Shawn Lee
HSE/OE Manager, Richmond Refinery

January 27, 2022

Mr. Jeff Gove
Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports

Six-month Deviation Summary and Six-month Monitoring Report Submittal by Chevron Richmond Refinery (Plant #0010) for the Period of July 1, 2021 to December 31, 2021

Dear Mr. Gove:

Attached are the Chevron Six-month Deviation Summary Report, and the Six-month Monitoring Report for July through December 2021, which meets the requirements of the Title V Permit Standard Condition I. F. and 40 CFR 70.6 as described in the BAAQMD correspondence from Steve Hill to Jim Whiteside dated January 8, 2004.

For questions, please contact Ms. Ashley Demcsak at (510) 242-4405.

Sincerely,

Ashley Demcsak for

Shawn Lee

Attachment(s)

Health, Environment & Safety
Chevron Products Company
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BAAQMD Title V Permit
6 Month Deviation Summary Report

From 07/01/2021 *to* 12/31/2021

Chevron Richmond Refinery
A0010

Facility Address:		Mailing Address:	
	841 Chevron Way		PO Box 1272
City:	Richmond	City:	Richmond
State:	CA	State:	CA
Zip Code:	94801	Zip Code:	94802-0272

Contact: Jason Brown Title: Air Compliance Technician Phone: (510) 242-3485

Event Started:	12/30/2021 - 7:10 AM
Stopped:	12/30/2021 - 1:51 PM Ongoing Event
Discovered On:	12/31/2021

Report ID:	7168
Source Number:	S6013
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Part 12 (formerly part 5); PC# 18656 Part 4
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(c))

Event Description: On December 30, 2021, the NISO Flare (S-6013) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours from 07:10 hours through 13:51 hours. Als NISO Flare had visible emissions in excess of 3 consecutive minutes.

Probable Cause: On December 30, 2021, visible emissions occurred during flaring at the NISO flare when a level controller malfunctioned at the NISO Gas Recovery Unit (GRU), causing process upset and flow to relief. While steam was increased rapidly to the flare, it was not sufficient in fully minimizing the visible emissions.

Corrective actions or preventative steps taken: Operations responded per procedure by optimizing steam to the flare. Operations repaired the level controller and stabilized the GRU, which stopped the flow to relief. Additional corrective actions will be identified as part of the investigation of the initiating event that led to the level controller malfunction.

Event Started:	12/30/2021 - 7:30 AM		Report ID:	7169	May have resulted in a violation of:
Stopped:	12/30/2021 - 11:15 AM	☐ Ongoing Event	Source Number:	S6016	Permit: PC #18656 Parts 3 and 12 (formerly part
Discovered On:	12/31/2021		Abatement Device:		BAAQMD:
					Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On December 30, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at tl FCC Flare (6016) was less than 270 BTU/SCF in a 15-minute block, first, during 07:30 hour and then from 10:15 hours to 11:15 hours.

Probable Cause: On December 30, 2021, Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the fl combustion zone to decrease below the 270 BTU/SCF limit. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header t assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the ass natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, a flare operations computer-based training has been developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, includir NHV.

Event Started:	12/27/2021		Report ID:	7170	May have resulted in a violation of:
Stopped:	12/29/2021	☐ Ongoing Event	Source Number:	S4237	Permit: Title V Standard Conditions J Part 3
Discovered On:	12/29/2021		Abatement Device:		BAAQMD:
					Other:

Event Description: The #5Rheniformer plant underwent an unscheduled start up on December 24, 2021. The Refinery failed to submit an unplanned start up notification to the Air District within 48 hours or the next business day. The startup notification was sent to the Air District on December 29, 2021.

Probable Cause: The person responsible for the startup notification was out of office. The out of office turnover properly documented that the #5 Rheniformer was tentatively scheduled to start up on December 26 and a startup notification would need to be sent. However, the #5 Rheniformer was started up earlier than expected. Unfortunately, the team responsible for the notification did not recognize within the notification window that the unit started up early.

Corrective actions or preventative steps taken: Once the startup of the #5Rheniformer was discovered, a startup notification was immediately sent. Furthermore, this incident was reviewed within the team and out of of coverage will have an improved process for tracking unit startup or shutdown activity and sending startup and shutdown notifications.

Event Started:	12/26/2021		Report ID:	7175	May have resulted in a violation of:
Stopped:	12/26/2021	☐ Ongoing Event	Source Number:	S6010	Permit:
Discovered On:	12/26/2021		Abatement Device:		BAAQMD:
					Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On December 26, 2021, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: Relief system pressure briefly exceeded the capacity of the Flare Gas Recovery Compressor resulting in breach of the flare water seal, though no visible flaring occurred. extensive review of process conditions and trends during the incident was performed but the originating source could not be definitively identified.

Corrective actions or preventative steps taken: Operations immediately responded to the incident and optimized the flare gas compressor operation to stop flaring.

Event Started:	12/13/2021		Report ID:	7154	May have resulted in a violation of:
Stopped:	12/13/2021	☐ Ongoing Event	Source Number:	S6019	Permit: 12-11-502.3 1(a)
Discovered On:	12/22/2021		Abatement Device:		BAAQMD:
					Other:

Event Description: The Alky flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on December 13, 2021.

Probable Cause: On December 13, 2021, flaring occurred at the Alky flare, and flare samples collection at the autosampler was initiated at the required time. While the samples were taken the correct time frame, they arrived late to the Refinery Lab due to ongoing flaring and Operations working to stabilize the process unit.

Corrective actions or preventative steps taken: Operations inspected the flare sample station to ensure that the station was functioning properly. HSE provided additional communication to Operations to reinforce the requirements on timely completion of flare sampling.

Event Started: 12/13/2021
Stopped: 12/13/2021 Ongoing Event
Discovered On: 12/22/2021

Report ID: 7156
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 12-11-502.3 1(a)
Other:

Event Description: The SISO flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on December 13, 2021.

Probable Cause: On December 13, 2021, flaring occurred due to malfunction of a safety system that automatically triggered shutdown of Cogen 2000, resulting in the sudden reduction of steam flow across the Refinery. A flare sample was required at SISO Flare (S-6012) on December 13, 2021 at 1:55 hours but was not timely delivered to the Refinery lab analysis. The operators were managing multiple process plant priorities due to the sudden reduction of steam flow across the Refinery.

Corrective actions or preventative steps taken: The refinery operations shift leads were assigned to refresh and train all crews on requirements aimed at properly prioritizing the timely completion of flare sampling. In addition, the flare operations computer-based training is assigned on an annual basis to provide an overview of all flare requirements for Operations personnel in areas tha operate flares.

Event Started: 12/13/2021
Stopped: 12/13/2021 Ongoing Event
Discovered On: 12/22/2021

Report ID: 7155
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The FCC flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on December 13, 2021.

Probable Cause: On December 13, 2021, flaring occurred at the FCC flare, and flare samples collection at the autosampler was initiated at the required time. While the samples were taken the correct time frame, it was rejected at the Refinery Lab due to the flare sample cylinders being empty.

Corrective actions or preventative steps taken: Operations inspected the flare sample station to ensure the station was functioning properly. The flare sample station continues to undergo regularly scheduled preventativ maintenance to ensure proper operation.

Event Started: 12/20/2021 - 12:00 AM
Stopped: 12/21/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 12/21/2021

Report ID: 7152
Source Number: Refinery
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg. 9-10-301
Other:

Event Description: The refinery exceeded the calendar day refinery-wide NOx mass emissions limit of 3,116 lbs on December 20, 2021. The calendar day refinery-wide NOx was 3,194.56

Probable Cause: The Refinery's ability to generate steam was limited due to the shutdown of Boiler #3, the inability to raise rates at Boiler #7, and the ongoing start up of the #5 Rhenifor To meet steam demand, the refinery initatied steam load-shed moves at the #4 Rheniformer and North Yard furnaces to increase steam production to safely posture the refinery and avoid additional process unit upsets. The steam load shed moves made at the furnaces resulted in exceeding the refinery-wide NOx calendar day limit.

Corrective actions or preventative steps taken: The furnaces were operating in a posture to generate steam and aid in the prevention of additional process upsets. All mitigating work practices were instituted to minimi the excess and kept the actual exceedance to approximately 1% of the Refinery limit. The Refinery took actions to reduce NOx which included despoiling the #4 Rheniformer furnaces, tuning North Yard and South Yard furnaces, and starting Boiler #3. To off-set the loss of steam the refinery shutdown the FCC sour water concentrator. While these moves were successful in lowering the daily NOx they did not provide enough NOx reduction to get back under the daily NOx limit.

Event Started: 12/15/2021 - 5:00 PM
Stopped: 12/15/2021 - 8:00 PM ☐ Ongoing Event
Discovered On: 12/16/2021

Report ID: 7145
Source Number: S6019
Abatement Device:

May have resulted in a violation of:
Permit: PC #18656 Parts 3 and 12 (formerly part
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On December 15, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at t Alky Flare (6019) was less than 270 BTU/SCF in a 15-minute block, first, from 17:00 hours through 19:15 hours and then from 19:30 hours through 20:00 hours.

Probable Cause: On December 15, 2021, Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the fl combustion zone to decrease below the 270 BTU/SCF limit. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header t assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the ass natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, a flare operations computer-based training has been developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, includir NHV.

Event Started: 12/11/2021
Stopped: 12/16/2021 Ongoing Event
Discovered On: 12/15/2021

Report ID: 7148
Source Number: S6021
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Reg 1-523.1
Other:

Event Description: TITLE V UPDATE: The Refinery submitted a late inoperative monitor notification (RCA 08E16) on December 16, 2021. On December 08, 2021, the H2 Flare (S-6021) Pilot Gas Flow meter (31FI34016) became inoperative at 10:54 hours.

Probable Cause: The inoperative monitor notification was due on December 10, 2021 but was submitted on December 16, 2021 due to the monitor was not timely identified as inoperativ during the initial data review by Environmental Compliance personnel. Upon subsequent data review, the meter was confirmed to be inoperative and therefore an inopera monitor notification was subsequently submitted.

Corrective actions or preventative steps taken: Upon discovery, the Refinery submitted the inoperative monitor notification (RCA 08E16) on December 16, 2021. Environmental Compliance reviewed the internal procedure used to identify inoperative monitors for improvement opportunities. It was determined that improved communication between the compliance personnel mem is needed to ensure timely filing of the inoperative monitor notification.

Event Started: 12/15/2021
Stopped: 12/16/2021 Ongoing Event
Discovered On: 12/15/2021

Report ID: 7149
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Reg 1-523.1
Other:

Event Description: The Refinery submitted a late inoperative monitor notification (RCA 08E17) on December 16, 2021. On December 12, 2021, the NISO Flare mass spectrometer, that measures BTU, became inoperative at 10:05 hours. On December 17, 2021, the NISO Flare mass spectrometer, that measures BTU, was back in service at 14:32 hours.

Probable Cause: On December 14, 2021, the Refinery analyzer group initially identified the NISO Flare mass spectrometer as operative due to passing validation. However, upon further review by the analyzer mechanic the next day, it was determined that the sample was not properly transported to the NISO Flare mass spectrometer , so the analyzer woul be considered inoperative retroactively starting on December 12, 2021 at 10:05 hours.

Corrective actions or preventative steps taken: Upon discovery, the Refinery submitted the inoperative monitor notification (RCA 08E17) on December 16, 2021.

Event Started: 12/14/2021 - 7:39 AM
Stopped: 12/14/2021 - 7:40 AM ☐ Ongoing Event
Discovered On: 12/14/2021

Report ID: 7151
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On December 14, 2021, flaring occurred at the SISO Flare (S-6012). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On December 14, 2021, flaring occurred at the SISO flare when a valve to relief was not seated completely while blowing down V-2050 which resulted in a totalizer trip though no visible flaring occurred.

Corrective actions or preventative steps taken: Operations immediately responded by closing the valve to stop the flow to relief, which resulted in less than one minute of visual flaring. The operations crew was coach on the potential consequences of performing this procedure and other similar procedures to aid in the prevention of future incidents.

Event Started: 12/2/2021 - 4:00 AM
Stopped: 12/2/2021 - 5:00 AM ☐ Ongoing Event
Discovered On: 12/14/2021

Report ID: 7157
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81, Title V Section I.
BAAQMD:
Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from December 2, 2021 04:00 hours through the 05:00 clock hour deviating from PC #24136 Section 81. RCA was submitted on time on December 3, 2021. The 10-day report was submitted late on December 14, 2021, therefore deviating from the reporti requirements of Title V Section I.F.

Probable Cause: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from December 2, 2021 04:00 hours through the 05:00 clock hour deviating from PC #24136 Section 81. However, it was found that due to an oversight, the 10-day deviation report was not submitted within 10 days of discovery. Immediately following th discovery, the late deviation was submitted on December 14, 2021.

Corrective actions or preventative steps taken: The Refinery takes all deviations very seriously and immediately upon discovery the late 10-day deviation was submitted. The Refinery has robust procedures and work practices in place to ensure compliance with Air District reporting requirements. To aid in the prevention of a reoccurrence, the Refinery has reinforced the expectation t always follow proper procedures and protocols.

Event Started:	12/13/2021 - 5:30 AM		Report ID:	7132	May have resulted in a violation of:
Stopped:	12/13/2021 - 6:45 AM	☐ Ongoing Event	Source Number:	S6019	Permit: PC #18656 Parts 3 and 12 (formerly part
Discovered On:	12/13/2021		Abatement Device:		BAAQMD:
					Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On December 13, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at t Alky Flare (6019) was less than 270 BTU/SCF in a 15-minute block, first, during 05:30 hour, then, during 05:45 hour, then during 06:00 hour, then, during 06:15 hour ar then during 06:30 hour.

Probable Cause: On December 13, 2021, Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the f combustion zone to decrease below the 270 BTU/SCF limit. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header t assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the as natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, a flare operations computer-based training has been developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, includi NHV.

Event Started:	12/7/2021 - 8:45 AM		Report ID:	7123	May have resulted in a violation of:
Stopped:	12/7/2021 - 9:15 AM	Ongoing Event	Source Number:	S6010	Permit: PC #18656 Parts 3 and 12 (formerly part
Discovered On:	12/7/2021		Abatement Device:		BAAQMD:
					Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On December 07, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at t LSFO Flare (6010) was less than 270 BTU/SCF in a 15-minute block during 08:45 hours and during 09:00 hours.

Probable Cause: Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combustion zone to decrease below the 270 BTU/SCF limit. T flare net heating value is a newer operational requirement, and Operations continues to develop understanding of process handles for the new flare combustion zone (RSF BTU) and the 15-minute time block requirement to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flar Inadvertently, during the LSFO flaring activity, the assist gas was not increased to meet the 270 BTU/scf limit.

Corrective actions or preventative steps taken: Area supervisors have re-enforced the expectation to always comply with regulatory limits through meetings with crews. Additional awareness training has been provide operators to ensure crews have an awareness level of the flare net heating value requirements and associated actions for compliance.

Event Started:	12/7/2021 - 8:39 AM		Report ID:	7143	May have resulted in a violation of:
Stopped:	12/7/2021 - 9:05 AM	Ongoing Event	Source Number:	S6010	Permit:
Discovered On:	12/7/2021		Abatement Device:		BAAQMD:
					Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On December 7, 2021, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: An investigation found that the flaring was caused by exceeding the pressure relief device (PRD) set point on V-3541 during operational moves to increase the ratio of hydrogen to hydrocarbon feed (H2/HC ratio) at #4 Rheniformer. Operations had been increasing K-3550 recycle compressor speed to raise the H2/HC ratio, which result an increase of the V-3541 inlet pressure. This operating scenario requires intervention by Operations to aid in the prevention of exceeding the PRD set point

Corrective actions or preventative steps taken: Once operations determined the source of the flaring, K-3550 speed set point was immediately reduced to decrease pressure at V-3541 and V-3541 was isolated. Area supervisors held meetings with crews to communicate the importance of addressing alarms, alarm prioritization, and familiarity with Consequence of Deviation tables an recommended corrective actions contained in the table.

Event Started:	12/7/2021		Report ID:	7124	May have resulted in a violation of:
Stopped:	12/7/2021	☐ Ongoing Event	Source Number:	S6010	Permit:
Discovered On:	12/7/2021		Abatement Device:		BAAQMD: 12-11-502.3 1(a)
					Other:

Event Description: On December 7, 2021, it was discovered that the LSFO flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a).

Probable Cause: On December 7, 2021, the LSFO flare vent gas triggered an automatic flare sample. During samples analysis, it was determined that the sample did not contain enough sample to analyze. Operations verified with maintenance that the Preventative Maintenance was completed on October 3, 2021, with no issues identified. A sample was successfully pulled by operations on December 14, 2021 and verified by the lab. The Refinery is continuing to look into possible causes of empty cylinders during a flari event.

Corrective actions or preventative steps taken: The Refinery continues to systematically progress through troubleshooting efforts to determine the cause of the sample system issue. Additionally, area supervisors held meetings with crews to review the importance of obtaining flare samples during a flaring event.

Event Started:	12/2/2021 - 4:00 AM		Report ID:	7119	May have resulted in a violation of:
Stopped:	12/2/2021 - 5:00 AM	☐ Ongoing Event	Source Number:	S4227	Permit: PC #24136 Section 81
Discovered On:	12/3/2021		Abatement Device:		BAAQMD:
					Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from December 02, 2021 04:00 hours through the 05:00 clock hour.

Probable Cause: On December 2, 2021, the SRU Train 2 (S-4227) thermal oxidizer operated below the permitted minimum temperature requirement due to startup of an upstream process unit resulting in variations of acid gas feed rates and feed composition. The higher hydrocarbon percentage in the feed gas led to a higher H2S percentage in the tail gas a caused the thermal oxidizer temperature to increase. The increase in temperature resulted in higher NOx formation and lowered the tail gas excess O2. This resulted in a decrease of the thermal oxidizer temperature.

Corrective actions or preventative steps taken: Operations placed the valve output of the natural gas to thermal oxidizer in manual to prevent flame loss. When the hydrocarbon percentage in the feed gas decreased, Operations ensured the thermal oxidizer temperature was brought back above the minimum temperature of 1400F.

Event Started: 10/27/2021

Stopped: 11/10/2021 ☐ Ongoing Event

Discovered On: 11/30/2021

Report ID: 7126

Source Number: S4285

Abatement Device:

May have resulted in a violation of:

Permit:

BAAQMD: Regulation 6, Rule 1, Section 301 – Excessive Visible Emissions

Other:

Event Description: On November 30, 2021 the BAAQMD issued the Chevron Richmond Refinery Notices of Violation A61105, A61106, and A61107 alleging that the visible emissions at FCC were greater than Ringelmann 1 for more than 3 minutes in an hour on October 27, November 3, and on November 10, 2021. Inspector Roger Pharn issued the NOV for the alleged violations of BAAQMD Regulation 6, Rule 1, Section 301-Excessive Visible Emissions. While the Refinery disputes the basis for the NOV, it submits thi 10-day deviation in an abundance of caution. For the reasons discussed in the response letter for the NOVs, submitted on December 10, 2021, the Refinery believes it me applicable compliance requirements and the NOVs should be withdrawn. This does not obligate Chevron to submit such reports in the future where there is no deviation.

Probable Cause: On October 27, 2021, November 3, 2021 and on November 10, 2021, Operations was starting up the FCC per procedure as part of recovery from a Refinery-wide upset o October 24, 2021when feed was pulled from the FCC. The Refinery disagrees with the basis for NOVs A61105, A61106, and A61107. During this startup period, the FC complied with the opacity limits in the Refinery's Title V Permit Condition 11066 Part 3c including requirements of NSPS Subparts A and J for opacity. In accordance w Part 3c, periods of startup are exempt because the FCC met the alternative standard for opacity. In compliance with Part 3c, the Refinery measures opacity with an opacit monitor which is more reliable than visual observations alone.

Corrective actions or preventative steps taken: Operations followed FCC startup procedure and the FCC met the opacity standards under the Refinery's Title V permit.

Event Started: 11/29/2021 - 12:00 AM
Stopped: 12/21/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 11/30/2021

Report ID: 7117
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit: PC #11066 Part 4.b.
BAAQMD:
Other:

Event Description: On November 29, 2021, the FCC (F-300) exceeded its rolling 365-day average 25 ppm SO2 corrected to 0% O2 limit starting at the 0:00 clock hour. The Refinery is currently operating well below the daily average and 7-day rolling average limits and is targeting SO2 emissions less than 25 ppm to decrease the 365-day rolling averag below the 25 ppm SO2 limit. The Refinery continues to make process moves, including optimizing SOx reduction catalyst addition, to minimize the magnitude and durat of the excess emissions.

Probable Cause: On November 29, 2021, the FCC (F-300) exceeded its rolling 365-day average 25 ppm SO2 corrected to 0% O2 limit due to equipment plugging that caused insufficient reduction catalyst to be added.

Corrective actions or preventative steps taken: On November 11, Operations established SO2 reduction catalyst addition and the SO2 emissions decreased. The FCC (F-330) emissions are below the 365-day average 2 ppm SO2 corrected to 0% O2 limit beginning December 21, 2021 at 0:00 clock hour.

Event Started: 11/24/2021 - 12:00 AM
Stopped: 11/25/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 11/24/2021

Report ID: 7113
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit: PC #11066 Part 4.b.
BAAQMD:
Other:

Event Description: On November 24, 2021, the FCC (F-300) exceeded its rolling 7-day average 50 ppm SO2 corrected to 0% O2 limit starting at the 0:00 clock hour. Title V update: The FC (F-330) emissions are below the 7-day average 50 ppm SO2 corrected to 0% O2 limit beginning November 25, 2021 at 0:00 clock hour.

Probable Cause: On November 24, 2021, the FCC (F-300) exceeded its rolling 7-day average 50 ppm SO2 corrected to 0% O2 limit due to equipment plugging that caused insufficient SC reduction catalyst to be added.

Corrective actions or preventative steps taken: On November 11, Operations established SO2 reduction catalyst addition and the SO2 emissions decreased.

Event Started: 11/24/2021 - 12:06 PM
Stopped: 11/24/2021 Ongoing Event
Discovered On: 11/24/2021

Report ID: 7118
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On November 24, 2021, flaring occurred at the SISO Flare (S-6012). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On November 24, 2021, a process composition change in the TKN Gas Recovery Unit (GRU) resulted in a short duration process upset that caused flow to relief and flar at the SISO Flare.

Corrective actions or preventative steps taken: Flaring occurred due to a process composition change in the TKN GRU process. Once this process change was identified, Operations made the necessary adjustment to stabilize the unit, which stopped the flow to relief.

Event Started: 11/21/2021 - 1:00 PM
Stopped: 11/22/2021 - 1:00 AM Ongoing Event
Discovered On: 11/22/2021

Report ID: 7110
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: On November 21, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 13:00 clock hour through November 22, 2021 0:00 clock hou

Probable Cause: On November 21, 2021, 1SRU (S-4227) train received increased hydrocarbons in the acid gas feed stream due to an upstream plant process upset. The higher hydrocarbo content in the acid gas feed led to a change in the tail gas quality which increased the thermal oxidizer temperature and resulted in increased NOx formation.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx by minimizing thermal oxidizer temperatures to near permit limits, manipulating the secondary air registers on the thermal oxidi increasing steam to F-2170, and targeting excess tail gas oxygen between 2-3%.

Event Started: 11/21/2021 - 5:00 PM
Stopped: 11/22/2021 - 2:00 PM ☐ Ongoing Event
Discovered On: 11/22/2021

Report ID: 7111
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: On November 21, 2021, the SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit from the 17:00 clock hour through November 22, 2021 13:00 clock hour.

Probable Cause: On November 21, 2021, 2SRU (S-4228) train received increased hydrocarbons in the acid gas feed stream due to an upstream plant process upset. The higher hydrocarbo content in the acid gas feed led to a change in the tail gas quality which increased the thermal oxidizer temperature and resulted in increased NOx formation.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx by minimizing thermal oxidizer temperatures to near permit limits, manipulating the secondary air registers on the thermal oxidi increasing steam to F-2270, and targeting excess tail gas oxygen between 2-3%.

Event Started: 11/16/2021 - 12:00 AM
Stopped: 11/17/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 11/18/2021

Report ID: 7102
Source Number: V701
Abatement Device:

May have resulted in a violation of:
Permit: PC 24136 Part 98a
BAAQMD:
Other:

Event Description: The V-701 Fuel Gas Drum exceeded its H2S Calendar Day average limit from November 16, 2021 through November 17, 2021.

Probable Cause: On November 16, 2021, due to upsets at upstream process plants, increased H2S in the process gas was observed at the V-701 fuel gas drum.

Corrective actions or preventative steps taken: The addition of fresh DEA and increased circulation at a H2S plant reduced the total H2S to the fuel gas system that reduced the concentration of H2S at V-701.

Event Started: 11/16/2021 - 11:30 AM
Stopped: 11/16/2021 - 12:33 PM ☐ Ongoing Event
Discovered On: 11/18/2021

Report ID: 7105
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On November 16, 2021 at 11:30 hours, Acid Gas Feed was introduced to the (S-4228) 2SRU Train prior to energizing the WESP (A-120) on November 16, 2021 at 12:33 hours.

Probable Cause: Per procedure operations followed safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 2 Train on November 21, 2021 at 11:30 hours. Once operations ensured that the SRU 2 Train was stable and operating safely the WESP was energized on November 16, 2021 at 12:33 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to a prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 2 Train was stable and operating safely, the WESP was energized. The Refi has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and h been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 11/16/2021 - 1:00 AM
Stopped: 11/16/2021 - 9:00 AM ☐ Ongoing Event
Discovered On: 11/18/2021

Report ID: 7104
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: On November 16, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 01:00 clock hour through the 08:00 clock hour.

Probable Cause: On November 16, 2021, 1SRU (S-4227) train received increased hydrocarbons in the acid gas feed stream due to an upstream plant process upset. The higher hydrocarbo content in the acid gas feed led to a change in the tail gas quality which increased the thermal oxidizer temperature and resulted in increased NOx formation.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx by minimizing thermal oxidizer temperatures to near permit limits, manipulating the secondary air registers on the thermal oxidi increasing steam to F-2170, and targeting excess tail gas oxygen between 2-3%.

