×	Turbidity Turbidity	EPA 180.1	x	x	X
Glyphosate + AMPA Gross Alpha/Pata	In House Method (3618)	x	~	x	Turbidity	SM 2130B	X	х	~
Gross Alpha/Beta Gross Alpha Coprecipitation	EPA 900.0 SM 7110 C	x	x	x	Uranium by ICP/MS UV 254	EPA 200.8 SM 5910B	x		x
Hardness	SM 2340B	х	x	x	VOC	EPA 524.2	x		х
Heterotrophic Bacteria	In House Method (2439)	х		x	VOC	In House Method (2411)	х		х
Heterotrophic Bacteria	SM 9215 B	х		х	Yeast and Mold	SM 9610	х		х
Hexavalent Chromium	EPA 218.6	х	х	х	Field Sampling	N/A			1

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (866) 988-3757 https://www.eurofinsus.com/Eaton Version 006 Issued: 05/04/20

	Actiowied	Igement of Samples Received
Addr:	San Francisco PUC	Client ID: SANFRAN
	1000 El Camino Real	Folder #: 909317
	Millbrae, CA 94030	Project: 470440-DW1
		Sample Group: Microcystins-Lake Merced
Attn:	Megan Tran	Project Manager: Monica Van Natta
Phone:	650-872-5945	Phone: 559-797-1931
		PO #: PRO.0165 PO-0000443463 TO#01
tests list for using	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC.	Exember 18, 2020 at 1058 . They have been scheduled for the incorrect, please contact your service representative. Thank you
tests list for using	ed below each sample. If this information is i	
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC.	ncorrect, please contact your service representative. Thank you
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample # 02012180093	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using ample # 02012180093	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01 @UCMR4 546	Incorrect, please contact your service representative. Thank you Sample Date 12/17/2020 0926
tests list	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01	ncorrect, please contact your service representative. Thank you Sample Date
tests list for using Sample #	ed below each sample. If this information is i Eurofins Eaton Analytical, LLC. Sample ID LMER_E_00_LIM Variable ID: 2079603-01 @UCMR4 546 LMER_N_00_LIM	Incorrect, please contact your service representative. Thank you Sample Date 12/17/2020 0926

@UCMR4 546 -- UCMR4 546

S	San Francisco		NF	SAN FRANCISCO		PUBLIC	UTIL	PUBLIC UTILITIES COMMISSION	VIISSIO	z	N	Water Quality Division 1000 El Camino Real
es <	VALET FOWET SEWER Services of the San Francisco Public Utilities Commission			SUB LA	BORAT	ORY CHA	IN OF (SUB LABORATORY CHAIN OF CUSTODY RECORD)RD	418 Pch		Milibrae, CA 94030 Tel: (650) 872-5945 Fax: (650) 952-3407
Out Source#: 4534	ource#: 4534	Ship To:SUB_LAB	4 B		Ship	Ship Date: 12/17/2020	/17/20	20	Ship Via: FedEx	FedEx	Trackin	Tracking#: 121103155620
Index Code.	UWW)100000000000000000000000000000000000	1001(WW) 0 470440(DW)					•	FOR	FOR LAB USE ONLY	۲۸		
		5		METHOD (JF TRANSI	METHOD OF TRANSPORT (CHECK ONE)		SAMPLE CONE	ITION UPON	SAMPLE CONDITION UPON RECEIPT (CHECK APPROPRIATE BOXES)	(OPRIATE BOXES)	SAMPLE STORAGE
SHIPPED BY:	A anni I	N N N			MILLBRAE			Э		CONTAINER INTACT	ACT	LOCATION
TYPE:	ROUTINE	E / SPECIAL		D MOCCASI	MOCCASIN			SEALED SEALINTACT		# OF SAMPLES MATCH COC HEADSPACE (VOA)	1ATCH COC A)	REFRIG# SHELF#
(Circle One)			_		ж					COOLER TEMPERATURE (0-6°C):	ATURE (0-6°C):	OTHERS
			STA	STATE EDT REQUIRED: SPECIAL INSTRUCTIONS:	RUCTIC	D: Y/N DNS:	SYT	SYTEM ID:				
										9 7 5_8US		
Sample ID	Source		te/Tim	e/By W	•	. Date/By	Locati	LocationNotes/Comments		-		
2079603-01	LMER_E_00_LIM	M 12/17/20 0926 RMJOHNSO12/17/20 N	6 RM	IOHNSO1		PHOANG			21 DAYS	1 I IIII		
2079604-01	LMER_N_00_LIM	IM 12/17/20 0932		RMJOHNSO 12/17/20 N	2/17/20	PHOANG			21 DAYS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
									↑ indic	ites the last digit	1 indicates the last digit(s) of container ID	
RELINQUISHED FROM: DUMP PAGE	ED FROM: (Print Name/Sign)	melsien MMH	DATE	ME	RELINC	RELINQUISHED TO:	Print Name/Sign)	me/Sign)	70	DATE/TIME: 0	Comments: 470440DW: (SUE	Comments: 470440DW: (SUB_546/LMER_E/LMER_N) : places consultations barries for analyte
SUBI	AB RECEIVED BY: (Printwan	in water Ster) Duil	DATE/1	IME:	SEND F	SEND REPORT TO:			AG	AGENCY:	details.	ducint pages for arranges
Printed on: Thurs	Printed on: Thursday, December 17, 2020	2020	2								Vertical Page Number: Horizontal Page Nu	tical Page Number: Page 1 of 2 Horizontal Page Number: 1

