REGION 8
DENVER, CO 80202

COLORADO
Department of Public Health & Environment

July 2, 2024

VIA EMAIL ONLY
READ RECEIPT REQUESTED

Bernd Haneke
Manager of Regulatory and Environmental (Air)
Suncor Energy (U.S.A.), Inc.
Bhaneke@suncor.com

Re: Notice of Violation to Suncor Energy (U.S.A.), Inc.

Dear Bernd Haneke:

The U.S. Environmental Protection Agency (the EPA) and the Colorado Department of Public Health and Environment, through the Air Pollution Control Division (the Division) (collectively, the Governments) are issuing Suncor Energy (U.S.A.), Inc. (Suncor) the enclosed Notice of Violation (NOV) and offering an opportunity to confer regarding alleged violations of the Clean Air Act (CAA), and its implementing regulations; the Colorado Air Pollution Prevention and Control Act, and its implementing regulations; the two consent decrees listed below; and/or applicable permits at Suncor's refinery located at 5800 and 5801 Brighton Boulevard in Commerce City, Colorado (the Commerce City Refinery).

Specifically, the Governments allege that Suncor has violated or is violating:

1. Section 111 of the CAA, 42 U.S.C. § 7411, and its implementing regulations at 40 C.F.R. Part 60, Subparts QQQ, Kb, J, and Ja;
2. Section 112 of the CAA, 42 U.S.C. § 7412, and its implementing regulations at 40 C.F.R. Part 61, Subpart FF, and 40 C.F.R. Part 63, Subparts CC, WW, and UUU;
3. Title V of the CAA, 42 U.S.C. §§ 7661-7661f, and its implementing regulations for approved state operating permit programs at 40 C.F.R. Part 70;
4. Colorado Regulation Number 24, 5 Colo. Code Reg. § 1001-26, the relevant portions of which are part of Colorado's approved State Implementation Plan (SIP) under Section 110 of the CAA, 42 U.S.C. § 7410;
5. Other federally-enforceable Colorado air quality regulations that are part of Colorado's SIP to the extent the facts alleged in the NOV support violations of such regulations;

6. Colorado Operating Permit Number 96OPAD120;
7. Colorado Operating Permit Number 95OPAD108;
8. Other federally-enforceable requirements that Suncor is alleged to have violated in the Compliance Advisory that the Division issued to Suncor on June 1, 2023 (Case No. 2023-082) based on the Division's July 11 – 13, 2022 inspection of the Commerce City Refinery and records related to the refinery (the Division's 2023 Compliance Advisory);
9. The requirements of the consent decree entered in *United States et al. v. Valero Refining, et al.*, Civil Action No. SA-05-CA-0569 (entered by W.D. Tex. November 23, 2005); non-material modification filed June 22, 2006; and
10. The requirements of the consent decree entered in *United States et al. v. Conoco Inc.*, Civil Action No. H-01-4430 (entered by S.D. Tex. April 30, 2002); (first amendment entered August 5, 2003; second amendment entered October 24, 2006; non-material modification filed May 6, 2010).

The Division also alleges that Suncor has violated or is violating:

11. Colorado state-only requirements to the extent a violation of any such requirement is alleged in the Division's 2023 Compliance Advisory; and
12. Colorado air quality regulations that are not part of Colorado's SIP to the extent the facts alleged in this NOV support violations of such regulations.

Suncor has made claims that some of the information upon which this NOV is based is confidential business information (CBI) subject to 40 C.F.R. Part 2, Subpart B. Without agreeing that the information is CBI, the EPA has treated and continues to treat all CBI-claimed information according to the requirements of 40 C.F.R. Part 2, Subpart B. Where information contained in this NOV is potentially CBI, and claimed as such by Suncor, EPA highlights the text in red to acknowledge the present designation as information that Suncor has claimed as CBI.

If Suncor is interested in a conference with the EPA and the Division to discuss the alleged violations, please have your counsel contact Robyn Emeson, Senior Assistant Regional Counsel for EPA Region 8, at (303) 312-6485 or Emeson.Robyn@epa.gov and Julia La Manna, Colorado Assistant Attorney General, at (720) 508-6318 or julia.lamanna@coag.gov, within 30 days of receipt of this NOV.

Sincerely,

SUZANNE BOHAN

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Date: 2024.07.02 15:17:17 -06'00'

Suzanne J. Bohan, Director
Enforcement and Compliance Assurance Division
Environmental Protection Agency, Region 8

Shannon L. McMillan

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Date: 2024.07.02 15:28:17 -06'00'

Shannon L. McMillan, Program Manager
Compliance and Enforcement Program
Air Pollution Control Division
Colorado Department of Public Health and Environment

Enclosures
1. Notice of Violation, inclusive of attachment

cc (w/Encl.):
Christine Jochim, Christine.Jochim@klgates.com
Michael Korenblat, MKorenblat@suncor.com
Jennifer Biever, jbiever@williamsweese.com
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Julia.Lamanna, julia.lamanna@coag.gov
Robyn Emeson, emeson.robyn@epa.gov

The Governments have redacted the original NOV sent to Suncor to prevent disclosure of company-claimed confidential business information (CBI). See footnote 2 of the NOV.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

and

COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE ENVIRONMENT
AIR POLLUTION CONTROL DIVISION

IN THE MATTER OF **Suncor Energy (U.S.A.), Inc.**	**NOTICE OF VIOLATION** **EPA Docket No.** Proceedings Pursuant to the Clean Air Act, 42 U.S.C. §§ 7401-7671q, and the Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-101 – 1604

NOTICE OF VIOLATION

The U.S. Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment, through the Air Pollution Control Division (the Division) (collectively, the Governments) together allege that Suncor Energy (U.S.A.), Inc. (Suncor) has violated the Clean Air Act (CAA) and its implementing regulations, the Colorado Air Pollution Prevention and Control Act (Colorado Air Act) and its implementing regulations, the Suncor Consent Decrees (as defined below) and/or applicable permits at Suncor's refinery located at 5800 and 5801 Brighton Boulevard in Commerce City, Colorado (the Commerce City Refinery).

Specifically, in this Notice of Violation (NOV) the Governments allege that Suncor has violated or is violating the following:

- Section 111 of the CAA, 42 U.S.C. § 7411, and its implementing regulations at 40 C.F.R. Part 60;
- Section 112 of the CAA, 42 U.S.C. § 7412, and its implementing regulations at 40 C.F.R. Parts 61 and 63;

- Title V of the CAA, 42 U.S.C. §§ 7661-7661f, for Operating Permits (Title V Permits), and its implementing regulations for approved state operating permit programs at 40 C.F.R. Part 70;

- Colorado Regulation Number 24, 5 Colo. Code Reg. § 1001-26, the relevant portions of which are part of Colorado's approved State Implementation Plan (SIP) under Section 110 of the CAA, 42 U.S.C. § 7410 (*See* 40 C.F.R. § 52.320);

- Other federally-enforceable Colorado air quality regulations that are part of Colorado's SIP to the extent the facts alleged below support violations of such regulations;

- Colorado Operating Permit Number 96OPAD120, issued to Suncor on August 1, 2004, and last revised February 22, 2018, applicable to Plant 1 and Plant 3 (Permit 96OPAD120);

- Colorado Operating Permit Number 95OPAD108, issued to Suncor on October 1, 2006, and revised June 15, 2009, then renewed September 1, 2022, applicable to Plant 2 (Permit 95OPAD108) (emission limits referenced in this NOV remained consistent between initial and renewed permit);[1] and

- Other federally-enforceable requirements that Suncor is alleged to have violated in the Compliance Advisory that the Division issued to Suncor on June 1, 2023 (Case No. 2023-082) based on the Division's July 11 – 13, 2022 inspection of the Commerce City Refinery and records related to the refinery (the Division's 2023 Compliance Advisory).

Additionally, the Governments allege that Suncor has violated or is violating the terms of two existing federal consent decrees under which Suncor is a party (together, the Suncor Consent Decrees):

- *United States et al. v. Valero Refining, et al.*, Civil Action No. SA-05-CA-0569 (entered by W.D. Tex. November 23, 2005); non-material modification filed June 22, 2006 (Valero Consent Decree).

- *United States et al. v. Conoco Inc.*, Civil Action No. H-01-4430 (entered by S.D. Tex. April 30, 2002); first amendment entered August 5, 2003; second

[1] References in this Notice of Violation to Permit 95OPAD108, cite the Section and/or Condition number in the renewal permit, effective September 1, 2022. When this Notice of Violation alleges an emission limit exceedance that occurred during the effective period for the initial permit, *i.e.,* prior to the effective date of Permit 95OPAD108's renewal, the citation in the initial permit is the applicable reference for this Notice of Violation, even though it may differ from the renewal permit citation provided.

amendment entered October 24, 2006; non-material modification filed May 6, 2010 (Conoco Consent Decree).

Finally, the Division alleges that Suncor has violated or is violating the following:

- Colorado state-only requirements to the extent a violation of any such requirement is alleged in the Division's 2023 Compliance Advisory; and

- Colorado air quality regulations that are not part of Colorado's SIP to the extent the facts alleged below support violations of such regulations.

I. GENERAL STATUTORY AND REGULATORY AUTHORITY

A. Formal Notice

1. For EPA, this NOV provides formal notice of Suncor's alleged violations of requirements or prohibitions of Colorado's SIP and alleged violations of the terms and conditions of Suncor's applicable permits, as specified below and pursuant to Section 113(a)(1) of the CAA, 42 U.S.C. § 7413(a)(1), as well as other CAA violations not subject to the notice requirements of Section 113(a)(1) of the CAA.

2. For the Division, this NOV provides formal notice of the Division's alleged violations, pursuant to Colorado Revised Statutes (C.R.S.) § 25-7-115(2), for all alleged violations described herein that were not already noticed in the Division's 2023 Compliance Advisory.

B. The CAA and Colorado Air Act Generally

3. A central purpose of the CAA is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b)(1).

4. A primary goal of the CAA is to "encourage . . . reasonable Federal, State, and local governmental actions . . . for pollution prevention." 42 U.S.C. § 7401(c).

5. Data from the EPA's environmental justice screening and mapping tool, *EJScreen*, suggests a significant potential for environmental justice concerns in Colorado's Commerce City - North Denver area due to a combination of high pollution burden and population vulnerability.

6. The Colorado Air Act declares that it is the policy of Colorado "to achieve the maximum practical degree of air purity in every portion of the state." C.R.S. § 25-7-102(1).

7. The Colorado General Assembly has declared that "[a]ll people have the right to breathe clean air, drink clean water, participate freely in decisions that affect their environments, live free of dangerous levels of toxic pollution, experience equal protection provided by environmental policies, and share the benefits of a prosperous and vibrant pollution-free economy." Colorado H.B. 2021-1266, Sec. 2(1)(a)(I).

8. The Colorado Air Act recognizes that "Colorado communities are increasingly concerned about the potential health impacts of air toxics resulting from routine facility operations, fugitive leaks, upset conditions, or emergency situations." C.R.S. § 25-7-141(1)(b)(II).

9. The Colorado General Assembly has found, "Emissions of ozone precursors, such as oxides of nitrogen (NOx) and volatile organic compounds, contribute to the formation of ozone and to public health impacts for individuals exposed to higher levels of air pollution." Colorado S.B. 2024-229, Sec. 1(1)(a).

10. The Colorado General Assembly has found that "[r]esidents of disproportionately impacted communities in the ozone nonattainment area may be exposed to higher levels of NOx than other Coloradans." Colorado S.B. 2024-229, Sec. 1(1)(d).

11. The Colorado General Assembly has also declared that "[m]ore accountability for sources of pollution and for the state will build public trust and improve air quality." Colorado S.B. 2024-229, Sec. 1(2)(b).

C. Applicable CAA Requirements

New Source Performance Standards

12. Section 111 of the CAA sets standards of performance for new and modified stationary sources. 42 U.S.C. § 7411.

13. Under Section 111(a) of the CAA, a "standard of performance" generally means an emissions standard for air pollutants, a limitation deemed achievable through a system of emission reduction; a "stationary source" is a "building, structure, facility, or installation that emits or may emit any air pollutant;" and a "new source" is any stationary source, the construction or modification of which is commenced after the promulgation of the standards of performance that will apply to such source. 42 U.S.C. §§ 7411(a)(1)-(3).

14. Under Section 111(b) of the CAA, the EPA is authorized by Congress to publish a list of categories of stationary sources that, in the EPA Administrator's judgment, cause, or contribute significantly to, "air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7411(b)(1)(A). For each of these source categories, the Administrator of the EPA promulgates federal

standards of performance applicable to "new sources." 42 U.S.C. § 7411(b)(1). These standards are widely known as New Source Performance Standards, or the NSPS.

15. The NSPS are promulgated at 40 C.F.R. Part 60.

16. Under Section 111(c) of the CAA, each State may develop and submit to the EPA Administrator a procedure for implementing and enforcing the NSPS for new sources located in such State, and if the Administrator finds the State procedure is adequate, the Administrator my delegate authority to the State to implement and enforce the NSPS. 42 U.S.C. § 7411(c). A delegated State may enforce the NSPS separate from or alongside the federal government, or the federal government may directly enforce the NSPS against a new source in a State with delegated authority. 42 U.S.C. § 7411(c)(2). Colorado has delegated authority to implement and enforce multiple NSPS and has incorporated such NSPS into the State's regulations at 5 Colo. Code Reg. § 1001-8.

17. It is unlawful for any owner or operator of any new source to operate the source in violation of applicable NSPS after the standards have gone into effect. 42 U.S.C. § 7411(e).

The NSPS General Provisions at 40 C.F.R. Part 60, Subpart A: Good Air Pollution Control Practice Requirement

18. 40 C.F.R. Part 60, Subpart A (the NSPS General Provisions) sets forth the NSPS that generally apply to the owners or operators of any stationary source that contains an "affected facility" subject to a particular NSPS promulgated elsewhere in Part 60. 40 C.F.R. § 60.1. The NSPS General Provisions further provide that an "affected facility" means "with reference to a stationary source, any apparatus to which a standard is applicable." 40 C.F.R. § 60.2.

19. The NSPS General Provisions require that at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. 40 C.F.R. § 60.11(d). Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. *Id.*

National Emissions Standards for Hazardous Air Pollutants

20. Section 112 of the CAA, 42 U.S.C. § 7412, establishes the CAA's national emissions standards for hazardous air pollutants (NESHAP) program for controlling emissions of hazardous air pollutants (HAPs), also known as air toxics, achieved through the implementation of maximum achievable control technology

(MACT) at major sources of HAPs, in an effort to reduce emissions of HAPs to the maximum degree.

21. HAPs are those pollutants that cause or may cause adverse human health effects, such as cancer, reproductive effects or birth defects, or adverse environmental effects, such as significant and widespread harm to wildlife, aquatic life, or other natural resources or significant degradation of environmental quality over broad areas. 42 U.S.C. § 7412(b).

22. HAPs are listed in section 112(b) of the CAA, 42 U.S.C. § 7412(b), and include benzene. 42 U.S.C. § 7412(b).

23. Under Section 112(a)(l) of the CAA, a "major source" of HAPs is, with limited exceptions not applicable here, "any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." 42 U.S.C. § 7412(a)(l); *see also* 40 C.F.R. § 63.2.

24. Pursuant to Section 112(c) of the CAA, 42 U.S.C. § 7412(c), the Administrator of EPA has published a list of designated categories and subcategories of major sources of HAPs that are subject to NESHAP, and the Administrator is required to revise that list from time to time in response to public comment or new information.

25. Section 112(d) of the CAA requires the Administrator of the EPA to set emission standards for each category and subcategory of major sources of HAPs listed in CAA Section 112(c) and requires these emission standards to achieve the maximum degree of reduction in HAP emissions through the implementation of MACT.

26. Pursuant to Section 112(d) of the CAA, the EPA has promulgated regulations governing industrial categories of major sources subject to NESHAP and setting specific emissions standards applicable to those sources. These NESHAP regulations are promulgated in the various subparts of 40 C.F.R. Parts 61 and 63. Colorado has delegated authority to implement and enforce much of Parts 61 and 63 and has incorporated such provisions into the State's regulations at 5 Colo. Code Reg. § 1001-10.

NESHAP Promulgated at 40 C.F.R. Part 61

27. 40 C.F.R. Part 61, Subpart A (the NESHAP Part 61 General Provisions) sets forth the standards that generally apply to the owners or operators of any stationary source subject to a particular NESHAP promulgated elsewhere in Part 61. 40 C.F.R. § 61.01(c).

28. The regulations at 40 C.F.R. Part 61 reflect the NESHAP promulgated by the Administrator of the EPA before the enactment of the Clean Air Act Amendments of 1990. *See* 40 C.F.R. § 63.1(2).

29. The NESHAP regulations at 40 C.F.R. Part 61 are independent of the NESHAP regulations at 40 C.F.R Part 63, which reflect the NESHAP promulgated by the Administrator of the EPA after the enactment of the Clean Air Act Amendments of 1990.

30. The Part 61 NESHAP remain in effect until they are amended, if appropriate, and added to the Part 63 NESHAP. 40 C.F.R. § 63.1(2).

(1) NESHAP Part 61's Good Air Pollution Control Practice Requirement

31. The NESHAP Part 61 General Provisions, at 40 C.F.R. § 61.12(c), require the owner or operator of each stationary source subject to a Part 61 NESHAP to maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions.

32. Determination of whether acceptable operating and maintenance procedures are being used consistent with good air pollution control practice will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source. 40 C.F.R. § 61.12(c).

NESHAP Promulgated at 40 C.F.R. Part 63

33. The NESHAP regulations promulgated at 40 C.F.R. Part 63, include the General Provisions set forth at 40 C.F R. Part 63, Subpart A (the NESHAP Part 63 General Provisions).

34. In general, the NESHAP Part 63 General Provisions require the owner or operator of an affected source to: install MACT level controls on affected sources; demonstrate the effectiveness of such controls; certify compliance with applicable regulatory requirements; continuously monitor the controls; record applicable monitoring data; comply with applicable emission restrictions/control requirements; and submit various notifications and reports regarding the affected source to assure compliance with applicable HAP emission control requirements.

35. An "affected source," for purposes of the NESHAP regulations set forth at 40 C.F.R. Part 63, means the "stationary source, the group of stationary sources, or the portion of the stationary source that is regulated by a relevant standard or other requirement established pursuant to Section 112 of the [CAA]. Each relevant

standard will define the 'affected source' for the purposes of that standard ...." 40 C.F.R. § 63.2.

36. Major sources that are subject to a MACT standard promulgated pursuant to Section 112(d) are prohibited from emitting HAPs in violation of such standard.

37. No emission standard or other requirement established under 40 C.F.R. Part 63 shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other authority of the CAA, or a standard issued under State authority. 40 C.F.R. § 63.1(a)(3).

38. The Administrator may specify in a specific NESHAP issued under 40 C.F.R. Part 63 that facilities subject to other CAA provisions need only comply with the provisions of that standard. 40 C.F.R. § 63.1(a)(3).

39. If a particular Part 63 NESHAP incorporates the requirements of an NSPS, a Part 61 NESHAP, or any other Part 63 NESHAP, the relevant Part 63 NESHAP must identify explicitly the applicability of each corresponding NSPS, Part 63 NESHAP, or other provision of the NESHAP Part 63 General Provisions. 40 C.F.R. § 63.1(a)(4).

40. Under the NESHAP Part 63 General Provisions, any owner or operator of an affected source subject to a Part 63 NESHAP must operate the source in compliance with the Part 63 NESHAP provisions and must keep records, notify, report, or revise reports as required under the Part 63 NESHAP. 40 C.F.R. § 63.4.

Title V Operating Permits

41. Title V of the CAA, 42 U.S.C. §§ 7661-7661f, establishes a permit program for any "major sources" of air pollution, as defined by Title V.

42. Under Title V, a "major source" means, *inter alia*, any stationary source that is either a "major source" as defined in section 112 of the CAA, 42 U.S.C. § 7412, or a "major stationary source" as defined in section 302 of the CAA, 42 U.S.C. § 7602. 42 U.S.C. § 7661.

43. The definition of a "major source" under section 112 of the CAA, 42 U.S.C. § 7412, is alleged above in Paragraph 23.

44. The definition of "major stationary source" under section 302 of the CAA, 42 U.S.C. § 7602, is "any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive

emissions of any such pollutant, as determined by rule by the Administrator)." In an ozone nonattainment area, such as the area that includes Suncor's Commerce City Refinery, a stationary source becomes a major stationary source at a lower threshold of emissions. *See* 42 U.S.C. § 7511a(c) and (d); accord 5 Colo. Code Reg. § 1001-5:D.II.A.25.

45. Under Colorado law, a "major source" is "any stationary source (or group of stationary sources which have the same two-digit standard industrial code, are located on one or more contiguous or adjacent properties, and are under common control) that: (a) [s]ubject to the provisions of section 112(n)(4) of the [CAA], emits or has the potential to emit considering enforceable control, in the aggregate, ten tons per year or more of any hazardous air pollutant or twenty-five tons per year or more of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as may be established pursuant to the [CAA]; or (b) [d]irectly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant; or (c) [m]eets any of the definitions of major source set forth in Part D of subchapter I of the [CAA]." C.R.S. § 25-7-114(3); *see also* 5 Colo. Code Reg. § 1001-5:A.I.B.30.

46. The purpose of Title V is to ensure that all "applicable requirements" that apply to a source regulated under the CAA are collected in one operating permit. 42 U.S.C. § 7661c(a).

47. Section 502(a) of the CAA, 42 U.S.C. § 7661a(a), provides that, after the effective date of any permit program approved or promulgated under Title V of the Act, no source subject to Title V may operate except as in compliance with a Title V operating permit (Title V Permit).

48. Section 502(d) of the CAA directs states to develop and submit for EPA approval a permit program under state or local law meeting the requirements of Title V and a legal opinion that the state has adequate authority to carry out the Title V program. If a state permit program is approved, the state will act as the Title V permitting authority with primary responsibility to implement Title V and the EPA will not issue federal Title V Permits in that state. But the EPA will retain the ability to enforce Title V Permits issued by a state. 42 U.S.C. §§ 7661a(d) and (e).

49. The State of Colorado has an approved operating permit program and acts as the Title V permitting authority for sources in Colorado. 60 Fed. Reg. 4563 (January 24, 1995) and 65 Fed. Reg. 49919 (August 16, 2000).

50. Section 502(b) of the CAA requires the EPA to promulgate regulations establishing the minimum elements of a Title V permit program to be administered by any air pollution control agency. 42 U.S.C. § 7661a(b).

51. In accordance with Section 502(b) of the CAA, 42 U.S.C. § 7661a(b), the EPA promulgated regulations establishing the minimum elements of approvable state permit programs implementing Title V. 57 Fed. Reg. 32250 (July 21, 1992). Those regulations for state air quality operating permit programs are codified at 40 C.F.R. Part 70.

52. All sources subject to the state operating permit programs consistent with the requirements of Title V "shall have a permit to operate that assures compliance by the source with all applicable requirements." 40 C.F.R. § 70.1(b).

53. A Title V Permit issued by a state may not be less stringent than necessary to meet all applicable federal permit requirements in Title V. 40 C.F.R. § 70.1(c). Nothing in the Title V regulations at 40 C.F.R. Part 70 prevents a state from establishing additional or more stringent requirements than the federal Title V Permit requirements. *Id*.

54. The Commerce City Refinery is subject to two Title V permits issued to Suncor by the Division: Permit 96OPAD120 and Permit 95OPAD108.

55. All terms and conditions of a state-issued Title V permits are federally enforceable by the EPA. 42 U.S.C. § 7413(b).

D. Applicable Colorado-Specific Requirements

56. Colorado Revised Statutes § 25-7-109(1)(a) directs the Colorado Air Quality Control Commission (Commission) to adopt and promulgate, and from time to time modify or repeal, emission control regulations which require the use of effective practical air pollution controls.

57. Colorado Revised Statutes §§ 25-7-101 through 25-7-147 establish the Commission's statutory authority for adoption of air quality standards, regulations, and programs and impose requirements upon sources of air pollution in Colorado, such as Suncor.

58. The Commission issues regulations to control emissions from sources throughout the State of Colorado. C.R.S. § 25-7-102(1); 5 Colo. Code Reg. § 1001-2:I.A.

59. The Division enforces violations of the Colorado Air Act, Commission regulations, and applicable permits. C.R.S. §§ 25-7-115, -121, and -122.

II. GENERAL FACTUAL BACKGROUND

A. Suncor and the Commerce City Refinery

60. Suncor is a domestic corporation incorporated in the State of Delaware that is a subsidiary of a publicly traded Canadian corporation, Suncor Energy, Inc. At all relevant times to this NOV, Suncor is doing business in the State of Colorado.

61. Suncor is a "person" within the meaning of Section 302(e) of the Clean Air Act, 42 U.S.C. § 7602(e).

62. Suncor owns and operates the Commerce City Refinery, which is the largest refinery in the Rocky Mountain region with an annual average capacity of 98,000 barrels per day (bbls/day).

63. The Commerce City Refinery processes both sweet and sour crude oils received from Colorado, Montana, North Dakota, Wyoming, and Canada. The incoming crude oil is received by truck or by pipeline.

64. The main petroleum products that Suncor produces at the Commerce City Refinery are gasoline, diesel, asphalt, jet fuel, and liquified petroleum gas.

65. The Commerce City Refinery is located in Colorado's ozone nonattainment area. The Commerce City Refinery is also located within a disproportionately impacted community, as defined at C.R.S. § 24-4-109(2)(b)(II).

66. The Commerce City Refinery consists of three plants: Plant 1, Plant 2, and Plant 3. The three plants have similar processes and are connected so that materials may be routed from one plant to another.

67. Plant 1 is the portion of the Commerce City Refinery that was historically owned and operated by Conoco, located on the west side of Brighton Boulevard (the West Plant) and Plant 3 is the portion of the heritage Conoco facility located to the east of Plant 2 on the east side of Brighton Boulevard (the Asphalt Unit). Plant 2 is located directly across from Plant 1 on the east side of Brighton Boulevard (formerly the East Plant), in between Plants 1 and 3. Plant 2 is the portion of the Commerce City Refinery that was historically owned and operated by Colorado Refining Company, later Valero.

68. The processing of crude oil at the Commerce City Refinery generates wastewater that is separated and is treated at the refinery's lone Wastewater Treatment Plant (WWTP), located in Plant 1. The WWTP consists of primary oil/water separation, dissolved gas floatation (DGF), biological treatment, and membrane filtration. Wastewater is centrally collected in the headworks and is then pumped to the API lift station which feeds the two API oil-water separators operated in parallel before the wastewater feeds into tanks for further treatment.

69. Processes used at the Commerce City Refinery include atmospheric and vacuum distillation, desalting, reforming, catalytic cracking, catalytic polymerization and hydrotreating.

70. A simplified process flow for each plant is as follows: crude oil enters the crude unit which distills and splits out jet, diesel, asphalt and/or gas oil and all except gas oil are typically routed to hydrodesulfurization units (HDS) in Plant 1. Naptha splits from the crude unit and is routed to a reformer, and the light straight run (LSR) is routed to mix with other refined products and be blended into gasoline. Gas oil is routed to the fluidized catalytic cracking units (FCCU) and some of the refined product from the FCCUs are then routed to a catalytic polymerization unit for further processing into gasoline.

71. The off-gases from the various processes throughout the refinery are sent to a sulfur recovery process.

72. During the refining process, certain emission units route waste gas through process flares for destruction.

73. The Commerce City Refinery operates a gas-benzene reduction (GBR) unit and routes emissions through the F3 Flare, the GBR flare. The remaining flares operating at the Commerce City Refinery subject to the 2023 CAA Stationary Source Inspection are: F1 Flare (Plant 1's Main Flare), F2 Flare (Plant 3's Main Flare), and Plant 2's Main Flare (C005 Flare).

74. The Commerce City Refinery stores refined products, wastewater and crude oil in storage vessels located on-site at each plant.

75. Continuous Monitoring Systems (CMS) continuously monitor emissions either through direct or parametric measurement.

76. The Commerce City Refinery has multiple CMS throughout Plants 1, 2, and 3 to measure the concentration of hydrogen sulfide (H_2S) in fuel gases before those gases are burned in a fuel gas combustion device or affected flare.

77. Continuous Emissions Monitoring Systems (CEMS) are located at the outlet of large industrial sources of emissions. CEMS measure the actual emission concentration of specified regulated pollutants from an industrial source into the ambient air.

78. At the Commerce City Refinery, CEMS measure actual emission concentration of carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO_2) among other regulated pollutants.

79. The Commerce City Refinery has multiple CEMS throughout Plants 1, 2, and 3.

80. Continuous Opacity Monitoring Systems (COMS) are located at the outlet of large industrial sources of emissions. COMS detect the actual opacity percentage of particulate matter emitted from an industrial source into the ambient air.

81. The Commerce City Refinery has multiple COMS throughout Plants 1 and 2.

82. A Tail Gas Unit (TGU) is a control device that uses thermal incineration to destroy regulated pollutants and transform them into CO_2 or SO_2. There is a TGU at Plant 1 with an emission unit ID of H-25.

83. Sulfur naturally occurs in raw petroleum products that are refined at the Commerce City Refinery. The refinery's operations include the removal of sulfur from the refined final product, known as sulfur recovery.

84. Suncor operates a gasoline fuel loading rack called the Denver Truck Terminal. This is the location where some of Suncor's final petroleum products are loaded into tanker trucks for off-site distribution.

85. Suncor distributes other refined products, which are not sent out through the Denver Truck Terminal, via pipeline or train.

B. Prior Air Enforcement by the Division

86. The Division conducts annual compliance inspections at the Commerce City Refinery and describes alleged violations in inspection reports. The Commerce City Refinery has been subject to state air enforcement actions by the Division annually for at least the past ten years, as follows: 1) Compliance Order on Consent (COC), Effective February 5, 2024: Case Nos. 2022-076 and 2021-082 (the Division's 2024 COC); 2) COC, Effective March 6, 2020: Case Nos. 2019-194 and 2019-097; 3) COC, Effective June 24, 2019: Case No. 2018-100; 4) COC, Effective April 19, 2018: Case No. 2017-092; 5) COC, Effective January 9, 2017: Case No. 2016-119; 6) COC, Effective August 26, 2015: Case Nos. 2014-122 & 2014-123; and 7) Settlement Agreement and COC, Effective December 2, 2015: Case Nos. 2013-029, 15-09-20-01; IC-150929-1. These inspection findings and enforcement actions include violations that were the same as or similar to certain violations alleged in this NOV.

C. The Division's 2022 Inspection of the Commerce City Refinery and 2023 Compliance Advisory

87. The Division inspected Suncor's Commerce City Refinery on July 11-13, 2022.

88. Based on the 2022 inspection, the Division issued the Division's 2023 Compliance Advisory, further described above in the introductory section of this NOV. A copy of CDPHE's 2023 Compliance Advisory is attached to this NOV.

D. The Governments' 2023 CAA Stationary Source Inspection of the Commerce City Refinery

89. Inspectors from EPA Region 8, EPA's National Enforcement Investigations Center (NEIC) (collectively, the EPA Inspection Team), accompanied by Division staff, conducted a CAA stationary source compliance investigation of the Commerce City Refinery on October 23-27, 2023, and November 2, 2023 to assess Suncor's compliance with the federal CAA and Suncor's Title V Permits for the Commerce City Refinery as summarized below in Table 1 (the 2023 CAA Stationary Source Inspection).

Table 1

LIST OF APPLICABLE CAA REGULATIONS AND PERMIT REQUIREMENTS INCLUDED IN THE SCOPE OF THE INSPECTION		
Regulatory Status	**Permit No.**	**Inspection Focus**
• Title V permit • NESHAP major source	• 96OPAD120 (Plants 1 and 3) • 95OPAD108 (Plant 2)	• 40 C.F.R. Part 60, Subpart J/Ja • 40 C.F.R. Part 60, Subpart Kb • 40 C.F.R. Part 60, Subpart GGGa • 40 C.F.R. Part 60, Subpart QQQ • 40 C.F.R. Part 61, Subpart FF (BWON) • 40 C.F.R. Part 63, Subpart CC • 40 C.F.R. Part 63, Subpart UUU • Title V Permits • Suncor Consent Decrees

90. The EPA Inspection Team conducted the 2023 CAA Stationary Source Inspection under the authority of CAA Section 114, 42 U.S.C. § 7414. Division staff joined this inspection pursuant to the Division's authority under Colorado regulations, issued permits, and C.R.S. § 25-7-111.

91. The EPA Inspection Team requested, and Suncor provided, records and other information before, during, and after 2023 CAA Stationary Source Inspection. When providing the requested information to the EPA Inspection Team, Suncor made claims that it included confidential business information (CBI) subject to 40 C.F.R. Part 2, Subpart B. Suncor later narrowed the scope of its CBI claims.

