IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

UNITED STATES OF AMERICA and NEW MEXICO ENVIRONMENT DEPARTMENT,	)	Civil Action No.
Plaintiffs,	)	
vs.	)	
HF SINCLAIR NAVAJO REFINING LLC,	)	
Defendant.	)	

CONSENT DECREE

TABLE OF CONTENTS

CONSENT DECREE

WHEREAS, Plaintiff United States of America ("United States"), by the authority of the Attorney General of the United States and through its undersigned counsel, on behalf of the United States Environmental Protection Agency ("EPA"), and the New Mexico Environment Department ("NMED") filed a complaint in this action ("Complaint") alleging that HF Sinclair Navajo Refining LLC ("HFSNR") violated, or continues to violate, the Clean Air Act ("CAA" or the "Act"), 42 U.S.C. § 7401 *et seq*., the New Mexico Air Quality Control Act ("AQCA"), New Mexico Statutes Annotated ("NMSA") 1978, §§74-2-1 to 74-2-17, and the regulations and permits issued thereunder at HFSNR's refinery in Artesia, New Mexico ("Artesia Refinery");

WHEREAS, the United States and NMED also allege violations of the New Mexico State Implementation Plan ("New Mexico SIP") provisions and/or other state rules, regulations, and permits incorporating and implementing the requirements of the CAA;

WHEREAS, the United States, New Mexico, and HFSNR (as successor-in-interest to Navajo Refining Company, L.P.) are among the parties to a consent decree entered by this Court in Civil Action No. Civ-01-1422 LH/LCS on March 5, 2002, regarding the Artesia Refinery, among other refineries (the "2002 Navajo CD");

WHEREAS, EPA's July 2019 investigation of benzene levels reported from the Artesia Refinery's National Emissions Standards for Hazardous Air Pollutants ("NESHAP") for Petroleum Refineries, 40 C.F.R. Part 63, Subpart CC ("MACT CC"), fenceline monitoring system exceeding the MACT CC action level was followed by an October 2019 inspection and December 2019 site visit;

WHEREAS, on May 1, 2020, EPA issued a Notice of Violation ("May 1, 2020 NOV") to HFSNR for a subset of alleged violations, also currently enumerated in the Complaint, alleging

violations involving the Artesia Refinery's storage tanks, fenceline monitoring program, flares, and wastewater treatment system ("WWTS"), including alleged violations of multiple New Source Performance Standards, 40 C.F.R. Part 60 ("NSPS"), and MACT CC;

WHEREAS, EPA subsequently issued two information requests, pursuant to its authority under Section 114 of the CAA, 42 U.S.C. § 7414, on September 16, 2020, and May 12, 2021;

WHEREAS, on May 15, 2019, June 5, 2020, and December 26, 2023, NMED issued Post-Inspection Notices (the "PINs") for a subset of alleged violations, including but not limited to allegations of NSPS Subpart QQQ and corresponding AQCA implementing regulations;

WHEREAS, EPA and NMED conducted a June 2023 site visit which identified additional alleged violations of the NESHAP for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF ("BWON"), and NSPS Subpart QQQ in and around the Artesia Refinery WWTS that were not identified during prior site visits;

WHEREAS, the Complaint alleges that HFSNR has violated: multiple subparts of the NSPS; the BWON; the MACT CC; the New Mexico SIP, including Section 74-2-7 of the AQCA and its implementing regulations at Part 20.2.73 of the New Mexico Administrative Code ("NMAC"); and the operating permit requirements under Title V of the CAA ("Title V"), 42 U.S.C. § 7661 *et seq*., which are implemented and administered by NMED as codified in 20.2.70 NMAC;

WHEREAS, upon lodging of this Consent Decree, the United States shall issue a stipulated penalty demand of $1,083,550 for violations of the 2002 Navajo CD at the Artesia Refinery which HFSNR shall pay in accordance with the terms of the 2002 Navajo CD, and which will resolve when paid all outstanding claims for stipulated penalties through the Date of Lodging;

WHEREAS, the Artesia Refinery is subject to the BWON;

WHEREAS, HFSNR retained a third-party consultant to assist with BWON and NSPS Subpart QQQ compliance at the Artesia Refinery;

WHEREAS, HFSNR has initiated numerous projects at the Artesia Refinery as discussed below and also in the Appendices to this Consent Decree;

WHEREAS, these projects at the Artesia Refinery include improving HFSNR's control of benzene and volatile organic compound ("VOC") emissions through installing temporary thermal oxidizers at the aggressive biological treatment ("ABT") tanks, repairing and improving junction boxes, replacing and upgrading API oil water separator ("API Separator") lids, commencing implementation of a stilling well improvement project, improving lids on the weir box and stormwater lift station, and improving its storage vessel program, including decommissioning and demolishing a tank (Tank 57) responsible for certain benzene emissions;

WHEREAS, starting with reporting year 2022, HFSNR reported that the Total Annual Benzene ("TAB") for the Artesia Refinery was greater than 10 megagrams per year (Mg/yr) (11 ton/yr);

WHEREAS, in 2023, HFSNR commenced a Third-Party TAB Study and Compliance Review and Field Verification Study of IDS Components (as defined below);

WHEREAS, in 2021, HFSNR commenced installation of an enhanced passive fenceline monitoring system with environmental gas chromatograph ("eGC") technology to monitor fenceline benzene levels ("eGC Network"), which became fully operational in 2024;

WHEREAS, the Artesia Refinery's rolling annual average fenceline benzene levels have been below a Δc of 9 $\mu g/m^3$ (the MACT CC action level) since November 2021 and at or below a Δc of 3 $\mu g/m^3$ since November 2022;

WHEREAS, HFSNR has installed a leak detection sensor network of monitors designed to reduce fugitive emissions and supplement its Leak Detection and Repair ("LDAR") program;

WHEREAS, in 2024, HFSNR hired a new LDAR contractor to improve the quality control of its LDAR program;

WHEREAS, HFSNR has committed a significant financial investment in, and has commenced the design and installation of, a flare gas recovery system ("FGRS");

WHEREAS, EPA's 2019 investigation prompted HFSNR to permanently remove Tank 57 from service in September 2019, resulting in EPA-estimated annual emissions reductions of up to 2,374 tons of VOC and 174 tons of benzene;

WHEREAS, it is estimated that, when the compliance requirements identified in Section VI (Compliance Requirements) of this Consent Decree are fully implemented, annual emissions from the Artesia Refinery will be further reduced by approximately the following amounts: 342 tons of VOC; 6 tons of volatile hazardous air pollutants ("HAP"), including benzene; 51 tons of nitrogen oxides ("NO_x"); and 31 tons of sulfur dioxide ("SO_2");

WHEREAS, HFSNR has made significant efforts to improve compliance with the statutes, regulations, and permits alleged to have been violated at the Artesia Refinery in the Complaint, as acknowledged herein and in the Appendices to this Consent Decree;

WHEREAS, HFSNR has submitted, and EPA has approved, an Optical Gas Imaging Survey Protocol ("OGI Protocol") for use under this Consent Decree;

WHEREAS, because this Consent Decree incorporates all other relevant BWON, NSPS Subpart QQQ, LDAR, and other obligations and requirements applicable to the Artesia Refinery, the Parties intend to terminate all the CAA requirements of the 2002 Navajo CD for the Artesia Refinery in two stages and replace them with the CAA requirements and other provisions of this

Consent Decree in furtherance of EPA's National Petroleum Refining Initiative;

WHEREAS, the Plaintiffs contend that HFSNR has not yet fully incorporated the emission limits, standards, and/or schedules as required by the 2002 Navajo CD for the Artesia Refinery into minor or major new source review permits or other permits (other than Title V permits) which are federally enforceable, and has not fully incorporated all requirements of the 2002 Navajo CD for the Artesia Refinery into Title V permits in accordance with state Title V rules and the requirements to complete these permitting actions are incorporated in this Consent Decree;

WHEREAS, this Consent Decree provides a process for terminating the remaining 2002 Navajo CD obligations as to the Artesia Refinery, including completion of the process of fully incorporating the emission limits, standards, and/or schedules as required by the 2002 Navajo CD for the Artesia Refinery into applicable permits;

WHEREAS, HFSNR has provided to EPA for review and consideration a table setting forth the remaining requirements of the 2002 Navajo CD that must be incorporated into the applicable permits, and EPA has provided initial feedback to HFSNR;

WHEREAS, HFSNR has waived any applicable federal or state requirements of statutory notice of the alleged violations described above and in the Complaint;

WHEREAS, the Parties agree that: (a) settlement of the matters set forth in the Complaint is in the best interests of the Parties and the public, and (b) entry of this Consent Decree without litigation is the most appropriate means of resolving this matter;

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the Act, 42 U.S.C. § 7413(b), and over the Parties. The Court has supplemental jurisdiction over NMED's state law claims under the AQCA pursuant to 28 U.S.C. § 1367 because the NMED's claims are so related to the claims in the United States' action that they form part of the same case or controversy. Venue lies in this District pursuant to relevant statutory sections set out in the Complaint, and 28 U.S.C. §§ 1391(b), 1391(c), and 1395(a), because the violations alleged in the Complaint are alleged to have occurred in, and HFSNR conducts business in, this judicial district.

2. For purposes of this Consent Decree, or any action to enforce this Consent Decree, HFSNR consents to the Court's jurisdiction over this Consent Decree and any such action, and over HFSNR, and consents to venue in this judicial district.

3. For purposes of this Consent Decree only, HFSNR agrees that the Complaint states claims upon which relief may be granted pursuant to Sections 111, 112, and 113(b) of the CAA, 42 U.S.C. §§ 7411, 7412, and 7413(b), and the New Mexico AQCA, NMSA 1978, §§ 74-2-1 to 74-2-17.

4. Notice of the commencement of this action has been given to the State of New Mexico in accordance with Section 113(a)(1) of the CAA, 42 U.S.C. § 7413(a)(1), and as required by Section 113(b) of the CAA, 42 U.S.C. § 7413(b).

II. APPLICABILITY

5. The obligations of this Consent Decree apply to and are binding upon the United States and NMED, and upon HFSNR and any successors, assigns, or other entities or persons otherwise bound by law.

6. From the Effective Date until termination pursuant to Section XXI (Termination), HFSNR agrees that the Artesia Refinery is covered by this Consent Decree. From the Effective Date until termination, HFSNR shall give written notice of this Consent Decree to any successors in interest to the Artesia Refinery prior to transfer of ownership or operation of any portion of the Artesia Refinery. At least 30 Days prior to such transfer, HFSNR shall provide a copy of this Consent Decree to any proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement (which may be designated as Confidential Business Information ("CBI")), to EPA, NMED, and the United States Department of Justice ("DOJ"), in accordance with Section XVI (Notices).

7. HFSNR shall condition any such transfer, in whole or in part, of ownership of, operation of, or other interest (exclusive of any non-controlling, non-operational shareholder or membership interest) in the Artesia Refinery on the execution by the transferee of a modification to this Consent Decree that makes the terms and conditions of this Consent Decree applicable to the transferee. If HFSNR retains any ownership interest in, or operational control of, the Artesia Refinery, it must remain a party to the Consent Decree (in addition to the transferee), and it shall not be relieved of its obligations to ensure that terms of the Consent Decree are implemented.

8. By no earlier than 60 Days after notice is provided pursuant to Paragraph 6, HFSNR may file a motion requesting that this Court modify this Consent Decree to make the terms and conditions of this Consent Decree applicable to the transferee. HFSNR shall be

released from the obligations and liabilities of this Consent Decree unless the United States opposes the motion and the Court finds that the transferee does not have the financial and technical ability to assume the obligations and liabilities under this Consent Decree.

9. Any attempt to transfer ownership or operation of the Facility without complying with this Section constitutes a violation of this Decree.

10. Except as provided in Paragraphs 7 and 8, HFSNR shall be solely responsible for ensuring that performance of the work required under this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and its Appendices.

11. HFSNR shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Consent Decree, as well as to any contractor retained to perform work required under this Consent Decree. This requirement may be satisfied by providing an electronic copy or a link to an electronic copy of the Consent Decree. HFSNR shall condition any such contract upon performance of the work in conformity with the terms of this Consent Decree. A copy of or link to this Consent Decree does not need to be supplied to firms retained solely to supply materials or equipment to satisfy the requirements of this Consent Decree.

12. In any action to enforce this Consent Decree, HFSNR shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. OBJECTIVES

13. It is the purpose of the Parties to this Consent Decree to further the objectives of the federal CAA and the AQCA.

IV. DEFINITIONS

14. Terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions apply; terms that are defined in a Consent Decree Appendix are applicable only to that Appendix unless otherwise stated:

"2002 Navajo CD" means the consent decree entered by this Court in Civil Action No. Civ-01-1422 LH/LCS on March 5, 2002, regarding the Artesia Refinery, among others;

"Artesia Refinery" or "Refinery" means the refinery owned and operated by HFSNR at 501 E. Main Street, Artesia, New Mexico;

"Business Day" means any Day other than a Saturday, Sunday, or federal or New Mexico holiday;

"CD Emissions Reductions" means any emissions reductions in hydrogen sulfide, total reduced sulfur, SO_2, NO_x, particulate matter (2.5 and 10), VOCs, benzene, HAPs, and greenhouse gases (carbon dioxide and methane) that result from any projects conducted, controls utilized, or any other actions taken to comply with this Consent Decree;

"Complaint" means the complaint filed by the United States and the NMED in this action;

"Consent Decree" or "Decree" means this Decree and all Appendices attached hereto (listed in Section XXVIII);

"Date of Lodging" shall mean the date on which this Consent Decree is lodged with the United States District Court for the District of New Mexico;

"Day" means a calendar day unless expressly stated to be a Business Day. In computing any period of time for a deadline under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal or New Mexico holiday, the period runs until the close of business of the next Business Day;

"DOJ" means the United States Department of Justice and any of its successor departments or agencies;

"EPA" means the United States Environmental Protection Agency and any of its successor departments or agencies;

"Effective Date" means the date of entry of the Consent Decree by the Court as defined in Section XVII;

"Facility" means HFSNR's Artesia Refinery located in Artesia, New Mexico;

"HAPs" means hazardous air pollutants;

"HFSNR" means HF Sinclair Navajo Refining LLC and its successors and assigns;

"Interest" means interest at the rate specified in 28 U.S.C. § 1961 in effect on the date 15 Days prior to the date that a payment is due. This definition of Interest applies to stipulated penalties under Section IX (Stipulated Penalties) but not to Section V (Civil Penalty) of this Consent Decree;

"Method 21" shall mean the test method found at 40 C.F.R. Part 60, Appendix A-7, Method 21, provided that to the extent that the equipment being monitored is subject to regulations that modify Method 21, those modifications shall be applicable;

"NESHAP" or "MACT" means the National Emission Standards for Hazardous Air Pollutants promulgated by EPA pursuant to Section 112 of the CAA, 42 U.S.C. § 7412;

"NMED" means the New Mexico Environment Department and any of its successor departments or agencies;

"NSPS" means the New Source Performance Standards promulgated by EPA pursuant to Section 111 of the CAA, 42 U.S.C. § 7411;

"Paragraph" means a portion of this Consent Decree identified by an Arabic numeral; references to specific Paragraphs in any Consent Decree Appendix are references to the Paragraphs of that Appendix only unless otherwise specifically stated;

"Parties" means the United States, NMED, and HFSNR;

"Plaintiffs" means the United States and NMED;

"Planned Fluid Catalytic Cracking Unit ("FCCU") Turnaround" means the next maintenance turnaround of the FCCU and associated units at the Facility after the Date of Lodging;

"Section" means a portion of this Consent Decree identified by a Roman numeral; references to specific Sections in any Consent Decree Appendix are references to the Sections of that Appendix only unless otherwise specifically stated;

"State" means the State of New Mexico;

"Subparagraph" means a portion of this Consent Decree identified by an Arabic numeral and lowercase letter; references to a specific Subparagraph in any Consent Decree Appendix are references to the Subparagraphs of that Appendix only unless otherwise specifically stated;

"United States" means the United States of America, acting on behalf of EPA;

"VOCs" means volatile organic compounds;

"WWTS" means wastewater treatment system.

