

Environmental Reportable Events Summary



Event Date: May 24, 2023 – May 25, 2023	
Event Title: Hydrogen Plant Pressure Swing Adsorption (PSA) Unit Trip	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 1 Main Plant Flare	
<p>Event Summary: On May 24, 2023, the pressure swing adsorption (PSA) unit at the Hydrogen Plant tripped due to high pressure in the unit. The PSA unit trip caused the flare suction valve on the Plant 1 main plant flare gas recovery system to automatically open as designed, redirecting gases with elevated concentration of hydrogen sulfide (H₂S) to the Plant 1 Main Plant Flare. As a result, the Plant 1 Main Plant Flare gas H₂S limit was exceeded. Operators worked diligently to bring the PSA unit back online and restore the Hydrogen Plant's functionality. The issue was resolved once the PSA came back online. 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 gas H₂S limit was exceeded from 5:00 p.m. on May 24, 2023, to 4:00 a.m. on May 25, 2023.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	
Permit Term or Condition	Maximum Reported Value
162 ppm H ₂ S in flare gas (3-hour rolling average)	319 ppm H ₂ S in flare gas (3-hour rolling average)
<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>	

Event Date: May 24, 2023	
Event Title: No. 1 Sulfur Recovery Unit Startup	
Impacted Media (air, water, or soil): Air	
Operating Unit: No. 1 Sulfur Recovery Unit	
<p>Event Summary: On May 24, 2023, the planned startup activities of the No. 1 Sulfur Recovery Unit (No. 1 SRU) resulted in elevated sulfur dioxide (SO₂) emissions from the Tail Gas Unit Incinerator (H-25). The elevated SO₂ emissions from H-25 occurred as the No. 1 SRU warmed up and stopped once the unit reached operational stability. Startup procedures were followed during this time.</p> <p>The event occurred between 11:00 a.m. and 11:00 p.m. on May 24, 2023.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	
Permit Term or Condition	Maximum Reported Value
SO₂ limits were exceeded for 12 hours	
250 ppm SO ₂ at 0% O ₂ (12-hour rolling average) from the tail gas unit incinerator (H-25)	313 ppm SO ₂ at 0% O ₂ during a 12-hour average period
15.68 lb/hr SO ₂ from the Plant 1 tail gas unit incinerator (H-25)	29 lb/hr SO ₂ from the Plant 1 tail gas unit incinerator during a 1-hour period
<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>	

**Information in this report is based on the facts known to Suncor Energy (U.S.A.), Inc. at the time of preparation. We may update or change the information contained herein if and to the extent additional facts become available.*

Environmental Reportable Events Summary



Event Date: June 13 – June 14, 2023	
Event Title: Plant 2 Startup Exceedances	
Impacted Media (air, water, or soil): Air	
Operating Unit: Plant 2 Process Units	
Event Summary:	
<p>On June 13, 2023, the Plant 2 Reformer underwent startup following a planned turnaround event. A turnaround is a scheduled maintenance event where refinery process units are taken offline for a period of time to undergo maintenance, inspection, and repairs.</p> <p>Suncor operators followed protocols to minimize emissions during the startup process. However, during the startup, operators encountered issues with contaminated amine in the Amine Unit and plugging in the No. 3 Sulfur Recovery Unit (No. 3 SRU). These issues resulted in gases with elevated concentrations of hydrogen sulfide (H₂S) being routed to the Plant 2 Main Plant Flare and fuel gas. H₂S is combusted at the flare tip, which results in the generation of sulfur dioxide (SO₂) and water vapor.</p> <p>To address the contaminated amine and plugging issues, a decision was made to shut down the Amine Unit and the No. 3 SRU. The Plant 2 Reformer Unit was also shut down to reduce the production of acid gases and reduce SO₂ emissions from the flare while the No. 3 SRU was offline.</p> <p>The event began at 6:00 a.m. on June 13, 2023 and continued intermittently until 1:00 am on June 14, 2023.</p> <p>The specific permit terms or conditions exceeded for this event include:</p>	
Permit Term or Condition	Maximum Reported Value
June 13, 2023	
H₂S in Flare Gas limit was exceeded for 17 hours	
162 ppm H ₂ S in flare gas (3-hour average)	318 ppm H ₂ S in flare gas (3-hour rolling average)
H₂S in Refinery Fuel gas was exceeded for 14 hours	
162 ppm H ₂ S in fuel gas (3-hour average)	300 ppm H ₂ S in fuel gas during a 3-hour average period
June 14, 2023	
H₂S in Flare Gas limit was exceeded for 1 hour	
162 ppm H ₂ S in flare gas (3-hour average)	318 ppm H ₂ S in flare gas (3-hour rolling average)
<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>	

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