PHILLIPS 66
SAN FRANCISCO REFINERY
1380 San Pablo Avenue
Rodeo, CA 94572

PHILLIPS 66
PROVIDING ENERGY. IMPROVING LIVES.

January 27, 2022

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

Attn: Title V Reports

Subject: Six-month Monitoring Report for July 1, 2021 through December 31, 2021
Phillips 66 Company - San Francisco Refinery – Plant No. A0016
BAAQMD Plant No. 16 Title V Section I, Part F

Director:

Phillips 66 is submitting its Monitoring Report covering the period of July 1, 2021 through December 31, 2021 as required by Section I.F in its Title V permit.

If you have any questions or require additional information on the information contained in this report, please contact Wilma Dreessen at (510) 245-5893.

Sincerely,

Jennifer Ahlskog, Team Leader
Environmental Department

Attachments

cc via email: Ms. Roshni Brahmbhatt, Manager, Air Enforcement Section (ENF 2-1)
Enforcement and Compliance Assurance Division,
U.S. Environmental Protection Agency, Region 9 (Brahmbhatt.Roshni@EPA.gov)

Air Enforcement Section (AEO_R9@epa.gov)

BAAQMD Title V Permit
6 Month Deviation Summary Report
From 7/1/2020 to 12/31/2020
San Francisco Refinery, A0016

Certification Statement

I certify under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.

x _____	Richard Harbison	General Manager	01/28/2022
Signature of Responsible Official	Print Name	Title	Date

BAAQMD Title V Permit
6 Month Deviation Summary Report

From 7/1/2021 *to* 12/31/2021

A0016 Phillips 66 Company San Francisco Refinery

Facility Address:	Mailing Address:
1380 San Pablo Ave	1380 San Pablo Ave
City: Rodeo	City: Rodeo
State: CA	State: CA
Zip Code: 94572-	Zip Code: 94572-

Contact: Wilma Dreessen Title: Senior Environmental Cons Phone (510) 245-5893

Title V deviations for the reporting period are summarized below:

May have resulted in a deviation from:

Deviation No:	022-21	Source Number(s):	135	Permit:	
Event Started:	7/1/2021 10:00 AM	Abatement Device(s) :		AQMD:	8-5-306.2
Stopped:	7/1/2021 12:22 PM	Emission Point(s):		Other:	

Event Description: On July 1, 2021 at 10:05 a.m., a BAAQMD inspector discovered Tank 200 (S135) tank hatch (LDAR tag 83450) leaking during a BAAQMD tank inspection. Although BAAQMD regulation 8-5 contains a 48-hr repair period for self-identified leaks, the repair period is not available for BAAQMD-inspector found leaks. On July 13, 2021, BAAQMD issued a Notice of Violation, VN No. A59910, citing Regulation 8-5 Section 306.2. BAAQMD informed Phillips 66 that a maximum leak reading of 1,200 ppm had been recorded on the hatch. Due to the rule complexity and ambiguity we were not certain we had a reportable violation until BAAQMD issued a violation notice.

Probable Cause: The probable cause was a pinhole leak in the seal.

Corrective actions or preventative steps taken: Upon discovery of the leak during the BAAQMD inspection, maintenance crews immediately began repairs on the hatch. Repairs were completed within 2 hours. The tank hatch was cleaned, repaired and the sealing material at the hatch was replaced. On July 1st, 2021 12:22 pm, the tank hatch was re-inspected and passed at 26 ppm.

May have resulted in a deviation from:

Deviation No:	023-21	Source Number(s):	296	Permit:	
Event Started:	7/5/2021 3:23 AM	Abatement Device(s) :		AQMD:	
Stopped:	7/5/2021 3:53 AM	Emission Point(s):		Other:	40 CFR 60.107a(a)(2)

Event Description: Flaring occurred at the Main Flare (S296) on July 05, 2021, from 3:24 a.m. until 3:53 a.m. due to increased pressure in the fuel gas system. Phillips 66 Company ("Phillips 66") calculates that excess sulfur dioxide, conservatively estimated using 0.01% H2S, was at most 0.32 lbs of sulfur dioxide (SO2). Nitrous Oxide (NOx) from the flare activity was approximately 1.0 lb.

In addition, NSPS Ja monitoring requirements at 40 CFR 60.107a(a)(2) require an H2S CEMs for any flaring of gas that is not process upset gas, non-routine relief valve leakage, or results from an emergency malfunction. Phillips 66 submitted an Alternative Monitoring Plan (AMP) application to EPA on March 1, 2016 requesting that BAAQMD Regulation 12-11 sampling be used in lieu of the Subpart Ja H2S CEMs required by section 60.107a(a)(2). We are currently awaiting EPA's approval of the AMP and do not have any indication that the AMP will not be approved. However, because we are still awaiting EPA approval of our AMP, we were in "technical" non-compliance with the section 60.107a(a)(2) requirements to have an H2S CEMs during this flaring. Said another way, if EPA had timely acted on our AMP request, we would not be reporting this part of the Title V Permit deviation. Recent discussions with Phillips 66 and EPA occurred in May 2021 where Phillips 66 communicated its interest that EPA approve the AMP as soon as possible.

