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March 17, 2021

Colorado Air Pollution Control Commission
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246

Submitted via email to cdphe.commentsapcd@state.co.us

Re: Comments on Suncor Energy (U.S.A.), Inc. Commerce City Refinery – Plant 2 – Adams County, Title V Operating Permit Renewal (95OPAD108)

Adams County provides these comments solely to protect the health, well-being, and safety of its citizens that live near or are impacted by the emissions from the Suncor Refinery. Unincorporated areas of Adams County surround the refinery and as such Adams County is the only governmental body that can represent the needs and interests of citizens not within the jurisdiction of home rule cities. Adams County has been affected by all facets of the emissions and unplanned releases from the Refinery and has unique knowledge and expertise beneficial to the Air Quality Control Commission.

While we appreciate the thoroughness of the Divisions review of the Suncor application, we believe the draft permit fails to address two fundamental issues – the unexcused excess emission events from the facility and increasing actual emissions from the Refinery. Accordingly, Adams County requests a Public Hearing to address the following comments and support approval of the Title V permit after the deficiencies identified are addressed:

I. The Permit Conditions do not ensure compliance with existing emission requirements

At the heart of any air emission permit, emission limits are established for a stationary source to protect human health and the environment. The Suncor Title V permit is designed to consolidate all permit requirements from the hundreds of individual sources at the refinery and ensure compliance with all applicable requirements.

A review of CDPHE and EPA data illustrates that Suncor is rarely in compliance with the existing emission limits contained in both the existing Title V and draft Title V permit. Figure 1 illustrates the number of violations at the facility from 2013-2019. Adams County previously requested from APCD information and data pertaining to excess emissions

associated with violation events. As of the date of this letter, county staff has not received the requested information and reserves the right to supplement county comments with additional analysis up to and including the public hearing.

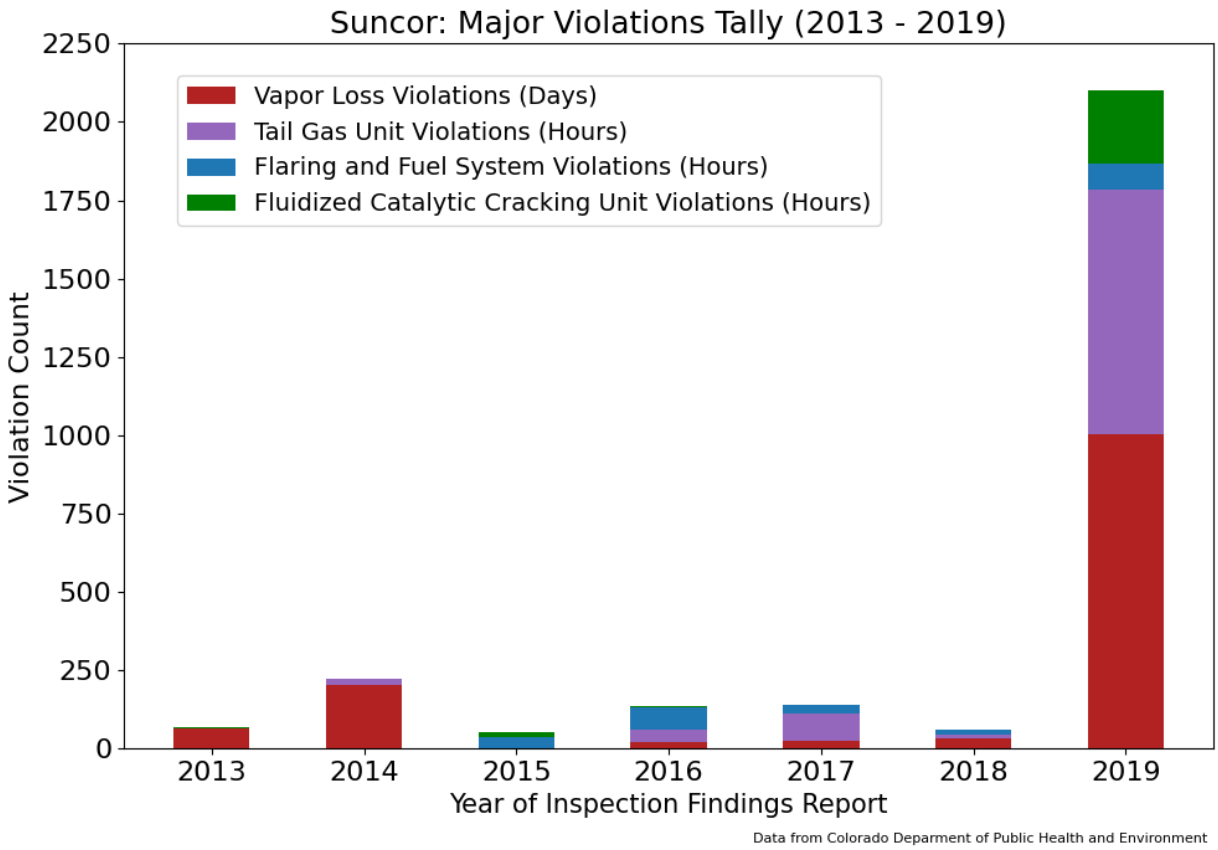


Figure 1: Suncor-Commerce City Violation History

This pattern of non-compliance raises an issue not addressed in the Technical Review Document (TRD) or draft Title V permit: whether the excess emissions are routine emissions and should be mitigated by additional enforceable controls in the permit. Consistent with AQCC 5 CCR 1001-5, Part C, III.C.8 and III.C.9 (*eff. 2/14/2021)*, Suncor must include in the Title V permit a compliance plan and compliance schedule to ensure excess emissions are eliminated except in the rare moments where an unforeseeable and uncontrollable event occurs.