V. CIVIL PENALTY

15. HFSNR shall pay the sum of $33,916,450 as a civil penalty, together with interest accruing from the Effective Date. The civil penalty payment will be divided between the United States and NMED and paid as specified below. For the purposes of this Section V, interest shall accrue at the rate of 7.5% per year.

16. HFSNR shall pay $16,958,225 of the civil penalty, together with interest from the Effective Date, to the United States by FedWire Electronic Funds Transfer ("EFT") to the DOJ account, in accordance with instructions provided to HFSNR by the Financial Litigation Unit ("FLU") of the United States Attorney's Office for the District of New Mexico after the Effective Date on the following schedule: (a) within 30 Days of the Effective Date, $10,000,000 together with interest from the Effective Date; and (b) by January 31, 2026, $6,958,225 together with interest from the Effective Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection System ("CDCS") number, which HFSNR shall use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to:

HF Sinclair Corporation
Attention: General Counsel
2323 Victory Avenue
Suite 1400
Dallas, TX 75219
generalcounsel@hfsinclair.com

Ray Bagherian
Associate General Counsel
HF Sinclair Corporation
2323 Victory Avenue
Suite 1400
Dallas, TX 75219
ray.bagherian@hfsinclair.com

on behalf of HFSNR. HFSNR may change the individual to receive payment instructions on its behalf by providing written notice of such change to DOJ and EPA in accordance with Section XVI (Notices).

17. HFSNR shall pay $16,958,225 of the civil penalty, together with Interest from the Effective Date, to the State of New Mexico General Fund, NMED-Air Quality Bureau, 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico 87505 by wire transfer (ACH deposit) or by certified or corporate check on the following schedule: (a) within 30 Days of the Effective Date, $10,000,000 together with interest from the Effective Date; and (b) by January 31, 2026, $6,958,225 together with interest from the Effective Date. On the date that delivery of funds is initiated, HFSNR shall notify the Air Quality Bureau by email at ENV-AQB.Settlement.Notifications@state.nm.us.

a. Wire transfers must be made to Wells Fargo Bank as follows:

Wells Fargo Bank, N.A.
100 W Washington Street, Floor 20
Phoenix, AZ 85003
Routing Transit Number: 121000248
Deposit Account Number: 4123107799
Descriptor: NMED-AQB-C&E

b. Certified or corporate checks must be sent to the following address:

New Mexico Environment Department
Air Quality Bureau
c/o Compliance and Enforcement Manager
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico 87505

18. At the time of payments pursuant to Paragraph 16, HFSNR shall send notice that payment has been made: (i) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268; (ii) to DOJ via email in accordance with Section XVI (Notices); and (iii) to EPA in

accordance with Section XVI (Notices). Such notice shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in *United States of America and New Mexico Environment Department* v. *HF Sinclair Navajo Refining LLC* and shall reference the civil action number, CDCS Number, and DOJ case number 90-5-2-1-2228/2.

19. HFSNR may pay any payment prior to its due date but must contact the FLU in advance for a determination regarding the amount of interest to be included with the payment. If any installment payment includes an overpayment, the amount of the overpayment will be applied to the remaining principal.

20. If HFSNR fails to make any payment required under Paragraphs 16 or 17 by the due date, the United Sates or NMED may send HFSNR a written notice of late payment. If HFSNR fails to make the payment and to pay all interest and stipulated penalties owed within 30 Days of receipt of the notice, all remaining payments and all accrued interest will be due immediately. Interest under this Section will continue to accrue at the rate of 7.5% per year on any unpaid amounts until HFSNR pays the total amount due and is in addition to any stipulated penalties owed under Paragraph 46.

21. HFSNR shall not deduct any penalties paid under this Decree pursuant to this Section or Section IX (Stipulated Penalties) in calculating its federal or State income tax.

VI. COMPLIANCE REQUIREMENTS

22. **Wastewater and BWON**. HFSNR must execute the measures set forth in **Appendix A** (Wastewater and BWON Compliance Program) to this Consent Decree to assist with ensuring continuing compliance with BWON and NSPS Subparts QQQ and A and to minimize or eliminate fugitive VOCs and benzene waste emissions at the Facility.

23. **LDAR**. HFSNR must execute the enhanced LDAR program as set forth in **Appendix B** (LDAR Program) to this Consent Decree to assist with ensuring continuing compliance with the LDAR regulations and to minimize or eliminate fugitive emissions of VOCs and organic HAPs from equipment in light liquid and/or in gas/vapor service at the Facility.

24. **Community and Fenceline Monitoring**. HFSNR must execute the community and fenceline monitoring program set forth in **Appendix C** (Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring) to this Consent Decree to assist with ensuring continuing compliance with MACT CC, and to monitor for benzene to inform the community surrounding the Facility of benzene concentrations.

25. **Flaring Compliance Program**. HFSNR must execute the measures set forth in **Appendix D** (Flaring Compliance Program) to this Consent Decree to bring the Facility into, and assist with ensuring continuing compliance with 40 C.F.R. Part 60, Subparts A and Ja, and MACT CC.

26. **Storage Vessels**. HFSNR must execute the Storage Vessel program set forth in **Appendix E** (Storage Vessel Compliance Program) to this Consent Decree to assist with ensuring continuing compliance and minimize or eliminate fugitive emissions of VOCs, benzene, and/or HAPs from Facility storage vessels.

27. **Heat Exchangers**. HFSNR must execute the heat exchanger program set forth in **Appendix F** (Heat Exchangers Program) to this Consent Decree to assist with ensuring continuing compliance and minimize or eliminate fugitive emissions of VOCs and HAPs from heat exchangers at the Facility.

28. **Emissions Testing**. HFSNR must execute the Emissions Testing program set forth in **Appendix G** (Protocol for Refinery Emissions Test) to this Consent Decree to obtain additional information regarding the Facility's VOC and benzene emissions.

29. **Leak Detection Sensor Network**. HFSNR must execute the Leak Detection Sensor Network set forth in **Appendix H** (Protocol for Leak Detection Sensor Network) to this Consent Decree to further minimize or eliminate fugitive emissions of VOCs, benzene, and HAPs at the Facility.

30. OGI Protocol. All OGI surveys conducted under this Consent Decree shall be conducted in accordance with the OGI Protocol approved by EPA.

a. The OGI Protocol must address and include the following:

(1) Description and specifications of OGI monitoring equipment to be used;

(2) Daily instrument checks;

(3) Procedure for determining OGI camera operating envelope (i.e., range of conditions within which a survey can be conducted to achieve the highest quality objective), and for ensuring monitoring will be conducted within the operating envelope;

(4) Monitoring observation path and the method for ensuring that applicable equipment is monitored;

(5) Operating requirements for OGI camera, including minimum number of image angles and dwell time, and procedures for accounting for interferences (including weather conditions);

(6) Pre-survey training requirements for OGI camera operators;

(7) QA/QC process for ensuring the validity of the OGI monitoring data;

(8) Procedures for calibration and maintenance; and

(9) Data collection/recordkeeping requirements.

b. HFSNR may submit for EPA approval a revised protocol for OGI surveys

required by this Consent Decree. The revised OGI Protocol must address and include the elements of Paragraph 30.a.1-.9.

c. The review and approval of a revised OGI protocol by EPA shall follow the procedures set forth in Paragraphs 31 through 36 below.

31. Approval of Deliverables. After review of any plan, report, or other item that is required to be submitted for approval pursuant to this Consent Decree, EPA, after consultation with NMED, will in writing: (a) approve the submission; (b) approve the submission upon specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission. The written response will be issued by the director of the Air Enforcement Division or the manager of the Air Enforcement Division Stationary Source Technical Branch.

32. If the submission is approved pursuant to Paragraph 31(a), HFSNR shall take all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part pursuant to Paragraph 31(b) or (c), HFSNR shall, upon written direction from EPA, after consultation with NMED, take all actions required by the approved plan, report, or other item that EPA, after consultation with NMED, determines are technically severable from any disapproved portions.

33. If the submission is disapproved in whole or in part pursuant to Paragraph 31(c) or (d), HFSNR shall, within 60 Days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, HFSNR shall proceed in accordance with the preceding Paragraph.

34. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA, after consultation with NMED, may again require HFSNR to correct any deficiencies, in accordance with the preceding Paragraphs.

35. If HFSNR elects to invoke Dispute Resolution as set forth in Section XII (Dispute Resolution) concerning a decision by EPA to disapprove or approve on specified conditions, HFSNR shall do so by sending a Notice of Dispute in accordance with Paragraph 68 within 30 Days (or such other time as the Parties agree to in writing) after receipt of the applicable decision.

36. Any stipulated penalties applicable to the original submission, as provided in Section IX, accrue during the 60-Day period or other specified period, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of HFSNR's obligations under this Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

37. Permits. Where any compliance obligation under this Section requires HFSNR to obtain a federal, state, or local permit or approval, HFSNR shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. HFSNR may seek relief under the provisions of Section XI (Force Majeure) for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if HFSNR has submitted timely and complete applications and has taken all other actions necessary to obtain all such permits or approvals.

VII. INCORPORATION OF CONSENT DECREE REQUIREMENTS INTO FEDERALLY ENFORCEABLE PERMIT

38. HFSNR shall incorporate each of the Appendix requirements identified below into a Title I federally enforceable permit or New Mexico SIP revision for all emission controls and limits prior to submitting any request to terminate this Consent Decree (all references below are to the Paragraphs and Sections of the cited Appendices). Such incorporation does not include any project completion deadlines contained in the requirements listed below that were met in accordance with the applicable Appendix, so long as all changes to permitted emissions sources are reflected in the permitting required by this Section.

a. Appendix A – Wastewater and BWON Program

(1) Subsection A (6 BQ and NSPS QQQ applicability)

(a) Paragraph 1 (6 BQ Compliance Option)

(b) Paragraph 6 (Annual TAB Report)

(c) Paragraph 7 (NSPS QQQ Applicability)

(2) Subsection E (Ongoing Monitoring) (excluding any monitoring requirements that apply only to the period prior to the installation of the New SWS)

(a) Paragraph 16.a (as WWTP is defined in Appendix A)

(b) Paragraph 16.b.3 (Monthly drain/aboveground sewer line AVO)

(c) Paragraph 16.c.3 (Monthly BWON/QQQ junction box AVO)

(d) Paragraph 16.e.1 (Quarterly Method 21 for junction boxes routed to NDE closed vent system)

(e) Paragraph 16.e.2 (Quarterly OGI for junction box NDE CVS)

(f) Paragraph 16.e.3 (Monthly junction box AVO)

(g) Paragraph 16.f.1 (Annual Method 21 of containers)

(h) Paragraph 16.f.3 (Quarterly AVO of containers)

(3) Subsection H (NDE Engineering Assessments for BWON Equipment and QQQ Equipment installed in the future)

(a) Paragraph 25.a (NDE for new equipment)

(b) Paragraph 25.g (Maintain electronic copies of engineering documents)

(c) Paragraph 26 (Cannot operate new equipment without NDE assessment)

(4) Subsection K (Repairs for ongoing monitoring)

(a) Paragraph 32 (Repair triggers)

(b) Paragraph 33 (First Attempt of Repair)

(c) Paragraph 34 (Completion of Repair)

(5) Subsection L (Carbon Canister Monitoring)

(6) Subsection M (Benzene Emissions Reduction Activities and Capital Projects)

(a) Paragraph 38.b.1-7 (New SWS requirements)

(b) Paragraph 38.c (New SWS requirements)

(c) Paragraph 39.a & b (API gasket upgrade)

(d) Paragraph 40.a.1-2 & b (Groundwater Remediation Project)

(e) Paragraph 41.b & c (Stilling well project)

(f) Paragraph 42.a (Tank Water Draw Project)

(g) Paragraph 43.b.1 & c.2 (ABT Project)

b. Appendix C – Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring

(1) Section 3 (eGC Fenceline Network)

(2) Section 5 (Investigations)

(3) Section 6 (eGC Corrective Action)

(4) Section 7 (Community Monitoring)

(5) Sections 9.2 (Duration) and 9.4 (New Technologies)

(6) Section 10.1 (Investigation and Corrective Action Reports)

(7) Section 11 (Public Posting to Ensure Transparency)

c. Appendix D – Flaring Compliance Program

(1) Subsection A

(a) Paragraph 1 (NESHAP Subpart A and CC applicability)