Event Started: 11/12/2021 - 5:45 PM
Stopped: 11/13/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 11/15/2021

Report ID: 7093
Source Number: S6010
Abatement Device:

May have resulted in a violation of:
Permit: PC #18656 Parts 3 and 12 (formerly part
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On November 12, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at LSFO Flare (6010) was less than 270 BTU/SCF in a 15-minute block, first, during 17:45 hours, then, during 23:30 hours and during 23:45 hours.

Probable Cause: The required steam flow to the relief system to aid in the prevention of visible emissions causes the flare net heating value (NHV) of the flare combustion zone to drop b the 270 BTU/scf limit. Therefore, when the NHV drops below 270 BTU/scf, operators are instructed to begin reducing steam to the flare header to assist with raising the BTU. If the BTU/scf requirements still cannot be met, then operators are instructed to increase the assist natural gas flow to the flare. Inadvertently, during the flaring ev the NHV decreased below the 270 BTU/scf limit.

Corrective actions or preventative steps taken: Area supervisors will re-enforce the expectation to comply with this regulatory limit. Additional training has been provided to operators to ensure crews are fully aware the flare net heating value requirements and associated process handles.

Event Started: 11/14/2021
Stopped: 11/14/2021 ☐ Ongoing Event
Discovered On: 11/15/2021

Report ID: 7097
Source Number: S6010
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 12-11-502.3 1(a)
Other:

Event Description: On November 14, 2021, it was discovered that the LSFO flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a).

Probable Cause: On November 14, 2021, the LSFO flare sample taken did not contain enough sample to analyze. Operations verified with maintenance that the Preventative Maintenance completed on October 3, 2021, with no issues identified. A sample was successfully pulled by operations on December 14, 2021 and verified by the lab. The Refinery is continuing to look into possible causes of empty cylinders during a flaring event.

Corrective actions or preventative steps taken: The Refinery continues to systematically progress through troubleshooting efforts to determine the cause of the sample system issue. Additionally, area supervisors held discussions concerning the importance of obtaining flare samples during a flaring event.

Event Started:	11/14/2021 - 10:45 AM		Report ID:	7094	May have resulted in a violation of:
Stopped:	11/14/2021 - 11:15 AM	☐ Ongoing Event	Source Number:	S6010	Permit: PC #18656 Parts 3 and 12 (formerly part
Discovered On:	11/15/2021		Abatement Device:		BAAQMD:
					Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On November 14, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at LSFO Flare (6010) was less than 270 BTU/SCF in a 15-minute block, first, during 10:45 hours, then, during 11:00 hours.

Probable Cause: The required steam flow to the relief system causes the flare net heating value (NHV) of the flare combustion zone to drop below the 270 BTU/scf limit. Therefore, wher NHV drops below 270 BTU/scf, operators begin to reduce steam to the flare header to assist with raising the BTU. If the BTU/scf requirements still cannot be met, then operators are instructed to increase the assist natural gas flow to the flare. Inadvertently, during the flaring event the NHV was allowed to drop below the 270 BTU/scf lir

Corrective actions or preventative steps taken: Area supervisors will re-enforce the expectation to always comply with regulatory limits. Additional training has been provided to operators to ensure crews are fully aw of the flare net heating value requirements.

Event Started:	11/2/2021		Report ID:	7078	May have resulted in a violation of:
Stopped:	11/5/2021	☐ Ongoing Event	Source Number:	S6039	Permit:
Discovered On:	11/11/2021		Abatement Device:		BAAQMD: 12-11-502.3 1(a)
					Other:

Event Description: The RLOP flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on November 2, November 3, November 4, and November 2021. Title V 30-day Update: The RLOP flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on November 4. Upon further review, the criteria for triggering the flare sample requirement was not triggered at RLOP Flare on November 2, 3, and 5.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storn event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. A flare sample was required but not collected from the RLOP Flare November 4 at 21:40 hours. During recovery efforts, liquid from steam and hydrocarbon came into contact with the RLOP flare line. The flare sample system was not ab knock out liquid effectively, so the flare samples could not be collected as required during the specified times.

Corrective actions or preventative steps taken: Maintenance worked quickly to remove liquid from the RLOP flare line to improve performance at the RLOP flare sample station. HSE provided additional communicat to Operations to reinforce the requirements on timely completion of flare sampling.

Event Started: 11/10/2021 - 3:00 AM
Stopped: 11/16/2021 - 2:00 PM ☐ Ongoing Event
Discovered On: 11/11/2021

Report ID: 7084
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 84
BAAQMD:
Other:

Event Description: The SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit starting on the 03:00 clock hour of November 10, 2021. The exceedance is ongoing. Title V Update: The SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit starting on the 03:00 clock hour of November 10, 2021 through November 16, 2021 14:00 clock hour.

Probable Cause: On November 10, 2021 at 03:00 clock hour, there was no acid gas feed going to the SRU Train 2. The increased NOx was due to natural gas firing per procedure for start and hot standby. Acid gas feed was introduced at approximately 11:30 clock hour on November 16, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: While following the hot standby procedure, Operations worked to minimize the NOx by making additional process moves during the hot standby period. The Refinery ha applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 11/4/2021
Stopped: 11/5/2021 ☐ Ongoing Event
Discovered On: 11/11/2021

Report ID: 7080
Source Number: S6013
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 12-11-502.3 1(a)
Other:

Event Description: The NISO flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on November 4 and November 5, 2021.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flare samples were required but not collected from the NISO Flare o November 4 at 01:51 hours, 16:54 hours, and 19:24 hours, and on November 5 at 12:55 hours. During recovery efforts, there was an insufficient quantity of flare sample containers that were available due to flare sample containers that were undergoing repair before being returned to service.

Corrective actions or preventative steps taken: Operations coordinated with Maintenance staff to expedite the flare sample container repair and return the flare sample containers to service.

Event Started: 11/2/2021
Stopped: 11/2/2021 ☐ Ongoing Event
Discovered On: 11/11/2021

Report ID: 7079
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 12-11-502.3 1(a)
Other:

Event Description: The SISO flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on November 2, 2021. Title V 30-day Update: Upon further da review, flaring on November 2, 2021 did not meet the criteria for triggering the flare sample requirement. Therefore, the Refinery respectfully requests to retract this deviation.

Probable Cause: Upon further data review, flaring on November 2, 2021 did not meet the criteria for triggering the flare sample requirement.

Corrective actions or preventative steps taken: The Refinery respectfully requests to retract this deviation.

Event Started: 11/9/2021 - 11:18 AM
Stopped: 11/11/2021 - 12:33 AM ☐ Ongoing Event
Discovered On: 11/10/2021

Report ID: 7083
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 2 Train thermal oxidizer operated below the minimum temperature limit, from November 09, 2021 11:18 hours to November 11, 2021 00:33 hours.

Probable Cause: The SRU Train 2 (S-4228) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip/regeneration and hot standby procedures were performed. Per procedures, Operations conducted the hot strip/regeneration procedure on SRU2 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the Thermal Oxidizer (A-0021) flame temperature lowered due to a reduced amount of H2S in the tail gas composition and resulting in the Thermal Oxidizer operating below the minimum temperature requirement and deviating from PC#24136, Part 81. Upon completion of the hot strip/regeneration, the SRU 2 train was placed in hot standby per procedure.

Corrective actions or preventative steps taken: Operations adjusted the natural gas to increase the thermal oxidizer temperature above the minimum operating temperature. The Refinery has applied for a revision to Pe Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fe the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted o June 14, 2020.

Event Started: 11/6/2021 - 5:32 AM
Stopped: 11/6/2021 - 3:46 PM Ongoing Event
Discovered On: 11/9/2021

Report ID: 7081
Source Number: S6013
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg 12-11-503
Other:

Event Description: The NISO Flare (S-6013) did not maintain a continuous burning pilot on November 6, 2021 from 05:32-16:46 hours. TITLE V 30-Day Update: Upon further review, the NISO Flare pilot was continuously lit during this time period and therefore this event is not a deviation. The Refinery respectfully requests to retract this deviation.

Probable Cause: Upon further review, the NISO Flare pilot was continuously lit during the time period, based on operator's visual observation. A 10-day deviation was filed in abundance caution to ensure all regulatory reporting requirements were met until the investigation was completed.

Corrective actions or preventative steps taken: The Refinery respectfully requests to retract this deviation.

Event Started: 11/6/2021 - 7:51 PM
Stopped: 11/6/2021 - 9:12 PM Ongoing Event
Discovered On: 11/8/2021

Report ID: 7068
Source Number: Castro St. GLM
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg 9-2-301
Other:

Event Description: On November 06, 2021, the Castro Ground Level Monitor (GLM) exceeded its H2S 3-minute average (consecutive) limit of 0.06 ppm, first, from 19:51 hours to 20:04 h then, from 20:19 hours to 20:29 hours. It had a maximum indicated excess of 0.124 ppm. Chevron also exceeded the 0.03 ppm limit averaged over any 60 consecutive minutes for 72 minutes on November 06, 2021, from 20:01 hours to 21:12 hours.

Probable Cause: On October 24, 2021, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. After power and steam was lost to the refinery, the majority of process units at the Refinery were shut down and de-pressured to place them in a safe posture until utilities could be restored. On November 6, 2021, the Refinery was undergoing recovery efforts with ongoing maintenance as process units were coming online when the Castro GLM was activated fo H2S.

Corrective actions or preventative steps taken: During the time of the indicated excess, Chevron's Fire Department (CFD) was dispatched to conduct field monitoring to identify the source(s) for the indicated H2S exc There were no detectable readings on mobile air quality monitors. Chevron continues to work with agencies to monitor air quality along our fence line and in the commu

Event Started: 10/30/2021 - 7:12 PM
Stopped: 11/10/2021 - 8:42 AM ☐ Ongoing Event
Discovered On: 11/8/2021

Report ID: 7098
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg 1-522.4
Other:

Event Description: The Refinery submitted a late inoperative monitor notification (RCA 08D41) on November 8, 2021 per BAAQMD Reg 1-522.4. On October 30, 2021 at the 19:12 clock hour, the the FCC Flare Vent Gas flow meter became inoperative. The flow meter was back in service on November 10, 2021 at the 08:42 clock hour.

Probable Cause: On October 30, 2021, flaring at the Refinery occurred during process unit startups as part of recovery efforts from the October 24 power interruption. Upon initial review FCC flare flow meter trends were not immediately identified as inoperative but were later determined to be inoperative during a subsequent review of process data and consultation with the Analyzer Team.

Corrective actions or preventative steps taken: HSE reviewed requirements for determining flare flowmeter inoperation and will evaluate improvements to HSE monitoring tools used to review flowmeter data.

Event Started: 11/6/2021
Stopped: 11/6/2021 ☐ Ongoing Event
Discovered On: 11/8/2021

Report ID: 7082
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Regulation 1, Section 301, H S Code – 41700 Public Nuisance.
Other:

Event Description: On November 8, 2021 the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A61104 alleging a public nuisance due to odor impacts in the community that began on November 6, 2021. Inspector Roger Pharn issued the NOV for the alleged violation of BAAQMD Regulation 1, Section 301, H&S Code - 417(Public Nuisance.

Probable Cause: At 20:16 hours on November 6, 2021, City of Richmond Fire Department (RFD) notified Chevron Fire Department (CFD) dispatch of multiple sulfur-type odor complair around Chancellor and Marine Street. CFD investigated the external odor complaints reported to RFD in the area of Chancellor Street in the City of Richmond. Odors we detected by nose from 4th Street and McDonald Ave to 24th Street and Chancellor and were present in portions of the area for approximately 45 minutes. CFD checked internal facility areas including bioreactor and North Yard process units and did not find a source of odors. There were no detectable readings on mobile air quality monit Refinery personnel were not able to identify odors or activity at the Refinery that would have led to offsite odors. CFD contacted RFD by phone to provide information o investigation.

Corrective actions or preventative steps taken: Chevron takes odor inquiries seriously and investigates them. However, due to the uncertainty of the cause of the odors, no preventive measures are identified. Chevron continues to work with agencies to monitor air quality along our fence line and in the community.

Event Started: 11/7/2021 - 7:34 AM
Stopped: 11/7/2021 - 7:37 AM ☐ Ongoing Event
Discovered On: 11/7/2021

Report ID: 7099
Source Number: S6039
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On November 7, 2021, flaring occurred at the RLOP Flare (S-6039). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On November 7, 2021, Operations was starting compressor, K-1900, per procedure. During startup, the pressure increased in the liquid knockout vessel, V-1903, due to a misaligned block valve, which caused visible flaring on the RLOP flare.

Corrective actions or preventative steps taken: Operations identified the block valve that was misaligned and corrected the alignment. This lowered the pressure in the knockout drum and stopped the flow to relief.

Event Started: 11/3/2021 - 4:00 AM
Stopped: 11/9/2021 - 4:00 AM ☐ Ongoing Event
Discovered On: 11/4/2021

Report ID: 7061
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: On November 03, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 04:00 clock hour. The excursion is still ongoing. Title V Upd
On November 03, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 04:00 clock hour through November 09, 2021 at the 04:00 clo hour.

Probable Cause: On November 03, 2021 at 04:00 clock hour, there was no acid gas feed going to the SRU Train 1. The increased NOx was due to natural gas firing per procedure for start and hot standby. Acid gas feed was introduced at approximately 04:00 clock hour on November 09, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: While following the hot standby procedure, Operations worked to minimize the NOx by making additional process moves during the hot standby period. The Refinery ha applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started:	11/4/2021		
Stopped:	11/4/2021	☐ Ongoing Event	
Discovered On:	11/4/2021		

Report ID:	7077
Source Number:	
Abatement Device:	

May have resulted in a violation of:

Permit:	
BAAQMD:	Reg 1 - 440
Other:	

Event Description: On November 8, 2021, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A61103 alleging that site access was denied on November 4, 2021. Inspector Roger Pharn issued the NOV for the alleged violation of BAAQMD Regulation 1, Section 440.

Probable Cause: On October 24, 2021, the Chevron Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple proc unit upsets and a significant curtailment of the Refinery. Chevron timely met all Air District reporting requirements. Chevron disagrees with the basis for NOV A61103. Chevron provided the Air District access to the Refinery multiple times during the weeks following the October 24 loss of power event, including on November 4. When Air District visited the Refinery on November 4, 2021, Chevron Refinery HSE staff met with the Air District, responded to information requests, and made personnel available to the extent possible during the event and associated efforts to restart the Refinery. Specifically, the Refinery provided opacity data and Ground Level Monitor (GLM) data associated with the area of concern. Moreover, Chevron provided regular status updates to BAAQMD Compliance and Enforcement until the recovery was complete. On November 4, the date of the alleged violation, the Refinery was undergoing several process unit startups in multiple locations. Since this event was dynami with multiple plants in different postures, the Cracking unit was restricted to essential personnel only for Process Safety management purposes. Chevron HSE communic this to the Air District inspectors, who agreed it was prudent to avoid the area for safety reasons. This is consistent with Air District Rule 1-440, which states "…access w be granted with due consideration for the safety of District employees and minimum interference with the operations of the facility." To reiterate, Chevron provided Air District personnel access to the Refinery and to information regarding the ongoing incident, but for the safety of Air District personnel, Chevron could not escort the inspectors to an unstable process area. Furthermore, Refinery personnel communicated on November 4 that they would conduct a site assessment to determine if a safe vantage point could be found for use by Air District inspectors and notified the Air District on November 5 of a location that the Air District Inspectors could access to conduct the emission survey. Per the District's request, the Refinery provided opacity data and Ground Level Monitors (GLM) data associated with the area of concern.

Corrective actions or preventative steps taken: The Refinery was adhering to the express requirements of 1-440. The Refinery was in an unstable operating posture and, as a result, certain areas of the site could not be directly accessed for safety reasons on November 4

Event Started: 11/2/2021 - 1:00 PM
Stopped: 11/9/2021 - 4:00 PM ☐ Ongoing Event
Discovered On: 11/4/2021

Report ID: 7062
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from November 02, 2021 13:00 hours. The excursion is still ongoing. Title V Update: SRU 1 Train thermal oxidizer operated below the minimum temperature limit from November 02, 2021 13:00 hours through November 09 15:57 hours.

Probable Cause: The SRU Train 1 (S-4227) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip/regeneration and hot standby procedures were performed. Per procedures, Operations conducted the hot strip/regeneration procedure on SRU1 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the Thermal Oxidizer (A-0020) flame temperature lowered due to a reduced amount of H2S in the tail gas composition and resulting in the Thermal Oxidizer operating below the minimum temperature requirement and deviating from PC#24136, Part 81. Upon completion of the hot strip/regeneration, the SRU 1 train was placed in hot standby per procedure.

Corrective actions or preventative steps taken: Operations adjusted the natural gas to increase the thermal oxidizer temperature above the minimum operating temperature. The Refinery has applied for a revision to Pe Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being f the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted June 14, 2020.

Event Started: 10/31/2021 - 12:00 AM
Stopped: 11/1/2021 - 6:00 AM ☐ Ongoing Event
Discovered On: 11/2/2021

Report ID: 7040
Source Number: V475
Abatement Device: V-475 H2S Analyzer

May have resulted in a violation of:
Permit: 8773 & 24136
BAAQMD:
Other:

Event Description: The V-475 Fuel Gas Drum exceeded its 50 ppm 24-hr average H2S limit from October 31, 2021 11:00 hours through November 01, 2021 05:00 hours. Also, V-475 Fuel Drum exceeded its 50 ppm Calendar-Day H2S limit from October 31, 2021 through November 01, 2021.

Probable Cause: On October 24, 2021, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. On October 31, 2021, 4H2S was in the process of starting up. During this time, sour gas was ro to 5H2S and blocked to V-475 at PC-1011. Despite Operations isolating PC-1011 from V-475, it was determined that PC-1011 had a valve leaking by, which allowed so gas to enter the fuel gas system at V-475 and V-701.

Corrective actions or preventative steps taken: Operations completed startup of 4H2S by putting gas feed into the plant, which stopped the sour gas from entering the fuel gas system. As a corrective measure, Operatio is evaluating the valves associated with PC-1011 for leak-by, to aid in the prevention of future reoccurrence.

Event Started: 10/24/2021
Stopped: 10/26/2021 Ongoing Event
Discovered On: 11/2/2021

Report ID: 7056
Source Number: S6019
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The Alky flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, 2021, and on October 26, 2021. Title V 30-da Update: Upon further data review, the Alky flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, October 25, on October 26.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storı event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. During recovery efforts, there was an insufficient quantity of flare sample containers that were available due to flare sample containers that were undergoing repair before being returned to service.

Corrective actions or preventative steps taken: Operations coordinated with Maintenance staff to expedite the flare sample container repair and return the flare sample containers to service.

Event Started: 10/26/2021
Stopped: 10/28/2021 Ongoing Event
Discovered On: 11/2/2021

Report ID: 7055
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The FCC flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 26, 2021, October 27, 2021, and on October 28, 2(Title V 30-day Update: Upon further data review, the FCC flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 2 October 25, October 26, October 27, and on November 4. Flaring on October 28 did not trigger the flare sample requirement.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storn event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. During recovery efforts, there was an insufficient quantity of flare sample containers that were available due to flare sample containers that were undergoing repair before being returned to service.

Corrective actions or preventative steps taken: Operations coordinated with Maintenance staff to expedite the flare sample container repair and return the flare sample containers to service.

Event Started: 10/24/2021
Stopped: 10/26/2021 Ongoing Event
Discovered On: 11/2/2021

Report ID: 7050
Source Number: S6010
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The LSFO flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, and October 26.

Probable Cause: The LSFO flare samples taken did not contain enough sample to analyze. Operations verified with maintenance that the Preventative Maintenance was completed on Oct 3, 2021, with no issues identified. A sample was successfully pulled by operations on December 14, 2021 and verified by the lab. The Refinery is continuing to look into possible causes of empty cylinders during a flaring event.

Corrective actions or preventative steps taken: The Refinery continues to systematically progress through troubleshooting efforts to determine the cause of the sample system issue. Additionally, area supervisors held d discussions concerning the importance of obtaining flare samples during a flaring event.

Event Started: 10/24/2021
Stopped: 10/30/2021 Ongoing Event
Discovered On: 11/2/2021

Report ID: 7049
Source Number: S6013
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The NISO flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, October 26, October 27, and October 30, 202

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flare samples were required but not collected from the NISO Flare o October 24 at 13:45 hours and 16:45 hours, on October 25 at 17:23 hours, on October 26 at 2:32 hours, 10:02 hours, 16:12 hours, and 19:12 hours, on October 27 at 22:48 hours, and on October 30 at 20:58 hours. During recovery efforts, there was an insufficient quantity of flare sample containers that were available due to flare sample containers that were undergoing repair before being returned to service.

Corrective actions or preventative steps taken: Operations coordinated with Maintenance staff to expedite the flare sample container repair to return the flare sample containers to service.

Event Started: 10/24/2021
Stopped: 11/1/2021 ☐ Ongoing Event
Discovered On: 11/2/2021

Report ID: 7048
Source Number: S6039
Abatement Device:

May have resulted in a violation of:
Permit: 12-11-502.3 1(a)
BAAQMD:
Other:

Event Description: The RLOP flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, October 29, and November 1, 2021. Title V 30-day Update: Upon further data review, the RLOP flare samples were not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on October 24, October 25, and October 26. Flaring on October 29 and November 1 did not trigger the flare sample requirement.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storr event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flare samples were required but not collected from the RLOP Flare (October 24 at 13:15 hours and 16:15 hours, on October 25 at 21:53 hours, and on October 26 at 0:53, 3:53, and 18:06 hours. During recovery efforts, liquid from steam a hydrocarbon came into contact with the RLOP flare line. The flare sample system was not able to knock out liquid effectively, so the flare samples could not be collected required during the specified times.

Corrective actions or preventative steps taken: Maintenance worked quickly to remove liquid from the RLOP flare line to improve performance at the RLOP flare sample station. HSE provided additional communicat to Operations to reinforce the requirements on timely completion of flare sampling.

Event Started: 11/1/2021 - 1:00 AM
Stopped: 11/1/2021 - 2:00 AM ☐ Ongoing Event
Discovered On: 11/2/2021

Report ID: 7041
Source Number: V701
Abatement Device:

May have resulted in a violation of:
Permit: 24136 98c
BAAQMD:
Other:

Event Description: On November 01, 2021 The V-701 Fuel Gas Drum exceeded its 1-hour average total sulfur limit during the 01:00 clock hour.

Probable Cause: On October 24, 2021, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. On October 31, 2021, 4H2S was in the process of starting up. During this time, sour gas was ro to 5H2S and blocked to V-475 at PC-1011. Despite Operations isolating PC-1011 from V-475, it was determined that PC-1011 had a valve leaking by, which allowed sou gas to enter the fuel gas system at V-475 and V-701.

Corrective actions or preventative steps taken: Operations completed startup of 4H2S by putting gas feed into the plant, which stopped the sour gas from entering the fuel gas system. As a corrective measure, Operatio is evaluating the valves associated with PC-1011 for leak-by, to aid in the prevention of future reoccurrence.

Event Started: 10/30/2021 - 2:52 AM
Stopped: 10/30/2021 - 3:00 AM ☐ Ongoing Event
Discovered On: 10/30/2021

Report ID: 7057
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On October 30, 2021, flaring occurred at the FCC Flare (S-6016), Alky Flare (S-6019), RLOP Flare (S-6039), NISO Flare (S-6013), and SISO Flare (S-6012). The flarin was not due to a startup, shutdown, or malfunction.

Probable Cause: On October 30, 2021, the flare gas recovery compressor K-1060 shut down on low pressure, which left only one flare gas recovery compressor, K-1070, online. Multiple plants were using the relief system during startup activities as part of the Refinery recovery efforts from the October 24th power interruption. While K-1070 was fully loa it was unable to maintain the relief header pressure above flare seal pressures, resulting in the visible flaring.

Corrective actions or preventative steps taken: Operations quickly restarted K-1060 and lowered the relief header pressure below flare seal pressures, which stopped the visible flaring.

Event Started: 10/27/2021 - 12:00 AM
Stopped: 11/1/2021 - 10:00 AM ☐ Ongoing Event
Discovered On: 10/28/2021

Report ID: 7014
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: On October 27, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, starting from the 00:00 clock hour. This incident is being reported as ongoing. Title V Update: On October 27, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, starting from the 00:00 clock hour to Novembe 2021 at 10:00 clock hour.

Probable Cause: On October 24, 2021, due to a Refinery-wide upset, the SRU 1 train tripped offline. There was no acid gas feed going to the SRU 1 train. During recovery efforts, Operat worked to minimize NOx by adjusting the secondary air registers on the thermal oxidizer and by minimizing thermal oxidizer temperature.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx emissions by adjusting the secondary air registers on the thermal oxidizer and by minimizing thermal oxidizer temperature durin the shutdown period. The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose exemption of the NOx limit du shutdown periods from the SRU trains. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updat application was submitted on June 14, 2020.

Event Started: 10/25/2021 - 2:00 AM
Stopped: 10/25/2021 - 4:00 AM ☐ Ongoing Event
Discovered On: 10/26/2021

Report ID: 6994
Source Number: S4352, S4353
Abatement Device:

May have resulted in a violation of:
Permit: 1162
BAAQMD: 9-9-301.2
Other:

Event Description: On October 25, 2021 the Cogen 2000 Train exceeded its 3-hr average NOx limit from the 02:00 clock hour through the 03:00 clock hour.

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. During the Cogeneration train start up the refinery was experienc very low steam production. To control NOx, the #360 steam letdown from the #800 steam header is used. However, the #800 steam header did not have sufficient pressu supply the #360 letdown. Once the Cogeneration train began producing steam to assist with 800lb steam header deficiency, the #360 NOx steam was routed to the turbin lower the NOx.

Corrective actions or preventative steps taken: The investigation found that the NOx excess was caused by the Refinery wide upset, leading to steam production issues and the inability to start NOx steam injection. Th incident has been shared with U&E operations as lessons learned.