92. Because of Suncor's CBI claims on certain inspection-provided information, and without agreeing that the information is CBI, the Governments have treated and continue to treat all CBI-claimed information according to the requirements of 40 C.F.R. Part 2, Subpart B, and applicable Colorado law. CBI-claimed information contained in this NOV is highlighted in red to denote such treatment.

93. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team used instruments to test for and visualize potential leaks. These instruments include: (a) A Toxic Vapor Analyzer (TVA) to measure volatile organic compound (VOC) leaks in accordance with EPA Method 21 (40 C.F.R. Part 60, Appendix A); (b) an Optical Gas Imaging (OGI) camera that uses infrared technology to visualize fugitive emissions; (c) an Altair multiple gas monitor as a personal protective warning device to alert personnel of dangerous pollutants and to determine lower explosive limits (LEL) within enclosed spaces; and (d) SUMMA canisters to collect samples of gasses found on site to be later analyzed in NEIC's certified laboratory.

94. During the 2023 CAA Stationary Source Inspection, Suncor representatives used duplicative instrumentation to the EPA Inspection Team's instruments set forth immediately above to concurrently test for and visualize potential leaks alongside the EPA Inspection Team. In addition, Suncor used an UltraRae Photo Ionization Detector (PID), which was outfitted with a benzene separation tube to create a benzene-specific PID, to measure benzene concentration in vent gasses. The EPA Inspection Team observed Suncor's use of the PID.

95. All of the EPA Inspection Team's measurements via TVA and OGI were confirmed by Suncor at the time of the inspection.

96. The EPA finalized an inspection report for the 2023 CAA Stationary Source Inspection on January 26, 2024 (the CAA Stationary Source Inspection Report). As of the date of this NOV, the CAA Stationary Source Inspection Report remains marked as containing company-claimed CBI, because of the facts set forth in Paragraphs 91 and 92 and subject to the handling requirements of 40 C.F.R. Part 2, Subpart B.

97. Suncor received a copy of the CAA Stationary Source Inspection Report from the EPA prior to the issuance of this NOV.

III. FIRST SET OF JOINTLY ALLEGED VIOLATIONS: REQUIREMENTS INCLUDED IN THE DIVISION'S 2023 COMPLIANCE ADVISORY

98. This NOV incorporates by reference the entirety of the Division's 2023 Compliance Advisory, including without limitation the factual findings and violations contained therein. Through this NOV, the EPA joins the Division in alleging those violations that are federally enforceable.

IV. SECOND SET OF JOINTLY ALLEGED VIOLATIONS: REQUIREMENTS FOR REFINERY WASTEWATER AND PROCESS UNIT EMISSION LEAKS

A. Statutory and Regulatory Authority

NESHAP Part 61, Subpart FF

99. 40 C.F.R. Part 61, Subpart FF sets the *National Emission Standard for Benzene Waste Operations* (BWON). 40 C.F.R. §§ 61.340 – 61.359.

100. Colorado has delegated authority to implement and enforce BWON. *See* 5 Colo. Code Reg. § 1001-10:A.I. (incorporating by reference BWON in effect as of July 1, 2023).

101. BWON requirements apply to owners and operators of petroleum refineries, like Suncor. 40 C.F.R. § 61.340(a).

NSPS Part 60, Subpart QQQ

102. 40 C.F.R. Part 60, Subpart QQQ sets the *Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems* (NSPS QQQ). 40 C.F.R. §§ 60.690 – 60.699.

103. Colorado has delegated authority to implement and enforce NSPS QQQ. *See* 5 Colo. Code Reg. § 1001-8:A (incorporating by reference NSPS QQQ in effect as of July 1, 2023).

104. With select exclusions not relevant here, NSPS QQQ applies to "affected facilities located in petroleum refineries for which construction, modification, or reconstruction commenced after May 4, 1987." 40 C.F.R. § 60.690(a)(1). An "affected facility" under NSPS Part 60 is, "with reference to a stationary source, any apparatus to which a standard is applicable." 40 C.F.R. § 60.2. *See* 40 C.F.R. § 60.691.

105. NSPS QQQ specifies that each individual drain system, oil-water separator, and aggregate facility is a separate affected facility. 40 C.F.R. §§ 60.690(a)(2)-(4).

106. The Commerce City Refinery operates emission units subject to NSPS QQQ.

NSPS QQQ Standards for Individual Drain Systems

107. 40 C.F.R. § 60.692-2 sets forth standards for individual drain systems.

NSPS QQQ Standards for Oil-Water Separators

108. 40 C.F.R. § 60.692-3 sets forth standards for oil-water separators.

NSPS QQQ Standards for Closed Vent Systems and Control Devices

109. 40 C.F.R. § 60.692-5 sets forth the standards for closed vent systems and control devices.

NSPS Part 60, Subpart Kb

110. 40 C.F.R. Part 60, Subpart Kb sets the *Standards of Performance for Volatile Organic Liquid (VOL) Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984* (NSPS Kb). 40 C.F.R. §§ 60.110b – 60.117b.

111. Colorado has delegated authority to implement and enforce NSPS Kb. *See* 5 Colo. Code Reg. § 1001-8:A (incorporating by reference NSPS Kb in effect as of July 1, 2023).

112. With select exclusions not relevant here, NSPS Kb applies to each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store VOL for which construction, reconstruction, or modification is commenced after July 23, 1984. 40 C.F.R. § 60.110b.

113. At the Commerce City Refinery, Suncor operates storage vessels subject to NSPS Kb.

NESHAP Part 63, Subpart CC

114. 40 C.F.R. Part 63, Subpart CC sets the *National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries* (MACT CC). 40 C.F.R. §§ 63.640 – 63.679.

115. Colorado has delegated authority to implement and enforce MACT CC. *See* 5 Colo. Code Reg. § 1001-10:E-III (incorporating by reference MACT CC in effect as of July 1, 2023).

116. MACT CC applies to petroleum refining process units and to all related emissions points at a single refinery plant site that are specified in MACT CC. 40 C.F.R §§ 63.640(a) and 63.640(c).

117. At the Commerce City Refinery, Suncor operates petroleum refining process units and related emissions points that are subject to MACT CC.

MACT CC Good Air Pollution Control Practice Requirement

118. For any source subject to MACT CC, the general provisions at 40 C.F.R. § 63.642, require, at 40 C.F.R. § 63.642(n), the owner or operator to operate and maintain the source, including associated equipment for air pollution control, in a manner consistent with safety and good air pollution control practices for

minimizing emissions. The general duty to minimize emissions does not require the owner operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. 40 C.F.R. § 63.642(n).

119. Determination of whether acceptable operating and maintenance procedures are being used consistent with safety and good air pollution control practices will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. 40 C.F.R. § 63.642(n).

Colorado's Air Quality Control Commission's Regulation 24

120. One of the regulations issued by the Commission, under the authority described in Paragraphs 56 through 58, is Regulation 24, which sets out requirements for the *Control of Emissions from Volatile Organic Compounds and Petroleum Liquids Storage and Petroleum Processing and Refining* (Regulation 24). 5 Colo. Code Reg. § 1001-28. Prior to June 14, 2023, these requirements were contained in 5 Colo. Code Reg. § 1001-9 (Regulation 7).

121. The requirements of Regulation 24 relevant to this NOV are part of Colorado's SIP. *See* 40 C.F.R. § 52.320(c) (conveying that these provisions were approved when they were contained in Regulation 7, Part B).

122. At the Commerce City Refinery, Suncor operates petroleum liquids storage and petroleum processing and refining operations that are subject to Regulation 24.

123. Part B of Regulation 24, *Storage, Transfer, and Disposal of Volatile Organic Compounds and Petroleum Liquids and Petroleum Processing and Refining*, sets forth requirements for storage and transfer of VOCs.

124. Among other things, Part B of Regulation 24 requires all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves to be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance), with an additional directive that any such opening, actuation, or use must be limited so as to minimize vapor loss. 5 Colo. Code Reg. § 1001-28:B.I.A.

125. Under Part B of Regulation 24, detectable vapor loss is determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer (when an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm). 5 Colo. Code Reg. § 1001-28:B.I.A.

126. Part B of Regulation 24 regulates emissions from petroleum refineries and has specific provisions governing the venting of blowdown systems and safety pressure relief valves that direct "[a]ll blowdown systems, process equipment vents, and pressure relief valves shall be vented to a vapor recovery system, or to a flare or firebox which assures at least 90% combustion efficiency." 5 Colo. Code Reg. § 1001-28:B.VI.B.3.

B. BWON Violations

Applicable Factual Background

Benzene Waste Operations at Suncor (BWON)

(1) Emissions Units that Suncor Reports as Controlled, but are Actually Uncontrolled

127. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team observed the following tanks to have an open "box" (open to the atmosphere) in the sewer line: T2010; T34; T55; T67; T77; T78; T70; T75; T775; T777; T778; and T80. An open "box" is an area where operators can observe the interface between water and hydrocarbon so they can determine when to close the water draw drain valve.

128. Facilities subject to the BWON who have benzene containing waste on site must calculate the total annual benzene (TAB) quantity from facility waste determined in accordance with 40 C.F.R.§ 61.355(a) and include this information in TAB reports. *See* 40 C.F.R. §§ 61.357(a) and 61.357(d)(2).

129. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team reviewed controlled and uncontrolled sources of benzene containing waste at Suncor as provided by Suncor in TAB reports.

130. For each of the tanks identified in Paragraph 127, Suncor reported the tank water draws as controlled for benzene emissions in its 2020-2022 TAB reports. The water draws contributed 0.32 Mg, 1.39 Mg, and 0.91 Mg of benzene waste according to information provided by Suncor in the TAB reports in 2022, 2021, and 2020, respectively.

(2) Uncontrolled Emission Units at the Denver Truck Terminal, that Suncor reports as Controlled

131. When final product is loaded into tanker trucks at the Denver Truck Terminal, as set forth in Paragraph 84, spills and drips can occur.

132. Suncor instructs all tanker truck drivers to use a Suncor-provided open bucket to collect spills and drips during the loading process. Upon completion of loading, the drivers are instructed to empty any contents of the bucket into the

individual drain system via one of several elevated funnel-shaped drains at the Denver Truck Terminal. At times, spills and drips reach the loading pad/floor.

133. The open bucket referred to in the Paragraph immediately above is a "container" as defined in 40 C.F.R. § 61.341.

134. The EPA Inspection Team observed one of the elevated drains at the Denver Truck Terminal to have a funnel-shaped opening that was equipped with an unlatched and unsealed cover and lacking a visible water seal. This collection drain leads to an underground tank at the same loading bay. Additionally, the EPA Inspection Team measured benzene emissions from the drain at 8,200 ppm using a TVA.

135. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team observed one truck being loaded at the Denver Truck Terminal; the driver did not place the bucket under the nozzle and proceeded to spill the gasoline onto the ground. The gasoline that had spilled was observed to evaporate before reaching the area floor drain.

136. Suncor reports spills and drips from gasoline loading operations at the Denver Truck Terminal containing benzene as controlled in the TAB reports.

137. Suncor reports the BWON waste generated at the Denver Truck Terminal as controlled.

138. The Denver Truck Terminal contributed to 0.74 Mg, 1.06 MG, and 0.88 Mg of benzene waste according to information provided by Suncor in the TAB reports in 2020, 2021, and 2022, respectively.

139. According to Suncor representatives, the benzene quantity reported in the TAB reports is based on vacuum truck loadout, with the contents of the vacuum truck being sampled for benzene content before the contents are discharged into the headworks of the Commerce City Refinery's on-site wastewater treatment plant at Plant 1 (WWTP). Vacuum truck loadout refers to the use of a vacuum truck to remove waste.

(3) Leaks from Refinery WWTP

140. During the 2023 CAA Station Source Inspection, the EPA Inspection Team measured detectable emissions over 500 ppmv above background at multiple emissions units that Suncor was required to operate with no detectable emissions, as indicated by an instrument reading below 500 ppmv, as set forth in Table 2. The EPA Inspection Team also observed flameout status on the TVA while it was in use, as noted below. Flameout status indicates a TVA reading of VOC concentration that is greater than the upper measurement safety threshold of the TVA.

Table 2

Location at Refinery WWTP	The EPA Inspection Team's Observations	Applicable Regulatory Requirements
API Lift Station	North hatch of API Lift Station leaking at 3,700 ppm. Pressure relief device was leaking and TVA flameout occurred. Pressure relief device benzene measurement of 276 ppm.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
Tank T60 Lift Station	Northeast hatch leak detected by Suncor at 6,362 ppm on October 5, 2023; hatch leaking at 1,700 ppm on October 23, 2023.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
Tank T4515 (oil-water separator)	Vacuum breaker on a pressure relief device leaking at 2,200 ppm on tank. The vent to atmosphere from another pressure relief device had emissions that were observed through OGI.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.347(a)(1).
Tank T4514 (oil-water separator)	Vacuum breaker on pressure relief device leaking at 735 ppm on tank.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.347(a)(1)(i)(A).
Tank T4517 (slop oil)	Seal on agitator of tank leaking at 6,311 ppm.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
DGF, tank T4504	Vacuum breaker on pressure relief device leaking at 1,119 ppm on tank.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
DGF, tank T4507	Vacuum breaker on pressure relief device leaking at 7,376 ppm on tank.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
DGF, tank T4508	Pressure side of pressure	Which shall otherwise be

Location at Refinery WWTP	The EPA Inspection Team's Observations	Applicable Regulatory Requirements
	relief device leaking 900 ppm, and vacuum breaker on same PRD flameout TVA.	in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
DGF, carbon canisters	The closed vent system routing organic vapors to the carbon canister was observed to be leaking using OGI at the connection point to control device. The latch connecting the closed vent system carbon canister was not engaged. After the latch was engaged by Suncor, emissions were no longer observable on OGI.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.349(a).
Lab Sump	Manway leak was measured to leak at 918 ppm.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. § 61.343(a)(1).
Lab Sump	Vacuum truck hose connected to sump was observed open, leaking at 900 ppm.	Which shall otherwise be in continuous compliance with the requirements of 40 C.F.R. §61.343(a)(1).

(4) EOL and TAB Reports Discrepancies

141. Pursuant to the Suncor Consent Decrees, Suncor uses an End-of-Line (EOL) benzene waste sampling plan designed to validate the benzene concentration and quantity of waste streams managed at the Commerce City Refinery (BWON EOL Sampling Plan). A waste stream is the waste generated by a particular process unit, product tank, or waste management unit.

142. Under the BWON EOL Sampling Plan in use at the time of the 2023 CAA Stationary Source Inspection, which was revised and submitted to the Governments in 2018, Suncor collects and measures samples downstream of refinery process units (at the EOL). To generate the annual TAB report, Suncor collects samples or uses process knowledge to determine the benzene quantity of waste streams a point of waste generation (POGs).

143. The amount of benzene measured at an EOL location should be less

than the amount of benzene determined at the combination of POG locations that are managed through respective downstream EOL locations due to volatilization throughout the wastewater management system.

144. For both controlled and uncontrolled waste streams, benzene in the waste can evaporate between the POG and EOL.

145. The BWON EOL Sampling Plan requires Suncor to submit quarterly reports to the EPA and the Division to, among other things, relay sampling results. Suncor's TAB reports list the entirety of its benzene-containing waste streams from Plant 2 and Plant 3 as uncontrolled on its TAB reports from 2020, 2021, and 2022.

146. Suncor lists some of its benzene-containing waste streams from Plant 1 as controlled, and some as uncontrolled, on its TAB reports from 2020, 2021, and 2022.

147. On facility TAB reports for Plant 2, Suncor reported the benzene quantity at the POGs equal to 0.354 Mg in 2020, and 0.295 Mg in 2021.

148. Based on sampling, Suncor reported the EOL benzene quantity from Plant 2 equal to 0.662 Mg in 2020, and 0.309 Mg in 2021.

149. On facility TAB reports for Plant 3, Suncor reported the benzene quantity at the POGs from waste streams equal to 0.013 Mg in 2020, 0.009 Mg in 2021, and 0.009 Mg in 2022.

150. Based on information available to the EPA, Suncor collects EOL samples and reported the EOL benzene quantity from Plant 3 equal to 0.224 Mg in 2020, 0.312 Mg in 2021, and 0.258 Mg in 2022.

151. On the facility TAB report for Plant 1, Suncor reported the benzene quantity at the POGs from waste streams equal to 0.081 Mg in 2022.

152. Suncor does not collect EOL benzene samples from the sewer system in Plant 1 due to self-expressed safety concerns about H_2S exposure at the EOL sampling location. Instead, Suncor uses self-described engineering judgement, process knowledge, and historical sampling to estimate the benzene quantity at the EOL. Suncor reported the EOL benzene quantity from Plant 1 equal to 0.13 Mg in 2022.

153. Suncor reported in previously submitted annual TAB reports for each year from 2020 through 2023, that facility waste contains a total annual benzene quantity of approximately 18 Mg/yr.

154. As provided in the TAB reports, Suncor has chosen to comply with the BWON compliance option in 40 C.F.R. § 61.342(e).

155. Under the compliance option in 40 C.F.R. § 61.342(e), only wastewater containing a facility-wide total of 6 Mg benzene per year can be uncontrolled or handled in waste management units that are not compliant with 40 C.F.R. §§ 61.343, 61.344, 61.345, 61.346, 61.347, and/or 61.348(a).

156. According to the calculation required in 40 C.F.R. § 61.355(k), the uncontrolled benzene quantity is determined at each location where the waste stream enters the first waste management unit not complying with 40 C.F.R. §§ 61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a) that are applicable to the waste management unit.

Pressure Relief Devices

157. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team observed detectable emissions greater than 500 ppm on pressure relief devices as listed in Table 3. There were no process upsets or risks of safety hazard or equipment damage noted by Suncor for these PRDs at the time of the 2023 CAA Stationary Source Inspection. The EPA Inspection Team also observed flameout status on the TVA while it was in use, as noted below. Flameout status indicates a TVA reading of VOC concentration that is greater than the upper measurement safety threshold of the TVA.

Table 3

Emission Unit Location	**Monitored TVA Emission Measurement**
API lift station	Flameout
Tank T4514 API	735 ppm
Tank T4515 API	2,200 ppm
Tank T4516 (slop oil)	2,100 ppm
Tank T4504 (DGF)	1,100 ppm (measured by Suncor using an extension probe)
Tank T4507 (DGF effluent tank)	7,375 ppm
Tank 4508 (DGF skim tank)	Flameout
Lower API (Plant 2)	80,000 ppm

The Governments have redacted the original NOV sent to Suncor to prevent disclosure of company-claimed confidential business information (CBI). See footnote 2.

Leak Detection and Repair (LDAR) Monitoring

158. Suncor monitored, Company-Claimed CBI BWON affected components to detect the presence of leaks Company-Claimed CBI

159. As part of the 2023 CAA Stationary Source Inspection, Suncor provided the EPA Inspection Team with access to the Company-Claimed CBI and the EPA Inspection Team reviewed Company-Claimed CBI

160. Based on the EPA Inspection Team's review conducted and set forth immediately above, Company-Claimed CBI from emissions units subject to BWON requirements from Company-Claimed CBI.

161. Company-Claimed CBI

162. During the days of the 2023 CAA Stationary Source Inspection that the EPA Inspection Team was monitoring BWON affected components at the Commerce City Refinery for leaks, the EPA Inspection Team found at least 20 leaking BWON components at the Commerce City Refinery, as set forth in Paragraphs 140 and 157 and observed uncontrolled emissions units that Suncor reported as controlled, as set forth in Paragraph 127 and 131 to 135, and other indications of an inadequate LDAR program.

Carbon Canisters at the Plant 1 WWTP

163. Suncor uses carbon canisters, connected in series, to control emissions from the Dissolved Gas Flotation (DGF) tanks at the facility WWTP at Plant 1.

164. The EPA Inspection Team inspected the DGF tanks' carbon canisters and observed VOC emissions with an OGI camera from the secondary carbon canister effluent stack.

165. At the direction of EPA Inspection Team, Suncor monitored the DGF exhaust gases between the primary canister and the secondary canister, and at the outlet of the secondary canister (which is vented to atmosphere) using an UltraRae PID. The UltraRae PID was calibrated to measure benzene, but not total VOCs. At both locations, Suncor's instrument read 68 ppm benzene, indicating zero control efficiency was being achieved by the secondary carbon canister. At both locations,

[2] As set forth in Paragraphs 91 to 92, CBI-claimed information contained in this NOV is highlighted in red to indicate it is treated by the Governments according to 40 C.F.R. Part 2, Subpart B, and applicable Colorado law.

the EPA Inspection Team monitored for breakthrough of total organic compounds using a TVA and at both locations, the vapors caused a flameout of the TVA.

166. The EPA Inspection Team collected an air sample using a SUMMA canister between the primary and secondary carbon canisters identified in Paragraph 165. After collection, the sample was later analyzed at the NEIC's laboratory for both benzene and total VOC concentration. The analysis at the lab allowed for detection of organics in the parts per billion range, a higher precision value than the UltraRae PID utilized on-site by Suncor. The sample results showed a benzene concentration of 76.1 ppm and a VOC concentration of 789.6 ppm.

167. According to Suncor's engineering calculation and design analysis records for the DGF carbon canister system, the highest concentration expected to occur at the inlet to the system is 1,000 ppm VOC.

168. The EPA Inspection Team collected a SUMMA canister sample of vapors from the API Lift Station which showed a benzene concentration of 276 ppm. The API Lift Station is used to collect and pump wastewater to the API oil-water separators prior to treatment in the downstream DGF.

169. More oil is present and benzene vapor concentrations are expected to be higher at the API Lift Station than the DGF tanks. When wastewater travels between the API Lift Station and the DGF tanks, benzene has the opportunity to evaporate out. Therefore, the benzene concentration at the inlet to the DGF carbon canisters is expected to be no greater than 276 ppm.

170. Assuming a 276 ppm benzene inlet measurement at the DGF, and an outlet reading of 76 ppm at the outlet of the second canister, Suncor only achieved a 72.4% benzene reduction efficiency through the carbon canisters.

171. Assuming a 1,000 ppm VOC inlet measurement at the DGF and a reading of near 789 ppm at the outlet of the secondary canister, Suncor only achieved a 21% VOC reduction efficiency.

172. Suncor's records indicate that the monitoring frequency for carbon canisters at the Commerce City Refinery is every 3 days.

173. Based on the breakthrough of both the primary and secondary carbon canisters, set forth above in Paragraphs 163 to 171, and Suncor's monitoring frequency set forth in Paragraph 172, Suncor is not monitoring for breakthrough on a daily basis or at a frequency of at least 20% of the design carbon replacement interval.

174. The Conoco Consent Decree defines, for dual carbon canister systems in series, "breakthrough" between the primary and secondary canister as any reading equal to or greater than 50 ppm VOCs.

175. Suncor uses a 5-ppm benzene breakthrough definition and monitors the carbon canisters for breakthrough using an UltraRae benzene-specific PID with at 5-ppm benzene breakthrough definition.

176. The Conoco Consent Decree requires Suncor to replace the original primary carbon canisters with either a fresh carbon canister or the secondary canister within 24 hours of when breakthrough is detected. If the original secondary carbon canister is used as the new primary carbon canister, a fresh carbon canister will become the secondary canister.

177. Plant 1 has a laboratory to test wastewater generated by Suncor's operations. Suncor disposes of laboratory waste through an underground sump. Suncor uses carbon canisters to serve as a control device for the emissions from the lab sump.

178. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team also inspected carbon canisters used as control devices on the lab sump. The EPA Inspection Team measured breakthrough at the carbon canisters at the lab sump with a leak of 918 ppm VOC. Suncor did not replace the carbon canisters within 24 hours after the EPA Inspection Team measured breakthrough using the 50 ppm VOC breakthrough definition set forth in Paragraph 174.

BWON Violations

Failure to Comply with Individual Drain Systems Standards

179. Suncor failed to install, operate, and maintain on each drain system opening a cover and closed-vent system, in a manner so as to have no visual gaps or cracks in joints, seals, or other emissions interfaces, that routes all organic vapors vented from the drain system to a control device and/or failed to operate each sewer line in a manner that is not open to the atmosphere, enclosed or covered so as to have no visual gaps or crack in joints, seals, or other emission interfaces for each of the tank water draws identified in Paragraph 127, in violation of 40 C.F.R. §§ 61.346(a)(1) and/or 61.346(b)(3).

180. Suncor failed to install water seal controls or a tightly-fitting cap or plug at the Denver Truck Terminal elevated funnel-shaped drains identified in Paragraph 134, in violation of 40 C.F.R. §§ 61.346(a)(1) and/or (b)(1) and (b)(3).

Failure to Comply with Container Standards

181. By using open containers without covers to collect spills during the tanker truck loading process at the Denver Truck Terminal, as set forth in Paragraphs 132 through 134, and by reporting the BWON waste at the Denver Truck Terminal as controlled, as set forth in Paragraphs 136 and 137, Suncor violates the requirements for a controlled container under 40 C.F.R. § 61.345(a)(1).

The Governments have redacted the original NOV sent to Suncor to prevent disclosure of company-claimed confidential business information (CBI). See footnote 2.

Benzene-Containing Waste Reporting Violations

182. Suncor failed to report the tank water draw discharges for each of the tanks identified in Paragraph 127 as uncontrolled wastes in the facility's 2020-2022 TAB reports, in violation of 40 C.F.R. §§ 61.357(a) and 61.357(d)(2).

183. Suncor's annual TAB reports from 2020-2023, as identified in Paragraph 136 and 137, do not account for spilled gasoline that evaporates prior to reaching the floor drain at the Denver Truck Terminal resulting in an underestimation of benzene quantity in those reports. Therefore, Suncor failed to accurately account for benzene-containing waste produced at individual points of waste generation on its TAB reports for 2020, 2021, and 2022, in violation of 40 C.F.R. § 61.357(a)(4).

184. Based on the information set forth in Paragraph 131 through 139, Suncor generated uncontrolled benzene-containing waste at the Denver Truck Terminal (gasoline loading rack), but failed to report the waste as uncontrolled in its TAB reports from 2020-2022, in violation of 40 C.F.R. § 61.357(a)(2).

Leaks from Refinery WWTP

185. Based on the information set forth in Paragraph 140, Suncor failed to operate and maintain fixed roofs and closed vent systems that route all organic vapors to control device and control emissions units to ensure those units would operate with no detectable emissions, as indicated by an instrument reading below 500 ppmv, in violation of 40 C.F.R. §§ 61.343(a)(1), 61.347(a)(1), 61.349(a)(2), and 61.349(a)(1)(i).

Inadequate LDAR Monitoring

186. Based on Company-Claimed CBI BWON affected components at the Commerce City Refinery, as set forth in Paragraphs 158 through 161, and the EPA Inspection Team's monitoring of BWON affected components at the Commerce City Refinery, as set forth in Paragraph 162, Suncor failed to correctly perform BWON-related LDAR monitoring for Company-Claimed CBI prior to the 2023 CAA Stationary Source Inspection Company-Claimed CBI in violation of 40 C.F.R. §§ 61.343, 61.345, 61.346, 61.347, 61.349, and 61.355

BWON Control Device Violations

(1) Failure to Achieve Control Efficiency for DGF Carbon Canisters

187. Based on the benzene and VOC reduction efficiencies set forth in Paragraphs 170 and 171, respectively, and the facts set forth in Paragraphs 163 through 169, Suncor failed to operate a vapor recovery system to recover or control the benzene emissions vented from the five DGF tanks (T4502, T4503, T4504,

T4507, T4508) through the carbon canisters with an efficiency of 98 weight percent or greater, or organic emissions with an efficiency of 95 weight percent or greater, in violation of 40 C.F.R. § 61.349(a)(2)(ii).

(2) Failure to Monitor and Replace Carbon Canisters as Required

188. Based on the facts set forth in Paragraphs 172 and 173, carbon canisters at the Commerce City Refinery are not monitored as required by 40 C.F.R. § 61.354(d).

189. Suncor incorrectly used a 5-ppm benzene breakthrough definition instead of the 50-ppm VOC breakthrough definition required by the Conoco Consent Decree, as set forth by Paragraphs 174 and 175, in its inspections of the carbon canisters in Plant 1 and Plant 3, from 2018 to 2023, in violation of Conoco Consent Decree Paragraph 90.

190. Based on the facts set forth in Paragraphs 176 and 177 Suncor failed to replace the carbon canisters at the lab sump within 24 hours in violation of Conoco Consent Decree Paragraph 92.

BWON Reporting Violations

191. The EOL sample results provided by Suncor demonstrate more benzene at the EOL for Plants 2 and 3 than from the individual points of waste generation reported in the TAB reports, such that Suncor's TAB reports are not accurately accounting for all the benzene waste produced at individual points of waste generation based on information set forth in Paragraph 141 to 152, in violation of 40 C.F.R. §§ 61.357(a) and 61.357(d)(2).

Suncor Exceeded the 6 Mg/yr Control Standard for Benzene Quantity

192. Based on the information set forth in Paragraph 179 to 191 Suncor failed to maintain the amount of controlled benzene in facility wastewater below 6 Mg/year, as determined using the procedures in 40 C.F.R. § 61.355(k) from 2018 through 2023, in violation of 40 C.F.R. § 61.342(e)(2)(i).

C. Wastewater VOC Emissions Violations (NSPS QQQ)

Applicable Factual Background

Facility-Wide NSPS QQQ Inspections

193. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team inspected individual drains and junction boxes within process units subject to NSPS QQQ as identified by Suncor, and observed that the drains in

Table 4 were not operated with the required controls, and that the junction boxes in Table 4 were not equipped with a tightly sealed cover as follows:

Table 4

Location at Commerce City Refinery	**EPA Inspection Team's Observation**	**Applicable Requirement**
Plant 2, Unsaturated Gas Unit	Drain 0451 equipped with a plug that was not tightly sealed and leaking at 1,092 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Junction box manhole cover west of vessel 09T250 was not tightly sealed and leaking at 17,000 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 2, Unsaturated Gas Unit	Three drain risers next to pump 0466 were equipped with plugs that were not properly installed.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Drain 0468 equipped with a plug that was not tightly sealed, leaking at 515 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Drain 0469 equipped with a plug that was not properly installed as indicated by a visible gap around the edge of the seal.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Drain 0472 equipped with a plug that was not tightly sealed, leaking at 1,744 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Drain 0473 equipped with a plug that was not tightly sealed, leaking at 3,300 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Unsaturated Gas Unit	Manhole near pump 254A not sealed (with visible holes) with emissions measuring 2,800 ppm.	40 C.F.R. § 60.692-2(b).
Plant 2, Saturated Gas Unit	Drain 0414 (near pump 318A) equipped with a plug that was not properly installed as indicated by a visible gap around the edge of the seal.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).

Location at Commerce City Refinery	EPA Inspection Team's Observation	Applicable Requirement
Plant 2, Saturated Gas Unit	Drain 0415 (near pump 318B) equipped with a plug that was not properly installed as indicated by a visible gap around the edge of the seal.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Drain 0408 equipped with a plug that was not tightly sealed, leaking at 1,300 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Junction box manhole cover with holes (not sealed) between Saturated and Unsaturated units.	40 C.F.R. § 60.692-2(b).
Plant 2, Saturated Gas Unit	Sewer opening with a steel plate cover (with holes in it) with emissions measuring 2,300 ppm.	40 C.F.R. § 60.692-2(b).
Plant 2, Saturated Gas Unit	Drain near caustic treater V-255 equipped with a plug that was not properly installed as indicated by a visible gap around the edge of the seal.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Drain east of E-294 with open grating and no visible water seal, with emissions measuring 765 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Drain near V-705 with no plug and no visible water seal with emissions measuring at 1,757 ppm.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Drain 0428 with no plug and no visible water seal.	40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).
Plant 2, Saturated Gas Unit	Junction box manhole cover northeast of eyewash station not tightly sealed and leaking at 8,000 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 2, Saturated Gas Unit	Junction box manhole cover (tag 0501) north of upper API was not sealed (had visible holes) and had emissions measuring 12,000 ppm.	40 C.F.R. § 60.692-2(b).

The Governments have redacted the original NOV sent to Suncor to prevent disclosure of company-claimed confidential business information (CBI). See footnote 2.

