



Sunnyvale

January 27, 2022

Water Pollution Control Plant  
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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

TV Tracking #: 369

1.  RECEIVED IN 01/27/2022  
ENFORCEMENT: \_\_\_\_\_

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 July 1 through December 31, 2021. After reasonable inquiry, we conclude the following regarding this period of operation:

- A 10-day Response to an NOV Report was submitted on July 16, 2021, pursuant to NOV #58384 issued for the January 2021 Source Test failure of S-15;
- One deviation of the thermocouple recordkeeping requirement listed in Condition 10844 (8) for each of two cogeneration engines (S-14 and S-15);
- All reports were submitted on time;
- All CEM QA procedures, methodologies, and maintenance were performed as required.

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

S-14 and S-15 are the two cogeneration engines that comprise the Power Generation Facility. Gas throughput for each fuel type is metered continuously at five-second intervals on a daily basis, well in compliance with the required 15-minute interval. Monthly samples are collected from each fuel stream and analyzed for the high-heat value, which is used with the gas throughput to calculate the daily and consecutive 12-month total heat inputs for each engine to determine compliance. The input heat values for both engines were maintained below the 200 MMBTU daily limit throughout the reporting period. The Facility also remained in compliance with the 72,000 MMBTU annual total limit throughout the reporting period.

**Source Test [BAAQMD 8-34-301.4; Condition 10844 (4, 6)]:**

The most recent successful Annual Source Tests for S-14 was performed on January 11, 2021, and for S-

on February 11, 2021. On July 16, 2021, the City was issued NOV #58384 for S-15 for the failure of the initial Source Test performed on January 11, 2021. The City responded by submitting a requisite 10-day Response to NOV Report. To prevent similar incidents in the future, Sunnyvale is adjusting the frequency at which it performs overhauls on S-14 and S-15 while continuing to evaluate other options to maintaining compliance.

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

From 7:15 to 9:15 am on July 13, 2021, thermocouple data for S-14 and S-15 were not recorded by the Wonderware Historian. The thermocouple data gap was associated with maintenance work on a separate system that required power to be turned off on for the same electrical feed as the equipment hosting the Wonderware Historian in order for the work to be performed safely. RCAs #08B54 and #08B55 were submitted, followed by 10- and 30-day Deviation Reports for each engine.

During investigations on the probable cause, the Universal Power Supply (UPS) associated with the computer work station hosting the Wonderware Historian was found to be defective, which explains why it did not turn-on when it sensed a loss of power. Sunnyvale was already in the process of installing a new SCADA server to host a new historian database (RSView SE Historian) when the incident occurred, but it had not yet been configured to capture thermocouple data. It has since been configured to capture thermocouple and other process data as a back-up system but will eventually replace the Wonderware Historian. Additionally, Sunnyvale is prepared to install a replacement UPS for the Wonderware Historian in early 2022. The installation was delayed due to supply chain interruptions associated with COVID-19.

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

Third and fourth quarter emissions monitoring events for S-14 and S-15 were conducted on August 31 and November 2, 2021, respectively. All results were in compliance with the applicable emissions limits of 70 ppm NOx and 2,000 ppm CO.

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

There was no exceedances of the oil and filter change and hose and spark plug inspection 1,440-hour limit 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)
Q3 2021	7/21/2021	19978 (2)	1,400	Y
Q4 2021	11/10/2021	19978 (2)	1,100	Y

**Emergency Blackstart Generator Reliability-Related Activities [Condition 23110 (3)]:**

The blackstart generator (S-19) was decommissioned and removed from the site in June 2020. No reliability-related activities were performed during this reporting period. The City submitted BAAQMD’s Device Data Update (DDU) Form to document the removal of this sources on July 20, 2020. This source no longer appears in the BAAQMD Facility PTO.

**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]:**

Third and fourth quarter monitoring of the landfill gas system components at the Facility were conducted on August 10 and October 27, 2021, 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 if you have any questions or comments on this report.

Sincerely,

*Ramana Chinnakotla*

Ramana Chinnakotla  
 Director, Environmental Services Department

January 27, 2022

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: 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 July 1 to December 31, 2021.