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UCMR4 INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder Number:	9093	13				
			DLLECTION TIME?			FedEx
		/				IRK# 1211 0245 500
TYPE OF ICE: Rea						0221 1211 0315 5620
CONDITION OF ICE	E: Frozer	n 📝 Partially F	Frozen Tha	wed N/A	7	
CONDITION OF SA	MPLE: Fr	rozen Partia	lly Frozen	Not Frozen 🔜 🗸		
METHOD OF SHIP	MENT: Pi	ick-Up / Walk-In	FedEx / UPS	/ DHL / Area Fa	ast / Top	Line / Other:
Compliance Accep	tance Cri	teria:				
If sample(s) r	eceived:					
1) on the same of	lay as the	collection day; sa	mple temperature	may be ≥10°C w	ith eviden	ice of cooling
Los Contras representados de las mesonas res	• // •• · · · ·			-		t 200.8) and not frozen (except 546), and
,,						nd not frozen (except 546), and not
			and shipment doc			
			A STATE OF THE OWNER	Starting and a start of the start of the start of the	CONTRACTOR OF THE OWNER.	
						tle that is checked does not meet the cted for that method is checked to determined if
a valid sample w						
Facility ID & Unio	que Field Sar	mple ID	07960	2-01-0		
IR Gun ID =	690	1A				
Method	Container ID		rection or (*C) Final (*C)	Method	Container ID	Observation Correction Final (*C) (*C) Factor (*C)
UCMR4 2008	1	+	=	UCMR4 544	1	+ =
UCMR4 525.3	1	+	=		2	+ =
	2	+	=		3	+ =
	3	+	=	UCMR4 545	1	
UCMR4 530	1	+	=	UCMR4 546	1	3.0.0.1. 1.8
	2	+	=			
	3	+	=			
	1	+	=			
UCMR4 541	2	+	=			
	3	+	=			
UCMR4 552.3	1	+	=			
TOC (5310C)	1	+	=			
Bromide (300.0	1	+	=	J		

Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not.
SIGNATURE PRINT NAME COMPANY/ITTLE



QA FO 00104.1 (FRM 17965) (01/10/18) Ver 2

Page ____ of ____



Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Laboratory Comments

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Revised report to edit dilution factors. UMVN, 01/05/2021

The Comments Report may be blank if there are no comments for this report.