Location at Commerce City Refinery	EPA Inspection Team's Observation	Applicable Requirement
Plant 3	Junction box manhole cover (tag 0087) with visible holes and emissions measuring at 13,000 ppm.	40 C.F.R. § 60.692-2(b).
Plant 1, GBR Unit	Sewer cleanout access (tag 0229) not tightly sealed and leaking at 594 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, GBR Unit	Sewer cleanout access (tag 0224) not tightly sealed and leaking at 1,600 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, Hydrogen Unit	Junction box (tag 2249) visibly damaged seal with a leak that caused a flameout of the TVA.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, Reformer Unit	Drain 1077 missing water seal and emissions measuring 1,300 ppm.	40 C.F.R. § 60.692-2(a)(1).
Plant 1, Reformer Unit	Drain 1079 with a partial water seal (did not appear to be fully sealed) and emissions measuring 978 ppm.	40 C.F.R. § 60.692-2(a)(1).
Plant 1, Reformer Unit	Drain 1078 missing water seal.	40 C.F.R. § 60.692-2(a)(1).
Plant 1, Reformer Unit	Sewer cleanout access (tag 1080) not tightly sealed and leaking at 740 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, Reformer Unit	Junction box manhole cover (tag 0189) not tightly sealed and leaking at 2,000 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, HDS#3	Junction box manhole cover (tag 0112) with visibly damaged seal leaking at 1,500 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, HDS#3	Junction box manhole cover (tag 0013) with visibly damaged seal leaking at 670 ppm.	40 C.F.R. § 60.692-2(b)(2).
Plant 1, HDS#3	Drain 0152 missing water seal.	40 C.F.R. § 60.692-2(a)(1).

194. Suncor provided the EPA Inspection Team with records of NSPS QQQ inspections from Company-Claimed CBI that Suncor conducted on subject components from Company-Claimed CBI . The records identify that Company-Claimed CBI

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Company-Claimed CBI [redacted].

195. According to the Company-Claimed CBI [redacted]

196. The EPA Inspection Team's review of Company-Claimed CBI [redacted]

197. Suncor performed Company-Claimed CBI [redacted]

198. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team conducted NSPS QQQ compliance inspections. Over the course of three days, the EPA Inspection Team observed the 34 deficiencies listed in the table above in Table 4. By contrast, Company-Claimed CBI [redacted] as set forth in Paragraph 197.

199. Suncor reported that the wastewater generated in Plant 2 is routed through the upper, middle, and/or lower APIs and is then collected in tank T29. Tank T29 is equipped with an oil skimmer and the skimmed slop oil is collected in tank T20 for reprocessing. The oil is removed from tank T29 using a vacuum truck that is vented to the atmosphere while filling. Suncor also reported that oil is also removed from the upper, middle, and lower APIs using vacuum trucks.

ADI Control Number 0400031

200. On May 10, 2004, EPA Region 5 issued an ADI under NSPS QQQ titled, "Junction Box Tight Seal & Infrequently Used Drain" (ADI Control Number 0400031). This ADI clarified what satisfies the "tight seal" requirements for junction box covers under NSPS QQQ and whether any alternative to the water seal requirements for drains under NSPS QQQ may apply to infrequently used drains.

201. ADI Control Number 0400031 states that "…the intention of the 'tight seal' requirements in Sec. 60.692-2(b)(2) is to prevent the leakage of vapor from around the edges of junction box covers. . . .[T]he proposed rule at 52 Fed. Reg. 16352 (May 4, 1987) stated 'the seal around the junction cover shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background levels, as determined during an initial and semiannual inspections thereafter.' This language was omitted from the promulgated rule because the Agency decided that visual inspections would be

sufficient. However, we believe that the rule's intention remains that seals around junction box covers prevent detectable leaks."

Ground Cracks in Plant 1 Reformer Process Area

202. While touring the Plant 1 Reformer process area, the EPA Inspection Team observed visible cracks in the ground (concrete) to be emitting hydrocarbon when viewed with an OGI camera. The EPA Inspection Team could not determine the exact source of these hydrocarbon emissions while on site during the 2023 CAA Stationary Source Inspection. Suncor representatives identified an underground process sewer line or potentially contaminated soil beneath the concrete within the reformer process area as two possible sources of these emissions.

Cracks in Plant 2 API Tanks

203. Suncor identified to the EPA Inspection Team during the 2023 CAA Stationary Source Inspection three emission units in Plant 2, among others, that are subject to NSPS QQQ, namely the Lower API, Middle API, and Upper API.

204. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team inspected the three API tanks referred to immediately above and made observations of deficiencies in the operation of these emission units as set forth in Table 5.

Table 5

Emission Unit	**EPA Inspection Team's Observation**
Lower API F021	Cracking in the outer walls of the concrete tank, which had emissions ranging between 1,800 ppm and 2,900 ppm. The northwest edge at the bottom of the Lower API, where it touches the ground was stained, significant hydrocarbon odor was apparent, and emissions were measured at 30,000 ppm. The entire edge along the back side of the Lower API was emitting hydrocarbons greater than 10,000 ppm.
Middle API F022	Cracks along the southwest portion of the Middle API. The observed cracks had visible staining. The cracked and stained concrete measured 2,000 ppm VOC.
Upper API F023	Several cracks along the east side of the concrete wall, which had emissions ranging between 2,000 ppm and 5,300 ppm.

205. The EPA Inspection Team observed during the 2023 CAA Stationary Source Inspection that the Lower API, Middle API, and Upper API are each equipped with a fixed roof and have a nitrogen blanket that purges the vapors to carbon canisters. However, the EPA Inspection Team also observed that there were

no flow indicators installed on the APIs to indicate whether the vapors are actually being routed to the carbon canisters. The EPA Inspection Team observed the position of the valves used to control each carbon canister that is in use to be visible; however, the valve position did not indicate flow or demonstrate that the vapors are being routed to the control device.

NSPS QQQ Violations

206. Suncor failed to operate the drains in Table 4, of Paragraph 193, with water seals and/or tightly sealed caps or plugs, in violation of 40 C.F.R. §§ 60.692-2(a)(1) and 60.692-2(a)(4).

207. Suncor failed to operate the junction boxes in Table 4, of Paragraph 193, with tightly sealed covers in violation of 40 C.F.R. § 60.692-2(b).

208. Suncor failed to operate the oil-water separators in Paragraphs 194 through 198 with fixed roofs that completely cover the separator tanks in violation of 40 C.F.R. § 60.692-3(a)(1).

209. Suncor failed to operate closed vent systems in Paragraphs 194 through 198 with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background in violation of 40 C.F.R. § 60.692-5(e)(1).

210. Suncor failed to make repairs to missing or improperly installed caps or plugs in Paragraphs 194 through 198 soon as practicable, but not later than 24 hours after detection, pursuant to ADI Control Number 0400031 in violation of 40 C.F.R. § 60.692-2(a)(5).

211. Suncor failed to make repairs to non-tightly sealed junction boxes in Paragraphs 194 through 198 as soon as practicable, but not later than 15 calendar days after identification pursuant to ADI Control Number 0400031, in violation of 40 C.F.R. § 60.692-2(b)(4).

212. Based on the information set forth in Table 4, of Paragraph 193, and Paragraphs 194 through 198, Suncor failed to properly perform monitoring and repair for NSPS QQQ affected emission units, in violation of 40 C.F.R. §§ 60.692-2(a), 60.692-2(b), 60.692-3(a)(4), and 60.692-5(e)(1).

213. Based on the facts set forth in Paragraph 199 the oil and oily wastewater from slop oil handling in tank T29, Lower API, Middle API, Upper API, and tank T20 is collected and transported using vacuum trucks that are vented to the atmosphere during filling and not in an enclosed system, in violation of 40 C.F.R. § 60.692-3(e).

214. Based on the facts set forth in Paragraph 205, Suncor failed to equip the Lower API, Middle API, and Upper API with closed vent systems that contain the required flow indicators, in violation of and 40 C.F.R. § 60.692-5(e)(3).

D. Volatile Organic Liquid from Storage Vessels Violations (NSPS Kb)

Applicable Factual Background

215. Tank T29 in Plant 2 receives oily wastewater from the Lower API, Middle API, and Upper APIs, as discussed in Paragraph 204.

216. Tank T29 is subject to NSPS Kb. This status is incorporated into Suncor's Permit 95OPAD108.

217. Tank T29 is equipped with an external floating roof (EFR). While standing on the tank platform above the floating roof deck, the EPA Inspection Team observed, with an OGI camera, hydrocarbon emissions from an automatic bleeder vent on the EFR.

218. The EPA created and regularly revises and updates AP-42, *Compilation of Air Pollutant Emissions Factors from Stationary Sources*, to represent the primary compilation of EPA's emissions factor information. Chapter 7 of AP-42 addresses Liquid Storage Tanks.

219. Emissions estimating methodologies for storage tanks of various types and operating conditions are set forth in Chapter 7 of AP-42 and only apply for storage tanks that are properly maintained and in normal working condition. The emissions estimating methodologies do not address conditions of deteriorated or otherwise damaged materials of construction, nor do they address operating conditions for storage tanks that are not properly maintained or in normal working condition.

220. Suncor uses AP-42 emission factors to determine emission limits set forth in both Title V permits.

221. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 1.71 tpy VOC emissions limitation for tank T29 in its Title V permit application, and Suncor's Permit 95OPAD108, at Condition 10.1.2, incorporates a 1.71 tpy VOC emissions limitation for tank T29. This emission limit was approved based on Suncor's representation that tank T29 met the maintenance and operating conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

222. Any storage vessel that is not properly maintained or operating under normal working conditions loses the ability to accurately estimate emissions using AP-42 emission factors to demonstrate compliance with an emissions limit.

NSPS Kb Violations

223. Based on the facts set forth in Paragraph 217, Suncor failed to maintain the automatic bleeder vent on tank T29 in Plant 2 such that automatic bleeder vent was closed at all times and gasketed. 40 C.F.R. § 60.112b(a)(2)(ii).

224. Based on the EPA Inspection Team's inspection of tank T29 set forth in Paragraph 217, Suncor failed to operate and maintain the source consistent with good air pollution control practices for minimizing emissions. 40 C.F.R. § 60.11(d).

225. Because the tank T29 automatic bleeder vent has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 217, Tank T29 was not properly maintained and operating under normal working conditions while it was leaking.

226. Based on the information set forth in Paragraph 225, Suncor's emission limits estimated by AP-42 are not accurate estimates, as set forth in Paragraph 221 and 222, therefore tank T29 has been exceeding the permitted VOC emission limit in Permit 95OPAD108, Condition 10.1.2 for an unknown amount of time, in violation of that permit.

E. Colorado Commission Regulation 24 Violations

227. Based on information received from Suncor regarding uncontrolled pressure relief devices, observations made during the 2023 CAA Stationary Source Inspection, and the facts set forth in Paragraph 157, Suncor is failing to route 61 pressure relief devices to a vapor recovery system, or to a flare or firebox that assures at least 90% combustion efficiency, in violation of Part B of Regulation 24, 5 Colo. Code. Reg. § 1001-28:B.VI.B.3.

F. Pressure Relief Device Violations of MACT CC

228. As set forth in Paragraph 157, Suncor failed to operate the pressure relief devices in Table 3 with an instrument reading of less than 500 ppm above background, in violation of 40 C.F.R. § 63.648(j)(1).

G. Good Air Pollution Control Practices for Both BWON and NSPS QQQ Affected Facilities

229. Based on the numerous violations found during the 2023 CAA Stationary Source Inspection where EPA Inspection Team observed leaking BWON components at the Commerce City Refinery, as set forth in Paragraphs 140 and 157 and observed uncontrolled emissions units that Suncor reported as controlled, as set

forth in Paragraph 127 and 131 through 139, Suncor failed to operate the components subject to BWON in a manner consistent with good air pollution control practices, in violation of 40 C.F.R. § 61.12(c).

230. Suncor failed to maintain and operate affected facilities in a manner consistent with good air pollution control practice for minimizing emissions at NSPS QQQ-subject sources, based on the repeat deficiencies identified by Suncor in Paragraphs 194 through 198 and the EPA Inspection Team's observations in Table 4, in violation of 40 C.F.R. § 60.11(d).

231. Based on the facts set forth in Paragraph 202, and 203 to 204, Suncor has failed to operate and maintain affected sources at the Commerce City Refinery with good air pollution control practices for minimizing emissions, in violation of 40 C.F.R. §§ 61.12(c) and 60.11(d).

V. THIRD SET OF JOINTLY ALLEGED VIOLATIONS: CAA STORAGE VESSEL REQUIREMENTS AND CAA FLARE GAS RECOVERY SYSTEM ASSESSMENT VIOLATIONS

A. Statutory and Regulatory Authority

NSPS Kb

232. At the Commerce City Refinery, Suncor operates storage vessels subject to NSPS Kb, as set forth in Paragraphs 110 through 113.

MACT CC

233. At the Commerce City Refinery, Suncor operates petroleum refining process units and related emission points that are subject to MACT CC, as set forth in Paragraphs 114 through 117.

MACT WW

234. 40 C.F.R. Part 63, Subpart WW sets the *National Emission Standards for Storage Vessels (Tanks) – Control Level 2* (MACT WW). 40 C.F.R. §§ 63.1060 – 63.1067.

235. MACT WW applies to the control of air emissions from storage vessels referred to in, among other subparts, MACT CC. 40 C.F.R § 63.1060.

236. At the Commerce City Refinery, Suncor operates storage vessels referred to in MACT CC and subject to Subpart WW.

NSPS Part 60, Subpart Ja

237. 40 C.F.R. Part 60, Subpart Ja sets the *Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007* (NSPS Ja). 40 C.F.R. §§ 60.100a – 60.109a.

238. Colorado has delegated authority to implement and enforce NSPS Ja. *See* 5 Colo. Code Reg. § 1001-8:A (incorporating by reference NSPS Ja in effect as of July 1, 2023).

239. With select exceptions not relevant here, NSPS Ja applies to the following affected facilities in petroleum refineries: fluid catalytic cracking units (FCCU), fluid coking units (FCU), delayed coking units, fuel gas combustion devices (including process heaters), flares and sulfur recovery plants. The sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery. 40 C.F.R. § 60.100a.

240. At the Commerce City Refinery, Suncor operates affected facilities subject to NSPS Ja.

B. General Factual Background about Tanks Inspections

241. At all refineries, the physical inspection from within the storage vessel of certain components or sections of storage vessel control devices, such as rim seals, pontoon covers, and vacuum breaker vents that are part of a floating roof as explained in MACT WW, is limited by safety considerations.

242. During the 2023 CAA Stationary Source Inspection, because visual inspection of certain components or sections of storage vessel control device presents safety risks as set forth immediately above, the EPA Inspection Team and Suncor used OGI cameras to inspect tanks storing VOL to assess whether those tanks had likely deficiencies such as gaps, holes, vent failures, or other control device integrity failures that may otherwise be visible during a physical inspection from within the storage vessel.

C. Volatile Organic Liquid from Storage Vessels Violations (NSPS Kb)

Applicable Factual Background

243. Tanks T6, T53 and T96 are internal floating roof (IFR) tanks subject to the requirements of MACT CC and NSPS Kb.

244. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team and Suncor used OGI cameras to inspect the following IFR tanks and observed hydrocarbon emissions being vented to atmosphere as shown in Table 6:

Table 6 List of Inspected Tanks Subject to MACT CC and NSPS Kb

Tank Emission ID	**Tank Type**	**The EPA Inspection Team's Observations**
Tank T6	Internal Floating Roof	Emissions from roof vents on the north and west side of the tank.
Tank T53	Internal Floating Roof	Emissions from a roof vent on the west side of the tank.
Tank T96	Internal Floating Roof	Emissions from a roof vent on the south side of the tank.

245. The emissions observed by the EPA Inspection Team using OGI cameras as described immediately above were documented in still photographs and videos that depict, in some cases, visibly large plumes continuously wafting off the top of the tanks into the ambient air. OGI cameras capture images that cannot be seen by the naked eye.

246. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team used an Altair 5X multiple gas monitor to measure the lower explosive limit (LEL) in the vapor space for two tanks, IFR tank T6 (in Plant 2) and tank T96 (in Plant 1). Tanks T6 and T96 are both located within a quarter mile of Brighton Boulevard and both tanks measured by the EPA Inspection Team had elevated LEL, though were below the LEL.

Suncor's Additional Inspection of, and Records and Reports for, Tank T96

247. Based on the EPA Inspection Team's inspection of IFR tank T96, set forth in Paragraph 244, the EPA Inspection Team requested that Suncor conduct a visual inspection IFR from openings in the fixed roof for that tank.

248. On November 2, 2023, Suncor conducted a visual inspection of tank T96's IFR, as requested by the EPA Inspection Team in the paragraph immediately above.

249. Suncor's inspection records for the tank T96 inspection conducted on November 2, 2023 identified black liquid accumulated on the floating roof around what appears to be an IFR deck leg. These inspection records also said no action was required for the IFR of tank T96.

250. Since Suncor's November 2, 2023 visual inspection of tank T96, Suncor has not reported to the EPA and the Division repairing tank T96 or emptying and removing tank T96 from service to address liquid accumulated on the IFR of tank T96.

Suncor's Additional Inspection of Tanks T6, T53, and T96

251. The EPA Inspection Team observed Suncor's tank inspection contractors conducting IFR tank inspections at multiple tanks on October 25, 2023 and November 2, 2023.

252. Tanks T6, T53, and T96 were inspected by Suncor's contractors as set forth in Paragraph 251.

253. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team observed and verified that Suncor conducts visual tank top inspections through a single opening in the fixed roof for IFR tanks, which does not provide a comprehensive view of the entire IFR deck, deck fittings, and rim seals.

NSPS Kb Violations

Emissions from IFR roof vents on Tanks T6, T53, and T96

254. Based on the observations of the EPA Inspection Team for tanks T6, T53, and T96 set forth in Paragraph 244, Suncor failed to correctly operate the IFR for tanks T6, T53, and T96, in violation of 40 C.F.R. § 60.112b(a)(1).

Failure to Correctly Operate and Repair or Take Tank T96 out of Service after Identification of IFR Deficiency

255. Based on the EPA Inspection Team's observations in Paragraphs 244, and Suncor's inspection observations and records in Paragraphs 247 through 249, Suncor failed to operate tank T96 in compliance with the IFR standards, in violation of 40 C.F.R. § 60.112b(a)(1).

256. Based on Suncor's inspection observation and records in Paragraph 249, and Suncor's lack of reported corrective action in Paragraph 250, Suncor failed to comply with the requirements, in violation of 40 C.F.R. § 63.113b(a)(2).

Failure to Comprehensively Inspect Tanks T6, T53, and T96

257. Based on the EPA Inspection Team's interviews with Suncor contractors, and observation of how Suncor visually conducts IFR tank top inspections, as set forth in Paragraph 251 and 253, Suncor failed to properly conduct annual IFR inspections of the IFR deck, deck fittings, and rim seals for Tanks T6, T53, and T96 in violation of 40 C.F.R. § 60.113b(a)(2).

D. Petroleum Refinery Process Units and Emissions Points Violations (MACT CC)

Applicable Factual Background

258. Tanks T35, T36, T38, T58, T67, T70, T78, T777, and T778 are EFR tanks subject to the requirements of MACT CC and MACT WW.

259. Paragraph 243 is realleged here.

260. Paragraphs 244 and 245 are realleged here.

261. Tanks T10 and T27 are IFR tanks subject to the requirements of MACT CC and MACT WW.

262. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team and Suncor observed elevated hydrocarbon emissions being vented to atmosphere using OGI cameras on the tanks listed below in Table 7:

Table 7: List of Inspected Tanks Subject to MACT CC and MACT WW

Tank Emission ID	**Tank Type**	**EPA Inspection Team's Observations**
Tank T38	External Floating Roof	Emissions observed along the rim seal.
Tank T70	External Floating Roof	Emissions observed along the rim seal on southeast and east sides (right below the platform).
Tank T78	External Floating Roof	Emissions observed along the rim seal
Tank T777	External Floating Roof	Emissions observed along the rim seal.
Tank T35	External Floating Roof	Emissions from a pontoon cover in the center of the EFR deck.
Tank T36	External Floating Roof	Emissions from a pontoon cover in the center of the EFR deck.
Tank T58 (Plant 1)	External Floating Roof	Emissions from a vacuum breaker on the north side of the EFR.
Tank T67	External Floating Roof	Emissions from two vacuum breakers on the EFR.
Tank T778	External Floating Roof	Emissions from a vacuum breaker on the north side of the EFR and three deck legs near the hatch on the east side of the EFR.
Tank T10	Internal Floating Roof	Emissions from roof vent.
Tank T27	Internal Floating Roof	Emissions from roof vent.

263. The emissions observed by the EPA Inspection Team using IR cameras as described immediately above were documented in still photographs and videos that depict, in some cases, visibly large plumes continuously wafting from sections or components off the top of the tanks into the ambient air. OGI cameras capture images that cannot be seen by the naked eye.

264. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team, using OGI cameras, observed emissions being vented to atmosphere from the rim seals of EFR tanks T38, T70, T78 and T777.

265. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team, using OGI cameras, observed emissions being vented to atmosphere from the pontoon covers of EFR tanks T35 and T36.

266. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team, using OGI cameras, observed emissions being vented to atmosphere from the vacuum breaker vents of EFR tanks T58, T67 and T778.

267. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team, using OGI cameras, observed emissions being vented to atmosphere from the roof vents of IFR tanks T10 and T27.

MACT CC Violations

Tank Design and Operational Violations

268. Based on the EPA Inspection Team's observations in Paragraph 262 and 264 rim seals for tanks T38, T70, T78, and T777 were not functioning as designed, in violation of 40 C.F.R. § 63.1063(a)(1)(ii).

269. Based on the EPA Inspection Team's observations in Paragraphs 262 and 265, pontoon covers for tanks T35 and T36 were not operating as required, in violation of 40 C.F.R. § 63.1063(b)(3).

270. Based on the EPA Inspection Team's observations in Paragraph 262 and 266, vacuum breaker vents for tanks T58, T67 and T778 were not operating as required, in violation of 40 C.F.R. § 63.1063(b)(4).

271. Based on the EPA Inspection Team's observations in Paragraph 262 and 267, roof vents for tanks T10 and T27 were not functioning as designed, in violation of 40 C.F.R. § 63.1063(b).

E. Emissions from MACT CC Storage Vessels Violations (MACT WW)

Applicable Factual Background

272. Paragraph 258 is realleged here.

273. Paragraphs 262 and 263 are realleged here.

274. As part of the 2023 CAA Stationary Source Inspection, the EPA Inspection Team reviewed Suncor's EFR tank inspection records for the previous five years.

275. The EFR tank inspection records reviewed showed that Suncor inspected tanks T38, T70, T78 and T777 and recorded observations in an EFR tank inspection checklist on the dates summarized below in Table 8.

Table 8

Tank Emission ID	**Inspection Date**
Tank T38	October 24, 2023
Tank T70	August 17, 2023
Tank T78	June 23, 2021 and April 10, 2023
Tank T777	June 13, 2023 and July 19, 2023

276. Suncor's inspection records for tank T38 on October 24, 2023, two days prior to the EPA Inspection Team's observations set forth in Paragraph 262, documented that the rim seals were in acceptable condition with no gaps noted and that tank T38 did not display any indication of requiring repair.

277. In Suncor's inspection records for tank T78, which was storing liquid, on June 23, 2021, Suncor observed and reported seals that had product in a location indicative of a need for repair, yet Suncor's inspection checklist indicated no repair action was required and Suncor did not repair the seal.

278. In Suncor's inspection records for tank T777, which was storing liquid, on June 13, 2023, Suncor observed and reported four gaps in the secondary seal. Suncor indicated that a repair of the secondary seal on tank T777 was completed on July 19, 2023.

279. Paragraph 251 is realleged.

280. During the 2023 CAA Stationary Source Inspection, the EPA Inspection Team observed and verified that Suncor conducts visual tank top inspections through a single opening in the fixed roof for IFR tanks, which does not provide a comprehensive view of the entire IFR deck, deck fittings, and rim seals.

MACT WW Violations

Tank Design and Operational Violations

281. Based on the deficiencies with the tank T38 rim seal observed during the 2023 CAA Stationary Source Inspection, as set forth by Paragraphs 262 and 264, contrasted against Suncor's independent inspection findings two days earlier, as set forth by Paragraph 276 Suncor failed to correctly perform storage vessel inspections of the rim seals on tank T38, in violation of 40 C.F.R. § 63.1063(d)(1)(iii).

282. Based on the facts set forth in Paragraph 277, Suncor failed to repair the seals on tank T78, in violation of 40 C.F.R. § 63.1063(e)(2).

283. Based on the EPA Inspection Team's observation of emissions from tank T777, as set forth by Paragraph 264, contrasted against Suncor's inspection records set forth in Paragraph 278, Suncor did not sufficiently repair gaps in the seal, in violation of 40 C.F.R. § 63.1063(e)(2).

284. Based on the EPA Inspection Team's observation of how Suncor visually conducts IFR tank top inspections, as set forth in Paragraphs 278 and 280, Suncor failed to properly conduct annual IFR inspections of the IFR deck, deck fittings, and rim seals, in violation of 40 C.F.R. § 63.1063(d)(2).

F. Failure to Achieve Emission Limits for Several Tanks (Title V Violations)

Applicable Factual Background

Tanks T777 and T778 Permit Emissions Limits

285. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 2.75 ton/yr VOC emissions limitation for tank T777 and a 3.54 ton/yr VOC emissions limitation for tank T778 in its Title V permit application, and Suncor's Permit 96OPAD120 (Permit 96OPAD120), at Section II, Condition 4.1 incorporates a 2.75 ton/yr emission limit for tank T777, and tank T778's VOC emission limit at 3.54 ton/yr. These emission limits were approved based on Suncor's representation that tank T777 and tank T778 met the maintenance and operating conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

Tank T58 Title V Permit Emissions Limits

286. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 4.65 ton/yr VOC emissions limitation for tank T58 in its Title V permit application, and Suncor's Permit 95OPAD108, Section II, Condition 15.1 incorporates a 4.65 ton/yr emission limit for tank T58. The emission limit was approved based on Suncor's representation that tank T58 met the maintenance and operating conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

Tank T96 Title V Permit Emissions Limits

287. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 6.72 ton/yr VOC emissions limitation for tank T96 and T97's combined in its Title V permit application, Suncor's Permit 96OPAD120, Section II, Condition 3.1 incorporates a 6.72 ton/yr emission limit for tanks T96 and T97. The emission limit was approved based on Suncor's representation that tank T96 and T97 met the maintenance and operating

conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

Tank T6 Title V Permit Emissions Limits

288. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 16.7 ton/yr VOC emissions limitation for tank T6 in its Title V permit application, Suncor's Permit 95OPAD108, Section II, Condition 15.1 incorporates a 16.7 ton/yr emission limit for tank T6. The emission limit was approved based on Suncor's representation that tank T6 met the maintenance and operating conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

Tank T53 Title V Permit Emissions Limits

289. Relying on AP-42 Chapter 7 emission estimating methodologies, as set forth in Paragraphs 218 to 220, Suncor requested a 3.77 ton/yr VOC emissions limitation for tank T53 in its Title V permit application, Suncor's Permit 95OPAD108, Section II, Condition 15.1 incorporates a 3.77 ton/yr emission limit for tank T53. The emission limit was approved based on Suncor's representation that tank T53 met the maintenance and operating conditions required for the application of AP-42 Chapter 7 emissions estimating methodologies, as set forth in Paragraph 219.

Title V Permit Violations

Tanks T777 and T778 Failed to Meet Title V Permit Emissions Limits

290. Because tank T777 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 268, tank T777 was not properly maintained and operating under normal working conditions while it was leaking.

291. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T777 is not an accurate estimate, as set forth in Paragraph 221 and 222, therefore tank T777 has been exceeding the permitted VOC emission limit in Suncor's Permit 96OPAD120, at Section II, Condition 4.1 for an unknown amount of time, in violation of that permit.

292. Because tank T778 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 270, tank T778 was not properly maintained and operating under normal working conditions while it was leaking.

293. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T778 is not an accurate estimate, as set

forth in Paragraph 221 and 222, therefore tank T778 has been exceeding the permitted VOC emission limit in Suncor's Permit 96OPAD120, at Section II, Condition 4.1 for an unknown amount of time, in violation of that permit.

Tank T58 Failed to Meet Title V Permit Emissions Limits

294. Because tank T58 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 270, tank T58 was not properly maintained and operating under normal working conditions while it was leaking.

295. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T58 is not an accurate estimate, as set forth in Paragraph 221 and 222, therefore tank T58 has been exceeding the permitted VOC emission limit in Suncor's Permit 95OPAD108, Section II, Condition 15.1 for an unknown amount of time, in violation of that permit.

Tank T96 Failed to Meet Title V Permit Emissions Limits

296. Because tank T58 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 244 and 246, tank T96 was not properly maintained and operating under normal working conditions while it was leaking.

297. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T96 is not an accurate estimate, as set forth in Paragraph 221 and 222, therefore tank T96 has been exceeding the permitted VOC emission limit in Suncor's Permit 96OPAD120, Section II, Condition 3.1 for an unknown amount of time, in violation of that permit.

Tank T6 Failed to Meet Title V Permit Emissions Limits

298. Because T6 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in Paragraph 244 and 246, tank T6 was not properly maintained and operating under normal working conditions while it was leaking.

299. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T6 is not an accurate estimate, as set forth in Paragraph 221 and 222, therefore tank T6 has been exceeding the permitted VOC emission limit in Suncor's Permit 95OPAD108, Section II, Condition 15.1, for an unknown amount of time, in violation of that permit.

Tank T53 Failed to Meet Title V Permit Emissions Limits

300. Because T6 has been leaking for an unknown amount of time, at a minimum during the 2023 CAA Stationary Source Inspection, as set forth in

Paragraph 244, tank T53 was not properly maintained and operating under normal working conditions while it was leaking.

301. Based on the information set forth in Paragraph 225, Suncor's emission limit estimated by AP-42 for tank T53 is not an accurate estimate, as set forth in Paragraph 221 and 222, therefore tank T53 has been exceeding the permitted VOC emission limit in Suncor's Permit 95OPAD108, Section II, Condition 15.1, for an unknown amount of time, in violation of that permit.

G. Failure to Achieve Good Air Pollution Control Practices

Good Air Pollution Control Practice Violations

302. Based on the EPA Inspection Team's observations set forth in Paragraph 262, tanks T38, T70, T78, T777, T35, T36, T58, T67, T778, T10, and T27 were not operating and maintained consistent with MACT CC's good safety and air pollution control practices for minimizing emissions, in violation of 40 C.F.R. § 63.642(n).

303. Based on the EPA Inspection Team's observations set forth in Paragraphs 244 and 246, tanks T6, T53, and T96 were not operating and maintained consistent with NSPS General Provisions' good safety and air pollution control practices for minimizing emissions, in violation of 40 C.F.R. § 60.11(d).

H. Flare Gas Recovery System Assessment Violations (NSPS Ja)

Applicable Factual Background

304. Suncor operates its Plant 2 flare (C005 Flare) without using a Flare Gas Recovery System, as defined by 40 C.F.R. § 60.101a, to divert excess gas from the flare and redirect it to a fuel gas system or fuel gas combustion device. Emissions generated in Plant 2 are routed to the C005 Flare for destruction without recovery.

305. Each owner and operator that operates a flare shall develop and implement a flare management plan which must include an assessment of whether discharges from a flare can be minimized, such as a Flare Gas Recovery System, set forth in 40 C.F.R. § 60.103a(a)(2).

306. Suncor operates flares that are subject to MACT CC and NSPS Ja and therefore developed a written flare management plan under 40 C.F.R. §§ 63.670(o) and 60.103a.

307. Suncor's *Flare Management Plan for the Plant 2 Flare System (June 2019)* (Suncor's FMP) did not include all required information specified in 40 C.F.R. § 63.670(o)(1)(ii), such as, safety considerations, secondary environmental impacts, or clear rational in terms of costs.

308. In Suncor's process flow diagram provided in Suncor's FMP, Suncor depicts that the incoming feed for the C005 Flare is from the Plant 2 FCCU, polymerization unit, saturation gas unit, unsaturated gas stripper, and pressure relief device from vessel in process units.

309. As part of the 2023 CAA Stationary Source Inspection, the EPA Inspection Team received a copy of Suncor's FMP as the then-current plan used by Suncor.

310. An FMP must include all process units that route emissions to a flare. An FMP must be updated periodically to account for changes in the operation of a flare, such as new connections to the flare, as set forth in 40 C.F.R. § 63.670(o)(2)(ii).

311. Suncor's FMP does not list the Plant 2 thermal reactor as a process unit that routes emissions to the C005 Flare.

312. In a Root Cause Failure Analysis report provided by Suncor, dated August 9, 2023, Suncor reported that on June 23, 2023, it re-routed the acid gases from the thermal reactor to the C005 Flare.

313. Suncor's FMP describes a total of seven sources of sweep gas being used for Plant 2's flare. According to the flow diagram in the FMP, five of the seven streams are shown using refinery fuel gas as sweep gas and two of the seven streams are shown using natural gas as sweep gas.

314. Natural gas offset credits provided in the FMP are based on flows of the two natural gas sweep gas streams identified in Suncor's FMP. Based on the EPA Inspection Team's review of Suncor's FMP, natural gas offset credits appear to be based on an annual natural gas savings of 410,327 thousand standard cubic feet per year.

