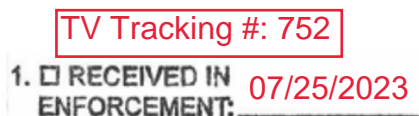




July 25, 2023

Water Pollution Control Plant
1444 Borregas Avenue
Sunnyvale, CA 94088-3707
TDD/TYY 408-730-7501
sunnyvale.ca.gov

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105



Attn: Title V Reports

Re: Semiannual Monitoring Report, City of Sunnyvale Water Pollution Control Plant, Facility No. A0733

To Whom It May Concern:

Per Section I, Part F of its Title V permit, the City of Sunnyvale Water Pollution Control Plant (Facility No. A0733) is submitting this Semiannual Monitoring Report for the period from January 1 through June 30, 2023. After reasonable inquiry, we conclude the following regarding this period of operation:

- S-14 exceeded the limit of 200 mmBTU (Condition #10844(2)) on one day in January 2023 (RCA #08R09);
- All reports were submitted on time; and
- All CEM QA procedures, methodologies, and maintenance were performed as required.

PGF Input Heat Limits Monitoring [Condition 10844(2)]:

On January 24, 2023, the calculated daily input heat value (IHV) for S-14 slightly exceeded the limit of 200 mmBTU in BAAQMD Condition #10844, Part 2. The calculated value for that day of 202 mmBTU was within 1% of the limit and attributed to above average heat content values from the monthly analytical lab reports for air-blended natural gas (ABNG). Following this incident, Operations made adjustments to the pressure set points that regulate the intake of air and natural gas into the blend tank. In addition, the sample point for ABNG was moved from the blend tank itself to a downstream segment of pipe that is more representative of the final mixture of ABNG sent to S-14 and S-15.

As part of its 2017 Major Facility Review Renewal Application, Sunnyvale presented findings from an investigation on the origin of the IHV limits in Condition 10844(2) showing that the daily and annual IHV limits are an artifact of an error that occurred during the issuance of the Authority to Construct (ATC Application #11087) for Sources S-14 and S-15. Sunnyvale maintains that the 200 mmBTU/day limit was derived from the heat capacity of surrogate Waukesha engines that were never installed. To correct this issue and prevent future exceedances of the daily IHV limit during routine maintenance activities,

Sunnyvale will be submitting a request for an administrative amendment to correct the limits.

Source Test [BAAQMD 8-34-301.4; Condition 10844(6)]:

The last annual source test for was performed on February 10, 2023, and the results indicated compliance with all emission limits.

PGF Combustion Temperature Monitoring [Condition 10844(8)]:

The thermocouple data collected during this reporting period are accurate, reflective of the operating conditions of S-14 and S-15, and in compliance with Condition 10844(8).

PGF Quarterly Emissions Monitoring [9-8-503, 9-8-302.1, 9-8-302.3]:

First and second quarter emissions monitoring events for S-14 and S-15 were conducted on February 13 and April 27, 2023, respectively. All results were in compliance with the applicable emissions limits of 70 ppm NO_x and 2,000 ppm CO.

RICE Oil Change Frequency [Table 2d.13 of NESHAP 63.6603(a)]:

There were no exceedances of the 1,440-hour limit for oil and filter changes and hose and spark plug inspections, as established in Table 2d.13 of NESHAP 63.6603(a), for all applicable RICE engines at the facility.

Sulfur Compounds Monitoring [Condition 19978(2)]:

The results from quarterly monitoring of total reduced sulfur compounds in digester gas used to operate S-16, S-17, and S-18 provided in the following table demonstrate compliance with the 1,550 ppmvd limit:

Total Reduced Sulfur Compounds – Draeger Tube Test Results				
S-16, 17 & 18	Date of Test	Requirement	Result ppmv (dry)	Compliant (Y/N)
Q1 2023	3/8/2023	19978 (2)	875	Y
Q2 2023	6/28/23	19978 (2)	975	Y

Emergency Standby Diesel Generator Reliability-Related Activities [Condition 22850(1)]:

During the reporting period, reliability-related activities performed on the emergency standby diesel generators (S-26 and S-27) were in compliance with the limitation of ≤ 50 hours/year.

