**Kris Battleson**
HSE Manager, Richmond Refinery



July 26, 2023

TV Tracking #: 777

1. ☐ RECEIVED IN ENFORCEMENT: 07/31/2023

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 January 1, 2023 to June 30, 2023**

Dear Mr. Gove:

Attached are the Chevron Six-month Deviation Summary Report, and the Six-month Monitoring Report for January through June 2023, 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 Mr. Danny Barbour at (510) 242-4405.

Sincerely,

Danny Barbour FOR

Kris Battleson

Attachment

**Health, Environment & Safety**
Chevron Products Company
P.O Box 1272
Richmond, CA 94802 – 0272
Tel 510 242 1400
Fax 510 242 5353
KBattleson@chevron.com

# BAAQMD Title V Permit
# 6 Month Deviation Summary Report

*From* 01/01/2023 *to* 06/30/2023

## 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: Environmental Feild Coordinator Phone: (510) 242-3485

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| Event Started: | 6/28/2023 - 9:54 AM | | |
| Stopped: | 6/29/2023 - 1:13 AM | Ongoing Event | |
| Discovered On: | 6/29/2023 | | |

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| Report ID: | 7998 |
| Source Number: | S4285 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | 11066 Part 7 (A5) |
| BAAQMD: | |
| Other: | |

**Event Description:** The FCC operated with greater than two TR Sets de-energized from June, 28 2023, 9:54 hours through June 29, 2023, 01:13 hours. The Refinery is currently operating under the Ammonia Optimization and Demonstration Testing Protocol and was operating with greater than two TR sets below 200mA with the remaining sets greater than 296mA averaged over a 3-hour period, preceding the de-energization of the TR sets on June 28, 2023. ***UPDATE*** The FCC operated with greater than two TR Sets de-energized from June, 28 2023, 9:54 hours through June 29, 2023, 01:13 hours and was operating with greater than two TR sets below 200mA with the remaining sets greater than 296mA averaged over a 3-hour period, preceding the de-energization of the TR sets on June 28, 2023. The FCC NH3 Optimization, Regulation 6-5 trial testing was conducted March 2016 through June 2017. The Optimization and Demonstration Protocol Final Report and a Revision to Permit Application 27796/27797 was submitted to BAAQMD August 31, 2017. The report shows that the total of condensable and filterable particulate emissions are minimized when the FCC operates outside of the condition 11066 permit requirements. The permit application requests revision to the TSP limit and deletion of the secondary current limit in condition 11066 in order to minimize condensable particulate, which comprised the bulk of the particulate emissions during the trial testing.

**Probable Cause:** Soot-blowers play a crucial role in the FCC process by effectively removing accumulated soot and deposits from some pieces of flue gas equipment such as the WHSG. These deposits can hinder the performance of the FCC system. By employing soot-blowers, the FCC can maintain optimal efficiency and productivity. On June 28, 2023, operations had an unexpected decline in the ESP milliamps resulting from using the soot-blowers on E-60 (WHSG) Subsequent investigation revealed that the cause was an extended period without utilizing the soot blowers.As a result, when the soot blowers were employed, they caused an abnormal increased loading on the ESP, subsequently leading to decreased milliamps.

**Corrective actions or preventative steps taken:** Proper and timely utilization of the soot blowers will enhance the FCC ESP performance. To prevent such issues in the future, it's operations will regularly employ the soot blowers as part of the maintenance routine.

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| Event Started: | 6/13/2023 | | |
| Stopped: | 6/14/2023 | Ongoing Event | |
| Discovered On: | 6/14/2023 | | |

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| Report ID: | 7989 |
| Source Number: | S-6059 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | Permit Condition #27096 Parts 8a and 8c |
| BAAQMD: | |
| Other: | |

Event Description: It was discovered on June 14, 2023 that the once per day monitoring as required by PC 27096 Parts 8a and 8c were not performed on June 13, 2023 during the period of inoperation of the Isomax Cooling Tower hydrocarbon analyzer. The Isomax Cooling Tower hydrocarbon analyzer returned to service on June 14, 2023.

Probable Cause: On June 14, 2023, the Isomax Cooling Tower hydrocarbon analyzer was out of service starting on June 12, 2023 at 08:37 hours due to the Maintenance Analyzer group conducting preventive maintenance on the analyzer. Environmental initially interpreted the analyzer to be back in service on June 13, therefore it was determined that sampling as required by PC 27096 Parts 8a and 8c would not be applicable that day. However, it was discovered the next day that the analyzer did not yet successfully pass its mid-span calibration until the July 14. Therefore, it was determined that the analyzer should be considered out of service during the entire preceding period starting on June 12. Thus, monitoring as required by PC 27096 Parts 8a and 8c was now required on June 13, 2023 but inadvertently missed due to the misunderstanding that the analyzer was back in service that day.

Corrective actions or preventative steps taken: The Isomax Cooling Water Tower hydrocarbon analyzer (78AI260A) was put back in service on June 14, 2023 at 10:20 hours upon completion of troubleshooting and passing its calibration. As a corrective action, the Analyzer group is updating its PM procedure to notify Environmental as soon as possible to preemptively initiate the once per day monitoring requirements per Permit Condition 27096 Part 8 if the Isomax Cooling Tower hydrocarbon analyzer will be out of service overnight.

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| Event Started: | 5/31/2023 - 5:47 PM | | |
| Stopped: | 5/31/2023 - 5:49 PM | Ongoing Event | |
| Discovered On: | 5/31/2023 | | |

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| Report ID: | 7980 |
| Source Number: | S6010 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | |
| Other: | 40 CFR 60 Subpart J (60.104(a)(1)) |

Event Description: On May 31, 2023, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On May 31, 2023, excess RPG liquid from the Hydrogen Plant was sent to K-3950 flare gas compressor, resulting in a rapid level increase in the first stage knockout drum . Consequently, Operations did not have adequate notice to pump out the high liquid level. The high liquid level caused K-3950 to trip offline, sending flow to the LSFO Flare (S-6010).

Corrective actions or preventative steps taken: Operations cleared the high level in the first stage knockout drum and restarted K-3950, which stopped the flaring.

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| Event Started: | 5/17/2023 | | |
| Stopped: | 5/17/2023 | Ongoing Event | |
| Discovered On: | 5/25/2023 | | |

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| Report ID: | 7972 |
| Source Number: | S4285 |
| Abatement Device: | |

May have resulted in a violation of:

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

Event Description: On May 17, 2023, FCC operations was conducting a normal, routine duty of filling V-41 with walnut shells. During this time, the FCC complied with all opacity regulatory limits. Still, Inspector Chris Coelho issued an NOV A62050 for the alleged violation of BAAQMD Regulation 6, Rule 1, Section 301. While the Refinery disputes the basis for the NOV, it submits this 10-day deviation in an abundance of caution to comply with Title V reporting requirements. For the reasons discussed in the response letter for the NOV, submitted on June 02, 2023, the Refinery believes it met applicable compliance requirements and the NOV should be withdrawn. This does not obligate Chevron to submit such reports in the future where there is no deviation.

Probable Cause: The operations team diligently followed the appropriate Job Aid while performing their regular duty of filling V-41 with Walnut Shells. However, as a consequence of this process, a small amount of walnut shell dust is occasionally carried through the unit and may exit through the stack.

Corrective actions or preventative steps taken: It is our priority to minimize any stack pluming while adding walnut shells to V-41. Once the normal routine duty of dropping Walnut Shells ceased, the visible emissions from the FCC Stack also ceased to occur.

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| Event Started: | 5/18/2023 - 8:38 AM | | |
| Stopped: | 5/18/2023 - 8:50 AM | Ongoing Event | |
| Discovered On: | 5/18/2023 | | |

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| Report ID: | 7968 |
| Source Number: | S6039 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | |
| Other: | 40 CFR 60 Subpart J (60.104(a)(1)) |

Event Description: On May 18, 2023, flaring occurred at the FCC (S-6016), Alky (S-6019), and RLOP (S-6039) flares. The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: On May 18, 2023, greater than normal flows to relief caused flaring at the FCC, Alky and RLOP flares. The increased loading on the flare gas recovery system led to minor flaring, with approximately 3 minutes of visible flaring.

Corrective actions or preventative steps taken: Operations completed troubleshooting to reduce flows to relief, which stopped the flaring

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| Event Started: | 5/15/2023 - 11:00 AM | | Report ID: | 7946 | May have resulted in a violation of: |
| Stopped: | 5/15/2023 - 12:00 PM | Ongoing Event | Source Number: | S4285 | Permit: PC#11066 Part 3C |
| Discovered On: | 5/16/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: |

Event Description: On May 15, 2023, the F-300 Stack Opacity exceeded its 30% 6-minute average limit during the 11:00 clock hour.

Probable Cause: FCC opacity exceeded the limit when both K-13A & K-13B tripped offline due to high CO. High CO was present due to an upset at the FCC initiated by loss of feed from TKC in the Hydro area. The FCC feed controller 50FC080 increased its output to 100% to try to maintain feed setpoint when TKC flow was lost. When TKC flow returned several minutes later the FCC feed controller 50FC080 was not able to reduce output fast enough to maintain the feed setpoint, and the TKC feed pressure controller was also not able to open fast enough to reduce TKC feed pressure which contributed to the issue. FCC feed increased rapidly and there was not enough air to combust all the coke generated. This led to high CO which tripped the ESP.

Corrective actions or preventative steps taken: The feed controllers functioned as intended and reduced feed to setpoint within minutes. Operations also reduced feed manually to decrease CO before increasing air to regain excess oxygen in the regenerator. Once unit stability was restored and CO was reduced operations re-energized K-13A & K-13B to bring the opacity back below limits.

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| Event Started: | 5/13/2023 - 6:09 PM | | Report ID: | 7944 | May have resulted in a violation of: |
| Stopped: | 5/14/2023 - 5:00 PM | Ongoing Event | Source Number: | S4285 | Permit: 11066 Part 7 (A5) |
| Discovered On: | 5/15/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: |

Event Description: The FCC operated with greater than two TR Sets de-energized from May,13 2023 18:09 hours through May 14, 2023 17:00 hours. The Refinery is currently operating under the Ammonia Optimization and Demonstration Testing Protocol and was operating with greater than two TR sets below 200mA with the remaining sets greater than 296mA averaged over a 3-hour period, preceding the de-energization of the TR sets on May 13, 2023.

Probable Cause: The FCC Transformer Rectifier (TR) 1A and 6A were offline due to ongoing maintenance issues. Therefore, when the breaker for TR 5B tripped due to power being too high and above the baseline power the TR set is typically powered at, it resulted in deviating from the requirement of having an average of 296mA over a 3-hour period.

Corrective actions or preventative steps taken: Contacted maintenance and had electricians track down the source of the issue. They reset the breaker and it tripped again. The electricians lowered the power to the TR set and repowered the tripped breaker. The reduced power to the TR set was within the allowed limits of the ESP, so the power was lowered back to the baseline.

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| Event Started: | 5/4/2023 - 1:00 PM | | |
| Stopped: | 5/4/2023 - 2:00 PM | Ongoing Event | |
| Discovered On: | 5/5/2023 | | |

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| Report ID: | 7932 |
| Source Number: | S4228 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | Reg. 9-1-307 |
| Other: | 40 CFR Part 60, Subpart J |

Event Description: On May 04, 2023, the SRU 2 Train (S4228) exceeded the 1-hour average SO2 limit of 250 ppm, corrected to 0% O2, during the 13:00 clock hour.