315. During the 2023 CAA Stationary Source Inspection, Suncor provided information to the EPA Inspection Team that showed five of the seven streams using refinery fuel gas as sweep gas and two of the seven streams using natural gas as sweep gas.

316. During the 2023 CAA Stationary Source Inspection, NEIC requested additional confirmation on the type of gas used as sweep gas. Suncor provided a responsive statement that the source of sweep gas is utility-supplied natural gas or refinery fuel gas from the refinery and that Suncor was updating Suncor's FMP to clarify. As of the date of this NOV, Suncor has not provided an updated FMP to the EPA or the Division.

317. Under 40 C.F.R. § 60.103a, Suncor's FMP includes an assessment of whether discharges to the C005 Flare from process units, ancillary equipment, and fuel gas systems can be minimized, known as a flare gas minimization assessment.

318. The flare gas minimization assessment that Suncor performed in Suncor's FMP, as set forth immediately above, considered costs (capital an annual operating), but did not consider natural gas offset credits, technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved as required by 40 C.F.R. §§ 60.103a(a)(2) and 63.670(o)(1)(ii).

319. Suncor's consideration of costs in its flare gas minimization assessment, as set forth in Paragraph 318, was based on a 3-year assumption for economic feasibility. This assumption was not further explained.

320. The 2023 CAA Stationary Source Inspection occurred after the 3-year assumption period underlying Suncor's flare gas minimization assessment had ended, yet Suncor's FMP from 2019 was still in use.

Failure to Adequately Assess Need for Flare Gas Recovery System on Plant 2 Flare

Suncor's FMP was out-of-date as of the 2023 CAA Stationary Source Inspection

321. Based on the change in operation of the C005 Flare that occurred on June 23, 2023, set forth in Paragraphs 311 through 316, and the contents of Suncor's FMP, Suncor failed to update its FMP, in violation of 40 C.F.R. §§ 63.670(o)(1) and (2).

Suncor's FMP is Based on an Inadequate and Incomplete Assessment

322. Suncor's failure to consider all required aspects of flare minimization in Suncor's FMP, as set forth in Paragraphs 313 and 318, violates 40 C.F.R. §§ 60.103a(a)(2) and 63.670(o)(1)(ii) and invalidates the adequacy of the flare gas minimization assessment that Suncor performed.

Suncor Failed to Demonstrate Clear Rationale for its Consideration of Costs (Capital and Annual Operating) in Suncor's FMP

323. Suncor's 2019 FMP did not provide an explanation or clear rationale for the 3-year assessment period, as set forth in Paragraph 319 and 320, in violation of 40 C.F.R. §§ 60.103a(a)(2) and 63.670(o)(1)(ii), which invalidates the adequacy of the flare gas minimization assessment that Suncor performed in Suncor's 2019 FMP.

VI. FOURTH SET OF JOINTLY ALLEGED VIOLATIONS: FLARE, THERMAL COMBUSTION DEVICES, FCCU, CMS, CEMS, AND COMS VIOLATIONS

324. The Governments allege violations in this Section (Section VI) only to the extent that the allegations were not previously resolved by the Division in the Division's 2024 COC.

A. Statutory and Regulatory Authority

NSPS Part 60, Subpart J

325. 40 C.F.R. Part 60, Subpart J sets the *Standards of Performance for Petroleum Refineries* (NSPS J).

326. Colorado has delegated authority to implement and enforce NSPS J. *See* 5 Colo. Code Reg. § 1001-8:A (incorporating by reference NSPS J in effect as of July 1, 2023).

327. NSPS J applies to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants with a design capacity for sulfur feed greater than 20 long tons per day. 40 C.F.R. § 60.100(a).

328. Owners or operators subject to NSPS J may elect to satisfy its requirements by complying with the provisions of NSPS Ja. 40 C.F.R. § 60.100(e).

329. In a 2008 amendment to the NSPS, applicable to sources regulated under NSPS J or NSPS Ja, the EPA promulgated an alternative H_2S emissions limit of 162 ppmv or less in the fuel gas on a 3-hour rolling average basis using standard conditions, such that the subpart J emission limit is equivalent to 162 ppmv H_2S rather than 160 ppmv. 73 Fed. Reg. 35852 (June 24, 2008).

330. At the Commerce City Refinery, Suncor operates affected facilities subject to NSPS J.

NSPS Part 60, Subpart Ja

331. At the Commerce City Refinery, Suncor operates affected facilities subject to NSPS Ja, as set forth in Paragraphs 237 through 240.

MACT CC

332. At the Commerce City Refinery, Suncor operates petroleum refining process units and related emission points that are subject to MACT CC, as set forth in Paragraphs 114 through 117.

NESHAP Part 63, Subpart UUU

333. 40 C.F.R. Part 63, Subpart UUU sets the *National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units* (MACT UUU).

334. Colorado has delegated authority to implement and enforce MACT UUU. *See* 5 Colo. Code Reg. § 1001-10:E.III (incorporating by reference MACT UUU in effect as of July 1, 2023).

335. MACT UUU applies to petroleum refineries that are located at a major source of HAP emissions and have the affected sources set forth in MACT UUU. 40 C.F.R. §§ 63.1561(a)-1562.

336. At the Commerce City Refinery, Suncor operates affected sources subject to MACT UUU.

Permit 96OPAD120, Section II, Condition 35 Opacity Limits

337. Suncor's Permit 96OPAD120, Section II, Condition 35 sets opacity limits that are more stringent than the NSPS J/Ja and MACT UUU requirements. Specifically, Condition 35.1 of that permit states: "Except as provided in Conditions 35.2 and 35.3, below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20 percent opacity. This standard is based on 24 consecutive opacity readings taken at 15-second intervals for six minutes. The approved reference test method for visible emissions measurement on which the standards in Regulation No. 1 Section II.A are based is EPA Method 9 (40 C.F.R. Part 60, Appendix A (July, 1992). (Colorado Regulation No. 1, II.A.1)."

Permit 95OPAD108, Section II, Condition 20, Opacity Limits

338. Suncor's Permit 95OPAD108, Section II, Condition 20 sets the opacity limits that are more stringent than the NSPS J/Ja and MACT UUU requirements. Specifically, Condition 20.1 of that permit states: "Except as provided in Condition 20.2 below, no owner or operator of a source should allow or cause the emission into the atmosphere of any air pollutant that is in excess of 20% opacity. This standard is based on 24 consecutive opacity readings taken at 15-second intervals for six minutes. The approved reference test method for visible emissions measurement is EPA Method 9 (40 C.F.R. Part 60, Appendix A (July 1992)) in all subsections of Section II. A and B of this regulation. (Colorado Regulation No. 1, II.A.1)."

Permit 96OPAD120, Section II, Condition 22, NOx Limits

339. Suncor's Permit 96OPAD120, Section II, Condition 22 sets the NOx emissions that are more stringent than NSPS Ja requirements. Specifically,

Condition 22.4.1 of that permit states: "86.8 ppmvd at 0% O_2, on a 7-day rolling average."

Permit 96OPAD120, Section II, Condition 54, SO_2 Limits

340. Suncor's Permit 96OPAD120, Section II, Condition 54 sets the SO_2 emissions that are more stringent than MACT UUU requirements. Specifically, Condition 54.31.4 of that permit states: "Reporting any 12-hour rolling average concentration of SO_2 greater than 250 ppmvd at 0% excess air in the compliance report required by 63.1575."

B. Exceedance of the 162 ppmv 3-Hour Rolling Average Limit Violations (NSPS Ja)

Applicable Factual Background

341. The EPA Inspection Team analyzed Suncor's H_2S CMS data during and after the 2023 CAA Stationary Source Inspection for the period of January 1, 2020, through September 30, 2023, and found exceedances of the 162 ppmv H_2S 3-hour rolling average limit set forth at 40 C.F.R. § 60.103a(h), summarized as follows in Table 9:

Table 9

Emission Unit	**Year**	**Number of Hours that Exceeded the H_2S 3-hour Rolling Average Limit of 162 ppm**
F1	2020	162
	2021	137
	2022	347
	2023	145
F2	2020	11
	2021	4
	2022	18
	2023	0
C005	2020	60
	2021	68
	2022	62
	2023	62

NSPS Ja Violations

F1 Flare Violations (Plant 1's Main Flare)

342. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 341, Suncor operated its F1 Flare in Plant 1 in

violation of the 162 ppmv H_2S 3-hour rolling average limit set forth at 40 C.F.R. § 60.103a(h).

F2 Flare Violations (Plant 3's Main Flare)

343. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 341, Suncor operated its F2 Flare in Plant 3 in violation of the 162 ppmv 3-hour rolling average limit set forth at 40 C.F.R. § 60.103a(h).

C005 Flare Violations (Plant 2's Main Flare)

344. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 341, Suncor operated its C005 Flare in Plant 1 in violation of the 162 ppm 3-hour rolling average limit set forth at 40 C.F.R. § 60.103a(h).

C. Inadequate Net Heating Values, Exceedances of Actual Flare Tip Velocity, and Recordkeeping and Reporting Violations (MACT CC Violations)

Applicable Facts

Net Heating Values

345. The EPA Inspection Team analyzed Suncor's flare data during and after the 2023 CAA Stationary Source Inspection for the period of January 1, 2020, through September 30, 2023, and found multiple instances where the net heating value of flare combustion zone gas (NHVcz) at the flare tip, including steam, was less than the lower combustion zone operating limit of 270 BTU/scf, of 40 C.F.R. § 63.670(e), that applies while regulated material is routed to the flare, summarized as follows in Table 10:

Table 10

Emission Unit	Year	Number of 15-min Block Average that NHVcz Values were Less than 270 Btu/scf
F1	2020	140
	2021	1,572
	2022	207
	2023	335
F2	2020	0
	2021	1,779
	2022	1
	2023	0
F3	2020	3
	2021	458
	2022	44
	2023	5
C005	2020	4
	2021	4
	2022	79
	2023	3,050

Flare Tip Velocity

346. The EPA Inspection Team analyzed Suncor's flare data during and after the 2023 CAA Stationary Source Inspection for the period of January 1, 2020, through September 30, 2023, and found multiple 15-minute periods where the actual flare tip velocity (Vtip) was greater than 60 feet per second, the lower Vtip limit set forth at 40 C.F.R. § 63.670(d)(1), and Suncor did not designate whether regulated material was being routed to the flare, summarized as follows in Table 11:

Table 11

Emission Unit	Year	Number of 15-min Block Average that Vtip was Greater than 60 ft/sec
F1	2020	253
	2021	2,764
	2022	6

Recordkeeping and Reporting

347. The EPA Inspection Team's review of available flare data for the time period alleged immediately above revealed that Suncor did not provide records to definitively indicate whether regulated material was being routed to the listed flare during each 15-minute block being reviewed. However, the EPA Inspection Team is confident based on their knowledge of refinery operations that regulated material was being routed to the flares during a majority of the 15-minute blocks listed above.

348. Suncor did not provide the EPA Inspection Team with records to indicate when regulated material was routed to its flares in Paragraphs 345 and 346, as set forth above in Paragraph 347.

349. Based on EPA Inspection Team's review of records and the periods of identified noncompliance with the NHVcz operating limits set forth in Paragraph 345, Suncor did not report all periods of noncompliance with the NHVcz operating limit.

350. Based on EPA Inspection Team's review records and the periods of identified noncompliance with the actual flare tip velocity operating limits set forth in Paragraph 346, Suncor did not report all periods of noncompliance with the actual flare tip velocity operating limit.

Inadequate Heating Values (MACT CC Violations)

F1 Flare Violations (Plant 1's Main Flare)

351. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 345, Suncor operated its F1 Flare in Plant 1 in violation of the lower NHVcz limit set forth at 40 C.F.R. § 63.670(e).

F3 Flare Violations (Plant 1's GBR Flare)

352. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 345, Suncor operated its F3 Flare in Plant 1 in violation of the lower NHVcz limit set forth at 40 C.F.R. § 63.670(e).

F2 Flare Violations (Plant 3's Main Flare)

353. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 345, Suncor operated its F2 Flare in Plant 3 in violation of the lower NHVcz limit set forth at 40 C.F.R. § 63.670(e).

C005 Flare Violations (Plant 2's Main Flare)

354. On multiple occasions between January 1, 2020 through September 30, 2023, summarized in Paragraph 345, Suncor operated its C005 Flare in Plant 2 in violation of the lower NHVcz limit set forth at 40 C.F.R. § 63.670(e).

Exceedance of Actual Flare Tip Velocity at the F1 Flare (MACT CC Violations)

F1 Flare Violations (Plant 1's Main Flare)

355. On multiple occasions between January 1, 2020 through December 31, 2022, summarized in Paragraph 346, Suncor operated its F1 Flare in Plant 1 in violation of the lower Vtip limit set forth at 40 C.F.R. § 63.670(d)(1).

Recordkeeping and Reporting Violations (MACT CC Violations)

Failure to Maintain Records and Report When Regulated Material was Routed to Flares to Maintain NHVcz and Actual Flare Tip Velocity (MACT CC Violations)

356. As set forth in Paragraph 347 through 350, Suncor did not designate whether regulated material was being routed to the flare in its MACT CC records to maintain NHVcz and actual flare tip velocity, in violation of 40 C.F.R. § 63.655(i)(9)(vii).

Failure to Maintain Records and Report Noncompliance with Net Heating Values and Actual Flare Tip Velocity (MACT CC Violations)

357. For the NHVcz reported below 270 Btu/scf and for actual flare tip velocity reported as greater than 60 ft/sec identified in Paragraphs 345 and 346, respectively, Suncor failed to report the deviations of the applicable operating limits as set forth 40 C.F.R. §§ 63.670(d)-(f) in violation of 40 C.F.R. § 63.655(g)(11).

D. SO_2 Fuel Gas Combustion Violations (NSPS J Violations, Alternatively NSPS Ja Violations)

Applicable Facts

358. The EPA Inspection Team reviewed fuel gas system data for Plants 1, 2, and 3 for the time period of January 1, 2022 through September 30, 2023 and found exceedances of the 162 ppmv H_2S 3-hour rolling average limit set forth at 40 C.F.R. § 60.104(a)(1), as informed by 73 Fed. Reg. 35852, summarized as follows in Table 12:

Table 12

Fuel Gas System	**Number of Hours that Exceeded the H_2S 3-hr Rolling Average Limit of 162 ppmv**
Plant 1 and Plant 3	62
Plant 2	78

NSPS J/Ja Violations

359. On multiple occasions between January 1, 2022 through September 2023, summarized in Paragraph 358, Suncor operated its Plants in violation of 162 ppmv H_2S 3-hour rolling average limit set forth at 40 C.F.R. § 60.104(a)(1), as informed by 73 Fed. Reg. 35852, or alternatively 40 C.F.R. § 60.102a(g)(1)(ii).

E. CO Emissions Violations (NSPS J, Ja, and MACT UUU Violations)

Applicable Facts

Plant 1 FCCU

360. Plant 1 and Plant 2 each have an FCCU that breaks long-chain hydrocarbons into shorter chain hydrocarbons as part of the refining process at the Commerce City Refinery.

361. The FCCU at Plant 1 is equipped with a CEMS on the process unit outlet.

362. The EPA Inspection Team reviewed CO CEMS data for the Plant 1 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 500 ppmvd CO limit (NSPS J), or 500 ppmvd CO limit at 0% O_2 on a 1-hour average basis (NSPS Ja), the limits set forth in 40 C.F.R. §§ 60.103, 60.102a(b)(4), and 63.1565(a)(1), summarized as follows in Table 13:

Table 13

Exceedance Start Time CO > 500 ppm	**Exceedance End Time CO > 500 ppm**	**Duration of Continuous Limit Exceedance (hours)**	**Included in Semiannual Deviation Report***
3/2022 12:00	3/17/2022 17:59	6	Yes
3/19/2022 23:00	3/19/2022 23:59	1	Yes
3/20/2022 5:00	3/20/2022 6:59	2	Yes
3/21/2022 6:00	3/21/2022 8:59	3	Yes
3/21/2022 10:00	3/21/2022 20:59	11	Yes
5/9/2022 14:00	5/9/2022 21:59	8	Yes
6/2/2022 1:00	6/3/2022 1:59	25	Yes
6/3/2022 3:00	6/3/2022 13:59	11	Yes
8/7/2022 20:00	8/7/2022 20:59	1	Yes
10/4/2022 8:00	10/4/2022 8:59	1	Yes
3/28/2023 9:00	3/29/2023 13:59	29	Yes
)3/30/2023 21:00	4/1/2023 15:59	43	Yes
4/2/2023 5:00	4/2/2023 5:59	1	No

Exceedance Start Time CO > 500 ppm	Exceedance End Time CO > 500 ppm	Duration of Continuous Limit Exceedance (hours)	Included in Semiannual Deviation Report*
4/2/2023 7:00	4/3/2023 1:59	19	No
9/1/2023 17:00	9/1/2023 17:59	1	NA
9/1/2023 22:00	9/1/2023 22:59	1	NA
9/2/2023 13:00	9/3/2023 16:59	28	NA
9/3/2023 18:00	9/3/2023 22:59	5	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

363. The EPA Inspection Team identified Suncor reported that the Plant 1 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit any regulated pollutants while out-of-service.

Plant 2 FCCU

364. The FCCU at Plant 2 is equipped with a CEMS on the process unit outlet.

365. The EPA Inspection Team reviewed CO CEMS data for the Plant 2 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 500 ppmvd CO limit (NSPS J), or 500 ppmvd CO limit at 0% O_2 on a 1-hour average basis (NSPS Ja), the limits set forth in 40 C.F.R. §§ 60.103, 60.102a(b)(4), and 63.1565(a)(1), summarized as follows in Table 14:

Table 14

Start Time CO > 500 ppm	End Time CO > 500 ppm	Duration of Continuous Limit Exceedance (hours)	Included in Semiannual Deviation Report*
1/27/2022 1:00	1/27/2022 14:59	14	Yes
1/28/2022 9:00	1/28/2022 17:59	9	Yes
2/9/2022 7:00	2/9/2022 8:59	2	No
2/14/2022 12:00	2/14/2022 17:59	6	Yes
2/14/2022 22:00	2/15/2022 0:59	3	Yes
4/2/2022 23:00	4/2/2022 23:59	1	Yes
4/3/2022 7:00	4/3/2022 7:59	1	Yes
4/3/2022 10:00	4/3/2022 13:59	4	Yes
4/4/2022 16:00	4/5/2022 1:59	10	Yes
7/26/2022 11:00	7/26/2022 15:59	5	No
2/15/2023 13:00	2/15/2023 16:59	4	Yes

Start Time CO > 500 ppm	End Time CO > 500 ppm	Duration of Continuous Limit Exceedance (hours)	Included in Semiannual Deviation Report*
2/16/2023 15:00	2/16/2023 21:59	7	Yes
2/17/2023 21:00	2/18/2023 3:59	7	Yes
2/25/2023 0:00	2/26/2023 8:59	33	Yes
6/21/2023 11:00	6/21/2023 18:59	8	Yes
7/5/2023 7:00	7/5/2023 21:59	15	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

366. The EPA Inspection Team identified Suncor reported that the Plant 2 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit any regulated pollutants while out-of-service.

MACT UUU Violations

Excess CO from Plant 1 FCCU

367. On multiple occasions between January 1, 2022 through September 30, 2023, summarized in Paragraph 362, and noting that at times the FCCU was reported to be out of service while emissions were exceeding the continuous limit, as set forth in Paragraph 363, Suncor operated its Plant 1 FCCU in violation of 500 ppmvd (at 0% O_2) on a 1-hour average basis set forth in 40 C.F.R. §§ 60.103, 60.102a(b)(4), and 63.1565(a)(1).

Failure to Report Deviations of the CO FCCU Emission Limit

368. For the April 2, 2023 deviations summarized in Paragraph 362, Suncor failed to report the exceedances of the CO emissions limit for the Plant 1 FCCU, in violation of 40 C.F.R. § 63.1575(e).

369. For the February 9, 2022, and July 26, 2022 deviations summarized in Paragraph 365, Suncor failed to report the exceedances of the CO emissions limit for the Plant 2 FCCU, in violation of 40 C.F.R. § 63.1575(e).

Excess CO from Plant 2 FCCU

370. On multiple occasions between January 1, 2022 through September 30, 2023 summarized in Paragraph 365, and noting that at times the FCCU was reported to be out of service while emissions were exceeding the continuous limit, as set forth in Paragraph 366, Suncor operated its Plant 2 FCCU in violation of 500 ppmvd (at 0% O_2) on a 1-hour average basis set forth in 40 C.F.R. §§ 60.103, 60.102a(b)(4), and 63.1565(a)(1).

F. FCCU Opacity Violations (NSPS J and MACT UUU Violations)

Applicable Facts

Plant 1 FCCU

371. The FCCU at Plant 1 is equipped with a COMS on the process unit outlet.

(1) COMS 30% Opacity Limit

372. The EPA Inspection Team reviewed the COMS data for the Plant 1 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 30% opacity limit (gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period), the limit set forth in 40 C.F.R. §§ 60.102(a)(2) and 63.1564(a)(1) and Table 1.1 of MACT UUU, as summarized as follows in Table 15:

Table 15

Opacity Exceedance Start Time	**Opacity Exceedance End Time**	**Duration of Continuous Limit Exceedance (minutes)**	**Included in Semiannual Deviation Report***
3/17/2022 14:15	3/17/2022 14:59	45	No
4/7/2022 13:04	4/7/2022 13:16	13	No
4/7/2022 14:06	4/7/2022 14:24	19	No
5/25/2022 11:15	5/26/2022 11:01	1,427	No
5/26/2022 11:05	5/26/2022 11:17	13	No
9/24/2022 10:21	9/24/2022 10:39	19	No
9/24/2022 12:14	9/24/2022 12:27	14	No
11/28/2022 13:12	11/28/2022 13:27	16	No
11/28/2022 14:59	11/28/2022 15:14	16	No
3/24/2023 15:15	3/24/2023 15:30	16	No
3/29/2023 12:19	3/29/2023 12:58	40	Yes
3/29/2023 13:02	3/29/2023 14:51	110	Yes
3/29/2023 16:01	3/29/2023 16:31	31	Yes
3/29/2023 22:55	3/30/2023 0:16	82	Yes
3/30/2023 0:58	3/30/2023 1:22	25	Yes
3/31/2023 15:55	3/31/2023 16:09	15	Yes
3/31/2023 19:49	3/31/2023 20:00	12	Yes
3/31/2023 21:04	3/31/2023 21:31	28	Yes
4/1/2023 7:17	4/1/2023 7:45	29	Yes
4/1/2023 12:51	4/1/2023 13:06	16	Yes
4/1/2023 15:31	4/1/2023 15:43	13	Yes

4/2/2023 5:01	4/2/2023 9:10	250	No
4/2/2023 10:01	4/2/2023 10:57	57	No
4/2/2023 21:36	4/2/2023 22:51	76	No
4/3/2023 0:20	4/3/2023 0:35	16	No
4/3/2023 0:41	4/3/2023 1:06	26	No
4/3/2023 1:30	4/3/2023 1:42	13	No
5/27/2023 8:57	5/27/2023 9:08	12	No
5/27/2023 10:41	5/27/2023 10:57	17	No
9/26/2023 7:29	9/26/2023 13:51	383	NA
9/26/2023 13:57	9/26/2023 14:11	15	NA
9/26/2023 15:37	9/26/2023 15:52	16	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

(2) COMS 20% Opacity Limit in MACT UUU

373. The EPA Inspection Team reviewed the COMS data for the Plant 1 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 20% opacity limit (3-hour rolling average), the limit found in 40 C.F.R. § 63.1564(a)(2) and Table 2.1 of MACT UUU for units subject to the NSPS for PM in 40 C.F.R. § 60.102, summarized as follows in Table 16:

Table 16

Opacity Exceedance Start Time	**Opacity Exceedance End Time**	**Duration of Continuous Limit Exceedance (minutes)**	**Included in Semiannual Deviation Report***
3/17/2022 16:29	3/17/2022 17:21	53	No
5/25/2022 11:52	5/26/2022 13:34	1,543	No
9/24/2022 12:11	9/24/2022 13:32	82	No
11/28/2022 15:06	11/28/2022 16:15	70	No
3/29/2023 9:35	3/29/2023 19:14	581	Yes
3/29/2023 23:37	3/30/2023 3:21	226	No
3/31/2023 8:18	4/1/2023 0:32	976	No
4/1/2023 1:55	4/1/2023 14:40	767	No
4/1/2023 14:52	4/1/2023 15:07	17	No
4/1/2023 15:32	4/1/2023 15:54	24	No
4/1/2023 16:22	4/2/2023 13:13	1,253	No
4/2/2023 20:50	4/3/2023 4:33	465	No
5/27/2023 10:51	5/27/2023 11:56	67	NA
9/26/2023 7:59	9/26/2023 16:57	540	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

374. The EPA Inspection Team identified Suncor reported that the Plant 1 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit PM to cause opacity exceedances while out-of-service.

(3) COMS 20% Opacity Limit in Suncor's Permit 96OPAD120

375. The EPA Inspection Team reviewed the COMS data for the Plant 1 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 20% opacity limit (based on 24 consecutive opacity readings taken at 15-second intervals for six minutes), set forth by Suncor's Permit 96OPAD120 Section II, Condition 35.1, summarized as follows in Table 17:

Table 17

Opacity Exceedance Start Time	**Opacity Exceedance End Time**	**Duration of Continuous Limit Exceedance (minutes)**	**Included in Semiannual Deviation Report***
3/17/2022 12:27	3/17/2022 12:33	7	Yes
3/17/2022 14:12	3/17/2022 15:11	60	No
3/19/2022 12:36	3/19/2022 12:46	11	Yes
3/20/2022 10:56	3/20/2022 11:01	6	No
4/7/2022 13:04	4/7/2022 13:17	14	No
4/7/2022 13:56	4/7/2022 14:25	30	No
5/25/2022 11:14	5/26/2022 11:18	1,445	No
6/3/2022 12:26	6/3/2022 12:38	13	Yes
6/3/2022 13:37	6/3/2022 13:42	6	No
6/3/2022 15:57	6/3/2022 16:04	8	Yes
9/24/2022 10:20	9/24/2022 10:39	20	No
9/24/2022 11:00	9/24/2022 11:43	44	No
9/24/2022 12:03	9/24/2022 12:28	26	No
9/24/2022 12:30	9/24/2022 12:40	11	No
11/28/2022 13:11	11/28/2022 13:28	18	No
11/28/2022 13:48	11/28/2022 14:31	44	No
11/28/2022 14:47	11/28/2022 15:16	30	No
12/22/2022 7:30	12/22/2022 7:38	9	Yes
1/13/2023 19:29	1/13/2023 19:34	6	No
1/19/2023 10:55	1/19/2023 11:00	6	No
3/14/2023 21:49	3/14/2023 21:54	6	No
3/24/2023 13:33	3/24/2023 13:45	13	No
3/24/2023 14:04	3/24/2023 14:48	45	No
3/24/2023 15:03	3/24/2023 15:31	29	No
3/28/2023 10:09	3/28/2023 10:14	6	No

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report*
3/28/2023 16:08	3/28/2023 16:13	6	No
3/28/2023 17:08	3/28/2023 17:13	6	No
3/28/2023 18:08	3/28/2023 18:14	7	No
3/28/2023 19:08	3/28/2023 19:13	6	No
3/28/2023 20:08	3/28/2023 20:14	7	No
3/28/2023 21:08	3/28/2023 21:15	8	No
3/28/2023 22:08	3/28/2023 22:13	6	No
3/28/2023 23:08	3/28/2023 23:13	6	No
3/29/2023 0:08	3/29/2023 0:14	7	No
3/29/2023 1:08	3/29/2023 1:14	7	No
3/29/2023 2:08	3/29/2023 2:14	7	No
3/29/2023 3:08	3/29/2023 3:14	7	No
3/29/2023 4:08	3/29/2023 4:13	6	No
3/29/2023 5:08	3/29/2023 5:13	6	No
3/29/2023 7:32	3/29/2023 7:38	7	No
3/29/2023 8:12	3/29/2023 8:44	33	Yes
3/29/2023 8:47	3/29/2023 15:38	412	No
3/29/2023 15:59	3/29/2023 16:45	47	Yes
3/29/2023 17:39	3/29/2023 17:53	15	Yes
3/29/2023 21:11	3/29/2023 21:16	6	No
3/29/2023 22:54	3/30/2023 1:23	150	Yes
3/30/2023 8:35	3/30/2023 8:56	22	Yes
3/31/2023 4:06	3/31/2023 4:15	10	Yes
3/31/2023 4:33	3/31/2023 4:39	7	Yes
3/31/2023 5:00	3/31/2023 5:08	9	Yes
3/31/2023 6:59	3/31/2023 10:52	234	Yes
3/31/2023 11:03	3/31/2023 11:16	14	Yes
3/31/2023 11:34	3/31/2023 21:59	626	Yes
3/31/2023 23:02	3/31/2023 23:11	10	Yes
3/31/2023 23:17	3/31/2023 23:24	8	Yes
4/1/2023 0:52	4/1/2023 0:58	7	Yes
4/1/2023 1:14	4/1/2023 1:19	6	Yes
4/1/2023 1:28	4/1/2023 1:35	8	Yes
4/1/2023 1:37	4/1/2023 6:18	282	Yes
4/1/2023 7:04	4/1/2023 7:09	6	Yes
4/1/2023 7:11	4/1/2023 9:33	143	Yes
4/1/2023 9:35	4/1/2023 11:33	119	Yes
4/1/2023 12:06	4/1/2023 12:22	17	Yes
4/1/2023 12:25	4/1/2023 13:08	44	Yes

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report*
4/1/2023 14:50	4/1/2023 14:55	6	No
4/1/2023 15:25	4/1/2023 15:50	26	Yes
4/1/2023 16:02	4/1/2023 16:29	28	Yes
4/1/2023 16:37	4/1/2023 16:54	18	Yes
4/1/2023 17:10	4/1/2023 18:00	51	Yes
4/1/2023 18:16	4/1/2023 20:36	141	Yes
4/1/2023 20:54	4/1/2023 21:54	61	Yes
4/1/2023 21:57	4/1/2023 22:55	59	Yes
4/1/2023 23:02	4/2/2023 0:53	112	Yes
4/2/2023 1:01	4/2/2023 4:13	193	Yes
4/2/2023 4:18	4/2/2023 4:36	19	Yes
4/2/2023 4:43	4/2/2023 11:07	385	No
4/2/2023 15:11	4/2/2023 15:38	28	Yes
4/2/2023 18:39	4/2/2023 19:49	71	Yes
4/2/2023 19:52	4/2/2023 21:26	95	Yes
4/2/2023 21:31	4/3/2023 2:42	312	Yes
4/3/2023 3:37	4/3/2023 3:43	7	Yes
4/3/2023 3:58	4/3/2023 4:03	6	Yes
4/3/2023 4:36	4/3/2023 4:45	10	Yes
4/3/2023 8:33	4/3/2023 8:39	7	No
4/3/2023 9:33	4/3/2023 9:39	7	No
4/3/2023 10:42	4/3/2023 10:48	7	No
4/3/2023 12:09	4/3/2023 12:14	6	No
4/3/2023 13:09	4/3/2023 13:15	7	No
4/3/2023 15:22	4/3/2023 15:27	6	No
4/3/2023 18:23	4/3/2023 18:28	6	No
4/3/2023 20:23	4/3/2023 20:28	6	No
4/3/2023 23:22	4/3/2023 23:27	6	No
4/4/2023 1:23	4/4/2023 1:28	6	No
4/4/2023 2:22	4/4/2023 2:29	8	Yes
4/4/2023 4:22	4/4/2023 4:28	7	No
4/4/2023 6:22	4/4/2023 6:27	6	No
4/4/2023 7:29	4/4/2023 7:36	8	Yes
4/4/2023 8:36	4/4/2023 8:42	7	No
4/4/2023 9:41	4/4/2023 9:46	6	No
4/4/2023 12:41	4/4/2023 12:46	6	No
4/4/2023 13:41	4/4/2023 13:46	6	No
4/4/2023 14:41	4/4/2023 14:46	6	No
4/4/2023 15:41	4/4/2023 15:46	6	No

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report*
4/4/2023 16:41	4/4/2023 16:46	6	No
4/4/2023 17:41	4/4/2023 17:47	7	Yes
4/4/2023 18:41	4/4/2023 18:47	7	Yes
4/4/2023 19:41	4/4/2023 19:46	6	No
4/4/2023 20:41	4/4/2023 20:46	6	No
4/4/2023 21:41	4/4/2023 21:46	6	No
4/4/2023 22:41	4/4/2023 22:46	6	No
4/5/2023 0:41	4/5/2023 0:46	6	No
4/5/2023 1:41	4/5/2023 1:46	6	No
4/5/2023 5:41	4/5/2023 5:46	6	No
5/27/2023 8:56	5/27/2023 9:09	14	No
5/27/2023 9:28	5/27/2023 10:11	44	No
5/27/2023 10:27	5/27/2023 10:59	33	No
9/3/2023 14:01	9/3/2023 14:06	6	NA
9/3/2023 14:21	9/3/2023 14:35	15	NA
9/3/2023 14:50	9/3/2023 14:55	6	NA
9/3/2023 15:00	9/3/2023 15:06	7	NA
9/3/2023 21:34	9/3/2023 22:07	34	NA
9/4/2023 4:01	9/4/2023 4:06	6	NA
9/26/2023 7:28	9/26/2023 13:51	384	NA
9/26/2023 13:56	9/26/2023 14:12	17	NA
9/26/2023 14:26	9/26/2023 15:09	44	NA
9/26/2023 15:25	9/26/2023 15:53	29	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

376. The EPA Inspection Team identified Suncor reported that the Plant 1 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit PM to cause opacity exceedances while out-of-service.

