Suncor Air Exceedance Reports						
Date	Media Impact	Location/Unit	Summary	Exceedance	Permit Limit	Community Impact
5/17/2022	Soil	Tank 76, Pump J-49	During routine rounds on 5/17/22, Suncor operators discovered slop oil released to soil near Tank 76 from a leaking pump. Approximately 2 to 3 barrels of slop oil was spilled. The slop oil was contained within the secondary containment area of the tank, no oil was released off Suncor property and there was no evidence of the spilled material reaching groundwater. Vacuum trucks were deployed to the area to recover liquid on 5/17/22 and soil scraping/excavation was initiated on 5/18/2022. As of this report, all impacted soils related to this release have been excavated. The leaking pump was locked out to prevent further use while a repair or replacement plan is developed. This pump remains out of service.	Oil spill	N/A	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.
5/22/2022	Air	No 3 Sulfur Recovery	While under normal operation, a component in the process level control (PLC) system failed, which caused the No. 3 SRU to trip offline. Suncor personnel power cycled the component and switched to an alternate piece of equipment to bring the unit back online. The SRU treats refinery flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	300 ppm H2S in flare gas for a 3-hour average	162ppm H2S in flare gas for a 3-hour average	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.
5/22/2022	Air	No 3 Sulfur Recovery	While under normal operation, a component in the process level control (PLC) system failed, which caused the No. 3 SRU to trip offline. Suncor personnel power cycled the component and switched to an alternate piece of equipment to bring the unit back online. The SRU treats refinery flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	1,238 °F daily average	1416 °F daily average	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.
5/22/2022	Air	No 3 Sulfur Recovery	While under normal operation, a component in the process level control (PLC) system failed, which caused the No. 3 SRU to trip offline. Suncor personnel power cycled the component and switched to an alternate piece of equipment to bring the unit back online. The SRU treats refinery flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	597 lbs. of SO2	500 lbs. of SO2	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.
5/27/2022	Soil	Tank 3801	During routine rounds, Suncor operators discovered a water and diesel fuel mixture released to soil near Tank 3801. Approximately 100 to 200 barrels of diesel fuel and water were released. The spilled material was contained within the secondary containment area of the tank, no oil was released off Suncor property and there was no evidence of the spilled material reaching groundwater. Suncor operators located the source of the leak, isolated the section of line that was leaking, and called for vacuum trucks to recover the spilled material. Soil scraping/excavation was initiated on 05/28/2022. As of this report, the large majority of the impacted soil has been excavated with only a small amount of excavation remaining to be completed. This work is scheduled to be completed in the coming weeks. The leaking line currently has a temporary clamp, which prevents leaks from the line, and will be replaced with a new line that will be brought fully above ground.			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.
6/1/2022	Air	No. 3 SRU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	300 ppm H2S in flare gas for a 3-hour average	162ppm H2S in flare gas for a 3-hour average	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.

6/1/2022	Air	No. 3 SRU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	1,402 °F daily average	1,416 °F daily average	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.
6/2/2022	Air	Plant 1 FCCU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	2,030 ppm CO at 0% O2 for a 1-hour average	500 ppm CO at 0% O2 for a 1-hour average	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.
6/2/2022	Air	Plant 1 FCCU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	36% for a 6-minute average (intermittent)	Opacity not to exceed 20% for a 6-minute average	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.
6/2/2022	Air	Plant 1 FCCU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	31% for a 6-minute average (intermittent)	Opacity not to exceed 30% for a 6-minute average	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.
6/2/2022	Air	Plant 1 FCCU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	265 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	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.
6/2/2022	Air	Plant 1 FCCU	While under normal operation, the valve controlling fuel gas flow to the SRU incinerator closed, which caused the incinerator to trip offline. Suncor personnel took operating units to minimum rates to reduce the creation of fuel gas while instrument technicians were called to replace the solenoid controlling the valve. The SRU treats refinery fuel gas and flare gas to reduce H2S concentrations. While the unit was offline, H2S concentrations remained elevated but were combusted at the flare tip and in the refinery fuel gas system. At the flare tip, and in the refinery fuel gas system, H2S is combusted, which results in the generation of Sulfur Dioxide (SO2) and water vapor.	176 ppm H2S in flare gas for a 3-hour average	162ppm H2S in flare gas for a 3-hour average	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.

6/3/2022	Air	Plant 2 Flare	During normal operation, the net heating value indication from the online analyzer on the Plant 2 flare began reading erratically in the Plant 2 main control room. Operations personnel began investigating the issue and found a relief valve from the No. 2 Crude Unit was open to the flare.	89 ppm Btu/scf for a 15-minute average	Flare combustion zone Net Heating Value (NHV) 270 BTU/scf for a 15-minute average	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.