(2) Subsection B

(a) Paragraph 2 (NSPS Subpart A and Ja applicability)

(b) Paragraph 4 (Specifications for FGRS And Compressor operating design capacity)

(c) Paragraph 5 (Minimize Waste Gas while ensuring safe refinery operations)

(d) Paragraph 6 (Operate consistent with good engineering and maintenance practices)

(e) Paragraphs 7 and 9 (Compressors Available for Operation time)

(f) Paragraph 8 and 9 (Compressor monitoring)

(g) Paragraph 10 (Requirements Related to PSA Hydrogen)

(h) Paragraph 11 (FGRS reporting)

d. Appendix E – Storage Vessel Compliance Program

(1) Subsection C (Alarms and Monitoring Systems)

(a) Paragraph 6.a (Install and operate temperature monitoring equipment)

(b) Paragraph 6.b & c (Establish Monthly Maximum Temperature)

(c) Paragraph 7 (Overfill Prevention)

(d) Paragraph 8 (Landing Protection)

(2) Subsection D (Update permits to document storage vessel configuration changes, only for the following)

(a) Paragraph 9, Table 1 (Geodesic Dome Installation)

(b) Paragraph 10.b (T-0434 Fixed Roof Storage Vessel)

(c) Paragraph 11.a, Table 2 (IFR Storage Vessel Seal Upgrades)

(d) Paragraph 12 (EFR Storage Vessel Deck Leg Socks)

(3) Subsection E (Enhanced Covered Storage Vessel Program)

(a) Paragraph 15.a.2 (IFR annual LEL Monitoring)

(b) Paragraph 15.b.1 (EFR annual Platform OGI)

(4) Subsection G (Covered Storage Vessel Degassing Operations)

e. Appendix F – Heat Exchanger Program

(1) Subsection A (Heat Exchange Monitoring Program)

(a) Paragraphs 3.a. & 3.b (Monitoring)

VIII. REPORTING REQUIREMENTS

39. HFSNR shall submit the following reports to EPA, DOJ, and NMED at the addresses set forth in Section XVI (Notices): By August 31st and February 28th of each year after the Date of Lodging, until termination of this Decree pursuant to Section XXI, HFSNR shall submit a semi-annual report for the 6-month periods ending June 30th and December 31st, respectively, that includes all information required by the Appendices to this Consent Decree, including: the status of any construction or compliance measures; completion of milestones; problems encountered or anticipated, together with implemented or proposed solutions; status of permit applications; operation and maintenance; and reports to state agencies. If there are less

than 45 Days from the Effective Date to the end of a semi-annual period, HFSNR may forego the report for that period and include the required information in the next semi-annual report.

40. Whenever any violation of this Consent Decree, any applicable permits, or any other event affecting HFSNR's performance under this Decree may pose an immediate threat to the public health or welfare or the environment, HFSNR shall notify EPA orally or via email in accordance with Section XVI (Notices) and NMED by telephone at (505) 827-9329 (Environmental Emergencies) as soon as possible, but no later than 24 hours after HFSNR first knew of the violation or event. This procedure is in addition to the requirements set forth in Paragraph 39.

41. Each report submitted by HFSNR under this Section shall be signed by an official of the submitting party and include the following certification:

> I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

42. This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

43. The reporting requirements of this Consent Decree do not relieve HFSNR of any reporting obligations required by the CAA or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

44. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

IX. STIPULATED PENALTIES

45. HFSNR shall be liable for stipulated penalties to the United States and NMED for violations of this Consent Decree as specified below, unless excused under Section XI (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Decree. Where HFSNR's violation of a particular Consent Decree requirement triggers more than one stipulated penalty provision in this Consent Decree, HFSNR shall be liable for stipulated penalties calculated under only one stipulated penalty provision as determined by the Plaintiff(s) making the stipulated penalty demand.

46. Late Payment of Civil Penalty. If HFSNR fails to pay the civil penalty required to be paid under Section V (Civil Penalty) when due, HFSNR shall pay a stipulated penalty of $10,000 per Day for each Day that the payment is late.

47. Compliance Milestones.

A. Stipulated Penalties for Appendix A: Wastewater and BWON Compliance Program

Consent Decree Violations of Appendix A[1]	Stipulated Penalty
a. For each violation of Paragraph 1, failure to comply with the 6 BQ Compliance Option.	$60,000 for each 0.5 Mg (or any portion thereof) by which the 6 BQ Compliance Option uncontrolled benzene limit is exceeded.
b. For failure to submit the BWON Compliance Plan required by Paragraph 4.	$10,000 per month.

1 All Paragraph references below are to Paragraphs in Appendix A (Wastewater and BWON Compliance Program) unless otherwise stated.

<table>
<tr><td>c. For each violation of Paragraph 6, failure to submit a complete annual TAB report.</td><td><table><tr><th>Uncontrolled Waste Stream omitted from the annual TAB report</th><th>Penalty per year</th></tr><tr><td>Stream <0.03 Mg/yr</td><td>$250</td></tr><tr><td>Stream ≥0.03 and <0.1 Mg/yr</td><td>$1,000</td></tr><tr><td>Stream ≥0.1 and <0.5 Mg/yr</td><td>$5,000</td></tr><tr><td>Stream ≥ 0.5 Mg/yr</td><td>$10,000</td></tr><tr><td>Controlled Waste Stream</td><td>$500</td></tr></table></td></tr>
<tr><td>d. For each violation of Paragraph 7, failure to comply with the monitoring and control requirements of QQQ for each IDS component and oil-water separator that is subject to QQQ under this Appendix.</td><td>$20,000 per missed oil-water separators per month.

$500 per drain or above-ground sewer line segment per month and $2,000 per junction box per month, not to exceed $20,000 per month.</td></tr>
<tr><td>e. For violation of Paragraph 9 and B.9.b, failure to timely develop and complete a written BWON and NSPS QQQ Program Document, or each failure to timely update the BWON and NSPS QQQ Program Document on an annual basis as needed.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$300</td></tr><tr><td>16-30 Days</td><td>$400</td></tr><tr><td>31 Days or more</td><td>$500</td></tr></table></td></tr>
<tr><td>f. For violation of Paragraph 9.a, each failure to add a piece of BWON Equipment or QQQ Equipment to the BWON and NSPS QQQ Program Document when required to do so as part of the required MOC process.</td><td>$500 per piece of BWON Equipment or QQQ Equipment (plus the stipulated penalty amount, if any, due as a result of missed monitoring events related to a component that should have been added to the BWON or QQQ program but was not).</td></tr>
<tr><td>g. For violation of Paragraph 10, failure to complete each annual waste stream verification program.</td><td>$10,000 per incomplete annual verification.</td></tr>
<tr><td>h. For violation of Paragraph 12.b, for each failure to timely transfer monitoring data to an electronic database or use a paper log where appropriate.</td><td>$150 per Day.</td></tr>
</table>

<table>
<tr><td>i. For each violation of Paragraphs 12-18, and 35.d for failure to conduct initial and ongoing monitoring as required.</td><td><u>For missed Method 21 monitoring</u>: $500 per piece of BWON Equipment or QQQ Equipment per missed monitoring event.

<u>For missed OGI monitoring</u>: $500 per piece of BWON Equipment or QQQ Equipment per missed monitoring event.

<u>For missed AVO inspections</u>: $500 per piece of BWON Equipment or QQQ Equipment per missed monitoring event.</td></tr>
<tr><td>j. For each violation of Paragraphs 12.d, 15.a.1, 15.b.1 15.c.1, 15.d.1, 15.e.1, 15.f.1, 16.a.1, 16.b.1, 16.c.1, 16.d.1, 16.e.1, 16.f.1 for failure to properly characterize BWON Equipment or QQQ Equipment as UTM, DTM, or as Inaccessible Equipment.</td><td>$500 per piece of BWON Equipment or QQQ Equipment.</td></tr>
<tr><td>k. For each violation of Paragraph 19, for failure to timely install each passive monitor as required.</td><td>$20,000 per monitor per month.</td></tr>
<tr><td>l. For violations of Paragraphs 20 and 21 for failure to continuously operate each passive monitor as required.</td><td><table><tr><th><u>Period of noncompliance</u></th><th><u>Penalty per Day</u></th></tr><tr><td>1-30 Days</td><td>$1,000</td></tr><tr><td>31-60 Days</td><td>$2,000</td></tr><tr><td>61 Days or more</td><td>$3,000</td></tr></table></td></tr>
<tr><td>m. For each violation of Paragraphs 24 and 25, for failure to complete an NDE Engineering Assessment for each piece of existing or new NDE Equipment.</td><td>$75,000 per piece of BWON Equipment or QQQ Equipment subject to an NDE standard under this Appendix. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.</td></tr>
<tr><td>n. For each violation of Paragraph 25.c.1, for failure to finalize and maintain all engineering documents, including the NDE engineering assessment.</td><td>$20,000 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.</td></tr>
<tr><td>o. For each violation of Paragraph 25.c.2, for failure to develop a corrective action plan or to comply with the corrective action plan timeline to meet NDE.</td><td>$25,000 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.</td></tr>
<tr><td>p. For each violation of Paragraph 25.c.3, for failure to develop a corrective action plan to install permanent controls at any equipment that uses temporary controls.</td><td>$5,000 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.</td></tr>
</table>

q. For each violation of Paragraph 25.d, for failure to submit to EPA all engineering documents related to the NDE Engineering Assessment for EPA review.	$5,000 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.
r. For each violation of Paragraph 25.f, for failure to address EPA or NMED comments regarding engineering documents related to the NDE Engineering Assessment within 90 Days.	$10,000 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.
s. For each violation of Paragraph 25.g, for failure to maintain electronic copies of all engineering documents.	$2,500 per piece of BWON Equipment or QQQ Equipment per month. A waste management unit that has multiple pieces of BWON Equipment or QQQ Equipment shall be considered one piece of equipment.
t. For each violation of Paragraph 27, for failure to timely install a Low-E Valve or Low-E Packing on valves subject to an NDE standard as required (unless they are commercially unavailable).	$5,000 per valve.
u. For violations of Paragraph 28, for failure to complete the annual review of commercially available low-leak repair methods or repair technologies.	$2,500 per month.
v. For each violation of Paragraph 30.b, for failure to commence a root cause analysis within the required time frame.	$500 per piece of BWON Equipment or QQQ Equipment per Day, not to exceed $5,000 per piece of BWON Equipment or QQQ Equipment.
w. For each violation of Paragraph 30.e, for failure to timely complete a root cause analysis.	$1,000 per piece of BWON Equipment or QQQ Equipment per Day, not to exceed $20,000 per piece of BWON Equipment or QQQ Equipment.
x. For each violation of Paragraph 30.f, for failure to implement corrective action.	$500 per piece of BWON Equipment or QQQ Equipment per Day, not to exceed $50,000 per piece of BWON Equipment or QQQ Equipment.
y. For each detectable emission above the NDE standard at a distinct emission interface per piece of NDE Equipment, as detected by Method 21 after January 1, 2026. Emissions detected during a repair verification monitoring event are not subject to this stipulated penalty.	Upon Discovery: $750 per detectable emission above the NDE standard.

<table>
<tr><td>z. For each violation of Paragraphs 33 and 34 except as provided in Paragraph 35, for failure to timely attempt or complete a repair (both NDE and non-NDE).</td><td><table><tr><th>Equipment Type</th><th>Penalty per component per Day</th><th>Not to exceed per component</th></tr><tr><td>Non-NDE equipment</td><td>$300</td><td>$45,000</td></tr><tr><td>Non-NDE pumps, agitators</td><td>$1,200</td><td>$150,000</td></tr><tr><td>NDE Equipment</td><td>$5,000</td><td>$350,000</td></tr></table></td></tr>
<tr><td>aa. For each violation of Paragraph 35.a, for improper placement of equipment on DOR (i.e., placing a piece of BWON Equipment and QQQ Equipment on DOR even though repair is feasible by the repair deadline without a complete or partial process unit shutdown).</td><td><table><tr><th>Equipment Type</th><th>Penalty per component per Day</th><th>Not to exceed per component</th></tr><tr><td>Non-NDE equipment</td><td>$300</td><td>$45,000</td></tr><tr><td>Non-NDE pumps, agitators</td><td>$1,200</td><td>$150,000</td></tr><tr><td>NDE Equipment</td><td>$5,000</td><td>$350,000</td></tr></table></td></tr>
<tr><td>bb. For each violation of Paragraph 35.b, for failure to use the drill-and-tap method as required.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per component per Day</th></tr><tr><td>1-15 Days</td><td>$500</td></tr><tr><td>16-30 Days</td><td>$1,000</td></tr><tr><td>31 Days or more</td><td>$1,500, not to exceed $45,000</td></tr></table></td></tr>
<tr><td>cc. For each violation of Paragraph 35.c, for failure to secure approval of the applicable process unit supervisor located at the Facility to place a piece of BWON or QQQ Equipment on DOR.</td><td>$500 per piece of BWON Equipment or QQQ Equipment.</td></tr>
<tr><td>dd. For each violation of Paragraph 35.e, for failure to estimate benzene emissions during the applicable DOR period.</td><td>$1,000 per each source of benzene emissions during the DOR period.</td></tr>
<tr><td>ee. For each violation of Paragraph 36.a.1 for failure to install and operate dual carbon canisters as required.</td><td>$1,000 per carbon canister per Day.</td></tr>
<tr><td>ff. For violation of Paragraphs 36.a.2 and 36.a.3, for failure to conduct breakthrough monitoring of dual carbon canisters.</td><td>$500 per carbon canister per Day.</td></tr>
</table>

<table>
<tr><td>gg. For violation of Paragraph 36.a.4, for failure to replace canisters as required.</td><td>$100 per hour beyond the 24 hours from breakthrough per primary canister.

$1,000 per hour beyond the 24 hours from breakthrough per secondary canister.</td></tr>
<tr><td>hh. For violation of Paragraphs 36.b.1, for failure to install and operate dual carbon canisters as required.</td><td>$1,000 per truck per Day.</td></tr>
<tr><td>ii. For violation of Paragraph 36.b.2 and 36.b.3, for failure to conduct breakthrough monitoring on carbon canisters as required.</td><td>$500 per carbon canister per Day.</td></tr>
<tr><td>jj. For violation of Paragraph 36.b.4 for failure to replace canisters as required.</td><td>$100 per hour beyond the 24 hours from breakthrough per primary canister.