Plant 2 FCCU

377. The FCCU at Plant 2 is equipped with a COMS on the process unit outlet.

(1) COMS 30% Opacity Limit

378. The EPA Inspection Team reviewed the COMS data for the Plant 2 FCCU for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 30% opacity limit (gases exhibiting greater than

30 percent opacity, except for one six-minute average opacity reading in any one hour period), the limit set forth in 40 C.F.R. §§ 60.102(a)(2) and 63.1564(a)(1) and Table 1.1 of MACT UUU, as summarized as follows in Table 18:

Table 18

Opacity Exceedance Start Time	**Opacity Exceedance End Time**	**Duration of Continuous Limit Exceedance (minutes)**	**Included in Semiannual Deviation Report***
2/9/2022 6:56	2/9/2022 7:45	50	Yes
2/13/2022 20:02	2/13/2022 20:14	13	No
3/1/2022 9:33	3/1/2022 9:47	15	No
3/1/2022 10:34	3/1/2022 10:47	14	No
6/21/2022 9:07	6/21/2022 9:30	24	No
6/21/2022 9:54	6/21/2022 10:06	13	No
9/9/2022 10:38	9/9/2022 10:50	13	No
12/1/2022 12:37	12/1/2022 12:48	12	No
2/23/2023 0:48	2/23/2023 1:13	26	Yes
2/25/2023 10:30	2/25/2023 11:37	68	Yes
2/25/2023 11:57	2/25/2023 12:13	17	Yes
3/21/2023 10:04	3/21/2023 10:19	16	Yes
3/21/2023 10:25	3/21/2023 10:42	18	No
3/21/2023 11:10	3/21/2023 11:24	15	No
6/29/2023 8:42	6/29/2023 8:55	14	No
7/5/2023 6:03	7/5/2023 6:29	27	No
8/21/2023 13:26	8/21/2023 18:42	317	NA
9/9/2023 9:37	9/9/2023 10:22	46	NA
9/9/2023 10:45	9/9/2023 11:14	30	NA
2/23/2023 0:48	2/23/2023 1:13	26	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

379. The EPA Inspection Team identified Suncor reported that the Plant 2 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit PM to cause opacity exceedances while out-of-service.

(2) COMS 20% Opacity Limit in MACT UUU

380. The EPA Inspection Team reviewed the COMS data for the Plant 2 FCCU for the time period of January 1, 2022 through September 30, 2023 and found seven exceedances of the 20% opacity limit (3-hour rolling average), the limit found in 40 C.F.R. § 63.1564(a)(2) and Table 2.1 of MACT UUU for units subject to the NSPS for PM in 40 C.F.R. § 60.102, summarized as follows in Table 19:

Table 19

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report
2/9/2022 8:18	2/9/2022 10:20	123	No
2/23/2023 2:54	2/23/2023 3:49	56	No
2/25/2023 10:36	2/25/2023 14:01	206	No
3/21/2023 11:10	3/21/2023 13:07	118	No
7/5/2023 7:32	7/5/2023 9:15	104	No
8/21/2023 13:58	8/21/2023 21:03	426	No
9/9/2023 10:17	9/9/2023 13:03	167	No

381. The EPA Inspection Team identified Suncor reported that the Plant 2 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit PM to cause opacity exceedances while out-of-service.

(3) COMS 20% Opacity Limit in Suncor's Permit 95OPAD108

382. The EPA Inspection Team reviewed the COMs data for the Plant 2 FCCU for the time period of January 1, 2022 through September 30, 2022 and found multiple exceedances of the 20% opacity limit (based on 24 consecutive opacity readings taken at 15-second intervals for six minutes), set forth by Suncor's Permit 95OPAD108, Section II Condition 20.1, summarized as follows in Table 20:

Table 20

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report*
2/9/2022 6:55	2/9/2022 8:26	92	Yes
2/13/2022 19:46	2/13/2022 19:55	10	Yes
2/13/2022 20:01	2/13/2022 20:27	27	Yes
3/1/2022 9:30	3/1/2022 9:47	18	No
3/1/2022 10:04	3/1/2022 10:10	7	No
3/1/2022 10:22	3/1/2022 10:48	27	No
4/4/2022 16:10	4/4/2022 16:17	8	Yes
4/4/2022 19:38	4/4/2022 19:43	6	Yes
4/5/2022 2:09	4/5/2022 2:16	8	Yes
6/21/2022 8:47	6/21/2022 8:57	11	No
6/21/2022 9:05	6/21/2022 9:32	28	No
6/21/2022 9:47	6/21/2022 10:08	22	No

Opacity Exceedance Start Time	Opacity Exceedance End Time	Duration of Continuous Limit Exceedance (minutes)	Included in Semiannual Deviation Report*
9/9/2022 9:38	9/9/2022 9:45	8	No
9/9/2022 9:49	9/9/2022 10:17	28	No
9/9/2022 10:27	9/9/2022 10:52	26	No
12/1/2022 11:58	12/1/2022 12:04	7	No
12/1/2022 12:10	12/1/2022 12:59	50	No
2/10/2023 23:06	2/10/2023 23:18	13	Yes
2/16/2023 18:45	2/16/2023 18:58	14	Yes
2/17/2023 22:44	2/17/2023 23:01	18	Yes
2/23/2023 0:46	2/23/2023 1:45	60	Yes
2/23/2023 5:20	2/23/2023 5:25	6	Yes
2/24/2023 9:44	2/24/2023 9:54	11	Yes
2/25/2023 6:54	2/25/2023 7:25	32	Yes
2/25/2023 9:00	2/25/2023 9:40	41	Yes
2/25/2023 10:18	2/25/2023 12:19	122	Yes
2/25/2023 18:13	2/25/2023 18:18	6	No
3/21/2023 10:04	3/21/2023 10:19	16	No
3/21/2023 10:25	3/21/2023 10:42	18	No
3/21/2023 11:00	3/21/2023 11:25	26	No
6/29/2023 7:54	6/29/2023 8:23	30	No
6/29/2023 8:35	6/29/2023 8:56	22	No
7/4/2023 9:27	7/4/2023 9:36	10	NA
7/4/2023 12:27	7/4/2023 13:09	43	NA
7/4/2023 13:14	7/4/2023 13:19	6	NA
7/4/2023 13:33	7/4/2023 13:40	8	NA
7/5/2023 5:50	7/5/2023 6:57	68	NA
7/5/2023 7:21	7/5/2023 7:26	6	NA
7/5/2023 7:30	7/5/2023 7:36	7	NA
7/5/2023 7:42	7/5/2023 8:11	30	NA
7/5/2023 8:18	7/5/2023 8:26	9	NA
8/21/2023 13:25	8/21/2023 18:42	318	NA
9/9/2023 9:37	9/9/2023 10:23	47	NA
9/9/2023 10:34	9/9/2023 11:26	53	NA

*NA indicates the semiannual deviation report was not yet due at the time of the 2023 CAA Stationary Source Inspection.

383. The EPA Inspection Team identified Suncor reported that the Plant 2 FCCU was out of service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit PM to cause opacity exceedances while out-of-service.

Plant 1 FCCU Opacity Violations

Plant 1 FCCU Operated in Violation of COMS 30% Opacity Limit

384. On multiple occasions between January 1, 2022 through September 30, 2023 summarized in Paragraph 372, Suncor operated its Plant 1 FCCU in violation of the 30% opacity limit (gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period), the limit set forth in 40 C.F.R. §§ 60.102(a)(2) and 63.1564(a)(1) and Table 1.1 of MACT UUU.

Plant 1 FCCU Operated in Violation of COMS 20% Opacity Limit

385. On multiple occasions between January 1, 2022 through September 30, 2023 summarized in Paragraph 373, and in consideration of the facts set forth in Paragraph 374, Suncor operated its Plant 1 FCCU in violation of the 20% opacity limit (3-hour rolling average), the limit set forth in C.F.R. § 63.1564(a)(2) and Table 2.1 of MACT UUU for units subject to the NSPS for PM in 40 C.F.R. § 60.102.

Plant 1 FCCU Operated in Violation of 20% Opacity Limit in Suncor's Title V Permit 96OPAD120

386. On multiple occasions between January 1, 2022 through September 30, 2023, summarized in Paragraph 375, and in consideration of the facts set forth in Paragraph 376, Suncor operated its Plant 1 FCCU in violation of the 20% opacity limit (based on 24 consecutive opacity reading taken at 15-second intervals for six minutes), the limit set forth by Suncor's Permit 96OPAD120 Section II, Condition 35.1.

Plant 2 FCCU Opacity Violations

Plant 2 FCCU Operated in Violation of COMS 30% Opacity Limit

387. On multiple occasions between January 1, 2022 through September 30, 2023 summarized in Paragraph 378, and in consideration of the facts set forth in Paragraph 379, Suncor operated its Plant 2 FCCU in violation of the 30% opacity limit (gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period), the limit set forth in 40 C.F.R. §§ 60.102(a)(2) and 63.1564(a)(1) and Table 1.1 of MACT UUU.

Plant 2 FCCU Operated in Violation of COMS 20% Opacity

388. On seven occasions between January 1, 2022 through September 30, 2023, summarized in Paragraph 380, and in consideration of the facts set forth in Paragraph 381, Suncor operated its Plant 1 FCCU in violation of the 20% opacity limit (3-hour rolling average), the limit set forth in 40 C.F.R. § 63.1564(a)(2) and Table 2.1 of MACT UUU for units subject to the NSPS for PM in 40 C.F.R. § 60.102.

Plant 2 FCCU Operated in Violation of 20% Opacity Limit in Suncor's Title V Permit 95OPAD108

389. On multiple occasions between January 1, 2022 through September 30, 2023 summarized in Paragraph 382, and in consideration of the facts set forth in 383, Suncor operated its Plant 1 FCCU in violation of the 20% opacity limit (based on 24 consecutive opacity reading taken at 15-second intervals for six minutes), the limit set forth by Suncor's Permit 95OPAD108, Section II, Condition 20.1.

Failure to Report Opacity Deviations in Plants 1 and 2

390. For each opacity exceedance identified in Table 15, set forth in Paragraph 372, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of 40 C.F.R. § 63.1575(e).

391. For each opacity exceedance identified in the Table 16, set forth in Paragraph 373, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of 40 C.F.R. § 63.1575(e).

392. For each opacity exceedance identified in Table 17, set forth in Paragraph 375, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of Section IV.22.d of Suncor's Permit 96OPAD120.

393. For each opacity exceedance identified in Table 18, set forth in Paragraph 378, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of 40 C.F.R. § 63.1575(e).

394. For each opacity exceedance identified in Table 19, set forth in Paragraph 380, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of 40 C.F.R. § 63.1575(e).

395. For each opacity exceedance identified in Table 20, set forth in Paragraph 382, that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the opacity exceedance in violation of Section IV.22.d of Suncor's Permit 95OPAD108.

G. Plant 1 FCCU NOx Emissions Exceedance Violations (Title V Violations)

Applicable Facts

396. The EPA Inspection Team reviewed the NOx CEMS data for the Plant 1 FCCU for the time period if January 1, 2022 through September 30, 2023 and

found multiple exceedances of the 86.8 ppmvd NOx (at 0% O_2) on a 7-day rolling average basis, set forth by Suncor's Permit 96OPAD120, Section II, Condition 22.4, summarized as follows in Table 21:

Table 21

NOx @ 0% O_2 7-day Rolling Average	**Exceedance Start Time NOx > 86.8 ppm at 0% O_2**	**Exceedance End Time NOx >86.8 ppm at 0% O_2**	**Duration of Continuous Limit Exceedance (days)**
88.1	4/2/2023 18:00	4/9/2023 17:59	7.0
88.7	7/26/2023 8:00	7/29/2023 21:59	3.6

397. The EPA Inspection Team identified that Suncor reported that the Plant 1 FCCU was out-of-service during some of the time periods set forth in the table immediately above. An out-of-service FCCU should not emit any regulated pollutants while out-of-service.

Plant 1 FCCU NOx Emissions Exceedance Violations

398. On two occasions between January 1, 2022 through September 30, 2023, summarized in Paragraph 396, and in consideration of the facts set forth in Paragraph 397, Suncor operated its Plant 1 FCCU in violation of the 86.8 ppmvd NOx (at 0% O_2) on a 7-day rolling average basis, set forth by Suncor's Permit 96OPAD120, Section II, Condition 22.4.

H. Tail Gas Unit Incinerator SO_2 Emission Exceedances Violations (MACT UUU and Title V Violations)

Applicable Facts

Plant 1 TGU

399. The TGU at Plant 1, described in Paragraph 82, operates as a control device for the sulfur recovery process at the Commerce City Refinery, described in Paragraph 83,. The TGU oxidizes H_2S in the sulfur gas stream to SO_2 which is then emitted to atmosphere at Plant 1.

400. The TGU at Plant 1 is equipped with a CEMS on the process unit outlet.

401. The EPA Inspection Team reviewed the TGU CEMS data for the Plant 1 sulfur recovery process for the time period of January 1, 2022 through September 30, 2023 and found multiple exceedances of the 250 ppm by volume (dry 12-hour rolling basis) of SO_2 at zero percent excess air, set forth by 40 C.F.R. §§ 60.104(a)(2)(i) and 63.1568(a)(1) and Table 29 of MACT UUU, summarized as follows in Table 21:

Table 22:

SO_2 Exceedance Start Time	SO_2 Exceedance End Time	Duration of Continuous 12-Hour Average Limit Exceedance (hours)	Included in Semiannual Deviation Report
2/24/2022 12:00	2/26/2022 17:59	54	Yes
3/17/2022 1:00	3/18/2022 0:00	23	Yes
3/19/2022 2:00	3/20/2022 7:00	29	Yes
3/22/2022 2:59	3/22/2022 3:59	1	Yes
3/22/2022 10:00	3/23/2022 8:00	22	Yes
3/23/2022 15:00	3/24/2022 3:00	12	Yes
12/22/2022 13:00	12/30/2022 0:59	180	Yes
3/2/2023 0:59	3/2/2023 5:59	5	No
3/10/2023 13:00	3/11/2023 8:00	19	Yes
3/13/2023 11:59	3/14/2023 8:59	21	Yes
4/1/2023 21:59	4/3/2023 20:00	46	No
4/12/2023 5:00	4/13/2023 18:59	38	No
4/28/2023 23:00	4/30/2023 0:00	25	No
5/24/2023 13:00	5/25/2023 0:00	11	No
6/29/2023 23:59	6/30/2023 1:59	2	No

402. The EPA Inspection Team identified Suncor reported that the Plant 1 TGU Incinerator was not receiving acid gas feed during some of the time periods set forth in the table immediately above. A TGU without acid gas feed should not emit levels of SO_2 above the exceedance threshold while incinerating tail gas.

SO_2 Emissions Exceedance Violations

Plant 1 TGU

403. On multiple occasions between January 1, 2022 through September 30, 2023, as summarized in Paragraph 401, and in consideration of the facts set forth in Paragraph 402, Suncor operated its Plant 1 SRU in violation of the 250 ppm by volume (dry 12-hour rolling basis) of SO_2 at zero percent excess air, set forth by 40 C.F.R. §§ 60.104(a)(2)(i) and 63.1568(a)(1) and Table 29 of MACT UUU.

404. For each SO2 exceedance identified in the table set forth in Paragraph 401 that has a "No" listed in the column titled "Included in Semiannual Deviation Report," Suncor failed to report the SO_2 exceedance in violation of 40 C.F.R. §§ 60.105(e)(4)(i) and 63.1575(e), and Suncor's Permit 96OPAD120, Section II, Condition 54.31.4.

I. Multiple CMS and CEMS at the Commerce City Refinery are Not Properly Calibrated to Provide Accurate Emission Measurements and Suncor Failed to Take Necessary Corrective Action (NSPS J/Ja Violations)

Applicable Facts

405. Calibration is the action or process of assessing and/or adjusting an instrument or device to ensure precise and accurate measurements.

406. Pursuant to the CAA and Suncor's Title V operating permits, Suncor's CMS and CEMS are required to be calibrated and maintained at Suncor's Commerce City Refinery at a minimum on a daily basis.

407. To determine whether a CMS or CEMS is calibrated, maintained, and operated correctly, an operator uses span gas or gases (gases with a verified reference value of pollutant) to assess calibration drifts (the difference in the CMS or CEMS output readings from the established reference value after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place).

408. Comparing the readings of the span gas or gasses against the output of the CMS or CEMS being calibrated allows an operator to determine whether the CMS or CEMS is functioning properly and providing precise, reliable readings or has calibration drift outside of the permissible range and is "out-of-control."

409. As specified in 40 C.F.R. Part 60 Appendix F Procedure 1, the CMS or CEMS is out-of-control if either the zero (or low-level) or high-level calibration drift result exceeds twice the applicable drift specification in Appendix B for five, consecutive, daily periods.

410. Under the NSPS, the beginning of the out-of-control period is the time corresponding to the completion of the fifth, consecutive, daily calibration drift check with a calibration drift in excess of two times the allowable limit, or the time corresponding to the completion of the daily calibration drift check preceding the daily calibration drift check that results in a calibration drift in excess of four times the allowable limit. The end of the out-of-control period is the time corresponding to the completion of the calibration drift check following corrective action that results in the calibration drift's at both the zero (or low-level) and high-level measurement points being within the corresponding allowable calibration drift limit (i.e., either two times or four times the allowable limit in Appendix B).

411. CMS or CEMS are located, among other places, at the C005 Flare, the Plant 2 FCCU, and the TGU (H-25).

C005 Flare CMS and CEMS

412. The C005 Flare CMS and CEMS is equipped to monitor H_2S and Total Reduced Sulfur (TRS), and also measures other regulated pollutants.

413. Based on the review of C005 Flare H_2S CMS and TRS CEMS daily calibration records, the EPA Inspection Team identified 744 hours of out-of-control periods between April 27, 2023 and May 28, 2023 due to missing calibration records and calibration drifts greater than four times the allowable drift.

414. For each of the out-of-control periods set forth immediately above, Suncor did not take necessary corrective action to address the excessive calibration drift.

415. Based on the review of Suncor's calibration and maintenance records for the C005 TRS CEMS, the EPA Inspection Team identified that Suncor did not conduct a daily calibration on the TRS sensor that from April 28, 2023, through May 4, 2023, and May 9, 2023 through May 27, 2023.

Plant 1 and 2 FCCU CEMS

416. The Plant 1 and Plant 2 FCCU CEMS are equipped to monitor CO and NOx, and also measure other regulated pollutants.

417. Based on the review of the Plant 2 FCCU NOx CEMS daily calibration records, the EPA Inspection Team identified 72 hours of out-of-control periods between September 1, 2023 and September 7, 2023 due to missing calibration records and calibration drifts greater than two times the allowable drift.

418. For the out-of-control periods set forth immediately above, Suncor did not take necessary corrective action to address the excessive calibration drift.

419. Based on the review of calibration and maintenance records for the Plant 1 and Plant 2 FCCU, the EPA Inspection Team observed that for the time period of January 1, 2022 through September 30, 2023 Suncor used an incorrect span gas value for the Plant 1 and Plant 2 FCCU CEMS. Suncor used a 700 ppm span gas standard for CO instead of a 1,000 ppm span gas as required by 40 C.F.R. § 60.105(a)(2)(i).

TGU (H-25) CEMS

420. The TGU (H-25) CEMS is equipped to monitor O_2 and SO_2, and also measures other regulated pollutants.

421. Based on the review of TGU SO_2 CEMS daily calibration records, the EPA Inspection Team identified 53 hours of out-of-control periods on January 6, 2022 and on April 11, 2023 through April 12, 2023 due to calibration drifts greater

than four times the allowable drift. Suncor only identified 8 total hours between the two out-of-control periods.

422. For each of the out-of-control periods set forth immediately above, Suncor did not take necessary corrective action to address the excessive calibration drift.

423. Based on the review of calibration and maintenance records for the TGU SO_2 CEMS, the EPA Inspection Team observed that for the time period of January 1, 2022 through September 30, 2023 Suncor used an incorrect span gas value for the TGU (H-25) CEMS. Suncor used a 400 ppm span gas standard for SO_2 instead of the 500 ppm span gas standard required by 40 C.F.R. § 60.105(a)(5)(i).

424. Based on the review of calibration and maintenance records for the TGU O_2 CEMS, the EPA Inspection Team observed that for the time period of January 1, 2022 through September 30, 2023 Suncor used an incorrect span gas value for the TGU (H-25) CEMS. Suncor used a 9% span gas standard for O_2 instead of a 25% span gas as required by 40 C.F.R. § 60.105(a)(5)(i).

Violations

C005 Flare CEMS

(1) Failure to Identify Out-of-Control Periods and Take Necessary Corrective Action

425. Each of Suncor's failures to identify out-of-control periods and take necessary corrective action set forth in Paragraphs 413 and 414, is a violation of 40 C.F.R. §§ 60.107a(a)(2)(iii) and 60.13(d)(1), and 40 C.F.R. Part 60, Appendix F, Procedure 1, 4.3.1.

(2) Failure to Conduct Daily Calibration.

426. Each of Suncor's failures to conduct daily calibration on the C005 TRS CEMS as set forth in Paragraph 415, is a violation of 40 C.F.R. § 60.13(d)(1).

Plant 1 and 2 FCCU CEMS

(1) Failure to Identify Out-of-Control Periods and Take Necessary Corrective Action for the Plant 1 FCCU CEMS

427. Each of Suncor's failures to identify out-of-control periods and take necessary corrective action set forth in Paragraphs 417 and 418, is a violation of 40 C.F.R. §§ 60.107a(a)(2)(iii) and60.13(d)(1) and 40 C.F.R. Part 60, Appendix F, Procedure 1, 4.3.1.

(2) Use of Incorrect Span Calibration Standards for the Plant 1 and Plant 2 FCCU CEMS

428. Suncor failed to use the proper CO span gas for the time period of January 1, 2022 through September 30, 2023, as set forth in Paragraph 419, for its Plant 1 and Plant 2 FCCU, in violation of 40 C.F.R. § 60.105(a)(2)(i).

TGU (H-25) CEMS

(1) Failure to Identify Out-of-Control Periods and Take Necessary Corrective Action

429. Each of Suncor's failures to identify out-of-control periods and take necessary corrective action set forth in Paragraphs 421 and 422, is a violation of 40 C.F.R. §§ 60.107a(a)(2)(iii) and 60.13(d)(1) and 40 C.F.R. Part 60, Appendix F, Procedure 1, 4.3.1.

(2) Use of Incorrect Span Calibration Standards

430. Suncor failed to use the proper SO_2 and O_2 span gas for the TGU CEMS for the time period of January 1, 2022 through September 30, 2023, as set forth in Paragraphs 423 and 424, in violation of 40 C.F.R. § 60.105(a)(5)(i).

VII. FIFTH SET OF JOINTLY ALLEGED VIOLATIONS: OTHER TITLE V PERMIT VIOLATIONS

A. Statutory and Regulatory Authority

431. Suncor is required to comply with the terms and conditions of two Title V permits issued to Suncor for the Commerce City Refinery, as set forth in Paragraphs 54 and 55.

B. Findings of Violation

432. For each of the applicable regulatory requirements set forth in this NOV that are incorporated into a term or condition of Permit 96OPAD120 or Permit 95OPAD108, where this NOV alleges that Suncor is or was violating the applicable regulatory requirement, this NOV also alleges that Suncor is or was violating the corresponding Title V permit term or condition.

VIII. SIXTH SET OF JOINTLY ALLEGED VIOLATIONS: SUNCOR CONSENT DECREE VIOLATIONS

A. Statutory and Regulatory Authority

433. Suncor is a party to and bound by the requirements of the Suncor Consent Decrees, as defined above in the introduction of this NOV.

B. Findings of Violation

434. For each of the applicable regulatory requirements set forth in this NOV that have a corresponding compliance requirement set forth in the Suncor Consent Decrees, where this NOV alleges that Suncor is or was violating the applicable regulatory requirement, this NOV also alleges that Suncor is or was violating the corresponding compliance requirement in the Suncor Consent Decrees, to the extent not already alleged by Paragraph 98.

IX. SEVENTH SET OF ALLEGED VIOLATIONS, SOME JOINTLY ALLEGED, SOME STATE ONLY: COLORADO REGULATORY VIOLATIONS

A. Statutory and Regulatory Authority

435. The Commission has promulgated air quality regulations pursuant to its statutory authority. C.R.S. §§ 25-7-101 et seq.; 5 Colo. Code Reg. §§ 1001-1 et seq. Some of these state air quality regulations are incorporated into Colorado's SIP.

B. Findings of Violation

436. To the extent the factual findings set out in this NOV support violations of Commission regulations that are incorporated into Colorado's SIP and federally enforceable, the Governments jointly allege that Suncor is in violation of such regulations.

437. To the extent the factual findings set out in this NOV support violations of Commission regulations that are enforceable only by the State of Colorado, the Division alleges that Suncor is in violation of such regulations.

X. ENFORCEMENT AUTHORITY

438. Section 113(a)(1) of the CAA, 42 U.S.C. § 7413(a)(1), directs that if, on the basis of information available to the EPA, the EPA finds that any person has violated or is in violation of any requirement or prohibition of an applicable implementation plan or permit, the EPA shall notify the person and the State in which the plan applies of such finding and, at any time after the expiration of 30 days following the date on which such notice of a violation is issued, the Administrator may, without regard to the period of violation: (a) issue an order requiring such person to comply with the requirements or prohibitions of such plan or permit; (b) issue an administrative order to comply with Section 113(d) of the CAA, or (c) bring a civil action in accordance with Section 113(b) of the CAA. 42 U.S.C. § 7413(a)(1).

439. Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3), provides that whenever, on the basis of any information available to the EPA, the EPA finds that

any person has violated, or is in violation of, any requirement of prohibition of an applicable implementation plan, the Administrator may issue an order requiring such person comply with the requirements or prohibition of such plan, issue an administrative penalty order in accordance with Section 113(d) of the CAA, or bring a civil action in accordance with Section 113(b) of the CAA for injunctive relief or civil penalties.

440. The Colorado Air Act provides that if the Division determines that any violation or failure to comply with the Colorado Air Act, Commission regulations, or applicable permits exists, the Division will notify and confer with the owner or operator of the relevant air pollution source. C.R.S. § 25-7-115(2)(c). Thereafter, the Division may issue an administrative order requiring, without limitation, the owner or operator or other responsible person to comply. C.R.S. § 25-7-115(3)(b)(I). Alternatively, the Division may bring a civil action in court for injunctive relief and/or penalties. C.R.S. §§ 25-7-121(1), -122(1).

441. The issuance of this NOV does not in any way limit or preclude the EPA from pursuing additional enforcement options concerning the federal inspection or review of information referenced in this NOV. Likewise, the issuance of this NOV does not limit or preclude the Division from pursuing additional enforcement options concerning further review of the information referenced in this NOV.

442. Since the Division's July 11-13, 2022, inspection underlying the Division's issuance of the Division's 2023 Compliance Advisory, and/or since the 2023 CAA Stationary Source Inspection, Suncor has submitted reports, including but not limited to excess emissions reports, Title V deviation reports, and root cause failure analysis reports, to the Division and/or EPA, indicating non-compliance with applicable regulatory, permit, and Suncor Consent Decree requirements. This NOV does not preclude EPA or the Division from taking enforcement action for violations not specifically addressed in this NOV, including, without limitation, violations arising from such reports.

Date Issued: July 2, 2024

SUZANNE BOHAN
Digitally signed by SUZANNE BOHAN
Date: 2024.07.02 15:14:48 -06'00'

Suzanne J. Bohan, Director
Enforcement and Compliance Assurance Division
Environmental Protection Agency, Region 8

Shannon L. McMillan

Digitally signed by Shannon L. McMillan
Date: 2024.07.02 15:40:00 -06'00'

Shannon L. McMillan, Program Manager
Compliance and Enforcement Program
Air Pollution Control Division
Colorado Department of Public Health and Environment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

and

COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE ENVIRONMENT
AIR POLLUTION CONTROL DIVISION

IN THE MATTER OF **Suncor Energy (U.S.A.), Inc.**	**NOTICE OF VIOLATION** **EPA Docket No.** Proceedings Pursuant to the Clean Air Act, 42 U.S.C. §§ 7401-7671q, and the Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-101 – 1604

NOTICE OF VIOLATION

ATTACHMENT: THE DIVISION'S 2023 COMPLIANCE ADVISORY

COLORADO

Department of Public Health & Environment

AIR POLLUTION CONTROL DIVISION

COMPLIANCE ADVISORY

CASE NO. 2023-082
AIRS NO. 001-0003
INSPECTION DATE: July 11-13, 2022

SENT VIA ELECTRONIC MAIL
MAILING DATE: June 1, 2023
SOURCE CONTACT: Carla Manzi

IN THE MATTER OF SUNCOR ENERGY (U.S.A.) INC.

This Compliance Advisory provides formal notice, pursuant to § 25-7-115(2), C.R.S., of alleged violations or noncompliance discovered during the Air Pollution Control Division's ("Division") inspection and/or review of records related to Suncor Energy (U.S.A.) Inc.'s Refinery identified below. The Division is commencing this action because it has cause to believe that the compliance issues identified below may constitute violations of the Colorado Air Pollution Prevention and Control Act ("the Act") and its implementing regulations.

Please be aware that you are responsible for complying with applicable State air pollution requirements and that there are substantial penalties for failing to do so. Pursuant to the enforcement authority provided to the Division by § 25-7-115, C.R.S., any person who violates the Act, its implementing regulations or any permit issued thereunder may be issued an order for compliance that can include permit revocation and assessment of penalties in accordance with § 25-7-122, C.R.S. The issuance of this Compliance Advisory does not in any way limit or preclude the Division from pursuing additional enforcement options concerning this inspection/review. Also, this Compliance Advisory does not constitute a bar to enforcement action for violations not specifically addressed in this Compliance Advisory.

Failure to respond to this Compliance Advisory by the date indicated at the end of this Compliance Advisory may be considered by the Division in any subsequent

enforcement action and assessment of penalties. Furthermore, the Division's enforcement process contemplates a full and final resolution of the compliance issues herein addressed, and those that may result from further review, in a timely manner. If at any time throughout the process of reaching such a resolution the Division determines that the parties cannot agree to the dispositive facts, compliance requirements and/or penalty assessments (if any) associated with this Compliance Advisory, or a resultant enforcement action, the Division may exercise its full enforcement authority allowed under the law.

Suncor Energy (U.S.A.) Inc. ("Suncor") owns and operates the petroleum refinery located at 5801 Brighton Boulevard, Commerce City, Adams County, Colorado (Plant 1), the petroleum refinery located at 5800 Brighton Boulevard, Commerce City, Adams County, Colorado (Plant 2), and the asphalt plant located approximately at 3875 East 56th Avenue, Commerce City, Adams County, Colorado (Plant 3) (collectively, the "Refinery").

Plant 1 and Plant 3 are subject to the terms and conditions of the following state and federal permits, consent decrees, and regulations, including, but not limited to:

1. Federal Consent Decree (Civil Action No. H-01-4430) entered April 30, 2002, first amendment lodged June 16, 2003, second amendment lodged July 12, 2006 ("West Plant Consent Decree");
2. Colorado Operating Permit Number 96OPAD120, issued to Suncor on August 1, 2004, and last revised February 22, 2018 ("Permit 96OPAD120"); and
3. 40 C.F.R. Part 63, Subpart R - National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) ("NESHAP R").

