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January 18, 2019

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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: **Phillips 66 Company**
Contra Costa Carbon Plant – Plant No. A0022
Six-month Monitoring Report for July 1, 2018 through December 31, 2018

Director:

Phillips 66 is submitting its Monitoring Report covering the period of July 1, 2018 through December 31, 2018 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 Ms. Suejung Shin at (510) 245-4655.

Sincerely,

Brent Eastep, Team Lead
Environmental Department

Attachment

cc: Ying Yu, BAAQMD Inspector, via e-mail (YYu@baaqmd.gov)

BAAQMD Title V Permit
6 Month Deviation Summary Report
From 7/1/2018 to 12/31/2018
Carbon Plant, A0022

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 Carl Perkins	Carl Perkins	Refinery Manager	1/18/19
Signature of Responsible Official	Print Name	Title	Date

BAAQMD Title V Permit
6 Month Deviation Summary Report

From 7/1/2018 *to* 12/31/2018

A0022 Phillips 66 Company Contra Costa Carbon Plant

Facility Address:	Mailing Address:
2101 Franklin Canyon Road	2101 Franklin Canyon Road
City: Rodeo	City: Rodeo
State: CA	State: CA
Zip Code: 94572	Zip Code: 94572

Contact: Suejung Shin Title: Environmental Engineer Phone: (510) 245-4655

Title V deviations for the reporting period are summarized below:

			May have resulted in a deviation from:
Deviation No: 029-18	Source Number(s): 1		Permit:
Event Started: 7/10/2018 8:00 PM	Abatement Device(s) : 14		AQMD: 9-10-310.2
Stopped: 7/10/2018 9:00 PM	Emission Point(s):		Other:

Event Description: On 7/10/18 at 9:00 pm SO2 emissions at the K-1 Kiln (S1) exceeded the regulatory limit of 250 lb/hr for one hour. The recorded SO2 emission rate was 252.5 lb/hr (+1%). A breakdown (ID 07H71) and excess (ID 07H72) were filed for this incident.

At around 8 pm on 7/10 Carbon Plant operators observed a brief spike in SO2 emissions that peaked at over 300 lb/hr. It was believed that the bicarbonate feed system had become plugged, resulting in reduced control of SO2 emissions. Operators immediately began cutting the feed rate in order to reduce SO2 emissions. Operators repeatedly cut rate over the next 40 minutes, but SO2 levels continued to steadily increase, though remaining under the 250 lb/hr average for the hour. At 8:50 pm operators completely cut feed to the kiln and began work to remove and clean the eductor that feeds bicarb into the exhaust stream. In doing so, the bicarb system was shut down resulting in another brief spike in SO2 emissions just before 9 pm. This brief spike caused the hourly average to exceed the regulatory limit. The kiln was then banked, which brings the entire K-1 system to a stop except for a very slow rotation of the kiln to prevent damage. The eductor was cleared of blockage, replaced, and the system restarted. SO2 emissions subsequently remained below the regulatory limit.

Probable Cause: The eductor in the bicarb injection system became plugged with bicarb, resulting in ineffective control of the SO2 emissions.

Corrective actions or preventative steps taken: Feed to the kiln was immediately reduced when SO2 levels spiked, then repeatedly further reduced as the hour progressed and SO2 levels remained near the 250 lb/hr limit. At around 8:50 the feed was entirely cut and the bicarb eductor removed and cleaned.

				May have resulted in a deviation from:	
Deviation No:	033-18	Source Number(s):	2	Permit:	136-9
Event Started:	9/6/2018 12:51 PM	Abatement Device(s) :	11	AQMD:	
Stopped:	9/6/2018 12:56 PM	Emission Point(s):		Other:	

Event Description: At approximately 12:50 PM on 9/6/2018, the hot stack on Kiln 2 (S-2) opened as result of an equipment failure. Permit Condition 136, Part 9 requires that all particulate matter emissions from Kiln 2 be routed through the A-11 baghouse. The equipment failure that caused the hot stack to open may have resulted in particulate matter being emitted to the atmosphere prior to passing through the baghouse (A-11).

At around 12:45 PM, operators were alerted to a low-level water alarm on the K-2 boiler. Operators responded immediately, but the water level in the boiler continued to drop until the point was reached where the boiler system, including the ID fan, shut down to maintain the mechanical integrity of the boiler and personnel safety. Without the ID fan, gases were not induced to travel through the K-2 baghouse to the cold stack. Due to the lack of induced flow the hot stack opened briefly, which may have resulted in
particulate matter being emitted to the atmosphere. No visible emissions were observed coming from the hot stack at any time. Water flow was re-established by manually bypassing the control valve, allowing the boiler system to re-start and gas flow to return to the K-2 baghouse. Operations estimate that the hot stack was open for a maximum of 5 minutes.

For approximately 1 to 1 ½ weeks before the breakdown incident, the boiler feedwater valve had been briefly cycling closed. In response to these cycling events, a technician was sent to calibrate the valve position and troubleshoot the issue. While the technician was calibrating the valve position, the valve closed and could not be reopened despite several efforts. Operators then blocked in the valve and opened the bypass to restore water flow into the boiler. The valve was later examined once the situation became stable, and it was discovered that the stem in the control valve was broken in two locations. It is currently believed that the breaks occurred due to excess clearance between the valve plug and the sleeve in which the plug travels. Excess clearance allows vibrations to weaken the mechanical integrity of the stem over time. A new control valve was manufactured and placed into service at approximately 3:45 PM on 9/13/2018.

Probable Cause: A broken control valve in the boiler feedwater system caused the boiler system to shut down due to a lack of feedwater. The resulting lack of draft caused the hot stack to open briefly.

Corrective actions or preventative steps taken: The K-2 hot stack was closed after water flow was re-established into the boiler, preventing the potential for excess emissions. The control valve was repaired and placed back into service at approximately 3:45 PM on 9/13/2018.

BAAQMD Title V Permit
6 Month Monitoring Report

A0022 **Phillips 66 Company Contra Costa Carbon Plant**

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City: Rodeo	City: Rodeo
State: CA	State: CA
Zip Code: 94572	Zip Code: 94572

Contact: Suejung Shin Title: Environmental Engineer Phone: (510) 245-4655

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#)
10/17/2018	8:00 AM	11/1/2018	8:00 AM	☑	045-18	2		

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: At approximately 8:00 am on 10/17/18, the SO2 analyzer at the K-2 kiln stack failed calibration. The analyzer subsequently failed calibration on 10/18/18, resulting in over 24 hours of inoperation. The analyzer was repaired and validated calibration at approximately 8:00 AM on 11/1/18.

11/9/2018	9:00 PM	11/14/2018	3:00 PM	☑	054-18	2		

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: At approximately 9:00 PM on 11/9/18, the SO2 analyzer at S2 (K-2 kiln stack) began giving erratic readings, and failed calibration the following day, 11/10/18. The system was repaired, and the analyzer passed calibration at approximately 3:00 PM 11/14/18.