Landfill Gas Component System Leak Testing [8-34-301.2]:

First and second quarter monitoring of the landfill gas system components were conducted on February 16 and April 14, 2023, to identify any presence of organic compound concentrations above the permit limit of 1,000 ppmv measured as methane. Results from both monitoring events were below the limit.

Landfill Gas Emission Control System [8-34-113.2]:

During the reporting period, the LFG emission control system was in compliance with the shutdown time limitation of ≤ 240 hours/year.

I am the responsible person for the City of Sunnyvale Water Pollution Control Plant. I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate and complete.

Please contact Melody Tovar at (408) 730-7740 or mtovar@sunnyvale.ca.gov if you have any questions or comments on this report.

Sincerely,

Ramana Chinnakotla

Ramana Chinnakotla
Director, Environmental Services Department



July 25, 2023

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Water Pollution Control Plant
1444 Borregas Avenue
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Attn: Title V Reports

**Re: Compliance and Enforcement Agreement Semiannual Progress Report, City of Sunnyvale
Water Pollution Control Plant, Facility No. A0733**

To Whom It May Concern:

This Semiannual Progress Report is submitted in response to a request for additional information from the Bay Area Air Quality Management District (BAAQMD) in a letter dated January 16, 2018, regarding the City of Sunnyvale's (City) submittal of a Major Facility Review Permit Application package (Application No. 29006) for the Water Pollution Control Plant (Facility No. A0733). In that letter, BAAQMD indicated that due to the existing Compliance and Enforcement Agreement with the Main Influent Pump Engines (S-16 through S-18), the City is required to submit semiannual progress reports that describe key accomplishments made in pursuit of compliance with BAAQMD 9-8-303. This letter satisfies the reporting requirement for the period from January 1 to July 31, 2023.

Project Background

The City is currently engaged in a massive Capital Improvement Program, the Sunnyvale Cleanwater Program (SCWP), at the Water Pollution Control Plant. The SCWP was developed to rebuild and upgrade the entire wastewater treatment facility, ensuring its continued service to Sunnyvale residents and protection of the San Francisco Bay well into the future. The Master Plan and Programmatic Environmental Impact Report for the SCWP were approved by the City Council in August of 2016, thereby establishing a roadmap for the implementation of the Program in accordance with all environmental regulations. Replacement of the Main Influent Pump Engines with electric motor driven pumps, as described in the Compliance and Enforcement Agreement, is part of the first large project of the SCWP.

This project, referred to as the Headworks and Primary Treatment Facilities Project, is being implemented in two construction "packages." Package 1 was completed in October 2017 and consisted of site preparation work in the location of the new facilities, including demolition of the former Dewatering Beds, the installation of a stormwater bypass channel beneath the future construction site, and import of more than 100,000 cubic yards of clean fill to the site to consolidate the existing ground surface so the future

facilities would be built on a structurally stable base. Construction of the actual facilities (Package 2) is currently underway.

Construction Status Update

Within the Package 2 project, there are multiple sources under the Authority to Construct (ATC) Permit (Application No. 28138). Package 2 construction began in late 2017 and is nearly complete. However, delays in obtaining PG&E power and subsequent completion of electrical system testing as well as control system testing and integration have pushed the start-up of the new facilities into 2023. Additional control system integration programming is currently underway in response to issues identified during witness testing of the whole system's functionality with recirculated utility water (Clean Water Test Period). The next commissioning phase of processing raw sewage through the new facilities (Process Operational Period) cannot proceed until these issues have been resolved and the system functions as a whole for a continuous 7-day period. The City's contractor is working diligently towards resolving these issues in a timely manner.