$1,000 per hour beyond the 24 hours from breakthrough per secondary canister.</td></tr>
<tr><td>kk. For violation of Paragraph 36.d, for failure to install, operate, and maintain a flow indicator at each carbon canister system.</td><td>$100 per carbon canister system per Day.</td></tr>
<tr><td>ll. For violation of Paragraph 37.a, for failure to operate and maintain the existing SWS to ensure that effluent meets a flow-weighted average benzene concentration of no more than 8.0 ppmw on a weekly average for the initial three months following Date of Entry, and thereafter on a 12-month rolling average.</td><td>Per monitoring period (weekly and 12-month rolling average):

<u>Weekly</u>
<table><tr><td>>8.0 and <10.0 ppmw</td><td>$2,500 per week</td></tr><tr><td>>10.0 ppmw</td><td>$5,000 per week</td></tr></table>
<u>12-month rolling average</u>
<table><tr><td>>8.0 and <10.0 ppmw</td><td>$12,500 per month</td></tr><tr><td>>10.0 ppmw</td><td>$25,000 per month</td></tr></table></td></tr>
<tr><td>mm. For violation of Paragraphs M.37.b and 38.b.3, for failure to monitor and record each parameter as required.</td><td>$250 per parameter per week.</td></tr>
<tr><td>nn. For violation of Paragraph 37.c for failure to implement any measures needed to address the causes of the elevated benzene concentration.</td><td>$500 per Day, not to exceed $50,000.</td></tr>
<tr><td>oo. For violation of Paragraph 37.e, failure to maintain required uptime.</td><td>$500 per hour.</td></tr>
<tr><td>pp. For violation of Paragraph 38.a, for failure to timely submit a pre-startup engineering design evaluation.</td><td>$5,000 per Day.</td></tr>
</table>

<table>
<tr>
<td>qq. For violation of Paragraph 38.b.1 for failure to route desalter effluent stream(s) to the New SWS except during New SWS downtime.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per stream, per Day</th></tr>
<tr><td>1-30 Days</td><td>$1,500</td></tr>
<tr><td>31-60 Days</td><td>$3,000</td></tr>
<tr><td>61 Days or more</td><td>$4,000 or a total amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.</td></tr>
</table>
</td>
</tr>
<tr>
<td>rr. For violation of Paragraph 38.b.2 for failure for the New SWS to meet the effluent limit for each benzene stripper (sour water or permanent).</td>
<td>Per monitoring period (weekly and 12-month rolling average):

Weekly
<table>
<tr><td>>2.0 and <10.0 ppmw</td><td>$5,000</td></tr>
<tr><td>≥ 10 ppmw</td><td>$10,000</td></tr>
</table>
12-month rolling average
<table>
<tr><td>>2.0 and <10.0 ppmw</td><td>$25,000</td></tr>
<tr><td>≥ 10 ppmw</td><td>$50,000</td></tr>
</table>
</td>
</tr>
<tr>
<td>ss. For violation of Paragraph 38.b.4, for failure to continuously route all vent gases from the New SWS to a control device, fuel gas system, or process unit in accordance with applicable BWON regulations.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per stream, per Day</th></tr>
<tr><td>1-30 Days</td><td>$1,500</td></tr>
<tr><td>31-60 Days</td><td>$3,000</td></tr>
<tr><td>61 Days or more</td><td>$4,000 or a total amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.</td></tr>
</table>
</td>
</tr>
<tr>
<td>tt. For violation of Paragraph 38.b.5, for failure to install process parameter monitoring equipment that are determined to significantly affect performance of the New SWS in removing benzene.</td>
<td>$10,000 per parameter.</td>
</tr>
<tr>
<td>uu. For violation of Paragraph 39, for failure to timely replace gasketing material on the roof of the API Separators as required.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr>
<tr><td>1-30 Days</td><td>$1,000</td></tr>
<tr><td>31-60 Days</td><td>$2,000</td></tr>
<tr><td>61 Days or more</td><td>$3,000</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td>vv. For violation of Paragraph 40, for failure to timely install, operate, and monitor pressure relief devices on Fixed Roof Storage Vessels used to manage Organic Benzene Wastes from groundwater remediation activities, as required (excluding time periods of maintenance and malfunction for monitoring equipment).</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$750</td></tr><tr><td>31-60 Days</td><td>$1,500</td></tr><tr><td>61 Days or more</td><td>$2,000</td></tr></table></td></tr>
<tr><td>ww. For violation of Paragraph 40.b, for failure to install closed vent system as required.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$750</td></tr><tr><td>31-60 Days</td><td>$1,500</td></tr><tr><td>61 Days or more</td><td>$2,000</td></tr></table></td></tr>
<tr><td>xx. For violation of Paragraph 41, for failure to complete a project described in Paragraphs 41.a, 41.b, and 41c.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per project, per Day</th></tr><tr><td>1-30 Days</td><td>$1,500</td></tr><tr><td>31-60 Days</td><td>$3,000</td></tr><tr><td>61 Days or more</td><td>$8,000</td></tr></table></td></tr>
<tr><td>yy. For violation of Paragraph 42, for failure to complete tank water draw project.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>Between 1-30 Days</td><td>$1,000</td></tr><tr><td>Between 31-60 Days</td><td>$2,000</td></tr><tr><td>61 Days or more</td><td>$8,000</td></tr></table></td></tr>
<tr><td>zz. For violation of Paragraph 43.a, for failure to operate temporary thermal oxidizer or alternative approved temporary control strategy.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$1,500</td></tr><tr><td>31-60 Days</td><td>$3,000</td></tr><tr><td>61 Days or more</td><td>$4,000</td></tr></table></td></tr>
<tr><td>aaa. For violation of Paragraph 43.a, for failure to submit to EPA and NMED a detailed engineering design document, including a projected wastewater flow diagram, of upgrades being implemented to the ABT portion of the Wastewater Treatment Plant.</td><td>$5,000 per Day.</td></tr>
</table>

<table>
<tr><td>bbb. For violation of Paragraph 43.b, for failure to timely implement a capital project to upgrade and improve the Wastewater Treatment Plant's biological activity as required.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$1,000</td></tr><tr><td>31-60 Days</td><td>$2,000</td></tr><tr><td>61 Days or more</td><td>$4,000 or a total amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.</td></tr></table></td></tr>
<tr><td>ccc. For violations of Paragraph 44.a, for failure to timely complete an inventory of all IDS components.</td><td>$100 per drain or above-ground sewer line segment or $500 per junction box.</td></tr>
<tr><td>ddd. For violations of Paragraph 44.b, for failure to timely control or correct any deficiencies.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$500</td></tr><tr><td>31-60 Days</td><td>$1,000</td></tr><tr><td>61 Days or more</td><td>$2,000</td></tr></table></td></tr>
<tr><td>eee. For violations of Paragraph 44.c, for failure to timely complete GIS mapping project as required.</td><td>For each sewer map per process unit, $500 per Day.</td></tr>
<tr><td>fff. For violation of Paragraph 45, for failure to conduct annual training as required.</td><td>$2,000 per individual per annual training period.</td></tr>
<tr><td>ggg. For violations of Paragraph 46, for failure to timely perform each BWON/NSPS QQQ Audit as required.</td><td>$20,000 per audit per month late.</td></tr>
<tr><td>hhh. For violations of Paragraphs 46.b and 46.c, for failure to comply with each third-party auditor requirement.</td><td>$5,000 per requirement per audit.</td></tr>
<tr><td>iii. For violations of Paragraph 46.d, for failure to include each element in the BWON/NSPS QQQ Audit.</td><td>$10,000 per requirement per type of BWON Equipment or QQQ Equipment per audit.</td></tr>
<tr><td>jjj. For violations of Paragraph 47.a, for failure to timely prepare an Audit CAP following the BWON/NSPS QQQ Audit (if necessary).</td><td>$25,000 per instance.</td></tr>
<tr><td>kkk. For violations of Paragraph 47.a, for failure to include each element in the CAP following the BWON/NSPS QQQ Audit.</td><td>$10,000 per element.</td></tr>
<tr><td>lll. For violations of Paragraph 47.a and b, for failure to timely complete each corrective action in the Audit CAP and/or the Revised Audit CAP.</td><td>$1,500 per Day for failing to complete each corrective action needed or a total amount equal 1.2 times the economic benefit of delayed compliance, whichever is greater.</td></tr>
</table>

mmm. For violations of Paragraph 47.c, for failure to submit the Audit CAP to EPA and NMED.	$5,000 per Day.
nnn. For violations of Paragraph 51, for failure to conduct EOL sampling as required.	$10,000 per quarter.

B. Stipulated Penalties for Appendix B: Leak Detection and Repair Program

<table>
<tr><th>Consent Decree Violations of Appendix B[2]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For each violation of Paragraph 3, for failure to timely develop and complete a written LDAR Program Document, failure to timely update the document on an annual basis as required, or failure to include in the LDAR Program document a list of Existing Valves that are in HFSNR's LDAR Database as required under Paragraph 3.a.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$300</td></tr><tr><td>16-30 Days</td><td>$400</td></tr><tr><td>31 Days or more</td><td>$500</td></tr></table></td></tr>
<tr><td>b. For each violation of Paragraphs 4 and 5, for each failure to perform monitoring of a component at the required frequencies, including for Covered Equipment placed on the DOR list.</td><td>$100 per component per missed monitoring event, not to exceed $25,000 per month per Covered Process Unit.</td></tr>
<tr><td>c. For each violation of Paragraph 6, for failure to comply with Method 21 in LDAR monitoring as indicated by the leak percentage ratio calculated under Paragraphs 14.d and 15.a.(2).</td><td><table><tr><th>Leak Percentage Ratio</th><th>Penalty per Process Unit</th></tr><tr><td>3.0 or greater but less than 4.0</td><td>$15,000</td></tr><tr><td>4.0 or greater but less than 5.0</td><td>$30,000</td></tr><tr><td>5.0 or greater but less than 6.0</td><td>$45,000</td></tr><tr><td>6.0 or greater</td><td>$60,000</td></tr></table></td></tr>
</table>

2 All Paragraph references below are to Paragraphs in Appendix B (LDAR Program) unless otherwise stated.

<table>
<tr><td>d. For each violation of Paragraph 6 for each failure to use a monitoring device that is attached to a data logger, and for each failure, during each monitoring event, to directly electronically record the Screening Value, date, time, and identification number of the monitoring instrument, and the identification of the technician, except when the procedures in Paragraph 6.b apply and are followed.</td><td>$100 per failure per piece of Covered Equipment monitored.</td></tr>
<tr><td>e. For each violation of Paragraph 6, for each failure to transfer monitoring data to HFSNR's LDAR Database on at least a weekly basis.</td><td>$150 per Day for each Day that the transfer is late beyond 7 Days.</td></tr>
<tr><td>f. For each violation of Paragraph 8.a, for each failure to timely perform a first attempt at repair as required by Paragraph 8.a.</td><td>$150 per Day for each late Day, not to exceed $1,500 per Leak.</td></tr>
<tr><td>g. For each violation of Paragraph 8.b, for each failure to timely perform repairs as required by Paragraph 8.b or 9.b unless not required to do so under Paragraph B.9.</td><td><table><tr><th>Equipment type</th><th>Penalty per component per Day late</th><th>Not to exceed</th></tr><tr><td>Valves/Connectors</td><td>$300</td><td>$37,500</td></tr><tr><td>Pumps</td><td>$1,200</td><td>$150,000</td></tr></table></td></tr>
<tr><td>h. For each violation of Paragraph 8.c, for failure to timely perform Repair Verification Monitoring in circumstances where the first attempt to adjust, or otherwise alter, the piece of equipment to eliminate the Leak was made within five Days and the final attempt to adjust, or otherwise alter, the piece of equipment to eliminate the Leak was made within 15 Days.</td><td><table><tr><th>Equipment type</th><th>Penalty per component per Day late</th><th>Not to exceed</th></tr><tr><td>Valves/Connectors</td><td>$150</td><td>$18,750</td></tr><tr><td>Pumps</td><td>$600</td><td>$75,000</td></tr></table></td></tr>
<tr><td>i. For each violation of Paragraph 8.d., for failure to timely perform an initial attempt at repair where the Screening Value is greater than 250 ppm and less than 500 ppm.</td><td>$150 per Day for each late Day, not to exceed $1,500 per Leak.</td></tr>
</table>

<table>
<tr><td>j. For each violation of Paragraph 8.e, for failure to attempt technically feasible repair methods or undertake the drill-and-tap method as required.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$200</td></tr><tr><td>16-30 Days</td><td>$350</td></tr><tr><td>31 Days or more</td><td>$500, not to exceed $37,500</td></tr></table></td></tr>
<tr><td>k. For each violation of Paragraph 9, for each placement of a piece of Covered Equipment on the DOR list even though it is feasible to repair it without a Process Unit Shutdown.</td><td><table><tr><th>Equipment Types</th><th>Penalty per component per Day late</th><th>Not to exceed</th></tr><tr><td>Valves/Connectors</td><td>$300</td><td>$75,000</td></tr><tr><td>Pumps</td><td>$1,200</td><td>$300,000</td></tr></table></td></tr>
<tr><td>l. For each violation of Paragraph 9.a, for each failure to comply with the requirement that a relevant Process Unit supervisor or person of similar authority sign off on placing a piece of Covered Equipment on the DOR list.</td><td>$250 per piece of Covered Equipment.</td></tr>
<tr><td>m. For each violation of Paragraph 9.c, for having more than 0.10% of the total valves subject to LDAR Regulations at the Facility on Delay of Repair at any time.</td><td>$5,000 per valve.</td></tr>
<tr><td>n. For each violation of Paragraph 10.c, for failure to comply with the work practice standards as required by Paragraph 10.c.</td><td>$50 per violation per valve per Day, not to exceed $15,000 for all valves in a Covered Process Unit per Quarter.</td></tr>
<tr><td>o. For each violation of Paragraphs 9.b.2 or 10.d for failure to install a new Low-E Valve or a new valve fitted with Low-E Packing when required to do so.</td><td>$5,000 per failure.</td></tr>
<tr><td>p. For each violation of Paragraph 9.b.2, 10.e, or 10.f for failure to timely comply with the requirements relating to installing a Low-E Valve or Low-E Packing if a process unit shutdown is not required.</td><td>$500 per Day per failure, not to exceed $10,000 per failure.</td></tr>
<tr><td>q. For each violation of Paragraph 9.b.2, 10.e, or 10.f for failure to install a Low-E Valve or Low-E Packing when required to do so during a process unit shutdown.</td><td>$5,000 per failure.</td></tr>
</table>