Event Started: 10/24/2021 - 8:57 AM
Stopped: 10/24/2021 - 9:02 AM ☐ Ongoing Event
Discovered On: 10/26/2021

Report ID: 6990
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On October 24, 2021 at 08:57 hours the (S-4227) 1SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant at 09:02 hours. Breakdown RCA # 08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, the SRU 1 Train tripped offline due to a Refinery-wide upset and the WESP was deenergized as a process safety best practice while acid gas feed v in the SRU 1 Train. The control logic trips the WESP as a process safety best practice to prevent potentially unsafe conditions.

Corrective actions or preventative steps taken: The control logic is programmed to aid in prevention of potentially unsafe operating conditions. The Refinery has applied for a revision to Permit Condition 24136, Parts 82, 83, 84, 87, 88, 92 and 95 to include language for WESP operation during SRU shutdown. The application was submitted to the Air District on October 25, 2019 and h been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 10/24/2021 - 9:00 AM
Stopped: 10/27/2021 - 3:24 AM ☐ Ongoing Event
Discovered On: 10/26/2021

Report ID: 6989
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from October 24, 2021 09:00 hours through October 27,2021 03:24 hours. Breakdown RCA #08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, due to a Refinery-wide upset, the SRU 1 Train tripped offline causing the thermal oxidizer to operate below the permitted minimum temperature requirement. Operations responded by relighting the thermal oxidizer and increasing the temperature above the minimum operating temperature requirement. There was acid gas feed to the SRU 1 Train for the duration of the excursion.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned applicat number 30221. An updated application was submitted on June 14, 2020.

Event Started: 10/27/2021 - 4:00 PM
Stopped: 10/30/2021 - 5:00 PM ☐ Ongoing Event
Discovered On: 10/26/2021

Report ID: 7060
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from October 27, 2021 16:00 hours through the 17:00 clock hour. Title V Update: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit from October 27, 2021 16:00 hours through the 17:00 clock hour and from October 30, 202 14:00 hours through the 16:00 clock hour. RCAs 08C99 and 08D16. Breakdown RCA #08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, due to a Refinery-wide upset, the SRU 1 Train tripped offline causing the thermal oxidizer to operate below the permitted minimum temperature requirement intermittently during recovery efforts on October 27, 2021 and on October 30, 2021. Operations responded by relighting the thermal oxidizer and increasing temperature above the minimum operating temperature requirement. There was no acid gas feed to the SRU 1 Train for the duration of the excursions.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned applicati number 30221. An updated application was submitted on June 14, 2020.

Event Started:	10/25/2021 - 2:00 AM		Report ID:	7054	May have resulted in a violation of:
Stopped:	10/26/2021 - 7:30 PM	Ongoing Event	Source Number:	S6019	Permit: PC #18656 Parts 3 and 12 (formerly part
Discovered On:	10/26/2021		Abatement Device:		BAAQMD:
					Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On October 25, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at the Alky Flare (6019) was less than 270 BTU/SCF in a 15-minute block first from 02:00 hours to 02:30 hours, then, from 19:15 hours to 22:00 hours and from 22:15 hours through October 26, 2021 0:00 hours and then on October 26, 2021, first from 00:30 hours to 01:45 hours, then, from 19:00 hours to 19:15 hours and from 19:30 to 19:45 hours. RCAs 08C89 and 08D08. Breakdown RCA 08C58 was filed in association with this event.

Probable Cause: During recovery efforts after a Refinery-wide upset on October 24, 2021, on October 25, 2021 and on October 26, 2021, Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combustion zone to decrease below the 270 BTU/SCF limit. The flare net heating value is a newer operation requirement, and Operations continues to develop understanding of process handles for the new flare combustion zone (RSR BTU) and the 15-minute time block required to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the assist natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, a new flare operations computer-ba training has been developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, includi NHV.

Event Started:	10/24/2021 - 9:30 PM		
Stopped:	10/28/2021 - 12:00 AM	Ongoing Event	
Discovered On:	10/26/2021		

Report ID:	7052
Source Number:	S6016
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Parts 3 and 12 (formerly part
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On October 24, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at the FCC Flare (6016) was less than 270 BTU/SCF in a 15-minute block from 21:30 hours to 21:45 hours and then on October 25, 2021 first from 00:30 hours to 01:15 hours, then, from 01:30 hours to 02:00 hours, then, from 02:15 to 02:30 hours, then, from 16:00 hours to 16:15 hours and from 18:45 hours through October 26, 2021 0:00 hour: and then on October 26, 2021 from 00:15 hours to 01:45 hours and then on October 27, 2021, first from 22:15 hours to 22:45 hours, and then on October 28, 2021 from 23:45 hours to 00:00 hours. RCAs 08C90, 08C91, 08D09, 08D07. Breakdown RCA 08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, due to a Refinery-wide upset, Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combusti zone to decrease below the 270 BTU/SCF limit. The flare net heating value is a newer operational requirement, and Operations continues to develop understanding of process handles for the new flare combustion zone (RSR BTU) and the 15-minute time block requirement to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the assist natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: On October 24, 2021, due to a Refinery-wide upset, Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combusti zone to decrease below the 270 BTU/SCF limit. The flare net heating value is a newer operational requirement, and Operations continues to develop understanding of process handles for the new flare combustion zone (RSR BTU) and the 15-minute time block requirement to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructed to reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natural gas flow to the flare. While the assist natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Event Started:	10/24/2021 - 8:00 AM		
Stopped:	11/11/2021 - 6:28 AM	☐ Ongoing Event	
Discovered On:	10/26/2021		

Report ID:	7051
Source Number:	S4285
Abatement Device:	

May have resulted in a violation of:

Permit:	11066 Part 7(A4) & (A5)
BAAQMD:	
Other:	

Event Description: On October 24, 2021, the FCC TR sets tripped offline at 08:00 hours and greater than two TR Sets are currently offline (RCA 08C82). In addition, the ESP inlet tempera was less than 550F at 10:00 hours and is still ongoing (RCA 08C83). Breakdown RCA #08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, the FCC TR sets tripped offline at 08:00 hours with greater than two TR sets offline, and the ESP inlet temperature decreased below 500°F due to Refinery-wide upset. The Transformer Rectifier (TR) sets at the electrostatic precipitator (ESP) were de-energized by the safety instrument systems per design during the upset. The de-energization of the ESP during is done to ensure that there is no hydrocarbon carryover into the ESP that could potentially ignite and result in a process saf event.

Corrective actions or preventative steps taken: Once the FCC unit was stabilized the ESP and TR sets were re-energized per procedure. The Refinery has applied for a revision to Permit Condition 11066, Part 7 (A5). application was submitted to the Air District on September 25, 2020. There are no outstanding requests from the Air District on this permit application. Consistent with t permit application, the Refinery is operating the TR sets and ESP during shutdown in a manner that is required to ensure process safety.

Event Started:	10/26/2021 - 3:45 AM
Stopped:	11/2/2021 - 12:00 AM ☐ Ongoing Event
Discovered On:	10/26/2021

Report ID:	7047
Source Number:	S6013
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Parts 3 and 12 (formerly part
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: When regulated material was routed to the flare for greater than 15 minutes, the average net heating value of the combustion zone (RSR BTU) at the NISO Flare (S-6013 was less than 270 BTU/SCF on October 26, 2021 from 03:45 hours to 04:00 hours, then from 07:45 hours to 15:30 hours, then from 15:45 hours to 20:00 hours, then fro October 27, 2021 from 12:30 hours to 00:00 hours on October 28, 2021, and from October 28, 2021 from 02:15 hours to 02:30 hours. TITLE V Update: Also from Octo 30, 2021 from 11:15 hours to 11:45 hours, then from 12:30 hours to 13:15 hours, then from 17:45 hours to 18:00 hours, and from 18:30 hours to 21:00 hours. Also from November 1, 2021 from 21:00 hours to November 2, 2021 0:00 hours. RCA's 08D11, 08D05, 08D04, 08D23, 08D24. Breakdown RCA 08C58 was filed in association w this event.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storn event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flaring occurred during Refinery recovery efforts, where there were multiple relief sources going to the flare, such as steam, nitrogen, and hydrogen, that contributed to lower net heating value of the combustion zone. Additional operator intervention is needed to manually add assist gas to the flare to raise the net heating value of the combustion zone. In these instances, additional assist gas was not added the flare.

Corrective actions or preventative steps taken: Operations management will communicate findings from this investigation and review guidance for managing the RSR BTU requirements with flare Operations to aid in prevention of reoccurrence.

Event Started: 10/25/2021 - 11:00 PM
Stopped: 10/26/2021 - 2:00 AM ☐ Ongoing Event
Discovered On: 10/26/2021

Report ID: 7013
Source Number: S4229
Abatement Device: SRU #3 Train Stack SO2

May have resulted in a violation of:
Permit:
BAAQMD: Reg. 9-1-307
Other: 40 CFR Part 60, Subpart J

Event Description: On October 25, 2021 the SRU 3 Train (S4229) exceeded its 1 hour average SO2 limit of 250ppm, dry, corrected to 0% O2 from the 23:00 clock hour through the 01:00 c hour on October 26, 2021. There was a second exceedance on October 26, 2021 during the 16:00 clock hour.

Probable Cause: On October 24, 2021, due to a Refinery-wide upset, the SRU 3 train shutdown due to a sudden loss of feed and natural gas was introduced without removing all condens sulfur from the train which created elevated levels of SO2.

Corrective actions or preventative steps taken: Operations introduced caustic flow to the SO2 absorbers and the SO2 emissions decreased. Corrective actions will focus on addressing the root cause of the initiating eve of the Refinery-wide upset to aid in the prevention of reoccurrence in the future.

Event Started: 10/24/2021
Stopped: 10/24/2021 ☐ Ongoing Event
Discovered On: 10/25/2021

Report ID: 6993
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Regulation 1, Section 301, H S Code – 41700 Public Nuisance.
Other:

Event Description: On October 25, 2021, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A60001 alleging a public nuisance resulting from flaring that began October 24, 2021. Inspector Roger Pharn issued the NOV for the alleged violation of BAAQMD Regulation 1, Section 301, H & S Code – 41700 Public Nuisance.

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of power at both Cogeneration trains due to a significant storm event. This incident led to multiple refinery process unit upsets and resultant flaring, which is a District-approved safety relief mechanism that enables a controlled means of releasin combustible gases to prevent over-pressurization of equipment in order to keep equipment and people safe. The investigation is currently ongoing to determine the root ca of the cogeneration train trips.

Corrective actions or preventative steps taken: The Refinery utilizes ground level monitoring stations (GLMs), fence line air monitoring and community air monitoring systems to gather data around the clock from the refinery's perimeter. Upon review of each system, no readings were recorded that exceeded permissible exposure limits during this event.

Event Started: 10/24/2021

Stopped: 10/24/2021 Ongoing Event

Discovered On: 10/25/2021

Report ID: 7012

Source Number: V475

Abatement Device:

May have resulted in a violation of:

Permit: PC 12842 part 98d

BAAQMD:

Other: NSPS 40 CFR 60 Supart j 60.104(a)(1)

Event Description: On October 24, 2021 the V-475 Fuel Gas Drum exceeded its 160 ppm 3-hr average H2S limit from the 15:00 clock hour through the 23:00 clock hour. Breakdown RCA #08C58 was filed in association with this event. RCA #08C74. The V-475 Fuel Gas Drum exceeded its 50 ppm Calendar-Day H2S limit from October 24, 2021 through October 25, 2021. Breakdown RCA #08C58 was filed in association with this event. Excess #08C78 The V-475 Fuel Gas Drum exceeded its 50 ppm 24-hr average H2S from October 24, 2021 17:00 hours through October 25, 2021 20:00 hours. Breakdown RCA #08C58 was filed in association with this event. Excess RCA #08C76

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. The loss of electrically powered equipment and steam led to the subsequent shutdown of the Refinery's process units and H2S carryover into the fuel gas system. The initiating event was an electrical bus differential fault on the 13.8kV bus at CGT-1000 caused by storm water intrusion into the electrical bus housed in MOD B. The fault caused the protection system to initiate a bus lockout and trip all 13.8kV breakers on CTG-1000, effectively shutting down CTG-1000 and opening the 13-1 breaker which supplies power to CTG-1000 and half the motor control center the Cogens. While responding to the loss of CTG-1000, the Distributed Control System (DCS) lost power 7 minutes later causing all DCS monitors to lose power. When breaker 13-1 opened from the bus differential trip the DCS system began running on the Cogen unit Uninterruptible Power Supply (UPS) system. The UPS system is designed to supply power in the event of a power outage; the system consists of a bank of batteries and a control system to supply power in the event of an outage. The system is designed to supply approximately 2 hours of power using the system batteries. Without the UPS providing backup power, the DCS system lost all indication. Tl loss of process information displayed on the DCS led Operations to perform an emergency shutdown of Cogen 2000 Train (CGT-2000).

Corrective actions or preventative steps taken: The investigation team determined that there were 2 causal factors associated with the incident that led to the cogeneration train shutdowns on October 24, 2021. The stor water intrusion at Mod B and the UPS system did not provide the intended back up power. As a result of the investigation findings the following corrective actions will b reviewed. The Refinery will assess the MOD B roof to determine if the current design can be improved to reduce likelihood of water entry on Mod A and Mod B. The Refinery will assess the current roof inspection process to determine if improvements can be established. The Refinery will assess the Cogen UPS configuration to determ if improvements can be implemented. Testing of the batteries and UPS system is in progress at the time of the investigation.

Event Started:	10/24/2021		
Stopped:	10/24/2021	☐ Ongoing Event	
Discovered On:	10/25/2021		

Report ID:	7011
Source Number:	V475
Abatement Device:	

May have resulted in a violation of:

Permit:	PC 12842 part 98d
BAAQMD:	
Other:	

Event Description: On October 24, 2021 The V-475 Fuel Gas Drum exceeded its 1-hour average total sulfur 200 ppm limit from the 14:00 clock hour through the 21:00 clock hour. Breakdc RCA #08C58 was filed in association with this event. Excess RCA #08C77 The V-475 Fuel Gas Drum exceeded its 100 ppm Calendar-Day total sulfur limit from Octob 24, 2021 through October 25, 2021. Breakdown RCA#08C58 was filed in association with this event. Excess RCA #08C73

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. The loss of electrically powered equipment and steam led to the subsequent shutdown of the Refinery's process units and sulfur carryover into the fuel gas system. The initiating event was an electrical bus differential fault on the 13.8k bus at CGT-1000 caused by storm water intrusion into the electrical bus housed in MOD B. The fault caused the protection system to initiate a bus lockout and trip all 13.8kV breakers on CTG-1000, effectively shutting down CTG-1000 and opening the 13-1 breaker which supplies power to CTG-1000 and half the motor control center the Cogens. While responding to the loss of CTG-1000, the Distributed Control System (DCS) lost power 7 minutes later causing all DCS monitors to lose power. When breaker 13-1 opened from the bus differential trip the DCS system began running on the Cogen unit Uninterruptible Power Supply (UPS) system. The UPS system is designed to supply power in the event of a power outage; the system consists of a bank of batteries and a control system to supply power in the event of an outage. The system is designed to supply approximately 2 hours of power using the system batteries. Without the UPS providing backup power, the DCS system lost all indication. Tl loss of process information displayed on the DCS led Operations to perform an emergency shutdown of Cogen 2000 Train (CGT-2000).

Corrective actions or preventative steps taken: The investigation team determined that there were 2 causal factors associated with the incident that led to the cogeneration train shutdowns on October 24, 2021. The stor water intrusion at Mod B and the UPS system did not provide the intended back up power. As a result of the investigation findings the following corrective actions will b reviewed. The Refinery will assess the MOD B roof to determine if the current design can be improved to reduce likelihood of water entry on Mod A and Mod B. The Refinery will assess the current roof inspection process to determine if improvements can be established. The Refinery will assess the Cogen UPS configuration to determ if improvements can be implemented. The Refinery will complete testing on UPS system, UPS battery and implement corrective actions to address findings from testing.

Event Started: 10/24/2021

Stopped: 10/24/2021 ☐ Ongoing Event

Discovered On: 10/25/2021

Report ID: 7010

Source Number: V701

Abatement Device:

May have resulted in a violation of:

Permit: PC 12842 part 98d

BAAQMD:

Other:

Event Description: On October 24, 2021 The V-701 Fuel Gas Drum exceeded its 1-hour average total sulfur limit during the 13:00 clock hour. Breakdown RCA #08C58 was filed in associa with this event. Excess RCA #08C72

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. The loss of electrically powered equipment and steam led to the subsequent shutdown of the Refinery's process units and sulfur carryover into the fuel gas system. The initiating event was an electrical bus differential fault on the 13.8k bus at CGT-1000 caused by storm water intrusion into the electrical bus housed in MOD B. The fault caused the protection system to initiate a bus lockout and trip all 13.8kV breakers on CTG-1000, effectively shutting down CTG-1000 and opening the 13-1 breaker which supplies power to CTG-1000 and half the motor control center the Cogens. While responding to the loss of CTG-1000, the Distributed Control System (DCS) lost power 7 minutes later causing all DCS monitors to lose power. When breaker 13-1 opened from the bus differential trip the DCS system began running on the Cogen unit Uninterruptible Power Supply (UPS) system. The UPS system is designed to supply power in the event of a power outage; the system consists of a bank of batteries and a control system to supply power in the event of an outage. The system is designed to supply approximately 2 hours of power using the system batteries. Without the UPS providing backup power, the DCS system lost all indication. Th loss of process information displayed on the DCS led Operations to perform an emergency shutdown of Cogen 2000 Train (CGT-2000).

Corrective actions or preventative steps taken: The investigation team determined that there were 2 causal factors associated with the incident that led to the cogeneration train shutdowns on October 24, 2021. The stor water intrusion at Mod B and the UPS system did not provide the intended back up power. As a result of the investigation findings the following corrective actions will be reviewed. The Refinery will assess the MOD B roof to determine if the current design can be improved to reduce likelihood of water entry on Mod A and Mod B. The Refinery will assess the current roof inspection process to determine if improvements can be established. The Refinery will assess the Cogen UPS configuration to determ if improvements can be implemented. The Refinery will complete testing on UPS system, UPS battery and implement corrective actions to address findings from testing.

Event Started:	10/24/2021	Report ID:	7009
Stopped:	10/24/2021 ☐ Ongoing Event	Source Number:	V870
Discovered On:	10/25/2021	Abatement Device:	

May have resulted in a violation of:

Permit:

BAAQMD:

Other: NSPS 40 CFR 60 Supart j 60.104(a)(1)

Event Description: On October 24, 2021 the V-870 Fuel Gas Drum exceeded its 3-hour average H2S limit of 160 ppm during the 15:00 clock hour. Breakdown RCA #08C58 was filed in association with this event. Excess RCA#08C70

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. The loss of electrically powered equipment and steam led to the subsequent shutdown of the Refinery's process units and sulfur carryover into the fuel gas system. The initiating event was an electrical bus differential fault on the 13.8k bus at CGT-1000 caused by storm water intrusion into the electrical bus housed in MOD B. The fault caused the protection system to initiate a bus lockout and trip all 13.8kV breakers on CTG-1000, effectively shutting down CTG-1000 and opening the 13-1 breaker which supplies power to CTG-1000 and half the motor control center the Cogens. While responding to the loss of CTG-1000, the Distributed Control System (DCS) lost power 7 minutes later causing all DCS monitors to lose power. When breaker 13-1 opened from the bus differential trip the DCS system began running on the Cogen unit Uninterruptible Power Supply (UPS) system. The UPS system is designed to supply power in the event of a power outage; the system consists of a bank of batteries and a control system to supply power in the event of an outage. The system is designed to supply approximately 2 hours of power using the system batteries. Without the UPS providing backup power, the DCS system lost all indication. T loss of process information displayed on the DCS led Operations to perform an emergency shutdown of Cogen 2000 Train (CGT-2000).

Corrective actions or preventative steps taken: The investigation team determined that there were 2 causal factors associated with the incident that led to the cogeneration train shutdowns on October 24, 2021. The stor water intrusion at Mod B and the UPS system did not provide the intended back up power. As a result of the investigation findings the following corrective actions will b reviewed. The Refinery will assess the MOD B roof to determine if the current design can be improved to reduce likelihood of water entry on Mod A and Mod B. The Refinery will assess the current roof inspection process to determine if improvements can be established. The Refinery will assess the Cogen UPS configuration to detern if improvements can be implemented. The Refinery will complete testing on UPS system, UPS battery and implement corrective actions to address findings from testing.

Event Started:	10/24/2021		
Stopped:	10/24/2021	☐ Ongoing Event	
Discovered On:	10/25/2021		

Report ID:	7008
Source Number:	V870
Abatement Device:	

May have resulted in a violation of:

Permit:	PC 12842 part 98d
BAAQMD:	
Other:	

Event Description: On October, 24 2021, V-870 exceeded its 1-hour average total sulfur limit from the 14:00 clock hour through the 15:00 clock hour. Breakdown RCA#08C58 was filed in association with this event. Excess RCA #08C75

Probable Cause: On October 24, 2021, at approximately 8:20hrs, the Chevron Refinery experienced the loss of both Cogeneration trains during a significant storm event. This incident led multiple process unit upsets and a significant curtailment of the Refinery, see breakdown RCA# 08C58. The loss of electrically powered equipment and steam led to the subsequent shutdown of the Refinery's process units and sulfur carryover into the fuel gas system. The initiating event was an electrical bus differential fault on the 13.8k bus at CGT-1000 caused by storm water intrusion into the electrical bus housed in MOD B. The fault caused the protection system to initiate a bus lockout and trip all 13.8kV breakers on CTG-1000, effectively shutting down CTG-1000 and opening the 13-1 breaker which supplies power to CTG-1000 and half the motor control center the Cogens. While responding to the loss of CTG-1000, the Distributed Control System (DCS) lost power 7 minutes later causing all DCS monitors to lose power. When breaker 13-1 opened from the bus differential trip the DCS system began running on the Cogen unit Uninterruptible Power Supply (UPS) system. The UPS system is designed to supply power in the event of a power outage; the system consists of a bank of batteries and a control system to supply power in the event of an outage. The system is designed to supply approximately 2 hours of power using the system batteries. Without the UPS providing backup power, the DCS system lost all indication. Tl loss of process information displayed on the DCS led Operations to perform an emergency shutdown of Cogen 2000 Train (CGT-2000).

Corrective actions or preventative steps taken: The investigation team determined that there were 2 causal factors associated with the incident that led to the cogeneration train shutdowns on October 24, 2021. The stor water intrusion at Mod B and the UPS system did not provide the intended back up power. As a result of the investigation findings the following corrective actions will b reviewed. The Refinery will assess the MOD B roof to determine if the current design can be improved to reduce likelihood of water entry on Mod A and Mod B. The Refinery will assess the current roof inspection process to determine if improvements can be established. The Refinery will assess the Cogen UPS configuration to determ if improvements can be implemented. The Refinery will complete testing on UPS system, UPS battery and implement corrective actions to address findings from testing.

Event Started:	10/24/2021 - 8:00 AM
Stopped:	10/24/2021 - 7:00 PM ○ Ongoing Event
Discovered On:	10/24/2021

Report ID:	7039
Source Number:	S6039
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Part 12 (formerly part 5); PC 18656 Part 4
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(c))

Event Description: On October 24, 2021, the Alky Flare (S-6019) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours during the 08:00 and 09:00 clock hours. Also Alky Flare had visible emissions in excess of 3 consecutive minutes from 08:29 hours to 08:40 hours. RCA 08C92. Breakdown RCA 08C58. On October 24, 2021, the F Flare (S-6016) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours during the 08:00 and 09:00 clock hours. Also, FCC Flare had visible emissio excess of 3 consecutive minutes from 08:29 hours to 08:40 hours. RCA 08C93. Breakdown RCA 08C58. On October 24, 2021, the RLOP Flare (S-6039) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours from the 15:00 clock hour through the 18:00 clock hour. Also, RLOP Flare had visible emissions in exces 3 consecutive minutes from 17:48 hours to 18:31 hours. RCA 08C94. Breakdown RCA 08C58. On October 24, 2021, the NISO Flare (S-6013) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours from the 13:00 clock hour through the 16:00 clock hour. Also, NISO Flare had visible emissions in excess of 3 consecutive minutes from 14:52 hours to 15:02 hours. RCA 08C95. Breakdown RCA 08C58.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storn event. After power and steam was lost to the refinery, the majority of process units at the Refinery were shut down and de-pressured to place them in a safe posture until utilities could be restored. While this occurred, the flares lacked steam to aid in managing visible emissions at the Alky, FCC, RLOP, and NISO flares.

Corrective actions or preventative steps taken: Operations worked quickly to safely restore power and steam production at the Refinery. The corrective actions will stem from the investigation of the initiating event tha led to power and steam loss.

Event Started:	10/24/2021 - 6:30 PM
Stopped:	10/30/2021 - 11:15 AM ☐ Ongoing Event
Discovered On:	10/24/2021

Report ID:	7046
Source Number:	S6012
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Parts 3 and 12 (formerly part
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description:	When regulated material was routed to the flare for greater than 15 minutes, the average net heating value of the combustion zone (RSR BTU) at the SISO Flare (S-6012) was less than 270 BTU/SCF in a 15-minute block on October 24, 2021 from 18:30 hours to 18:45 hours, then from 19:45 hours to 22:15 hours, then from 22:45 to 23:45 hours, then from October 25, 2021 from 02:15 hours to 07:30 hours, then from 14:45 to 23:45 hours, then on October 26, 2021 from 00:15 hours to 04:00 hours, then fro 04:15 hours to 11:00 hours, then from 12:45 hours to 16:15 hours, then from 17:15 hours to 20:00 hours, and from October 27, 2021 from 22:00 hours to 22:45 hours. TI V Update: Also from October 30, 2021 11:00 hours to 11:15 hours. RCA's 08C87, 08C85, 08D10, 08D06, 08D22. Breakdown RCA 08C58 was filed in association with event.
Probable Cause:	On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storm event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flaring occurred during Refinery recovery efforts, where there were multiple relief sources going to the flare, such as steam, nitrogen, and hydrogen, that contributed to lower net heating value of the combustion zone. Additional operator intervention is needed to manually add assist gas to the flare to raise the net heating value of the combustion zone. In these instances, additional assist gas was not added t the flare.
Corrective actions or preventative steps taken:	Operations management will communicate findings from this investigation and review guidance for managing the RSR BTU requirements with flare Operations to aid in prevention of reoccurrence.