Probable Cause: On May 3, 2023, a temporary loss of DEA flow occurred at 3H2S, leading to fluctuations in acid gas feed to SRU 2. Consequently, this led to plugging in the sulfur trap at SRU 2, causing elevated levels of SO2.

Corrective actions or preventative steps taken: Operations responded by increasing caustic solution flow to the SO2 absorbers and increased excess air to the front-end of the train to lower stack SO2 emissions.

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| Event Started: | 5/3/2023 - 9:00 PM | | |
| Stopped: | 5/4/2023 - 7:00 PM | Ongoing Event | |
| Discovered On: | 5/4/2023 | | |

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| Report ID: | 7928 |
| Source Number: | V475 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC 8773 Part 5, PC 24136 Part 98(d) |
| BAAQMD: | |
| Other: | NSPS 40 CFR 60 Subpart J 60.104(a)(1) |

Event Description: On May 3, 2023, the V-475 Fuel Gas Drum exceeded its 1-hour average 200 ppm Total Sulfur limit during the 21:00 clock hour. Also, the V-475 Fuel Gas Drum exceeded its 24-hour average 50 ppm H2S limit from the 13:00 clock hour through the 18:00 clock hour.

Probable Cause: On May 3, 2023, operations were preparing to take P-220 (DEA circulation pump) out of service for scheduled maintenance to address a leak by on the discharge check valve. Operations placed P-220A (backup pump) in service in preparation for this maintenance. However, upon taking P-220 out of service, a sudden reduction in DEA circulation occurred, and reverse flow was observed through P-220. Operations subsequently shut down P-220A and attempted to restart P-220, resulting in a loss of DEA circulation in the 3H2S plant. This led to an elevation in the sulfur concentration within the fuel gas system, leading to H2S and Total Sulfur excesses at V-475 and V-701.

Corrective actions or preventative steps taken: In response, Operations promptly took action to address the loss of DEA circulation. Initially, P-220 was isolated to resolve the reverse flow issue, and then P-220A was restarted. This corrective measure successfully restored DEA circulation, effectively reducing the sulfur levels in the fuel gas system. Consequently, V-475 and V-701 returned to compliance. The check valve replacement took place on May 4, 2023, and P-220 was placed back in service on May 5, 2023. Additionally, Operations conducted a comprehensive review and discussion of procedures to ensure their effectiveness and mitigate risks.

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| Event Started: | 5/3/2023 - 10:00 PM | | |
| Stopped: | 5/4/2023 - 1:00 AM | Ongoing Event | |
| Discovered On: | 5/4/2023 | | |

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| Report ID: | 7929 |
| Source Number: | V701 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC 8773 Part 5, PC 24136 Part 98(a)(d) |
| BAAQMD: | |
| Other: | NSPS 40 CFR 60 Subpart J 60.104(a)(1) |

**Event Description:** On May 3, 2023, the V-701 Fuel Gas Drum exceeded its 3-hour average H2S 160 ppm limit from the 22:00 clock hour through May 4, 2023, 00:00 clock hour. Also, on May 3, 2023, the V-701 Fuel Gas Drum exceeded its 200 ppm 1-hour average Total Sulfur limit during the 21:00 clock hour.

**Probable Cause:** On May 3, 2023, operations were preparing to take P-220 (DEA circulation pump) out of service for scheduled maintenance to address a leak by on the discharge check valve. Operations placed P-220A (backup pump) in service in preparation for this maintenance. However, upon taking P-220 out of service, a sudden reduction in DEA circulation occurred, and reverse flow was observed through P-220. Operations subsequently shut down P-220A and attempted to restart P-220, resulting in a loss of DEA circulation in the 3H2S plant. This led to an elevation in the sulfur concentration within the fuel gas system, leading to H2S and Total Sulfur excesses at V-475 and V-701.

**Corrective actions or preventative steps taken:** In response, Operations promptly took action to address the loss of DEA circulation. Initially, P-220 was isolated to resolve the reverse flow issue, and then P-220A was restarted. This corrective measure successfully restored DEA circulation, effectively reducing the sulfur levels in the fuel gas system. Consequently, V-475 and V-701 returned to compliance. The check valve replacement took place on May 4, 2023, and P-220 was placed back in service on May 5, 2023. Additionally, Operations conducted a comprehensive review and discussion of procedures to ensure their effectiveness and mitigate risks.

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| Event Started: | 5/4/2023 - 2:25 PM | | |
| Stopped: | 5/4/2023 - 2:40 PM | Ongoing Event | |
| Discovered On: | 5/4/2023 | | |

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| Report ID: | 7938 |
| Source Number: | S6010 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | |
| Other: | 40 CFR 60 Subpart J (60.104(a)(1)) |

**Event Description:** On May 4, 2023, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

**Probable Cause:** On May 4, 2023, Operations were performing a lube oil pump swap from P-1604A to P-1604. During the pump swap, K-1600 lost lube oil flow, resulting in the shutdown of the compressor. Consequently, the flow was diverted to the relief system, leading to a flare water seal breach and 5 minutes of intermediate visible flaring from the LSFO flare (S-6010).

**Corrective actions or preventative steps taken:** Operations promptly took action to restart the compressor. As part of the investigation into the pump swap process, it was recognized that a job aid is necessary to support operations in executing pump swaps more efficiently. Furthermore, Operations is actively exploring the implementation of various modifications to significantly improve the overall efficiency and effectiveness of the pump swapping process. These measures are being undertaken with the primary goal of mitigating the risk of compressor shutdowns.

Event Started: 5/1/2023
Stopped: 5/1/2023 Ongoing Event
Discovered On: 5/1/2023

Report ID: 7935
Source Number:
Abatement Device:

May have resulted in a violation of:
Permit:
BAAQMD: Reg 9-10-502.2
Other:

Event Description: On May 1, 2023, the Refinery submitted the Quarterly NOx Monitoring Report for the 1st quarter 2023 one day late per BAAQMD Reg 9-10-505.2.

Probable Cause: The Quarterly NOx Emissions Report for the 1st Quarter of 2023 was due 30 days after the end of the quarter according to BAAQMD Reg 9-10-505.2, and it was submitted via certified mail on May 1. However, it was submitted one day after the due date, as the report was completed on time but there was an administrative oversight that caused a delay in submitting the report via certified mail. As a result, the report was submitted 31 days following the end of the quarter.

Corrective actions or preventative steps taken: The Quarterly NOx Emissions Report for the 1st Quarter of 2023 was submitted immediately on the morning of May 1 upon discovery that the report had not been submitted via certified mail by the due date specified in BAAQMD Reg 9-10-505.2. The Refinery has reinforced the expectation to always follow proper procedures and protocols.

Event Started: 4/30/2023 - 6:08 AM
Stopped: 4/30/2023 - 10:26 AM Ongoing Event
Discovered On: 5/1/2023

Report ID: 7926
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 April 30, 2023 from 06:08-10:26 hours.

Probable Cause: It was discovered on May 1, 2023 that NISO Flare (S-6013) potentially did not maintain a continuously burning pilot on April 30, 2023 at 06:08-10:26 hours. During that time, all four NISO flare pilot temperature indicators showed ambient temperature. Three of the four NISO flare pilot temperature indicators currently have maintenance work orders written up for repair at the next turnaround, resulting in Operations needing to visually confirm that the pilots are lit rather than relying on the temperature indicator readings. The fourth NISO flare pilot which had an operational temperature indicator showed ambient temperature during this time. Upon discussion with Operations, they were unable to visually confirm at least one continuously lit pilot during the time noted in this deviation, since it is difficult to visually discern during daylight hours. This deviation is filed in abundance of caution to ensure all reporting requirements are met . No flaring occurred during this time.

Corrective actions or preventative steps taken: Operations relit the NISO Flare pilot, which increased the temperature reading for the fourth pilot temperature indicator . Operations wrote a work order to repair the NISO flare pilot temperature indicators at the next turnaround scheduled for 4Q 2023.

Event Started: 4/18/2023 - 12:00 AM
Stopped: 4/19/2023 - 12:00 AM Ongoing Event
Discovered On: 4/20/2023

Report ID: 7917
Source Number: V701
Abatement Device:

May have resulted in a violation of:
Permit: PC 8773 Part 5, PC 24136 Part 98(a)(d)
BAAQMD:
Other: NSPS 40 CFR 60 Subpart J 60.104(a)(1)

Event Description: The V-701 Fuel Gas Drum exceeded its 50 ppm Calendar Day average H2S limit from April 18, 2023 through April 19, 2023. On April 18, 2023, the V-701 Fuel Gas Drum exceeded its 3-hour average H2S 160 ppm limit from the 01:00 clock hour through the 05:00 clock hour. Also, on April 18, 2023, the V-701 Fuel Gas Drum exceeded its 200 ppm 1-hour average Total Sulfur limit from the 00:00 clock hour through the 03:00 clock hour.

Probable Cause: On April 18, 2023, during the TKC start up, total sulfur to the FCC increased due to higher levels of sulfur content in the TKC hot feed, which resulted in higher sulfur in the fuel gas. This led to H2S & Total Sulfur excesses at V-475 & V-701.

Corrective actions or preventative steps taken: Refinery Operations decreased higher-sulfur TKC hot feed and increased lower-sulfur TKC cold feed, which decreased the sulfur content in the fuel gas and brought V-475 and V-701 back into compliance.

Event Started: 4/18/2023 - 12:00 AM
Stopped: 4/19/2023 - 12:00 AM Ongoing Event
Discovered On: 4/20/2023

Report ID: 7916
Source Number: V475
Abatement Device:

May have resulted in a violation of:
Permit: PC 8773 Part 5, PC 24136 Part 98(a)(d)
BAAQMD:
Other: NSPS 40 CFR 60 Subpart J 60.104(a)(1)

Event Description: The V-475 Fuel Gas Drum exceeded its 50 ppm Calendar-Day average H2S limit on April 18, 2023 through April 19, 2023. On April 18, 2023, the V-475 Fuel Gas Drum exceeded its 50 ppm 24-hour average H2S limit from the 02:00 clock hour through the 23:00 clock hour. On April 18, 2023, the V-475 Fuel Gas Drum exceeded its 160 ppm 3-hour average H2S limit from 01:00 clock hour through the 04:00 clock hour. Also, on April 18, 2023, the V-475 Fuel Gas Drum exceeded its 200 ppm 1-hour average Total Sulfur limit during the 01:00 clock hour.

Probable Cause: On April 18, 2023, during the TKC start up, total sulfur to the FCC increased due to higher levels of sulfur content in the TKC hot feed, which resulted in higher sulfur in the fuel gas. This led to H2S & Total Sulfur excesses at V-475 & V-701.

Corrective actions or preventative steps taken: Refinery Operations decreased higher-sulfur TKC hot feed and increased lower-sulfur TKC cold feed, which decreased the sulfur content in the fuel gas and brought V-475 and V-701 back into compliance.

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| Event Started: | 4/17/2023 - 12:00 AM | | |
| Stopped: | 4/18/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 4/18/2023 | | |

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| Report ID: | 7914 |
| Source Number: | Refinery |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 April 17, 2023. The calendar day refinery-wide NOx was 3,391 lbs on April 17, 2023.

