

Environmental Reportable Events Summary



Event Date: August 17, 2023	
Event Title: Plant 1 – Sulfur Tank No. 98 vent opened to atmosphere	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 1 – No. 1 Sulfur Recovery Unit (SRU)	
<p>Event Summary: On August 17, 2023, at the Plant 1 Sulfur Recovery Complex, the hatch to Tank No. 98 opened and vented nitrogen with trace amounts of H₂S to the atmosphere. Suncor Operators promptly responded to the incident and identified that the steam tracing was off, which caused the piping to the Tail Gas Unit Incinerator H-25 to become plugged, which caused an over-pressurization in the line and resulted in the tank hatch opening. Once the steam tracing was turned on, normal operations resumed.</p> <p>Nitrogen vented to the atmosphere with trace amounts of H₂S for approximately 30 minutes. Under normal conditions, nitrogen and trace amounts of H₂S is routed to the Tail Gas Unit (TGU) and vented through the TGU incinerator, thus combusting any of the H₂S in the incinerator.</p> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	
Permit Term or Condition	Maximum Reported Value
Emissions from sulfur pit (T-98) are routed to the TGU and vented through the TGU incinerator (H-25).	Sulfur pit emissions vented to atmosphere.

Event Date: August 30, 2023	
Event Title: Plant 1, Main Plant Flare H ₂ S Exceedance	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 1 – Main Plant Flare	
<p>Event Summary: On August 30, 2023, the flare gas compressor malfunctioned, redirecting gases with elevated concentrations of hydrogen sulfide (H₂S) to the Plant 1 Main Plant Flare. As a result, the Plant 1 Main Plant Flare exceeded the applicable 3-hour rolling average H₂S limit. Operators worked diligently to bring the flare gas compressor back online and the issue was resolved. H₂S is combusted at the flare tip, which results in the generation of sulfur dioxide (SO₂) and water vapor.</p> <p>The Plant 1 Main Plant Flare exceeded the Hydrogen Sulfide (H₂S) 3-hour rolling average limit from 4:00 p.m. to 6:00 p.m. on August 30, 2023.</p> <p>The investigation for this incident is on-going. The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	

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Permit Term or Condition	Maximum Reported Value
Title V Operating Permit, Condition 29.9: Flare gas shall not contain H ₂ S in excess of 162 ppm, on a 3-hour rolling average.	216 ppm H ₂ S in flare gas (3-hr rolling average)

Event Date: September 1-3, 2023	
Event Title: Plant 1, Fluidized Catalytic Cracking Unit (FCCU) Trip and Startup Exceedances	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 1 – FCCU	
Event Summary: <p>On September 1, 2023, a pump failure ultimately led to the FCC releasing excess carbon monoxide (CO) emissions that were above the applicable 500 ppm limit.</p> <p>On September 2, 2023, while continuing the response to the pump failure, the FCCU experienced a temperature change, which resulted in the activation of the emergency shutdown system, which operated as designed. The FCCU was stabilized, and on September 3, 2023, the FCCU began the startup process, which resulted in carbon monoxide (CO) and opacity exceedances.</p> <p>The investigation for this incident is on-going. The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	
Permit Term or Condition	Maximum Reported Value
Title V Operating Permit, Condition 22.7: Opacity shall not exceed 20% on a six-minute rolling average.	9/3/23 2:18 p.m. - 2:36 p.m. (18 minutes) 9/3/23 2:48 p.m. - 2:54 p.m. (6 minutes) 9/3/23 9:30 p.m. - 10:00 p.m. (30 minutes) Maximum opacity was 37%.
Title V Operating Permit, Condition 35.2: Opacity shall not exceed 30% on a six-minute rolling average.	9/03/23 9:36 p.m. - 9:54 p.m. (18 minutes) 9/03/23 10:02 p.m. - 10:05 p.m. (3 minutes) Maximum opacity was 37%.
Title V Operating Permit, Condition 22.10: Shall meet an emission limit of 500 ppmvd CO at 0% O ₂ on a 1-hour average basis.	9/01/23 5:00 p.m. - 6:00 p.m. (1 hour) 9/01/23 10:00 p.m. - 11:00 p.m. (1 hour) 9/02/23 1:00 p.m. - 5:00 p.m. (4 hours) 9/03/23 6:00 p.m. - 11:00 p.m. (5 hours) Maximum CO at 0% was 2,030 ppmv.
Title V Operating Permit, Condition 55.11: Shall meet an emission limit of 500 ppmvd CO on a 1-hour average basis.	9/02/23 2:00 p.m. - 9:00 p.m. (7 hours) 9/02/23 10:00 p.m. - 9/03/23 4:00 p.m. (18 hours) 9/03/23 6:00 p.m. - 11:00 p.m. (5 hours) Maximum CO was 1,030 ppmv.

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