Laboratory Hits

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227) Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Samples Received on: 12/18/2020 1058

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/22/2020 14:27	202012180093 Total Microcystins	LMER E 00 LIM	19		ug/L	3.0
12/22/2020 14:27	202012180094 Total Microcystins	LMER N 00 LIM	24		ug/L	3.0



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Eaton Analytical

Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC Megan Tran 1000 El Camino Real Millbrae, CA 94030

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

Samples Received on: 12/18/2020 1058

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
LMER_I	E_00_LIM (202	2012180093)				Samp	led on 12/17	/2020 092	6
	Variable	e ID: 2079603-	01						
	1	EPA 546 - U	CMR4 546						
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	Total Microcystins	19	ug/L	3.0	10
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	%CV	1.10	%	110	1
LMER I	N 00 LIM (202	2012180094	<u>)</u>			Samp	led on 12/17	/2020 093	2
	Variable	e ID: 2079604-	01						
	I	EPA 546 - U	CMR4 546						
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	Total Microcystins	24	ug/L	3.0	10
12/18/20	12/22/20 14:27	1295215	1295128	(EPA 546)	%CV	2.00	%	200	1



Tel: (626) 386-1100 Fax: (866) 988-3757 1 800 566 LABS (1 800 566 5227)

San Francisco PUC

UCMR4 546

Prep Batch: 1295215 Analytical Batch: 1295128 202012180093 LMER_E_00_LIM

202012180093	LMER_E_00_LIM
202012180094	LMER_N_00_LIM

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

Analysis Date: 12/22/2020

Analyzed by: M8OF Analyzed by: M8OF



Tel: (626) 386-1100 Fax: (866) 988-3757

1 800 566 LABS (1 800 566 5227)

Laboratory QC

Report: 909317 Project: 470440-DW1 Group: Microcystins-Lake Merced

San Francisco PUC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
UCMR4 546 by EP	A 546								
Analytical B	atch: 1295128				4	Analysis D	ate: 12/22/	2020	
LCS1	%CV			1.90	%				
LCS2	%CV			ND	%				
MBLK	%CV			<15	%				
MBLK	%CV			<15	%				
MRL_CHK	%CV			ND	%				
MS2_202012180093	%CV	1.10		ND	%				
MSD2_202012180093	%CV	1.10		ND	%				
LCS1	Total Microcystins		0.5	0.502	ug/L	100	(60-140)		
LCS2	Total Microcystins		0.5	0.443	ug/L	89	(60-140)		
MBLK	Total Microcystins			<0.15	ug/L				
MBLK	Total Microcystins			<0.15	ug/L				
MRL_CHK	Total Microcystins		0.3	0.303	ug/L	101	(50-150)		
MS2_202012180093	Total Microcystins	19	5	28.9	ug/L	<u>1890</u>	(60-140)		
MSD2_202012180093	Total Microcystins	19	5	35.5	ug/L	<u>3210</u>	(60-140)	40	21

Spike recovery is already corrected for native results. Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u> Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

RPD not calculated for LCS2 when different a concentration than LCS1 is used. RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).

(S) - Indicates surrogate compound.
 (I) - Indicates internal standard compound.

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Abraxis

MICROCYSTINS ADDA - Assay Calibration Report

Assay Information

Assay Name: MICROCYSTINS ADDA Assay Mode: 4-Parameter Logistic Weight by:None Well Type: Flat bottom Version: 2 Last Modified On: 7/25/2019 12:53:38 PM Temperature: Room Temperature Normal: 0.300 - 5.000 Last Modified By: Security disabled Units: µg/L # of decimals: 3 Assay Description: PN 520011 Kit Lot Number: 19K1761 Exp Feb 2021 Assay Substances: Controls: MCT LRB (0.000-0.300) MCT QCS (0.5625-0.9375) Standards: MCT Std 0, Concentration = 0.000, Minimum number to use: 2 MCT Std 1, Concentration = 0.150, Minimum number to use: 2 MCT Std 2, Concentration = 0.400, Minimum number to use: 2 MCT Std 3, Concentration = 1.000, Minimum number to use: 2 MCT Std 4, Concentration = 2.000, Minimum number to use: 2 MCT Std 5, Concentration = 5.000, Minimum number to use: 2 Curve valid interval: 1 days 0 hours

Axis Mode: Y = Abs, X = Log(Conc)

Assay Calibration Current Calibration Status: "