Probable Cause: At 6:30 p.m. on July 4, 2021, the pressure at the Unicracker Plant 4 H2S Absorber (4D-401) tower pressure controller 4PIC176 was adjusted from 140 psi to 139 psi to support meeting a product specification. When the adjustment was made, the set point on the make-up natural gas to fuel gas system (4PIC001) was at 140 psig. This resulted in 4PV001 pressure controller to open to 4D-401 to reach the 140 psi setpoint at 4PIC001. During this period 4PIC001 continued to open to maintain a pressure setpoint of 140 psi while 4PIC176 continued to open to maintain a pressure setpoint of 140 psi. This resulted in the pressure in the Unit 233 fuel gas system increasing due to the additional natural gas being added to the system. Initially there was no flare impact as this additional natural gas was recovered and processed at the site heaters as fuel gas. Later during changing process conditions there was an additional increase in fuel gas system pressure that resulted in this material being vented to the flare for approximately 30 minutes.

Corrective actions or preventative steps taken: Upon identification of the issue, flaring was quickly stopped by blocking in 4PV001 (make-up natural gas to 4D-401) valve to stop the flow of high-pressure natural gas to the fuel gas system. To prevent recurrence, the manual block valve at 4PIC001 was locked closed.

May have resulted in a deviation from:

Deviation No:	029-21	Source Number(s):	1002; 343; 352; 425; 437; 460	Permit:	
Event Started:	8/17/2021	Abatement Device(s) :		AQMD:	
Stopped:	8/26/2021	Emission Point(s):		Other:	40 CFR 60.482-5(b)(2); 40 CFR 60.482-7(c)(2)

Event Description: 1. Sample Station at the Marine Terminal (S425) was found that did not have controls in place per 40 CFR 60.482-5(b)(2).
2. The following five valves were not monitored monthly for two months after a leak triggering the requirements of 40 CFR 60.482-7©(2) was detected: Unit 110 (S437) tag 8317; Unit 236 tag 43940 (S1002); Unit 250 tag 1779 (S460); SPP A tag 10014 (S352); and Bulk tag 10106 (S343 Tank 210 area). Importantly, however, the quarterly inspection following each leak showed that none of the valves was leaking above Federal leak limit.

Probable Cause: 1.The sample station was not controlled after usage.
2.The LDAR database did not include the follow-up monitoring requirement for these valves.

Corrective actions or preventative steps taken: 1. The sample station was controlled upon the date of discovery.
2. The LDAR database was updated to include the follow-up monitoring requirements for the valves

May have resulted in a deviation from:

Deviation No:	030-21	Source Number(s):	296	Permit:	
Event Started:	8/25/2021 7:04 PM	Abatement Device(s) :		AQMD:	
Stopped:	8/25/2021 7:14 PM	Emission Point(s):		Other:	40 CFR 60.103a(h); 40 CFR

Event Description: Flaring occurred at the Main Flare (S296) on August 25, 2021, from 7:04 p.m. until 7:14 p.m. for approximately 10 minutes. The Coke Drum 2 (D-202) pressure relief valve (PRV) lifted due to increased pressure in the blowdown system. Due to the brief duration of the flare activity the flaring did not require a flare sample per District Regulation 12-11. However, due to the nature of the flare activity it is possible that H2S may have been present in the fuel gas at concentrations greater than 162 ppm (3-hour avg). Phillips 66 Company ("Phillips 66") calculates that excess sulfur dioxide, conservatively estimated using 1.50% H2S, was at most 7.91 lbs of sulfur dioxide (SO2).

In addition, NSPS Ja monitoring requirements at 40 CFR 60.107a(a)(2) require an H2S CEMs for any flaring of gas that is not process upset gas, non-routine relief valve leakage, or results from an emergency malfunction. Phillips 66 submitted an Alternative Monitoring Plan (AMP) application to EPA on March 1, 2016 requesting that BAAQMD Regulation 12-11 sampling be used in lieu of the Subpart Ja H2S CEMs required by section 60.107a(a)(2). We are currently awaiting EPA's approval of the AMP and do not have any indication that the AMP will not be approved. However, because we are still awaiting EPA approval of our AMP, we were in "technical" non-compliance with the section 60.107a(a)(2) requirements to have an H2S CEMs during this flaring. Said another way, if EPA had timely acted on our AMP request, we would not be reporting this part of the Title V Permit deviation. Recent discussions with Phillips 66 and EPA occurred in May 2021 where Phillips 66 communicated its interest that EPA approve the AMP as soon as possible.

Probable Cause: On August 22, 2021 due to an operational issue with one of the motor valves associated with the Unit 200 Coker drum switching operation, a temporary operation plan was put in place. This temporary operation plan involved changing the temperature setpoint that controls the motor valves open/close sequence to allow Unit Operators to manually manage coke drum overhead flow. This plan proceeded from August 22-24 without any issues. On August 25, 2021 the temporary operation plan was still in place after the motor valve was replaced. During the D-202 coke drum cooling phase, Unit Operators were not aware of the temperature setpoint change from the prior shift. This resulted in the motor valves closing sooner than anticipated, and Unit Operators were not able to manually manage coke drum overhead flow in an expeditious manner. As the motor valves closed, pressure on the coke drum increased, lifting the safety pressure relief valve (PRV) and sending coke drum overhead flow to the flare system for a brief, 10-minute period.