Plant 2 is subject to the terms and conditions of the following state and federal permits, consent decrees, and regulations, including, but not limited to:

1. Federal Consent Decree (Civil Action No. SA-05-CA-0569) entered November 23, 2005, non-material modification effective June 18, 2006 ("East Plant Consent Decree");
2. Colorado Operating Permit Number 95OPAD108, issued to Suncor on October 1, 2006, and renewed September 1, 2022 ("Permit 95OPAD108 (9/1/2022)");
3. Colorado Construction Permit Number 09AD0961, Final Approval, issued to Suncor on February 23, 2015 ("Permit 09AD0961");
4. Colorado Construction Permit Number 09AD1422, Initial Approval, issued to Suncor on May 14, 2010 ("Permit 09AD1422"); and
5. 40 C.F.R. Part 60, Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction,

Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006 ("NSPS GGG").

Plant 2 was subject to the terms and conditions of the Colorado Operating Permit Number 95OPAD108, issued to Suncor on October 1, 2006, and revised June 15, 2009 ("Permit 95OPAD108").

The Refinery is subject to the terms and conditions of the following state and federal regulations, including, but not limited to:

1. 40 C.F.R. Part 60:
   i. Subpart A – General Provisions ("NSPS A");
   ii. Subpart J - Standards of Performance for Petroleum Refineries ("NSPS J");
   iii. Subpart Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 ("NSPS Ja");
   iv. Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006 ("NSPS VV");
   v. Subpart VVa - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 ("NSPS VVa");
   vi. Subpart GGGa - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 ("NSPS GGGa");
2. 40 C.F.R. Part 63:
   i. Subpart A – General Provisions ("NESHAP A");
   ii. Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries ("NESHAP CC");
   iii. Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units ("NESHAP UUU");
3. The Act; and
4. The Colorado Air Quality Control Commission ("AQCC") Regulations.

I. REQUIREMENTS APPLICABLE TO COMPLIANCE ADVISORY, CASE NO. 2023-082

Refinery: Plant 1 and Plant 3

1. Pursuant to Permit 96OPAD120, Section II, Condition 53.66, and NESHAP CC, § 63.655(g), the owner or operator of a source subject to this subpart shall

submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the information specified in paragraphs (g)(1) through (7) of this section or paragraphs (g)(9) through (14) of this section is collected. Pursuant to Permit 96OPAD120, Section II, Condition 47.5, and NSPS GGGa, § 60.592a(e), each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486a and 60.487a. Pursuant to Permit 96OPAD120, Section II, Condition 55.96, and NSPS VVa, § 60.487a(a), each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

2. Pursuant to Permit 96OPAD120, Section IV, Condition 22.d, the permittee shall submit to the Division all reports of any required monitoring at least every six months, and all instances of deviations from any permit requirements must be clearly identified in such reports.

3. Pursuant to Permit 96OPAD120, Section II, Conditions 11.3, 12.3, 13.3, 14.3, 15.3, 16.3, 17.3, 18.3, 20.6.2, 21.3, 27.3, 28.3, 29.2, 29.9, 30.2, 30.10, 38.2.1, 46.1.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, §§ 60.102a(g)(1)(ii) and 60.103a(h), Suncor shall not burn in any fuel gas combustion device or any affected flare any fuel gas that contains hydrogen sulfide ("H_2S") in excess of 162 parts per million volumetric ("ppmv") determined hourly on a 3-hour rolling average basis.

4. Pursuant to Permit 96OPAD120, Section II, Conditions 29.10, 31.10, and 53.91, and NESHAP CC, § 63.670(e), Suncor shall operate the Main Plant Flare and GBR Unit Flare to maintain the net heating value of flare combustion zone gas ("NHVcz") at or above 270 British thermal units per standard cubic feet ("Btu/scf") determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes.

5. Pursuant to Permit 96OPAD120, Section II, Conditions 29.10 and 53.89, and NESHAP CC, § 63.670(c), Suncor shall operate the Main Plant Flare with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare.

6. Pursuant to Permit 96OPAD120, Section II, Conditions 1.3 and 39.1, and AQCC Regulation 7, Part B, § I.A, all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

7. Pursuant to Permit 96OPAD120, Section II, Condition 22.10.1, and the West Plant Consent Decree, Paragraph 49, Suncor is required to limit carbon monoxide ("CO") emissions from the Plant 1 fluid catalytic cracking unit ("FCCU") to 500 parts per million volumetric dry ("ppmvd") at 0% oxygen ("O_2") on a one-hour average.

8. Pursuant to Permit 96OPAD120, Section II, Condition 20.1, Suncor shall not exceed the sulfur dioxide ("SO_2") emission limit of 15.68 pounds per hour ("lb/hr") from the Tail Gas Unit ("TGU") Incinerator (H-25). Pursuant to Permit 96OPAD120, Section II, Conditions 20.6.1 and 45.12.1; the West Plant Consent Decree, Paragraphs 169 and 171; and NSPS J, § 60.104(a)(2)(i), Suncor shall not discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of, for an oxidation control system or a reduction control system followed by incineration, 250 ppmvd of SO_2 at 0% excess air, on a 12-hour rolling average. Pursuant to Permit 96OPAD120, Section II, Conditions 20.10 and 54.28, and NESHAP UUU, § 63.1568(a)(1), the sulfur recovery units ("SRUs") at the Refinery, Plant 1, are subject to NSPS J, § 60.104(a)(2)(i), and the hazardous air pollutant emission limit for the SRUs is 250 ppmvd of SO_2 at 0% excess air, on a 12-hour rolling average.

9. Pursuant to Permit 96OPAD120, Section II, Conditions 22.7.1, 35.1, and 35.2, and Permit 96OPAD120, Section IV, Condition 16, Suncor shall comply with the opacity limits in AQCC Regulation 1. Pursuant to AQCC Regulation 1, § II.A.1, Suncor shall not allow or cause the emission into the atmosphere of any air pollutant that is in excess of 20% opacity based on 24 consecutive opacity readings taken at 15-second intervals for six minutes. Pursuant to AQCC Regulation 1, § II.A.4, Suncor shall not allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, any process modification, or adjustment or occasional cleaning of control equipment, which is in excess of 30% opacity for a period or periods aggregating more than six minutes in any sixty consecutive minutes. Pursuant to Permit 96OPAD120, Section II, Conditions 22.7.2, 22.7.3, 45.1.2, and 54.1.2; the West Plant Consent Decree, Paragraph 54; NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1), Suncor shall not discharge or cause the discharge into the atmosphere from any FCCU catalyst regenerator any gases exhibiting greater than 30% opacity, except for one six-minute average opacity reading in any one-hour period.

10. Pursuant to Permit 96OPAD120, Section II, Condition 52.13, and NESHAP R, § 63.427(b), Suncor shall operate the Rail Loading Rack (R101) vapor combustion unit ("VCU") in a manner not to go below 1,299 degrees Fahrenheit on a 6-hour rolling average. Operation of the VCU in a manner going below the operating parameter value (1,299°F, 6-hour rolling

average) shall constitute a violation of the emission standard in NESHAP R, § 63.422(b). Pursuant to Permit 96OPAD120, Section II, Condition 52.4, and NESHAP R, § 63.422(b), emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline cargo tanks shall not exceed 10 milligrams of total organic compounds per liter of gasoline loaded.

11. Pursuant to Permit 96OPAD120, Section II, Condition 13.8, and the West Plant Consent Decree, Paragraph 73(a), Suncor shall limit the CO emissions from Process Boilers B-6 and B-8 to 0.060 lb/MMBtu on a 24-hour rolling average basis.

12. Pursuant to Permit 96OPAD120, Section II, Condition 20.7, and the West Plant Consent Decree, Paragraph 173, all sulfur pit emissions to the atmosphere shall be either eliminated or included and monitored as part of the sulfur recovery plant's emissions. Vents from the No.1 SRU sulfur pit and No. 2 SRU sulfur pit are vented to the TGU Incinerator (H-25) and emissions are monitored via the SO_2 continuous emissions monitoring system.

13. Pursuant to Permit 96OPAD120, Section II, Condition 22.9.3, and the West Plant Consent Decree, Paragraph 47(b), Suncor shall install, certify, calibrate, maintain, and operate the Plant 1 FCCU continuous opacity monitoring system ("COMS") in accordance with the requirements of Condition 59 of this permit. Pursuant to Permit 96OPAD120, Section II, Condition 59.1, and the West Plant Consent Decree, Paragraph 202, Suncor shall install, certify, calibrate, maintain, and operate all COMS required by the West Plant Consent Decree in accordance with the requirements of 40 C.F.R. Part 60, §§ 60.11 and 60.13, and Part 60, Appendices A and B. Pursuant to NSPS A, § 60.13(a), and 40 C.F.R. Part 60, Appendix F, Procedure 3, Suncor is required to complete quarterly performance audits of the Plant 1 FCCU COMS. Pursuant to NESHAP A, § 63.8(d)(2), the owner or operator of an affected source that is required to use a continuous monitoring system ("CMS") and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. Pursuant to Permit 96OPAD120, Section II, Conditions 22.12 and 54.51, and NESHAP UUU, § 63.1574(f), Suncor must prepare and implement an operation, maintenance, and monitoring plan for each control system and CMS for each affected source, and the plan must include a quality control plan for each COMS. The quality control program/plan required by NESHAP A and NESHAP UUU must include procedures for accuracy audits.

14. Pursuant to Permit 96OPAD120, Section II, Conditions 24.5, 34.2, 34.7, 43.8, 47.1, 53.44, 55, and 64, Suncor is required to comply with the applicable equipment leak standards, including the Leak Detection and Repair

("LDAR") monitoring requirements, contained in NSPS VV, §§ 60.482-1 to 60.482-10; NSPS VVa, §§ 60.482-1a to 60.482-10a; NSPS GGGa, § 60.592a(a); NESHAP CC, § 63.648(a); and AQCC Regulation 7, Part B, § VI.C. Pursuant to Permit 96OPAD120, Section II, Conditions 43.8.2 and 55.40; NSPS VVa, § 60.482-6a(a); and AQCC Regulation 7, Part B, § VI.C.2.b, except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds ("VOCs") unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap.

15. Pursuant to Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

16. Pursuant to NESHAP A, § 63.6(e)(1)(i), at all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.

17. Pursuant to Permit 96OPAD120, Section II, Condition 53.12, and NESHAP CC, § 63.642(n), at all times, the owner or operator must operate and maintain

any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

18. Pursuant to Permit 96OPAD120, Section II, Condition 54.35, and NESHAP UUU, § 63.1570(c), at all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

19. Pursuant to the West Plant Consent Decree, Paragraph 220(a), Suncor shall only use the credits from the reductions made pursuant to the West Plant Consent Decree for projects necessary to meet the requirements of Tier 2 Gasoline, provided that new or modified heaters and boilers being permitted have emission limits at the time of permitting of 0.040 lbs NO_x per million BTU or less on a 3-hour rolling average basis.

20. Pursuant to AQCC Regulation 3, Part A, § II.A.1, except as exempted in Section II.D., no person shall allow emission of air pollutants from, or construction, modification or alteration of, any facility, process, or activity which constitutes a stationary source, except residential structures, from which air pollutants are, or are to be, emitted unless and until an Air Pollutant Emission Notice ("APEN") and the associated APEN fee has been filed with the Division with respect to such emission.

21. Pursuant to AQCC Regulation 3, Part B, § II.A.1, except where specifically authorized by the terms of this Regulation Number 3, no person shall construct, modify, or operate any stationary source or commence the conduct of any such activity without first obtaining or having a valid construction permit from the Division.

Refinery: Plant 2

22. Pursuant to Permit 95OPAD108 (9/1/2022), Section II, Condition 40.66, and NESHAP CC, § 63.655(g), the owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the information specified in paragraphs (g)(1) through (7) of this section or paragraphs (g)(9) through (14) of this section is collected. Pursuant to NSPS GGGa, § 60.592a(e), each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486a and 60.487a. Pursuant to NSPS VVa, § 60.487a(a), each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

23. Pursuant to Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, 8.4, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, §§ 60.102a(g)(1)(ii) and 60.103a(h), Suncor shall not burn in any fuel gas combustion device or any affected flare any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis.

24. Pursuant to NESHAP CC, § 63.670(b), Suncor shall operate the Plant 2 Flare with a pilot flame present at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations.

25. Pursuant to NESHAP CC, § 63.670(c), Suncor shall operate the Plant 2 Flare with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare.

26. Pursuant to NESHAP CC, § 63.670(e), Suncor shall operate the Plant 2 Flare to maintain the NHVcz at or above 270 Btu/scf determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes.

27. Pursuant to Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1, Suncor shall not allow or cause the emission into the atmosphere of any air pollutant that is in excess of 20% opacity based on 24 consecutive opacity readings taken at 15-second intervals for six minutes. Pursuant to Permit 95OPAD108, Section II, Conditions 2.7 and 33.4; Permit 09AD0961, Condition 27(b); the East

Plant Consent Decree, Paragraph 98; NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1), Suncor shall not discharge or cause the discharge into the atmosphere from any FCCU catalyst regenerator any gases exhibiting greater than 30% opacity, except for one six-minute average opacity reading in any one-hour period. Pursuant to Permit 95OPAD108, Section II, Conditions 2.7 and 33.5, and NESHAP UUU, § 63.1564(a)(2), Suncor shall maintain the 3-hour rolling average opacity of emissions from the FCCU catalyst regenerator vent to no higher than 20%.

28. Pursuant to Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Conditions 19 and 27(c); the East Plant Consent Decree, Paragraph 94; NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1), Suncor shall not discharge or cause the discharge into the atmosphere from the Plant 2 FCCU any gases that contain CO in excess of 500 ppmvd corrected to 0% excess air, on an hourly average basis.

29. Pursuant to Permit 95OPAD108, Section II, Conditions 15.2 and 23.1, and AQCC Regulation 7, Part B, § I.A, all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.

30. Pursuant to Permit 95OPAD108, Section II, Condition 19.5.5, for P014 – FCCU Catalyst Loading, F029 – Polymerization Unit Catalyst Unloading, and F009 – Polymerization Unit Catalyst Loading, semi-annual EPA Reference Method 9 opacity readings shall be conducted while the loading/unloading activity is taking place, and recorded by a certified reader. A minimum interval of at least four months shall occur between semiannual observations.

31. Pursuant to Permit 95OPAD108, Section II, Condition 18.2, equipment leak emissions associated with these sources (*i.e.,* fugitive VOC equipment leak emissions with permitted limits) are subject to the requirements of AQCC Regulation 7, Part B, § VI.C, NSPS GGG, and NESHAP CC, as set forth in Conditions 27.8, 30, and 32 of this permit. Pursuant to Permit 95OPAD108, Section II, Condition 27.8.1, and AQCC Regulation 7, Part B, § VI.C.2.a.(ii), Suncor is required to conduct a monitoring program consistent with the provisions in AQCC Regulation 7, Part B, § VI.C.4.a. Pursuant to Permit 95OPAD108, Section II, Conditions 30.1 and 32.16; NSPS GGG, § 60.592(a); and NESHAP CC, § 63.648(a), Suncor is required to comply with the equipment leak standards and LDAR monitoring requirements of NSPS VV, §§ 60.482-1 to 60.482-10. Pursuant to NSPS GGGa, § 60.592a(a), each owner or operator subject to the provisions of this subpart shall comply with the requirements of NSPS VVa, §§ 60.482–1a to 60.482–10a. Pursuant to Permit

95OPAD108, Section II, Condition 27.8.2; AQCC Regulation 7, Part B, § VI.C.2.b; NSPS VV, § 60.482-6(a); NSPS VVa, § 60.482-6a(a), except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing VOCs unless the pipe or line is sealed with a second valve, a blind flange, a plug, or a cap.

32. Pursuant to NESHAP UUU, § 63.1568(a)(2), and Table 30, Item 4, Suncor shall maintain the daily average combustion zone temperature of the thermal incinerator for the No. 3 SRU at or above 1,416°F.

33. Pursuant to Permit 95OPAD108, Section II, Condition 36.5, and NSPS A, § 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

34. Pursuant to NESHAP CC, § 63.642(n), at all times, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

35. Pursuant to Permit 95OPAD108, Section II, Condition 33.81, and NESHAP UUU, § 63.1570(c), at all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to,

monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

36. Pursuant to AQCC Regulation 3, Part A, § II.A.1, except as exempted in Section II.D., no person shall allow emission of air pollutants from, or construction, modification or alteration of, any facility, process, or activity which constitutes a stationary source, except residential structures, from which air pollutants are, or are to be, emitted unless and until an APEN and the associated APEN fee has been filed with the Division with respect to such emission.

37. Pursuant to AQCC Regulation 3, Part B, § II.A.1, except where specifically authorized by the terms of this Regulation Number 3, no person shall construct, modify, or operate any stationary source or commence the conduct of any such activity without first obtaining or having a valid construction permit from the Division.

II. ALLEGED VIOLATIONS AND FACTS

Refinery: Plant 1 and Plant 3

1. On July 11-13, 2022, Jason Long, of the Division, inspected the Refinery. Based on the Division's inspection, and a review of records related to the Refinery, the Division has identified the following compliance issues at the Refinery, Plant 1 and Plant 3:

    a. Suncor failed to submit the semiannual NSPS GGGa and NESHAP CC reports due August 1, 2022 and September 1, 2022, respectively, until September 27, 2022, violating Permit 96OPAD120, Section II, Conditions 47.5, 53.66, and 55.96; NSPS GGGa, § 60.592a(e); NSPS VVa, § 60.487a(a); and NESHAP CC, § 63.655(g).

    b. Suncor failed to report the deviation described in this Compliance Advisory, Section II, Paragraph 1.i, below, in the semiannual Monitoring and Permit Deviation Report due March 1, 2022, violating Permit 96OPAD120, Section IV, Condition 22.d.

    c. Suncor reported that, in April 2021, a planned, plant-wide shutdown, or turnaround, involving Plants 1 and 3 occurred to perform necessary maintenance activities. Following the turnaround, all of the process units were started up in a systematic manner from mid-June into July 2021. This event resulted in the following exceedances and noncompliance with operating standards:

i. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 07/01/2021 20:00 hrs
End Date and Time: 07/01/2021 23:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 07/01/2021 20:00 hrs
End Date and Time: 07/02/2021 10:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1);

ii. **Plant 1 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 07/01/2021 07:24 hrs
End Date and Time: 07/01/2021 07:30 hrs
Start Date and Time: 07/01/2021 09:18 hrs
End Date and Time: 07/01/2021 09:30 hrs
Start Date and Time: 07/01/2021 10:06 hrs
End Date and Time: 07/01/2021 10:12 hrs
Start Date and Time: 07/02/2021 03:54 hrs
End Date and Time: 07/02/2021 04:00 hrs
Start Date and Time: 07/02/2021 07:00 hrs
End Date and Time: 07/02/2021 07:06 hrs
Start Date and Time: 07/02/2021 12:48 hrs
End Date and Time: 07/02/2021 12:54 hrs
Start Date and Time: 07/03/2021 12:00 hrs
End Date and Time: 07/03/2021 12:06 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1; and

iii. After the turnaround and startup, Suncor operators observed product on top of the floating roof of Tank 80. Suncor determined that, during the startup process, light product from the FCCU was lined up to the incorrect tank and the lighter product likely blew through the tank seals onto the roof of Tank 80. Suncor failed to maintain and operate all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves on Tank 80 to

prevent detectable vapor loss, violating Permit 96OPAD120, Section II, Conditions 1.3 and 39.1, and AQCC Regulation 7, Part B, § I.A.

d. Suncor reported that, on the morning of July 8, 2021, operators identified a hole on a manway coming off the No. 2 SRU thermal reactor (H-2000). The control room was immediately called to trip the unit and get the No. 2 SRU to a safe state. When the No. 2 SRU tripped, it was no longer able to accept acid gas from the various amine regeneration systems throughout Plant 1, and those vessels were required to be routed to the Plant 1 flare header. The elevated flow to the flare gas recovery system initially caused breakthrough of sour material through the seal drum. At approximately 07:00 hours, the first stage of the flare gas recovery system could no longer handle all of the flow. Therefore, it was required to be taken partially offline to prevent tripping the entire system offline. This resulted in high H_2S in the flare gas and high H_2S in the Plant 1 fuel gas system. The TGU Incinerator (H-25) also exceeded the SO_2 limits during this event. This event resulted in the following exceedances and noncompliance with operating standards:

   i. **Main Plant Flare**
   H_2S in Flare Gas (162 ppmv, 3-hour average)
   Start Date and Time: 07/08/2021 07:00 hrs
   End Date and Time: 07/08/2021 18:00 hrs

   Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

   ii. **Plant 1 Fuel Gas System**
   H_2S in Fuel Gas (162 ppmv, 3-hour average)
   Start Date and Time: 07/08/2021 06:00 hrs
   End Date and Time: 07/08/2021 16:00 hrs

   Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 1 Fuel Gas System, violating Permit 96OPAD120, Section II, Conditions 11.3, 12.3, 13.3, 14.3, 15.3, 16.3, 17.3, 18.3, 20.6.2, 21.3, 27.3, 28.3, 30.2, 30.10, 38.2.1, and 46.1.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii);

   iii. **H-25**
   SO_2 (15.68 lb/hr)
   Start Date and Time: 07/08/2021 04:00 hrs

End Date and Time: 07/08/2021 05:00 hrs
Start Date and Time: 07/08/2021 09:00 hrs
End Date and Time: 07/08/2021 10:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 07/08/2021 04:00 hrs
End Date and Time: 07/09/2021 12:00 hrs
Start Date and Time: 07/09/2021 13:00 hrs
End Date and Time: 07/10/2021 02:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1);

iv. Suncor failed to maintain and operate the Main Plant Flare, Plant 1 Fuel Gas System, and No. 2 SRU in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d); and

v. Suncor failed to maintain and operate the No. 2 SRU in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 54.35, and NESHAP UUU, § 63.1570(c).

e. Suncor reported that, on July 12, 2021, at approximately 11:30 hours, compressor C-16 (air blower) in the Plant 1 FCCU tripped offline causing the Plant 1 FCCU to trip offline. C-16 tripped offline due to a loss of communication that lasted approximately 15 milliseconds. When C-16 tripped, the air flow immediately decreased, which caused the Plant 1 FCCU to trip. The programming logic for C-16 was configured such that a trip would occur immediately upon detection of signal loss in order to prevent the speed control from operating in an uncontrollable state and potentially damaging the equipment. To prevent a recurrence, a 30 second delay was added to the programming logic for C-16. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Main Plant Flare**
Visible Emissions (exceeded 5 minutes during any 2 consecutive hours)
Start Date and Time: 07/12/2021 15:25 hrs
End Date and Time: 07/12/2021 15:52 hrs

Suncor failed to comply with the visible emissions standard at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.10 and 53.89, and NESHAP CC, § 63.670(c);

ii. **Main Plant Flare**
NHVcz (=/>270 Btu/scf, 15-minute average)
Start Date and Time: 07/14/2021 10:15 hrs
End Date and Time: 07/14/2021 10:30 hrs

Suncor failed to comply with the NHVcz standard (=/>270 Btu/scf, 15-minute average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.10 and 53.91, and NESHAP CC, § 63.670(e);

iii. **Plant 1 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 07/12/2021 12:00 hrs
End Date and Time: 07/13/2021 12:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Condition 22.10.1, and the West Plant Consent Decree, Paragraph 49;

iv. **Plant 1 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 07/12/2021 11:30 hrs
End Date and Time: 07/12/2021 11:48 hrs
Start Date and Time: 07/12/2021 15:24 hrs
End Date and Time: 07/12/2021 15:30 hrs
Start Date and Time: 07/13/2021 10:00 hrs
End Date and Time: 07/13/2021 10:30 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1;

v. **Plant 1 FCCU**
Opacity (Federal – 30%, 6-minute average)
Start Date and Time: 07/12/2021 11:30 hrs
End Date and Time: 07/12/2021 11:48 hrs

Suncor exceeded the opacity limit (Federal – 30%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120,

Section II, Conditions 22.7.2, 22.7.3, 45.1.2, and 54.1.2; the West Plant Consent Decree, Paragraph 54; NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1);

vi. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 07/15/2021 22:00 hrs
End Date and Time: 07/16/2021 10:00 hrs
Start Date and Time: 07/16/2021 13:00 hrs
End Date and Time: 07/16/2021 15:00 hrs
Start Date and Time: 07/16/2021 23:00 hrs
End Date and Time: 07/17/2021 05:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 07/14/2021 12:00 hrs
End Date and Time: 07/15/2021 02:00 hrs
Start Date and Time: 07/15/2021 12:00 hrs
End Date and Time: 07/17/2021 15:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1);

vii. Suncor failed to maintain and operate the Plant 1 FCCU and Plant 1 SRUs in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Conditions 54.35 and 56.2; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c); and

viii. Suncor failed to maintain and operate the Main Plant Flare in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 53.12, and NESHAP CC, § 63.642(n).

f. Suncor reported that, on July 16, 2021, the 6-hour rolling average temperature of the Rail Loading Rack (R101) VCU dropped below the 1,299°F operating limit. The first-stage waste gas valve unexpectedly opened to the vapor combustor during a period when no loading operations were actively taking place. Suncor reported that, while the exact cause of the waste gas opening could not be confirmed, elevated ambient temperatures likely increased the knockout drum pressure to the level where the valve would lift to the combustor. The first-stage waste gas valve remained in the open position for approximately 154

minutes before reseating to the closed position. With the waste gas valve open and no product loading underway, the off-gas vapors from the knockout drum and supplemental city gas did not provide sufficient Btu content for maintaining the 1,299°F operating temperature. The 6-hour rolling average temperature returned to greater than 1,299°F when loading operations took place on the next shift. This event resulted in the following exceedances and noncompliance with operating standards:

i. From July 16, 2021 at 12:18 hours to July 17, 2021 at 00:14 hours, Suncor failed to operate the Rail Loading Rack (R101) VCU at or above 1,299°F on a 6-hour rolling average and failed to limit emissions to the atmosphere from the R101 VCU to 10 milligrams of total organic compounds per liter of gasoline loaded, violating Permit 96OPAD120, Section II, Conditions 52.4 and 52.13, and NESHAP R, §§ 63.422(b) and 63.427(b); and

ii. Suncor failed to maintain and operate the Rail Loading Rack (R101) VCU in a manner consistent with good air pollution control practices for minimizing emissions, violating NESHAP A, § 63.6(e)(1)(i).

g. Suncor reported that, on July 20, 2021, the tail gas analyzer from the sulfur recovery units became plugged. The tail gas analyzer was showing normal readings of H_2S while the TGU analyzers began showing elevated H_2S concentrations going to the TGU Incinerator (H-25). Suncor reported operational adjustments were made to control the SRU thermal reactors based on the TGU analyzer readings. Instrument technicians cleared the plugged analyzer and returned it to normal operation. This event resulted in an exceedance of the 15.68 lb/hr SO_2 limit at H-25. On July 20, 2021, from 09:00-10:00 hours, Suncor exceeded the SO_2 limit (15.68 lb/hr) at H-25, violating Permit 96OPAD120, Section II, Condition 20.1.

h. Suncor reported that, on July 20, 2021, a routine fresh catalyst delivery was being offloaded from the delivery truck to the fresh catalyst vessel. During the delivery, the semi-annual Method 9 observation was performed, which confirmed opacity in excess of the 20%, 6-minute average limit. The D-311 catalyst filter located within the eductor system was opened and inspected, and a total of 6 filters were found to have holes in them. A number of additional filters were observed to be bent as well. The holes present did not allow the filters to operate optimally resulting in the elevated opacity during this event. All of the filters within D-311 were replaced in June 2020 and were well within their expected useful life. Suncor determined that a

pressure surge within the system may have caused the holes and bent filter tubes. The compromised filters were replaced. On August 11, 2021, a follow-up Method 9 conducted during a fresh catalyst delivery demonstrated compliance with opacity standards and confirmed the filters were performing as expected. On July 20, 2021, from 14:30-14:36 hours, Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1.

i. On July 27, 2021, Pump P-1601 tripped offline and resulted in high H_2S at the Main Plant Flare. Prior to July 27, 2021, the level controller on Drum D-337 had been erratic and Suncor was operating the level in manual mode. The level indicator for D-337 was showing the level to be gradually going down, but the readings being taken in the field showed a constant level. When the level in D-337 dropped below the set point, P-1601 tripped offline. This event resulted in the following exceedances and noncompliance with operating standards:

    i. On July 27, 2021, from 09:00-14:00 hrs, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h); and

    ii. Suncor failed to maintain and operate the Main Plant Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d).

j. Suncor reported that, on August 23, 2021, during the startup of the No. 4 HDS Unit, which had been shut down in order to make repairs, there was an increase in sour water production that caused a large and sudden increase in Sour Water Stripper gas feed into the No. 2 SRU. This increase, combined with swings in acid gas, overwhelmed the No. 2 SRU causing an exceedance of the 15.68 lb/hr SO_2 limit at the TGU Incinerator (H-25). On August 23, 2021, from 03:00-04:00 hours, Suncor exceeded the SO_2 limit (15.68 lb/hr) at H-25, violating Permit 96OPAD120, Section II, Condition 20.1.

k. Suncor reported that, on August 23, 2021, at approximately 14:15 hours, when depressurizing a vessel during a planned operational change, Suncor operators observed an increase in purge gas burner pressure while gas was being transferred. The increase in pressure initiated a control valve to close and caused gases to be routed to the Main Plant Flare and the Flare Gas Recovery Unit ("FGRU"), which

caused the FGRU to trip resulting in higher H_2S concentrations in the flare gas. This event resulted in the following exceedances and noncompliance with operating standards:

i. On August 23, 2021, from 15:00-21:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h); and

ii. Suncor failed to maintain and operate the Main Plant Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d).

l. Suncor reported that, on September 25, 2021, the No. 4 HDS Makeup Hydrogen Compressor (C-1714) tripped offline. This trip resulted in a full shutdown of the No. 4 HDS Unit and caused SO_2 exceedances at the TGU Incinerator (H-25). Suncor determined that the compressor (C-1714) tripped offline due to high motor temperatures, as designed, to protect the compressor motor. The high temperatures were caused by plugged filters on the compressor motor. The filters had not been replaced as scheduled on May 11, 2021, because on the day they were to be replaced, workers did not have adequate scaffolding in place to complete this work. The schedule date for the filter replacements was then moved out, and they were not replaced prior to this event. This event resulted in the following exceedances and noncompliance with operating standards:

i. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 09/25/2021 20:00 hrs
End Date and Time: 09/25/2021 21:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 09/25/2021 20:00 hrs
End Date and Time: 09/26/2021 08:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1); and

ii. Suncor failed to maintain and operate the Plant 1 SRUs in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Conditions 54.35 and 56.2; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c).

m. Suncor reported that, while making operational changes in the Hydrogen Unit, operators observed a sudden increase in purge gas burner pressure, which initiated a control valve to close and resulted in gases being routed to the Main Plant Flare. This increase in pressure and the associated valve closing resulted in gases being routed to the FGRU overwhelming the FGRU causing it to trip resulting in high H_2S concentrations in the flare gas. This event resulted in the following exceedances and noncompliance with operating standards:

i. On October 8, 2021, from 15:00-21:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h); and

ii. Suncor failed to maintain and operate the Main Plant Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d).

n. Suncor reported that, on October 26, 2021, at approximately 07:30 hours, a high-level alarm on D-396 in the Plant 1 FCCU activated and the level continued to increase rapidly. Operators immediately went out to the field to investigate and observed that pump P-563 discharge pressure had decreased below the normal running pressure. At the same time, other operators went to observe D-175 (D-396 overhead/C-17 suction drum) to see if they could observe the level in that drum. Once the level was observed in D-175, operators then tried to drain the drum to prevent compressor C-17 from shutting down. However, the level in D-396 continued to increase faster than the operators could drain it, which resulted in compressor C-17 tripping. Once C-17 tripped, the Plant 1 FCCU also tripped. Further investigation indicated that the impeller of P-563 was tight to the pump shaft and free of debris, therefore, ruling out a mechanical issue with the impeller. There were no electrical findings and both suction strainers were found to be installed and were not significantly plugged. The only probable theory is that the strainers contributed to the issues with pump performance resulting in the level in D-396 rapidly increasing. This

event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 1 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 10/26/2021 07:00 hrs
End Date and Time: 10/27/2021 03:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Condition 22.10.1, and the West Plant Consent Decree, Paragraph 49;

ii. **Plant 1 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 10/26/2021 07:12 hrs
End Date and Time: 10/26/2021 09:12 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1;

iii. **Plant 1 FCCU**
Opacity (Federal – 30%, 6-minute average)
Start Date and Time: 10/26/2021 07:24 hrs
End Date and Time: 10/26/2021 09:12 hrs

Suncor exceeded the opacity limit (Federal – 30%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.2, 22.7.3, 45.1.2, and 54.1.2; the West Plant Consent Decree, Paragraph 54; NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1); and

iv. Suncor failed to maintain and operate the Plant 1 FCCU in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Conditions 54.35 and 56.2; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c).

o. Suncor reported that, on October 27, 2021 through November 5, 2021, Suncor operators were unable to control the CO emissions from Process Boiler B-6. Suncor determined the boiler control scheme was out of tune resulting in a lack of control. Until the boiler could be re-tuned, CO emission exceedances periodically occurred, as described below.