Event Started:	10/24/2021 - 9:15 PM		
Stopped:	10/27/2021 - 10:45 PM	Ongoing Event	
Discovered On:	10/24/2021		

Report ID:	7045
Source Number:	S6039
Abatement Device:	

May have resulted in a violation of:

Permit:	PC #18656 Parts 3 and 12 (formerly part
BAAQMD:	
Other:	Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: When regulated material was routed to the flare for greater than 15 minutes, the average net heating value of the combustion zone (RSR BTU) at the RLOP Flare (6039) less than 270 BTU/SCF on October 24, 2021 from 21:15 hours to 21:30 hours, then from 21:45 hours through 22:00, then from 22:15 through October 25, 2021 02:00 ho then from 02:30 hours to 03:30 hours, then from 15:00 hours to 15:15 hours, then from 17:00 hours to 17:45 hours, then from 18:30 to 18:45 hours, then from 19:15 to 2(hours, then from 21:15 hours to 23:15 hours, then from 23:45 hours through October 26, 2021 0:00 hours, then from October 26, 2021 from 0:15 hours to 00:45 hours, th from 01:00 hours to 04:15 hours, then from 04:30 hours to 05:00 hours, then from 05:15 hours to 05:45 hours, then from 17:30 to 17:45 hours, and then from October 27, 2021 from 22:15 hours to 22:45 hours. RCA's 08C86, 08C88, 08D03, 08D12. Breakdown RCA 08C58 was filed in association with this event.

Probable Cause: On October 24, 2021, at approximately 08:20 hours, the Chevron Richmond Refinery experienced the loss of power at both Cogeneration trains during a significant storn event. This incident led to multiple process unit upsets and a significant curtailment of the Refinery. Flaring occurred during Refinery recovery efforts, where there were multiple relief sources going to the flare, such as steam, nitrogen, and hydrogen, that contributed to lower net heating value of the combustion zone. Additional operator intervention is needed to manually add assist gas to the flare to raise the net heating value of the combustion zone. In these instances, additional assist gas was not added t the flare. During recovery efforts, liquid from steam and hydrocarbon also came into contact with the flow elements of the RLOP flare flow meter, which led to erratic flc readings.

Corrective actions or preventative steps taken: Operations worked quickly to remove liquid from the RLOP flare flow element to improve accuracy of the flow input for the RSR BTU calculation. Additionally, Operat management will communicate findings from this investigation and review guidance for managing the RSR BTU requirements with flare Operations to aid in the prevent of reoccurrence.

Event Started: 10/18/2021 - 11:45 PM
Stopped: 10/18/2021 - 11:45 PM ☐ Ongoing Event
Discovered On: 10/18/2021

Report ID: 6985
Source Number: S6010
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On October 18, 2021, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On October 18, 2021, while in the process of isolating a hydrogen booster compressor for maintenance, the output on one of the pressure control valves, PC-40, was lowe to de-pressure the compressor prior to isolation of the equipment. PC-30 and PC-40 are two pressure control valves that are both used to manage H2 pressure and flow. W the output on PC-40 was lowered, PC-30 was not placed at the correct set point prior to making the process move, which caused the H2 pressure to increase and backed o Rheniformer H2 flow resulting in flaring at the LSFO Flare.

Corrective actions or preventative steps taken: Upon backing out the Rheniformer H2 flow, Operations immediately returned PC-30 to its setpoint for normal operating posture to restore flow of Rheniformer H2. As a corrective action, operations management reviewed lessons learned with the crew, including valve lineup prior to making process moves, to aid in the prevention of future reoccurrence.

Event Started: 5/14/2021
Stopped: 5/14/2021 ☐ Ongoing Event
Discovered On: 10/12/2021

Report ID: 6966
Source Number: S6039
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Regulation 12, Rule 12, Section 406
Other:

Event Description: On October 12, 2021, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A60000 alleging an incomplete flare causal report for flaring at the RLOP flare (S-6039) that occurred on May 14, 2021. Inspector Roger Pharn issued the NOV for the alleged violation of BAAQMD Regulation 12, Rule 12, Section 406. While the Refinery disagrees that there is a deviation for the reasons discussed in the NOV response letter, submitted on October 20, 2021, this deviation is filed in an abundance of caution to ensure all reporting requirements are met.

Probable Cause: The Refinery respectfully disagrees with the issuance of this violation. On July 29, 2021, the Refinery timely submitted the information required under Rule 12-12-406 fo the flaring event that occurred on May 14, 2021. Specifically, 12-12-406.1 requires inclusion of "the results of an investigation to determine the primary cause and contributing factors to the event." As the Refinery Air Team has explained, the investigation was ongoing. The Refinery provided regular status updates to BAAQMD Compliance and Enforcement, and upon completion of the investigation, the Refinery submitted the updated report on November 10, 2021.

Corrective actions or preventative steps taken: The alleged violation of an incomplete causal report had an initial report submitted on time fulfilling Rule 12-12-406 requirements while the investigation was ongoing. T updated causal report with the full investigation results was subsequently submitted on November 10, 2021.

Event Started: 11/25/2020
Stopped: 11/25/2020 ☐ Ongoing Event
Discovered On: 10/12/2021

Report ID: 6967
Source Number: S6013
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Regulation 12, Rule 12, Section 406
Other:

Event Description: On October 12, 2021, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A59999 alleging an incomplete flare causal report for flaring at the NISO flare (S-6013) that occurred on November 25, 2020. Inspector Roger Pharn issued the NOV for the alleged violation of BAAQMD Regulation 12, Rule 12, Sectio 406. While the Refinery disagrees that there is a deviation for the reasons discussed in the NOV response letter, submitted on October 20, 2021, this deviation is filed in abundance of caution to ensure all reporting requirements are met.

Probable Cause: The Refinery respectfully disagrees with the issuance of NOV #A59999. On January 29, 2021, the Refinery timely submitted the information required under Rule 12-12- for the flaring event that occurred on November 25, 2020. Specifically, 12-12-406.1 requires inclusion of "the results of an investigation to determine the primary cause contributing factors to the event." As the Refinery Air Team has explained, the investigation was ongoing. Upon completion of the investigation, the Refinery submitted updated report on February 11, 2021.

Corrective actions or preventative steps taken: The alleged violation of an incomplete causal report had an initial report submitted on time fulfilling Rule 12-12-406 requirements while the investigation was ongoing. updated causal report with the full investigation results was subsequently submitted on February 11, 2021.

Event Started: 10/5/2021 - 12:00 PM
Stopped: 10/5/2021 - 2:00 PM ☐ Ongoing Event
Discovered On: 10/7/2021

Report ID: 6958
Source Number: S4471
Abatement Device:

May have resulted in a violation of:
Permit: PC 24136
BAAQMD:
Other:

Event Description: On October 05, 2021, F-1100 exceeded its 1-hour average NOx corrected to 3% O2 limit from the 12:00-clock hour through the 13:00-clock hour due to loss of NH3 injection.

Probable Cause: On October 5, 2021, per procedure, Refinery personnel turned on the backup selective catalytic reduction (SCR) blower CP-1185B to conduct maintenance, while runnin the primary SCR blower CP-1185A at F-1100. The purpose of the SCR is to reduce NOx by injecting ammonia to the catalyst bed. While both SCR blowers were runnin the ammonia vaporizer unexpectedly tripped offline. This caused temporary loss of ammonia to the F-1100 SCR and consequently resulted in an increase in NOx.

Corrective actions or preventative steps taken: As an immediate corrective action, Operations reset the ammonia vaporizer to re-establish ammonia injection to F-1100, which reduced NOx emissions. Refinery person continue to investigate the cause of the ammonia vaporizer trip offline while both SCR blowers were running.

Event Started: 10/4/2021 - 10:00 AM
Stopped: 10/5/2021 - 3:00 PM ☐ Ongoing Event
Discovered On: 10/6/2021

Report ID: 6956
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 2 Train thermal oxidizer operated below the minimum temperature limit, from October 04, 2021 10:00 hours to October 05, 2021 15:00 hours.

Probable Cause: On October 1, 2021, acid gas feed was pulled from the SRU 2 train for maintenance activities. The SRU 2 Train (S-4228) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip/passivation/shutdown procedures were performed. Per procedures, Operations conducted the hot strip/passivation/shutdown procedure on SRU 2 Train displacing any possible plugging contaminants. During the process of conducting shutdown operations, the thermal oxidizer flame temperature was lowered resulting in the thermal oxidizer operating below the minimum temperature requirement.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned applicati number 30221. An updated application was submitted on June 14, 2020.

Event Started: 10/1/2021 - 12:00 AM
Stopped: 10/1/2021 - 2:00 AM ☐ Ongoing Event
Discovered On: 10/4/2021

Report ID: 6952
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg. 9-1-307
Other: 40 CFR Part 60, Subpart J

Event Description: On October 1, 2021, the SRU 2 Train (S4228) exceeded the 1-hour average SO2 limit of 250 ppm corrected to 0% O2 from the 00:00 clock hour through the 01:00 clock hour.

Probable Cause: On October 1, 2021, SRU 2 train was preparing to shutdown for maintenance activities when the air demand analyzer experienced an issue that caused the H2S/SO2 ratio the tail gas to not be optimized, thereby increasing SO2 emissions. Operations adjusted the trim air flow and increased caustic flow to the SO2 absorbers, resulting in the emissions decreasing.

Corrective actions or preventative steps taken: Operations adjusted the trim air flow and increased caustic flow to the SO2 absorbers, resulting in the SO2 emissions decreasing. An investigation is ongoing to determin the root cause of the air demand analyzer malfunction.

Event Started: 10/3/2021 - 12:00 PM
Stopped: 10/4/2021 - 6:00 PM Ongoing Event
Discovered On: 10/4/2021

Report ID: 6957
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84
BAAQMD:
Other:

Event Description: The SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit from October 03, 2021 12:00 clock hour through October 04, 2021 17:00 clock hour.

Probable Cause: On October 3, 2021, there was no acid gas feed going to the SRU 2 train. Per procedure, Operations introduced natural gas and completed a hot strip and regeneration be shutting down 2SRU for maintenance work. The increased NOx was due to natural gas firing while following the hot strip and shutdown procedure. During this process, Operations continued work to minimize NOx by manipulating the secondary air registers on the thermal oxidizer and by minimizing thermal oxidizer temperature.

Corrective actions or preventative steps taken: While following the hot strip/shutdown procedure, Operations worked to minimize the NOx emissions by manipulating the secondary air registers on the thermal oxidize and by minimizing thermal oxidizer temperature during the shutdown period. The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87 92 and 95 to propose exemption of the NOx limit during shutdown periods to safely remove sulfur and pyrophoric materials from the SRU trains. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14, 2020.

Event Started: 10/1/2021 - 12:00 AM
Stopped: 10/2/2021 - 12:00 AM Ongoing Event
Discovered On: 10/4/2021

Report ID: 6955
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 92
BAAQMD:
Other:

Event Description: The SRU 2 Train exceeded its calendar day average CO limit on October 1, 2021. Title V Update: The SRU 2 Train is shut down for maintenance activities.

Probable Cause: On October 1, 2021, SRU 2 train was preparing to shutdown for maintenance activities when the air demand analyzer experienced an issue that caused the excess O2 out thermal oxidizer to decrease. The lower O2 increased the CO emissions.

Corrective actions or preventative steps taken: An investigation is ongoing to determine the root cause of the air demand analyzer malfunction and the increased CO emissions.

Event Started: 10/2/2021 - 2:00 PM
Stopped: 10/3/2021 - 3:00 PM ☐ Ongoing Event
Discovered On: 10/4/2021

Report ID: 6954
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 2 Train thermal oxidizer operated below the minimum temperature limit, first, on October 2, 2021 from the 14:00 clock hour through the 15:00 clock hour, ther October 3, 2021 from the 00:00 clock hour through the 14:00 clock hour.

Probable Cause: On October 1, 2021, acid gas feed was pulled from the SRU 2 train for maintenance activities. The SRU 2 Train (S-4228) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip and passivation procedures were performed. Per procedures, Operations conducted the hot strip and passivation on SRU 2 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the thermal oxidizer flame temperature lowered due t natural gas feed, resulting in the thermal oxidizer operating below the minimum temperature requirement.

Corrective actions or preventative steps taken: Operations adjusted the natural gas to increase the thermal oxidizer temperature above the minimum operating temperature. The Refinery has applied for a revision to Per Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fe the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted c June 14, 2020.

Event Started: 9/30/2021 - 11:55 PM
Stopped: 10/1/2021 - 12:36 AM ☐ Ongoing Event
Discovered On: 10/1/2021

Report ID: 6962
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On September 30, 2021 at 23:55 hours the (S-4228) 2SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant on October 1, 2021 at 00:36 hours

Probable Cause: While shutting down SRU 2 train to perform maintenance activities per procedure, Operations followed process safety best practice and deenergized the WESP prior to pulling acid gas feed to prevent potentially unsafe conditions. Operations deenergized the 2SRU WESP on September 30 at 2355 hours and the acid gas feed was pulled c October 1 at 0036 hours.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to include language for safe WESP operation during SRU shutdown. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted June 14, 2020.

Event Started: 9/11/2021 - 4:00 AM
Stopped: 9/11/2021 - 4:15 AM Ongoing Event
Discovered On: 9/13/2021

Report ID: 6939
Source Number: S6019
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On September 11, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at Alky Flare (6019) was less than 270 BTU/SCF in a 15-minute block during 04:00 hour.

Probable Cause: On September 11, 2021, Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combustion zone to decrease below t 270 BTU/SCF limit. The flare net heating value is a newer operational requirement, and Operations continues to develop understanding of process handles for the new fl combustion zone (RSR BTU) and the 15-minute time block requirement to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructe reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natura flow to the flare. While assist natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, improvements were made to flare operation procedures for the flare BTU limit.

Event Started: 9/11/2021 - 4:00 AM
Stopped: 9/11/2021 - 4:15 AM Ongoing Event
Discovered On: 9/13/2021

Report ID: 6941
Source Number: S6012
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On September 11, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at t SISO Flare (S-6012) was less than 270 BTU/SCF in a 15-minute block during 04:00 hour.

Probable Cause: At low flow rates of vent gas, the calculation will result in a low net heating value of the combustion zone. This is due to the calculation of the net heating value of the combustion zone, where the flow rate is multiplied by the NHV of the vent gas in the numerator of the calculation. Additional operator intervention is needed to manually add assist gas to the flare to raise the net heating value of the combustion zone. In this instance, additional assist gas was not added to the flare.

Corrective actions or preventative steps taken: Operations management will communicate findings from this investigation with flare operators and refresh the crews on guidance for managing the RSR BTU requiremer at low flow rates of vent gas to aid in the prevention of reoccurrence.

Event Started: 9/11/2021 - 4:00 AM
Stopped: 9/11/2021 - 4:15 AM ☐ Ongoing Event
Discovered On: 9/13/2021

Report ID: 6940
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On September 11, 2021, when regulated material was routed to the flare for greater than 15 minutes the average net heating value of the combustion zone (RSR BTU) at FCC Flare (6016) was less than 270 BTU/SCF in a 15-minute block during 04:00 hour.

Probable Cause: On September 11, 2021, Operations routed the steam flow to the relief system causing the flare net heating value (NHV) of the flare combustion zone to decrease below t 270 BTU/SCF limit. The flare net heating value is a newer operational requirement, and Operations continues to develop understanding of process handles for the new fl combustion zone (RSR BTU) and the 15-minute time block requirement to drive timely response. When the NHV drops below the 270 BTU/SCF, Operations is instructe reduce steam to the flare header to assist with raising the BTU. If the BTU/SCF requirement still cannot be met, then Operations is instructed to increase the assist natura flow to the flare. While the assist natural gas flow was adjusted during flaring, the increase was not enough to meet the 270 BTU/SCF requirement.

Corrective actions or preventative steps taken: As an immediate corrective action, HSE communicated with Operations to reinforce the flare compliance requirements. Additionally, improvements were made to flare operation procedures for the flare BTU limit.

Event Started: 9/11/2021 - 3:46 AM
Stopped: 9/11/2021 - 4:12 AM ☐ Ongoing Event
Discovered On: 9/11/2021

Report ID: 6945
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On September 11, 2021, flaring occurred at the FCC Flare (S-6016), Alky Flare (S-6019), NISO Flare (S-6013), and SISO Flare (S-6012). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: A high level in the liquid knockout drum, V-1051, for the flare gas recovery compressors led to the safety shutdown of the flare gas recovery compressors K-1060 and K-1070. The high level in V-1051 was due to light-end hydrocarbons in the relief system, and the pump for V-1051 could not reduce the light-end hydrocarbon level fast enough. The flare gas recovery compressors are designed to shut down at high level in V-1051 to avoid possible liquid carryover that may damage the compressors. Upo shutdown of the compressors, flow in the relief header led to visible flaring.

Corrective actions or preventative steps taken: Operations worked quickly to clear the level in the liquid knockout drum and get the FGR compressors back online to stop the flaring. As a corrective action, the Refiner evaluating the pump design for V-1051 for improvements to aid in the prevention of future reoccurrence.

Event Started: 1/1/2021
Stopped: 9/15/2021 ☐ Ongoing Event
Discovered On: 9/7/2021

Report ID: 6930
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Reg 8-18-401.3 and 8-18-401
Other:

Event Description: On 9/7/21, it was discovered that 45 inaccessible valves, along with associated connectors, installed in 2019 at the North Isomax Gas Recovery Unit had an incorrect exemption applied in the Leak Detection and Repair (LDAR) database. Therefore, the Air Compliance Inspection Group (ACIG) was not prompted to complete inspectic in 2020. Corrective actions are ongoing, including removing the exemption and completing required 2021 annual inspections. Title V Update: Corrective actions were completed on 9/15/21.

Probable Cause: Upon installation in 2019, the 45 inaccessible valves and associated connectors were entered into the database correctly, and all received an initial inspection per Reg. 8- requirements. These valves were later edited in the Leak Detection and Repair (LDAR) database to be in "vacuum service," which applied a monitoring exemption. This error was due to a misunderstanding of stream and process characteristics and the lack of a field or engineering verification before making the database change.

Corrective actions or preventative steps taken: Upon discovery, these components were corrected in the LDAR database and a Method 21 inspection was completed immediately, fulfilling the 2021 annual inspection requirement. Field and engineering verifications were completed to ensure accuracy of stream and process characteristics for these components. The process for major database changes has been updated to include field and/or engineering verification to aid in the prevention of a reoccurrence.

Event Started: 9/5/2021 - 8:11 AM
Stopped: 9/5/2021 - 8:32 AM ☐ Ongoing Event
Discovered On: 9/7/2021

Report ID: 6935
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: On September 05, 2021 the SRU 1 Train thermal oxidizer operated below the minimum temperature limit from the 08:11 hour to 08:32 hour.

Probable Cause: On September 05, 2021, the SRU Train 1 (S-4227) thermal oxidizer operated below the permitted minimum temperature requirement due to an increase of hydrocarbons the acid gas feed stream coming from an upstream process unit upset. The higher hydrocarbon percentage in the feed gas led to a higher H2S percentage in the tail gas an caused the thermal oxidizer temperature to increase. The increase in temperature resulted in higher NOx formation and lowered the tail gas excess O2. This resulted in a decrease of the thermal oxidizer temperature.

Corrective actions or preventative steps taken: The thermal oxidizer temperature was above the minimum operating temperature at approximately 08:32 hour after the hydrocarbon content in the acid gas feed decrease Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2(and has been assigned application number 30221. An updated application was submitted on June 14, 2020.

Event Started:	9/5/2021 - 7:40 AM		
Stopped:	9/5/2021 - 6:31 PM	☐ Ongoing Event	
Discovered On:	9/5/2021		

Report ID:	6942
Source Number:	S4228
Abatement Device:	

May have resulted in a violation of:

Permit:	PC#24136 Section(s) #83 & #88
BAAQMD:	
Other:	

Event Description: On September 5, 2021 at 07:40 hours, the SRU 2 train (S-4228) operated with the WESP (A-120) deenergized. The WESP was energized on September 5, 2021 at 18:31 hours.

Probable Cause: On September 5, 2021, the SRU 2 Train WESP was deenergized per procedure to perform water washing for maintenance and remained deenergized during a potential lo O2 operating scenario per process safety best practice. While the WESP was deenergized, the SRU 2 Train experienced an increase in hydrocarbon content in the acid ga feed stream. The higher hydrocarbon percentage in the acid gas feed during the upstream plant upset resulted in decreased conversion of H2S to SO2 in the front end of t SRU, and an increase of H2S in the tail gas to the TGU. The increased volume of H2S consumed the excess O2 at the thermal oxidizer to convert the H2S to SO2, resulti in a potential low O2 operating scenario. Operations followed a process safety best practice by keeping the WESP offline during the potential low O2 operating scenario ensured that the SRU 2 Train was stable and operating safely before energizing the WESP on September 5, 2021 at 18:31 hours.

Corrective actions or preventative steps taken: Operations followed process safety best practice to aid in prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 2 Train was stable operating safely, the WESP was energized. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 8/10/2021
Stopped: 8/10/2021 Ongoing Event
Discovered On: 8/27/2021

Report ID: 6936
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Regulation 1, Section 301, H & S Code - 41700 Public Nuisance
Other:

Event Description: On August 27, 2021, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A59551 alleging a public nuisance resulting from flaring at the FCC Alky flares that occurred on August 10, 2021. Inspector Christopher Coelho issued the NOV for the alleged violation of BAAQMD Regulation 1, Section 301, H & S Co 41700 Public Nuisance.

Probable Cause: On August 10, 2021, from approximately 14:36 hours to 15:10 hours, visible flaring occurred at the FCC and Alky flares due to a deviation between two pressure transmitters on V-100. Additionally, the steam valve on the FCC flare did not respond which limited the operator's ability to increase steam to reduce smoking at the FC flare, resulting in visible emissions.

Corrective actions or preventative steps taken: As a result of this event, none of the community monitors reported high readings. Thus, while the event resulted in visible emissions, which is the basis for the complaint there was no "injury, detriment, nuisance or annoyance to … the public," "endanger[ment] [of] the comfort, repose, health or safety … of the public," or "injury or dama business or property." Operations immediately responded by troubleshooting and temporarily placed the spillback valves for the FCC wet gas compressor in manual cont and flaring stopped. A work order was submitted later that evening to repair the steam valve for the FCC flare.

Event Started: 8/19/2021 - 9:00 AM
Stopped: 8/19/2021 - 3:00 PM Ongoing Event
Discovered On: 8/19/2021

Report ID: 6921
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: On August 19, 2021, the SRU 1 train Thermal oxidizer operated below the minimum temperature limit from the 09:00 clock hour through the 14:00 clock hour.

Probable Cause: On August 19, 2021, there was no acid gas feed in the SRU 1 Train when the thermal oxidizer temperature decreased below the minimum operating temperature. In respo Operations immediately began working to re-light the thermal oxidizer burner. Once the thermal oxidizer burner was re-lit, the thermal oxidizer temperature gradually increased above 1400°F.

Corrective actions or preventative steps taken: Operations began working on starting up SRU 1 Train per procedure and to bring the thermal oxidizer temperature up above the minimum operating temperature. Chevro has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when acid gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. updated application was submitted on June 14, 2020.

Event Started: 8/19/2021 - 12:05 PM
Stopped: 8/19/2021 - 2:15 PM ☐ Ongoing Event
Discovered On: 8/19/2021

Report ID: 6927
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On August 19, 2021 at 12:05 hours the (S-4227) 1SRU Train was operating with Acid Gas Feed in the system prior to energizing the WESP (A-120) at 14:15hours.

Probable Cause: Per procedure operations followed safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 1 Train on August 19, 2021 at 12:05 hours. Once operations ensured that the SRU 1 Train was stable and operating sa the WESP was energized on August 19, 2021 at 14:15 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to a prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 1 Train was stable and operating safely, the WESP was energized. Chevron applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 8/14/2021
Stopped: 8/19/2021 ☐ Ongoing Event
Discovered On: 8/19/2021

Report ID: 6924
Source Number: S6039
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Reg 12-12-405
Other:

Event Description: On August 19, 2021, the Refinery submitted a late notification of flaring to BAAQMD for flaring on August 14, 2021 at the RLOP Flare (S-6039). It was discovered on August 19, 2021 upon further data review that the volume of vent gas flared exceeded 500,000 standard cubic feet at the RLOP Flare (S-6039) on August 14, 2021.

Probable Cause: On August 14, 2021, the Refinery was in the process of starting up LNC when visible flaring occurred at SISO, FCC, Alky, and RLOP flares from 06:59-07:22 hours. Up further review, flaring continued at the RLOP Flare until approximately 9:30 hours based on the relief header pressure exceeding the water seal level, which resulted in th volume flared at RLOP Flare exceeding 500,000 SCF on August 14. The late notification was due to the 500,000 SCF threshold being reached while the RLOP Flare flov totalizer output remained below the reporting threshold, and there was no visible flaring during this period due to the composition of material in the flare being 99% recyc hydrogen. The investigation found that due to the loss of the water seal, the RLOP Flare relief header pressure was below the setpoint for the RLOP Flare totalizer logic t record flow, causing the flow totalizer output to inadvertently remain below the threshold during this flaring event.

Corrective actions or preventative steps taken: Upon discovery, the Refinery immediately submitted the notification to BAAQMD due to the volume of vent gas flared exceeding 500,000 standard cubic feet. As a corrective action, the Refinery is evaluating reprogramming the totalizer logic to record flow when relief header pressure exceeds water seal level on all refinery flares wi water seal.

Event Started: 8/14/2021
Stopped: 8/14/2021 Ongoing Event
Discovered On: 8/19/2021

Report ID: 6922
Source Number: S6039
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 12-11-502.3 1(a)
Other:

Event Description: On August 19, 2021, it was discovered that the RLOP flare sample was not collected per the requirements of BAAQMD Regulation 12-11-502.3 1(a) on August 14, 2021 TITLE V UPDATE: Upon further review, this event was determined to not be a deviation, and Chevron respectfully requests for this deviation to be retracted.