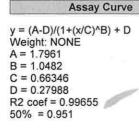
Name	Absorbance	Concentration	Interpretation	Position
5/4/2020 1:20:47 PM				
MCT Std 0	1.807 Abs	0.000 µg/L	R^2=0.99655, 100.781 %Ab	RK1:23->A01@2
MCT Std 0	1.778 Abs [1.7925] {1.1 C	/ 0.010 µg/L [0.005] {141.4 C	R^2=0.99655, 99.163 %Abs	RK1:23->B01@2
MCT Std 1	1.587 Abs 🥜	0.115 µg/L	R^2=0.99655, 88.511 %Abs	RK1:24->C01@2
MCT Std 1	1.487 Abs [1.5370] {4.6 C	/ 0.181 µg/L [0.148] {31.5 CV	R^2=0.99655, 82.934 %Abs	RK1:24->D01@2
MCT Std 2	1.259 Abs 🥢	0.374 µg/L	R^2=0.99655, 70.218 %Abs	RK1:25->E01@2
MCT Std 2	1.232 Abs [1.2455] {1.5 C	/ 0.403 µg/L [0.389] {5.3 CV	R^2=0.99655, 68.712 %Abs	RK1:25->F01@3
MCT Std 3	0.818 Abs 🥖	1.173 µg/L	R^2=0.99655, 45.622 %Abs	RK1:26->G01@3
MCT Std 3	0.850 Abs [0.8340] {2.7 C	1.076 µg/L [1.125] {6.1 CV]	R^2=0.99655, 47.407 %Abs	RK1:26->H01@3
MCT Std 4	0.697 Abs 🥖	1.672 µg/L	R^2=0.99655, 38.873 %Abs	RK1:27->A02@2
MCT Std 4	0.688 Abs [0.6925] {0.9 C	/ 1.721 µg/L [1.697] {2.0 CV]	R^2=0.99655, 38.371 %Abs	RK1:27->B02@2
MCT Std 5	0.447 Abs 🥖	4.865 µg/L	R^2=0.99655, 24.930 %Abs	RK1:28->C02@2
MCT Std 5	0.403 Abs [0.4250] {7.3 C	/ > 5.000 µg/L [4.865]	22.476 %Abs	RK1:28->D02@2
+++++++++++++++++++++++++++++++++++++++	****** ****************	+++++++++++++++++++++++++++++++++++++++	+++++++++++++++++++++++++++++++++++++++	+++++++++++++++++++++++++++++++++++++++
5/4/2020 1:20:47 PM				
MCT LRB (0.000-0.300)	1.710 Abs 🥟	0.045 µg/L	95.371 %Abs	RK1:10->E02@2
MCT LRB (0.000-0.300)	1.679 Abs [1.6945] {1.3 C	/ 0.062 µg/L [0.054] {22.5 C	93.642 %Abs [94.506 %Abs	RK1:10->F02@3
MCT QCS (0.5625-0.9375)	1.021 Abs 🥖	0.692 µg/L 🥢	56.944 %Abs	RK1:29->G02@3
MCT QCS (0.5625-0.9375)		/ 0.766 µg/L [0.729] {7.2 CV]		
*******	*******	*****	******	******
Statistic				
MCT Std 0 [MEAN]	1.7925	0.0050		
MCT Std 0 [SD]	0.0205	0.0071		
MCT Std 0 [%CV]	1.1440	141.4214		
MCT Std 1 [MEAN]	1.5370	0.1480		
MCT Std 1 [SD]	0.0707	0.0467		
MCT Std 1 [%CV]	4.6006	31.5331		
MCT Std 1 [%DIFF]		-1.3333		
MCT Std 2 [MEAN]	1.2455	0.3885		
MCT Std 2 [SD]	0.0191	0.0205		
MCT Std 2 [%CV]	1.5329	5.2783		
MCT Std 2 [%DIFF]		-2.8750		
MCT Std 3 [MEAN]	0.8340	1.1245		
MCT Std 3 [SD]	0.0226	0.0686		
MCT Std 3 [%CV]	2.7131	6.0995		
MCT Std 3 [%DIFF]		12.4500		
MCT Std 4 [MEAN]	0.6925	1.6965		
MCT Std 4 [SD]	0.0064	0.0346	-4	