The aerial extent and progress of construction activities for both project packages are shown in **Figure 1**. Status updates on the Package 2 elements are as follows:

- The new electric-driven pumps that will replace the current gas-driven main influent pump engines (sources S-16/17/18) are not going to be a source of air emissions and therefore do not require an ATC. The new electric motor-driven influent pumps have been installed and Functional Testing completed. This equipment is being exercised as part of the Clean Water Test; completion of control system testing and integration is needed before process water testing can commence.
- The Grit Basins (S-110) and Grit Pump equipment installation and Functional Testing are complete. This equipment is being exercised as part of the Clean Water Test; completion of control system testing and integration is needed before process water testing can commence.
- The Primary Sedimentation Tanks (S-120), Pump Gallery, and Scum Pump area equipment installation and Functional Testing are complete. This equipment is being exercised as part of the Clean Water Test; completion of control system testing and integration is needed before process water testing can commence.
- The Headworks Electrical Building, which will operate the new electric motor-driven pumps, is complete. This equipment is being exercised as part of the Clean Water Test; completion of control system testing and integration is needed before process water testing can commence.
- The Screenings and Grit Handling Building equipment, including the Screenings Washer/Compactor/Conveyor and Grit Washers, installation and Functional Testing are complete. This equipment is being exercised as part of the Clean Water Test; completion of control system testing and integration is needed before process water testing can commence.



Figure 1: Aerial of construction progress for Primary Packages 1 and 2.

- The 2 MW Emergency Diesel Generator (S-27), ancillary equipment and electrical installation and Functional Testing are complete. This equipment is being exercised as part of the Clean Water Test to confirm the control systems reaction to losing utility power and running on standby power. Completion of control system testing and integration is needed before process water testing can commence.
- Construction of the heat recovery system on S-14 and S-15 is complete. This equipment is on standby and awaiting the full commissioning of the new system and subsequent decommissioning of S-16/17/18 which currently provide process heat.
- Coordination with PG&E for the new 12kV Primary Service is complete and post-energization testing of the new 12kV Switchgear/Generator Controls is complete. This equipment is currently proving power to the existing and new facilities. Generator controls are on standby and awaiting completion of control system testing and integration before process water testing can commence.
- A change order has been issued to address critical control system integration and testing elements that were identified during previous witness testing of the new system. Control system testing and integration is currently expected to be completed by the end of the third quarter of 2023. The start of process water testing will begin following this milestone.

A time-lapse construction video of the Headworks and Influent Pump Station structures is posted on the Sunnyvale Cleanwater Program's website and can be accessed from the following link:

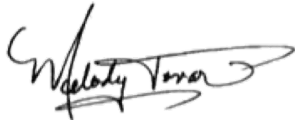
[Construction Time-Lapse of the Screening and Wastewater Influent Pumping Facilities](#)

Compliance and Enforcement Agreement

The Package 2 project provides for the replacement of sources S-16 through S-18 with electric motor-driven engines to attain compliance with BAAQMD 9-8-303 (in this case, by eliminating them as sources altogether). The Compliance and Enforcement Agreement was extended during the previous reporting period and is currently scheduled to expire on November 30, 2023. The City and its contractors are working diligently to complete the commissioning process for the new facilities, which will allow for the subsequent decommissioning of sources S-16 through S-18. The contractor's current construction schedule indicates that system commissioning will be complete prior to the expiration of the agreement. In order to be prepared for a scenario wherein additional delays jeopardize meeting that date, the City is prepared to consult with BAAQMD on options for next steps that may include an additional extension of the agreement.

Please contact me at (408) 730-7740 or Cameron Kostigen Mumper at (408) 730-7729 with any questions or comments regarding this report.

Sincerely,



Melody Tovar, P.E.

Regulatory Programs Division Manager

cc: Brenda Cabral, BAAQMD (email)
Joseph Muehleck, BAAQMD (email)