<table>
<tr><td>r. For each violation of Paragraph 11 for failure to add a piece of Covered Equipment to the LDAR Program when required to do so pursuant to the evaluation required by Paragraph 11.</td><td>$300 per piece of Covered Equipment (plus an amount, if any, due under Subparagraph b for any missed monitoring event related to a component that should have been added to the LDAR Program but was not).</td></tr>
<tr><td>t. For each violation of Paragraph 12.a for failure to timely develop a training protocol as required.</td><td>$50 per Day late.</td></tr>
<tr><td>u. For each violation of Paragraph 12.b-d for failure to perform initial, refresher, or new LDAR personnel training as required.</td><td>$1,000 per person per month late.</td></tr>
<tr><td>v. For each violation of Paragraph 13.b., for failure to perform any of the requirements relating to QA/QC.</td><td>$1,000 per missed requirement per quarter or semi-annual period as applicable.</td></tr>
<tr><td>w. For each violation of Paragraph 14.a for failure to timely perform an LDAR Audit for a Covered Facility in accordance with the schedule.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$300</td></tr><tr><td>16-30 Days</td><td>$400</td></tr><tr><td>31 Days or more</td><td>$500, not to exceed $100,000 per LDAR Audit</td></tr></table></td></tr>
<tr><td>x. For each violation of Paragraph 14.b, for failure to use a third party as an auditor as required; each use of an auditor that is not experienced in LDAR Audits; and each use of Defendants' regular LDAR contractor to conduct an LDAR Audit for the Facility.</td><td>$25,000 per LDAR Audit.</td></tr>
<tr><td>y. Except for the requirement to undertake Comparative Monitoring, for each violation of Paragraph 14.c, for failure to comply with the LDAR Audit requirements.</td><td>$10,000 per missed requirement, not to exceed $100,000 per LDAR Audit</td></tr>
<tr><td>z. For each violation of Paragraph B.14.d, for failure to comply with the Comparative Monitoring requirements.</td><td>$25,000 per LDAR Audit.</td></tr>
<tr><td>aa. For each violation of Paragraph 14.e, for failure to timely submit an LDAR Audit Report.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$150</td></tr><tr><td>16-30 Days</td><td>$200</td></tr><tr><td>31 Days or more</td><td>$500</td></tr></table></td></tr>
</table>

<table>
<tr>
<td>bb. For each violation of Paragraph 15.a and b, for failure to implement a corrective action within 90 Days after the LDAR Audit Completion Date or pursuant to the schedule that HFSNR must propose pursuant to Paragraph 15.c if the corrective action cannot be completed in 90 Days.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr>
<tr><td>1 – 15 Days</td><td>$500</td></tr>
<tr><td>16 – 30 Days</td><td>$750</td></tr>
<tr><td>31 Days or more</td><td>$1,000 per Day, not to exceed $100,000 per LDAR Audit</td></tr>
</table>
</td>
</tr>
<tr>
<td>cc. For each violation of Paragraph 15.c for failure to timely submit a Corrective Action Plan that conforms to the requirements of Paragraph 15.c.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr>
<tr><td>1 – 15 Days</td><td>$100</td></tr>
<tr><td>16 – 30 Days</td><td>$250</td></tr>
<tr><td>31 Days or more</td><td>$500, not to exceed $100,000 per LDAR Audit</td></tr>
</table>
</td>
</tr>
<tr>
<td>dd. For each violation of Paragraph 16, for failure to timely submit a Certification of Compliance that substantially conforms to the requirements of Paragraph 16.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr>
<tr><td>1 – 15 Days</td><td>$100</td></tr>
<tr><td>16 – 30 Days</td><td>$250</td></tr>
<tr><td>31 Days or more</td><td>$500, not to exceed $75,000</td></tr>
</table>
</td>
</tr>
</table>

C. Stipulated Penalties for Appendix C: Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring

<table>
<tr><th>Consent Decree Violations of Appendix C[3]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For each violation of Appendix C for failure to operate monitoring networks as required, including (a) failing to continuously operate the eGC Network, as required by Section 3.4 and the Section 3.5, (b) failing to maintain the eGC Network, the eGC for Investigations and the Traditional GC as required by Appendix C Attachment 3, (c) failing to operate the Enhanced Passive Monitoring Network as required by Section 4 in compliance with the methodology in Method 325A and Method 325B as required by Section 4.2, (d) failing to operate the Community Passive Monitors in compliance with Method 325A and Method 325B as required by Section 7.3, (e) failing to operate the Community eGC as required by Sections 7.5 and Section 7.6 and Appendix C Attachment 3.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr><tr><td>Days 1-30</td><td>$1,000</td></tr><tr><td>Days 31-60</td><td>$2,000</td></tr><tr><td>61 Days or more</td><td>$3,000</td></tr></table></td></tr>
<tr><td>b. For each instance of (a) failing to initiate an Investigation no later than three Days after the Threshold Exceedance as required by Section 5.2, (b) failing to complete any Investigate Steps or the eGC Root Cause Analysis as required by Section 5.3, (c) terminating an Investigation without meeting the requirements of Section 5.4, or (d) failing to submit an Investigation and Corrective Action Report as required by Sections 6.2.1, 6.2.2 and 10.1 or an amended eGC Corrective Action Plan as required by Section 6.2.3.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr><tr><td>Days 1-30</td><td>$800</td></tr><tr><td>Days 31-60</td><td>$1,600</td></tr><tr><td>61 Days or more</td><td>$3,000</td></tr></table></td></tr>
</table>

3 All Section references below are to Sections in Appendix C (Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring) unless otherwise stated.

<table>
<tr>
<td>c. For each failure to comply with eGC Corrective Action Plan as required by Sections 6.2.1 or 6.2.3.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$750</td></tr>
<tr><td>Days 31-60</td><td>$1,500</td></tr>
<tr><td>61 Days or more</td><td>$3,750, or a total amount equal to 1.2 times the economic benefit of failed or delayed compliance, whichever is greater</td></tr>
</table>
</td>
</tr>
<tr>
<td>d. Violation of Section 9.1 for failing to timely establish fully operational monitoring networks that meet the requirements of Appendix C, including: (a) failing to meet the siting requirements of Section 3.1 and Appendix C Attachment 1, (b) failing to maintain and have available an eGC and a Traditional GC for Investigations as required by Section 3.3, (c) failing to meet the Enhanced Passive Monitoring Network siting requirements of Section 4.1, (d) failing to acquire and site an additional eGC as required by Section 4.3; (e) failing to meet the siting requirements of Section 7.1 and 7.4.</td>
<td>$750 per monitor per Day, or a total amount equal to 1.2 times economic benefit, whichever is greater.</td>
</tr>
<tr>
<td>e. For each failure to provide notice of a permit modification to the Air Quality Bureau Compliance & Enforcement Section Chief of NMED as required by Section 9.2, if any.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$500</td></tr>
<tr><td>Days 31-60</td><td>$1,125</td></tr>
<tr><td>61 Days or more</td><td>$2,250</td></tr>
</table>
</td>
</tr>
<tr>
<td>f. For failure to provide a mockup of the publicly available website as required by Section 11.1 or failure to post to the publicly available website as required by Section 11.2.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$750</td></tr>
<tr><td>Days 31-60</td><td>$1,500</td></tr>
<tr><td>61 Days or more</td><td>$3,750</td></tr>
</table>
</td>
</tr>
</table>

D. Stipulated Penalties for Appendix D: Flaring Compliance Program

<table>
<tr><th>Consent Decree Violation of Appendix D[4]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For each failure after the Effective Date to comply with any requirement applicable to the Covered Flares set forth in NESHAP Subpart CC, 40 C.F.R. § 63.670(b) (pilot flame presence), (c) (visible emissions), (d) (flare tip velocity) and (e) (combustion zone operating limits) as required by Paragraph 1.</td><td>
<table>
<tr><th>Hours of noncompliance per Calendar Quarter</th><th>Penalty Per Hour Per Requirement Violated</th></tr>
<tr><td>0.25-100</td><td>$300</td></tr>
<tr><td>100.25-200</td><td>$700</td></tr>
<tr><td>200.25+</td><td>$1,000, or a total amount equal to 1.2 times the economic benefit of failed compliance, whichever is greater</td></tr>
</table>
</td></tr>
<tr><td>b. For each failure after the Effective Date to comply with any monitoring requirements applicable to the Covered Flares set forth in NSPS Subpart A, (including but not limited to 40 C.F.R. §§ 60.13; 60.18(d)), Subpart Ja (40 C.F.R. § 60.107a), or NESHAP Subpart A (including but not limited to 40 C.F.R. § 63.8) or Subpart CC (including but not limited to 40 C.F.R. §§ 63.670, 63.671) as required by Paragraph 1 and 2.</td><td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$1,000</td></tr>
<tr><td>Days 31-60</td><td>$2,000</td></tr>
<tr><td>61 Days or more</td><td>$4,000</td></tr>
</table>
</td></tr>
<tr><td>c. For each failure to comply with Paragraph 1 and 2 for any violation of an NSPS Subpart A or Ja, or NESHAP Subpart A or CC requirement applicable to the Covered Flares except those requirements for which a stipulated penalty has been assessed pursuant to Paragraphs a. and b. above or d. below.</td><td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$750</td></tr>
<tr><td>Days 31-60</td><td>$1,500</td></tr>
<tr><td>61 Days or more</td><td>$2,500</td></tr>
</table>
</td></tr>
</table>

4 All Paragraph references below are to Paragraphs in Appendix D (Flaring Compliance Program) unless otherwise stated.

<table>
<tr>
<td>d. For each failure to comply with the NSPS Subpart Ja H_2S concentration limit at the Covered Flares as required by Paragraph 2.</td>
<td>Prior to November 30, 2026:

<table>
<tr><th>Periods of noncompliance per Calendar Quarter</th><th>Penalty Per 3-Hour Rolling Average Above the Concentration Limit</th></tr>
<tr><td>Days 1-30</td><td>$250</td></tr>
<tr><td>Days 31-60</td><td>$500</td></tr>
<tr><td>61 Days or more</td><td>$700</td></tr>
</table>

After November 30, 2026:

<table>
<tr><th>Period of noncompliance per Calendar Quarter</th><th>Penalty Per 3-Hour Rolling Average Above the Concentration Limit</th></tr>
<tr><td>Days 1-30</td><td>$1,000</td></tr>
<tr><td>Days 31-60</td><td>$2,000</td></tr>
<tr><td>61 Days or more</td><td>$4,000 or a total amount equal to 1.2 times the economic benefit, whichever is greater</td></tr>
</table>
</td>
</tr>
<tr>
<td>e. For failure to update the Flare Management Plan in Paragraph 3.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-30</td><td>$750</td></tr>
<tr><td>Days 31-60</td><td>$1,500</td></tr>
<tr><td>61 Days or more</td><td>$2,500</td></tr>
</table>
</td>
</tr>
<tr>
<td>f. For failure to install FGRS in compliance with Paragraph 4.</td>
<td>
<table>
<tr><th>Period of noncompliance</th><th>Penalty Per Requirement Violated Per Day</th></tr>
<tr><td>Days 1-14</td><td>$2,000</td></tr>
<tr><td>Days 15-30</td><td>$5,000</td></tr>
<tr><td>31 Days or more</td><td>$10,000 or a total amount equal to 1.2 times the economic benefit of failed or delayed compliance, whichever is greater</td></tr>
</table>
</td>
</tr>
</table>

g. For each failure to operate the FGRS as required by Paragraph 7 (except as provided in Paragraph 9).

Percentage of FGRS Operating Time when Flare is In Operation	Days of noncompliance	Penalty Per Day
90-94.5%	Days 1-14	$750
	Days 15-30	$2,500
	Days 31 and Beyond	$4,500
Below 90%	Days 1-4	$2,000
	Days 15-30	$5,000
	Days 31 or more	$10,000

h. For each failure to have at least one compressor Available for Operation 100% of the time the North Flare or GOHT Flare is in Operation as required by Paragraph 7 (except as provided in Paragraph 9).

Percentage of time at least one compressor is Available for Operation when the North Flare or GOHT Flare is In Operation:	Days of noncompliance	Penalty Per Day
95-99.5%	Days 1-14	$2,000
	Days 15-30	$5,000
	31 Days or more	$10,000

i. For each failure to monitor as required by Paragraph 8 (except as provided in Paragraph 9).

Period of noncompliance	Penalty Per Requirement Violated Per Day
Days 1-30	$1,000
Days 31-60	$2,000
61 Days or more	$4,000

j. For violation of Paragraph 10.