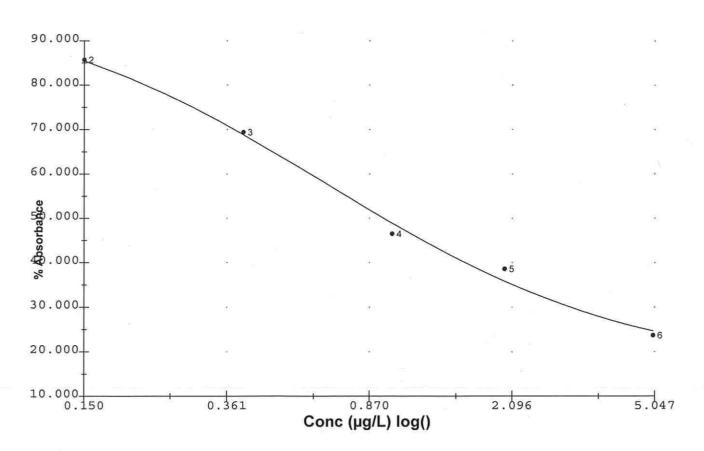
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MICROCYSTINS ADDA - Assay Calibration Report

Name	Absorbance	Concentration	Interpretation	Position
MCT Std 4 [%CV]	0.9190	2.0423		
MCT Std 4 [%DIFF]		-15.1750		
MCT Std 5 [MEAN]	0.4250			
MCT Std 5 [SD]	0.0311			
MCT Std 5 [%CV]	7.3206			
MCT LRB (0.000-0.300) [MEAN]	1.6945	0.0535		
MCT LRB (0.000-0.300) [SD]	0.0219	0.0120	×	
MCT LRB (0.000-0.300) [%CV]	1.2936	22.4688		
MCT QCS (0.5625-0.9375) [MEAN]	1.0010	0.7290		
MCT QCS (0.5625-0.9375) [SD]	0.0283	0.0523		
MCT QCS (0.5625-0.9375) [%CV]	2.8256	7.1778		







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MICROCYSTINS ADDA - Assay Calibration Report

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Assay Information

Assay Name: MICROCYSTINS ADDA Assay Mode: 4-Parameter Logistic Weight by:None Version: 2 Well Type: Flat bottom Last Modified On: 7/25/2019 12:53:38 PM Temperature: Room Temperature Last Modified By: Security disabled Normal: 0.300 - 5.000 Units: µg/L # of decimals: 3 Assay Description: PN 520011 Kit Lot Number: 19K1761 EXP FEB 2021 Assay Substances: Controls: MCT LRB (0.000-0.300) MCT QCS (0.5625-0.9375) Standards: MCT Std 0, Concentration = 0.000, Minimum number to use: 2 MCT Std 1, Concentration = 0.150, Minimum number to use: 2 MCT Std 2, Concentration = 0.400, Minimum number to use: 2 MCT Std 3, Concentration = 1.000, Minimum number to use: 2 MCT Std 4, Concentration = 2.000, Minimum number to use: 2 MCT Std 5, Concentration = 5.000, Minimum number to use: 2 Curve valid interval: 1 days 0 hours Axis Mode: Y = Abs, X = Log(Conc)

Assay Calibration Current Calibration Status: "