Probable Cause: Upon further review, this event was determined to not be a deviation, and Chevron respectfully requests for this deviation (Chevron Record #6922) to be retracted. It was determined that the RLOP flare sample was collected per the requirements of BAAQMD Reg 12-11-502.3 1(a), as a flare sample was collected as required on August 14, 2021 at 7:26 a.m. RLOP Flare records were submitted via email to the BAAQMD Inspector Roger Pharn on 9/10/2021 to demonstrate compliance with BAAQMD Reg 12-11-502.3 1(a).

Corrective actions or preventative steps taken: This event was submitted as a deviation in error. Upon further review, the RLOP flare sample was collected per requirements on August 14, 2021.

Event Started: 8/15/2021 - 6:23 PM
Stopped: 8/15/2021 - 9:37 PM Ongoing Event
Discovered On: 8/18/2021

Report ID: 6919
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 and #88
BAAQMD:
Other:

Event Description: On August 15, 2021 at 18:23 hours the (S-4227) 1SRU Train was operating with Acid Gas Feed in the system prior to energizing the WESP (A-120) at 21:37 hours.

Probable Cause: While SRU 1 Train was starting up and per procedure operations followed safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 1 Train on August 15, 2021, at 18:23 hours. Once operations ensured that the SRU Train was stable and operating safely the WESP was energized on August 15, 2021 at 21:37 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to a prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 1 Train was stable and operating safely, the WESP was energized. Chevron applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started:	8/12/2021 - 12:00 PM		
Stopped:	8/15/2021 - 7:00 PM	☐ Ongoing Event	
Discovered On:	8/16/2021		

Report ID:	6917
Source Number:	S4227
Abatement Device:	

May have resulted in a violation of:

Permit:	PC#24136, Part 84
BAAQMD:	
Other:	

Event Description: On August 12, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 12:00 clock hour through August 15, 2021 18:00 clock hour.

Probable Cause: On August 12, 2021, there was no acid gas feed going to the SRU Train 1. The increased NOx was due to natural gas firing per procedure for start-up. Acid gas feed was introduced at approximately 18:00 clock hour on August 15, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx by making additional process moves while on natural gas feed. The Refinery has applied for a revision to Permit Condition 241 Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updat application was submitted on June 14th, 2020.

Event Started:	8/12/2021 - 4:35 AM		
Stopped:	8/12/2021 - 4:51 AM	☐ Ongoing Event	
Discovered On:	8/13/2021		

Report ID:	6915
Source Number:	S4472
Abatement Device:	

May have resulted in a violation of:

Permit:	PC 24136 Part 16a
BAAQMD:	
Other:	

Event Description: On August 12, 2021 the SCR (A-303) at the H2 plant F-2100 furnace (S-4472) did not inject NH3 when the SCR (A-303) catalyst bed was greater than 500F from 04:35 hours to 04:51 hours.

Probable Cause: During the Hydrogen Train 2 startup on August 12, 2021, NH3 was not injected within 30 minutes of the F-2100 catalyst bed reaching 500 F. The F-2100 catalyst bed reached 500 F on 8/12 at 4:05 a.m., and NH3 injection was required by 4:35 a.m. but was not injected until 4:51 a.m. It was found that the NH3 tank level controller (34LC21850) was locked closed due to a DCS permissive. A permissive is used in control systems to prevent actions from taking place until pre-defined criteria have bee satisfied. While troubleshooting the locked permissive, Operations utilized the manual level control bypass valve to establish NH3 injection as soon as possible. Upon fur investigation, the control logic for locking out the NH3 tank level controller was due to a coding error of the interlocks on 34LC21850 that did not align with the DCS co narrative for Hydrogen Train 2. This coding error is not found in Hydrogen Train 1.

Corrective actions or preventative steps taken: Operations immediately utilized the manual level control bypass valve to establish NH3 injection and will continue using the manual bypass as an interim mitigation. Pro controls engineering is investigating the coding error for the Hydrogen Train 2 NH3 tank level controller so the NH3 tank level control valve would not be locked when N injection should be established.

Event Started: 8/10/2021 - 3:15 PM
Stopped: 8/10/2021 - 4:52 PM Ongoing Event
Discovered On: 8/12/2021

Report ID: 6910
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On August 10, 2021 at 15:15 hours, Acid Gas Feed was introduced to the (S-4228) 2SRU Train prior to energizing the WESP (A-121) on August 10, 2021 at 16:52 hours

Probable Cause: While starting up SRU 2 Train and per procedure operations followed safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WES prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 2 Train on August 10, 2021 at 15:15 hours. Once operations ensured that the SRU 2 Train stable and operating safely the WESP was energized on August 10, 2021 at 16:52 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to a prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 2 Train was stable and operating safely, the WESP was energized. Chevron applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 8/10/2021 - 3:00 PM
Stopped: 8/10/2021 - 5:00 PM Ongoing Event
Discovered On: 8/12/2021

Report ID: 6911
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 84
BAAQMD:
Other:

Event Description: On August 10, 2021, the SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit from the 15:00 clock hour through the 16:00 clock hour.

Probable Cause: On August 10, 2021 at 15:00 clock hour, there was no acid gas feed going to the SRU Train 2. The increased NOx was due to natural gas firing per procedure for start-up hot standby. Acid gas feed was introduced at approximately 15:15 clock hour on August 10, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: While following the hot standby procedure, Operations worked to minimize the NOx by making additional process moves during the hot standby period. Chevron has app for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 8/7/2021 - 11:24 PM
Stopped: 8/7/2021 - 11:35 PM Ongoing Event
Discovered On: 8/11/2021

Report ID: 6907
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On August 07, 2021 at 23:24 hours the (S-4228) 2SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant on August 07, 2021 at 23:35 hours.

Probable Cause: On August 07, 2021, due to an upstream plant upset, the SRU 2 WESP tripped offline due to increasing hydrocarbon content in the acid gas feed stream which resulted ir low O2 in the tail gas unit (TGU). The WESP has Fail Safe Control logic to automatically shut down during potential low O2 operating scenarios as a process safety best practice to aid in prevention of potentially unsafe conditions. The higher hydrocarbon percentage in the acid gas feed during the upstream plant upset resulted in decrease conversion of H2S to SO2 in the front end of the SRU, and an increase of H2S in the tail gas to the TGU. The increased volume of H2S consumed the excess O2 at the thermal oxidizer to convert the H2S to SO2, resulting in a potential low O2 operating scenario and tripping the WESP offline.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to include language for WESP safety trips. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14, 2020.

Event Started: 8/8/2021 - 6:00 AM
Stopped: 8/8/2021 - 4:00 PM Ongoing Event
Discovered On: 8/11/2021

Report ID: 6909
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 84
BAAQMD:
Other:

Event Description: On August 08, 2021, the SRU Train 2 exceeded its 3-hour average NOx corrected to 0% O2 limit from the 06:00 clock hour through the 15:00 clock hour.

Probable Cause: On August 08, 2021, there was no acid gas feed going to the SRU Train 2. The increased NOx was due to natural gas firing per procedure for start-up and hot standby. Ac gas feed was introduced at approximately 15:15 clock hour on August 10, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: While following the hot standby procedure, Operations worked to minimize the NOx by making additional process moves during the hot standby period. Chevron has app for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 8/7/2021 - 11:35 PM
Stopped: 8/8/2021 - 5:55 PM ☐ Ongoing Event
Discovered On: 8/11/2021

Report ID: 6908
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 2 Train thermal oxidizer operated below the minimum temperature limit, from August 07, 2021 23:35 hours to August 08, 2021 17:55 hours.

Probable Cause: On August 07, 2021, the SRU 2 Train tripped offline on low acid gas feed rates due to an upstream plant upset causing the thermal oxidizer temperature to decrease belo the minimum operating temperature. In response, Operations immediately began working to re-light the thermal oxidizer burner. Once the thermal oxidizer burner was re the thermal oxidizer temperature gradually increased above 1400°F.

Corrective actions or preventative steps taken: Operations began working on starting up SRU 2 Train and to bring the thermal oxidizer temperature up above the minimum operating temperature. Chevron has applied revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at the temperature limit apply only when gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated applicati was submitted on June 14, 2020.

Event Started: 8/10/2021 - 2:00 PM
Stopped: 8/10/2021 - 4:00 PM ☐ Ongoing Event
Discovered On: 8/10/2021

Report ID: 6906
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit: PC #18656 Part 12 (formerly part 5); PC# 18656 Part 4
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(c))

Event Description: On August 10, 2021, the FCC Flare (S-6016) and Alky Flare (S-6019) exceeded the visible emissions limit of 5 minutes in any 2 consecutive hours during the 14:00 and 15:00 clock hours. Also, FCC and Alky Flare had visible emissions in excess of 3 consecutive minutes.

Probable Cause: On August 10, 2021, from approximately 14:35 hours to 15:09 hours, visible flaring occurred at the FCC and Alky flares due to a deviation between two pressure transmitters on V-100. Additionally, the steam valve on the FCC flare did not respond, which limited the operator's ability to increase steam to reduce smoking at the FC flare, resulting in visible emissions.

Corrective actions or preventative steps taken: Operations immediately responded by troubleshooting and temporarily placed the spillback valves for the FCC wet gas compressor in manual control, and flaring stoppec The steam valve for the FCC flare was repaired later that evening.

Event Started: 8/10/2021 - 2:35 PM
Stopped: 8/10/2021 - 3:09 PM ☐ Ongoing Event
Discovered On: 8/10/2021

Report ID: 6920
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On August 10, 2021, flaring occurred at the FCC Flare (S-6016), Alky Flare (S-6019), and RLOP Flare (S-6039). The flaring was not due to startup, shutdown, or malfunction. Title V update: This deviation is filed in abundance of caution to ensure all reporting requirements are met.

Probable Cause: On August 10, 2021, from approximately 14:35 hours to 15:09 hours, visible flaring occurred at the FCC and Alky flares due to a deviation between two pressure transmitters on V-100. Additionally, the steam valve on the FCC flare did not respond which limited the operator's ability to increase steam to reduce smoking at the FC(flare, resulting in visible emissions.

Corrective actions or preventative steps taken: Operations immediately responded by troubleshooting and temporarily placed the spillback valves for the FCC wet gas compressor in manual control, and flaring stoppe(The steam valve for the FCC flare was repaired later that evening.

Event Started: 8/1/2021 - 10:36 AM
Stopped: 8/1/2021 - 11:12 AM ☐ Ongoing Event
Discovered On: 8/3/2021

Report ID: 6899
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On August 01, 2021 at 10:36 hours, Acid Gas Feed was introduced to the (S-4228) 2SRU Train prior to energizing the WESP (A-120) on August 01, 2021 at 11:12 hours

Probable Cause: While starting up SRU 2 Train per procedure operations followed safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 2 Train on August 1, 2021 at 10:36 hours. Once operations ensured that the SRU 2 Train w stable and operating safely the WESP was energized on August 1, 2021 at 11:12 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to a prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 2 Train was stable and operating safely, the WESP was energized. Chevron applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has b(assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started:	7/23/2021		Report ID:	6914	May have resulted in a violation of:
Stopped:	9/1/2021	☐ Ongoing Event	Source Number:	S4431	Permit:
Discovered On:	8/3/2021		Abatement Device:		BAAQMD: ATC Condition 27122 Part 12 (a)(b)
					Other:

Event Description: On August 3, 2021 it was discovered that Ranch Area Maintenance Yard Prime Diesel Engine Generator (S-4431) was taken off-site for maintenance activities while a replacement portable engine with higher CARB emission rates was placed in service without notification to the District within the specified timeframe.

Probable Cause: On July 23, 2021, the permitted Ranch Area Maintenance Yard Prime Diesel Engine Generator (S-4431) required repair and was exchanged for another generator from a third-party provider. With limited generators available company-wide, the third-party provider delivered a replacement generator, and it was placed in service. The perm generator (S-4431) was repaired and placed back in service at the Ranch Area Maintenance Yard on September 1, 2021.

Corrective actions or preventative steps taken: HSE developed and presented a training document for Operations to help ensure awareness of the rules when permitted generators are exchanged for maintenance activit When the generator exchange occurs, the third-party provider must provide exchange tickets so that HSE can confirm equipment specifications against generator requirements that are compiled in a tracking tool. A compliance assurance plan developed by HSE will capture all generator and engine rules in a guidance document tha will be stored on a SharePoint site.

Event Started:	7/26/2021 - 9:00 AM		Report ID:	6893	May have resulted in a violation of:
Stopped:	7/26/2021 - 1:00 PM	☐ Ongoing Event	Source Number:	S4227	Permit:
Discovered On:	7/29/2021		Abatement Device:		BAAQMD: Reg. 9-1-307
					Other: 40 CFR Part 60, Subpart J

Event Description: On July 26, 2021, the SRU 1 Train (S4227) exceeded the 1-hour average SO2 limit of 250 ppm corrected to 0% O2 from the 09:00 clock hour through the 12:00 clock hc

Probable Cause: On July 26, 2021, the SRU 1 train exceeded its 1-hour average SO2 limit of 250 ppm corrected to 0% O2 limit due to the Refinery-wide power dip that occurred July 25, 2021 when the SRU 1 train tripped offline. When SRU 1 train tripped offline without performing a proper heat soak to remove condensed sulfur, the air and natural gas introduction for the hot strip (clean-up process) created elevated levels of SO2 when the train was being prepared for maintenance activities.

Corrective actions or preventative steps taken: In response, Operations increased caustic solution flow to the SO2 absorber in SRU 1 train to aid in lowering stack SO2 emissions. Additionally, corrective actions will f on addressing the root cause of the initiating even of the power dips to aid in the prevention of reoccurrence in the future.

Event Started: 7/25/2021 - 9:13 PM
Stopped: 7/30/2021 - 1:31 AM ☐ Ongoing Event
Discovered On: 7/29/2021

Report ID: 6896
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: On July 25, 2021 the SRU 1 Train thermal oxidizer operated below the minimum temperature limit from the 21:13 clock hour. The deviation is still ongoing. Title V Upd The SRU 1 Train shutdown on July 30, 2021 at 01:31 clock hour for maintenance activities.

Probable Cause: The SRU Train 1 (S-4227) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip/regeneration and hot standby procedures were performed. Per procedures, Operations conducted the hot strip/regeneration procedure on SRU1 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the Thermal Oxidizer (A-0020) flame temperature lowered due to a reduced amount of H2S in the tail gas composition and resulting in the Thermal Oxidizer operating below the minimum temperature requirement.

Corrective actions or preventative steps taken: Process Engineering Department conducted a review of the process to ensure utilization of recommended process controls. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application numbe 30221. An updated application was submitted on June 14th, 2020.

Event Started: 7/27/2021 - 12:00 PM
Stopped: 7/27/2021 - 7:00 PM ☐ Ongoing Event
Discovered On: 7/29/2021

Report ID: 6895
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 84
BAAQMD:
Other:

Event Description: On July 27, 2021, SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, from the 12:00 clock hour through the 19:00 clock hour.

Probable Cause: On July 27, 2021, there was no acid gas feed going to the SRU Train 1. SRU 1 Train was feeding natural gas per procedure for a hot strip and regeneration to remove contaminants prior to shutting down for maintenance work. The increased NOx was due to natural gas firing.

Corrective actions or preventative steps taken: While following the hot strip/regeneration/hot standby procedure, Operations worked to minimize the NOx by making process moves to increase steam to F-2170, manipulate the secondary air registers on the thermal oxidizer, and minimize thermal oxidizer temperature . Chevron has applied for a revision to Permit Condition 2413(Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updat application was submitted on June 14th, 2020.

Event Started: 7/26/2021 - 12:00 AM
Stopped: 7/27/2021 - 12:00 AM ☐ Ongoing Event
Discovered On: 7/29/2021

Report ID: 6894
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136, Part 84b
BAAQMD:
Other:

Event Description: On July 26, 2021, the SRU 1 Train exceeded its calendar day average SO2 limit.

Probable Cause: On July 26, 2021, the SRU 1 train exceeded its 1-hour average SO2 limit of 250 ppm corrected to 0% O2 limit due to the Refinery-wide power dip that occurred July 25, 2021 when the SRU 1 train tripped offline. When SRU 1 train tripped offline without performing a proper heat soak to remove condensed sulfur, the air and natural gas introduction for the hot strip (clean-up process) created elevated levels of SO2 when the train was being prepared for maintenance activities.

Corrective actions or preventative steps taken: In response, Operations increased caustic solution flow to the SO2 absorber in SRU 1 train to aid in lowering stack SO2 emissions. Additionally, corrective actions will f on addressing the root cause of the initiating even of the power dips to aid in the prevention of reoccurrence in the future.

Event Started: 7/25/2021 - 7:00 AM
Stopped: 7/25/2021 - 9:00 AM ☐ Ongoing Event
Discovered On: 7/27/2021

Report ID: 6886
Source Number: S4155
Abatement Device:

May have resulted in a violation of:
Permit: PC #8773, Part 1
BAAQMD:
Other:

Event Description: On July 25, 2021, the F-135(S-4155) exceeded its 3-hour average NOx limit of 8.85 lb/hr, from the 07:00 clock hour through the 08:00 clock hour. Breakdown RCA #08 was filed in association with this event.

Probable Cause: On July 25th, F-135 (S-4155) exceeded its 3-hour average NOx limit due to an increase in fuel gas BTU following Refinery-wide power dips and the subsequent loss of manufactured hydrogen, which initiated emergency procedures to safely shutdown Hydroprocessing units. When the Hydroprocessing units underwent shutdowns, proce gases that were routed to the fuel gas system caused a significant increase in fuel gas BTU. Higher fuel gas BTU corresponds to increased heat and therefore higher NOx

Corrective actions or preventative steps taken: As an immediate corrective action, Operations personnel adjusted F-135 operations to compensate for the change in fuel gas BTU due to the Hydroprocessing unit shutdowns. Additionally, corrective actions will focus on addressing the root cause of the initiating event of the power dips to aid in the prevention of reoccurrence in the future.

Event Started: 7/27/2021 - 2:51 PM
Stopped: 7/27/2021 - 2:52 PM ☐ Ongoing Event
Discovered On: 7/27/2021

Report ID: 6901
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 60 Subpart J (60.104(a)(1))

Event Description: On July 27, 2021, flaring occurred at the FCC Flare (S-6016) and the Alky Flare. This deviation is filed in abundance of caution to ensure all reporting requirements are

Probable Cause: On July 27, 2021, brief visible flaring occurred at the FCC and Alky flares due to a deviation between two pressure transmitters on V-100, causing the CCC controller to slow down the wet gas compressor. This change in speed resulted in a pressure differential on PC-100A, which opened to relief and resulted in brief flaring.

Corrective actions or preventative steps taken: Operations immediately responded by troubleshooting and temporarily placed the spillback valves in manual control, and flaring stopped. Additional potential corrective actions are pending the Refinery's investigation for this flaring event.

Event Started: 7/25/2021 - 2:16 AM
Stopped: 7/25/2021 - 5:12 AM ☐ Ongoing Event
Discovered On: 7/27/2021

Report ID: 6890
Source Number: S4472
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 16a
BAAQMD:
Other:

Event Description: Title V Update: On July 25, 2021 the SCR (A-303) at the H2 plant F-2100 furnace (S-4472) did not inject NH3 when the SCR (A-303) catalyst bed was greater than 500 from 02:16 hours to 05:12 hours. Breakdown RCA #08A77 was filed in association with this event.

Probable Cause: On July 25th at 02:15 am, Tap 1 experienced a fault at the Standard Oil Switching Station (SOSS), which supplies purchased electricity to Refinery process units. Autom action by electrical system protection equipment isolated Tap 1 within 0.1 seconds. During the fault, the refinery substations experienced significant sags in voltage for th duration of the fault. The voltage sag caused several motors to shut down throughout the refinery, which resulted in the shutdowns of Hydrogen Train 1 and the SCR Blo CP-2185A/B at Hydrogen Train 2. At 05:12 am, Tap 1 experienced a second fault at the same location and automatic action by the electrical protection equipment isolate the line within 0.1 seconds. The second fault caused another voltage sag leading to the shutdown of the induced draft (ID) and forced draft (FD) fan motors for Hydrogen Train 2. Train 2 safety system initiated an immediate shutdown of Train 2. The shutdowns of both hydrogen trains within a short time period caused a complete loss of manufactured hydrogen and initiated emergency procedures to safely shutdown all Hydroprocessing units. Due to the loss of power of the SCR Blowers CP-2185A/B du the first power dip, NH3 injection could not be maintained at the F-2100 Furnace (S-4472). The function of the SCR blowers is to reduce NOx by injecting NH3 to the catalyst bed. Hydrogen Train 2 fully shut down during the second power dip at 05:12 a.m.

Corrective actions or preventative steps taken: Hydrogen Train 2 tripped offline from the second power dip soon after the loss of NH3 flow, so NH3 injection was no longer required until Hydrogen Train 2 could be restarted. Additionally, corrective actions will focus on addressing the root cause of the initiating event of the power dips to aid in the prevention of reoccurrence in the future.

Event Started:	7/25/2021 - 2:00 AM
Stopped:	7/25/2021 - 5:00 AM ☐ Ongoing Event
Discovered On:	7/27/2021

Report ID:	6889
Source Number:	S4472
Abatement Device:	

May have resulted in a violation of:

Permit:	PC#24136 Part 14a
BAAQMD:	
Other:	

Event Description: Title V Update: On July 25, 2021 F-2100 exceeded the 1-hour average NOx limit of 5 ppm corrected to 3% O2 starting from the 02:00-clock hour through the 04:00-clo hour. Breakdown RCA #08A77 was filed in association with this event.

Probable Cause: On July 25th at 02:15 am, Tap 1 experienced a fault at the Standard Oil Switching Station (SOSS), which supplies purchased electricity to Refinery process units. Autom action by electrical system protection equipment isolated Tap 1 within 0.1 seconds. During the fault, the refinery substations experienced significant sags in voltage for tl duration of the fault. The voltage sag caused several motors to shut down throughout the refinery, which resulted in the shutdowns of Hydrogen Train 1 and the SCR Blo CP-2185A/B at Hydrogen Train 2. At 05:12 am, Tap 1 experienced a second fault at the same location and automatic action by the electrical protection equipment isolat the line within 0.1 seconds. The second fault caused another voltage sag leading to the shutdown of the induced draft (ID) and forced draft (FD) fan motors for Hydroger Train 2. Train 2 safety system initiated an immediate shutdown of Train 2. The shutdowns of both hydrogen trains within a short time period caused a complete loss of manufactured hydrogen and initiated emergency procedures to safely shutdown all Hydroprocessing units. Due to the loss of power of the SCR Blowers CP-2185A/B du the first power dip, NH3 injection could not be maintained at the F-2100 Furnace (S-4472) and therefore resulted in a NOx exceedance at F-2100. The function of the SC blowers is to reduce NOx by injecting NH3 to the catalyst bed. Hydrogen Train 2 fully shut down during the second power dip at 05:12 a.m.

Corrective actions or preventative steps taken: Hydrogen Train 2 tripped offline from the second power dip soon after the loss of NH3 flow, so NH3 injection was no longer required until Hydrogen Train 2 could be restarted. Additionally, corrective actions will focus on addressing the root cause of the initiating event of the power dips to aid in the prevention of reoccurrence in the future.

Event Started: 7/23/2021 - 12:55 AM
Stopped: 7/23/2021 - 2:14 AM ☐ Ongoing Event
Discovered On: 7/26/2021

Report ID: 6880
Source Number: S4228
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On July 23, 2021 at 00:55 hours the (S-4228) 2SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant on July 23, 2021 at 02:14 hours.

Probable Cause: While shutting down SRU 2 train to perform maintenance activities per procedure, Operations followed safety best practice and deenergized the WESP prior to pulling a gas feed to prevent potentially unsafe conditions. Operations deenergized the 2SRU WESP on July 23, 2021 at 00:55 hours and the acid gas feed was pulled on July 23, 2 at 02:14 hours.

Corrective actions or preventative steps taken: While following the shutdown procedure, Operations followed process safety best practice and deenergized the WESP prior to pulling acid gas feed to aid in prevention potentially unsafe operating conditions. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to include language for safe WESP operation during SRU shutdown. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An upd application was submitted on June 14th, 2020.

Event Started: 7/25/2021 - 5:45 AM
Stopped: 7/25/2021 - 1:15 PM ☐ Ongoing Event
Discovered On: 7/26/2021

Report ID: 6892
Source Number: S6021
Abatement Device:

May have resulted in a violation of:
Permit: PC #18656 Part 3
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On July 25, 2021, when regulated material was routed to the flare for greater than 15 minutes, the average net heating value of the combustion zone (RSR BTU) at the H2 Plant Flare (S-6021) was less than 270 BTU/SCF in a 15-minute block, first, from 05:45 to 07:00 hours, then from 07:30 to 07:45 hours and from 12:45 to 13:15 hours. Breakdown RCA #08A77 was filed in association with this event.

Probable Cause: During recovery efforts from the refinery power dip on July 25, 2021, refinery operations introduced nitrogen gas per procedure to clean up sections of the Hydrogen Pla part of shutdown and start up activities. The natural gas assist control valve did not provide enough natural gas flow to maintain the net heating value above the 270 BTU/SCF limit due to a soft stop configured on the output of the natural gas assist flow controller. The control logic limited the output even though the calculated natural flow to maintain the net heating value was higher based on the BTU analyzer.

Corrective actions or preventative steps taken: As a corrective action, refinery personnel are evaluating if the soft stop on the natural gas assist control valve can be increased to allow higher rates for the assist gas syst Additionally, corrective actions will focus on addressing the root cause of the initiating event of the power dips to aid in the prevention of reoccurrence in the future.

Event Started: 7/25/2021 - 2:00 AM
Stopped: 7/25/2021 - 11:00 AM ☐ Ongoing Event
Discovered On: 7/26/2021

Report ID: 6888
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit: 11066 Part 7 (A5)
BAAQMD:
Other:

Event Description: On July 25, 2021, the FCC TR sets tripped offline at 02:00 hours. The TR sets were back in service at 03:30 hours. Greater than two TR Sets were offline from 05:13 hou to 10:29 hours. Breakdown RCA #08A77 was filed in association with this event.