While we are cognizant of the Suncor Compliance Order on Consent, executed on March 6, 2020, we are not convinced that the root cause analysis and maximum expenditure of $5 million is enough to guarantee compliance. CCR 1001-5, Part C, III.C.8 and III.C.9, require the filing of a compliance plan and schedule with the Title V permit, that, “shall be at least as stringent as that contained in any judicial consent decree or administrative order to which

the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based."

Given the refinery has been issued 15 enforcement orders since 2011 by EPA and CDPHE, it is appropriate that the Title V permit contain a binding compliance plan and schedule to break the cycle of permit non-compliance and compliance orders.

II. The Permit Fails to Address modifications at the facility that may be causing the air quality violations.

The TRD, on page 4, provides estimated potential to emit (PTE) and actual emissions from the Suncor Plant 2 facility (Table 1 below). However, as shown in Table 2, CDPHE estimated actual reported emissions from the facility for the past decade are significantly higher than the actual emissions values contained in the TRD. The total emissions values shown in table 2 were derived through summation of all reported source emissions per year from data provided by APCD staff. An issue that needs to be addressed in the Title V permit is the accuracy of the emissions being used as the basis for the TRD.

Potential To Emit (PTE)

Pollutant	Emissions (tons/yr)		
	Plants 1 & 3 (96OPAD120)	Plant 2 (95OPAD108)	Total Emissions
PM	138.15	53.34	191.49
$PM_{10}/PM_{2.5}$	138.15	53.34	191.49
SO_2	396.51	389.73	786.24
NO_X	692.69	266.41	959.10
CO	741.80	311.29	1,053.09
VOC	405.16	373.95	779.11

Actual Emissions

Pollutant	Emissions (tons/yr)		
	Plants 1 & 3 (96OPAD120)	Plant 2 (95OPAD108)	Total Emissions
PM	90.87	34.04	124.91
$PM_{10}/PM_{2.5}$	90.87	34.04	124.91
SO_2	147.45	41.02	188.47
NO_X	331.55	149.28	480.83
CO	225.12	132.68	357.80
VOC	184.68	133.91	318.59

Table 1: TRD emissions tables, Suncor Plant 2 Title V permit renewal

Total Suncor Emissions (Tons/year)										
Year	Toulene	N-Hexane	Xylenes	Benzene	H_2S	PM_{10}	SO_2	CO	VOC	NOX
2010	0	1	0	0	5	234	406	422	294	837
2011	0	3	0	1	2	241	234	355	315	670
2012	-	-	-	-	-	-	-	-	-	-
2013	0	2	0	2	6	143	217	452	424	764
2014	1	12	1	1	3	267	249	435	390	776
2015	1	13	1	1	13	148	183	463	416	563
2016	2	19	2	3	13	140	406	487	651	571
2017	2	19	2	3	3	144	196	406	588	593
2018	1	13	1	1	13	144	177	449	590	592
2019	0	4	0	0	11	145	186	456	578	641

Table 2: Suncor-Commerce City actual reported emissions

As Table 2 demonstrates, n-Hexane, H_2S, CO, and VOC emissions have increased since 2010[i].

III. Adams County is concerned that actual emissions of VOCs, H2S and carbon monoxide have been increasing as a result of multiple "minor modifications" or changes that have not been evaluated as a modification.

A review of Suncor publications reveals that Suncor has spent, "$1.3 billion in improvements since purchasing the refinery, spending $300-$400 million since 2015 alone in capital upgrades and investments in new technology". Additionally, in 2006 Suncor nearly doubled the percentage of high sulfur content oil sands from 8,000 barrels per day to 15,000 barrels per day.

The Division's TRD does not identify any permit or process changes associated with the increase in use of high sulfur feed stock. A question, therefore, not addressed in the TRD or draft permit is whether the increase in sulfur content feedstock with associated equipment and technology updates was a modification subject to either new source performance standards for petroleum refineries (40 CFR Part 60) or non-attainment new source review (NSR) permitting program requirements. Further, Suncor appears to have made numerous minor modifications that allowed it to avoid installing controlling equipment to reduce those emissions. While parsing every change into small discrete activities that required Construction Permits may be "technically justifiable", the Commission may want to evaluate whether the sum of these permitting activities was possibly a circumvention of NSPS or NSR.