Corrective actions or preventative steps taken: Upon identification of the issue, flaring was quickly stopped by reducing the pressure at D-202 Coke Drum below the PRV setpoint. The temperature set point was then reduced to allow more time for the drum to de-pressure during drum cooling to prevent recurrence. Refresher training for board operators will be undertaken to identify conditions in which a permit is required for temporary modified operating conditions and to communicate temporary operating conditions with the shift organization.

May have resulted in a deviation from:

Deviation No:	031-21		Source Number(s):	465	Permit:
Event Started:	8/24/2021	8:35 AM	Abatement Device(s) :		AQMD:
Stopped:	8/24/2021	8:37 AM	Emission Point(s):		Other:

Event Description: Unit 235 Sulfur Recovery Unit (SRU) utilizes a degassing system to control vapors from the liquid sulfur collection header (S465). Ejector air is drawn from a stack on the header and the vent gases from S465 are routed to the front-end reaction furnace of Unit 235 for control. On August 24, 2021 following a plant air upset, the ejector discharge was closed in before the motive force was shut down, resulting in potential reverse flow. The ejectors tripped on low measured flow, which may have resulted in the release of gases from the header to atmosphere. The equipment measured no induced flow for approximately two minutes. An estimated 0.10 pounds of H2S were potentially emitted during this period. However, there were no reports of visible emissions to the atmosphere. In an abundance of caution and for sake of transparency, we are reporting this incident as a potential deviation.

Probable Cause: Temperature began to decrease on the pre-heated air to the ejector due to a minor reduction of flow in the refinery air system. Motive air flow through the plant air ejector subsequently began to decrease and the steam ejector was activated to maintain the degassing system. After normalization of air temperature and flow, operations personnel began to shut down the steam ejector. Ejector discharge was blocked in before the steam ejector completed shutdown and zero induced flow was measured through the sulfur collection header, resulting in a safety instrumented shutdown of both ejectors.

Corrective actions or preventative steps taken: Vent flow through the collection header returned within two minutes of the event. Signage will be installed in the field to further guide proper sequencing of steps related to ejector shutdown. Phillips 66 previously recognized that the applicable permit condition does not have sufficient flexibility in these type of maintenance and operational situations and, therefore, submitted a permit application to BAAQMD (Application for Modification to Permit Condition 22964, 382-ESDR-19, November 26, 2019) to clarify abatement requirements on S465, S503, S504 and S505.

May have resulted in a deviation from:

Deviation No:	036-21		Source Number(s):	1010	Permit:
Event Started:	10/4/2021	11:00 AM	Abatement Device(s) :		AQMD: 9-1-307
Stopped:	10/4/2021	11:59 AM	Emission Point(s):		Other:

Event Description: The Unit 235 (S-1010) Sulfur Recovery Unit (SRU) exceeded the 1-hour SO2 250 ppm @ 0% O2 limit from 11:00 a.m. to 11:59 a.m. on 10/4/2021 as the Unicracker was started up and additional H2S load was observed at the amine system. The 1-hour average emissions during this time was 409 ppm SO2 @ O% O2. Excess emissions were reported to BAAQMD (ID 08C17) on 10/05/21. Total excess SO2 emissions during this event are estimated to be 7.16 lbs.

Probable Cause: Sour water strippers (SWS) at the SRU process phenolic water from tankage that separates slop oils from sour water. On 10/4/2021, with the startup of the Unicracker following a third-party hydrogen plant shutdown and startup, off-grade material was being sent to the tank supplying water to phenolic water strippers. During unit startups there can be higher rates of off-grade material sent to tankage. The higher rates of feed and withdrawal at the SWS feed tank, Tank 205, likely resulted in some emulsification of materials in the tank (sour water and residual hydrocarbon) and as a result there was hydrocarbon carryover to the Unit 235 reaction furnace.

Corrective actions or preventative steps taken: Phenolic water stripper rates were reduced and lineup for off grade material was changed to a different tank. Amine circulation and stripping steam rates were adjusted to maximize H2S absorption. The exceedance was limited to 1 hour. The NSPS Ja limit of SO2 of 250 ppm @ 3% O2 (12-hour avg) was not exceeded during this process upset.

May have resulted in a deviation from:

Deviation No:	038-21	Source Number(s):	371; 372	Permit:	
Event Started:	9/25/2021 3:56 PM	Abatement Device(s) :		AQMD:	1-522.4
Stopped:	9/27/2021 7:48 AM	Emission Point(s):		Other:	

Event Description: The NOx analyzer experienced failure at 3:56 pm on Saturday, 9/25/2021. The analyzer was returned to service at 7:48 am on Monday, 9/27/2021. However, no inoperative monitor notification was sent on the next business day.

Probable Cause: The NOx CEMS became inoperative due to loss of air to the analyzer. The analyzer was returned to instrument air and put back in service. Internal administrative error resulted in the inoperative monitor notification not being submitted on the next business day.

Corrective actions or preventative steps taken: Upon discovery that the BAAQMD Reportable Compliance Activity (RCA) notification had not been submitted, the inoperative monitor notification was submitted on Tuesday, 10/12/2021 (08C34). The internal administrative process regarding reporting of instrument downtime has been reviewed and all personnel have been re-trained in this regard.