Suncor exceeded the CO limit (0.060 lb/MMBtu, 24-hour rolling average) at Boiler B-6, violating Permit 96OPAD120, Section II, Condition 13.8, and the West Plant Consent Decree, Paragraph 73(a).

Process Boiler B-6
CO (0.060 lb/MMBtu, 24-hour rolling average)
Start Date and Time: 10/27/2021 18:00 hrs
End Date and Time: 10/27/2021 20:00 hrs
Start Date and Time: 10/31/2021 13:00 hrs
End Date and Time: 11/03/2021 01:00 hrs
Start Date and Time: 11/04/2021 11:00 hrs
End Date and Time: 11/05/2021 01:00 hrs

p. Suncor reported that, on October 29, 2021, at approximately 04:00 hours, the No. 1 and No. 2 SRU experienced a sudden pressure increase. Suncor operators were unable to immediately control the pressure swing. The pressure spike resulted in an SO_2 exceedance at the TGU Incinerator (H-25). Suncor determined that a plug in the vapor line going to H-25 may have unexpectedly dislodged just prior to this event causing the pressure swing throughout the SRU. This event resulted in the following exceedances and noncompliance with operating standards:

i. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 10/29/2021 04:00 hrs
End Date and Time: 10/29/2021 07:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 10/29/2021 04:00 hrs
End Date and Time: 10/29/2021 18:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1); and

ii. Suncor failed to maintain and operate the Plant 1 SRUs in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Conditions 54.35 and 56.2; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c).

q. Suncor reported that, in late September 2021, it observed an increase in pressure inside the Plant 1 TGU absorber. Suncor conducted an investigation that included pressure surveys and x-rays on associated piping equipment. Suncor determined that a spool piece located immediately upstream of the TGU Incinerator (H-25) burner can had become plugged. A shutdown of H-25 was necessary to make the required repairs. The shutdown resulted in various emission exceedances and periods where the Sulfur Pit (T-2005) vent was opened to the atmosphere. Suncor had developed a plan to allow for the repairs to occur without having to shut down the SRUs and TGU. However, while implementing this plan, Suncor determined that one of the valves necessary to follow the proposed plan would not fully close. After making several attempts to work around this issue, Suncor determined it was necessary to move the SRUs into hot-standby in order to make the necessary repairs. This event resulted in the following exceedances and noncompliance with operating standards:

i. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 12/07/2021 14:00 hrs
End Date and Time: 12/07/2021 22:00 hrs
Start Date and Time: 12/07/2021 23:00 hrs
End Date and Time: 12/08/2021 07:00 hrs
Start Date and Time: 12/09/2021 10:00 hrs
End Date and Time: 12/09/2021 11:00 hrs
Start Date and Time: 12/09/2021 21:00 hrs
End Date and Time: 12/09/2021 22:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 12/07/2021 15:00 hrs
End Date and Time: 12/09/2021 22:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1); and

ii. **Sulfur Pit (T-2005)**
Vents to atmosphere must remain closed and vapors controlled at all times
Start Date and Time (vents opened): 12/08/2021 13:44 hrs
End Date and Time (vents closed): 12/09/2021 09:41 hrs

Suncor failed to address sulfur pit emissions as required, violating Permit 96OPAD120, Section II, Condition 20.7, and the West Plant Consent Decree, Paragraph 173.

r. Suncor reported that, on December 16, 2021, a faulty fuel gas regulator caused instability of a burner inside of Process Boiler B-8. At the time of the fuel gas regulator failure, Process Boiler B-6, which provides steam to the same equipment that B-8 provides steam to, was out of service for maintenance. B-6 being unavailable required B-8 to fire harder during the cold weather the area was experiencing, and in combination with the faulty regulator, B-8 subsequently exceeded the CO emission limit. On December 16, 2021, from 06:00-15:00 hours, Suncor exceeded the CO limit (0.060 lb/MMBtu, 24-hour rolling average) at Process Boiler B-8, violating Permit 96OPAD120, Section II, Condition 13.8, and the West Plant Consent Decree, Paragraph 73(a).

s. Suncor reported that, on December 17, 2021, it observed that the indication on an instrument transmitter in the Hydrogen Unit was beginning to drift causing the system to alarm. Suncor instrument technicians were immediately called in to troubleshoot the issue. When the technicians began to troubleshoot the transmitter, the transmitter failed resulting in the Plant 1 Hydrogen Unit tripping offline. Because of this trip, and before operators could restart the Hydrogen Unit, the No. 3 HDS Unit also had to be shut down. The Hydrogen Unit trip and associated shutdowns led to an increase in the H_2S in the Main Plant Flare gas and visible emissions at the Main Plant Flare. On December 17, 2021, from 09:30-10:15 hours, Suncor failed to comply with the visible emissions standard (exceeded 5 minutes during any 2 consecutive hours) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.10 and 53.89, and NESHAP CC, § 63.670(c).

t. Suncor reported that it was unable to complete the quarterly audit of the Plant 1 FCCU COMS during the fourth quarter of 2021. Suncor attempted to perform the audit in October 2021 but was unable to complete it because a steam leak near the stack location hindered visibility. The steam leak would have likely impacted the instruments being used to perform the audit as well. Suncor entered a work request to repair the steam leak, but repairs were not completed until April 6, 2022. Suncor performed the audit on April 7, 2022. Suncor failed to complete the quarterly audit of the Plant 1 FCCU COMS during the fourth quarter of 2021 and failed to comply with the quality control program/plan for the COMS, violating Permit 96OPAD120, Section II, Conditions 22.9.3, 22.12, 54.51, and 59.1; the West Plant Consent Decree, Paragraphs 47(b) and 202; NSPS A, § 60.13(a); 40 C.F.R. Part

60, Appendix F, Procedure 3; NESHAP A, § 63.8(d)(2); and NESHAP UUU, § 63.1574(f). The failure to complete the audit during the first quarter of 2022 is addressed in this Compliance Advisory, Section II, Paragraph 1.z, below.

u. Between July 2021 and December 2021, Suncor identified 3 valves and 21 connectors at the West Rack Loading Terminal, and 1 valve and 1 connector at the No. 2 HDS, that were subject to LDAR monitoring requirements but had not previously been included in the LDAR inspection program. These components were added to the LDAR database for continual monitoring. Suncor failed to conduct LDAR monitoring on 26 components, violating Permit 96OPAD120, Section II, Conditions 24.5, 34.2, 34.7, 43.8, 47.1, 53.44, 55, and 64; NSPS VV, §§ 60.482-1 to 60.482-10; NSPS VVa, §§ 60.482-1a to 60.482-10a; NSPS GGGa, § 60.592a(a); NESHAP CC, § 63.648(a); and AQCC Regulation 7, Part B, § VI.C.

v. Suncor reported that, on January 31, 2022, a faulty fuel gas regulator caused instability of a burner inside of Process Boiler B-8. At the time of the fuel gas regulator failure, Process Boiler B-6, which provides steam to the same equipment that B-8 provides steam to, was out of service for maintenance. B-6 being unavailable required B-8 to fire harder during the cold weather the area was experiencing, and in combination with the faulty regulator, B-8 subsequently exceeded the CO emission limit. On January 31, 2022 at 12:00 hours to February 1, 2022 at 00:00 hours, Suncor exceeded the CO limit (0.060 lb/MMBtu, 24-hour rolling average) at Process Boiler B-8, violating Permit 96OPAD120, Section II, Condition 13.8, and the West Plant Consent Decree, Paragraph 73(a).

w. Suncor reported that, beginning on February 6, 2022, the sulfur storage tank (Tk-2005) sweep air flow instrumentation (75FI411A) low flow alarm began activating, indicating low or loss of sweep air in Tk-2005. Similar incidents occurred again with the same instrumentation along with the other sweep air flow instruments on Tk-2005 alarming on low air flow. Loss of sweep air can result in hazardous conditions through the buildup of H_2S vapors in the tank. Suncor determined that steam eductor EJ-202B was failing due to a possible hole in the steam line. The eductor was blocked-in out in the field and closed on the distributive control system. However, the low air flow issue persisted indicating a potential blockage in the air system. To prevent a more significant issue, Suncor opened the vent from the tank to atmosphere instead of to the TGU Incinerator (H-25). Suncor determined that due to a broken sight glass and a malfunctioning controller, condensate was entering into the steam system. This created water hammer erosion in

the steam jacketing into the process side of the piping. Due to the wet nature of the steam, there was also likely sulfuric acid creation that led to additional corrosion. Lastly, the steam jacketing was also found to be water-logged due to leaks and the wet nature of the steam. This created the inability for the system to be adequately heated and a lack of steam jacketing, which resulted in a sulfur plug in the line causing the sweep air to be backed out. On the dates, and for the durations, identified below, Suncor failed to address sulfur pit emissions as required, violating Permit 96OPAD120, Section II, Condition 20.7, and the West Plant Consent Decree, Paragraph 173.

Sulfur Pit (T-2005)
Vents to atmosphere must remain closed and vapors controlled at all times
Start Date and Time (vents opened): 02/14/2022 10:38 hrs
End Date and Time (vents closed): 02/15/2022 21:44 hrs
Start Date and Time (vents opened): 02/15/2022 21:47 hrs
End Date and Time (vents closed): 02/18/2022 15:44 hrs

x. Suncor reported that, on the morning of February 24, 2022, an alarm for high seal gas flow sounded in the Plant 1 control room indicating a potential leak at the main compressor, C-1715, for the No. 4 HDS Unit. This alarm caused C-1715 to trip offline and, subsequently, caused the No. 4 HDS Unit to trip offline to prevent a more hazardous condition near the compressor and damage to the unit. The trip of the No. 4 HDS Unit resulted in stability issues in various units upstream and downstream, which caused the FGRU and the No. 1 SRU to trip. These unit trips caused the gases normally processed in the units to be sent to the Main Plant Flare for safe combustion. With the No. 4 HDS Unit offline, several other processing units in the refinery were destabilized causing permit exceedances at the TGU Incinerator (H-25) and the Main Plant Flare. Suncor determined that compressor C-1715 tripped offline due to a primary mechanical seal face failure and a high flow alarm on the seal gas flow to the flare. Further, the C-1715 conditioning system had not been cleaned out for an extended period of time resulting in significant fouling that ultimately led to the primary seal failure. In 2015, the programming logic that was in place to trip C-1715 due to high seal gas flow was modified to remove the trip from occurring during high flow. However, Suncor discovered that there was additional parallel programing code in place that was not changed, which resulted in the compressor tripping due to high flow on February 24, 2022. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Main Plant Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)
Start Date and Time: 02/24/2022 07:00 hrs
End Date and Time: 02/24/2022 11:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

ii. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 02/24/2022 07:00 hrs
End Date and Time: 02/24/2022 08:00 hrs
Start Date and Time: 02/24/2022 12:00 hrs
End Date and Time: 02/24/2022 13:00 hrs
Start Date and Time: 02/24/2022 16:00 hrs
End Date and Time: 02/25/2022 00:00 hrs
Start Date and Time: 02/25/2022 02:00 hrs
End Date and Time: 02/25/2022 10:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 02/24/2022 11:00 hrs
End Date and Time: 02/26/2022 15:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1);

iii. Suncor failed to maintain and operate the Main Plant Flare and No. 1 SRU in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d); and

iv. Suncor failed to maintain and operate the No. 1 SRU in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 54.35, and NESHAP UUU, § 63.1570(c).

y. Suncor reported that, on March 17, 2022, at approximately 11:40 hours, an arc flash occurred at the refinery from an onsite Power Distribution Center (Power Distribution Center 41, or PDC 41) in Plant 2. Personnel in the area noted what appeared to be flames and smoke

and activated the Refinery Plant Alarm system in the area. Several operating units in Plant 1 and Plant 2 shut down due to the arc flash and resulting power loss. During the shutdown of the operating units, gases that are normally processed in the units were sent to the Main Plant Flare for safe combustion. PDC 41 feeds the Plant 1 boilers, air compressors, and pumps. This unplanned power outage resulted in shutting down the Plant 1 boilers, the No. 1 Crude Unit, and the No. 1 and No. 2 SRUs. As a result of the power loss to PDC 41, electrical substation 100 also tripped impacting other areas in Plant 1. Suncor's investigation determined that the initiating event was a fault in the wiring for two small electrical potential transformers in PDC 41. These transformers step down the voltage from 13.6 kV to 120 V, so electricians can check the phasing. Suncor also determined that the shielded jumper cables on the potential transformers were improperly installed during the 2016 turnaround. The conductors were touching or nearly touching fuse holders for different phases and the enclosure. Additionally, the shielding on the cables was not grounded. The improper installation and unintentional ground fault caused the arc flash in PDC 41. Further, Suncor determined that an incorrect setting was entered into the transformer protection relays during a project executed in 2021 to upgrade controls on the 115 kV feed coming from the main transformer that supplies power to both Plant 1 and Plant 2. The incorrect setting caused the protection settings to activate at the 115 kV feed source, prior to the activation of the protection settings near the source of the fault. When the arc flash occurred in PDC 41, the incorrect setting on the transformer protection relays caused a power disruption to 6 electrical substations in the refinery, instead of 1, which resulted in the Plant 1 process units shutting down. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Sulfur Pit (T-2005)**
Vents to atmosphere must remain closed and vapors controlled at all times
Start Date and Time (vents opened): 03/17/2022 21:31 hrs
End Date and Time (vents closed): 03/19/2022 07:05 hrs

Suncor failed to address sulfur pit emissions as required, violating Permit 96OPAD120, Section II, Condition 20.7, and the West Plant Consent Decree, Paragraph 173;

ii. **H-25**
SO_2 (15.68 lb/hr)
Start Date and Time: 03/17/2022 01:00 hrs
End Date and Time: 03/17/2022 03:00 hrs

Start Date and Time: 03/19/2022 10:00 hrs
End Date and Time: 03/19/2022 13:00 hrs

SO_2 (250 ppmvd at 0% O_2, 12-hour average)
Start Date and Time: 03/17/2022 01:00 hrs
End Date and Time: 03/17/2022 14:00 hrs
Start Date and Time: 03/19/2022 00:00 hrs
End Date and Time: 03/20/2022 01:00 hrs
Start Date and Time: 03/21/2022 23:00 hrs
End Date and Time: 03/22/2022 04:00 hrs
Start Date and Time: 03/22/2022 10:00 hrs
End Date and Time: 03/23/2022 04:00 hrs
Start Date and Time: 03/23/2022 13:00 hrs
End Date and Time: 03/24/2022 02:00 hrs

Suncor exceeded the SO_2 limits (15.68 lb/hr and 250 ppmvd at 0% O_2, 12-hour average) at H-25, violating Permit 96OPAD120, Section II, Conditions 20.1, 20.6.1, 20.10, 45.12.1, and 54.28; the West Plant Consent Decree, Paragraphs 169 and 171; NSPS J, § 60.104(a)(2)(i); and NESHAP UUU, § 63.1568(a)(1);

iii. **Main Plant Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)
Start Date and Time: 03/17/2022 13:00 hrs
End Date and Time: 03/19/2022 21:00 hrs
Start Date and Time: 03/22/2022 08:00 hrs
End Date and Time: 03/23/2022 16:00 hrs
Start Date and Time: 03/24/2022 01:00 hrs
End Date and Time: 03/24/2022 20:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

iv. **Plant 1 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 03/17/2022 12:00 hrs
End Date and Time: 03/17/2022 18:00 hrs
Start Date and Time: 03/19/2022 23:00 hrs
End Date and Time: 03/20/2022 00:00 hrs
Start Date and Time: 03/20/2022 05:00 hrs
End Date and Time: 03/20/2022 07:00 hrs
Start Date and Time: 03/21/2022 06:00 hrs
End Date and Time: 03/21/2022 09:00 hrs

Start Date and Time: 03/21/2022 10:00 hrs
End Date and Time: 03/21/2022 21:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Condition 22.10.1, and the West Plant Consent Decree, Paragraph 49;

v. **Plant 1 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 03/17/2022 12:24 hrs
End Date and Time: 03/17/2022 12:30 hrs
Start Date and Time: 03/19/2022 12:36 hrs
End Date and Time: 03/19/2022 12:42 hrs
Start Date and Time: 03/20/2022 10:54 hrs
End Date and Time: 03/20/2022 11:00 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1;

vi. **Process Boiler B-8**
CO (0.060 lb/MMBtu, 24-hour rolling average)
Start Date and Time: 03/18/2022 00:00 hrs
End Date and Time: 03/22/2022 16:00 hrs
Start Date and Time: 03/23/2022 20:00 hrs
End Date and Time: 03/25/2022 03:00 hrs
Start Date and Time: 03/28/2022 21:00 hrs
End Date and Time: 03/29/2022 17:00 hrs

Suncor exceeded the CO limit (0.060 lb/MMBtu, 24-hour rolling average) at Process Boiler B-8, violating Permit 96OPAD120, Section II, Condition 13.8, and the West Plant Consent Decree, Paragraph 73(a);

vii. **GBR Unit Flare**
NHVcz (=/>270 Btu/scf, 15-minute average)
Start Date and Time: 03/18/2022 21:00 hrs
End Date and Time: 03/18/2022 21:15 hrs

Suncor failed to comply with the NHVcz standard (=/>270 Btu/scf, 15-minute average) at the GBR Unit Flare, violating Permit 96OPAD120, Section II, Conditions 31.10 and 53.91, and NESHAP CC, § 63.670(e);

viii. Suncor failed to maintain and operate the Main Plant Flare and Plant 1 SRUs in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d);

ix. Suncor failed to maintain and operate the Plant 1 SRUs in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 54.35, and NESHAP UUU, § 63.1570(c); and

x. Suncor failed to maintain and operate the GBR Unit Flare in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 53.12, and NESHAP CC, § 63.642(n).

z. Suncor reported that it was unable to complete the quarterly audit of the Plant 1 FCCU COMS during the first quarter of 2022. Suncor attempted to perform the audit prior to the end of the quarter but was unable to complete it because a steam leak near the stack location hindered visibility. The steam leak would have likely impacted the instruments being used to perform the audit as well. Suncor entered a work request to repair the steam leak, but repairs were not completed until April 6, 2022. Suncor performed the audit on April 7, 2022. Suncor failed to complete the quarterly audit of the Plant 1 FCCU COMS during the first quarter of 2022 and failed to comply with the quality control program/plan for the COMS, violating Permit 96OPAD120, Section II, Conditions 22.9.3, 22.12, 54.51, and 59.1; the West Plant Consent Decree, Paragraphs 47(b) and 202; NSPS A, § 60.13(a); 40 C.F.R. Part 60, Appendix F, Procedure 3; NESHAP A, § 63.8(d)(2); and NESHAP UUU, § 63.1574(f).

aa. Suncor reported that, on April 3, 2022, a routine, semi-annual visual inspection of the Tank 77 floating roof and secondary seal was performed from the access platform. During the inspection, a gauge hatch on the floating roof was observed to be open. Suncor could not determine how or why the hatch was opened but noted a high wind event as a potential cause. On April 7, 2022, Suncor closed the hatch. Suncor failed to maintain and operate all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves on Tank 77 to prevent detectable vapor loss, violating Permit 96OPAD120, Section II, Conditions 1.3 and 39.1, and AQCC Regulation 7, Part B, § I.A.

bb. Pursuant to Permit 96OPAD120, Section II, Condition 18.1, emissions of NO_x from Process Heater 37 (H-37) shall not exceed 24.56 tpy, and

emissions shall be calculated using an emission factor of 0.098 lb/MMBtu and the monthly fuel consumption. Monthly emissions shall be calculated by the end of the subsequent month and used in a twelve-month rolling total to monitor compliance with the annual limitation. Each month a new twelve month rolling total shall be calculated using the previous twelve months data. In May 2021, Suncor elected to make the changes proposed in the modification application for Permit 96OPAD120, Modification #101[1]. Therefore, beginning with the rolling 12-month period ending June 2021, and consistent with Modification #101, Suncor was required to comply with the proposed controlled NO_x limit of 10.41 tpy for H-37 and calculate emissions using an emission factor of 0.042 lb/MMBtu.

i. As described in the table below, Suncor exceeded 10.41 tpy NO_x from H-37 during the rolling 12-month periods ending June 2021 through November 2021.

H-37 NO_x Emissions		
Rolling 12-Month Period Ending	**Monthly Total (tons)**	**12-Month Rolling Total (tons)**
		Limit: 10.41
June-21	0.61	16.24
July-21	0.43	13.80
August-21	0.65	12.84
September-21	0.71	11.88
October-21	0.76	11.25
November-21	0.65	10.97

ii. Following the May 2021 replacement of the stack and burners at H-37, Suncor determined that the heater had flame instability issues, which can create safety issues. Suncor took necessary corrective action to resolve the flame instability issues. Suncor determined, based on initial data, that those steps may have increased the lb/MMBtu NO_x emission rate from H-37. On April 27, 2022, in an attempt to address this potential concern, Suncor installed new burner tips and measured the NO_x emission rate using US EPA Test Method 3A for oxygen and Test Method 7E for NO_x. Suncor collected 16.58 hours of data and calculated an average NO_x emission rate of 0.052 lb/MMBtu, which is above the

[1] On October 13, 2020, the Division received the APEN for Permit 96OPAD120, Modification #101. Suncor submitted Modification #101 to account for the installation of ultra-low NO_x burners on H-37. In May 2021, during the turnaround of Plant 1 and Plant 3, Suncor installed the ultra-low NO_x burners.

emission rate represented in Modification #101. As of April 27, 2022, Suncor is out of compliance with the controlled NO_x emission rate in Modification #101 (0.042 lb/MMBtu).

For the rolling 12-month periods ending June 2021 through November 2021, Suncor failed to comply with the controlled NO_x limit (10.41 tpy) for H-37, and from April 27, 2022 to present, Suncor has failed to demonstrate compliance with the controlled NO_x emission factor (0.042 lb/MMBtu) for H-37, violating Permit 96OPAD120, Section II, Condition 18.1.

cc. Suncor reported that, in April and May 2022, the primary plant air compressors were out of service and required several parts to be ordered so that the necessary repairs could be made. Suncor reported that due to logistical issues beyond Suncor's control, the parts needed for the repairs were delayed by several months. Suncor utilized the emergency air compressors (P1AC1 and P1AC2) while the primary compressors were out of service. During this period (April and May 2022), P1AC1 and P1AC2 experienced reliability issues, so Suncor rented temporary air compressors that could be used as backups to P1AC1 and P1AC2. Suncor repaired the primary compressors and the temporary compressors were removed from the site. Additionally, Suncor reported that, in December 2022, Suncor utilized P1AC1 and P1AC2 while the primary compressors were out of service. In calendar year 2022, Suncor operated P1AC1 and P1AC2 above APEN thresholds without first submitting APENs for the engines, violating AQCC Regulation 3, Part A, § II.A.1.

dd. As described in this Compliance Advisory, Section II, Paragraph 1.cc, above, in calendar year 2022, Suncor utilized the emergency air compressors (P1AC1 and P1AC2) while the primary compressors were out of service and exceeded APEN thresholds. In calendar year 2022, Suncor operated P1AC1 and P1AC2 above construction permit thresholds without first obtaining permits for the engines, violating AQCC Regulation 3, Part B, § II.A.1.

ee. Suncor reported that, on May 4, 2022, a vent to the atmosphere on the Plant 1 sulfur pit (T-2005) briefly opened during a planned maintenance event. At every section of pipe on the TK-2005 vent lines, where the pipe makes a 90 degree turn, there is a "rod-out" location for clearing the line if it plugs with sulfur. One of the caps on a rod out location became dislodged due to sulfur build up internal to the cap. During this maintenance event, the vent was opened for approximately 20 minutes in order to ensure that there was not an open-ended line with H_2S venting directly at the Suncor pipe fitters performing the

work to replace the flange. It was estimated that approximately 1.4 lbs of H_2S was released during this event. On May 4, 2022, from 10:56-11:17 hours, Suncor failed to address sulfur pit emissions as required, violating Permit 96OPAD120, Section II, Condition 20.7, and the West Plant Consent Decree, Paragraph 173.

ff. Suncor reported that, on May 9, 2022, at approximately 13:45 hours, the Plant 1 steam boiler B8 tripped offline when the core blower pressure dropped briefly below the established trip setpoint. At the time of this incident, steam boiler B4 was down for maintenance and boiler B6 was already at max capacity. When B8 tripped, it initiated a chain of events that required operators to immediately shed steam, which included adjusting feed rates to the Plant 1 FCCU. After boiler B8 was restarted, Suncor operators began increasing the feed rate to the FCCU. The operators had been increasing the feed rate at increments of 100 barrels per day ("BPD") at a time and wanted to increase the rate to 17,900 BPD. As an operator entered the new setpoint, they inadvertently hit the number lock key after they hit 7 and the system accepted a setpoint of 17 BPD. The operator tried to enter a new setpoint and was unsuccessful. The operator asked the chief operator to change the FCCU feed rate from the chief's console. However, the FCCU Emergency Shut Down ("ESD") tripped before the operators were able to enter a new setpoint. The bottoms level of the main fractionator rose rapidly, and at approximately 13:27 hours, liquids from the main fractionator bottom entered the horizontal vapor line. The vapor line operates at approximately 900°F and the bottoms liquid was approximately 600°F. After the ESD activated, outside operators were conducting response activities, and at approximately 14:20 hours, noticed a fire and announced it on the radio. Operators commenced firefighting and the Suncor emergency response team was called out. The fire was extinguished at approximately 14:35 hours. Due to this event, the Plant 1 FCCU was shut down from May 9, 2022 to June 3, 2022. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Main Plant Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)
Start Date and Time: 05/09/2022 16:00 hrs
End Date and Time: 05/09/2022 19:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Main Plant Flare, violating Permit 96OPAD120, Section II, Conditions 29.2, 29.9, 38.2.1, and 46.8; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

ii. **Plant 1 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 05/09/2022 14:00 hrs
End Date and Time: 05/09/2022 20:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Condition 22.10.1, and the West Plant Consent Decree, Paragraph 49; and

iii. Suncor failed to maintain and operate the Main Plant Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Condition 56.2, and NSPS A, § 60.11(d).

gg. Suncor reported that, on May 9, 2022, the Plant 1 FCCU had an unplanned shutdown. Following the May 9, 2022 shutdown, Suncor made the necessary repairs to restart the Plant 1 FCCU. On June 2, 2022, Suncor began the startup process for the Plant 1 FCCU. While starting up the Plant 1 FCCU, torch oil was introduced to the unit, which caused elevated CO emissions. Additionally, while starting up the main air blower for the FCCU, an opacity spike was measured at the FCCU stack. During the startup, elevated H_2S in the flare and fuel gas system was present as the unit was brought online. The CO emissions and opacity events were brought under control after the unit was stabilized following startup activities. This event resulted in the following exceedances:

i. **Plant 1 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 06/03/2022 12:24 hrs
End Date and Time: 06/03/2022 12:36 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II, Conditions 22.7.1 and 35.1; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.1;

ii. **Plant 1 FCCU**
Opacity (State - 30%, 6-minute average)
Start Date and Time: 06/03/2022 16:01 hrs
End Date and Time: 06/03/2022 16:03 hrs

Suncor exceeded the opacity limit (State - 30%, 6-minute average) at the Plant 1 FCCU, violating Permit 96OPAD120, Section II,

Conditions 22.7.1 and 35.2; Permit 96OPAD120, Section IV, Condition 16; and AQCC Regulation 1, § II.A.4; and

iii. **Plant 1 Fuel Gas System**
H_2S in Fuel Gas (162 ppmv, 3-hour average)
Start Date and Time: 06/03/2022 19:00 hrs
End Date and Time: 06/03/2022 23:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 1 Fuel Gas System, violating Permit 96OPAD120, Section II, Conditions 11.3, 12.3, 13.3, 14.3, 15.3, 16.3, 17.3, 18.3, 20.6.2, 21.3, 27.3, 28.3, 30.2, 30.10, 38.2.1, and 46.1.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii).

hh. During a third-party consent decree audit in June 2022, the auditor identified three open-ended lines in the Plant 1 Crude Unit on June 28, 2022. The open-ended lines were closed on June 28, 2022. Suncor failed to seal three open-ended lines and maintain and operate three open-ended lines in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 96OPAD120, Section II, Conditions 43.8.2, 55.40, and 56.2; NSPS A, § 60.11(d); NSPS VVa, § 60.482-6a(a); and AQCC Regulation 7, Part B, § VI.C.2.b.

ii. On April 5, 2022, Suncor submitted a schedule of compliance for Process Heater H-2101 (H-2101) and the applicable NO_x emission limit. H-2101 was permitted in 2004 as part the Clean Fuels Project. Paragraph 220(a) of the West Plant Consent Decree sets restrictions on the use of emission reductions required by the West Plant Consent Decree for purposes of netting. Since Suncor used emission reductions required by the West Plant Consent Decree, any new or modified heaters were required to be permitted with NO_x limits of 0.040 lb/MMBtu or less, on a 3-hour rolling average. H-2101 is not able to comply with the NO_x limit in Paragraph 220(a) of the West Plant Consent Decree. Therefore, Suncor submitted a schedule of compliance on April 5, 2022 and a status update on April 13, 2023. In the April 2023 status update, Suncor reported plans to install selective catalytic reduction on H-2101 by December 31, 2026 in order to comply with the NO_x limit. From 2004 to present, Suncor has failed to comply with the required NO_x limit of 0.040 lb/MMBtu or less, on a 3-hour rolling average, violating the West Plant Consent Decree, Paragraph 220(a).