***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 has been progressing. The delays in obtaining PG&E power are anticipated to push the start-up of the new facilities into the middle of 2022. 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 was completed in September 2021 with the use of temporary power.
- The Grit Basins (S-110) and Grit Pump equipment installation is complete. Functional Testing of the Grit Removal System and Pumps was completed in August and September 2021, respectively, with the use of temporary power.
- The Primary Sedimentation Tanks (S-120), Pump Gallery, and Scum Pump area equipment installation is complete. Functional Testing of the Sludge/Scum/Scum Recirculation Pumps and Collectors was completed in July 2021 with the use of temporary power. Functional Testing of the Channel Air Blower was completed in June 2021. Canopy soffit installation at the Primary Sedimentation Tanks sampler and blower area is complete.
- The Headworks Electrical Building, which will operate the new electric motor-driven pumps, is nearly complete with some minor work remaining. The temporary power connection for Installation and Functional Testing was made at Switchboard (SWBD-255).
- The Screenings and Grit Handling Building equipment installation is complete. Functional Testing of the Screenings Washer/Compactor and Grit Washers was completed in April and September 2021, respectively, with the use of temporary power. Functional Testing of the Screenings Conveyor is complete.
- The 2 MW Emergency Diesel Generator (S-27), ancillary equipment and electrical installation is complete. A portion of the Functional Testing was completed in November 2021, following PG&E establishing utility power in October 2021. Due to faulty PG&E equipment, the testing was ceased and is to be rescheduled following the replacement of the PG&E equipment in January 2022.
- Construction of the heat recovery system on S-14 and S-15, which includes installation of heat recovery equipment, pipe supports, hot water piping, and engine exhaust piping, is nearly complete and the system is expected to be commissioned following the decommissioning of S16-S18.

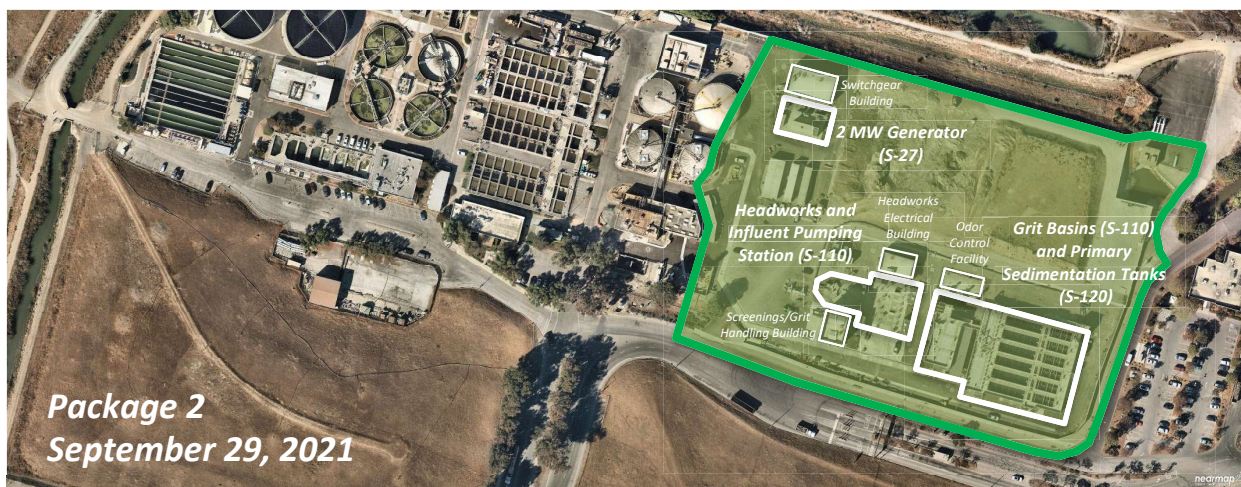


Figure 1: Aerial of construction progress for Primary Packages 1 and 2.



- Coordination with PG&E for the new 12kV Primary Service is underway. A Complete PG&E Primary Service document package was sent to PG&E on November 30, 2020, for review and was based on the revised curves provided by PG&E on September 16, 2020, following an approximate 7-month review/coordination period. PG&E was onsite February 10, 2021, and completed the witness testing of the main breaker relays and battery alarm. Following the witness testing, PG&E requested that the Current Transformers (CTs) in the main breakers be relocated. The CTs were installed, tested, and the results were sent to PG&E on June 25, 2021, with a request to reschedule the witness testing. The second round of witness testing was performed on September 10, 2021, and PG&E energized the new utility service on October 12, 2021. During the post-energization testing of the new 12kV Switchgear/Generator Controls on November 16, 2021, PG&E equipment continued to trip unexpectedly and the testing was ceased. PG&E determined that the equipment needed to be replaced, and the work to change-out their equipment was completed on January 24, 2022, and was verified to be functioning properly.

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:

<http://www.sunnyvalecleanwater.com/news-articles/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 is currently scheduled to expire on May 31, 2022.

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: Huiting Gao, BAAMQD (email)  
Joseph Muehleck, BAAQMD (email)