May have resulted in a deviation from:

Deviation No:	039-21	Source Number(s):	1010	Permit:	
Event Started:	10/16/2021 10:00 PM	Abatement Device(s) :		AQMD:	9-1-307
Stopped:	10/16/2021 10:59 PM	Emission Point(s):		Other:	

Event Description: The Unit 235 (S-1010) Sulfur Recovery Unit (SRU) exceeded the 1-hour SO2 250 ppm @ 0% O2 limit from 10:00 p.m. to 10:59 p.m. on Saturday, 10/16/2021. The 1-hour average emissions during this time was indicated as 589 ppm SO2 @ 0% O2. Excess emissions were reported to BAAQMD (ID 08C47) on Tuesday, 10/19/21. Total excess SO2 emissions during this event are estimated to be approximately 32 lbs.

Probable Cause: Phenolic sour water strippers (SWS) at the SRU process phenolic water from tankage that separates slop oils from sour water. On 10/16/2021, it is believed that either hydrocarbon or sludge migrated from the bottom of the tank into the SWS. The tank was not receiving off-grade material at time of the incident. This activity resulted in hydrocarbon carryover to the Unit 235 reaction furnace.

Corrective actions or preventative steps taken: Phenolic water stripper rates were reduced to limit the amount of hydrocarbon carryover. Amine circulation and amine regenerator stripping steam rates were adjusted to maximize H2S absorption. To prevent additional upsets, the unit collected samples of stripper bottoms at a higher frequency in the short term to visually capture potential feed variations and to verify no presence of hydrocarbons. No additional stripper bottom anomalies were identified. The exceedance was limited to 1 hour. The NSPS Ja limit of SO2 of 250 ppm @ 3% O2 (12-hour avg) was not exceeded during this process upset.

May have resulted in a deviation from:

Deviation No:	041-21	Source Number(s):	296	Permit:	
Event Started:	10/22/2021 8:50 PM	Abatement Device(s) :		AQMD:	
Stopped:	10/22/2021 9:14 PM	Emission Point(s):		Other:	40 CFR 60.103a(h); 40 CFR

Event Description: Flaring occurred at the Main Flare (S296) on October 22, 2021, from 8:50 p.m. until 9:14 p.m. for approximately 24 minutes. The Unit 200 Coker Bubble Tower overhead pressure control valve to the flare gas system opened due to increased pressure in the system. Due to the flare vent gas volume below 330 scfm, the flaring did not require a flare sample per District Regulation 12-11. However, due to the nature of the flare activity it is possible that H2S may have been present in the fuel gas at concentrations greater than 162 ppm (3-hour avg). Phillips 66 Company ("Phillips 66") calculates that excess sulfur dioxide, conservatively estimated using 1.50% H2S, was an estimated 22 lbs of sulfur dioxide (SO2).
In addition, NSPS Ja monitoring requirements at 40 CFR 60.107a(a)(2) require an H2S CEMs for any flaring of gas that is not process upset gas, non-routine relief valve leakage, or results from an emergency malfunction. Phillips 66 submitted an Alternative Monitoring Plan (AMP) application to EPA on March 1, 2016 requesting that BAAQMD Regulation 12-11 sampling be used in lieu of the Subpart Ja H2S CEMs required by section 60.107a(a)(2). We are currently awaiting EPA's approval of the AMP and do not have any indication that the AMP will not be approved. However, because we are still awaiting EPA approval of our AMP, we were in "technical" non-compliance with the section 60.107a(a)(2) requirements to have an H2S CEMs during this flaring. Said another way, if EPA had timely acted on our AMP request, we would not be reporting this part of the Title V Permit deviation. Recent discussions with Phillips 66 and EPA occurred in May 2021 where Phillips 66 communicated its interest that EPA approve the AMP as soon as possible.

Probable Cause: On August 31, 2021, the set points of the Unit 200 Bubble Tower pressure controllers 200PIC202 and 200PIC002 were lowered to ensure product specifications would be met. This adjustment in operating pressure proceeded without any issues. On October 22, 2021, a unit operator slowly increased the bubble tower overhead pressure using controller PIC202 from 34 psig to 40 psig to improve product quality. When the adjustments were made the set point at pressure controller PIC002 remained at 36 psi. Due to the increasing tower pressure, the valve associated with 200PIC202 slowly opened and sent overhead vapors to the flare gas recovery system. Pressure at the flare gas recovery system began to increase and eventually vent gas was sent to the flare for approximately 24 minutes.

Corrective actions or preventative steps taken: Upon identification of the issue, flaring was quickly stopped by increasing PIC002 set point to let the valve close. Training will take place for unit operators to verify set points of both 200 PIC202 and 200PIC002 prior to making adjustments. In addition, an alarm will be added for PIC002 if it begins to open; it is normally in a closed position.

May have resulted in a deviation from:

Deviation No:	044-21	Source Number(s):	107; 129; 261	Permit:	
Event Started:	8/30/2021 10:00 AM	Abatement Device(s) :		AQMD:	8-5-404
Stopped:	10/29/2021 10:00 AM	Emission Point(s):		Other:	

Event Description: In accordance with BAAQMD 8-5, tank seal inspections for Tanks 1010 (S261), 180 (S129), 150 (S107) as well as other tanks were conducted in June 2021. Although these inspections were completed and a report submitted for the June 2020 inspections, the forms for Tanks 1010, 180, and 150 were inadvertently not included with the other tank seal inspection forms that were submitted in July 2021.