**Probable Cause:** On April 15, 2023, the refinery experienced a full trip of the Hydrogen Train 2 while Cogen train 1000 was offline for scheduled maintenance. This severely limited the Refinery's ability to generate spare steam. To meet steam demands the Refinery initiated steam load-shed moves across the yard to increase steam production to safely posture the refinery and avoid additional process unit upsets. However, these steam load-shed moves at the furnaces led to exceeding the Refinery-Wide NOx calendar day limit on April 17th, 2023.

**Corrective actions or preventative steps taken:** The steam load-shed moves allowed the furnaces to operate in a posture to generate steam and aid in the prevention of additional process upsets. Once the steam system was determined to be stable, moves were made across the yard to reduce the Refinery-Wide NOx. These moves included despoiling #4 and #5 Rheniformer furnaces, generating additional steam from the FCC and tuning multiple furnaces throughout the Refinery.

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| Event Started: | 4/14/2023 - 12:00 AM | | |
| Stopped: | 4/17/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 4/17/2023 | | |

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| Report ID: | 7911 |
| Source Number: | Refinery |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 April 14, 2023, April 15, 2023 and April 16, 2023. The calendar day refinery-wide NOx was 3,526 lbs on April 16, 2023.

**Probable Cause:** After further review, the calendar day refinery-wide NOx mass emissions limit of 3,116 lbs was not exceeded on April 14,2023. On April 15, 2023, the refinery experienced a full trip of the Hydrogen Train 2 while Cogen train 1000 was offline for scheduled maintenance. This severely limited the Refinery's ability to generate spare steam. To meet steam demands the Refinery initiated steam load-shed moves across the yard to increase steam production to safely posture the refinery and avoid additional process unit upsets. However, these steam load-shed moves at the furnaces led to exceeding the Refinery-Wide NOx calendar day limit on April 15th and April 16th, 2023.

**Corrective actions or preventative steps taken:** After further review, the calendar day refinery-wide NOx mass emissions limit of 3,116 lbs was not exceeded on April 14,2023. On April 15, 2023, the refinery experienced a full trip of the Hydrogen Train 2 while Cogen train 1000 was offline for scheduled maintenance. This severely limited the Refinery's ability to generate spare steam. To meet steam demands the Refinery initiated steam load-shed moves across the yard to increase steam production to safely posture the refinery and avoid additional process unit upsets. However, these steam load-shed moves at the furnaces led to exceeding the Refinery-Wide NOx calendar day limit on April 15th and April 16th, 2023.

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| Event Started: | 4/10/2023 - 12:00 AM | | |
| Stopped: | 4/12/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 4/12/2023 | | |

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| Report ID: | 7900 |
| Source Number: | Refinery |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 April 10, 2023 and April 11, 2023. The calendar day refinery-wide NOx was 3,409 lbs on April 10, 2023.

**Probable Cause:** On April 4, 2023, Cogen train 1000 was shut down for planned maintenance, which resulted in a reduction in the refinery's spare steam capacity. In addition, the refinery faced booster compressor trips, further limiting its ability to generate spare steam. To fulfill the steam demands, the refinery implemented steam load-shed moves throughout the facility to increase steam production, ensuring the refinery's safety and avoiding additional process unit upsets. However, these steam load-shed moves at the furnaces led to exceeding the Refinery-Wide NOx calendar day limit on April 10th and April 11th, 2023.

**Corrective actions or preventative steps taken:** The steam load-shed moves allowed the furnaces to operate in a posture to generate steam and aid in the prevention of additional process upsets. Once the steam system was determined to be stable, moves were made across the yard to reduce the Refinery-Wide NOx. These moves included despoiling #4 and #5 Rheniformer furnaces, generating additional steam from the FCC and tuning multiple furnaces throughout the Refinery.

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| Event Started: | 4/7/2023 - 12:00 AM | | |
| Stopped: | 4/10/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 4/10/2023 | | |

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| Report ID: | 7897 |
| Source Number: | Refinery |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 April 07, 2023 and April 09, 2023. The calendar day refinery-wide NOx was 3,272 lbs on April 09, 2023.

**Probable Cause:** On April 4, 2023, Cogen train 1000 was shut down for planned maintenance, which resulted in a reduction in the refinery's spare steam capacity. In addition, the refinery faced booster compressor trips, further limiting its ability to generate spare steam. To fulfill the steam demands, the refinery implemented steam load-shed moves throughout the facility to increase steam production, ensuring the refinery's safety and avoiding additional process unit upsets. However, these steam load-shed moves at the furnaces led to exceeding the Refinery-Wide NOx calendar day limit on April 7th and April 9th, 2023.

**Corrective actions or preventative steps taken:** The steam load shed moves allowed the furnaces to operate in a posture to generate steam and aid in the prevention of additional process upsets. Once the steam system was determined to be stable, moves were made across the yard to reduce the Refinery-Wide NOx. These moves included despoiling #4 and #5 Rheniformer furnaces, generating steam off the FCC and tuning multiple furnaces throughout the Refinery.

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| Event Started: | 4/1/2023 | | Report ID: | 7905 | May have resulted in a violation of: |
| Stopped: | 4/5/2023 | Ongoing Event | Source Number: | S6019 | Permit: |
| Discovered On: | 4/5/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: 40 CFR 63.671(a)(1) |

Event Description: It was discovered on April 5, 2023, that the Alky Flare (S-6019) RSR quarterly visual inspection was not yet completed for Q1. Upon discovery, visual inspection was completed for the meters on April 5, 2023.

Probable Cause: On the day the visual inspection was scheduled, maintenance activities were impacted. The inspection team did not communicate the issue to the environmental team for immediate rescheduling or break in work. As a result, the 1st quarter visual inspections were not competed by the Q1 deadline.

Corrective actions or preventative steps taken: To address the incomplete RSR quarterly visual inspections from Q1 2023, corrective actions were taken. The issue was acknowledged, and a revised schedule was set for April 5, 2023. As a result, the inspections were successfully completed.

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| Event Started: | 3/27/2023 - 12:00 AM | | Report ID: | 7882 | May have resulted in a violation of: |
| Stopped: | 3/30/2023 - 12:00 AM | Ongoing Event | Source Number: | Refinery | Permit: |
| Discovered On: | 3/28/2023 | | Abatement Device: | | 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 March 27, 2023, March 28, 2023, and March 29, 2023. The calendar day refinery-wide NOx was 3,335 lbs on March 27, 2023.

Probable Cause: On March 27, 2023, Cogeneration Train 1000 was shut down for planned maintenance. Additionally, start-up activities at the Alky and Poly plants further limited the Refinery's ability to generate spare steam. To meet steam demands the Refinery initiated steam load-shed moves across the yard to increase steam production to safely posture the refinery and avoid additional process unit upsets. However, the steam load-shed moves made at the furnaces led to the Refinery-Wide NOx calendar day limit being excesses.

Corrective actions or preventative steps taken: The steam load shed moves allowed the furnaces to operate in a posture to generate steam and aid in the prevention of additional process upsets. Once the steam system was determined to be stable, moves were made across the yard to reduce the Refinery-Wide NOx. These moves included despoiling #4 and #5 Rheniformer furnaces and tuning multiple furnaces throughout the Refinery.

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| Event Started: | 3/24/2023 - 2:53 PM | | Report ID: | 7890 | May have resulted in a violation of: |
| Stopped: | 4/1/2023 | Ongoing Event | Source Number: | | Permit: |
| Discovered On: | 3/24/2023 | | Abatement Device: | | BAAQMD: 8-18-303.2 |
| | | | | | Other: |

Event Description: On March 23, 2023, BAAQMD inspector Chris Coelho identified a VOC leak on K-3950. Operations immediately attempted to repair the VOC leak but were unsuccessful, and on March 24, 2023, K-3950 was shutdown for further maintenance repairs. After follow-up inspections it was determined that the Refinery failed to meet the <500 ppm VOC leak repair requirements within the 24 hours timeline in accordance with Reg 8-18-303.2.

Probable Cause: On March 23, 2023, BAAQMD inspector Chris Coelho identified a VOC leak on K-3950. Operations immediately attempted to repair the VOC leak but were unsuccessful, and on March 24, 2023, K-3950 was shut down for repairs. As per the regulation 8-18-303.2 the compressor was taken out of service within the 24 hours. However, the VOC inspection group continued to get readings greater than 500 ppm due to residual hydrocarbon in the compressor.

Corrective actions or preventative steps taken: The refinery maintenance immediately began working on the repairs to address the leak. Prior to placing K-3950 back in service on April 1, 2023, the Refinery inspection group re-inspected the compressor and confirm the leak was repaired.

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| Event Started: | 3/17/2023 | | Report ID: | 7886 | May have resulted in a violation of: |
| Stopped: | 3/17/2023 | Ongoing Event | Source Number: | S4285 | Permit: |
| Discovered On: | 3/22/2023 | | Abatement Device: | | BAAQMD: Regulation 6, Rule 1, Section 301 – Excessive Visible Emissions |
| | | | | | Other: |

Event Description: On March 17, 2023, the refinery started up the FCC unit in accordance with established procedures to recover from an unplanned shutdown. Despite the successful startup, and in compliance with the Refinery's Title V permit and NSPS Subparts J and A, the refinery has received a notice of violation. Inspector Chris Coelho issued the NOV for the alleged violation of BAAQMD Regulation 6, Rule 1, Section 301-Excessive Visible Emissions. While the Refinery disputes the basis for the NOV, it submits this 10-day deviation in an abundance of caution. For the reasons discussed in the response letter for the NOV, submitted on March 29, 2023, the Refinery believes it met applicable compliance requirements and the NOV should be withdrawn. This does not obligate Chevron to submit such reports in the future where there is no deviation.

Probable Cause: The Refinery respectfully disagrees with the basis for NOV A62046. During the startup period, the FCC 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 with 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 opacity 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.

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| Event Started: | 3/18/2023 - 12:00 AM | | |
| Stopped: | 3/19/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 3/20/2023 | | |

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| Report ID: | 7873 |
| Source Number: | Refinery |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 March 18, 2023. The calendar day refinery-wide NOx was 3,417 lbs.

Probable Cause: On March 18, 2023, Hydrogen Train 1 was undergoing start-up activities following a trip. Additionally, start-up activities at the FCC plant further limited the Refinery's ability to generate spare steam. To meet steam demands the Refinery initiated steam load-shed moves across the yard to increase steam production to safely posture the refinery and avoid additional process unit upsets. However, the steam load-shed moves made at the furnaces led to the Refinery-Wide NOx calendar day limit excess.

Corrective actions or preventative steps taken: The steam load shed moves allowed the furnaces to operate in a posture to generate steam and aid in the prevention of additional process upsets. Once the steam system was determined to be stable, moves were made across the yard to reduce the Refinery-Wide NOx. These moves included despoiling #4 and #5 Rheniformer furnaces and tuning multiple furnaces throughout the Refinery.

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| Event Started: | 3/18/2023 - 2:00 PM | | |
| Stopped: | 3/18/2023 - 9:00 PM | Ongoing Event | |
| Discovered On: | 3/20/2023 | | |

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| Report ID: | 7871 |
| Source Number: | V475 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC 8773 Part 5 |
| BAAQMD: | |
| Other: | NSPS 40 CFR 60 Subpart J 60.104(a)(1) |

Event Description: On March 18, 2023, the V-475 Fuel Gas Drum exceeded its 50 ppm 24-hr average H2S limit. First, from the 14:00 clock hour through the 16:00 clock hour and then, from the 19:00 clock hour through the 20:00 clock hour. Title V Update: RCA was submitted on time on March 21, 2023. The 10-Day report was submitted on time on March 27, 2023.