6/3/2022	Air	Plant 2 Flare	During normal operation, the net heating value indication from the online analyzer on the Plant 2 flare began reading erratically in the Plant 2 main control room. Operations personnel began investigating the issue and found a relief valve from the No. 2 Crude Unit was open to the flare.	Between 04:58 a.m. and 02:09 p.m. on	Flares shall be operated with no visible emissions except for periods not to exceed a total of 5	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.
6/5/2022	Air and Soil	Plant 1, Unit 1, Oily Water Sewer Overflow	During the startup of the No. 1 Crude Unit in Plant 1, the vacuum section overhead started to heat up. Operations personnel attempted to cool the vapor going to this section of the crude unit, but the changes were not creating enough cooling. A piece of equipment in the crude unit, D-73, was over-pressured, which resulted in spraying oil to the atmosphere through a vent. Oil was sprayed in the crude unit and adjacent areas, including on portions of Brighton Boulevard. This also caused the oily water sewer system inside the refinery to be overwhelmed, which caused an overflow of oil on refinery property. Oil that made it to stormwater retention ponds and water treatment lagoons was contained with oil absorbent and hard booms and skimmed to prevent oil from getting offsite. Impacted soil on refinery property was excavated and concrete swales were pressure washed to remove impacted sediment. No soil staining was noted on Brighton Boulevard, so no additional cleanup was necessary outside of refinery property.	Oil Spill	Storm water Retention Pond	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.
5/9/2022	Air	Plant 1 FCCU	During normal operation of the FCCU, one of the refinery boilers tripped, causing a loss of steam pressure and flow. This required operations to reduce the rate of the FCCU until the boiler could be restarted. As the boiler came back online, the feed rate setpoint was incorrect, which caused the emergency shutdown devices to automatically take the unit offline as designed. One of the FCCU columns cooled quickly, pulling liquid into a vapor line which caused a flange to separate, which caused a **fire**. The plant alarm was sounded, which activated the Suncor Emergency Operations Center (EOC) and Emergency Response Team (ERT). The fire was quickly brought under control and no injuries were reported.			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.
5/9/2022	Air	Plant 1 FCCU	During normal operation of the FCCU, one of the refinery boilers tripped, causing a loss of steam pressure and flow. This required operations to reduce the rate of the FCCU until the boiler could be restarted. As the boiler came back online, the feed rate setpoint was incorrect, which caused the emergency shutdown devices to automatically take the unit offline as designed. One of the FCCU columns cooled quickly, pulling liquid into a vapor line which caused a flange to separate, which caused a fire. The plant alarm was sounded, which activated the Suncor Emergency Operations Center (EOC) and Emergency Response Team (ERT). The fire was quickly brought under control and no injuries	emissions.	500 ppm CO at 0% O2 for a 1-hour average	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.
5/9/2022	Air	Plant 1 FCCU	During normal operation of the FCCU, one of the refinery boilers tripped, causing a loss of steam pressure and flow. This required operations to reduce the rate of the FCCU until the boiler could be restarted. As the boiler came back online, the feed rate setpoint was incorrect, which caused the emergency shutdown devices to automatically take the unit offline as designed. One of the FCCU columns cooled quickly, pulling liquid into a vapor line which caused a flange to separate, which caused a fire. The plant alarm was sounded, which activated the Suncor Emergency Operations Center (EOC) and Emergency Response Team (ERT). The fire was quickly brought under control and no injuries were reported.	217 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	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.
5/6/2022	Air	Plant 2 Sulfur Rec	An electrical feed in a substation failed, causing a d	330 ppm H2S in flare gas for a	162 ppm H2S in flare gas	Denver Air Monitoring
5/6/2022	Air	Plant 2 Sulfur Rec	A report was made pursuant to the Emergency Pla	The RQ was 990 lbs of SO2 (24- hour total).	500 lbs 24-hour total	Denver Air Monitoring network of sensors within
5/6/2022	Air	Plant 2 Sulfur Recovery Complex, Plant 2 Flare	An electrical feed in a substation failed, causing a d	267 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	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.

5/6/2022	Air	Plant 2 Sulfur Recovery Complex, Plant 2 Flare	An electrical feed in a substation failed, causing a c	330 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	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.
5/4/2022	Air	Plant 1 Sulfur Recovery Complex	While under normal operation, a threaded plug and cap on a sulfur line cracked and fell off. In order to safely make the repair to the line, tank T-2005 vents had to be opened to atmosphere. A new line end cap was installed without the threaded plug to prevent the event from happening again.	Sulfur pit emissions vented to atmosphere	SO2 – 500 lbs 24-hour rolling total	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.