Probable Cause: Internal administrative error resulted in the tank seal inspection forms not being included with the tank seal inspection report submitted in July 2021 (30-day early submittal) nor by August 30, 2021 (60-day 8-5-404 deadline).

Corrective actions or preventative steps taken: Upon discovery that these particular tank seal inspection forms were not submitted, the forms were included with the September tank seal inspection report, submitted on October 29, 2021. The internal administrative process regarding reporting tank seal inspection reports has been reviewed, enhanced, and all personnel have been re-trained in this regard.

			May have resulted in a deviation from:
Deviation No: 047-21		Source Number(s): 296	Permit: 21096.5b; 22964.3
Event Started: 11/11/2021	12:31 PM	Abatement Device(s) :	AQMD: 6-1-301
Stopped: 11/11/2021	4:30 PM	Emission Point(s):	Other: 40 CFR 63.670(c)

Event Description: Flaring occurred at the Main Flare (S296) on November 11, 2021, for approximately 1 hour and 48 minutes from 12:20 p.m. until approximately 2:08 p.m. due to a Sulfur Recovery Unit (SRU) Complex upset. During the flare activity, there was also a period of uncertified observations of the flare indicated the presence of visible emissions. The flare visible emissions occurred from approximately 12:31 p.m. until 1:45 p.m.

SRU utilizes a degassing system to control vapors from the liquid sulfur collection header (S465). The ejector system draws in air from a stack on the header and the vent gases from S465 are routed to the front-end reaction furnace of Unit 235 for control. On November 11, 2021 following the SRU Complex upset, the ejectors at Unit 235 discharge were closed as a safety mechanism to prevent flow to the reactor. Although Unit 235 ejectors were down, there was no fresh sulfur being produced during the SRU Complex upset. Only residual vapors from Unit 235 were not abated following the process upset. An estimated 0.50 pounds of H2S were potentially emitted during this period. However, there were no reports of visible H2S emissions to the atmosphere.

Probable Cause: Prior to the event, the primary flash drum (F-809) located at Unit 235 was switched to a spare flash drum (F-803) for scheduled regulatory internal inspection of the primary flash drum (F-809). Both drums are designed with an overflow weir to separate oil from amine.

On the day of the event, the level indicator (LIT-801) on the spare flash drum failed, resulting in spare drum (F-803) reaching a high level and sending oil to the downstream Amine Regenerators. Oil carried over from F-803 causing foaming in the Amine Regenerators, which resulted in high liquid levels in the reflux drums and Sulfur Plants' (U235 & U236) knock out pots. High levels on the knockout pots tripped the SRU complex furnaces as designed per safety system protection. The shutdown of the furnaces is a safety shutdown system to prevent liquid carryover into the Claus reactors and sour gas through the unit to accumulate and cause further upset conditions. The shutdown of the Sulfur recovery plants led to untreated sour vent gas to the enclosed flare header and to be subsequently combusted at the flare. During the SRU upset, the steam ejectors at Unit 235 closed as part of a safety instrumented shutdown.

Corrective actions or preventative steps taken: Refinery unit throughputs were immediately reduced to minimize sour gas flaring. The spare flash drum, regenerators and knockout pots were drained and upon returning to normal levels the sulfur plants were restarted. The sulfur plants were back online at 1:32 p.m. and flaring stopped at 2:08 p.m. No excess emissions were detected by the BAAQMD 9-1, 9-2 Ground Level Monitors (GLM) or the BAAQMD 12-15 fenceline monitoring system. Immediately after the event, the level indicator was inspected by maintenance and confirmed that level indication (LIT-801) had failed. Prior to the event, the level transmitter was serviced and calibrated before placing it in service. The level transmitter was serviced on April 19, 2021. At the time that the instrument was serviced, it was working properly. Just prior to putting the F-803 vessel in service, a field verification of the level indicator was performed as well and it was working properly at that time. Upon identification of the level indication failure, the pneumatic level indicator at the spare drum was replaced with an electronic differential pressure level indicator. Operational procedure for the F-803 flash drum will be enhanced based on this incident to provide awareness of the occurrence of this incident.

May have resulted in a deviation from:

Deviation No:	050-21	Source Number(s):	Permit:
Event Started:	12/2/2021 2:00 PM	Abatement Device(s) :	AQMD:
Stopped:	12/30/2021 5:00 PM	Emission Point(s):	Other: 40 CFR 60.13

Event Description: BAAQMD personnel conducted continuous emissions monitoring system (CEMS) field visits on 5/25/21, 6/3/21, 6/22/21, and 7/15/21. Following their field visits, BAAQMD requested various CEMS program documents. On 12/2/21, BAAQMD presented Phillips 66 with the results of its field visits and document review and issued Violation Notices A61503-A61517. The Violation Notices allege violations of the following regulatory requirements: BAAQMD Reg 1-522.5, Reg 10 (40 CFR 60.13), Reg 10 (40 CFR 60.13; App. F), Reg 10 (40 CFR 60.13; App. F Sec. 5.1.2), Reg 10 (40 CFR 60.13, App. F. Sec 5.1.2), 2-6-307, Reg 10 (40 CFR 60.13 App F, Sec. 3 and 63.8, Sub A), and 9-10-502. Phillips 66 has evaluated these allegations and agree that certain deviations of 40 CFR 60.13; App. F occurred. These deviations are detailed below. Phillips 66 has submitted a separate response on 12/30/21 (488-ESDR-21) to the Director of Compliance & Enforcement (via email to compliance@BAAQMD.gov) addressing the remaining allegations, which we believe lack merit.