Probable Cause: On March 18, 2023, during the startup of the FCC, the Lean DEA rate to C-200 was insufficiently set to manage the sour gas, resulting in increased levels of H2S in the fuel gas system.

Corrective actions or preventative steps taken: In response to the elevated H2S levels in the fuel gas system, Operations took immediately action by increasing the DEA rate and therefore reducing the H2S introduced into the fuel gas system. These operational adjustments were made swiftly to mitigate any potential hazards and ensure safe and efficient unit operation.

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| Event Started: | 3/9/2023 | | |
| Stopped: | 3/9/2023 | Ongoing Event | |
| Discovered On: | 3/20/2023 | | |

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| Report ID: | 7878 |
| Source Number: | |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | Regulation 1, Section 301, H & S Code – 41700 Public Nuisance |
| Other: | |

**Event Description:** On March 20, 2023, the BAAQMD issued the Chevron Richmond Refinery a Notice of Violation #A61126 alleging a public nuisance resulting from flaring at the Refinery flares that resulted in 4 confirmed Air District complaints that occurred on March 9, 2023. 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 March 9, 2023 at 6:54 pm, a ground fault on the medium pressure boiler feedwater pump motor PM-3835A caused a loss of power to the 4160V and 480V bus located in the common substation, resulting in the loss of critical equipment and an operator-initiated emergency shutdown of Hydrogen Plant Train 2. In response, hydrogen consumers in the Hydroprocessing Area used emergency procedures to pull feed and depressurize systems to a safe posture, which resulted in flaring. Flares are district-approved safety relief mechanism that enables a controlled means of releasing combustible gases to prevent over-pressurization of equipment to keep equipment and people safe.

**Corrective actions or preventative steps taken:** At the start of the flare activity, Chevron Fire Department (CFD) initialized standard downwind monitoring (10-point atmospheric evaluation between the community and the refinery). 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. An investigation is underway to evaluate the power distribution center and identify key reliability upgrades to aid in the prevention of future reoccurrence. Breakdown RCA #08R31 was filed in association with this event.

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| Event Started: | 3/10/2023 - 3:00 AM |
| Stopped: | 3/10/2023 - 7:30 AM Ongoing Event |
| Discovered On: | 3/13/2023 |

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| Report ID: | 7845 |
| Source Number: | S6039 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC #18656 Part 3 (formerly part 5) |
| BAAQMD: | |
| Other: | Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e)) |

**Event Description:** On March 10, 2023, 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) was less than 270 BTU/SCF, first, from the 03:00 hours to the 04:45 hours and then from the 07:15 hours to the 07:30 hours. Breakdown RCA #08R31 was filed in association with this event.

**Probable Cause:** On March 9, 2023 at 6:54 pm, a ground fault on the medium pressure boiler feedwater pump motor PM-3835A caused a loss of power to the 4160V and 480V bus located in the common substation, resulting in the loss of critical equipment and an operator-initiated emergency shutdown of Hydrogen Plant Train 2. In response, hydrogen consumers in the Hydroprocessing Area used emergency procedures to pull feed and depressurize systems to a safe posture, which resulted in flaring. Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the flare 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 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. Inadvertently, during the RLOP flaring activity, the assist gas was not increased to meet the 270 BTU/scf limit.

**Corrective actions or preventative steps taken:** HSE communicated with Operations to reinforce the flare compliance requirements. A flare operations computer-based training was developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, including NHV.

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| Event Started: | 3/10/2023 - 11:59 PM | | |
| Stopped: | 7/9/2023 - 12:00 AM | Ongoing Event | |
| Discovered On: | 3/13/2023 | | |

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| Report ID: | 7854 |
| Source Number: | S4044, S4045 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | |
| BAAQMD: | Title V permit condition #23872 |
| Other: | |

Event Description: On March 10, 2023 the #5 Rheniformer F-570, F-580 East exceeded it's 365-day NOx limit of 0.040 lbs/mmbtu as required by Title V permit condition 23872. This RCA is being submitted as ongoing.

Probable Cause: In response to prolonged unit turnarounds, start ups, and process unit upsets at the hydrogen trains, as well as plugged and damaged burners on the furnace, the firing rate at F-570 and F-580 was increased to meet the refinery steam demand. However, this increase in firing rate led to a rise in NOx emission rates, which ultimately exceeded the 365-day average limit.

Corrective actions or preventative steps taken: Maintenance personnel have repaired the damaged or plugged burners, and operations are actively working to reduce the NOx emissions by making necessary adjustments. Despite the ongoing turnarounds, the refinery will continue to prioritize efforts to limit NOx emissions, while also ensuring adequate steam production for plant operations.

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| Event Started: | 3/10/2023 - 2:45 AM | | |
| Stopped: | 3/10/2023 - 1:30 PM | Ongoing Event | |
| Discovered On: | 3/13/2023 | | |

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| Report ID: | 7844 |
| Source Number: | S6019 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC #18656 Part 3 (formerly part 5) |
| BAAQMD: | |
| Other: | Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e)) |

Event Description: On March 10, 2023, 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 02:45 hours to 03:30 hours, then, from 04:30 hours to 05:00 hours and then from 12:00 hours to 13:30 hours. Breakdown RCA #08R31 was filed in association with this event.

Probable Cause: On March 10, 2023, Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the flare 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 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 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, including NHV.

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| Event Started: | 3/9/2023 | | Report ID: | 7862 | May have resulted in a violation of: |
| Stopped: | 3/9/2023 | Ongoing Event | Source Number: | S6012 | Permit: |
| Discovered On: | 3/9/2023 | | Abatement Device: | | 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 March 09, 2023. Breakdown RCA #08R31 was filed in association with this event.

Probable Cause: On March 9, 2023, the hydrogen producing plant tripped offline due to electrical equipment malfunction. This incident led to refinery process unit upsets and resultant flaring, which is a District-approved safety relief mechanism that enables a controlled means of releasing combustible gases to prevent over-pressurization of equipment to keep equipment and people safe. There was a loss of power to the SISO flare sample station during the significant rain event, which caused a missed sample at SISO flare at 21:16 hours.

Corrective actions or preventative steps taken: SISO flare sample station was restored once power was regained.

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| Event Started: | 3/9/2023 - 9:16 PM | | Report ID: | 7860 | May have resulted in a violation of: |
| Stopped: | 3/11/2023 - 1:04 AM | Ongoing Event | Source Number: | S6013 | Permit: |
| Discovered On: | 3/9/2023 | | Abatement Device: | | 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 March 09, March 10 and March 11, 2023. Breakdown RCA #08R31 was filed in association with this event.

Probable Cause: On March 9, 2023, the hydrogen producing plant tripped offline due to electrical equipment malfunction. This incident led to refinery process unit upsets and resultant flaring, which is a District-approved safety relief mechanism that enables a controlled means of releasing combustible gases to prevent over-pressurization of equipment to keep equipment and people safe. There was a loss of power to the NISO flare sample station during the significant rain event, which was not restored once power was regained. This caused the missed samples at NISO Flare on March 9th at 21:16 hours; on March 10th at 3:01, 9:34, 12:34, 17:02, and 22:04 hours; and on March 11th at 1:04 hours.

Corrective actions or preventative steps taken: A maintenance work order was issued for the repair of NISO flare sample station.

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| Event Started: | 3/4/2023 - 1:45 AM | | Report ID: | 7822 | May have resulted in a violation of: |
| Stopped: | 3/4/2023 - 3:30 AM | Ongoing Event | Source Number: | S6021 | Permit: PC #18656 Parts 3 (formerly part 5) |
| Discovered On: | 3/6/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(c)) |

Event Description: Title V Update: After further review, the steam meter was determined to be inoperative on March 04, 2023 from 01:11 hours to 03:39 hours. The Refinery is requesting a retraction for this deviation. On March 04, 2023, 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 during from 01:45 hours to 03:30 hours. This report is being submitted in an abundance of caution to ensure that all reporting requirements are met.

Probable Cause: After further review, the steam meter was determined to be inoperative on March 04, 2023 from 01:11 hours to 03:39 hours. The Refinery is requesting a retraction for this deviation.

Corrective actions or preventative steps taken: This report is being submitted in an abundance of caution to ensure that all reporting requirements are met.

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| Event Started: | 3/4/2023 - 5:00 AM | | Report ID: | 7816 | May have resulted in a violation of: |
| Stopped: | 3/4/2023 - 6:00 AM | Ongoing Event | Source Number: | S4227 | Permit: |
| Discovered On: | 3/6/2023 | | Abatement Device: | | BAAQMD: Reg. 9-1-307 |
| | | | | | Other: 40 CFR Part 60, Subpart J |

Event Description: On March 04, 2023, the SRU 1 Train (S4227) exceeded the 1-hour average SO2 limit of 250 ppm, corrected to 0% O2, during the 05:00 clock hour.

Probable Cause: On March 04, 2023, the Sulfur Recovery Unit experienced an upset due to uncompensated H2S feed from SWC vent line. This impacted the H2S/SO2 ratio causing an increase in SO2.

Corrective actions or preventative steps taken: In response, operations took immediate actions by isolating uncompensated H2S feed from SWC vent line and reducing excess air to the main reaction furnace. These operational adjustments mitigated the SO2 limit and ensure safe and efficient unit operation.

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| Event Started: | 3/4/2023 - 5:30 PM | | Report ID: | 7821 | May have resulted in a violation of: |
| Stopped: | 3/4/2023 - 6:00 PM | Ongoing Event | Source Number: | S6039 | Permit: PC #18656 Part 3 (formerly part 5) |
| Discovered On: | 3/6/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e)) |

Event Description: On March 04, 2023, 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) was less than 270 BTU/SCF from 17:30 hours to 18:00 hours.

Probable Cause: Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the flare 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 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. Inadvertently, during the RLOP flaring activity, the assist gas was not increased to meet the 270 BTU/scf limit.

Corrective actions or preventative steps taken: HSE communicated with Operations to reinforce the flare compliance requirements. A flare operations computer-based training was developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, including NHV.

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| Event Started: | 2/24/2023 - 6:00 AM | | Report ID: | 7804 | May have resulted in a violation of: |
| Stopped: | 2/24/2023 - 7:00 AM | Ongoing Event | Source Number: | S4228 | Permit: |
| Discovered On: | 2/27/2023 | | Abatement Device: | | BAAQMD: Reg. 9-1-307 |
| | | | | | Other: 40 CFR Part 60, Subpart J |

Event Description: On February 24, 2023, the SRU 2 Train (S4227) exceeded the 1-hour average SO2 limit of 250 ppm, corrected to 0% O2, during the 06:00 clock hour.

Probable Cause: On February 24, 2023, the SRU 2 Train experienced variations in its acid gas feed composition due to upstream processes. The variation in hydrocarbon in the acid gas feed composition led to the decreased conversion of SO2 in the train due to the lack of air available to maintain proper H2S/SO2 ratios.

Corrective actions or preventative steps taken: Operations responded by increasing caustic solution flow to the SO2 absorbers and increased excess air to the front-end of the train to lower stack SO2 emissions.

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| Event Started: | 2/13/2023 - 10:04 AM | | Report ID: | 7789 | May have resulted in a violation of: |
| Stopped: | 3/17/2023 - 7:39 PM | Ongoing Event | Source Number: | S4285 | Permit: 11066 Part 7 (A5) |
| Discovered On: | 2/14/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: |

Event Description: On February 13, 2023, the FCC TR sets were de-energized at 10:04 hours. The FCC is shutdown for maintenance activities. Title V 30 day update: FCC TR sets were re-energized on March 17, 2023 at 19:39 hours.