MCT Std 0 1.756 Abs [1.7750] {1.5 CV} 0.010 µg/L [0.005] {141.4 CV R^2} MCT Std 1 1.564 Abs 0.108 µg/L R^2 MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R^2 MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R^2 MCT Std 2 1.259 Abs 0.356 µg/L R^2 MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 µg/L [0.418] {21.0 CV} R^2 MCT Std 3 0.869 Abs 1.069 µg/L R^2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 µg/L [1.076] {0.9 CV} R^2	2^2=0.99749, 88.113 %Abs	
MCT Std 0 1.756 Abs [1.7750] {1.5 CV} 0.010 µg/L [0.005] {141.4 CV R/2 MCT Std 1 1.564 Abs 0.108 µg/L R/2 MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R/2 MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R/2 MCT Std 2 1.259 Abs 0.356 µg/L R/2 MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 µg/L [0.418] {21.0 CV} R/2 MCT Std 3 0.869 Abs 1.069 µg/L R/2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 µg/L [1.076] {0.9 CV} R/2 MCT Std 4 0.694 Abs 1.835 µg/L R/2	R^2=0.99749, 98.930 %Abs R^2=0.99749, 88.113 %Abs	RK1:23->B01@2
MCT Std 1 1.564 Abs 0.108 µg/L R^2 MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R^2 MCT Std 2 1.259 Abs 0.356 µg/L R^2 MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 µg/L [0.418] {21.0 CV} R^2 MCT Std 3 0.869 Abs 1.069 µg/L R^2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 µg/L [1.076] {0.9 CV} R^2 MCT Std 4 0.694 Abs 1.835 µg/L R^2	2^2=0.99749, 88.113 %Abs	
MCT Std 1 1.467 Abs [1.5155] {4.5 CV} 0.172 µg/L [0.140] {32.3 CV} R/2 MCT Std 2 1.259 Abs 0.356 µg/L R/2 MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 µg/L [0.418] {21.0 CV} R/2 MCT Std 3 0.869 Abs 1.069 µg/L R/2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 µg/L [1.076] {0.9 CV} R/2 MCT Std 4 0.694 Abs 1.835 µg/L R/2	,	DK1.04 - C01@0
MCT Std 2 1.259 Abs 0.356 µg/L R/2 MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 µg/L [0.418] {21.0 CV} R/2 MCT Std 3 0.869 Abs 1.069 µg/L R/2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 µg/L [1.076] {0.9 CV} R/2 MCT Std 4 0.694 Abs 1.835 µg/L R/2	2=0.99749. 82.648 %Abs	RR1.24->001@2
MCT Std 2 1.157 Abs [1.2080] {6.0 CV} 0.480 μg/L [0.418] {21.0 CV} R^2 MCT Std 3 0.869 Abs 1.069 μg/L R^2 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 μg/L [1.076] {0.9 CV} R^2 MCT Std 4 0.694 Abs 1.835 μg/L R^2		RK1:24->D01@2
MCT Std 3 0.869 Abs 1.069 μg/L R^4 MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 μg/L [1.076] {0.9 CV} R^4 MCT Std 4 0.694 Abs 1.835 μg/L R^4	R^2=0.99749, 70.930 %Abs	RK1:25->E01@2
MCT Std 3 0.865 Abs [0.8670] {0.3 CV} 1.082 μg/L [1.076] {0.9 CV} R/2 MCT Std 4 0.694 Abs 1.835 μg/L R/2	R^2=0.99749, 65.183 %Abs	RK1:25->F01@3
MCT Std 4 0.694 Abs 1.835 µg/L R^2	R^2=0.99749, 48.958 %Abs	RK1:26->G01@3
	R^2=0.99749, 48.732 %Abs	RK1:26->H01@3
MCT Std 4 0.728 Abs [0.7110] {3.4 CV} 1.639 µg/L [1.737] {8.0 CV} R^2	R^2=0.99749, 39.099 %Abs	RK1:27->A02@2
	2~2=0.99749, 41.014 %Abs	RK1:27->B02@2
MCT Std 5 0.450 Abs > 5.000 µg/L 25.	5.352 %Abs	RK1:28->C02@2
MCT Std 5 0.444 Abs [0.4470] {0.9 CV} > 5.000 µg/L 25.	5.014 %Abs	RK1:28->D02@2
+++++++++++++++++++++++++++++++++++++++	+++++++++++++++++++++++++++++++++++++++	+++++++++++++++++++++++++++++++++++++++
5/4/2020 4:30:44 PM		
MCT LRB (0.000-0.300) 1.676 Abs 0.046 µg/L 94.	4.423 %Abs	RK1:10->E02@2
MCT LRB (0.000-0.300) 1.707 Abs [1.6915] {1.3 CV} 0.031 µg/L [0.038] {27.5 CV} 96.	6.169 %Abs [95.296 %Abs]	RK1:10->F02@3
MCT QCS (0.5625-0.9375) 1.048 Abs 0.650 µg/L 59.	9.042 %Abs	RK1:29->G02@3
MCT QCS (0.5625-0.9375) 1.053 Abs [1.0505] {0.3 CV} 0.641 µg/L [0.645] {1.0 CV} 59.		
****	**********	*********
Statistic		
MCT Std 0 [MEAN] 1.7750 0.0050		
MCT Std 0 [SD] 0.0269 0.0071		
MCT Std 0 [%CV] 1.5138 141.4214		
MCT Std 1 [MEAN] 1.5155 0.1400		
MCT Std 1 [SD] 0.0686 0.0453		
MCT Std 1 [%CV] 4.5259 32.3249		
MCT Std 1 [%DIFF] -6.6667		
MCT Std 2 [MEAN] 1.2080 0.4180		
MCT Std 2 [SD] 0.0721 0.0877		
MCT Std 2 [%CV] 5.9706 20.9764		
MCT Std 2 [%DIFF] 4.5000		
MCT Std 3 [MEAN] 0.8670 1.0755		
MCT Std 3 [SD] 0.0028 0.0092		
MCT Std 3 [%CV] 0.3262 0.8547		
MCT Std 3 [%DIFF] 7.5500		
MCT Std 4 [MEAN] 0.7110 1.7370		
MCT Std 4 [SD] 0.0240 0.1386		
MCT Std 4 [%CV] 3.3814 7.9789		
MCT Std 4 [%DIFF] -13.1500		