Probable Cause: Allegation – "Failure to conduct quarterly quality assurance cylinder gas audits (CGA)": BAAQMD requested 5-year period of CGA records. (3 times per year – approximately 180 records). Phillips 66 has been unable to locate records of three (3) cylinder gas audit (CGA) records from the 4th quarter of 2016 for SRU 235 (S1010), SRU 236 (S1002), and SRU 238 (S1003). All CGA records were provided for the surrounding quarters.

Allegation – "CGAs conducted with wrong gas range": Phillips 66 confirmed instances of CGA where the reference gas used was out of the required range during the period audited. The O2 (diluent) high range for these CEMS is required to be 8-12%. Many of the CGAs performed were in the 13.5-13.8% O2 range, 1.5-1.8% higher volume than the testing standard for a 25% O2 span. It is possible that someone at the site read the pollutant standard to be 50-60% of span and applied it to the O2 (diluent) span of 25% (i.e., 50% to 60% x 25% = 12.5% to 15%). Despite this issue, daily calibrations and quarterly audits [CGAs and 3rd party Relative Accuracy Test Assurance (RATAs)] continued to show accurate performance of the analyzers.

Allegation – "CEMS audits conducted less than 2 months (60-days) apart": Phillips 66 confirmed 15 instances of quarterly audits conducted within two months out of approximately 180 audits. Most of these instances occurred in the period in which a RATA was conducted. Source testing scheduling is quite challenging in that we must consider the unit operating status (normal operation, future shutdown, etc.), 3rd party testing scheduler availability, and an adequate buffer so as not conduct testing towards the end of the quarter in case of unplanned unit or weather issues. Although there were instances where there was not a 60-day period between these tests, daily calibrations, and quarterly audits (CGAs and RATAs) continued to show accurate performance of the analyzers.

Allegation – "Direct calibrations": S1003 was being directly calibrated for a temporary period while tubing repairs were underway.

Corrective actions or preventative steps taken: Phillips 66 has reviewed the quarterly auditing process and will be implementing process enhancements to avoid future issues with audit timing and gas concentrations. S1003 has been repaired and returned to a remote calibration on 7/14/21. A RATA was performed on the S1003 CEMS and passed on 8/18/21.

May have resulted in a deviation from:

Deviation No: 053-21	Source Number(s): 1010; 465	Permit:	
Event Started: 12/11/2021 6:47 AM	Abatement Device(s) :	AQMD:	
Stopped: 12/11/2021 7:48 AM	Emission Point(s):	Other:	

Event Description: The Unit 235 (S-1010) Sulfur Recovery Unit (SRU) utilizes a degassing system to control vapors from the liquid sulfur collection header (S465). The ejector system draws in air from a stack on the header and the vent gases from S465 are routed to the front-end reaction furnace of Unit 235 for control. On 12/11/21 at 6:47 a.m. during a unit upset, high pressures in the unit caused the ejectors to shut down, resulting in potential release of gases from the header to atmosphere. An estimated 0.11 lbs of H2S and 0.23 lbs of SO2 were estimated during this period. At 6:55 a.m. on 12/11/21, the Unit 235 incinerator temperature also dropped below the permitted temperature excursion allowance. Temperature was restored above permit requirements by 6:58 a.m. (3-minute duration) on 12/11/2021. The temperature excursion was reported as a parametric reportable compliance activity (RCA) to BAAQMD on 12/14/21 (BAAQMD ID 08E12).

Probable Cause: On 12/11/21, Unit 235 experienced hydrocarbon carryover from phenolic water strippers due to increased flow. The hydrocarbon carryover resulted in increased flow and pressure in the reaction furnace and decreased temperature in the incinerator. The higher reaction furnace pressure caused higher backpressure on the ejector, and the ejector flow decreased below minimum required flow, causing the ejectors to shut down per the safety instrumented system design.

Corrective actions or preventative steps taken: Phenolic water stripper rates were shut down to cease hydrocarbon carryover and stabilize the unit. Operational changes were made to reduce the pressure that caused ejector shutdown.

May have resulted in a deviation from:

Deviation No: 054-21	Source Number(s): 126	Permit: 26689-1	
Event Started: 12/1/2021 12:00 AM	Abatement Device(s) :	AQMD:	
Stopped: 12/31/2021 11:59 PM	Emission Point(s):	Other:	

Event Description: It was discovered that Tank 172 (S126) exceeded its 12-month rolling throughput limit of 594,845 barrels for the months of November and December 2021. This throughput limit was established under the premise that Tank 172 is in petroleum liquid service with a Reid Vapor Pressure (RVP) limit of 9 psia. In August 2021, the tank service was changed from gasoline to gas oil. Although the tank exceeded the tank throughput limit, the gas oil product transferred into the tank was unregulated material with a True Vapor Pressure (TVP) of less than 0.5 psia. Phillips 66 calculated the actual tank total volatile organic compounds (VOC) emissions for the months of November and December as 46 lbs. and 49 lbs., respectively. The emissions are below the permitted baseline emissions of 2,627 lbs per year (219 lbs/mo baseline). Thus, although the throughput for the tank was exceeded, this technical deviation from the permit's 12-month rolling throughput limit did not result in excess emissions. The "stopped" time listed above represents the end of the December 12-month rolling period.