Probable Cause: On February 13, 2023, feed was pulled from the FCC unit for maintenance activities and the FCC TR sets were de-energized. The Transformer Rectifier (TR) sets at the electrostatic precipitator (ESP) were de-energized by the safety instrument systems per design during the shutdown. The de-energization of the ESP is done 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: The FCC unit was started up upon completion of maintenance activities, and the TR sets were re-energized per procedure. The Refinery has applied for a revision to Permit Condition 11066, Parts 7A to include language for ESP safety. The 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 that permit application, the Refinery is operating the TR sets and ESP during shutdown in a manner that is required to ensure process safety.

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| Event Started: | 1/26/2023 | | Report ID: | 7793 | May have resulted in a violation of: |
| Stopped: | 2/1/2023 | Ongoing Event | Source Number: | S3197 | Permit: |
| Discovered On: | 2/13/2023 | | Abatement Device: | | BAAQMD: 8-5-328.3 |
| | | | | | Other: |

Event Description: On February 13, 2023, it was discovered that the Refinery failed to submit a tank degassing notification for TK-3197 3-days prior to the start of a degassing operation. On January 26, 2023, TK-3197 started degassing, the degassing was complete on February 1, 2023.

Probable Cause: On January 16, 2023, an external floating roof landing and tank degas notification was submitted to BAAQMD, however, the notification did not include the supplemental degas operation form. After further investigation it was determined the missed degassing notification was caused by inadequate communication during personnel turnover, which resulted in unclear expectations of the individual responsible for the submittal of the degas notifications.

Corrective actions or preventative steps taken: To aid in the prevention of a reoccurrence additional process improvements have been put in place. The Refinery has reinforced the expectation to always follow proper procedures and protocols. No excess emissions occurred as a result of this deviation.

Event Started: 2/6/2023 - 1:00 PM
Stopped: 2/6/2023 - 3:00 PM Ongoing Event
Discovered On: 2/7/2023

Report ID: 7779
Source Number: S4227
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 February 06, 2023, the SRU 1 Train (S4227) exceeded the 1-hour average SO2 limit of 250 ppm, corrected to 0% O2, from the 13:00 clock hour through the 14:00 clock hour.

Probable Cause: On February 06, 2023, as operations were working to introduce feed at the #3 SRU, the #2 SRU tripped offline. The #1 SRU experienced a variation in its acid gas feed composition due to the increased feed routed to the #1 SRU. The variation in the acid gas feed composition led to the decreased conversion of SO2 in the train due to the lack of air available to maintain proper H2S/SO2 ratios.

Corrective actions or preventative steps taken: Operations responded by routing sour gas feed from the SRU to the H2S relief scrubber, and per procedure, increased caustic solution flow to the SO2 absorbers and increased excess air to the front-end of the train to lower stack SO2 emissions.

Event Started: 2/4/2023 - 3:45 PM
Stopped: 2/4/2023 - 4:15 PM Ongoing Event
Discovered On: 2/6/2023

Report ID: 7776
Source Number: S6010
Abatement Device:

May have resulted in a violation of:
Permit: PC #18656 Part 3 (formerly part 5)
BAAQMD:
Other: Refinery Sector Rule 40 CFR 63 Subpart CC (63.670(e))

Event Description: On February 04, 2023, 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 LSFO Flare (6010) was less than 270 BTU/SCF in a 15-minute block from 15:45 hours through 16:15 hours.

Probable Cause: Operations routed the steam flow to the relief system to minimize visible emissions, which also causes the flare net heating value (NHV) of the flare 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 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: HSE communicated with Operations to reinforce the flare compliance requirements. A flare operations computer-based training was developed and rolled out for completion by Operations personnel in areas that operate flares to improve understanding of all flare requirements, including NHV. Lastly, HSE provided in person training to operations to ensure flare training material is understood.

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|---|---|---|---|---|---|
| Event Started: | 2/3/2023 | | Report ID: | 7791 | May have resulted in a violation of: |
| Stopped: | 2/3/2023 | Ongoing Event | Source Number: | S4229 | Permit: |
| Discovered On: | 2/6/2023 | | Abatement Device: | | BAAQMD: BAAQMD Reg 6, Rule 1, Section 301 |
| | | | | | Other: |

Event Description: On February 6, 2023, the BAAQMD Inspector Chris Coelho issued the Chevron Richmond Refinery Notice of Violation A62045 alleging that on February 3, 2023, the SRU Train 3 exceeded visible emissions by 20% based on the Ringelmann 1 scale for an aggregate period of more than three minutes in an hour (10 minutes documented) which is in violation of BAAQMD Reg 6, Rule 1, Section 301.

Probable Cause: On February 3, 2023, the SRU 3 train had no acid gas feed in the unit and was shutdown. Operations was conducting the hot strip procedure with natural gas feed in the unit to prepare the unit for maintenance.

Corrective actions or preventative steps taken: As an immediate corrective action, Operations adjusted air, natural gas, and furnace temperatures per procedure to reduce visible emissions. The Refinery continues to comply with BAAQMD Reg 6, Rule 1, Section 301 through monthly visible emissions evaluations (VEE) using EPA Method 9 that requires a certified observer to measure opacity during three thirty-minute test runs each with a minimum of 24 observations recorded at 15-second intervals. The SRU 3 Train passed its VEE on January 24, 2023.

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|---|---|---|---|---|---|
| Event Started: | 1/24/2023 - 12:11 PM | | Report ID: | 7768 | May have resulted in a violation of: |
| Stopped: | 1/24/2023 - 12:16 PM | Ongoing Event | Source Number: | S6010 | Permit: |
| Discovered On: | 1/24/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: 40 CFR 60 Subpart J (60.104(a)(1)) |

Event Description: On January 24, 2023, flaring occurred at the LSFO Flare (S-6010). The flaring was not due to a startup, shutdown, or malfunction.

Probable Cause: During the #5 Rhenifomer turnaround, increased relief activity caused a high liquid level at V-1171 knockout drum. Inadvertently, the high liquid level caused the K-1171 compressor to trip, resulting in a momentary breech of the LSFO water seal. No visible flaring occurred.

Corrective actions or preventative steps taken: Operations quickly began pumping down the liquid level at V-1171 and restarted compressor K-1171. This incident will be documented, and leanings have been shared with D&R personnel.

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|---|---|---|---|
| Event Started: | 1/16/2023 - 12:00 PM | | |
| Stopped: | 1/16/2023 - 9:00 PM | Ongoing Event | |
| Discovered On: | 1/17/2023 | | |

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|---|---|
| Report ID: | 7754 |
| Source Number: | S4155 |
| Abatement Device: | |

May have resulted in a violation of:

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|---|---|
| Permit: | PC#8773, Part 1 |
| BAAQMD: | |
| Other: | |

Event Description: On January 16, 2023, the F-135 (S-4155) exceeded its 3-hour average NOx limit of 8.85 lb/hr from the12:00 clock hour through the 20:00 clock hour. Breakdown RCA #08Q11 was filed in association with this event.

Probable Cause: On the evening of January 15, 2023, PC-135 (F-135 draft controller) failed. Without PC-135 operating properly, Operations manually controlled the draft/O2 in the field to stay in a safe operating posture. F-135 fuel gas was operated in manual until PC-135 was repaired, resulting in excess O2 and intermittent elevated NOx levels as reported in the January 16-17, 2023 RCA's #08Q14 and #08Q17.

Corrective actions or preventative steps taken: Operations and Maintenance staff met promptly to discuss a repair plan, while scaffolding was erected in preparation for the needed repairs. The Refinery expeditiously replaced two regulators at PC-135, completing the repair on January 17, 2023, at 15:30 hours. F-135 NOx returned back under the 8.85 lb/hr 3-hour average NOx compliance limit on January 17, 2023 at 18:00 hours.

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|---|---|---|---|
| Event Started: | 1/17/2023 - 6:00 AM | | |
| Stopped: | 1/17/2023 - 6:00 PM | Ongoing Event | |
| Discovered On: | 1/17/2023 | | |

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| Report ID: | 7758 |
| Source Number: | S4155 |
| Abatement Device: | |

May have resulted in a violation of:

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| Permit: | PC#8773, Part 1 |
| BAAQMD: | |
| Other: | |

Event Description: On January 17, 2023, the F-135 (S-4155) exceeded its 3-hour average NOx limit of 8.85 lb/hr from the 06:00 clock hour through the 17:00 clock hour. Breakdown RCA #08Q11 was filed in association with this event.

Probable Cause: On the evening of January 15, 2023, PC-135 (F-135 draft controller) failed. Without PC-135 operating properly, Operations manually controlled the draft/O2 in the field to stay in a safe operating posture. F-135 fuel gas was operated in manual until PC-135 was repaired, resulting in excess O2 and intermittent elevated NOx levels as reported in the January 16-17, 2023 RCA's #08Q14 and #08Q17.

Corrective actions or preventative steps taken: Operations and Maintenance staff met promptly to discuss a repair plan, while scaffolding was erected in preparation for the needed repairs. The Refinery expeditiously replaced two regulators at PC-135, completing the repair on January 17, 2023, at 15:30 hours. F-135 NOx returned back under the 8.85 lb/hr 3-hour average NOx compliance limit on January 17, 2023 at 18:00 hours.

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|---|---|---|---|---|---|
| Event Started: | 1/8/2023 - 2:57 PM | | Report ID: | 7745 | May have resulted in a violation of: |
| Stopped: | 2/13/2023 | Ongoing Event | Source Number: | S4285 | Permit: 11066 Part 7(A4) |
| Discovered On: | 1/9/2023 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: |

Event Description: On January 08, 2023, the FCC ESP inlet temperature was less than 550F at the 14:57-clock hour and is still ongoing. Title V Update: The FCC ESP inlet temperature excursion is still ongoing. The temperature excursion stopped when FCC feed was pulled and the ESP was deenergized on February 13, 2023.

Probable Cause: On February 13, 2023, feed was pulled from the FCC unit and the electrostatic precipitator (ESP) was de-energized. After the shutdown, maintenance identified that a water leak inside of an exchanger was found as the cause of the FCC ESP inlet temperature excursion.

Corrective actions or preventative steps taken: The FCC unit was shut down and is currently undergoing maintenance to repair the exchanger.

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| Event Started: | 10/1/2022 | | Report ID: | 7611 | May have resulted in a violation of: |
| Stopped: | | ✓ Ongoing Event | Source Number: | S-6059 | Permit: |
| Discovered On: | 10/1/2022 | | Abatement Device: | | BAAQMD: BAAQMD Regulation 1-523.2 |
| | | | | | Other: |

Event Description: On October 1, 2022, it was discovered that the Isomax Cooling Water Tower hydrocarbon analyzer (78AI260A) exceeded the parametric monitor periods of inoperation limits per Regulation 1-523.2.

Probable Cause: Isomax CWT hydrocarbon analyzer experienced periods of downtime during the commissioning of the Isomax CWT during 1H 2022. In September 2022, the analyzer malfunctioned and became inoperative when its heater was found to no longer be working. Refinery Maintenance staff expedited the order for the replacement part required for repair; however, following installation of the replacement part, the analyzer continued to be inoperative due to the heater and was subsequently sent to the manufacturer for additional repair. UPDATE 1/24/2023 - The analyzer was repaired and returned to service on December 22, 2022 at 13:10 hours. This deviation is ongoing until the analyzer no longer exceeds the parametric monitor periods of inoperation limits.