Probable Cause: On July 25, 2021, the FCC TR sets tripped offline at 02:00 hours during the first Refinery power dip and greater than two TR sets tripped offline from 05:13 hours to 10: hours due to the second Refinery power dip. The Transformer Rectifier (TR) sets at the electrostatic precipitator (ESP) were de-energized by the safety instrument systen per design during the power dip. The de-energization of the ESP is done to ensure that there is no hydrocarbon carryover into the ESP that could potentially ignite and re: in a process safety event.

Corrective actions or preventative steps taken: Once the FCC unit was stabilized after the first Refinery power dip, the ESP was re-energized per procedure. Following the second Refinery power dip, the TR sets were re-energized per procedure. Chevron has applied for a revision to Permit Condition 11066, Part 7 (A5). The application was submitted to the Air District on September 2: 2020.

Event Started: 7/25/2021 - 2:00 AM
Stopped: 7/25/2021 - 3:00 AM ☐ Ongoing Event
Discovered On: 7/26/2021

Report ID: 6887
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit: PC#11066 Part 3C
BAAQMD:
Other:

Event Description: On July 25, 2021 the F-300 stack opacity exceeded its 30% 6-minute average limit during the 02:00 clock hour. Breakdown RCA #08A77 was filed in association with th event.

Probable Cause: On July 25, 2021, the F-300 stack opacity exceeded its 30% 6-minute average limit during the 02:00 clock hour due to a Refinery power dip. The Transformer Rectifier (sets at the electrostatic precipitator (ESP) were de-energized by the safety instrument systems per design during the power dip. The de-energization of the ESP during is c to ensure that there is no hydrocarbon carryover into the ESP that could potentially ignite and result in a process safety event.

Corrective actions or preventative steps taken: Once the FCC unit stabilized after the power dip, the ESP was re-energized per procedure and opacity was subsequently brought back within limits.

Event Started: 7/25/2021 - 5:00 AM
Stopped: 7/25/2021 - 8:00 AM
Ongoing Event
Discovered On: 7/26/2021

Report ID: 6885
Source Number: S4229
Abatement Device: SRU #3 Train Stack SO2

May have resulted in a violation of:
Permit:
BAAQMD: Reg. 9-1-307
Other: 40 CFR Part 60, Subpart J

Event Description: On July 25, 2021 the SRU 3 Train (S4229) exceeded its 1 hour average SO2 limit of 250ppm, dry, corrected to 0% O2 during from the 05:00 clock hour through the 07:(clock hour. Breakdown RCA #08A77 was filed in association with this event.

Probable Cause: On July 25, 2021, the SRU 3 train exceeded its 1-hour average SO2 limit of 250ppm, dry, corrected to 0% oxygen when it experienced hydrocarbon carryover due to upstream process plant upsets resulting from a Refinery-wide power dip.

Corrective actions or preventative steps taken: In response, Operations increased caustic solution flow to the SO2 absorber to aid in lowering stack SO2 emissions during the hydrocarbon carryover events. Additional corrective actions will focus on addressing the root cause of the initiating event of the power dip to aid in the prevention of reoccurrence in the future.

Event Started: 7/25/2021 - 2:00 AM
Stopped: 7/25/2021 - 3:00 AM
Ongoing Event
Discovered On: 7/26/2021

Report ID: 6884
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On July 25, 2021 at 02:00 hours the (S-4227) 1SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant on July 25, 2021 at 03:00 hours. Breakd RCA #08A77 was filed in association with this event.

Probable Cause: On July 25, 2021, the SRU 1 train WESP tripped offline when it experienced hydrocarbon carryover due to upstream process plant upsets resulting from a Refinery-wide power dip. The SRU 1 train WESP tripped offline due to increasing hydrocarbon content in the acid gas feed stream which resulted in low O2 in the tail gas unit (TGU). WESP has Fail Safe Control logic to automatically shut down during potential low O2 operating scenarios as a process safety best practice to aid in prevention of potenti unsafe conditions. The higher hydrocarbon percentage in the acid gas feed during the upstream plant upset resulted in decreased conversion of H2S to SO2 in the front er the SRU, and an increase of H2S in the tail gas to the TGU. The increased volume of H2S consumed the excess O2 at the thermal oxidizer to convert the H2S to SO2, resulting in a potential low O2 operating scenario and tripping the WESP offline.

Corrective actions or preventative steps taken: The Refinery has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to include language for SRU WESP safety trips. The applicatio was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14, 2020.

Event Started:	7/25/2021 - 2:00 AM		Report ID:	6883	May have resulted in a violation of:
Stopped:	7/25/2021 - 3:00 AM	☐ Ongoing Event	Source Number:	S4227	Permit:
Discovered On:	7/26/2021		Abatement Device:		BAAQMD: Reg. 9-1-307
					Other: 40 CFR Part 60, Subpart J

Event Description: On July 25, 2021, the SRU 1 Train (S4227) exceeded the 1-hour average SO2 limit of 250 ppm corrected to 0% O2 during the 02:00 clock hour. Breakdown RCA #08A7 was filed in association with this event.

Probable Cause: On July 25, 2021, the SRU 1 train exceeded its 1-hour average SO2 limit of 250ppm, dry, corrected to 0% oxygen when it experienced hydrocarbon carryover due to upstream process plant upsets resulting from a Refinery-wide power dip.

Corrective actions or preventative steps taken: In response, Operations increased caustic solution flow to the SO2 absorber to aid in lowering stack SO2 emissions during the hydrocarbon carryover events. Additional corrective actions will focus on addressing the root cause of the initiating event of the power dip to aid in the prevention of reoccurrence in the future.

Event Started:	7/23/2021 - 10:00 PM		Report ID:	6881	May have resulted in a violation of:
Stopped:	7/31/2021 - 1:34 AM	☐ Ongoing Event	Source Number:	S4228	Permit: PC #24136 Section 81
Discovered On:	7/26/2021		Abatement Device:		BAAQMD:
					Other:

Event Description: The SRU 2 Train thermal oxidizer operated below the minimum temperature limit, first, on July 23, 2021 from the 05:00 clock hour through the 15:00 clock hour, then, o July 24, 2021 at the 14:00 clock hour. This deviation is still ongoing. Title V Update: The SRU 2 Train thermal oxidizer temperature increased to its minimum operating temperature on July 31, 2021 at 01:34 clock hour.

Probable Cause: On July 23, 2021, acid gas feed was pulled from the SRU 2 train as part of planned maintenance activities. The SRU 2 Train (S-4228) thermal oxidizer operated below th permitted minimum temperature requirement while the hot strip/regeneration and hot standby procedures were performed. Per procedures, Operations conducted the hot strip/regeneration procedure on SRU 2 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the Thermal Oxidizer (A-0021) flame temperature lowered due to a reduced amount of H2S in the tail gas composition and resulting in the Thermal Oxidizer operating below the minimum temperature requirement.

Corrective actions or preventative steps taken: Operations immediately started making manual moves on the natural gas control valve to bring the thermal oxidizer temperature up above the minimum operating temperature. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to propose that the operation of the thermal oxidizer at temperature limit apply only when acid gas is being fed to the unit. The application was submitted to the Air District on October 25, 2019 and has been assigned applicati number 30221. An updated application was submitted on June 14, 2020.

Event Started: 7/25/2021
Stopped: 7/25/2021 Ongoing Event
Discovered On: 7/25/2021

Report ID: 6900
Source Number: S6016
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: BAAQMD Reg. 12-11-502.3.1(a)
Other:

Event Description: On July 25, 2021 it was discovered that the FCC flare sample was not collected per the requirements of BAAQMD Reg. 12-11-502.3.1(a).

Probable Cause: On July 25, 2021, flaring occurred at the FCC flare, and a flare sample collection at the autosampler was initiated at the required time. While the sample was taken at the correct time frame, it was rejected at the Refinery Lab due to the flare sample cylinder being empty.

Corrective actions or preventative steps taken: Operations inspected the flare sample station and drained a small amount of liquid in the sampling line and ensured that it was functioning properly. The flare sample stat continues to undergo regularly scheduled preventative maintenance to ensure proper operation.

Event Started: 7/15/2021 - 11:00 PM
Stopped: 7/19/2021 - 2:00 AM Ongoing Event
Discovered On: 7/19/2021

Report ID: 6870
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Part 84
BAAQMD:
Other:

Event Description: The SRU Train 1 exceeded its 3-hour average NOx, corrected to 0% O2 limit, first, from July 15, 2021 23:00 clock hour through July 16, 2021 06:00 clock hour, then fro July 16, 2021 10:00 clock hour through July 17, 2021 07:00 clock hour, then on July 18, 2021 from the 04:00 clock hour through the 13:00 clock hour and from July 18, 2021 22:00 clock hour through July 19 01:00 clock hour.

Probable Cause: From July 15, 2021 to July 17, there was no acid gas feed going to the SRU Train 1. Per procedure, Operations introduced natural gas and completed a hot strip and regeneration before shutting down 1SRU for maintenance work. The increased NOx was due to natural gas firing while following the hot strip/regeneration/hot standby procedure. During this process, Operations continued work to minimize NOx by increasing steam to the stack gas heater, manipulating the secondary air registers on the thermal oxidizer, and by minimizing thermal oxidizer temperature. On July 18, 2021 to July 19, 2021, there was no acid gas feed going to the SRU Train 1. The increased NOx was due to natural gas firing per procedure for start-up. Acid gas feed was introduced at approximately 01:00 clock hour on July 19, 2021 and the NOx emissions decreased.

Corrective actions or preventative steps taken: Operations worked to minimize the NOx by making additional process moves while on natural gas feed. Chevron has applied for a revision to Permit Condition 24136, Pa 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 7/15/2021 - 10:00 PM
Stopped: 7/19/2021 - 3:00 AM ☐ Ongoing Event
Discovered On: 7/19/2021

Report ID: 6873
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC #24136 Section 81
BAAQMD:
Other:

Event Description: The SRU 1 Train thermal oxidizer operated below the minimum temperature limit, first, from July 15, 2021 22:00 clock hour through 23:00 clock hour, then, from July 17,2021 04:00 clock hour through July 18, 2021 06:00 clock hour, and then from July 18, 2021 15:00 clock hour through July 19, 2021 02:00 clock hour.

Probable Cause: The SRU Train 1 (S-4227) thermal oxidizer operated below the permitted minimum temperature requirement while the hot strip/regeneration and hot standby procedures were performed. Per procedures, Operations conducted the hot strip/regeneration procedure on SRU1 Train displacing any possible plugging contaminants. During the process of conducting hot strip operations, the Thermal Oxidizer (A-0020) flame temperature lowered due to a reduced amount of H2S in the tail gas composition and resulting in the Thermal Oxidizer operating below the minimum temperature requirement.

Corrective actions or preventative steps taken: Process Engineering Department conducted a review of the process to ensure utilization of recommended process controls. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has been assigned application numbe 30221. An updated application was submitted on June 14th, 2020.

Event Started: 7/19/2021 - 12:53 PM
Stopped: 7/19/2021 - 1:57 PM ☐ Ongoing Event
Discovered On: 7/19/2021

Report ID: 6872
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On July 19, 2021 at 12:53 hours the (S-4227) 1SRU Train was operating with Acid Gas Feed in the system prior to energizing the WESP (A-120) at 13:57 hours.

Probable Cause: Per procedure operations followed safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 1 Train on July 19, 2021 at 12:53 hours. Once operations ensured that the SRU 1 Train was stable and operating safely the WESP was energized on July 19, 2021 at 13:57 hours.

Corrective actions or preventative steps taken: Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95 to include language for safe WESP operation during SRU startup. Tl application was submitted to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14, 20

Event Started: 7/15/2021 - 9:14 PM
Stopped: 7/15/2021 - 10:19 PM Ongoing Event
Discovered On: 7/19/2021

Report ID: 6871
Source Number: S4227
Abatement Device:

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On July 15, 2021 at 21:14 hours the (S-4227) 1SRU Train WESP was deenergized prior to pulling Acid Gas Feed from the plant on July 15, 2021 at 22:19 hours.

Probable Cause: While shutting down SRU 1 train to perform maintenance activities per procedure, Operations followed safety best practice and deenergized the WESP prior to pulling ac gas feed to prevent potentially unsafe conditions. Operations deenergized the 1SRU WESP on July 15 at 21:14 hours and the acid gas feed was pulled on July 15 at 22:19 hours.

Corrective actions or preventative steps taken: While following the shutdown procedure, Operations followed process safety best practice and deenergized the WESP prior to pulling acid gas feed to aid in prevention c potentially unsafe operating conditions. Chevron has applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submit to the Air District on October 25, 2019 and has been assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 7/13/2021
Stopped: 7/14/2021 Ongoing Event
Discovered On: 7/14/2021

Report ID: 6874
Source Number: S4042
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: 1-522.5
Other:

Event Description: On July 13, 2021, the F-550/60 NOX/O2 CEMs missed the daily calibration required by regulation 1-522.5

Probable Cause: The 5Rhenformer pulled feed to undergo catalyst regeneration. Per procedure, while the catalyst is undergoing regeneration, the furnace continues to operate. It was foun that the night shift mechanic was unaware of the requirement to calibrate the CEMS during a catalyst regeneration and inhibited the auto calibration function, which woul be required per procedure if the furnace is out of service . Unfortunately, this caused F-550/60 NOX/O2 CEMs to miss the daily calibration for July 13, 2021.

Corrective actions or preventative steps taken: Once the missed auto calibration was discovered, F-550/60 was immediately calibrated on July 14, 2021. To aid in the prevention of a reoccurrence, Maintenance management conducted a review with the analyzer crew of the incident and the environmental requirement for furnace calibration when a furnace is in service during cata regenerations.

Event Started: 7/7/2021 - 2:42 PM
Stopped: 7/7/2021 - 3:32 PM ☐ Ongoing Event
Discovered On: 7/8/2021

Report ID: 6861
Source Number: S4227
Abatement Device: SRU #1 Train WESP

May have resulted in a violation of:
Permit: PC#24136 Section(s) #83 & #88
BAAQMD:
Other:

Event Description: On July 7, 2021 at 14:42 hours the (S-4227) 1SRU Train was operating with Acid Gas Feed in the system prior to energizing the WESP (A-120) at 15:32 hours.

Probable Cause: Per procedure operations followed safety best practice and introduced acid gas feed into the SRU 1 Train prior to energizing the WESP to prevent potentially unsafe conditions. Acid gas feed was introduced into SRU 1 Train on July 7, 2021 at 14:42 hours. Once operations ensured that the SRU 1 Train was stable and operating safely WESP was energized on July 7, 2021 at 15:32 hours.

Corrective actions or preventative steps taken: While following startup procedure, Operations followed process safety best practice and introduced acid gas feed into the SRU 2 Train prior to energizing the WESP to ai prevention of potentially unsafe operating conditions. Once Operations ensured that the SRU 1 Train was stable and operating safely, the WESP was energized. Chevron applied for a revision to Permit Condition 24136, Parts 81, 82, 83, 84, 87, 88, 92 and 95. The application was submitted to the Air District on October 25, 2019 and has be assigned application number 30221. An updated application was submitted on June 14th, 2020.

Event Started: 7/1/2021
Stopped: 7/1/2021 ☐ Ongoing Event
Discovered On: 7/1/2021

Report ID: 6862
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg 1-522.4
Other:

Event Description: The Refinery submitted a late inoperative monitor notification (RCA 08A36) on July 6, 2021 per BAAQMD Reg 1-522.4. On June 25, 2021 at the 06:05 clock hour, the F V-65 flue gas O2 analyzer became inoperative. The analyzer was back in service on July 6, 2021 at the 09:11 clock hour.

Probable Cause: The inoperative monitor notification was submitted late due to an inadvertent oversight in identification of the monitor's inoperative status. On June 25, 2021, initial revie of data by Refinery Compliance personnel showed that the FCC V-65 flue gas O2 analyzer passed its daily validation, indicating proper operation. The analyzer's oxygen reading was also observed to be higher than the stack's oxygen reading. Consequently, Refinery Compliance personnel requested the Analyzer team confirm proper opera while the monitor continued to pass its daily validations over the weekend. On June 30, 2021, the Analyzer team identified plugging at the oxygen analyzer probe, indicat inoperative status.

Corrective actions or preventative steps taken: The inoperative monitor notification was submitted upon identification of inoperative status. Repairs to the analyzer were completed, and the analyzer was placed back in service July 6, 2021. Additionally, Refinery Compliance personnel reviewed the process used by compliance personnel to identify inoperative monitors for improvement opportunities. As a result, additional clarifications will be added to the procedure for V-65 oxygen analyzer on how to determine inoperative monitor status to aid in the prevention of a reoccurrence.

Event Started: 2/19/2020

Stopped:

✓ Ongoing Event

Discovered On: 5/13/2021

Report ID: 6814

Source Number: S32103

Abatement Device:

May have resulted in a violation of:

Permit:

BAAQMD: Reg. 2-1-220

Other: Title 13, Division 3, Chapter 9, Article 5. Section 2451 (b)(2)

Event Description: On May 13, 2021, it was discovered that a portable air compressor greater than 50 horsepower has been onsite for more than 12 consecutive months at the Cogen plant.

Probable Cause: During an internal review of the portable engine program, it was discovered that the Refinery inadvertently did not include this Cogen compressor as part of the ongoing deviation filed in February 2020. Omission of the compressor was an oversight as there is full intention of permitting the compressor along with the other permitted compressors onsite. This Cogen compressor is included in the Refinery's application submitted to the BAAQMD on March 2020. The omission can be attributed to hastil gathering all the relevant data following the discovery of the compliance gap within 10 days of discovery. This compressor has been emergency standby service starting February 2019.

Corrective actions or preventative steps taken: Upon discovery of the omission of the Cogen compressor, Chevron filed a separate deviation within 10-days of discovery. Internal records have been updated to reflect th engine's equipment number, time onsite and when it has been removed from site. This Cogen compressor has been added to fuel and hour tracking documents to ensure permit conditions can be adhered to accordingly. This Cogen compressor is included in the Refinery's application submitted to the BAAQMD on March 2020.

Event Started: 10/31/2019

Stopped:

✓ Ongoing Event

Discovered On: 1/31/2020

Report ID: 4385

Source Number: S3129

Abatement Device:

May have resulted in a violation of:

Permit: PC J.2

BAAQMD:

Other:

Event Description: The throughput limits for T3129 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 4,970,210 bbls. for S-3129. As of October 20 the actual annual throughput limit of S-3129 for the past twelve months was 5,269,007 bbls. Accordingly, based on data for the months of November 2018 through Octob 2019, Chevron determined that S-3129 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition J.2 of th refinery's Tile V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this perm condition.

Event Started: 8/31/2019

Stopped:

✓ Ongoing Event

Discovered On: 1/31/2020

Report ID: 4386

Source Number: S0991

Abatement Device:

May have resulted in a violation of:

Permit: PC J.2

BAAQMD:

Other:

Event Description: The throughput limits for T991 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevron sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 5,342,125 bbls. for S-991. As of August 201' the actual annual throughput limit of S-991 for the past twelve months was 5,383,208 bbls. Accordingly, based on data for the months of September 2018, through Augus 2019, Chevron determined that S-991 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition J.2 of the refinery's Tile V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this pern condition.

Event Started:	2/27/2019		
Stopped:		✓ Ongoing Event	
Discovered On:	12/5/2019		

Report ID:	4145
Source Number:	S32103
Abatement Device:	

May have resulted in a violation of:

Permit:	
BAAQMD:	Reg. 2-1-220
Other:	Title 13, Division 3, Chapter 9, Article 5. Section

Event Description:	On December 5, 2019, it was discovered that portable air compressors or generators greater than 50 horsepower have been onsite and hooked up for service for more than consecutive months at the Cracking FCC Air Compressors. In May 2021, it was discovered that one air compressor at the SRU was onsite and in service for more than 12 consecutive months. This deviates from Title 13, Division 3, Chapter 9, Article 5, Section 2451, (b)(2), and Reg. 2-1-22
Probable Cause:	While conducting a field audit of portable diesel engine emission generators of 50hp or greater it was discovered that four diesel engine portable air compressors have res at the FCC and SRU as stationary sources for more than one year without the required permitting. Typically, at least 1 portable air compressor is hooked up "on standby" the FCC Air Compressors to help support to refinery air needs. The compressors are leased equipment from third party contractor and rotated periodically to have maintenance performed by the contracted owner.
Corrective actions or preventative steps taken:	Title V deviation submitted to the BAAQMD upon discovery. Internal investigation conducted to review management controls for compliance and develop sustainable mitigations to aid in the prevention of future occurrences. Reviewing recommendations from investigation to create a procedure to better manage tracking and compliance including permitting guidance. The Refinery submitted permit applications on March 24, 2020 and responded to a Request for Additional Information on May 18, 2020.

Event Started: 1/17/2017 - 9:07 AM
Stopped:
✓ Ongoing Event
Discovered On: 1/17/2017

Report ID: 4348
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other: 40 CFR 63.1564

Event Description: On January 17, 2017 from 0907 hours to 1421 hours, the FCC (S-4285) operated above its limit of 20% opacity for a consecutive 3-hour period. This indicated excess occurred during the Refinery's (BAAQMD 6-5) Ammonia Optimization and Demonstration Testing Protocol. Per the agreement made on April 12, 2016 between the Refinery and the BAAQMD, the test protocol is conducted under the Air District's Trial Testing Policy and this notification is being submitted to capture all potential deviations as a result of implementing the testing protocol. UPDATE: On June 27, 2017, the BAAQMD agreed to allow the Chevron Richmond Refinery to continue trial testing under the Refinery's Ammonia Optimization and Demonstration Testing Protocol. Per the agreement, the BAAAQMD will extend enforcement relief and permit t Refinery to operate outside the requirements of the Title V Permit Condition 11066 #3A, 3B, 3C, 7A, and 7A5 (and potentially other parts of the permit condition) until issuance of the final ammonia emissions limit. The Refinery will continue to capture all potential deviations as a result of implementing the testing protocol.

Probable Cause: Due to the ongoing FCC stack ammonia optimization testing protocol, the Refinery deviated from 40 CFR 63.1564 on the following dates. January 2017 • January 17, 20 from 0907 hours to 1421 hours February 2017 • None March 2017 • None April 2017 • None May 2017 • None June 2017 • None July 2017 • None August 2017 • None September 2017 • None October 2017 • None November 2017 • None December 2017 • None January 2018 • None February 2018 • None March 2018 • None April 2018 None May 2018 • None June 2018 • None July 2018 • None August 2018 • None September 2018 • None October 2018 • None November 2018 • None December 2018 • None January 2019 • None February 2019 • None March 2019 • None April 2019 • None May 2019 • None June 2019 • None July 2019 • None August 2019 • None September 2019 • None October 2019 • None November 2019 • None December 2019 None January 2020 None February 2020 None March 2020 None April 2020 None May 2020 None June 2020 None JULY 2020 None AUGUST 2020 None SEPTEMBER 2020 None OCTOBER 2020 None November 2020 None December 2020 None January 2021 None February 2021 None March 2021 None April 2021 None May 2021 None June 2021 None July 2021 None August 2021 None September 2021 None October 2021 None November 2021 None December 2021 None

Corrective actions or preventative steps taken: FCC NH3 Optimization, Regulation 6-5, trial testing is being conducted and still ongoing.

Event Started: 5/20/2016 - 7:00 AM
Stopped:
✓ Ongoing Event
Discovered On: 5/23/2016

Report ID: 4347
Source Number: S4285
Abatement Device:

May have resulted in a violation of:
Permit: PC #11066 part 7A5
BAAQMD:
Other:

Event Description: Beginning on May 20, 2016 the FCC electrostatic precipitator (ESP) has begun operating intermittently in a state of deviation with Title V permit condition 11066 part 7(following the commencement of the Refinery's ammonia optimization and demonstration testing protocol per Regulation 6 Rule 5. Per the Air District's approval and direction given on April 12, 2016, the test protocol is conducted under the Air District's Trial Testing Policy and this report is being submitted to capture all potential deviations with the above mentioned permit condition as a result of implementing the testing protocol. UPDATE: On June 27, 2017, the BAAQMD agreed to allow the Chevron Richmond Refinery to continue trial testing under the Refinery's Ammonia Optimization and Demonstration Testing Protocol. Per the agreement, the BAAAQM will extend enforcement relief and permit the Refinery to operate outside the requirements of the Title V Permit Condition 11066 #3A, 3B, 3C, 7A, and 7A5 (and potenti other parts of the permit condition) until issuance of the final ammonia emissions limit. The Refinery will continue to capture all potential deviations as a result of implementing the testing protocol.