Probable Cause: During an internal compliance audit, it was discovered that Tank 172 may have exceeded its permitted limit of 594,845 bbls (12-month rolling). After confirming the throughput exceedance, an investigation was initiated. The investigation determined that during the evaluation process to change the service of Tank 172 from gasoline to gas oil site personnel did not identify that Tank 172 has a more restrictive throughput permit limit.

Corrective actions or preventative steps taken: Upon discovery of the potential throughput exceedance plans to stop active use of the tank in gas oil service were undertaken. To prevent recurrence, an evaluation form to identify potential tank limit restrictions is being enhanced to create better awareness around Tank 172 throughput limit.

May have resulted in a deviation from:

Deviation No:	062-21	Source Number(s):	Permit:
Event Started:	12/29/2021 4:00 AM	Abatement Device(s) :	AQMD:
Stopped:	12/29/2021 5:00 AM	Emission Point(s):	Other:

Event Description: The Unit 235 (S-1010) Sulfur Recovery Unit (SRU) exceeded the 1-hour SO2 250 ppm @ 0% O2 limit and 1-hour CO 75 ppm @ 7% O2 limit from 4:00 a.m. to 4:59 a.m. on 12/29/2021. The indicated 1-hour average emissions during this time were 530 ppm SO2 @ O% O2 and 87 ppm CO @ 7% O2. Total excess emissions during this event are estimated to be 30 lbs SO2 and 2 lbs CO. Excess emissions were reported to BAAQMD (ID 08E51) on 12/30/21.

Probable Cause: On 12/29/21 at approximately 2:00 a.m., the light ends section of the coking unit experienced an upset. This resulted in light process liquids entering the Unit 233 fuel gas system, which then entered the sulfur plant at approximately 4:00 a.m. The air ratio in the sulfur plant was insufficient to support adequate combustion, resulting in elevated SO2 and CO concentrations in the incinerator.

Corrective actions or preventative steps taken: Immediate operational changes were made to cease light process liquids entering the U235 reaction furnace. Phenolic water stripper rates were reduced to decrease sulfur to the sulfur plant. An alarm with high urgency was put in place to prevent similar process upsets at the coking unit.

BAAQMD Title V Permit
6 Month Monitoring Report

A0016 Phillips 66 Company San Francisco Refinery

Facility Address:	Mailing Address:
1380 San Pablo Ave	1380 San Pablo Ave
City: Rodeo	City: Rodeo
State: CA	State: CA
Zip Code: 94572-	Zip Code: 94572-

Contact: Wilma Dreessen Title: Senior Environmental Cons Phone (510) 245-5893

Inoperable monitors as defined by BAAQMD Regulations 1-522 and 1-523 for the reporting period are summarized below:

Started		Stopped			Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
8/12/2021	8:10 AM	8/13/2021	8:10 AM	☑	025-21	29		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: On 8/12/21 at 8:20 AM the CEMS failed to capture all data during the calibration activity although a calibration was initiated. Upon discovery the CEMS were recalibrated and returned to service on 8/13/21 at 8:10 AM.

Started		Stopped			Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
8/12/2021	7:00 AM	8/13/2021	1:00 PM	☐	026-21	45		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The CEMS system did not calibrate successfully on 8/12/21 at 7:00 am due to low calibration gas flow. Upon discovery the flow was adjusted and analyzer was recalibrated and returned to service on 8/13/21 at 1:00 pm.

Started	Stopped		Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
8/14/2021	9:00 AM	8/17/2021 12:36 PM	☑ 027-21	31		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The U200 B501 fuel flow meter readings became erratic on 8/14/21 at approximately 9 a.m. due to plugging. The device was cleared and returned to service on 8/17/21 at 12:36 p.m.

9/11/2021	5:07 PM	9/14/2021	2:01 PM	☑ 033-21		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The NOx analyzer at U228 B520/521 lost indication on 9/11/21 at 5:07 p.m. due to a faulty power supply. The power supply was repaired and the analyzer was validated and returned to service on 9/14/21 at 2:01 p.m.

9/18/2021	2:43 PM	9/20/2021	8:40 AM	☑ 034-21	371; 372	

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The NOx analyzer at U228 B520/521 lost indication on 9/18/21 at 2:43 p.m. due to a faulty regulator. System components were replaced and analyzer was recalibrated and returned to service on 9/20/21 at 8:40 a.m.

9/25/2021	3:56 PM	9/27/2021	7:48 AM	☑ 038-21	371; 372	

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The NOx analyzer experienced failure at 3:56 pm on Saturday, 9/25/2021. The analyzer was returned to service at 7:48 am on Monday, 9/27/2021. However, no inoperative monitor notification was sent on the next business day.