Corrective actions or preventative steps taken: UPDATE 1/24/2023 -The analyzer was sent to the manufacturer for additional repair with a request for expedited service. During the time that the analyzer was inoperative, the Refinery performed monitoring and sampling as specified in PC 27096 parts 8a through 8e to ensure the CWT meets requirements for hydrocarbon content.

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| Event Started: | 7/1/2022 | | Report ID: | 7427 | May have resulted in a violation of: |
| Stopped: | | ✓ Ongoing Event | Source Number: | | Permit: 2238, 13535, 6660, 15038, 25848, 13364, 25037, 25913, 21165 |
| Discovered On: | 7/1/2022 | | Abatement Device: | | BAAQMD: |
| | | | | | Other: |

Event Description: S-3100, S-3197, S-3189, S-3133, S-3228, S-3202, S-3229, S-3231, S-4424 may not comply with permit conditions that incorporate the trigger thresholds as limits

Probable Cause: Due to the revision of Rule 2-5 Table 2-5-1 trigger thresholds, multiple sources may not comply with permit conditions that incorporate the trigger thresholds as limits. Specifically, S-3100 compliance with condition 2238, S-3197 compliance with condition 13535, S-3189 compliance with condition 6660, S-3133 compliance with condition 15038, S-3228 compliance with condition 25848, S-3202 compliance with condition 13364, S-3229 compliance with condition 25037, S-3231 compliance with condition 25913, S-4424 compliance with condition 21165.

Corrective actions or preventative steps taken: A permit application requesting revision of the conditions to set potential toxic air contaminant emission rates as limits for components that may exceed trigger thresholds was submitted July 1, 2022. All sources toxic air contaminant potential emissions comply with Rule 2-5 standards.

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|---|---|---|---|---|---|
| Event Started: | 2/19/2020 | | Report ID: | 6814 | May have resulted in a violation of: |
| Stopped: | | ✓ Ongoing Event | Source Number: | S32103 | Permit: |
| Discovered On: | 5/13/2021 | | Abatement Device: | | 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 hastily 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 this 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.

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| Event Started: | 10/31/2019 |
| Stopped: | ✓ Ongoing Event |
| Discovered On: | 1/31/2020 |

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| Report ID: | 4385 |
| Source Number: | S3129 |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 2019, 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 October 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 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 permit condition.

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| Event Started: | 8/31/2019 | | |
| Stopped: | | ✓ Ongoing Event | |
| Discovered On: | 1/31/2020 | | |

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| Report ID: | 4386 |
| Source Number: | S0991 |
| Abatement Device: | |

May have resulted in a violation of:

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| 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 2019, 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 August 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 permit 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 12 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 resided 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" at 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: 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(A5) 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 BAAAQMD 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 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 BAAQMD permit condition #11066 part 7A5 on the following dates. May

2016: •May 20 at 0700h to May 21 at 0300 h•May 21 at 0600h to May 23 at 0700 h•May 25 at 2000h to May 2 at 0000 h•May 26 at 1800h to May 27 at 0000h•May 27 at 0800h to May 27 at 1000h•May 28 at 0900h to May 28 at 1100h•May 28 at 2100h to May 28 at 2200 h•May 31 at 2100h to May 31 at 2200h June 2016: •June 6 at 1000h to June 6 at 1400 h•June 10 at 2000h to June 10 at 2100h•June 14 at 2200h to June 15 at 0100 h•June 15 at 0700h to June 15 at 0800h•June 15 at 1200h to June 15 at 1900h•June 15 at 2200h to June 15 at 2300h•June 16 at 0900h to June 17 at 0800h•June 17 at 2000h to June 18 at 0900h•June 18 at 2200h to June 19 at 0100h•June 20 at 1700h to June 25 at 1200h•June 25 at 2000h to June 26 at 1100h•June 26 at 1800h to June 26 at 2100h•June 27 at 0300h to June 27 at 0400h•June 27 at 0500h to June 27 at 11:00h•June 28 at 0500h to June 28 at 0800h•June 28 at 2000h to June 29 at 0200h•June 29 at 1900h to June 30 at 1200h•June 30 at 1900h to July 1 at 0000h July 2016: •Jul 1 at 0000h to Jul 1 at 0200h•July 2 at 0900h to July 2 at 1000h•July 3 at 0200h to July 3 at 1500h•July 4 at 0800h to July 4 at 1600h•July 4 at 2200h to July 5 at 0000h•July 5 at 0000h to July 5 at 0900h•July 6 at 0900h to July 6 at 1500h •July 6 at 1800h to July 7 at 0000h•July 7 at 0000h to July 7 at 0800h•July 7 at 1000h to July 7 at 1300h 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 at 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, 2016 at 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•Sep 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 21:00 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 to 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 to 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, 2016 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 21:00 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•Oct 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 7, 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 00:00 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 Jan 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, 2017 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 4, 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 at 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 to 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 to 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•Apr 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, 2017 at 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 23:00 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 to 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 May 17, 2017 at 06:00•May 17, 2017 at 08:00 hours to May 17, 2017 at 11:00 •May 17, 2017 at 22:00 hours to May 19, 2017 at 04:00•May 19, 2017 at 07:00 hours to May 19, 2017 at 20:00•May 19, 2017 at 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2017 at 03:00 hours to June 27, 2017 at 13:00•June 28, 2017 at 01:00 hours to July 1, 2017 at 00:00 July 2017 •Jul 1 at 0000h to Jul 7 at 2200h•Jul 8 at 0700h to 0900h•Jul 8 at 2100h to Jul 9 at 2300h•Jul 10 at 0000h to Jul 10 at