Additionally, Suncor has requested an increase of 11.66 tons per year (TPY) particulate matter (PM) emissions and 138.05 TPY in VOC emissions. (with a reduction in SO2, NOx and

CO). This dramatic increase in permitted emissions (although not NNSR significant because of the way the individual actions are apparently permitted) accelerates the trend of increasing actual emissions from the facility.

IV. The Suncor refinery is unique and compliance with Ozone re-designation, Regional Haze and Greenhouse Gas Emission Reduction goals should be evaluated as permit modifications or as a stand-alone regulatory proceeding.

As the Commission well knows, the Denver Metropolitan Region and Colorado are facing increasingly challenging emission reduction requirements associated with the impending ozone designation of severe from serious non-attainment. Colorado will soon be addressing the challenges of reducing NOx to achieve Regional Haze requirements. Additionally, Colorado has established a goal of achieving a 26 percent reduction in greenhouse gas (GHG) emissions by 2025 and 50 percent by 2030.

The Suncor Refinery is one of the largest, non-coal fired power plant, emitters of VOCs, NOx and GHG emissions in Colorado. Adams County recommends that the Commission develop a comprehensive, enforceable reduction strategy for the Refinery given its location and direct impact to surrounding environmental justice communities. Addressing the disproportionate impact this single, largest industrial source of GHG and criteria pollutants has on the health and welfare of these communities through such a facility-specific regulatory approach aligns with the goals and strategies specified in APCD's recently released Climate Equity Framework.

V. Suncor should provide the public with frequent, understandable excess emission reports that quantify excess emissions where possible and specify the cause of the event and corrective actions taken or planned (particularly considering continual sources of upsets, malfunctions, and leaks).

Adams County is concerned that the frequent upset reports filed by Suncor are neither understandable to the public nor the Division and do not satisfy the need for transparency. The County recommends that the Commission add a recordkeeping and reporting requirement to the Title V Permit to address this knowledge gap. The new reporting mechanism would require Suncor to provide, for every upset or excess emission event, the date, duration, calculated volume of emissions (e.g., pounds per hour), a cumulative tally of annual excess emissions, whether the event is similar to other upsets and why the previous corrective action failed to prevent the new event.

VI. In addition to the mandated root cause analysis of excess emissions, a proactive, plant-wide Failure Modes and Effects Analysis should be incorporated into the permit to mitigate the frequency of malfunctions, upsets, and human error-based

violations, as well as and identify opportunities for redundancy, LAER, and BACT controls.

Through the issued Compliance Order on Consent, Case Nos. 2019-097 & 2019-194, the Division required a formal Root Cause Investigation. Root Cause Investigations are useful and pertinent for systemic and reoccurring violations or emission exceedances. However, in the context of Consent Decrees and the Compliance Orders on Consent for this company and facility, there seems to be similar categories of consequence, but with dissimilar root causes. In this case, a more appropriate analysis would be use of Failure Modes and Effects Analysis (FMEA) or Fault Tree Analysis (FTA). An FMEA looks at risks associated with hardware failures from a bottom-up approach and classifies the consequence of those failures based on severity. If a single point or probable single failure scenario results in exceeding emissions limitations, the operator must evaluate adding redundancy or removing the risk by other means. A Fault Tree Analysis (FTA) is a top-down approach, where a hazard (e.g., tank venting) is identified and all reasonable and unlikely causes are identified whether it be hardware, software, automation, or human error. For each critical cause, the operator should address how that cause is being mitigated to the maximum extent practicable. These two types of analyses are inherently more useful to prevent future failures that are non-systemic in nature. However, Root Cause Investigations are post appraising in nature, are not predictive, and therefore do not provide assurance to the public that emissions exceedances will deescalate at the Suncor Plant 2.

Some of the failures delineated in the Compliance Orders on Consent were identified as being caused by loss of material integrity (e.g., piping wall thickness loss, corrosion). Based on the age of the facility, it is necessary to perform API-579 Fitness-for-Service (FFS) assessments for pressurized systems and pressure vessels. The goal of the FFS assessments is to determine a “remaining life” for each critical piece of equipment or critical component. The remaining life (expressed in months or years) informs maintenance schedules and eventually equipment replacement. Performing these assessments is not only critical for safety but also critical for preventing future catastrophic emission releases.

Adams County appreciates the opportunity to provide public comment on the draft Title V permit for Plant 2. However, because certain essential information such as the Root Cause Analysis, excess emissions data, and 2020 semi-annual deviation reports were not available before the Comment filing deadline, Adams County respectfully reserves the right to supplement our comments up to and including the Public Hearing.

[i] Data provided from CDPHE to Adams County, March 2021

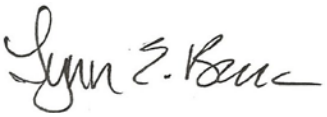
Sincerely,

Commissioner Eva J. Henry, District 1

Commissioner Charles "Chaz" Tedesco, District 2

Commissioner Emma Pinter, District 3

Commissioner Steve O'Dorisio, District 4



Commissioner Lynn Baca, District 5