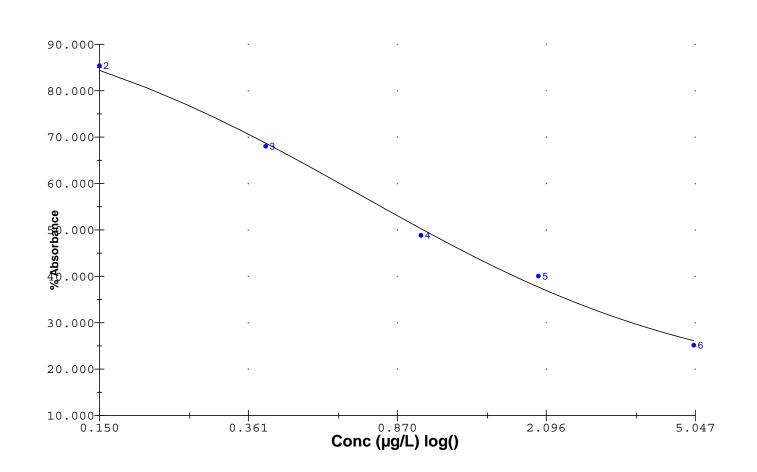
MICROCYSTINS ADDA - Assay Calibration Report

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Name	Absorbance	Concentration	Interpretation	Position	
MCT Std 5 [MEAN]	0.4470				
MCT Std 5 [SD]	0.0042				
MCT Std 5 [%CV]	0.9491				
MCT LRB (0.000-0.300) [MEAN]	1.6915	0.0385			
MCT LRB (0.000-0.300) [SD]	0.0219	0.0106			
MCT LRB (0.000-0.300) [%CV]	1.2959	27.5496			
MCT QCS (0.5625-0.9375) [MEAN]	1.0505	0.6455			
MCT QCS (0.5625-0.9375) [SD]	0.0035	0.0064			
MCT QCS (0.5625-0.9375) [%CV]	0.3366	0.9859			

Assay Curve

 $\begin{array}{l} y = (A-D)/(1+(x/C)^{A}B) + D\\ Weight: NONE\\ A = 1.7804\\ B = 0.96067\\ C = 0.69572\\ D = 0.26602\\ R2\ coef = 0.99749\\ 50\% = 1.014 \end{array}$





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Test Report (by Request)