1500h•Jul 10 at 1800h to Jul 12 at 1200h•Jul 12 at 1400h to 2200h•Jul 13 at 0300h to Jul 14 at 0000h•Jul 14 at 01:00h to Jul 15 at 0000h•Jul 15 at 1200h to Jul 15 at 2000h•Jul 16 at 0000h to 02:00h•Jul 16 at 0800h to Jul 16 at 1100h•Jul 16, 2017 at 14:00 hours to Jul 16, 2017 at 23:00 hours•Jul 17, 2017 at 04:00 hours to Jul 17, 2017 at 11:00 hours•Jul 18, 2017 at 01:00 hours to Jul 19, 2017 at 23:00 hours•Jul 20, 2017 at 13:00 hours to Jul 21, 2017 at 02:00 hours•Jul 21, 2017 at 12:00 hours to Jul 22, 2017 at 23:00 hours•Jul 23, 2017 at 14:00 hours to Jul 23, 2017 at 17:00 hours•Jul 24, 2017 at 02:00 hours to Jul 24, 2017 at 07:00 hours•Jul 24, 2017 at 11:00 hours to Jul 24, 2017 at 13:00 hours•Jul 24, 2017 at 16:00 hours to Jul 24, 2017 at 20:00 hours•Jul 25, 2017 at 07:00 hours to Jul 25, 2017 at 08:00 hours•Jul 25, 2017 at 12:00 hours to Jul 25, 2017 at 23:00 hours•Jul 26, 2017 at 15:00 hours to Jul 29, 2017 at 10:00 hours•Jul 29, 2017 at 15:00 hours to Aug 1 at 0000h August 2017 •Aug 1, 2017 at 00:00 hours to Aug 1, 2017 at 17:00•Aug 1, 2017 at 22:00 hours to Aug 2, 2017 at 15:00•Aug 2, 2017 at 18:00 hours to Aug 3, 2017 at 13:00•Aug 3, 2017 at 15:00 hours to Aug 4, 2017 at 02:00•Aug 4, 2017 at 07:00 hours to Aug 6, 2017 at 07:00•Aug 6, 2017 at 14:00 hours to Aug 13, 2017 at 18:00•Aug 13, 2017 at 23:00 hours to Aug 14, 2017 at 21:00• Aug 15, 2017 at 07:00 hours to Aug 15, 2017 at 10:00• Aug 15, 2017 at 14:00 hours to Aug 15, 2017 at 19:00• Aug 15, 2017 at 23:00 hours to Aug 17, 2017 at 21:00• Aug 18, 2017 at 01:00 hours to Aug 20, 2017 at 16:00•Aug 20, 2017 at 19:00 hours to Aug 20, 2017 at 21:00• Aug 21, 2017 at 00:00 hours to Aug 21, 2017 at 22:00• Aug 22, 2017 at 01:00 hours to Aug 22, 2017 at 12:00• Aug 22, 2017 at 14:00 hours to Aug 22, 2017 at 19:00• Aug 23, 2017 at 02:00 hours to Aug 24, 2017 at 16:00•Aug 24, 2017 at 20:00 hours to Aug 24, 2017 at 21:00• Aug 26, 2017 at 07:00 hours to Aug 27, 2017 at 05:00 September2017 • Sept 14, 2017 at 07:00 hours to 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2017 • None January 2018 • Jan 15, 2018 at 08:00 hours to Jan15, 2018 at 18:00 hours • Jan 15, 2018 at 19:00 hours to Jan 15, 2018 at 22:00 hours • Jan22, 2018 at 13:00 hours to Jan 22, 2018 at 14:00 hours February 2018 • Feb 8, 2018 at 09:00 hours to Feb 8, 2018 at 12:00 hours • Feb 8, 2018 at 14:00 hours to Feb 10, 2018 at 16:00 hours • Feb 16, 2018 at 21:00 hours to Feb 17, 2018 at 02:00 hours • Feb 19, 2018 at 22:00 hours to Feb19, 2018 at 23:00 hours • Feb 20, 2018 at 19:00 hours to Feb 20, 2018 at 21:00 hours • Feb 21, 2018 at 12:00 hours to Feb 24, 2018 at 02:00 hours • Feb 24, 2018 at 06:00 hours to Feb 24, 2018 at 12:00 hours • Feb24, 2018 at 19:00 hours to Feb 25, 2018 at 23:00 hours • Feb 26, 2018 at 06:00 hours to Mar 1, 2018 at 00:00 hours March 2018 • March 1, 2018 at 00:00 hours to March 3, 2018 at 18:00 hours • March 3, 2018 at 20:00 hours to March 3, 2018 at 22:00 hours • March 5, 2018 at 16:00 hours to March 5, 2018 at 21:00 hours • March 5, 2018 at 22:00 hours to 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S/D; Reference RCA # 07G76 • April 17, 2018 at 17:00 hours to April 18, 2018 at 06:00 hours • April 20, 2018 at 20:00 hours to April 20, 2018 at 22:00 hours • April 21, 2018 at 07:00 hours to April 21, 2018 at 13:00 hours • April 22, 2018 at 09:00 hours to April 22, 2018 at 10:00 hours • April 23, 2018 at 21:00 hours to April 24, 2018 at 00:00 hours • April 25, 2018 at 14:00 hours to April 26, 2018 at 08:00 hours • April 26, 2018 at 12:00 hours to April 27, 2018 at 10:00 hours May 2018 • May 9, 2018 at 08:00 hours to May 9, 2018 at 18:00 hours • May 10, 2018 at 07:00 hours to May 10, 2018 at 16:00 hours • May 11, 2018 at 09:00 hours to May 11, 2018 at 14:00 hours • May 11, 2018 at 19:00 hours to May 12, 2018 at 10:00 hours • May 15, 2018 at 08:00 hours to May 15, 2018 at 10:00 hours • May 15, 2018 at 14:00 hours to May 16, 2018 at 10:00 hours • May 16, 2018 at 20:00 hours to May 17, 2018 at 10:00 hours • May 17, 2018 at 11:00 hours to May 17, 2018 at 13:00 hours • May 17, 2018 at 21:00 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2019 at 01:00 hours –FCC unplanned S/D due to power outage• February 10, 2019 at 15:00 hours to February 13, 2019 at 03:00 hours –FCC S/U subsequent to unplanned S/D due to power outage•February 20, 2019 at 00:00 hours to February 20, 2019 at 11:00 hours•February 20, 2019 at 22:00 hours to February 21, 2019 at 08:00 hours•February 21, 2019 at 20:00 hours to February 22, 2019 at 13:00 hours•February 23, 2019 at 08:00 hours to February 23, 2019 at 12:00 hours-Reference RCA # 07L28 March 2019 •March 2, 2019 at 00:00 hours to March 2, 2019 at 05:00 hours•March 2, 2019 at 09:00 hours to March 2, 2019 at 10:00 hours•March 5, 2019 at 20:00 hours to March 6, 2019 at 03:00 hours• March 6, 2019 at 11:00 hours to March 7, 2019 at 09:00 hours – FCC unplanned S/U due to power outage; Reference RCA # 07L46•March 9, 2019 at 21:00 hours to March 9, 2019 at 22:00 hours•March 11, 2019 at 21:00 hours to March 13, 2019 at 04:00 hours•March 14, 2019 at 18:00 hours to March 14, 2019 at 19:00 hours•March 15, 2019 at 00:00 hours to March 16, 2019 at 20:00 hours•March 18, 2019 at 08:00 hours to March 20, 2019 at 08:00 hours – FCC process unit upset; Reference RCA # 07L74 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 hours 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• May 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 at 0000 hours to July 1 0000 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 07:00 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, 2019 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•July 29, 2019 at 07:00 hours to August 1, 2019 at 00:00 hours August 2019 •Aug 1 at 0000h to Aug at 1400h•Aug 11 at 2200h to Aug 11 at 2300h•Aug 13 at 0600h to Aug 13 at 0800h•Aug 13 at 2000h to Sep 1, 2019 0000h September 2019 Sep 1 at 0000h to Oct 1, 2019 at 0000h October 2019 Oct 1 at 0000h to Nov 1, 2019 at 0000h November 2019 Nov 1 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 Feb 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 at 0000h to May 6 at 1500h•May 6 at 1800h to May 6 at 1900h•May 6 at 2000h to May 6 at 2300h•May 7 at 0100h to May 7 at 1000h• May 7 at 1700h to May 7 at 1900h•May 8 at 0000h to May 8 at 0100h•May 8 at 0200h to June 1, 2020 at 00:00h June 2020 June 1 at 0000h to July 1, 2020 at 0000h July 2020 July 1 at 0000h to July 8 at 1800h•July 9 at 0800h to July 9 at 1100h•July 10 at 1800h to Aug 1 at 0000 hours August 2020 Aug 1, 2020 at 0000h to Aug 1, 2020 at 0000h September 2020 Sept 1 at 0000h to Sept 15 at 0500h•Sept 15 at 0900h to Oct 1 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 01, 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 February 2021 Feb 1 at 0000h to Mar 1 at 0000h March 2021 Mar 1 at 0000h to Mar 2 at 1200h•Mar 5 at 1300h to Mar 5 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 hours 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, 2021 at 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 0900h 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, 2021 at 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, 2021 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 •Sep 1 at 2000h to Sept 2, 2021 at 0300h•Sep 2 at 1800h to Sep 4 at 0300h•Sep 4 at 0800h to Sept 6 at 0100h•Sept 6 at 0800h to Sep 6 at 1000h•Sep 6 at 1500h to Sep 7 at 0900h•Sep 8 at 0500h to Sep 8 at 1400h•Sep 11 at 0700h to Sep 11, 2021 at 1200h•Sep 13 at 0700h to Sep 13 at 1600h•Sep 14 at 0200h to Sep 17 at 1900h•Sep 18, 2021 at 0800h to Sep 18 at 1700h•Sep 19, 2021 at 0700h to Sept 20, 2021 at 0600h•Sep 20 at 1000h to Sep 21 at 0700h•Sep 21, 2021 at 1300h to Sep 21 at 2300h•Sep 22 at 0600h to Sep 22, 2021 at 1000h•Sep 22 at 1600h to Sep 23 at 1500h•Sep 24 at 1000h to Sep 24 at 0300h•Sep 25 at 0200h to Sep 25 at 1400h•Sep 25 at 2000h to Sep 26 at 0400h•Sept 26, 2021 at 1300h to Sep 27 at 0500h•Sep 28 at 0200h to Sep 29 at 0800h•Sep 29 at 1400h to Sep 30 at 0100h•Sep 30at 1400h to Oct 1 at 0000h October 2021 •Oct 1 at 0000h to Oct 1 at 0100h•Oct 1 at 0700h to Oct 1 at 1700h•Oct 2 at 1600h to Oct 2 at 1700h•Oct 3 at 0700h to Oct 3 at 0800h•Oct 3 at 1400h to Oct 4 at 0300h•Oct 4 at 0800h to Oct 4 at 2300h•Oct 6 at 1600h to Oct 6 at 2000h•Oct 8 at 1600h to Oct 8 at 1900h•Oct 11 at 2000h to Oct 11 at 2300h•Oct 12 at 0700h to Oct 12 at 1900h•Oct 12 at 2300h to Oct 13 at 0200h•Oct 13 at 0700h to Oct 13 at 1000h•Oct 13 at 2000h to Oct 14 at 0000h•Oct 14 at 1000h to Oct 14 at 2000h•Oct 17 at 0900h to Oct 17 at 1000h•Oct 24 at 0:00h to Oct 24 at 1000h•Oct 24 at 1000h to Nov 1 at 00:00 - ESP S/D due to unplanned FCC Shutdown. •Nov 1 at 0000h to Nov 11 at 0600h - ESP S/D due to unplanned FCC Shutdown.•Nov 11 at 0700h to Nov 11 at 0900h •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 1000h to Dec 22 at 2200h•Dec 24 at 0700h to 1500h•Dec 27 at 0200h to Jan 1, 2022 at 0000h •Jan 01, 2022 at 0000h to Jan 10 at 2200h •Feb 2, 2022 at 1000h to Feb 3 at 0800h•Feb 23 at 1200h to Feb 23 at 2100h•Feb 24 at 0800h to Feb 24 at 2100h•Feb 25 at 0300h to Feb 25 at 0600h •Mar 07, 2022 at 2200h to Mar 14 at 1000h•Mar 14 at 1400h to Mar 14 at 2200h•Mar 15 at 0900h to Mar 19 at 0400h•Mar 19 at 1500h to Apr 01 at 0000h •Apr 1, 2022 at 0000h to Apr 29 at 1100h•Apr 29 at 1300h to Apr 29 at 2300h •May 2, 2022 at 1600h to May 2 at 1900h•May 3 at 0700h to May 3 at 1100h•May 3 at 1400h to May 3 at 1700h•May 4 at 0900h to May 4 at 1100h•May 5 at 0100h to May 5 at 1100h•May 8 at 0900h to May 8 at 1200h•May 9 at 0800h to May 9 at 1000h•May 12 at 1300h to May 12 at 1400h•May 13 at 0100h to May 13 at 1200h•May 17 at 0800h to May 17 at 1000h•May 20 at 0200h to May 20 at 0900h•May 21 at 0100h to May 21 at 1100h•May 21 at 1800h to May 22 at 0900h•May 22 at 1500h to May 22 at 1600h •June 2, 2022 at 0300h to June 2 at 0500h•June 2 at 1700h to June 2 at 2200h•June 3 at 1500h to June 3 at 1900h•June 4 at 1200h to June 4 at 2300h•June 8 at 0500h to June 8 at 0700h•June 9 at 0700h to June 9 at 0900h•June 9 at 2200h to June 10 at 0700h•June 15 at 2100h to June 16 at 0000h•June 16 at 0700h to June 16 at 1000h•June 16 at 2000h to June 16 at 2300h•June 17 at 1500h to June 17 at 2000h•June 18 at 0400h to June 18 at 0600h•June 28 at 2100h to June 28 at 2300h •July 13, 2022 at 2000h to July 14 at 0200h • Aug, 2022The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of August. •Sep 5, 2023, at 1800h to Sep 7 at 1300h-ESP S/D due to FCC unplanned shutdown•Sep 14 at 1100h to Sep 18 at 0000h-ESP S/D due to FCC unplanned shutdown•Sep 18 at 0000h to Sep 18 at 0200h •Oct. 2023, The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of October •Nov. 2023, The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of November •Dec. 2022, The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of December •Jan. 2023, The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of January. •Feb. 2023 The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of February. February 13, 2023 at 11:00 - ESP S/D due to unplanned FCC Shutdown. •March 13, 2023 at 11:00 hours to March 17, 2023 at 21:00 - ESP S/D due to unplanned FCC Shutdown. •April 2023, The Refinery did not deviate from BAAQMD permit condition #11066-part 7A5 in the month of April. •May 13, 2023 at 20:00 hours to May 14, 2023 at 15:00

Corrective actions or preventative steps taken: FCC NH3 Optimization, Reg 6-5, trial testing is being conducted and still ongoing.. The FCC NH3 Optimization, Regulation 6-5 trial testing was conducted March 2016 through June 2017. The Optimization and Demonstration Protocol Final Report and a Revision to Permit Application 27796/27797 was submitted to BAAQMD August 31, 2017. The report shows that the total of condensable and filterable particulate emissions are minimized when the FCC operates outside of the condition 11066 permit requirements. The permit application requests revision to the TSP limit and deletion of the secondary current limit in condition 11066 in order to minimize condensable particulate, which comprised the bulk of the particulate emissions during the trial testing

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 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 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 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 permit 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 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 22,676,000 bbls. for S-3104. As of 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 2008, 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 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 permit 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 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 8,560,287 bbl. for S-3071. As of 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, on 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 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 permit 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 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 5,059,000 bbl. for S-1688. As of 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 November 2006, on December 1, 2006, Chevron determined that S-1688 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 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 permit 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 new 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 bbls 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 for 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 permit. 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 9/1/2018: 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 through 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 reporting 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 of 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 the 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 and no modifications were made which enabled the change in service. 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:** 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) 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 Chevron sum the total throughput for each of the twelve months preceeding the calculation date. 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 the 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 through 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 for 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 reflect 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 | ***Tolly Graves*** | ***Director, Richmond Refinery*** | 7/26/2023 |
|---|---|---|---|
| Signature of Responsible Official | Print Name | Title | Date |

# BAAQMD Title V Permit
## 6 Month Monitoring Report

*From* 01/01/2023 *to* 06/30/2023

**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: Environmental Feild Coordinator  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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7739 | V870 | V-870 H2S analyzer | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 1/2/2023 3:59 AM

Stopped: 1/3/2023 8:24 AM

Discovered on: 1/3/2023

Event Description: On January 02, 2023, the V-870 Total Sulfur analyzer became inoperative at 03:59 hours. The analyzer was back in service on January 03, 2023 at 08:24 hours.

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7738 | S4228 | | ✓ | | | | ✓ | | | | | | | | | | | | | | | | |

Started: 1/2/2023 5:30 AM

Stopped: 1/3/2023 10:33 AM

Discovered on: 1/3/2023

Event Description: On January 02, 2023, the SRU #2 Train SO2 Low Range analyzer became inoperative at 05:30 hours. The SO2 Low Range analyzer was back in service on January 03, 2023 at 10:33 hours.