Started	Stopped		Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
9/30/2021	8:42 AM	10/1/2021 8:57 AM	☑ 035-21	461		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The CEMS system did not calibrate successfully on 9/30/21 at 8:42 am. Upon discovery, the analyzer was re-calibrated and returned to service on 10/1/2021 8:57 am.

10/9/2021	8:40 AM	10/11/2021 10:28 AM	☑ 037-21	352		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The Nox analyzer failed due to span drift on 8:40 am on 10/9/2021. Manual calibration was done to correct the drift and the analyzer was returned to service at 10:28 AM on 10/11/2021 after it performed an auto validation.

10/24/2021	8:00 AM	10/25/2021 8:00 AM	☑ 042-21	12		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The NOx analyzer became inoperative upon failed calibration on 10/24/21 at 8:00 a.m. The analyzer successfully calibrated on 10/25/21 at 8:00 a.m. and was returned to service.

10/25/2021	1:52 PM	10/26/2021 3:35 PM	☑ 043-21	352; 355		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzers became inoperative on 10/25/21 at 1:52 p.m. due to a peristaltic pump malfunction. The pump system was repaired and analyzers were returned to service on 10/26/21 at 3:35 p.m.

Started		Stopped			Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
10/30/2021	7:54 AM	11/2/2021	10:40 AM	☑	045-21	15; 16; 17; 18; 19		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzers became inoperative on 10/30/21 at 7:54 a.m. due to a plugged probe. Plug was cleared and analyzers were validated and returned to service on 11/2/21 at 10:40 a.m.

10/30/2021	9:00 AM	11/2/2021	2:37 PM	☑	046-21	4		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzers became inoperative on 10/30/21 at 9:00 a.m. due to low internal flow. The system converter was replaced and analyzer was validated and returned to service on 11/2/21 at 2:37 p.m.

11/26/2021	8:09 AM	11/29/2021	8:09 AM	☑	048-21	438		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzer failed validation on 11/26/21 at 8:09 a.m. The sample filter was replaced and sample pump was rebuilt. The analyzer was validated and returned to service on 11/29/21 at 8:09 a.m.

11/28/2021	9:00 AM	11/29/2021	10:50 AM	☑	049-21	338		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzer became inoperative on 11/28/21 at 9:00 a.m. The system was cleaned, serviced, validated and returned to service on 11/29/21 at 10:50 a.m.

Started	Stopped	Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
12/3/2021	3:11 PM 12/6/2021 9:11 AM	☑ 051-21	336; 337		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The NOx analyzer became inoperative on 12/3/21 at 3:11 p.m. The air pressure transducer was replaced and the analyzer was validated and returned to service on 12/6/21 at 9:11 a.m.

Started	Stopped	Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
12/3/2021	9:46 AM 12/17/2021 2:52 PM	☑ 052-21	352; 355		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: Analyzers at S352/355 were considered potentially inoperative beginning 12/3/21 at 9:46 a.m. due to preliminary source test data. The analyzers were replaced and validated on 12/17/21 at 2:52 p.m.

Started	Stopped	Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
12/19/2021	7:59 AM 12/20/2021 8:45 AM	☑ 056-21	438		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzer failed validation on 12/19/21 at 7:59 a.m. The validation failure was related to moisture in the sampling system. The sampling system moisture was cleared and validation checked to ensure it completed successfully. The analyzer was validated and returned to service on 12/20/21 at 8:45 a.m.

Started	Stopped	Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
12/25/2021	9:04 AM 12/27/2021 10:56 AM	☑ 058-21	371; 372		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzers failed validation on 12/25/21 at 9:04 a.m. due to moisture and plugging. Sample lines were cleared and dried and the analyzers were revalidated and returned to service on 12/27/21 at 10:56 a.m.

Started	Stopped		Deviation #	Source (S#)	Abatement Device (A#)	Emission Point (P#)
12/26/2021	6:10 AM	12/27/2021 1:15 PM ☑	059-21	438		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
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Event Description: The analyzers became inoperative on 12/26/21 at 6:10 a.m. due to liquid in the sample system. Liquid was removed from the system and the analyzers were revalidated and returned to service on 12/27/21 at 1:15 p.m.

12/26/2021	8:15 AM	12/27/2021 1:47 PM ☑	060-21	1010		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Event Description: The analyzer became inoperative on 12/26/21 at 8:15 a.m. due to drift. The analyzer was revalidated and returned to service on 12/27/21 at 1:47 p.m.

12/26/2021	8:45 AM	12/27/2021 2:55 PM ☑	061-21	13		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
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Event Description: The analyzers became inoperative on 12/26/21 at 8:45 a.m. due to liquid in the sample system. The liquid was cleared and the analyzers were revalidated and returned to service on 12/27/21 at 2:55 p.m.

12/30/2021	11:27 PM	1/3/2022 11:47 AM ☑	063-21	438		

CEM	GLM	Fuel Gas	Parametric	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Steam	Flow	Wind Dir.	Wind Speed	pH	Temp.	VOC.	Gauge Press.
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Event Description: The analyzers became inoperative on 12/30/21 at 11:27 p.m. due to moisture in the sample system. Cleared line and system with instrument air, revalidated and returned to service on 1/3/21 at 11:47 a.m.