Test Information

Request: 5/4/2020 4:32:28 PM Date: 5/4/2020

Name/ID	Assay	Absorbance	Concentration	Interpretation	Reference	Lot #
2072412-01 lm e	MICROCYSTINS ADDA	0.176 Abs	> 5.000 µg/L	9.915 %Abs, Out(LR)	0.300 - 5.000	19K1761 EX
2072412-01 lm e	MICROCYSTINS ADDA	0.194 Abs [0.1850] {6.9 CV}	> 5.000 µg/L	10.930 %Abs, Out(LR	0.300 - 5.000	19K1761 E>
LM E 10X	MICROCYSTINS ADDA	0.654 Abs	2.110 µg/L	36.845 %Abs	0.300 - 5.000	19K1761 E>
LM E 10X	MICROCYSTINS ADDA	0.639 Abs [0.6465] {1.6 CV}	2.229 µg/L [2.169]{3	36.000 %Abs [36.423	0.300 - 5.000	19K1761 E>
LM E 15X	MICROCYSTINS ADDA	0.836 Abs	1.177 µg/L	47.099 %Abs	0.300 - 5.000	19K1761 E>
LM E 15X	MICROCYSTINS ADDA	0.842 Abs [0.8390] {0.5 CV}	1.156 µg/L [1.167]{1	47.437 %Abs [47.268	0.300 - 5.000	19K1761 E>
2072414-01 lm n	MICROCYSTINS ADDA	0.162 Abs	> 5.000 µg/L	9.127 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
2072414-01 lm n	MICROCYSTINS ADDA	0.121 Abs [0.1415] {20.5 CV	> 5.000 µg/L	6.817 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
LM N 10X	MICROCYSTINS ADDA	0.520 Abs	3.686 µg/L	29.296 %Abs	0.300 - 5.000	19K1761 E>
LM N 10X	MICROCYSTINS ADDA	0.527 Abs [0.5235] {0.9 CV}	3.563 µg/L [3.625] {2	29.690 %Abs [29.493	0.300 - 5.000	19K1761 E>
LM N 15X	MICROCYSTINS ADDA	0.669 Abs	2.000 µg/L	37.690 %Abs	0.300 - 5.000	19K1761 E>
LM N 15X	MICROCYSTINS ADDA	0.682 Abs [0.6755] {1.4 CV}	1.912 µg/L [1.956] {3	38.423 %Abs [38.056	0.300 - 5.000	19K1761 E>
2072416-01 lm r	MICROCYSTINS ADDA	0.157 Abs	> 5.000 µg/L	8.845 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
2072416-01 lm r	MICROCYSTINS ADDA	0.174 Abs [0.1655] {7.3 CV}	> 5.000 µg/L	9.803 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
LM R 10X	MICROCYSTINS ADDA	0.590 Abs	2.696 µg/L	33.239 %Abs	0.300 - 5.000	19K1761 E>
LM R 10X	MICROCYSTINS ADDA	0.575 Abs [0.5825] {1.8 CV}	2.870 µg/L [2.783] {4	32.394 %Abs [32.817	0.300 - 5.000	19K1761 E>
LM R 15X	MICROCYSTINS ADDA	0.790 Abs	1.350 µg/L	44.507 %Abs	0.300 - 5.000	19K1761 E>
LM R 15X	MICROCYSTINS ADDA	0.803 Abs [0.7965] {1.2 CV}	1.298 µg/L [1.324]{2	45.239 %Abs [44.873	0.300 - 5.000	19K1761 E>
2072417-01 lm s	MICROCYSTINS ADDA	0.138 Abs	> 5.000 µg/L	7.775 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
2072417-01 lm s	MICROCYSTINS ADDA	0.126 Abs [0.1320] {6.4 CV}	> 5.000 µg/L	7.099 %Abs, Out(LR)	0.300 - 5.000	19K1761 E>
LM S 1:10	MICROCYSTINS ADDA	0.468 Abs	4.880 µg/L	26.366 %Abs	0.300 - 5.000	19K1761 E>
LM S 1:10	MICROCYSTINS ADDA	0.484 Abs [0.4760] {2.4 CV}	4.451 µg/L [4.666] {6	27.268 %Abs [26.817	0.300 - 5.000	19K1761 E>
LM S 1:15	MICROCYSTINS ADDA	0.634 Abs	2.271 µg/L	35.718 %Abs	0.300 - 5.000	19K1761 E>
LM S 1:15	MICROCYSTINS ADDA	0.615 Abs [0.6245] {2.2 CV}	2.441 µg/L [2.356] {5	34.648 %Abs [35.183	0.300 - 5.000	19K1761 E>