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7760 | S4155 | | ✓ | | | ✓ | | | | | | ✓ | | | | | | | | | | | |

Started: 1/21/2023 4:17 AM

Stopped: 1/23/2023 9:28 AM

Discovered on: 1/23/2023

Event Description: On January 21, 2023, the F-135 NOx and O2 analyzers became inoperative at 04:17 hours. The analyzers were back in service on January 23, 2023 at 09:28 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7766 | S6013 | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 1/30/2023 6:17 AM

Stopped: 1/31/2023 10:38 AM

Discovered on: 1/30/2023

Event Description: On January 30, 2023 the NISO Flare Vent Gas Pressure Meter (69PI287) became inoperative at 06:17 hours. The Vent Gas Pressure Meter (69PI287) was back in service on January 31, 2023 at 10:38 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7767 | V870 | V-870 H2S analyzer | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 2/1/2023 4:01 AM

Stopped: 2/2/2023 3:17 PM

Discovered on: 2/2/2023

Event Description: RESUMPTION OF MONITORING On February 02, 2023, the V-870 Total Sulfur analyzer was back in service at 15:17 hours. On February 01, 2023, the V-870 Total Sulfur analyzer became inoperative at 04:01 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7777 | S4167 | | ✓ | | | ✓ | | | | | | | | | | | | | | | | | |

Started: 2/5/2023 5:38 AM

Stopped: 2/6/2023 9:21 AM

Discovered on: 2/6/2023

Event Description: On February 05, 2023, the F-710 NOx analyzer became inoperative at 05:38 hours. The NOx analyzer was back in service on February 06, 2023 at 09:21 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7786 | S4471 | | | | ✓ | | | | ✓ | | | | | | | | | | | | | | |

Started: 2/12/2023 4:31 AM

Stopped: 2/13/2023 10:45 AM

Discovered on: 2/13/2023

Event Description: On February 12, 2023, the F-1100 PSA1 Tail Gas Total Sulfur analyzer became inoperative at 04:31 hours. The F-1100 PSA1 Tail Gas Total Sulfur analyzer was back in service on February 13, 2023 at 10:45 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7785 | S4159, S4160 | | ✓ | | | ✓ | | | | | | ✓ | | | | | | | | | | | |

Started: 2/10/2023 5:02 AM

Stopped: 2/11/2023 7:45 AM

Discovered on: 2/13/2023

Event Description: On February 10, 2023, the F-410/420 NOx and O2 analyzers were inoperative at 05:02 hours. The analyzers were back in service on February 11, 2023 at 07:45 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7790 | S6016 | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 2/13/2023 11:25 AM

Stopped: 2/17/2023 5:37 PM

Discovered on: 2/14/2023

Event Description: RESUMPTION OF MONITORING On February 17, 2023, the FCC Flare Vent Gas Flow Meter (59FI735) was back in service at 17:37 hours. On February 13, 2023, the FCC Flare Vent Gas Flow Meter (59FI735), became inoperative at 11:25 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7792 | S6016 | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 2/15/2023 6:43 AM

Stopped: 2/17/2023 8:40 AM

Discovered on: 2/17/2023

Event Description: On February 15, 2023, the FCC Flare Vent Gas Flow Meter (59FI737), became inoperative at 06:43 hours. The analyzer was back in service on February 17, 2023 at 08:40 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7796 | S6013 | | | | ✓ | | | | | | | | | | | | ✓ | | | | | | |

Started: 2/21/2023 11:10 AM

Stopped: 2/24/2023 9:11 AM

Discovered on: 2/22/2023

Event Description: RESUJMPTION OF MONITORING On February 24, 2023, the NISO Flare steam flowmeter (69FC283) was back in service at 09:11 hours. On February 21, 2023, the NISO Flare steam flowmeter (69FC283) became inoperative at 11:10 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7847 | S4159, S4160 | | ✓ | | | ✓ | | | | | | ✓ | | | | | | | | | | | |

Started: 3/9/2023 7:12 PM

Stopped: 3/11/2023 8:03 AM

Discovered on: 3/13/2023

Event Description: On March 09, 2023, the F-410/420 NOx and O2 analyzers were inoperative at 19:12 hours. The analyzers were back in service on March 11, 2023 at 08:03 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7846 | S4061, S4062 | | ✓ | | | ✓ | | | | | | | | | | | | | | | | | |

Started: 3/11/2023 3:44 PM

Stopped: 3/13/2023 12:49 PM

Discovered on: 3/13/2023

Event Description: On March 11, 2023, the F-410/447 NOx analyzer was inoperative at 15:44 hours. The NOx analyzer was back in service on March 13, 2023 at 12:49 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7848 | S4472 | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 3/11/2023 1:52 PM

Stopped: 3/13/2023 8:09 AM

Discovered on: 3/13/2023

Event Description: On March 11, 2023 the F-2100 PSA2 Tail Gas Fuel BTU analyzer became inoperative at 13:52 hours. The F-2100 PSA2 Tail Gas Fuel BTU analyzer was back in service on March 13, 2023 at 08:09 hours

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7858 | S6016 | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 3/14/2023 9:12 PM

Stopped: 3/17/2023 8:05 AM

Discovered on: 3/15/2023

Event Description: RESUMPTION OF MONITORING On March17, 2023, the FCC Flare Vent Gas Flow Meter (59FI737), was back in service at 08:05 hours. On March14, 2023, the FCC Flare Vent Gas Flow Meter (59FI737), became inoperative at 21:12 hours.

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7869 | S4285 | | ✓ | | | | | ✓ | | | | | | | | | | | | | | | |

Started: 3/18/2023 5:29 AM

Stopped: 3/21/2023 2:48 PM

Discovered on: 3/20/2023

Event Description: RESUMPTION OF MONITORING On March 21, 2023, the FCC (F-300) CO analyzer was back in service at 14:48 hours. On March 18, 2023, the FCC (F-300) CO analyzer became inoperative at 05:29 hours.

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7893 | S4070 | | ✓ | | | ✓ | | | | | | ✓ | | | | | | | | | | | |

Started: 4/2/2023 7:19 PM

Stopped: 4/4/2023 2:30 PM

Discovered on: 4/3/2023

Event Description: On April 02, 2023 the F-1100A NOx and O2 analyzers became inoperative at 19:19 hours. The F-1100A NOx and O2 analyzers were back in service on April 04, 2023 at 14:30 hours.

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7903 | | | | ✓ | | | | | ✓ | | | | | | | | | | | | | | |

Started: 4/11/2023 11:47 AM

Stopped: 4/13/2023 5:12 AM

Discovered on: 4/13/2023

Event Description: On April 11, 2023, the H2S analyzer at the Castro Street GLM Station was inoperative at 11:47 hours. On April 13, 2023, the H2S analyzer at the Castro Street GLM Station was back in service at 05:12 hours.

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7918 | S4229 | | ✓ | | | | ✓ | | | | | | | | | | | | | | | | |

Started: 4/19/2023 6:01 PM

Stopped:

Discovered on: 4/21/2023

Event Description: On April 19, 2023 the SRU #3 Train SO2 analyzer became inoperative at 18:01 hours. This was identified through a Relative Accuracy Test Audit. Chevron was notified on April 21, 2023. This filing is being done in an abundance of caution as the investigation is ongoing.

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| 7921 | | | | | ✓ | | | | | | | | | | | | | | | | | | |

Started: 4/24/2023 4:18 AM

Stopped: 4/25/2023 1:06 PM

Discovered on: 4/24/2023

Event Description: On April 24, 2023, the V-870 Fuel Gas Drum BTU analyzer was inoperative at 04:18 hours. On April 25, 2023, the BTU analyzer came back online at 13:06 hours.

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| 7922 | V701 | | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 4/25/2023 4:31 AM

Stopped: 4/26/2023 12:31 PM

Discovered on: 4/25/2023

Event Description: On April 25, 2023, the V-701 Fuel Gas Drum H2S analyzer became inoperative at 04:31 hours. On April 26, 2023, the H2S analyzer came back online at 12:31 hours.

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| 7937 | S4472 | F-2100 PSA 2 Tail Gas, Total Sulfur | | | ✓ | | | | ✓ | | | | | | | | | | | | | | |

Started: 5/7/2023 12:47 AM

Stopped: 5/8/2023 9:29 AM

Discovered on: 5/8/2023

Event Description: On May 7, 2023, the F-2100 PSA2 Tail Gas Total Sulfur analyzer (34AI22108) became inoperative at 00:47 hours. On May 8, 2023, the F-2100 PSA2 Tail Gas Total Sulfur analyzer came back online at 09:29 hours.

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| 7963 | V870 | V-870 H2S analyzer | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 5/21/2023 5:00 AM

Stopped: 5/22/2023 8:59 AM

Discovered on: 5/22/2023

Event Description: On May 21, 2023, the V-870 Total Sulfur analyzer became inoperative at 05:00 hours. The analyzer was back in service on May 22, 2023 at 08:59 hours.

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| 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7961 | S4227 | | ✓ | | | | ✓ | | | | | | | | | | | | | | | | |

Started: 5/19/2023 4:58 AM

Stopped: 5/20/2023 5:22 AM

Discovered on: 5/22/2023

Event Description: On May 19, 2023 the SRU #1 Train SO2 analyzer became inoperative at 04:58 hours. The SO2 analyzer was back in service on May 20, 2023 at 05:22 hours.

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| 7962 | V870 | V-870 H2S analyzer | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 5/21/2023 4:32 AM

Stopped: 5/22/2023 5:00 AM

Discovered on: 5/22/2023

Event Description: On May 21, 2023, the V-870 H2S analyzer became inoperative at 04:32 hours. The H2S analyzer was back in service on May 22, 2023 at 05:00 hours.

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| 7969 | V701 | | ✓ | | | | | | ✓ | | | | | | | | | | | | | | |

Started: 5/29/2023 4:01 AM

Stopped: 5/30/2023 8:09 AM

Discovered on: 5/29/2023

Event Description: On May 29, 2023, the V-701 Fuel Gas Drum H2S analyzer became inoperative at 04:01 hours. On May 30, 2023, the H2S analyzer came back online at 08:09 hours.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7983 | S4285 | | ✓ | | | | | | | | | | | | ✓ | | | | | | | | |

Started: 6/9/2023 7:45 PM

Stopped: 6/11/2023 3:45 PM

Discovered on: 6/12/2023

Event Description: Update: On June 12, 2023, Chevron submitted RCA 08M15, which had the incorrect time of occurrence and incorrect date of incident stopped on the description. Chevron is resubmitting this RCA to correct these errors. On June 9, 2023, the FCC Opacity analyzer became inoperative at 19:45 hours. On June 11, 2023, the FCC Opacity analyzer was back in service at 15:45 hours.

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| 7984 | | | | ✓ | | | | | | | | | | | | | | | | | | | |

Started: 6/12/2023 8:37 AM

Stopped: 6/14/2023 10:20 AM

Discovered on: 6/13/2023

Event Description: RESUMPTION OF MONITORING On June 14, 2023, the Isomax Cooling Water Tower hydrocarbon analyzer (78AI260A) was back in service at 10:20 hours. On June 12, 2023, the Isomax Cooling Water Tower hydrocarbon analyzer (78AI260A) became inoperative at 08:37 hours.

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