Period of noncompliance	Penalty Per Requirement Violated Per Day
Days 1-30	$750
Days 31-60	$1,825
61 Days or more	$3,750

E. Stipulated Penalties for Appendix E: Storage Vessel Compliance Program

<table>
<tr><th>Consent Decree Violations of Appendix E[5]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For each violation of Paragraphs 1 or 2, for failure to comply with NESHAP Subpart WW or NESHAP Subpart SS, based on the MTVP of the stored Volatile Organic Liquid.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$750</td></tr><tr><td>31-60 Days</td><td>$1,500</td></tr><tr><td>61 Days or more</td><td>$2,500</td></tr></table></td></tr>
<tr><td>b. For violation of Paragraph 5.a or 5.b, for failure to timely develop and complete a written facility-wide Storage Vessel Document, or for each failure to timely update the Storage Vessel Document on an annual basis as needed.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$200</td></tr><tr><td>16-30 Days</td><td>$400</td></tr><tr><td>31 Days or more</td><td>$500</td></tr></table></td></tr>
<tr><td>c. For each violation of Paragraph 6.a-6.f, for failure to timely install and continuously operate temperature monitors (except for periods of maintenance and malfunction) on Covered Storage Vessels or establish Monthly Maximum Temperatures and Daily Maximum Temperatures for each Covered Storage Vessel.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$250</td></tr><tr><td>16-30 Days</td><td>$500</td></tr><tr><td>31 Days or more</td><td>$1,000</td></tr></table></td></tr>
<tr><td>d. For each violation of Paragraph 6.g, for failure to timely initiate corrective and/or preventative actions to prevent a Covered Storage Vessel from reaching the Monthly Maximum Temperature.</td><td><table><tr><th>Penalty per Storage Vessel per Day late</th><th>Not to Exceed (per Storage Vessel)</th></tr><tr><td>$1,000</td><td>$100,000</td></tr></table></td></tr>
<tr><td>e. For each violation of Paragraph 6.h, for failure to conduct a review and evaluation of corrective and/or preventative action when the Daily Maximum Temperature is exceeded at a Covered Storage Vessel.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$750</td></tr><tr><td>16-30 Days</td><td>$1,500</td></tr><tr><td>31 Days or more</td><td>$2,500</td></tr></table></td></tr>
<tr><td>f. For violation of Paragraph 7 or 8, for each failure to install and continuously operate a monitoring or alarm system (except for periods of maintenance and malfunction) for a Covered Storage Vessel.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$250</td></tr><tr><td>16-30 Days</td><td>$500</td></tr><tr><td>31 Days or more</td><td>$1,000</td></tr></table></td></tr>
</table>

5 All Paragraph references below are to Paragraphs in Appendix E (Storage Vessel Compliance Program) unless otherwise stated.

<table>
<tr><td>g. For each violation of Paragraph 9, for failure to install geodesic domes at T-0079, T-0401, T-0402, T-0411, T-0450, and T-0821 in accordance with Table 1.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$1,000</td></tr><tr><td>30-60 Days</td><td>$2,000</td></tr><tr><td>61 Days or more</td><td>$3,000</td></tr></table></td></tr>
<tr><td>h. For each violation of Paragraph 9.a, for failure to re-inspect the primary seal and complete a seal gap inspection prior to installing geodesic domes at T-0079, T-0401, T-0402, T-0411, T-0450, and T-0821.</td><td>$15,000 per occurrence.</td></tr>
<tr><td>i. For violation of Paragraph 10.a, for each transfer of naphtha entering T-0434 prior to installing a Floating Roof in the Storage Vessel.</td><td>$15,000 per occurrence.</td></tr>
<tr><td>j. For violation of Paragraph 10.b, for failure to timely Remove from Service and Degas T-0434.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$250</td></tr><tr><td>16-30 Days</td><td>$500</td></tr><tr><td>31 Days or more</td><td>$1,000</td></tr></table></td></tr>
<tr><td>k. For each violation of Paragraph 11.a or 11.b, for failure to timely upgrade the rim seals of T-0011, T-0107, T-0109, T-0111, T-0415, and T-0417 in accordance with Table 2.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$250</td></tr><tr><td>16-30 Days</td><td>$500</td></tr><tr><td>31 Days or more</td><td>$1,000</td></tr></table></td></tr>
<tr><td>l. For each violation of Paragraph 12, for failure to timely install deck leg socks on each Category A-2 EFR Covered Storage Vessel deck leg.</td><td><table><tr><th>Penalty per deck leg per Day late at each Storage Vessel</th><th>Not to exceed (per Storage Vessel)</th></tr><tr><td>$100</td><td>$2,500</td></tr></table></td></tr>
<tr><td>m. For each violation of Paragraph 13.c, for failure to continuously maintain a diesel-range (or heavier) hydrocarbon blanket within Sour Water EFR Storage Vessels, except during periods of maintenance, or skim and replenish at least once per month.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$500</td></tr><tr><td>16-30 Days</td><td>$1,000</td></tr><tr><td>31 Days or more</td><td>$2,000</td></tr></table></td></tr>
</table>

<table>
<tr>
<td>n. For each violation of Paragraphs 15.a-15.d, for failure to comply with the applicable inspection/monitoring requirements for Covered Storage Vessels, including out of service inspections for Floating Roofs.</td>
<td><u>For missed LEL monitoring in accordance with Paragraph 15.a:</u> $1,000 per missed monitoring event per Covered Storage Vessel or for each failure to conduct LEL monitoring in accordance with the requirements of Paragraph 15.a(2) per Covered Storage Vessel.

<u>For missed Method 21 monitoring in accordance with Paragraph 15.b:</u> $1,000 per missed monitoring event or per Covered Storage Vessel.

<u>For missed visual inspections in accordance with Paragraph 15.a - 15.d:</u> $5,000 per missed inspection per Covered Storage Vessel or for each failure to conduct a visual inspection in accordance with the requirements of Paragraphs 15.a(3), 15.b(4), and 15.d(1) per Covered Storage Vessel.

<u>For missed OGI inspections in accordance with Paragraph 15.a - 15.c:</u> $1,000 per missed inspection per Covered Storage Vessel or for each failure to conduct an OGI inspection in accordance with the requirements of Paragraphs 15.a(1), 15.b(1)-(2), and 15.c(1) per Covered Storage Vessel.

<u>For missed seal gap measurements in accordance with Paragraph 15.b:</u> $5,000 per missed measurement per Covered Storage Vessel.</td>
</tr>
<tr>
<td>o. For each violation of Paragraph 16.a-16.e and 18, for failure to timely complete repairs at a Covered Storage Vessel when there is an Inspection Failure, except as provided in Paragraph 19, or implement the appropriate corrective actions for the Inspection Failure. This stipulated penalty does not apply to the failure to initiate the repair within 10 Days as required in Paragraph 18.</td>
<td>
<table>
<tr><th><u>Period of noncompliance</u></th><th><u>Penalty per Day</u></th></tr>
<tr><td>1-15 Days</td><td>$1,500</td></tr>
<tr><td>16-30 Days</td><td>$3,000</td></tr>
<tr><td>31 Days or more</td><td>$4,500</td></tr>
</table>
</td>
</tr>
<tr>
<td>p. For each violation of Paragraph 17, for failure to conduct a Storage Vessel repair verification.</td>
<td>
<table>
<tr><th><u>Period of noncompliance</u></th><th><u>Penalty per Day</u></th></tr>
<tr><td>1-15 Days</td><td>$750</td></tr>
<tr><td>16-30 Days</td><td>$1,500</td></tr>
<tr><td>31 Days or more</td><td>$3,000</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td>q. For each violation of Paragraph 20 - 23, for failure to route vapors through a closed vent system to a control device that meets a 98% control efficiency during degassing of Category A-1 IFR or Category A-2 EFR Covered Storage Vessels or conduct the initial performance test (if required) or monitoring to demonstrate that the control device can achieve the required control efficiency.</td><td>$35,000 per occurrence.</td></tr>
<tr><td>r. For violation of Paragraph 26.a, for failure to develop a training protocol.</td><td>$50 per Day late.</td></tr>
<tr><td>s. For violation of Paragraph 26.b or 26.c, for failure to conduct initial and annual training as required.</td><td>$2,000 per person per month late.</td></tr>
<tr><td>t. For violation of Paragraph 27, for failure to complete and timely submit a Vapor Pressure Protocol.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-15 Days</td><td>$500</td></tr><tr><td>16-30 Days</td><td>$1,000</td></tr><tr><td>31 Days or more</td><td>$1,500</td></tr></table></td></tr>
<tr><td>u. For violation of Paragraph 31, for failure to timely perform the Covered Storage Vessel Audit with the necessary elements.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$300</td></tr><tr><td>16-30 Days</td><td>$400</td></tr><tr><td>31 Days or more</td><td>$500, not to exceed $50,000 per Covered Storage Vessel Audit</td></tr></table></td></tr>
<tr><td>v. For violation of Paragraph 31.d, for failure to timely prepare a Covered Storage Vessel Audit Corrective Action Plan following the Covered Storage Vessel Audit (if necessary).</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day late</th></tr><tr><td>1-15 Days</td><td>$150</td></tr><tr><td>16-30 Days</td><td>$200</td></tr><tr><td>31 Days or more</td><td>$500</td></tr></table></td></tr>
<tr><td>w. For violations of Paragraph 31.d, for failure to timely complete each corrective action in the Covered Storage Vessel Audit CAP.</td><td>$35,000 per instance.</td></tr>
</table>

F. Stipulated Penalties for Appendix F: Heat Exchangers Compliance Requirements

<table>
<tr><th>Consent Decree Violations of Appendix F[6]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For violation of Paragraphs 2.a or 2.b, failure to timely develop and complete a written facility-wide Heat Exchange Monitoring Program Document, or each failure to timely update the Heat Exchange Monitoring Program Document on an annual basis as needed.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$200</td></tr><tr><td>31-60 Days</td><td>$400</td></tr><tr><td>61 Days or more</td><td>$500</td></tr></table></td></tr>
<tr><td>b. For each violation of Paragraphs 3.a and 3.b, failure to perform monitoring or initiate investigations to identify Cooling Water Heat Exchanger Leaks.</td><td>$1,000 per Cooling Water Heat Exchanger System per missed monitoring event or delayed investigation.</td></tr>
<tr><td>c. For violation of Paragraph 4.a, failure to conduct routine time-based or risk-based inspections and testing of Cooling Water Heat Exchangers or complete a deferral form prior to the scheduled inspection as identified in the Heat Exchange Monitoring Program Document.</td><td><table><tr><th>Period of noncompliance</th><th>Penalty per Day</th></tr><tr><td>1-30 Days</td><td>$500</td></tr><tr><td>31-60 Days</td><td>$1,000</td></tr><tr><td>61 Days or more</td><td>$2,000</td></tr></table></td></tr>
<tr><td>d. For violation of Paragraph 5.a, except as provided in Paragraph 5.c, failure to repair the Cooling Water Heat Exchanger Leak no later than 45 Days after identifying a Cooling Water Heat Exchanger Leak.</td><td><table><tr><th>Penalty per Heat Exchanger Leak per Day late</th><th>Not to exceed</th></tr><tr><td>$1,000</td><td>$100,000</td></tr></table></td></tr>
<tr><td>e. For violation of Paragraph 5.d, failure to complete a RCFA Report and identify the Failure Type within 150 Days of identification of a leak.</td><td>$15,000 per instance.</td></tr>
</table>

6 All Paragraph references below are to Paragraphs in Appendix F (Heat Exchangers) unless otherwise stated.

H. Stipulated Penalties for Appendix H: Protocol for Leak Detection Sensor Network

<table>
<tr><th>Consent Decree Violations of Appendix H[7]</th><th>Stipulated Penalty</th></tr>
<tr><td>a. For each failure to: (1) conduct quarterly bump test on sensor, (2) recalibrate or replace a sensor after an unsuccessful bump test, or (3) conduct a new bump test after recalibration, as required in accordance with Section 4.2; or to (4) confirm the health of each sensor or (5) test the responsivity and wireless communication of the sensor as required by Section 4.3; (6) check the sensor detection floor as required by Section 4.4; or (7) conduct the quarterly wind sensor check required by Section 4.5.</td><td>$500 per sensor.</td></tr>
<tr><td>b. For each failure to repair, replace, or adjust a sensor, or take other corrective actions as required by Sections 4.3, 4.4 or 4.5.</td><td>$500 per sensor.</td></tr>
<tr><td>c. For each sensor, failure to continuously collect data in accordance with Section 4.3 except as provided by Section 4.6.</td><td>
<table>
<tr><th>Percentage of sensor downtime, 12-month rolling annual average basis</th><th>Months of Noncompliance</th><th>Penalty Per Month</th></tr>
<tr><td rowspan="3">10-15%</td><td>First and second month</td><td>$500</td></tr>
<tr><td>Third and fourth month</td><td>$1,000</td></tr>
<tr><td>Fifth month and beyond</td><td>$2,000</td></tr>
<tr><td rowspan="3">15% or higher</td><td>First and second month</td><td>$1,000</td></tr>
<tr><td>Third and fourth month</td><td>$2,500</td></tr>
<tr><td>Fifth month and beyond</td><td>$5,000</td></tr>
</table>
</td></tr>
</table>

7 All Section references below are to Sections in Appendix H (Protocol for Leak Detection Sensor Network) unless otherwise stated.

d. For each failure to conduct the Initial Screening Investigation or Second Screening Investigation in accordance with Sections 5.2.1 and 5.2.2, 5.2.4, 5.2.5, 5.2.6, 5.3, or 5.4, or for each closing of a PSL Notification without the conditions of Sections 5.2.3.3, 5.2.4, 5.2.5, or 5.5. having been met.	$5,000 per investigation or PSL Notification closure.
e. For failure to repair leak source subject to the LDAR program as required by 5.2.3.1.	See Appendix B (LDAR Program) – Stipulated Penalties (f)-(h).
f. For failure to repair leak source not subject to LDAR program but within the LDSN as required by 5.2.3.2.	$150 per component per Day, not to exceed $1,500 per component.
g. For failure to complete third party audit required by Section 6.1 or failure of audit to meet requirements of Section 6.5.	$5,000 per audit.

48. Reporting and Recordkeeping Requirements. The following stipulated penalties shall accrue per violation per Day for each violation of the reporting requirements of Section VIII (Reporting Requirements) and the recordkeeping requirements of Section XIII (Information Collection and Retention) (which includes the reporting and recordkeeping requirements in the Appendices):

Penalty Per Violation Per Day	Period of Noncompliance
$500	1st through 14th Day
$1,000	15th through 30th Day
$2,000	31st Day and beyond

49. Transfer of Ownership. If HFSNR fails to: (a) provide a copy of this Consent Decree to any proposed transferee; (b) provide written notice to the United States at least 30 Days prior to any transfer of any portion of the Facility; or (c) provide a copy of the proposed written agreement with the transferee as required by Paragraph 6, HFSNR shall pay a stipulated penalty of $10,000 per occurrence.

50. Except as provided in Paragraphs 54.a and b, stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree unless otherwise specified herein.

51. HFSNR shall pay stipulated penalties to the United States and NMED within 60 Days of a written demand by either Plaintiff. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff.

52. HFSNR shall pay stipulated penalties to the United States and the NMED within 60 Days of a written demand by either the United States or NMED. HFSNR shall pay 50 percent of the total stipulated penalty amount due to the United States and 50 percent to NMED. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff.

53. The United States or NMED may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due to it under this Consent Decree.