04/02/2022	Air	Air Operating Unit: Plant 2 Fluidized Catalytic Cracking Unit (FCC)	While starting up the Plant 2 FCC, torch oil was introduced to the unit which caused elevated carbon monoxide (CO) emissions. Additionally, while starting up the main air blower for the FCC, an opacity spike was measured at the FCC stack which was above the permit limits. During the	2,031 ppm CO at 0% O2 for a 1-hour average	500 ppm CO at 0% O2 for a 1-hour average	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
04/02/2022	Air	Air Operating Unit: Plant 2 Fluidized Catalytic Cracking Unit (FCC)	While starting up the Plant 2 FCC, torch oil was introduced to the unit which caused elevated carbon monoxide (CO) emissions. Additionally, while starting up the main air blower for the FCC, an opacity spike was measured at the FCC stack which was above the permit limits. During the	177 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	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
4/2/2022	Air	Air Operating Unit: Plant 2 Fluidized Catalytic Cracking Unit (FCC)	While starting up the Plant 2 FCC, torch oil was introduced to the unit which caused elevated carbon monoxide (CO) emissions. Additionally, while starting up the main air blower for the FCC, an opacity spike was measured at the FCC stack which was above the permit limits. During the	28% for a 6-minute average	Opacity not to exceed 20% for a 6-minute average	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
3/29/2022	Air	Air Operating Plant 2 Flare Pilots Out	While relieving pressure from the Plant 2 Reformer Unit, the Plant 2 Flare pilots and flame were inadvertently snuffed when the steam output exceeded the gas output from the Reformer. Operations personnel reduced the Reformer pressure relief and worked quickly to re-light the flare and the pilots.	Unlit flare	The flare shall be operated with a flame present at all times	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.
3/29	Air		10 day event - see below	Reported at 23 lb/hr of	15.68 lb/hr of SO2 1-	CCD - Not Verified
3/29		Plant 1 -Boiler 8	10 day event - see below	Reported at 0.170 lb of CO	Permit limit of 0.060 lb	CCD - Not Verified
3/29		Plant 1	10 day event - see below	Reported at 73% opacity for a	Permit limit of opacity	CCD - Not Verified
3/29		Boiler 6	10 day event - see below	Reported at 0.078 lb of CO	Permit limit of 0.060 lb	CCD - Not Verified
3/29		Plant 1	10 day event - see below	Reported at 2,030 ppm CO at 0	500 ppm CO at 0% O2 for	CCD - Not Verified
3/29		Plant 1	10 day event - see below	Reported at 561 ppm SO2 at	250 ppm SO2 at 0%	CCD - Not Verified
3/19/22 - 3/29	Air	Flare	10 day event - see below	Reported at 258 btu/scf	Heat content of the flare shall not drop below 270 btu/scf (Plant 1 Main Plant Flare)	CCD - Not Verified
3/19/22 - 3/29	Air	Plant 1 - Flare	10 day event - see below	624 lbs of SO2	Emergency Planning and Community Right-to-Know Act (EPCRA) reportable quantity (RQ) exceedance for SO2 – 500 lbs 24-hour rolling total (Plant 1 Main Plant Flare)	CCD - Not Verified
3/19/22 - 3/29	Air	Plant 1 Operating units	While starting up the after the power failure on 03/17/2022, there were multiple permit exceedances as the units were being stabilized. Many of the exceedances were related to instrumentation issues which required recalibration or replacement after power was restored. This event began 03/19/2022 at 12:00 a.m. and ended on 03/29/2022 at 5:00 p.m. once all units were operational and running stably.	Reported at 300 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average (Plant 1 Main Plant Flare)	CCD - Not Verified
3/17/2022	Air	Plant 1 - Flare	While under normal operation, an electrical arc flash occurred at the refinery from an onsite Power Distribution Center (PDC) in Plant 2, which resulted in multiple refinery operating units shutting down. These units shutting down caused the gases normally processed in the units to be sent to the Plant 1 Main Plant Flare for safe combustion. H2S is combusted at the flare, which results in the generation of SO2 and water vapor. The refinery plant alarm system was sounded which, per procedure, activated the Suncor Emergency Operations Center (EOC) and the Refinery Emergency Response Team (ERT). All refinery operating units were brought to a safe state by refinery operations personnel and no injuries were reported in associated with this incident.	1,174 lbs of SO2	Emergency Planning and Community Right-to-Know Act (EPCRA) reportable quantity (RQ) exceedance for SO2 – 500 lbs 24-hour rolling total (Plant 1 Main Plant Flare	CCD - Not Verified