Probable Cause: Due to the ongoing FCC stack ammonia optimization testing protocol, the Refinery deviated from BAAQMD permit condition #11066 part 7A5 on the following dates. M May 20, 2016 at 0700 hrs to May 21, 2016 at 0300 hrs•May 21, 2016 at 0600 hrs to May 23, 2016 at 0700 hrs•May 25, 2016 at 20:00 hrs to May 26, 2016 at 00:00 hrs•M 26, 2016 at 18:00 hrs to May 27, 2016 at 00:00 hrs•May 27, 2016 at 08:00 hrs to May 27, 2016 at 10:00 hrs•May 28, 2016 at 09:00 hrs to May 28, 2016 at 11:00 hrs•May 2016 at 21:00 hrs to May 28, 2016 at 22:00 hrs•May 31, 2016 at 21:00 hrs to May 31, 2016 at 22:00 hrs June: •June 6, 2016 at 10:00 hrs to June 6, 2016 at 14:00 hrs•Junc 2016 at 20:00 hrs to June 10, 2016 at 21:00 hrs•June 14, 2016 at 22:00 hrs to June 15, 2016 at 01:00 hrs•June 15, 2016 at 07:00 hrs to June 15, 2016 at 08:00 hrs•June 15, 2016 at 12:00 hrs to June 15, 2016 at 19:00 hrs•June 15, 2016 at 22:00 hrs to June 15, 2016 at 23:00 hrs•June 16, 2016 at 09:00 hrs to June 17, 2016 at 08:00 hrs•June 17, 2016 at 20:00 hrs to June 18, 2016 at 09:00 hrs•June 18, 2016 at 22:00 hrs to June 19, 2016 at 01:00 hrs•June 20, 2016 at 17:00 hrs to June 25, 2016 at 12:00 hrs•June 25, 2016 at 20:00 hrs to June 26, 2016 at 11:00 hrs•June 26, 2016 at 18:00 hrs to June 26, 2016 at 21:00 hrs• June 27, 2016 at 03:00 hrs to June 27, 2016 at 04:00 hrs•June 27 2016 at 05:00 hrs to June 27, 2016 at 11:00 hrs•June 28, 2016 at 05:00 hrs to June 28, 2016 at 08:00 hrs•June 28, 2016 at 20:00 hrs to June 29, 2016 at 02:00 hrs•June 29, 2016 at 19:00 hrs to June 30, 2016 at 12:00 hrs•June 30, 2016 at 19:00 hrs to July 1, 2016 at 00:00 hrs July: •Jul 1, 2016 at 00:00 hrs to Jul 1, 2016 at 02:00 hrs•July 2, 20 at 09:00 hrs to July 2, 2016 at 10:00 hrs•July 3, 2016 at 02:00 hrs to July 3, 2016 at 15:00 hrs•July 4, 2016 at 08:00 hrs to July 4, 2016 at 16:00 hrs•July 4, 2016 at 22:00 l to July 5, 2016 at 00:00 hrs•July 5, 2016 at 00:00 hrs to July 5, 2016 at 09:00 hrs•July 6, 2016 at 09:00 hrs to July 6, 2016 at 15:00 hrs •July 6, 2016 at 18:00 hrs to July 7 2016 at 00:00 hrs•July 7, 2016 at 00:00 hrs to July 7, 2016 at 08:00 hrs•July 7, 2016 at 10:00 hrs to July 7, 2016 at 13:00 hrs August: •Aug 5, 2016 at 06:00 hrs to Aug 5, 2016 at 07:00 hrs•Aug 5, 2016 at 10:00 hrs to Aug 5, 2016 at 14:00 hrs•Aug 8, 2016 at 12:00 hrs to Aug 8, 2016 at 16:00 hrs•Aug 12, 2016 at 21:00 hrs to Aug 12,2016 a 22:00 hrs•Aug 16, 2016 at 23:00 hrs to Aug 17, 2016 at 00:00 hrs•Aug 17, 2016 at 22:00 hrs to Aug 18, 2016 at 00:00 hrs•Aug 22, 2016 at 11:00 hrs to Aug 18, 2016 at 13:00 hrs•Aug 23, 2016 at 20:00 hrs to Aug 23, 2016 at 21:00 hrs•Aug 26, 2016 at 12:00 hrs to Aug 26, 2016 at 13:00 hrs•Aug 26, 2016 at 20:00 hrs to Aug 26, 2016 at 21:00 hrs•Aug 29, 2016 at 09:00 hrs to Aug 29, 2016 at 12:00 hrs •Aug 29, 2016 at 13:00 hrs to Aug 29, 2016 at 15:00 hrs•Aug 30, 2016 at 17:00 hrs to Aug 30, 2016 at 23:00 hrs •Aug 31, 2016 at 07:00 hrs to Sept 1, 2016 at 00:00 hrs September: •Sep 1, 2016 at 00:00 hrs to Sep 1, 2016 at 02:00 hrs•Sep 1, 2016 at 03:00 hrs to Sep 1, 201 07:00 hrs•Sep 1, 2016 at 08:00 hrs to Sep 1, 2016 at 22:00 hrs•Sep 3, 2016 at 17:00 hrs to Sep 5, 2016 at 21:00 hrs•Sep 6, 2016 at 03:00 hrs to Sep 7, 2016 at 20:00 hrs•S 8, 2016 at 06:00 hrs to Sep 8, 2016 at 21:00 hrs•Sep 9, 2016 at 00:00 hrs to Sep 9, 2016 at 21:00 hrs •Sep 10, 2016 at 00:00 hrs to Sep, 2016 at 17:00 hrs•Sep 18, 2016 at 08:00 hrs to Sep 18, 2016 at 15:00 hrs•Sep 20, 2016 at 02:00 hrs to Sept 20, 2016 at 14:00 hrs•Sep 20, 2016 at 20:00 hrs to Sep 21, 2016 at 15:00 hrs•Sep 21, 2016 at 21:(hrs to Sep 24, 2016 at 00:00 hrs•Sep 24, 2016 at 03:00 hrs to Sep 25, 2016 at 21:00 hrs•Sep 26, 2016 at 02:00 hrs to Sep 27, 2016 at 16:00 hrs•Sep 27, 2016 at 19:00 hrs t Sep 30, 2016 at 04:00 hrs•Sep 30, 2016 at 05:00 hrs to Sep 30, 2016 at 10:00 hrs •Sep 30, 2016 at 16:00 hrs to Oct 1, 2016 at 00:00 hrs October: •Oct 1, 2016 at 00:00 hrs Oct 4, 2016 at 22:00 hrs•Oct 4, 2016 at 23:00 hrs to Oct 7, 2016 at 21:00 hrs• Oct 8, 2016 at 05:00 hrs to Oct13, 2016 at 19:00 hrs•Oct 13, 2016 at 23:00 hrs to Oct 15, 20 at 07:00 hrs•Oct 15, 2016 at 09:00 hrs to Oct 17, 2016 at 01:00 hrs•Oct 17, 2016 at 09:00 hrs to Oct 21, 2016 at 18:00 hrs•Oct 22, 2016 at 00:00 hrs to Oct 22, 2016 at 21: hrs•Oct 23, 2016 at 00:00 hrs to Oct 23, 2016 at 06:00 hrs•Oct 23, 2016 at 10:00 hrs to Oct 24, 2016 at 20:00 hrs •Oct 24, 2016 at 22:00 hrs to Oct 25, 2016 at 20:00 hrs•(25, 2016 at 22:00 hrs to Oct 26, 2016 at 19:00 hrs•Oct 26, 2016 at 21:00 hrs to Oct 30, 2016 at 00:00 hrs•Oct30, 2016 at 03:00 hrs to Oct 31, 2016 at 19:00 hrs November •Nov 1, 2016 at 03:00 hours to Nov 2, 2016 at 10:00 hours•Nov 2, 2016 at 13:00 hours to Novr 11, 2016 at 19:00 hours •Nov 11, 2016 at 20:00 hours to Nov 22, 2016 at 09:00 hours•Nov 22, 2016 at 19:00 hours to Dec1, 2016 at 00:00 hours December: •Dec 1, 2016 at 00:00 hrs to Dec 6, 2016 at 08:00 hrs•Dec 6, 2016 at 10:00 hrs to Dec 2016 at 08:00 hrs•Dec 7, 2016 at 10:00 hrs to Dec 7, 2016 at 22:00 hrs•Dec 8, 2016 at 07:00 hrs to Dec 9, 2016 at 16:00 hrs•Dec 10, 2016 at 00:00 hrs to Dec 10, 2016 at 17:00 hrs•Dec 10, 2016 at 20:00 hrs to Dec 16, 2016 at 07:00 hrs•Dec 16, 2016 at 08:00 hrs to Dec 18, 2016 at 02:00 hrs•Dec 18, 2016 at 05:00 hrs to Jan 1, 2016 at 00:0(hrs January 2017: •Jan 1, 2017 at 00:00 hours to Jan 26, 2017 at 20:00 hours•Jan 27, 2017 at 00:00 hours to Jan 31, 2017 at 12:00 hours•Jan 31, 2017 at 14:00 hours to Jar 31, 2017 at 16:00 hours•Jan 31, 2017 at 19:00 hours to Feb 1, 2017 at 00:00 hours February 2017: •Feb 1, 2017 at 00:00 hours to Feb 26, 2017 at 19:00 hours• Feb 27, 20 at 00:00 hours to Feb 28, 2017 at 23:00 hours March 2017: •Mar 1, 2017 at 00:00 hours to Mar 2, 2017 at 01:00•Mar 2, 2017 at 06:00 hours to Mar 4, 2017 at 13:00•Mar 2017 at 15:00 hours to Mar 10, 2017 at 00:00•Mar 10, 2017 at 06:00 hours to Mar 10, 2017 at 22:00•Mar 11, 2017 at 00:00 hours to Mar 25, 2017 at 05:00•Mar 25, 2017 10:00 hours to Mar 25, 2017 at 12:00•Mar 25, 2017 at 15:00 hours to Mar 25, 2017 at 16:00•Mar 25, 2017 at 19:00 hours to Mar 26, 2017 at 01:00•Mar 26, 2017 at 10:00 hours to Mar 26, 2017 at 11:00 •Mar 26, 2017 at 12:00 hours to Mar 26, 2017 at 15:00•Mar 26, 2017 at 21:00 hours to Mar 28, 2017 at 17:00•Mar 28, 2017 at 18:00 hours Mar 31, 2017 at 22:00 April 2017: •April 1, 2017 at 00:00 hours to Apr 1, 2017 at 03:00•April 1, 2017 at 07:00 hours to Apr 1, 2017 at 20:00•April 1, 2017 at 22:00 hours Apr 2, 2017 at 21:00•Apr 3, 2017 at 01:00 hours to Apr 3, 2017 at 18:00•Apr 4, 2017 at 09:00 hours to Apr 6, 2017 at 16:00• Apr 6, 2017 at 19:00 hours to Apr 9, 2017 at

22:00•Apr 10, 2017 at 01:00 hours to Apr 10, 2017 at 18:00•Apr 10, 2017 at 22:00 hours to Apr 13, 2017 at 22:00•Apr 14, 2017 at 04:00 hours to Apr 14, 2017 at 20:00•
15, 2017 at 00:00 hours to Apr 16, 2017 at 11:00•Apr 16, 2017 at 14:00 hours to Apr 19, 2017 at 16:00•Apr 19, 2017 at 20:00 hours to Apr 20, 2017 at 09:00•Apr 20, 201
10:00 hours to Apr 24, 2017 at 06:00•Apr 24, 2017 at 08:00 hours to Apr 26, 2017 at 18:00•Apr 26, 2017 at 20:00 hours to Apr 27, 2017 at 17:00• Apr 27, 2017 at 21:00
hours to Apr 29, 2017 at 21:00•Apr 29, 2017 at 23:00 hours to May 1, 2017 at 00:00 May 2017 •May 1, 2017 at 00:00 hours to May 7, 2017 at 19:00•May 7, 2017 at 23:0
hours to May 9, 2017 at 19:00•May 9, 2017 at 22:00 hours to May 10, 2017 at 13:00•May 10, 2017 at 14:00 hours to May 10, 2017 at 21:00•May 12, 2017 at 10:00 hours
May 13, 2017 at 18:00•May 13, 2017 at 21:00 hours to May 16, 2017 at 00:00•May 16, 2017 at 10:00 hours to May 16, 2017 at 14:00•May 16, 2017 at 18:00 hours to Ma
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Reference RCA # 07L7 submitted for March 19, 2019 10:18 hours to March 19, 2019 at 10:29 hours•March 20, 2019 at 11:00 hours to March 21, 2019 at 10:00 hours•March 21, 2019 at 18:00 h to April 1, 2019 at 00:00 April 2019 •April 1, 2019 at 00:00 hours to May 1, 2019 at 00:00 hours May 2019 •May 1, 2019 at 00:00 hours to May 6, 2019 at 10:00 hours• M 6, 2019 at 11:00 hours to May 6, 2019 at 17:00 hours•May 6, 2019 at 19:00 hours to May 7, 2019 at 13:00 hours•May 7, 2019 at 19:00 hours to May 8, 2019 at 00:00 hours•May 8, 2019 at 09:00 hours to May 8, 2019 at 11:00 hours•May 8, 2019 at 12:00 hours to June 1, 2019 at 00:00 hours June 2019 •June 1, 2019 at 00:00 hours to Jul 2019 00:00 hours July 2019 •July 1, 2019 at 00:00 hours to July 15, 2019 at 11:00 hours• July 15, 2019 at 12:00 hours to July 18, 2019 at 05:00 hours•July 18, 2019 at 07 hours to July 18, 2019 at 12:00 hours•July 19, 2019 at 07:00 hours to July 20, 2019 at 10:00 hours•July 20, 2019 at 11:00 hours to July 27, 2019 at 06:00 hours•July 27, 2 at 14:00 hours to July 27, 2019 at 16:00 hours•July 27, 2019 at 19:00 hours to July 28, 2019 at 08:00 hours•July 28, 2019 at 09:00 hours to July 28, 2019 at 10:00 hours•J 29, 2019 at 07:00 hours to August 1, 2019 at 00:00 hours August 2019 •August 1, 2019 at 00:00 hours to August 11, 2019 at 14:00 hours•August 11, 2019 at 22:00 hours August 11, 2019 at 23:00 hours•August 13, 2019 at 06:00 hours to August 13, 2019 at 08:00 hours• August 13, 2019 at 20:00 hours to September 1, 2019 00:00 hours September 2019 September 1, 2019 at 00:00 hours to October 1, 2019 at 00:00 hours October 2019 October 1, 2019 at 00:00 hours to November 1, 2019 at 00:00 hours November 2019 Nov 1, 2019 at 0000h to Dec 1, 2019 at 0000h December 2019 Dec 1, 2019 at 0000h to Jan 1, 2020 at 0000h January 2020 Jan 1, 2020 at 0000h to Febru 1, 2020 at 0000h February 2020 Feb 1, 2020 at 0000h to Mar 1, 2020 at 0000h March 2020 Mar 1, 2020 at 0000h to April 1, 2020 at 0000h April 2020 April 1, 2020 at 0000h to May 1, 2020 at 0000h May 2020 May 1, 2020 at 00:00 hours to May 6, 2020 at 15:00 hours•May 6, 2020 at 18:00 hours to May 6, 2020 at 19:00 hours• May 6, 2020 at 20:00 hours to May 6, 2020 at 23:00 hours•May 7, 2020 at 01:00 hours to May 7, 2020 at 10:00 hours• May 7, 2020 at 17:00 hours to May 7, 2020 at 19:00 hours•May 8, 2020 at 00:00 hours to May 8, 2020 at 01:00 hours •May 8, 2020 at 02:00 hours to June 1, 2020 at 00:00 hours June 2020 June 1, 2020 at 00:00 hours to Jul 2020 at 00:00 hours July 2020 July 1, 2020 at 00:00 hours to July 8, 2020 at 18:00 hours•July 9, 2020 at 08:00 hours to July 9, 2020 at 11:00 hours•July 10, 2020 at 18:00 hours to August 1, 2020 at 00:00 hours August 2020 Aug 1, 2020 at 0000h to Aug 1, 2020 at 0000h September 2020 Sept 1, 2020 at 0000h to Sept 15, 2020 at 0500h• Sep 15, 2020 at 0900h to Oct 1, 2020 at 0000h October 2020 Oct 1, 2020 at 0000h to Oct 2, 2020 at 1600h – ESP S/D due to planned FCC Turnaround November 2020 Nov 0 2020 at 0000h to Nov 30, 2020 at 0000h - ESP S/D due to planned FCC Turnaround December 2020 Dec 01, 2020 at 0000h to Dec 09, 2020 at 1459h - ESP S/D due to planned FCC Turnaround•Dec 9, 2020 at 1500h to Dec 10, 2020 at 0200h•Dec 13, 2020 at 2000h and Jan 01, 2021 at 0000h January 2021 Jan 1, 2021 at 0000h to Jan 19, 2021 at 0300h•Jan 19, 2021 at 0400h to Jan 22, 2021 at 0200h – FCC process unit upset; Reference RCA # 07X77•Jan 22, 2021 at 0200h to Feb 1, 2021 at 0000h Februar 2021 Feb 1, 2021 at 0000h to Mar 1, 2021 at 0000h March 2021 Mar 1, 2021 at 0000h to Mar 2, 2021 at 1200h•Mar 5, 2021 at 1300h to Mar 5, 2021 at 1900h Reference RCA # 07Y68 April 2021 • The Refinery did not deviate from BAAQMD permit condition #11066 part 7A5 in the month of April. May 2021 • May 2, 2021 at 22:00 hou to May 3, 2021 at 00:00 hours June 2021 • The Refinery did not deviate from BAAQMD permit condition #11066 part 7A5 in the month of June. July 2021 •July 17, 202 10:00 hours to July 17, 2021 at 11:00 hours.•July 25, 2021 at 02:00 hours to July 25, 2021 at 11:00 hours. Reference Breakdown #08A77 August 2021 Aug 8, 2021 at 09(to Aug 8, 2021 at 1000h•Aug 9, 2021 at 0800h to Aug 9, 2021 at 1400h.• Aug 17, 2021 at 0800h to Aug 17, 2021 at 1100h•Aug 18, 2021 at 0900h to Aug 18, 2021 at 1000h•Aug 19, 2021 at 0900h to Aug 19, 2021 at 1000h•Aug 21, 2021 at 2200h to Aug 22, 2021 at 0000h•Aug 22, 2021 at 2000h to Aug 23, 2021 at 0200h•Aug 24, 202 1200h to Aug 24, 2021 at 1800h•Aug 24, 2021 at 2200h to Aug 25, 2021 at 2200h•Aug 26, 2021 at 0800h to Aug 26, 2021 at 1100h•Aug 27, 2021 at 0800h to Aug 27, 2(at 1200h•Aug 28, 2021 at 0900h to Aug 28, 2021 at 1200h•Aug 29, 2021 at 0800h to Aug 29, 2021 at 1600h September 2021 •Sept 1, 2021 at 2000h to Sept 2, 2021 at 0300h• Sept 2, 2021 at 1800h to Sept 4, 2021 at 0300h•Sept 4, 2021 at 0800h to Sept 6, 2021 at 0100h•Sept 6, 2021 at 0800h to Sept 6, 2021 at 1000h•Sept 6, 2021 at 15(to Sept 7, 2021 at 0900h•Sept 8, 2021 at 0500h to Sept 8, 2021 at 1400h•Sept 11, 2021 at 0700h to Sept 11, 2021 at 1200h•Sept 13, 2021 at 0700h to Sept 13, 2021 at 1600h•Sept 14, 2021 at 0200h to Sept 17, 2021 at 1900h•Sept 18, 2021 at 0800h to Sept 18, 2021 at 1700h•Sept 19, 2021 at 0700h to Sept 20, 2021 at 0600h•Sept 20, 202 at 1000h to Sept 21, 2021 at 0700h•Sept 21, 2021 at 1300h to Sept 21, 2021 at 2300h•Sept 22, 2021 at 0600h to Sept 22, 2021 at 1000h•Sept 22, 2021 at 1600h to Sept 23 2021 at 1500h•Sept 24, 2021 at 1000h to Sept 24, 2021 at 0300h•Sept 25, 2021 at 0200h to Sept 25, 2021 at 1400h•Sept 25, 2021 at 2000h to Sept 26, 2021 at 0400h•Sept 26, 2021 at 1300h to Sept 27, 2021 at 0500h•Sept 28, 2021 at 0200h to Sept 29, 2021 at 0800h•Sept 29, 2021 at 1400h to Sept 30, 2021 at 0100h•Sept 30, 2021 at 1400h t Oct 1, 2021 at 0000h October 2021 •Oct 1, 2021 at 00:00 hours to Oct 1, 2021 at 01:00 hours•Oct1, 2021 at 07:00 hours to Oct 1, 2021 at 17:00 hours.•Oct 2, 2021 at 16:(hours to Oct 2, 2021 at 17:00 hours•Oct 3, 2021 at 07:00 hours to Oct 3, 2021 at 08:00 hours•Oct 3, 2021 at 14:00 hours to Oct 4, 2021 at 03:00 hours•Oct 4, 2021 at 08:0 hours to Oct 4, 2021 at 23:00 hours•Oct 6, 2021 at 16:00 hours to Oct 6, 2021 at 20:00 hours•Oct 8, 2021 at 16:00 hours to Octr 8, 2021 at 19:00 hours•Oct 11, 2021 at 20 hours to Oct 11, 2021 at 23:00 hours•Oct 12, 2021 at 07:00 hours to Oct 12, 2021 at 19:00 hours•October 12, 2021 at 23:00 hours to Oct 13, 2021 at 02:00 hours•Octr 13, 2021 at 07:00 hours to Oct 13, 2021 at 10:00 hours. •Oct 13, 2021 at 20:00 hours to Oct 14, 2021 at 00:00 hours•Oct 14, 2021 at 10:00 hours to Oct 14, 2021 at 20:00 hours•Oct17, 2021 at 09:00 hours to Oct 17, 2021 at 10:00 hours•Oct 24, 2021 at 08:00 hours to October 24, 2021 at 10:00 hours•Oct 24, 2021 at 10:00 hours to Nov 1, 2(

at 00:00 - ESP S/D due to unplanned FCC Shutdown. November 2021 •Nov 1 at 0000h to Nov 11 at 0600h - ESP S/D due to unplanned FCC Shutdown.•Nov 11 at 0700l Nov 11 at 0900h December 2021 •Dec 13 at 0400h to Dec 15 at 1500h - ESP S/D due to unplanned FCC Shutdown•Dec 15 at 1500h to Dec 18 at 0900h •Dec 18 at 1000 Dec 22 at 2200h•Dec 24 at 0700h to 1500h•Dec 27 at 0200h to Jan 1, 2022 at 0000h

Corrective actions or preventative steps taken: FCC NH3 Optimization, Reg 6-5, trial testing is being conducted and still ongoing.

Event Started: 6/30/2008 - 11:59 PM
Stopped: ✓ Ongoing Event
Discovered On: 7/7/2008

Report ID: 4345
Source Number: S1504
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD:
Other:

Event Description: The throughput limits for T1504 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevr sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 602,132 bbls. for S-1504. As of June 30, 2008, the actual annual throughput limit of S-1504 for the past twelve months was 609,294 bbls. Accordingly, based on data for the months of July 2007 through June 2008, on July 7, 2008, Chevron determined that S-1504 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Stand Condition J.2 of the refinery's Tile V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes o -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this perm condition.

Event Started:	4/30/2008 - 11:59 PM		
Stopped:		✓ Ongoing Event	
Discovered On:	5/1/2008		

Report ID:	4344
Source Number:	S3072
Abatement Device:	

May have resulted in a violation of:

Permit:	Title V Permit Table II.A.3
BAAQMD:	
Other:	

Event Description: The throughput limits for T3072 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevr sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 2,979,200 bbl. for S-3072. As c April 30, 2008 the actual throughput of S-3072 for the past 12 months was 2,987,253 bbl. Accordingly, based on data for the months May, 2007 through April 2008, on M 1, 2008, Chevron determined that S-3072 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition I.J.2 the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is not a indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposed only. We are reporting this exceedance consistent with this perr condition.

Event Started: 4/1/2008

Stopped:

✓ Ongoing Event

Discovered On: 4/1/2008

Report ID: 4343

Source Number: S3104

Abatement Device:

May have resulted in a violation of:

Permit:

BAAQMD:

Other:

Event Description: The throughput limits for T3104 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevr sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 22,676,000 bbls. for S-3104. A March 31, 2007, the actual throughput of S-3104 for the past 12 months was 22,752,328 bbls. Accordingly, based on data for the months of April 2007 through March 20 on April 1, 2008, Chevron determined that S-3104 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condit J.2 of the refinery's Tile V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this perm condition.

Event Started:	3/31/2007 - 11:59 PM		
Stopped:		✓ Ongoing Event	
Discovered On:	4/2/2007		

Report ID:	4342
Source Number:	S3071
Abatement Device:	

May have resulted in a violation of:

Permit:	Title V Permit Table II.A.3
BAAQMD:	
Other:	

Event Description: The throughput limits for T3071 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1. 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevr sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 8,560,287 bbl. for S-3071. As c March 31, 2007 the actual throughput of S-3071 for the past 12 months was 8,776,309 bbl. Accordingly, based on data for the months April, 2006 through March 2007, o April 2, 2006, Chevron determined that S-3071 exceeded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition I.J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this perm condition.

Event Started: 11/23/2006 - 3:00 AM
Stopped: ✓ Ongoing Event
Discovered On: 12/4/2006

Report ID: 4341
Source Number: S1688
Abatement Device:

May have resulted in a violation of:
Permit: Title V Permit Table II.A.3
BAAQMD:
Other:

Event Description: The throughput limits for T1688 contained in Table II A 3 (Grandfathered Sources) of the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance with the annual throughput limits listed in Table II A 3, the District directed that Chevr sum the total throughput for each of the twelve months preceding the calculation date. Table II A 3 includes an annual throughput limit of 5,059,000 bbl. for S-1688. As o December 1, 2006 the actual throughput of S-1688 for the past 12 months was 5,206,861 bbl. Accordingly, based on data for the months December 2005 through Novemb 2006, on December 1, 2006, Chevron determined that S-1688 exceded its annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standa Condition I.J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The grandfathered limit was established using the highest documented throughput for the tank which was not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications.

Corrective actions or preventative steps taken: According to Standard Condition J-2 of our Title V permit, this throughput limit is for reporting purposes only. We are reporting this exceedance consistent with this perm condition.

Event Started: 7/1/2005

Stopped:

✓ Ongoing Event

Discovered On: 7/1/2005

Report ID: 4340

Source Number: S1491

Abatement Device:

May have resulted in a violation of:

Permit: Title V permit, Table II A 3

BAAQMD:

Other:

Event Description: REVISED: The throughput limit for the Chevron Refinery Tank 1491 (S#1491) contained in Table II A 3 (Grandfathered Sources) of the Refinery's Title V permit are ne limits - they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). Table II A 3 includes a 12-month throughput limit of 1,093,160 bbl for 1491 Tank. As of July 31, 2006 the actual total throughput of this source for the previous 12 months was approximately 1,137,815 bbls. Accordingly, based on data fo the months August 2005 through July 2006, Chevron determined that this source exceeded its annual throughput limit listed in Table II A 3 of the Refinery's Title V perm As of January 31, 2009, the actual throughput of S-1491 for the past 12 months was 1,119,918 bbls. Accordingly, based on data for the months of February 2008 through January 2009, on February 3, 2009, Chevron determined that S-1491 exceeded its annual throughput limit in Table II A 3 of the refinery's Title V permit. Updated 9/1/20 As of August 31, 2017, the actual throughput of S-1491 for the past 12 months was 1,611,125 bbls. Accordingly, based on data for the months of September 2017 throug August 2018, on September 1, 2018, Chevron determined that S-1491 exceeded its annual throughput limit in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition I.J.2 of the Refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is for reportin purposes only - it is not an indication of non-compliance with the Refinery's Title V permit.