Refinery: Plant 2

2. On July 11-13, 2022, Jason Long, of the Division, inspected the Refinery. Based on the Division's inspection, and a review of records related to the Refinery, the Division has identified the following compliance issues at the Refinery, Plant 2:

   a. Suncor failed to submit the semiannual NSPS GGGa and NESHAP CC reports due August 1, 2022 and September 1, 2022, respectively, until September 27, 2022, violating Permit 95OPAD108 (9/1/2022), Section II, Condition 40.66; NSPS GGGa, § 60.592a(e); NSPS VVa, § 60.487a(a); and NESHAP CC, § 63.655(g).

   b. Suncor reported that, on August 17, 2021, the No. 3 SRU tripped offline causing high liquid level in the knockout drum. Suncor determined that the No. 3 SRU trip was due to hydrocarbon carryover into the No. 3 SRU. Sampling of materials in associated equipment led to the discovery that higher than normal temperatures in an upstream unit were resulting in soot accumulation causing the hydrocarbon carryover event. This event resulted in the following exceedances and noncompliance with operating standards:

      i. **Plant 2 FCCU**
      Opacity (State - 20%, 6-minute average)
      Start Date and Time: 08/18/2021 17:54 hrs
      End Date and Time: 08/18/2021 18:00 hrs

      Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1;

      ii. **Plant 2 Flare**
      H_2S in Flare Gas (162 ppmv, 3-hour average)
      Start Date and Time: 08/17/2021 11:00 hrs
      End Date and Time: 08/17/2021 20:00 hrs
      Start Date and Time: 08/18/2021 13:00 hrs
      End Date and Time: 08/18/2021 21:00 hrs

      Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Flare, violating Permit 95OPAD108, Section II, Conditions 8.4 and 22.5.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

      iii. **Plant 2 Fuel Gas System**
      H_2S in Fuel Gas (162 ppmv, 3-hour average)

Start Date and Time: 08/17/2021 11:00 hrs
End Date and Time: 08/17/2021 20:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii); and

iv. Suncor failed to maintain and operate the Plant 2 Flare and Plant 2 Fuel Gas System in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Condition 36.5, and NSPS A, § 60.11(d).

c. Suncor reported that, on August 26, 2021, it began the planned start-up of the Plant 2 FCCU following the shutdown that was necessary to perform exchanger maintenance. During the start-up process, the start-up was aborted after five attempts. Suncor operations were unable to circulate catalyst due to plugging around the regen slide valve and the catalyst fines withdraw line. An inspection identified small pieces of refractory blocking both areas. On September 10, 2021, after removing the blockage, Suncor successfully restarted the Plant 2 FCCU. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 2 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 08/26/2021 14:00 hrs
End Date and Time: 08/26/2021 14:30 hrs
Start Date and Time: 08/27/2021 01:18 hrs
End Date and Time: 08/27/2021 01:54 hrs
Start Date and Time: 08/27/2021 09:54 hrs
End Date and Time: 08/27/2021 10:12 hrs
Start Date and Time: 08/27/2021 14:48 hrs
End Date and Time: 08/27/2021 15:18 hrs
Start Date and Time: 08/27/2021 22:18 hrs
End Date and Time: 08/27/2021 23:06 hrs
Start Date and Time: 08/28/2021 08:36 hrs
End Date and Time: 08/28/2021 09:06 hrs
Start Date and Time: 08/28/2021 19:36 hrs
End Date and Time: 08/28/2021 19:42 hrs
Start Date and Time: 08/28/2021 20:00 hrs
End Date and Time: 08/28/2021 20:12 hrs
Start Date and Time: 08/28/2021 21:06 hrs
End Date and Time: 08/28/2021 21:18 hrs

Start Date and Time: 09/05/2021 08:06 hrs
End Date and Time: 09/05/2021 08:18 hrs
Start Date and Time: 09/10/2021 00:06 hrs
End Date and Time: 09/10/2021 00:12 hrs
Start Date and Time: 09/10/2021 18:00 hrs
End Date and Time: 09/10/2021 18:06 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1;

ii. **Plant 2 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 08/26/2021 22:00 hrs
End Date and Time: 08/26/2021 23:00 hrs
Start Date and Time: 08/27/2021 04:00 hrs
End Date and Time: 08/27/2021 06:00 hrs
Start Date and Time: 08/28/2021 19:00 hrs
End Date and Time: 08/28/2021 22:00 hrs
Start Date and Time: 08/29/2021 02:00 hrs
End Date and Time: 08/29/2021 08:00 hrs
Start Date and Time: 09/10/2021 10:00 hrs
End Date and Time: 09/10/2021 20:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Conditions 19 and 27(c); the East Plant Consent Decree, Paragraph 94; NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1); and

iii. Suncor failed to maintain and operate the Plant 2 FCCU in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Conditions 36.5 and 33.81; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c).

d. Suncor reported that, on September 10, 2021, the Plant 2 Flare began experiencing periods of elevated H_2S in the flare header. After several days of troubleshooting, Suncor determined the source of elevated H_2S was a leaking control valve located on the amine regenerator overhead line. While the control valve was showing at fully closed, Suncor determined that a very small amount of high concentration H_2S gas was leaking by the valve. Once identified, Suncor manually blocked-in the

valve and concentrations of H_2S decreased. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 2 Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)
Start Date and Time: 09/10/2021 21:00 hrs
End Date and Time: 09/11/2021 03:00 hrs
Start Date and Time: 09/15/2021 06:00 hrs
End Date and Time: 09/15/2021 11:00 hrs
Start Date and Time: 09/15/2021 19:00 hrs
End Date and Time: 09/15/2021 22:00 hrs
Start Date and Time: 09/18/2021 21:00 hrs
End Date and Time: 09/19/2021 00:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Flare, violating Permit 95OPAD108, Section II, Conditions 8.4 and 22.5.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h); and

ii. Suncor failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Condition 36.5, and NSPS A, § 60.11(d).

e. Suncor reported that, on October 27, 2021, a routine seal inspection identified hydrocarbon material on the top of the floating roof of Tank 20. The presence of VOC product observed on the roof is indicative of a detectable vapor loss. On October 26, 2021, during the restart of the Plant 2 FCCU, Suncor sent unstabilized gasoline to Tank 20 for a period of hours. Tank 20 is an internal floating roof tank. Suncor believes product went by the seals and onto the roof. On November 14, 2021, Suncor cleaned the tank roof. Suncor failed to maintain and operate all storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves on Tank 20 to prevent detectable vapor loss, violating Permit 95OPAD108, Section II, Conditions 15.2 and 23.1, and AQCC Regulation 7, Part B, § I.A.

f. Suncor reported that, at approximately 10:24 hours on November 2, 2021, while workers were in the process of performing an external bypass on UPS-13 for annual maintenance, the C-201 air blower tripped. Power was disrupted to the soft starter while workers were turning the external maintenance bypass switch to “Bypass”. This power disruption to the soft starter is what ultimately caused C-201 to trip. When C-201 tripped, there was a loss of positive pressure into the

regenerator, and that loss of pressure resulted in the emergency shutdown (ESD) system activating when the Regen Slide Valve differential pressure fell below 1.0 psid. The ESD system activated and closed both of the slide valves within 23 seconds of the air blower fault. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 2 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 11/02/2021 10:24 hrs
End Date and Time: 11/02/2021 10:30 hrs
Start Date and Time: 11/02/2021 14:06 hrs
End Date and Time: 11/02/2021 14:18 hrs
Start Date and Time: 11/02/2021 15:12 hrs
End Date and Time: 11/02/2021 15:18 hrs
Start Date and Time: 11/02/2021 15:30 hrs
End Date and Time: 11/02/2021 15:36 hrs
Start Date and Time: 11/02/2021 15:42 hrs
End Date and Time: 11/02/2021 15:54 hrs
Start Date and Time: 11/02/2021 16:00 hrs
End Date and Time: 11/02/2021 16:12 hrs
Start Date and Time: 11/02/2021 16:30 hrs
End Date and Time: 11/02/2021 16:36 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1;

ii. **Plant 2 FCCU**
CO (500 ppmvd at 0% O_2,1-hour average)
Start Date and Time: 11/02/2021 11:00 hrs
End Date and Time: 11/02/2021 22:00 hrs
Start Date and Time: 11/03/2021 07:00 hrs
End Date and Time: 11/03/2021 10:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Conditions 19 and 27(c); the East Plant Consent Decree, Paragraph 94; NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1);

iii. **Plant 2 Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)

Start Date and Time: 11/02/2021 23:00 hrs
End Date and Time: 11/03/2021 09:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Flare, violating Permit 95OPAD108, Section II, Conditions 8.4 and 22.5.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

iv. **Plant 2 Flare**
NHVcz (=/>270 Btu/scf, 15-minute average)
Start Date and Time: 11/03/2021 05:30 hrs
End Date and Time: 11/03/2021 05:45 hrs

Suncor failed to comply with the NHVcz standard (=/>270 Btu/scf, 15-minute average) at the Plant 2 Flare, violating NESHAP CC, § 63.670(e);

v. Suncor failed to maintain and operate the Plant 2 FCCU in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Conditions 33.81 and 36.5; NSPS A, § 60.11(d); and NESHAP UUU, § 63.1570(c); and

vi. Suncor failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Condition 36.5; NSPS A, § 60.11(d); and NESHAP CC, § 63.642(n).

g. Suncor reported that, on the evening of November 8, 2021, pre-startup activities began for the Plant 2 FCCU. However, during that process, there were multiple opacity exceedances while operators attempted to load the catalyst. Despite making several attempts, operations was unable to lower the opacity. Suncor ceased the startup process until the opacity issues could be understood and resolved. Suncor discovered that the warmup process was not successful due to a plugged burner. Suncor delayed the startup process until after the burner repairs could be made. On November 15, 2021, after the burner repairs were completed, Suncor began the startup process for the Plant 2 FCCU. During this startup, after making several attempts, Suncor was unable to complete the catalyst loading without causing opacity exceedances. The catalyst loading is a necessary step in the startup of the Plant 2 FCCU. On November 17, 2021, Suncor again attempted startup of the Plant 2 FCCU. This time, Suncor was able to complete startup and return the unit to normal operation. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 2 FCCU**

Opacity (State - 20%, 6-minute average)

Start Date and Time: 11/08/2021 17:12 hrs
End Date and Time: 11/08/2021 17:48 hrs
Start Date and Time: 11/09/2021 01:48 hrs
End Date and Time: 11/09/2021 01:54 hrs
Start Date and Time: 11/09/2021 09:36 hrs
End Date and Time: 11/09/2021 09:42 hrs
Start Date and Time: 11/09/2021 19:24 hrs
End Date and Time: 11/09/2021 19:30 hrs
Start Date and Time: 11/09/2021 22:30 hrs
End Date and Time: 11/09/2021 22:36 hrs
Start Date and Time: 11/09/2021 22:42 hrs
End Date and Time: 11/09/2021 22:48 hrs
Start Date and Time: 11/10/2021 00:30 hrs
End Date and Time: 11/10/2021 00:36 hrs
Start Date and Time: 11/10/2021 02:30 hrs
End Date and Time: 11/10/2021 02:36 hrs
Start Date and Time: 11/10/2021 05:30 hrs
End Date and Time: 11/10/2021 05:42 hrs
Start Date and Time: 11/15/2021 10:42 hrs
End Date and Time: 11/15/2021 12:18 hrs
Start Date and Time: 11/15/2021 12:42 hrs
End Date and Time: 11/15/2021 12:48 hrs
Start Date and Time: 11/15/2021 20:12 hrs
End Date and Time: 11/15/2021 20:24 hrs
Start Date and Time: 11/15/2021 20:54 hrs
End Date and Time: 11/15/2021 21:00 hrs
Start Date and Time: 11/15/2021 21:24 hrs
End Date and Time: 11/15/2021 21:36 hrs
Start Date and Time: 11/16/2021 01:00 hrs
End Date and Time: 11/16/2021 01:06 hrs
Start Date and Time: 11/16/2021 01:48 hrs
End Date and Time: 11/16/2021 02:00 hrs
Start Date and Time: 11/16/2021 04:54 hrs
End Date and Time: 11/16/2021 05:12 hrs
Start Date and Time: 11/16/2021 06:18 hrs
End Date and Time: 11/16/2021 06:36 hrs
Start Date and Time: 11/16/2021 07:00 hrs
End Date and Time: 11/16/2021 08:54 hrs
Start Date and Time: 11/17/2021 15:36 hrs
End Date and Time: 11/18/2021 01:36 hrs
Start Date and Time: 11/18/2021 06:48 hrs
End Date and Time: 11/18/2021 08:18 hrs
Start Date and Time: 11/18/2021 09:00 hrs

End Date and Time: 11/18/2021 09:06 hrs
Start Date and Time: 11/18/2021 10:42 hrs
End Date and Time: 11/18/2021 10:48 hrs
Start Date and Time: 11/18/2021 11:00 hrs
End Date and Time: 11/18/2021 11:06 hrs
Start Date and Time: 11/18/2021 11:30 hrs
End Date and Time: 11/18/2021 12:48 hrs
Start Date and Time: 11/18/2021 15:06 hrs
End Date and Time: 11/18/2021 15:30 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1;

ii. **Plant 2 FCCU**
Opacity (Federal - 30%, 6-minute average)
Start Date and Time: 11/18/2021 07:00 hrs
End Date and Time: 11/18/2021 07:36 hrs

Suncor exceeded the opacity limit (Federal – 30%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.4; Permit 09AD0961, Condition 27(b); the East Plant Consent Decree, Paragraph 98; NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1);

iii. **Plant 2 FCCU**
Opacity (Federal - 20%, 3-hour average)
Start Date and Time: 11/15/2021 12:00 hrs
End Date and Time: 11/15/2021 14:00 hrs
Start Date and Time: 11/16/2021 08:00 hrs
End Date and Time: 11/16/2021 10:00 hrs
Start Date and Time: 11/17/2021 17:00 hrs
End Date and Time: 11/18/2021 03:00 hrs
Start Date and Time: 11/18/2021 07:00 hrs
End Date and Time: 11/18/2021 10:00 hrs
Start Date and Time: 11/18/2021 11:00 hrs
End Date and Time: 11/18/2021 14:00 hrs

Suncor exceeded the opacity limit (Federal – 20%, 3-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.5, and NESHAP UUU, § 63.1564(a)(2);

iv. **Plant 2 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)

Start Date and Time: 11/16/2021 22:00 hrs
End Date and Time: 11/17/2021 06:00 hrs
Start Date and Time: 11/17/2021 14:00 hrs
End Date and Time: 11/17/2021 17:00 hrs
Start Date and Time: 11/18/2021 11:00 hrs
End Date and Time: 11/18/2021 16:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Conditions 19 and 27(c); the East Plant Consent Decree, Paragraph 94; NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1);

v. **Plant 2 Flare**
H_2S in Flare Gas (162 ppmv, 3-hour average)
Start Date and Time: 11/18/2021 09:00 hrs
End Date and Time: 11/18/2021 12:00 hrs
Start Date and Time: 11/19/2021 06:00 hrs
End Date and Time: 11/19/2021 15:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Flare, violating Permit 95OPAD108, Section II, Conditions 8.4 and 22.5.1; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h);

vi. **Plant 2 Fuel Gas System**
H_2S in Fuel Gas (162 ppmv, 3-hour average)
Start Date and Time: 11/19/2021 07:00 hrs
End Date and Time: 11/19/2021 10:00 hrs

Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii);

vii. Suncor failed to maintain and operate the Plant 2 FCCU, Plant 2 Flare, and Plant 2 Fuel Gas System in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Condition 36.5, and NSPS A, § 60.11(d); and

viii. Suncor failed to maintain and operate the Plant 2 FCCU in a manner consistent with good air pollution control practices for minimizing emissions, violating Permit 95OPAD108, Section II, Condition 33.81, and NESHAP UUU, § 63.1570(c).

h. Suncor reported that, while prepping the poly reactor for catalyst change, Suncor performed manual adjustments to the steam and supplemental city gas controllers associated with the Plant 2 Flare. Suncor implemented these preemptive actions to mitigate visible emissions during anticipated flaring events. However, the supplemental gas remained in manual control while conditions in the flare gas changed, and the set point did not provide sufficient flow to supplement a drop in BTU content. In this condition, the calculated 15-minute block average NHVcz value fell below 270 Btu/scf for approximately 30 minutes. This event resulted in the following noncompliance with operating standards:

   i. **Plant 2 Flare**
   NHVcz (=/>270 Btu/scf, 15-minute average)
   Start Date and Time: 11/28/2021 23:15 hrs
   End Date and Time: 11/28/2021 23:45 hrs

   Suncor failed to comply with the NHVcz standard (=/>270 Btu/scf, 15-minute average) at the Plant 2 Flare, violating NESHAP CC, § 63.670(e); and

   ii. Suncor failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practices for minimizing emissions, violating NESHAP CC, § 63.642(n).

i. Suncor reported that, during the second half of 2021, the first catalyst loading event for Polymerization Unit Catalyst Loading occurred in July 2021, but a Method 9 was not performed while the loading activity was taking place. The second loading event was scheduled to occur in the fourth quarter of 2021 but was delayed until early 2022. During the second half of 2021, Suncor failed to conduct a Method 9 opacity reading for Polymerization Unit Catalyst Loading, violating Permit 95OPAD108, Section II, Condition 19.5.5.

j. Suncor reported the following deviations from equipment leak standards and LDAR monitoring requirements:

   i. Between July 2021 and December 2021, Suncor identified four valves and two connectors at the #2 Poly Unit that were subject to LDAR monitoring requirements but had not previously been included in the LDAR inspection program. These components were added to the LDAR database for continual monitoring;

   ii. On April 18, 2022, Suncor identified three open-ended lines. The open-ended lines were closed April 18, 2022; and

iii. During a third-party consent decree audit in June 2022, the auditor identified two open-ended lines in the Plant 2 Crude Unit on June 27, 2022. The open-ended lines were closed on June 27, 2022.

Suncor failed to conduct LDAR monitoring on six components, seal five open-ended lines, and maintain and operate five open-ended lines in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Conditions 18.2, 27.8.1, 27.8.2, 30.1, 32.16, and 36.5; AQCC Regulation 7, Part B, §§ VI.C.2.a.(ii), VI.C.2.b, and VI.C.4.a; NSPS A, § 60.11(d); NSPS VV, §§ 60.482-1 to 60.482-10; NSPS VV, § 60.482-6(a); NSPS VVa, §§ 60.482–1a to 60.482–10a; NSPS VVa, § 60.482-6a(a); NSPS GGG, § 60.592(a); NSPS GGGa, § 60.592a(a); and NESHAP CC, §§ 63.482(n) and 63.648(a).

k. Suncor reported that, on the night of January 25, 2022, the city gas line and instrument 54FI120 froze due to cold weather. The temperatures were near zero degrees Fahrenheit. This resulted in a high pressure indication, which caused the associated valve to automatically close. This resulted in the loss of fuel gas pressure to the Plant 2 fuel gas header. As a result of the drop of the fuel gas pressure, boilers B-504 and B-505 in Plant 2 tripped offline. As steam is a vital part of the operations process at multiple units in Plant 2, the loss of steam resulted in H_2S exceedances at the Plant 2 Fuel Gas System. On January 26, 2022, from 03:00-05:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii).

l. Suncor reported that, on January 25, 2022, the Plant 2 FCCU was shut down after the Plant 2 boilers tripped offline. On January 27, 2022, Suncor began the process of starting up the Plant 2 FCCU. This startup event resulted in exceedances of the CO limit at the Plant 2 FCCU, as described below. On January 27-28, 2022, Suncor exceeded the CO limit (500 ppmvd at 0% O2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Condition 27(c); NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1).

Plant 2 FCCU
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 01/27/2022 01:00 hrs
End Date and Time: 01/27/2022 15:00 hrs

Start Date and Time: 01/28/2022 09:00 hrs
End Date and Time: 01/28/2022 18:00 hrs

m. Suncor reported that, on the night of February 2, 2022, the No. 3 SRU tripped at approximately 24:00 hours due to high pressure in the burners in the unit. While attempting to relight the SRU, the flame detection instrument was reading incorrectly preventing the flame from being relit. Suncor operators isolated the faulty instrument and were able to relight the flame. Once the flame was relit, Suncor checked the faulty instrument again, and it was still reporting faulty information. Suncor operators called the Suncor instrument technicians out to investigate and potentially replace the faulty instrument. In order to install the new instrument, the technician needed to close a 1/4 turn isolation valve in order to isolate the equipment and replace the faulty instrument. However, the technician did not realize at that time that the isolation valve did not fully close. When the faulty instrument was being removed, the heat from the No. 3 SRU burner began coming out from the transmitter mount. The technician tried to turn the valve an additional 1/4 turn more in order to fully isolate the valve but was unable to close the valve any further. Operators were also unable to completely isolate the valve, and a vapor release and small fire were observed. Maintenance personnel activated the vapor release alarm. Suncor operators immediately began shutting down the SRU to prevent any further process gases from being released. Shutting down the SRU resulted in a higher concentration of H_2S in the Plant 2 Fuel Gas System, because the SRU was not efficiently removing sulfur as it had tripped. On February 3, 2022, from 02:00-09:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii).

n. Suncor reported that, on February 8, 2022, the Plant 2 FCCU main air blower, 02C201, experienced a step change in vibration readings and an increase in observed noise. After evaluation by the Suncor reliability group, and discussions of possible failure modes, Suncor decided to shut down the Plant 2 FCCU starting the night of February 8, 2022. As the orderly shutdown of the unit was progressing, the compressor coupling end bearing drain temperature spiked into alarm and then lost indication. As a result of this, operations manually tripped the compressor (02C201) early on the morning of February 9, 2022. Inspection of the compressor and gearbox revealed that the high-speed coupling, between the gearbox output shaft and compressor, was failing but still transmitting torque at the time it was shut down. On February 9, 2022, from 06:54-07:30 hours, Suncor exceeded:

i. The opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1; and

ii. The opacity limit (Federal – 30%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.4; Permit 09AD0961, Condition 27(b); NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1).

o. Suncor reported that, on February 9, 2022, Suncor shutdown the Plant 2 FCCU in order to repair the FCCU main air blower. On February 13, 2022, Suncor began to restart the FCCU after all necessary repairs were made. This event resulted in the following exceedances:

i. **Plant 2 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 02/14/2022 12:00 hrs
End Date and Time: 02/14/2022 18:00 hrs
Start Date and Time: 02/14/2022 22:00 hrs
End Date and Time: 02/15/2022 01:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Condition 27(c); NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1);

ii. **Plant 2 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 02/13/2022 19:42 hrs
End Date and Time: 02/13/2022 19:54 hrs
Start Date and Time: 02/13/2022 20:00 hrs
End Date and Time: 02/13/2022 20:24 hrs
Start Date and Time: 02/14/2022 00:00 hrs
End Date and Time: 02/14/2022 00:06 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1; and

iii. **Plant 2 FCCU**
Opacity (Federal - 30%, 6-minute average)
Start Date and Time: 02/13/2022 19:42 hrs

End Date and Time: 02/13/2022 19:54 hrs

Suncor exceeded the opacity limit (Federal – 30%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.4; Permit 09AD0961, Condition 27(b); NSPS J, § 60.102(a)(2); and NESHAP UUU, § 63.1564(a)(1).

p. Suncor reported that, on the morning of March 2, 2022, the H_2S concentrations in the Plant 2 flare gas began to climb. At the time, Suncor operators could not determine the cause. Suncor later determined that, while purging the Unsaturated Gas Plant in Plant 2 to prepare for exchanger repairs, the purge, which can contain H_2S, continued longer than planned due to an analyzer error. Suncor operators were of the opinion that the readouts were inaccurate and did not require any action to be taken. As soon as it was determined that the purge was still ongoing, Suncor closed the valve, and the H_2S concentrations dropped. On March 2, 2022, from 05:00-08:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Flare and failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practice for minimizing emissions, violating Permit 95OPAD108, Section II, Conditions 8.4, 22.5.1, and 36.5; NSPS A, § 60.11(d); NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.103a(h).

q. Suncor reported that, on March 2, 2022, while depressuring the Plant 2 Reformer Unit, a large volume of steam was sent to the Plant 2 Flare resulting in snuffing/extinguishing the pilot flame. The Plant 2 Flare had no flame for roughly 83 minutes. When depressuring, steam flow rates to the flare are increased to match the output ratio of the flame. At the time, natural gas was in automatic control, and as soon as the depressuring stopped to the flare, the steam output was still high. Suncor determined that this excess flow was responsible for snuffing out the flare's flame. On March 29, 2022, from 01:34-02:57 hours, Suncor failed to:

    i. Operate the Plant 2 Flare with a pilot flame present at all times when regulated material is routed to the flare, violating NESHAP CC, § 63.670(b);

    ii. Operate the Plant 2 Flare to maintain the NHVcz at or above 270 Btu/scf, violating NESHAP CC, § 63.670(e); and

    iii. Suncor failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practices for minimizing emissions, violating NESHAP CC, § 63.642(n).

r. Suncor reported that, prior to April 2, 2022, Suncor shutdown the Plant 2 FCCU in order to make necessary exchanger repairs. On April 2, 2022, Suncor began to restart the FCCU after all necessary repairs were made. This event resulted in the following exceedances:

i. **Plant 2 FCCU**
CO (500 ppmvd at 0% O_2, 1-hour average)
Start Date and Time: 04/02/2022 23:00 hrs
End Date and Time: 04/03/2022 00:00 hrs
Start Date and Time: 04/03/2022 07:00 hrs
End Date and Time: 04/03/2022 08:00 hrs
Start Date and Time: 04/03/2022 10:00 hrs
End Date and Time: 04/03/2022 14:00 hrs
Start Date and Time: 04/04/2022 16:00 hrs
End Date and Time: 04/05/2022 02:00 hrs

Suncor exceeded the CO limit (500 ppmvd at 0% O_2, 1-hour average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.7 and 33.19; Permit 09AD0961, Condition 27(c); NSPS Ja, § 60.102a(b)(4); and NESHAP UUU, § 63.1565(a)(1); and

ii. **Plant 2 FCCU**
Opacity (State - 20%, 6-minute average)
Start Date and Time: 04/04/2022 16:06 hrs
End Date and Time: 04/04/2022 16:18 hrs
Start Date and Time: 04/04/2022 19:36 hrs
End Date and Time: 04/04/2022 19:42 hrs
Start Date and Time: 04/04/2022 23:00 hrs
End Date and Time: 04/04/2022 23:06 hrs
Start Date and Time: 04/05/2022 02:06 hrs
End Date and Time: 04/05/2022 02:12 hrs

Suncor exceeded the opacity limit (State - 20%, 6-minute average) at the Plant 2 FCCU, violating Permit 95OPAD108, Section II, Conditions 2.8 and 19.1; Permit 09AD0961, Condition 3; and AQCC Regulation 1, § II.A.1.

s. Suncor reported that, on May 11, 2022, C-502, the primary air compressor for Plant 2, had an electrical failure that resulted in shutting down the compressor. Suncor determined that significant repairs to C-502 and the electrical wiring associated with the compressor are necessary before the compressor can be started back up. Suncor reported that, due to logistical issues beyond Suncor's control, the lead time to acquire the parts necessary to complete the repairs is extensive. Suncor placed expedited orders, so the parts will

be delivered as soon as possible. Upon shutdown of C-502, Suncor began utilizing P2AC1 (the emergency compressor) to provide the necessary compressed air to Plant 2. Subsequently, P2AC1 began to experience operating problems requiring Suncor to rent a temporary compressor in order to provide the necessary compressed air to Plant 2. P2AC1 and the temporary rental compressor have been providing the necessary compressed air to Plant 2 since C-502 shutdown on May 11, 2022. Based on the NSPS NO_x limit (4.0 g/kW-hr) and design rate (391.4 kW), emissions of NO_x from P2AC1 exceed the APEN de minimis level (1 tpy) at 580 hours per year. In calendar year 2022, Suncor operated P2AC1 more than 580 hours. Suncor continues to operate P2AC1. To date, Suncor has failed to submit an APEN for P2AC1, violating AQCC Regulation 3, Part A, § II.A.1.

t. As described in this Compliance Advisory, Section II, Paragraph 2.s, above, in calendar year 2022, Suncor operated P2AC1 more than 580 hours. Suncor continues to operate P2AC1. To date, Suncor has failed to obtain a permit for P2AC1, violating AQCC Regulation 3, Part B, § II.A.1.

u. Suncor reported that, on the morning of May 6, 2022, a brief power interruption was experienced within Plant 2. This power interruption resulted in a loss of amine circulation within the No. 3 SRU. Several other pumps and electric re-heaters were also affected by this power interruption. Materials containing elevated concentrations of H_2S were routed to the Plant 2 Flare. Suncor determined that the failure was due to a wire fault on the line side of the circuit breaker supplying power to pump P701A, the rich amine circulation pump. Gradual abrasion over an extended period of time likely resulted in the wire insulation failing, which then caused the wire to ultimately fail. This event resulted in exceedances of the H_2S limit at the Plant 2 Fuel Gas System. On May 6, 2022, from 09:00-13:00 hours, Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii).

v. Suncor reported that, on the morning of May 22, 2022, a malfunction occurred at the No. 3 SRU due to an electronics failure inside the No. 3 SRU Programmable Logic Controller (PLC). The malfunction resulted in acid gas (gas having high concentrations of H_2S) being sent to the Plant 2 Flare. Suncor operators attempted to safely bring the unit back into normal operation and notified the appropriate technicians to come out and identify the cause of the malfunction. Engineers determined that the PLC system had a failure involving the control network cards. This

failure is believed to have been caused by the system attempting to determine which system was the primary versus backup after experiencing an initial failure. When a brief communication error occurred, the system was not able to quickly resolve the issue described above, which caused the system to trip offline. From May 22, 2022 to May 23, 2022, Suncor failed to comply with the combustion zone temperature operating limit (1,416°F minimum temperature, daily average) at the thermal incinerator for the No. 3 SRU, violating NESHAP UUU, § 63.1568(a)(2), and Table 30, Item 4.

w. Suncor reported that, on the afternoon of June 1, 2022, the No. 3 SRU unexpectedly tripped offline. Suncor determined that the trip was caused by a fuel gas incinerator valve, which automatically closed due to an internal failure. The valve closed automatically, as designed, due to a bad solenoid within the system. This event resulted in the following exceedances and noncompliance with operating standards:

   i. **Plant 2 Fuel Gas System**
   H_2S in Fuel Gas (162 ppmv, 3-hour average)
   Start Date and Time: 06/01/2022 14:00 hrs
   End Date and Time: 06/01/2022 22:00 hrs

   Suncor exceeded the H_2S limit (162 ppmv, 3-hour average) at the Plant 2 Fuel Gas System, violating Permit 95OPAD108, Section II, Conditions 1.3, 2.10, 3.3, 5.11, 7.2, and 22.5.1; Permit 09AD1422, Condition 10; NSPS J, § 60.104(a)(1); and NSPS Ja, § 60.102a(g)(1)(ii); and

   ii. **No. 3 SRU Incinerator**
   Minimum Temperature (1,416°F daily average temperature)
   Start Date and Time: 06/01/2022 00:00 hrs
   End Date and Time: 06/01/2022 12:00 hrs

   Suncor failed to comply with the combustion zone temperature operating limit (1,416°F, daily average) at the thermal incinerator for the No. 3 SRU, violating NESHAP UUU, § 63.1568(a)(2), and Table 30, Item 4.

x. Suncor reported that, on June 3, 2022, the Plant 2 Flare began to experience brief periods of visible emissions. In order to eliminate the visible emissions, Suncor introduced more steam to the flare. During this event, operators were having a difficult time between adding steam to the flare in order to eliminate the visible emissions and ensuring that the NHVcz value stayed above 270 Btu/scf. By sampling the contents of the flare knock out drum, Suncor operators determined

that the flare knock out drum unexpectedly contained Light Straight Run gasoline. This indicated that a relief valve was relieving to the flare causing the unexpected visible emissions. This event resulted in the following exceedances and noncompliance with operating standards:

i. **Plant 2 Flare**
NHVcz (=/>270 Btu/scf, 15-minute average)
Start Date and Time: 06/03/2022 05:15 hrs
End Date and Time: 06/03/2022 09:30 hrs
Start Date and Time: 06/03/2022 12:15 hrs
End Date and Time: 06/03/2022 18:30 hrs
Start Date and Time: 06/03/2022 19:00 hrs
End Date and Time: 06/03/2022 19:30 hrs
Start Date and Time: 06/03/2022 23:30 hrs
End Date and Time: 06/04/2022 00:00 hrs

Suncor failed to comply with the NHVcz standard (=/>270 Btu/scf, 15-minute average) at the Plant 2 Flare, violating NESHAP CC, § 63.670(e);

ii. **Plant 2 Flare**
Visible Emissions (exceeded 5 minutes during any 2 consecutive hours)
Start Date and Time: 06/03/2022 04:58 hrs
End Date and Time: 06/03/2022 05:22 hrs
Start Date and Time: 06/03/2022 05:59 hrs
End Date and Time: 06/03/2022 08:24 hrs
Start Date and Time: 06/03/2022 11:54 hrs
End Date and Time: 06/03/2022 14:15 hrs

Suncor failed to comply with the visible emissions standard at the Plant 2 Flare, violating NESHAP CC, § 63.670(c); and

iii. Suncor failed to maintain and operate the Plant 2 Flare in a manner consistent with good air pollution control practices for minimizing emissions, violating NESHAP CC, § 63.642(n).

It is important to resolve the above-referenced issues as soon as possible. Therefore, the Division encourages Suncor to immediately identify those compliance issues that are not in dispute and to rectify those issues before the upcoming Compliance Advisory meeting. In accordance with § 25-7-115(3)(a), C.R.S., the Compliance Advisory meeting will be held within thirty (30) calendar days of the Division's issuance of the Compliance Advisory in this matter. The Division also requests that Suncor provide the Division with a brief written response to the alleged

violations ("Source Response"). The Source Response should identify the undisputed compliance issues and, if an alleged violation is disputed, the basis for the dispute. The Division requests that Suncor provide the Source Response, to the attention of Jen Sandor, no later than ten business days before the Compliance Advisory meeting. At the upcoming meeting, the Division will confirm the actions taken to rectify the undisputed compliance issues and proceed with unresolved matters as outlined below.

If you have any questions regarding this Compliance Advisory, the Division's enforcement processes, or any related issues, please refer to the APCD Enforcement Guide located at https://www.colorado.gov/pacific/cdphe/inspections-and-enforcement and/or contact the Division personnel identified below.

III. COMPLIANCE ADVISORY MEETING

Suncor is requested to contact the Division and schedule a meeting to:

- Discuss the disputed Compliance Advisory issues and answer any remaining questions it may have;
- Submit information necessary to successfully show that the deficiencies and noncompliance issues (or any portion of them) are not violations of Colorado's air pollution laws; and
- Establish a mutually acceptable schedule and guidelines for the full and final resolution of any remaining deficiencies and noncompliance issues in a timely manner.

Please contact the Enforcement Advisor identified below by no later than June 8, 2023 to schedule a meeting with the Division to discuss the Compliance Advisory. In accordance with § 25-7-115(3)(a), C.R.S., the Compliance Advisory meeting will be held within thirty (30) days of the Division's issuance of the Compliance Advisory in this matter.

Jen Sandor, Enforcement Advisor (jen.sandor@state.co.us)

To ensure meaningful communication with all Coloradans, the Division offers free language services. Please let us know if we can provide an interpreter for anyone attending the Compliance Advisory meeting.

cc: Shannon McMillan, APCD
Garry Kaufman, APCD
Paul Carr, APCD
Ben Cappa, APCD
Tom Lovell, APCD
Robert Stockton, APCD
Jeffrey Bishop, APCD
Jason Long, APCD
Heather Wuollet, APCD
Beth Pilson, APCD
Michael Landis, Attorney General's Office
Robyn Wille, Attorney General's Office
Michael Stovern, EPA (Region VIII)
File