54. Stipulated penalties shall continue to accrue as provided in Paragraph 50, during any Dispute Resolution, but need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of EPA or NMED that is not appealed to the Court, HFSNR shall pay accrued penalties determined to be owing, together with Interest, to the United States or NMED within 30 Days of the effective date of the agreement or the receipt of EPA's or NMED's decision or order.

b. If the dispute is appealed to the Court and the United States or NMED

prevails in whole or in part, HFSNR shall pay all accrued penalties determined by the Court to be owing, together with Interest, within 60 Days of receiving the Court's decision or order, except as provided in subparagraph c, below.

c. If any Party appeals the District Court's decision, HFSNR shall pay all accrued penalties determined to be owing, together with Interest, within 15 Days of receiving the mandate following the final appellate court decision.

55. HFSNR shall pay stipulated penalties owing to the United States in the manner set forth in Paragraph 16 and with the confirmation notices required by Paragraph 18, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid. HFSNR shall pay stipulated penalties owing to NMED in the manner set forth in Paragraph 17.

56. If HFSNR fails to pay stipulated penalties according to the terms of this Consent Decree, HFSNR shall be liable for Interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States or NMED from seeking any remedy otherwise provided by law for HFSNR's failure to pay any stipulated penalties.

57. The payment of penalties and Interest, if any, shall not alter in any way HFSNR's obligation to complete the performance of the requirements of this Consent Decree.

58. Non-Exclusivity of Remedy. Stipulated penalties are not the United States' exclusive remedy for violations of this Consent Decree. Subject to the provisions of Section XIV (Effect of Settlement/Reservation of Rights), the United States expressly reserves the right to seek any other relief it deems appropriate for HFSNR's violation of this Decree or applicable law, including, but not limited to, an action against HFSNR for statutory penalties, additional

injunctive relief, mitigation or offset measures, and/or contempt. However, the amount of any statutory penalty assessed for a violation of this Consent Decree shall be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree.

X. PROHIBITION ON NETTING

59. General Prohibition. HFSNR shall not use any emissions reductions that result from actions required by this Consent Decree for the purposes of obtaining project decreases, netting reductions, or emission offset credits, including, but not limited to, applying for, obtaining, trading, or selling any emission reductions credits.

60. Outside the Scope of the General Prohibition. Nothing in this Consent Decree is intended to prohibit HFSNR from:

a. Using or generating netting reductions or emission offset credits from Artesia Refinery units that are covered by this Consent Decree to the extent that the proposed netting reductions or emission offset credits represent the difference between the emissions limitations set forth in or established pursuant to this Consent Decree for these Artesia Refinery units and the more stringent emissions limitations that HFSNR may elect to accept for these Artesia Refinery units in a permitting process;

b. Using or generating netting reductions or emission offset credits for emissions reductions not required by this Consent Decree; or

c. Using CD Emissions Reductions for Artesia Refinery's compliance with any rules or regulations designed to address regional haze or the non-attainment status of any area (excluding Prevention of Significant Deterioration and Non-Attainment New Source Review ("NSR") rules found at Part C and D of Subchapter I of the CAA, 42 U.S.C. §§ 7470–7492, 7501–7515, and applicable federal and New Mexico regulations implementing such

provisions of the CAA) that apply to the Artesia Refinery; provided, however, that HFSNR shall not be allowed to trade or sell any CD Emissions Reductions.

XI. FORCE MAJEURE

61. "Force majeure," for purposes of this Consent Decree, means any event arising from causes beyond the control of HFSNR, of any entity controlled by HFSNR, or of HFSNR's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite HFSNR's best efforts to fulfill the obligation. Given the need to protect public health and welfare and the environment, the requirement that HFSNR exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure, such that any delay or non-performance is, and any adverse effects of the delay or non-performance are, minimized to the greatest extent possible. "Force majeure" does not include financial inability to perform any obligation under this Consent Decree.

62. If any event occurs for which HFSNR will or may claim a force majeure, HFSNR shall provide notice to EPA and NMED by email in accordance with Section XVI (Notices). The deadline for the initial notice is 10 Days after HFSNR first knew or should have known that the event would likely delay or prevent performance. HFSNR shall be deemed to know of any circumstance of which any contractor of, subcontractor of, or entity controlled by HFSNR knew or should have known.

63. Regardless of whether HFSNR seeks to assert a claim of force majeure concerning the event, within 15 Days after the notice under Paragraph 62, HFSNR shall submit a further notice to EPA and NMED that includes: (a) an explanation and description of the event and its effect on HFSNR's completion of the requirements of the Consent Decree; (b) a

description and schedule of all actions taken or to be taken to prevent or minimize the delay and/or other adverse effects of the event; (c) if applicable, the proposed extension of time for HFSNR to complete the requirements of the Consent Decree; (d) HFSNR's rationale for attributing such delay to a force majeure if it intends to assert such a claim; (e) a statement as to whether, in the opinion of HFSNR, such event may cause or contribute to an endangerment to public health or welfare or the environment; and (f) all available proof supporting any claim that the delay was attributable to a force majeure.

64. Failure to submit a timely or complete notice or claim under Paragraph 62 or 63 regarding an event precludes HFSNR from asserting any claim of force majeure regarding that event, provided, however, that EPA may, in its unreviewable discretion, excuse such failure if it is able to assess to its satisfaction whether the event is a force majeure, and whether HFSNR has exercised its best efforts, under Paragraph 61.

65. After receipt of any claim of force majeure, EPA, after a reasonable opportunity for review and comment by NMED, will notify HFSNR of its determination whether HFSNR is entitled to relief under Paragraph 61, and, if so, the excuse of, or the extension of time for, performance of the obligations affected by the force majeure. An excuse of, or extension of the time for performance of, the obligations affected by the force majeure does not, of itself, excuse or extend the time for performance of any other obligation.

66. If HFSNR elects to invoke the dispute resolution procedures set forth in Section XII (Dispute Resolution), it shall do so no later than 30 Days after receipt of EPA's notice. In any such proceeding, HFSNR has the burden of proving that it is entitled to relief under Paragraph 61, that its proposed excuse or extension was or will be warranted under the circumstances, and that it complied with the requirements of Paragraphs 61 through 63. If

HFSNR carries this burden, the delay or non-performance at issue shall be deemed not to be a violation by HFSNR of the affected obligation of this Consent Decree identified to EPA and the Court.

XII. DISPUTE RESOLUTION

67. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. HFSNR's failure to seek resolution of a dispute under this Section concerning an issue of which it had notice and an opportunity to dispute under this Section prior to an action by the United States to enforce any obligation of HFSNR arising under this Decree precludes HFSNR from raising any such issue as a defense to any such enforcement action.

68. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when HFSNR sends DOJ, EPA, and NMED a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 30 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, HFSNR invokes formal dispute resolution procedures as set forth below.

69. Formal Dispute Resolution. HFSNR shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by sending DOJ and EPA a written Statement of Position regarding the matter in dispute. The Statement of Position

shall include, but need not be limited to, any factual data, analysis, or opinion supporting HFSNR's position, and any supporting documentation relied upon by HFSNR.

70. The United States will send HFSNR its Statement of Position within 45 Days of receipt of HFSNR's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position, and any supporting documentation relied upon by the United States. The United States' Statement of Position is binding on HFSNR, unless HFSNR files a motion for judicial review of the dispute in accordance with the following Paragraph.

71. Judicial Dispute Resolution. HFSNR may seek judicial review of the dispute by filing with the Court and serving on the United States a motion requesting judicial resolution of the dispute. The motion: (a) must be filed within 30 Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph; (b) may not raise any issue not raised in informal dispute resolution pursuant to Paragraph 68, unless the Plaintiffs raise a new issue of law or fact in the Statement of Position; (c) shall contain a written statement of HFSNR's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation; and (d) shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

72. The United States shall respond to HFSNR's motion within the time period allowed by the Local Rules of this Court. HFSNR may file a reply memorandum, to the extent permitted by the Local Rules.

73. Standard of Review. In all disputes arising under the Consent Decree, HFSNR shall bear the burden of demonstrating that its position complies with this Consent Decree and the CAA and that it is entitled to relief under applicable principles of law. The United States

reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law, and HFSNR reserves the right to argue to the contrary.

74. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of HFSNR under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 54. If HFSNR does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX (Stipulated Penalties).

XIII. INFORMATION COLLECTION AND RETENTION

75. The United States, NMED, and their representatives, including attorneys, contractors, and consultants, shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to:

a. Monitor the progress of activities required under this Consent Decree;

b. Verify any data or information submitted to the United States or NMED in accordance with the terms of this Consent Decree;

c. Obtain samples and, upon request, splits of any samples taken by HFSNR or its representatives, contractors, or consultants;

d. Obtain documentary evidence, including photographs and similar data; and

e. Assess HFSNR's compliance with this Consent Decree.

76. Upon request, HFSNR shall provide EPA and NMED or their authorized representatives splits of any samples taken by HFSNR. Upon request, EPA and NMED shall provide HFSNR splits of any samples taken by EPA or NMED.

77. Except as provided in the data collection/recordkeeping requirements of the OGI Protocol approved by EPA, or a revised protocol approved by EPA, under Paragraph 30, Appendix A (Paragraph 48), and Appendix E (Paragraph 34), until 3 years after the termination of this Consent Decree, HFSNR shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to HFSNR's performance of its obligations under this Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States or NMED, HFSNR shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

78. At the conclusion of the information-retention period provided in the preceding Paragraph, HFSNR shall notify the United States and NMED at least 90 Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States or NMED, HFSNR shall deliver any such documents, records, or other information to EPA or NMED. HFSNR may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal law. If HFSNR asserts such a privilege, it shall provide the following: (a) the title of the document, record, or information; (b) the date of the document,

record, or information; (c) the name and title of each author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or information; and (f) the privilege asserted by HFSNR. However, no documents, records, or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

79. HFSNR may also assert that information required to be provided under this Section is protected as CBI under 40 C.F.R. Part 2 and, if applicable, 20.2.1.1115 NMAC. As to any information that HFSNR seeks to protect as CBI, HFSNR shall follow the procedures set forth in 40 C.F.R. Part 2 and 20.2.1.1115 NMAC.

80. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or NMED pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of HFSNR to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

81. Entry of this Consent Decree resolves the civil claims of the United States and NMED at the Artesia Refinery through the Date of Lodging for:

a. Violations alleged in the Complaint.

b. Violations alleged in the May 1, 2020 NOV.

c. Violations alleged in the NMED PINs.

d. Violations of 40 C.F.R. Part 61, Subpart FF, and 20.2.78 NMAC; and NSPS Subpart QQQ, and 20.2.77 NMAC.

e. Violations with respect to the Appendix B Covered Process Units of the

LDAR requirements of NSPS Subparts GGG and GGGa, and those requirements of NSPS Subparts VV and VVa that are applicable via GGG and GGGa, and 20.2.77 NMAC; and the Equipment Leak Standards of 40 C.F.R. Part 63, Subpart CC, and 20.2.82 NMAC.

f. Violations with respect to the Appendix E Covered Storage Vessels of NSPS Subparts A, K, Ka, and Kb, and 20.2.77 NMAC; and 40 C.F.R. Part 63, Subparts A, CC, SS, and WW, and 20.2.82 NMAC.

g. Violations with respect to the Appendix F Covered Heat Exchangers of 40 C.F.R. § 63.654 (MACT CC heat exchanger requirements), and 20.2.82 NMAC.

h. Violations with respect to the Appendix D Covered Flares of NSPS Subparts A and Ja, and 20.2.77 NMAC; and 40 C.F.R. Part 63, Subpart CC, and 20.2.82 NMAC.

i. Violations of 40 C.F.R. § 63.658 (MACT CC fenceline monitoring requirements) and 20.2.82 NMAC.

j. Violations of the provisions of Artesia Refinery's NSR Permit, No. 0195-M41 and Title V Permit No. P051-R2, and predecessor permits, that implement the requirements identified in Subparagraphs (a) through (i).

82. The United States and NMED reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree. This Consent Decree shall not be construed to limit the rights of the United States or NMED to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Paragraph 81.

83. The United States and NMED further reserve all legal and equitable remedies to address any conditions if there is or may be an imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, HFSNR's Facility, whether related to the violations addressed in this Consent Decree or otherwise.

84. In any subsequent administrative or judicial proceeding initiated by the United States or NMED for injunctive relief, civil penalties, other appropriate relief relating to the Artesia Refinery, HFSNR shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, claim preclusion (res judicata), issue preclusion (collateral estoppel), claim-splitting, or other defenses based upon any contention that the claims raised by the United States or NMED in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 81.

85. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. HFSNR is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and HFSNR's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and NMED do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that HFSNR's compliance with any aspect of this Consent Decree will result in compliance with provisions of the Act, 42 U.S.C. § 7401, *et seq*., or with any other provisions of federal, State, or local laws, regulations, or permits.

86. This Consent Decree does not limit or affect the rights of HFSNR or of the United States or NMED against any third parties, not party to this Consent Decree, nor does it limit the

rights of third parties, not party to this Consent Decree, against HFSNR, except as otherwise provided by law.

87. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XV. COSTS

88. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States and NMED shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by HFSNR.

XVI. NOTICES

89. Unless otherwise specified in this Decree, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and sent by (a) email (preferred) or (b) mail with a copy by email, addressed as follows, provided that any submission that is too large to be emailed may be provided via an electronic file share technology (including, for EPA, via the CDX electronic system noted below). In addition, for all notification, submissions, or communications to EPA, HFSNR shall register for the CDX electronic system and upload such notifications, submissions, or communications at https://cds.gov/epa-home.asp.