3/17/2022	Air	Electrical Substation Arc Flash and Power Failure - Multiple Units	While under normal operation, an electrical arc flash occurred at the refinery from an onsite Power Distribution Center (PDC) in Plant 2, which resulted in multiple refinery operating units shutting down. These units shutting down caused the gases normally processed in the units to be sent to the Plant 1 Main Plant Flare for safe combustion. H2S is combusted at the flare, which results in the generation of SO2 and water vapor. The refinery plant alarm system was sounded which, per procedure, activated the Suncor Emergency Operations Center (EOC) and the Refinery Emergency Response Team (ERT). All refinery operating units were brought to a safe state by refinery operations personnel and no injuries were reported in associated with this incident.	Reported at 300 ppm H2S in flare gas for a 3-hour average	162 ppm H2S in flare gas for a 3-hour average	CCD - Not Verified	62 ppm H2S in flare gas for a 3-hour average (Plant 1 Main Plant Flare) • Reported at 300 ppm H2S in flare gas for a 3-hour average • Emergency Planning and Community Right-to-Know Act (EPCRA) reportable quantity (RQ) exceedance for SO2 – 500 lbs 24-hour rolling total (Plant 1 Main Plant Flare) • 1,174 lbs of SO2 • 15.68 lb/hr of SO2 1-hour average from the tail gas incinerator (H-25) • Reported at 156 lb/hr of SO2 for a 1-hour average (maximum) • 250 ppm SO2 at 0% O2 for a 12-hour rolling average from the tail gas incinerator (H-25) • Reported at 2,212 ppm SO2 at 0% O2 for a 12-hour average • Permit limit of 0.060 lb of CO per MMBtu for a 24-hour period (average) (Boiler B8) • Reported at 0.240 lb of CO per MMBtu for a 24-hour period (average) • 500 ppm CO at 0% O2 for a 1-hour average (Plant 1 Fluidized Catalytic Cracking Unit – FCC) • Reported at 2,030 ppm CO at 0% O2 for a 1-hour average • Permit limit of opacity not to exceed 20% for a 3-hour average (Plant 1 FCC) • Reported at 33% opacity for a 6-min block average (maximum)
3/12/2022	Air	No. 4 Hydrodesulfurization (#4 HDS) Unit	The No. 4 HDS unit was required to be shut down to make the necessary repairs to the main compressor. This work was related to the unit trip on February 24. During the planned shutdown, gases were routed to the Plant 1 Main Plant Flare for safe combustion. H2S is combusted at the flare, which results in the generation of SO2 and water vapor	Reported at 248 ppm H2S in flare gas for a 3-hour average	162 ppm H2S for a three-hour avaerage	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.	
3/2/2022	Air	Plant 2 Unsaturated Gas Unit	While purging the Unsaturated gas unit to prepare for maintenance work, some residual sour gases from the unit were sent to the flare for safe combustion. H2S is combusted at the flare, which results in the generation of SO2 and water vapor	Reported at 222 ppm for a 3-hour average	162 ppm H2S for a three-hour avaerage	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.	
3/22/2022	Air	Plant 1 Flare	Startup/Shutdown	H2S		A	
3/24/2022	Air	Plant 1 Flare	Startup/Shutdown	H2S		A	
2/25/2022	Air	Plant 1 Flare	Malfunction	SO2		F	
2/28/2022	Air	Plant 1 Hydrogen Unit	The Plant 1 Hydrogen Unit was shut down to perform maintenance on equipment. During the shutdown, the Flare Gas Recovery Unit (FGRU) was temporarily bypassed and gases from the Hydrogen Unit were sent to the flare for safe combustion. H2S is combusted at the flare, which results in the generation of SO2 and water vapor	Reported at 241 ppm H2S in flare gas for a 3-hour average	162 ppm H2S for a three-hour avaerage	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.	
2/25/2022	Air	Plant 1 Flare	Malfunction	SO2			
2/24/2022	Air	Plant 1 Flare	Startup/Shutdown	H2S			
2/25/2022	Air	Plant 1 Flare	Malfunction	H2S			
2/26/2022	Air	Plant 1 Flare	Malfunction	H2S			
2/27/2022	Air	Plant 1 Flare	Malfunction	H2S			
2/28/2022	Air	Plant 1 Flare	Startup/Shutdown	H2S			
1/31/2022	Air	B8	Process Problems	CO			
10-Jan	Soil	Tank 3801	An overflow of the water draw pan. Personnel collected soil samples (diesel and water). The stained soil area was excavated found and backfilled with clean soil	1 barrel of diesel/water mix	N/A	N/A	
17-Dec	Air	Plant 1 Hydrogen Unit and Plant 1 No. 3 Unit (No. 3 HDS).	During maintenance unit tripped causing excess methane released and subsequent fire.	Reported at 300 ppm (max value) for a 3-hour average.	162 ppm H2S in Plant 1 Flare Gas for a 3-hour average.		
16-Dec	Air	Plant I – Hydrogen Unit & Hydrodesulphurization (HDS) Unit	Carbon monoxide release	0.068 lb. of CO per MMBtu for a 24 hr. (average)	0.060 lb. of CO/ MMBtu 24 hr. (average)		