Probable Cause: T-3073 received gasoline components from two process units and the refinery decided to divert one of these streams to T-1491 (S-1491). T-1491 has contained a number gasoline components during its life. Although no change occurred with plant operation or capacity, the diverted stream caused an increase in throughput to be seen by T-1491. Immediately prior to its current service, T-1491 contained MTBE/TAME which was the basis for the Title V grandfathered throughput limit. The throughput of t current process stream to T-1491 is much greater than the throughput of MTBE/TAME. No modifications have been made which affect T-1491's throughput capabilities a no modifications were made which enabled the change in service. The grandfathered limit was established using the highest documented throughput for the tank which wa not appropriate since design capacity would provide a higher throughput limit. This tank has not been part of any activity with NSR implications

Corrective actions or preventative steps taken: Chevron will continue to report this to the District as required by the Title V permit. According to Standard Condition J-2 of our Title V permit, this limit is for reporting purposes only. We are reporting this exceedance consistent with this permit condition.

Event Started:	12/31/2004 - 11:59 PM		Report ID:	4339	May have resulted in a violation of:
Stopped:		✓ Ongoing Event	Source Number:	RLW	Permit: Title V Permit, Table II.A.3
Discovered On:	1/10/2005		Abatement Device:		BAAQMD:
					Other:

Event Description: REVISED NOTIFICATION to reflect date & time change: The throughput limit for the Chevron Refinery Long Wharf contained in Table II A 3 (Grandfathered Sources the refinery's Title V permit are new limits -- they did not exist before December 1, 2003 (the date the refinery's Title V permit was issued). To determine compliance wit the annual throughput limits listed in Table II A 3, the District directed that Chevron sum the total throughput for each of the twelve months preceeding the calculation da Table II A 3 includes a 12-month throughput limit of 146,628,000 bbls for the sum of all 6 berths - S-9321, -9322, -9323, -9324, -9325 and -9326. As of January 1, 2005 actual total throughput of these sources for the previous 12 months was approximately 148,340,000 bbls. Accordingly, based on data for the months January 2004 throug December 2004, on January 10, 2005 Chevron determined that these sources exceeded their annual throughput limit listed in Table II A 3 of the refinery's Title V permit. Pursuant to Standard Condition I.J.2 of the refinery's Title V permit, Chevron is required to report to the District any exceedance of a limit in Table II A 3. Such notice is reporting purposes only -- it is not an indication of non-compliance with the refinery's Title V permit.

Probable Cause: The refinery has been operating at higher rates in order to meet the increased public demand for refined products, i.e., gasoline, diesel fuel and jet fuel. The refinery's feedstocks and incremental production are both handled at the Long Wharf. The 12-month throughput limit in the Title V Permit was artificially imposed and did not refl the "as built" capabilities of the systems. No modifications have been made since February, 2000 that affected the wharf's throughput capabilities.

Corrective actions or preventative steps taken: Chevron has reported this to the District as required by the Title V permit.

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	*Alan Davis*	*General Manager Richmond Refinery*	1/27/2022
Signature of Responsible Official	Print Name	Title	Date

BAAQMD Title V Permit
6 Month Monitoring Report

From 07/01/2021 *to* 12/31/2021

Chevron Richmond Refinery
A0010

Facility Address:		Mailing Address:	
	841 Chevron Way		PO Box 1272
City:	Richmond	City:	Richmond
State:	CA	State:	CA
Zip Code:	94801	Zip Code:	94802-0272

Contact: Jason Brown Title: Air Compliance Technician Phone: (510) 242-3485

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

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6859	S4350, S4351		✓					✓				✓											

Started: 7/4/2021 5:08 AM

Stopped: 7/5/2021 4:07 PM

Discovered on: 7/5/2021

Event Description: On July 04, 2021 the Cogen 1000 CO and O2 analyzers became inoperative at 05:08 hours. On July 5, 2021 the CO and O2 analyzers were back in service at 16:07 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6860	S4285		✓			✓																	

Started: 7/4/2021 5:31 AM

Stopped: 7/5/2021 3:09 PM

Discovered on: 7/5/2021

Event Description: On July 04, 2021 The FCC (F-300) NOx analyzer became inoperative at 05:31 hours. The analyzer was back in service on July 05, 2021 at 15:09 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6863	S6039				✓																		

Started: 7/9/2021 5:10 PM

Stopped: 7/12/2021 1:42 PM

Discovered on: 7/12/2021

Event Description: RESUMPTION OF MONITORING On July 12, 2021, the RLOP Flare mass spectrometer was back in service at 13:42 hours. On July 09, 2021, the RLOP Flare mass spectrometer, that measures BTU, became inoperative at 17:10 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6898	S6016				✓																		

Started: 7/30/2021 9:33 AM

Stopped: 8/2/2021 8:52 AM

Discovered on: 8/2/2021

Event Description: On July 30, 2021, the FCC Flare mass spectrometer, that measures BTU, became inoperative at 09:33 hours. The mass spectrometer was back in service on August 2, 2021 at 08:52 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6903					✓																		

Started: 8/6/2021 4:22 AM

Stopped: 8/9/2021 9:02 AM

Discovered on: 8/9/2021

Event Description: On August 06, 2021, the D&R Flare (S-6015) mass spectrometer, that measures BTU, became inoperative at 04:22 hours. The mass spectrometer was back in service on August 09, 2021 at 09:02 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6904	S4228		✓															✓					

Started: 8/7/2021 11:35 PM

Stopped: 10/5/2021 2:42 AM

Discovered on: 8/9/2021

Event Description: RESUMPTION OF MONITORING On October 05, 2021, the SRU 2 stack exhaust flow meter (22FI371) was back in service at 02:42 hours. On August 07, 2021, the SRU 2 stack exhaust flow meter (22FI371) became inoperative at 23:35 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6912	V870	V-870 H2S analyzer	✓						✓														

Started: 8/11/2021 4:07 AM

Stopped: 8/12/2021 10:55 AM

Discovered on: 8/11/2021

Event Description: On August 11, 2021, the V-870 H2S analyzer became inoperative at 04:07 hours. The analyzer was successfully calibrated and back in service on August 12, 2021 at 10:55 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6913	S6016				✓																		

Started: 8/10/2021 2:51 PM

Stopped: 8/12/2021 7:14 PM

Discovered on: 8/12/2021

Event Description: RESUMPTION OF MONITORING On August 12, 2021, The FCC Flare sample station was back in service at 19:14 hours. On August 10, 2021, The FCC Flare sample station became inoperative at 14:51 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6918	S4472		✓			✓																	

Started: 8/13/2021 5:08 AM

Stopped: 8/14/2021 8:09 AM

Discovered on: 8/16/2021

Event Description: On August 13, 2021 the F-2100 NOx analyzer became inoperative at 05:08 hours. The F-2100 NOx analyzer was back in service on August 14, 2021 at 08:09 hours.

6925	S6013				✓																✓		

Started: 8/25/2021 2:12 PM

Stopped: 8/31/2021 1:38 PM

Discovered on: 8/26/2021

Event Description: RESUMPTION OF MONITORING On August 31, 2021 the NISO Flare vent gas temperature (69TI287A) and molecular weight (69AI287A) flow meters were back in service at 13:38 hours. On August 25, 2021, the NISO Flare vent gas temperature (69TI287A) and molecular weight (69AI287A) flow meters became inoperative at 14:12 hours.

6926	S6012				✓																✓		

Started: 8/25/2021 2:13 PM

Stopped: 8/31/2021 1:52 PM

Discovered on: 8/26/2021

Event Description: RESUMPTION OF MONITORING On August 31, 2021, the SISO Flare vent gas temperature (69TI286A) and molecular weight (69AI286A) flow meters were back in service at 13:52 hours. On August 25, 2021, the SISO Flare vent gas temperature (69TI286A) and molecular weight (69AI286A) flow meters became inoperative at 14:13 hours.

6928	S4188		✓			✓																	

Started: 8/28/2021 9:11 AM

Stopped: 8/30/2021 12:22 PM

Discovered on: 8/30/2021

Event Description: On August 28, 2021, the F-651 NOx analyzer became inoperative at 09:11 hours. The F-651 NOx analyzer was back in service on August 30, 2021 at 12:22 hours.

6934	S4068		✓			✓																	

Started: 9/6/2021 5:25 AM

Stopped: 9/7/2021 7:41 AM

Discovered on: 9/7/2021

Event Description: On September 06, 2021 the F-1610 NOx analyzer became inoperative at 05:25 hours. The NOx analyzer was back in service on September 07, 2021 at 07:41 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6933	S4070		✓			✓						✓											

Started: 9/6/2021 5:25 AM

Stopped: 9/7/2021 8:21 AM

Discovered on: 9/7/2021

Event Description: On September 06, 2021 the F-1100A NOx and O2 analyzers became inoperative at 05:25 hours. The F-1100A NOx and O2 analyzers were back in service on September 07, 2021 at 08:21 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6932	S4227		✓				✓																

Started: 9/6/2021 4:43 AM

Stopped: 9/7/2021 5:21 AM

Discovered on: 9/7/2021

Event Description: On September 06, 2021 the SRU #1 Train SO2 analyzer became inoperative at 04:43 hours. The SO2 analyzer was back in service on September 07, 2021 at 05:21 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6931					✓																		

Started: 9/5/2021 7:50 AM

Stopped: 9/7/2021 9:34 AM

Discovered on: 9/7/2021

Event Description: RESUMPTION OF MONITORING On September 07, 2021, the D&R Flare (S-6015) mass spectrometer, that measures BTU, was back in service at 09:34 hours. On September 05, 2021, the D&R Flare (S-6015) mass spectrometer, that measures BTU, became inoperative at 07:50 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6947				✓			✓		✓														

Started: 9/18/2021 10:58 PM

Stopped: 9/20/2021 6:00 AM

Discovered on: 9/20/2021

Event Description: On September 18, 2021 the H2S & SO2 analyzers at the Castro GLM Station were inoperative at 22:58 hours. The H2S & SO2 analyzers were back in service on September 20, 2021 at 06:00 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6949					✓																		

Started: 9/25/2021 5:01 AM

Stopped: 9/26/2021 5:26 AM

Discovered on: 9/27/2021

Event Description: On September 25, 2021, the D&R Flare (S-6015) mass spectrometer, that measures BTU, became inoperative at 05:01 hours. The mass spectrometer was back in service on September 26, 2021 at 05:26 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6951	S6010				✓																		

Started: 10/2/2021 12:49 PM

Stopped: 10/4/2021 9:40 AM

Discovered on: 10/4/2021

Event Description: On October 2, 2021, the LSFO Flare mass spectrometer, that measures BTU, became inoperative at 12:49 hours. The mass spectrometer was returned to service on October 4, 2021 at 09:40 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6953	S6016				✓																✓		

Started: 9/30/2021 1:40 PM

Stopped:

Discovered on: 10/4/2021

Event Description: Retracted on 10/7/2021. On September 30, 2021 the FCC Flare vent gas temperature (59TI737A) became inoperative at 13:40 hours. This report is being submitted in an abundance of caution to ensure that all reporting requirements are met.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6961	S6019				✓																		

Started: 10/9/2021 12:45 AM

Stopped: 10/14/2021 12:56 PM

Discovered on: 10/11/2021

Event Description: RESUMPTION OF MONITORING On October 14, 2021, the Alky Flare mass spectrometer, that measures BTU, was back in service at 12:56 hours. On October 09, 2021, the Alky Flare mass spectrometer, that measures BTU, became inoperative at 00:45 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6965	S6019				✓																		

Started: 10/19/2021 9:15 AM

Stopped: 10/20/2021 6:52 PM

Discovered on: 10/20/2021

Event Description: On October 19, 2021, the Alky Flare mass spectrometer, that measures BTU, became inoperative at 9:15 hours. The mass spectrometer was back in service on October 20, 2021 at 18:52 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6970	S6016				✓																		

Started: 10/20/2021 4:41 AM

Stopped: 10/21/2021 3:59 PM

Discovered on: 10/20/2021

Event Description: On October 20, 2021, the FCC Flare mass spectrometer, that measures BTU, became inoperative at 04:41 hours through October 21 at 1559 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
6969	S4155		✓			✓						✓											

Started: 10/19/2021 12:27 PM

Stopped: 11/9/2021 2:01 PM

Discovered on: 10/20/2021

Event Description: RESUMPTION OF MONITORING On November 09, 2021 the F-135 NOx and O2 analyzers were back in service at 14:01 hours. On October 19, 2021 the F-135 NOx and O2 analyzers became inoperative at 12:27 hours.

6988	V701		✓						✓														

Started: 10/24/2021 12:15 PM

Stopped: 10/26/2021 11:11 AM

Discovered on: 10/26/2021

Event Description: On October 24, 2021, the V-701 H2S analyzer became inoperative at 12:15 hours. The H2S analyzer was back in service on October 26, 2021 at 11:11 hours.

6977					✓																✓		

Started: 10/24/2021 1:19 PM

Stopped: 10/27/2021 3:09 PM

Discovered on: 10/26/2021

Event Description: RESUMPTION OF MONITORING On October 27, 2021 the Wharf LERP ERD Exhaust Temperature analyzer (20TI019) was back in service at 15:09 hours. On October 24, 2021 the Wharf LERP ERD Exhaust Temperature analyzer (20TI019) became inoperative at 13:19 hours.

7017	S4472				✓																		

Started: 10/27/2021 6:35 AM

Stopped: 11/3/2021 12:37 PM

Discovered on: 10/28/2021

Event Description: RESUMPTION OF MONITORING On November 03, 2021 the F-2100 PSA2 Tail Gas Fuel BTU analyzer was back in service at 12:37 hours. On October 27, 2021 the F-2100 PSA2 Tail Gas Fuel BTU analyzer became inoperative at 06:35 hours. Repairs are ongoing

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7016	S6016				✓																		

Started: 10/26/2021 5:45 AM

Stopped: 10/28/2021 1:53 PM

Discovered on: 10/28/2021

Event Description: On October 26, 2021, the FCC Flare mass spectrometer, that measures BTU, became inoperative at 05:45 hours. The mass spectrometer was back in service on October 28, 2021 at 13:53 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7018	V701		✓						✓														

Started: 10/28/2021 5:04 AM

Stopped: 11/9/2021 4:46 AM

Discovered on: 10/29/2021

Event Description: RESUMPTION OF MONITORING On November 09, 2021, the V-701 H2S analyzer was back in service at 04:46 hours. On October 28, 2021, the V-701 H2S analyzer became inoperative at 05:04 hours. The repairs are ongoing.

7034					✓																		

Started: 10/28/2021 6:11 AM

Stopped: 11/1/2021 7:22 AM

Discovered on: 10/29/2021

Event Description: On October 28, 2021, the Temporary Isomax Cooling Water Tower(S-6058) conductivity analyzer (78AI263) became inoperative at 06:11 hours. The conductivity analyzer was back in service on November 01, 2021 at 07:22 hours.

7033	S6013				✓																		

Started: 10/28/2021 3:18 PM

Stopped:

Discovered on: 11/1/2021

Event Description: RCA Retracted on 11/2/21. On October 28, 2021, the NISO Flare mass spectrometer, that measures BTU, became inoperative at 15:18 hours.

7053	S4285		✓									✓											

Started: 11/1/2021 6:04 AM

Stopped: 11/2/2021 4:04 PM

Discovered on: 11/3/2021

Event Description: RESUMPTION OF MONITORING On November 02, 2021, the FCC V-65 flue gas O2 analyzer was back in service at 16:04 hours. On November 01, 2021, the FCC V-65 flue gas O2 analyzer became inoperative at 06:04 hours.

7058	S6039				✓																		

Started: 11/2/2021 9:48 PM

Stopped: 11/9/2021 4:24 PM

Discovered on: 11/4/2021

Event Description: RESUMPTION OF MONITORING On November 09, 2021, the RLOP Flare mass spectrometer, that measures BTU, was back in service at 16:24 hours. On November 02, 2021, the RLOP Flare mass spectrometer, that measures BTU, became inoperative at 21:48 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7059	S6039				✓																		

Started: 11/2/2021 10:37 PM

Stopped: 11/4/2021 11:50 AM

Discovered on: 11/4/2021

Event Description: RESUMPTION OF MONITORING On November 04, 2021, the RLOP Flare Vent Gas flow meter was back in service at 11:50 hours. On November 02, 2021, the RLOP Flare Vent Gas flow meter, became inoperative at 22:37 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7073	S6016				✓																		

Started: 10/30/2021 7:12 PM

Stopped: 11/10/2021 8:42 AM

Discovered on: 11/8/2021

Event Description: RESUMPTION OF MONITORING On November 10, 2021, the FCC Flare Vent Gas flow meter, was back in service at 08:42 hours. On October 30, 2021, the FCC Flare Vent Gas flow meter, became inoperative at 19:12 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7069	S4471		✓			✓																	

Started: 11/6/2021 5:28 AM

Stopped: 11/7/2021 5:51 AM

Discovered on: 11/8/2021

Event Description: On November 06, 2021 the F-1100 NOx analyzer became inoperative at 05:28 hours. The NOx analyzer was back in service on November 07, 2021 at 05:51 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7074					✓																		

Started: 11/7/2021 3:24 AM

Stopped: 11/8/2021 1:50 PM

Discovered on: 11/9/2021

Event Description: On November 07, 2021, the D&R Flare (S-6015) mass spectrometer, that measures BTU, became inoperative at 03:24 hours. The mass spectrometer was back in service on November 08, 2021 at 13:50 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7092	S4472				✓																		

Started: 11/12/2021 6:02 PM

Stopped: 11/16/2021 11:36 AM

Discovered on: 11/15/2021

Event Description: RESUMPTION OF MONITORING On November 16, 2021 the F-2100 PSA2 Tail Gas Fuel BTU analyzer was back in service at 11:36 hours. On November 12, 2021 the F-2100 PSA2 Tail Gas Fuel BTU analyzer became inoperative at 18:02 hours. Repairs are ongoing.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7101	S6021		✓		✓				✓														

Started: 11/16/2021 10:06 AM

Stopped: 11/17/2021 1:22 PM

Discovered on: 11/17/2021

Event Description: On November 16, 2021, the H2 Plant Flare mass spectrometer (H2S, total sulfur, and BTU) became inoperative at 10:06 hours. The Mass Spectrometer was back in service on November 17, 2021 at 13:22 hours.

7103	S6013				✓																		

Started: 11/17/2021 1:50 PM

Stopped: 11/18/2021 3:47 PM

Discovered on: 11/18/2021

Event Description: On November 17, 2021, the NISO Flare mass spectrometer, that measures BTU, became inoperative at 13:50 hours. The NISO Flare mass spectrometer was back in service on November 18, 2021 at 15:47 hours.

7109	V701		✓						✓														

Started: 11/19/2021 4:04 AM

Stopped: 11/22/2021 3:12 PM

Discovered on: 11/19/2021

Event Description: RESUMPTION OF MONITORING On November 22, 2021, the V-701 H2S analyzer was back in service at 15:12 hours. On November 19, 2021, the V-701 H2S analyzer became inoperative at 04:04 hours.

7114	S4472	F-2100 PSA 2 Tail Gas, Total Sulfur			✓				✓														

Started: 11/25/2021 5:07 AM

Stopped: 11/29/2021 10:49 AM

Discovered on: 11/27/2021

Event Description: On November 25, 2021, the F-2100 PSA2 Tail Gas Total Sulfur analyzer became inoperative at 05:07 hours. The analyzer was back in service on November 29, 2021 at 10:49 hours.

7115	V701		✓						✓														

Started: 11/25/2021 4:04 AM

Stopped: 12/1/2021 4:48 AM

Discovered on: 11/27/2021

Event Description: RESUMPTION OF MONITORING On December 01, 2021, the V-701 H2S analyzer was back in service at 04:48 hours. On November 25, 2021, the V-701 H2S analyzer became inoperative at 04:04 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7116	S4167		✓			✓																	

Started: 11/28/2021 9:23 AM

Stopped: 11/29/2021 10:26 AM

Discovered on: 11/30/2021

Event Description: On November 28, 2021 the F-710 NOx analyzer became inoperative at 09:23 hours. The NOx analyzer was back in service on November 29, 2021 at 10:26 hours.

7122	S6016				✓																		

Started: 12/3/2021 3:44 AM

Stopped: 12/6/2021 2:48 PM

Discovered on: 12/3/2021

Event Description: RESUMPTION OF MONITORING On December 06, 2021, the FCC Flare mass spectrometer, that measures BTU, was back in service at 14:48 hours. On December 03, 2021, the FCC Flare mass spectrometer, that measures BTU, became inoperative at 03:44 hours. This report is being submitted in an abundance of caution to ensure that all reporting requirements are met.

7121	S6051				✓																	✓	

Started: 12/2/2021 10:21 AM

Stopped: 12/3/2021 12:41 PM

Discovered on: 12/3/2021

Event Description: On December 02, 2021 at 10:21 hours, the hydrocarbon analyzer (12AI1400) at the Alky Cooling water Tower (S-6051) was inoperative. The hydrocarbron analyzer was put back in service on December 03, 2021 at 12:41 hours.

7130	S6016				✓																		

Started: 12/10/2021 5:10 AM

Stopped: 12/13/2021 6:36 AM

Discovered on: 12/10/2021

Event Description: On December 10, 2021, the FCC Flare Vent Gas flow meter (59FI735), became inoperative at 05:10 hours. The Vent Gas flow meter (59FI735) was back in service on December 13, 2021 at 06:36 hours.

7129	V701		✓						✓														

Started: 12/9/2021 4:04 AM

Stopped: 12/10/2021 4:48 AM

Discovered on: 12/13/2021

Event Description: On December 09, 2021, the V-701 H2S analyzer became inoperative at 04:04 hours. The H2S analyzer was back in service on December 10, 2021 at 04:48 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7131	S6010				✓																		

Started: 12/9/2021 3:05 PM

Stopped: 12/13/2021 2:07 PM

Discovered on: 12/13/2021

Event Description: On December 09, 2021, the LSFO Flare mass spectrometer, that measures BTU, became inoperative at 15:05 hours. The mass spectrometer was back in service on December 13, 2021 at 14:07 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7136	V701		✓						✓														

Started: 12/13/2021 4:04 AM

Stopped: 12/14/2021 11:14 AM

Discovered on: 12/13/2021

Event Description: On December 13, 2021, the V-701 H2S analyzer became inoperative at 04:04 hours. The H2S analyzer was back in service on December 14, 2021 at 11:14 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7137	S6016				✓																		

Started: 12/13/2021 3:05 PM

Stopped: 12/15/2021 11:06 PM

Discovered on: 12/14/2021

Event Description: RESUMPTION OF MONITORING On December 15, 2021, the FCC Flare Vent Gas flow meter (59FB7357), was back in service at 23:06 hours. On December 13, 2021, the FCC Flare Vent Gas flow meter (59FB7357), became inoperative at 15:05 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7141	S6021				✓													✓					

Started: 12/8/2021 10:54 AM

Stopped: 12/16/2021 4:53 PM

Discovered on: 12/15/2021

Event Description: RESUMPTION OF MONITORING On December 16, 2021, the H2 Flare (S-6021) Pilot Gas Flow meter (31FI34016) was back in service at 16:53 hours. On December 08, 2021, the H2 Flare (S-6021) Pilot Gas Flow meter (31FI34016) became inoperative at 10:54 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7142	S6013				✓																		

Started: 12/12/2021 10:05 AM

Stopped: 12/17/2021 2:32 PM

Discovered on: 12/16/2021

Event Description: RESUMPTION OF MONITORING On December 17, 2021, the NISO Flare mass spectrometer, that measures BTU, was back in service at 14:32 hours. On December 12, 2021, the NISO Flare mass spectrometer, that measures BTU, became inoperative at 10:05 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7144	S4038, S4039		✓			✓						✓											

Started: 12/15/2021 9:00 AM

Stopped: 12/16/2021 1:59 PM

Discovered on: 12/16/2021

Event Description: On December 15, 2021, the 4 Rhen West (F-3550/3560) NOx and O2 analyzers were inoperative at 09:00 hours. The analyzers were back in service on December 16, 2021 at 13:59 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7147	S4228		✓															✓					

Started: 12/19/2021 2:32 PM

Stopped:

Discovered on: 12/20/2021

Event Description: On December 19, 2021, the SRU 2 stack exhaust flow meter (22FI371) became inoperative at 14:32 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7153	S6016				✓																		

Started: 12/21/2021 8:41 AM

Stopped: 12/22/2021 8:00 PM

Discovered on: 12/22/2021

Event Description: RESUMPTION OF MONITORING On December 22, 2021, the FCC Flare Vent Gas flow meter (59FI735), was back in service at 20:00 hours. On December 21, 2021, the FCC Flare Vent Gas flow meter (59FI735), became inoperative at 08:41 hours.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7158	S6012				✓																		

Started: 12/23/2021 12:50 PM

Stopped: 12/28/2021 10:30 AM

Discovered on: 12/26/2021

Event Description: RESUMPTION OF MONITORING On December 28, 2021, the SISO Flare mass spectrometer, that measures BTU, was back in service at 10:30 hours. On December 23, 2021, the SISO Flare mass spectrometer, that measures BTU, became inoperative at 12:50 hours. The repairs are ongoing.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.
7162	S6021				✓													✓					

Started: 12/16/2021 4:53 PM

Stopped:

Discovered on: 12/28/2021

Event Description: On December 16, 2021, the H2 Flare (S-6021) Pilot Gas Flow meter (31FI34016) became inoperative at 16:53 hours. Note: this is filed in association with RCA# 08E16.

Record Id	Source(S#)	Abatement Device (A#)	CEM	GLM	Parametic	NOx	SO2	CO	H2S	TRS	NH3	O2	CO2	H2O	Opacity/ LTA	Lead	Stream	Flow	Wind Dir	Wind Speed	Temp	VOC	Gauge Press.

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	*Alan Davis*	*General Manager Richmond Refinery*	1/27/2022
Signature of Responsible Official	Print Name	Title	Date