As to DOJ by email (preferred):	eescdcopy.enrd@usdoj.gov Re: DJ #90-5-2-1-2228/2
As to DOJ by mail:	EES Case Management Unit Environment and Natural Resources Division U.S. Department of Justice P.O. Box 7611 Washington, D.C. 20044-7611 Re: DJ #90-5-2-1-2228/2

As to EPA by email (preferred):	foley.patrick@epa.gov R6CAACDDeliverables@epa.gov refineryCD@erg.com haynes.james@epa.gov
As to NMED by email (preferred):	ENV-AQB.Settlement.Notifications@state.nm.us
As to NMED by mail:	Air Quality Bureau Attn: Compliance & Enforcement Section Chief 525 Camino de los Marquez, Suite 1 Santa Fe, NM 87505
As to HFSNR by email (preferred):	DL-UG-CD-NotificationsHFSNR@HFSinclair.com generalcounsel@hfsinclair.com
As to HFSNR by mail:	HF Sinclair Navajo Refining LLC Attention: Plant Manager 501 E Main St. Artesia, NM 88210 HF Sinclair Corporation Attention: General Counsel 2323 Victory Avenue Suite 1400 Dallas, TX 75219

90. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

91. Notices submitted pursuant to this Section shall be deemed submitted upon transmission by email, or mailing with a copy by email, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVII. EFFECTIVE DATE

92. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket; provided, however, that HFSNR hereby agrees that it shall be bound to perform duties scheduled to occur prior to the Effective

Date. In the event the United States withdraws or withholds consent to this Consent Decree before entry, or the Court declines to enter the Consent Decree, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

XVIII. RETENTION OF JURISDICTION

93. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Sections XII (Dispute Resolution) and XIX (Modification), or effectuating or enforcing compliance with the terms of this Decree.

XIX. MODIFICATION

94. The terms of this Consent Decree, including any attached Appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Decree, it shall be effective only upon approval by the Court.

95. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XII (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 73, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XX. PROCEDURES FOR TERMINATION OF THE 2002 NAVAJO CD

96. Within 15 Business Days of the Effective Date, the Parties shall file a joint motion to terminate the following Paragraphs of the 2002 Navajo CD as to HFSNR (as successor to Navajo Refining Company, L.P.) for the Artesia Refinery:

a. Paragraph 19 – Applicability of and Compliance for Flaring;

b. Paragraph 22 – Benzene Waste NESHAP Program Enhancements;

c. Paragraph 23 - Leak Detection and Repair ("LDAR") Program Enhancements;

d. Paragraph 29 – Compliance with NSPS QQQ at the Artesia and Lovington Refineries;

e. Paragraph 30 – Operation of the Sulfur Recovery Unit;

f. Paragraph 31 – Installation of Additional Wet Gas Scrubber;

g. Paragraph 32 – Community SEPs for Navajo; and

h. Paragraph 33 – Environmental Management System Baseline Assessment for Navajo.

97. Within 30 Days after all the following events (Paragraphs 97.a through 97.c) have occurred, the Parties shall file a joint motion to terminate the remainder of the 2002 Navajo CD as to HFSNR (as successor to Navajo Refining Company, L.P.) for the Artesia Refinery:

a. HFSNR provides the United States and NMED with copies of final and effective construction, minor or major new source review permits, or other federally enforceable permits (other than Title V permits) that properly incorporate the 2002 Navajo CD emission limits, standards, and/or schedules ("2002 Navajo CD Permit Requirements") as required by Paragraph 24 of the 2002 Navajo CD for the Artesia Refinery;

b. HFSNR provides the United States and NMED with copies of completed permit application(s) for an operating (Title V) permit(s) that would properly incorporate the 2002 Navajo CD Permit Requirements; and

c. Submission of a certification by HFSNR in accordance with Paragraph 41 of this Consent Decree to the United States and NMED that since January 1, 2025, HFSNR has

for the Artesia Refinery maintained substantial compliance with all 2002 Navajo CD requirements not terminated under Paragraph 96 and that HFSNR has paid all penalties and other monetary obligations due under the 2002 Navajo CD through the date HFSNR provides copies of the permits to the United States and NMED pursuant to Paragraph 97.a above.

XXI. TERMINATION

98. After HFSNR has completed all projects required by and maintained satisfactory compliance with the requirements of Section VI (Compliance Requirements), has complied with all other requirements of this Consent Decree, and has paid the civil penalty and any accrued and demanded stipulated penalties as required by this Consent Decree, HFSNR may serve upon the United States and NMED a Request for Termination, stating that HFSNR has satisfied those requirements, together with all necessary supporting documentation.

99. Following receipt by the United States and NMED of HFSNR's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether HFSNR has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States, after consultation with NMED, agrees that the Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Decree.

100. If the United States, after consultation with NMED, does not agree that the Consent Decree may be terminated, the United States shall provide written notice to HFSNR within 180 Days of receiving HFSNR's request for termination that explains why it does not agree. Upon receipt of this written notice, HFSNR may invoke Dispute Resolution under Section XII.

XXII. PUBLIC PARTICIPATION

101. This Consent Decree shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. HFSNR consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified HFSNR in writing that it no longer supports entry of the Decree.

XXIII. SIGNATORIES/SERVICE

102. Each undersigned representative of HFSNR, NMED, and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice identified on the DOJ signature page below, certifies that that person is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party that person represents to this document.

103. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. HFSNR agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons. HFSNR need not file an answer to the complaint in this action unless or until the Court expressly declines to enter this Consent Decree.

XXIV. INTEGRATION

104. This Consent Decree, including deliverables that are subsequently approved pursuant to this Consent Decree, constitutes the entire agreement among the Parties regarding the subject matter of the Consent Decree and supersedes all prior representations, agreements and understandings, whether oral or written, concerning the subject matter of the subject matter of the Decree herein.

XXV. 26 U.S.C. SECTION 162(f)(2)(A)(ii) IDENTIFICATION

105. For purposes of the identification requirement in Section 162(f)(2)(A)(ii) of the Internal Revenue Code, 26 U.S.C. § 162(f)(2)(A)(ii), and 26 C.F.R. § 1.162-21(b)(2), performance of the Compliance Requirements in Section VI of this Consent Decree, including the requirements of Appendices A-H, is restitution, remediation, or required to come into compliance with law.

XXVI. HEADINGS

106. Headings to the Sections and Subsections of this Consent Decree are provided for convenience and do not affect the meaning or interpretation of the provisions of this Consent Decree.

XXVII. FINAL JUDGMENT

107. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, NMED, and HFSNR.

XXVIII. APPENDICES

108. The following Appendices are attached to and part of this Consent Decree:

"**Appendix A**" is the Wastewater and BWON Program;

"**Appendix B**" is the Leak Detection and Repair Program;

"**Appendix C**" is the Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring;

"**Appendix D**" is the Flaring Compliance Program;

"**Appendix E**" is the Storage Vessel Compliance Program;

"**Appendix F**" is the Heat Exchangers Compliance Requirements;

"**Appendix G**" is the Emissions Testing Program; and

"**Appendix H**" is the Protocol for Leak Detection Sensor Network.

Dated and entered this __ day of _____, 2025 by:

_____
UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

1/17/2025
Date

KATHERINE E. KONSCHNIK
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

SCOTT M. CERNICH
Senior Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Washington, DC 20044-7611

ALEXANDER M.M. UBALLEZ
United States Attorney
District of New Mexico

RUTH F. KEEGAN
Assistant United States Attorney
District of New Mexico

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

CECIL RODRIGUES Digitally signed by CECIL RODRIGUES Date: 2025.01.16 16:41:36 -05'00'

DATE

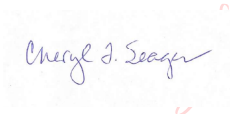
CECIL RODRIGUES
Acting Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Washington, DC 20004

ROSEMARIE A. KELLEY
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Washington, DC 20004

MARY E. GREENE
Director, Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Washington, DC 20004

PROVIDENCE SPINA
Attorney Adviser
Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Washington, DC 20004

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:



CHERYL T. SEAGER
Director
Enforcement and
Compliance Assurance Division
U.S. Environmental Protection Agency, Region 6

ARATI TRIPATHI
Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 6
1201 Elm Street
Dallas, TX 75270

FOR THE NEW MEXICO ENVIRONMENT DEPARTMENT:

JAMES C. KENNEY
Secretary
New Mexico Environment Department

CHRISTOPHER J. VIGIL
Special Assistant Attorney General
1190 St. Francis Dr., Suite N4050
Santa Fe, New Mexico 87501
(505) 577-6178
christopherj.vigil@state.nm.us

FOR HF SINCLAIR NAVAJO REFINING LLC:

1-16-2025
Date

Eric L. Nitcher
Executive Vice President, General Counsel
HF Sinclair Navajo Refining LLC

Ray R. Bagherian
Associate General Counsel, EHS
Counsel to HF Sinclair Navajo Refining LLC

Appendix A

Wastewater and BWON Program

WHEREAS, HFSNR has completed a third-party audit pursuant to the 2002 Navajo CD ("Third-Party TAB Study and Compliance Review") prior to the Effective Date.

WHEREAS, HFSNR has completed the Field Verification of all individual drain systems ("IDS") components at process units not covered by the Third-Party TAB Study and Compliance Review ("Field Verification of IDS Components") prior to the Effective Date.

WHEREAS, the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components evaluated 462 IDS components and controlled or corrected 164 IDS components under BWON or NSPS QQQ prior to the Effective Date.

WHEREAS, HFSNR will control or correct 6 deficient IDS components pursuant to the Sewer System Evaluation of Paragraph 44 and per the BWON Compliance Plan developed pursuant to Paragraph 4.

WHEREAS, HFSNR has completed the following projects prior to the Effective Date: (1) redesigned and installed new covers at each API oil water separator ("API Separators"); (2) redesigned and installed a new bar screen lid (T-844); (3) installed temporary thermal oxidizers at the Aggressive Biological Treatment ("ABT") Tanks; (4) redesigned and sealed the Master Box; (5) completed certain repairs to the Stormwater Lift Station pump pad; (6) sealed the sewer junction box west of the API Separators; and (7) installed a hard-piped connection for T-49 slop tank water draws to the sewer ahead of the API Separators.

Definitions:

Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Section, Paragraph, and Subparagraph references in this Appendix are references to the Sections, Paragraphs, and Subparagraphs in this Appendix.

"Aqueous Benzene Wastes" shall mean wastes with a flow-weighted annual average water content greater than or equal to 10% water, on a volume basis as total water, or wastes that are mixed with water or other wastes at any time such that the resulting mixture has an annual average water content greater than or equal to 10%.

"BWON" shall mean the National Emission Standards for Hazardous Air Pollutants ("NESHAP") promulgated at 40 C.F.R. Part 61, Subpart FF, pursuant to Section 112 of the CAA, 42 U.S.C. § 7412.

"BWON Equipment" shall mean all equipment at the Facility that is subject to the BWON control standards under 40 C.F.R. Part 61, Subpart FF and that has been selected by HFSNR to be controlled to meet the 6 BQ Compliance Option. BWON Equipment includes, but is not limited to, the following: valves, agitators, connectors, pumps, pressure relief devices, IDSs (including, but not limited to, junction boxes and manhole covers), stilling well (T-844), lift basin (T-1), stormwater lift station (T-846), API Separators, conservation vents, and tanks.

"Difficult-to-Monitor" or "DTM Equipment" shall mean that the Facility demonstrates that BWON Equipment or QQQ Equipment, specifically valves and connectors, cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

"Detectable Emissions" shall mean 500 parts per million by volume ("ppmv") or greater above background levels at NDE Equipment.

"Detectable Emissions Root Cause" shall mean the primary, underlying, systemic causes, and any other immediate, contributing causes of Detectable Emissions.

"Detectable Emissions Root Cause Analysis" shall mean an analysis conducted by HFSNR to identify the Detectable Emissions Root Cause.

"Inaccessible Equipment" shall have the same definition as set forth in 40 C.F.R. § 60.482–11b(f), except references to "connector" shall mean valves or connectors subject to BWON and NSPS QQQ regulations. Insulated valve packing shall not be classified as Inaccessible Equipment.

"No Detectable Emissions" or "NDE" shall mean less than 500 ppmv above background levels, as measured by a detection instrument reading in accordance with the procedures specified in 40 C.F.R. § 61.355(h).

"NDE Equipment" shall mean BWON Equipment or QQQ Equipment subject to an NDE standard under BWON or NSPS QQQ.

"NSPS QQQ" shall mean the New Source Performance Standards ("NSPS") promulgated at 40 C.F.R. Part 60, Subpart QQQ ("NSPS QQQ"), pursuant to Section 111 of the CAA, 42 U.S.C. § 7411.

"Organic Benzene Wastes" shall mean wastes with a flow-weighted annual average water content less than 10% that never commingle with other aqueous wastes to become greater than or equal to 10% water.

"QQQ Equipment" shall mean all IDSs, oil-water separators, and all aggregate facilities at the Facility that are subject to NSPS QQQ or that become subject to NSPS QQQ during the term of this Consent Decree.

"Screening Value" shall mean the highest emission level that is recorded at each piece of equipment monitored in accordance with Method 21.

"Unsafe-to-Monitor" or "UTM Equipment" shall have the same definition as set forth in 40 C.F.R. § 60.482-11b(e), except references to connector shall mean BWON or NSPS QQQ valves and connectors. Insulated valves shall not be classified as UTM Equipment unless they are UTM Equipment for another reason.

"Wastewater Treatment Plant" or "WWTP" shall mean, for purposes of this Consent Decree, the Facility's wastewater system that treats process wastewater and storm water runoff from process units throughout the Facility. The WWTP begins at the Master Box (T-845) and ends with the oil water separator system. Should HFSNR select any equipment downstream of the oil water separator system to be controlled to meet the 6 BQ Compliance Option, the definition of WWTP will be deemed to include such equipment.

I. COMPLIANCE REQUIREMENTS

HFSNR shall undertake the following measures to minimize fugitive benzene waste and VOC emissions at the Facility. Nothing in this Appendix shall relieve HFSNR of its independent obligation to comply with the applicable requirements of BWON and NSPS QQQ.

A. BWON COMPLIANCE

1. **6 BQ Compliance Option.** By no later than January 1, 2026, HFSNR shall comply with the compliance option set forth at 40 C.F.R. § 61.342(e) known as the "6 BQ Compliance Option" of BWON. HFSNR shall not change the compliance option applicable to the Facility from the 6 BQ Compliance Option to the 2 Mg compliance option. Any other change in HFSNR's BWON compliance program not expressly prohibited by this Consent Decree must be completed in accordance with the applicable BWON regulations.

2. HFSNR shall ensure that all waste management units and treatment processes at the Facility handle Organic Benzene Wastes in compliance with all applicable BWON control standards.

3. For purposes of complying with the 6 BQ Compliance Option, all waste management units at the Facility handling Aqueous Benzene Wastes shall either: (a) meet the applicable control standards of BWON (e.g., 40 C.F.R. §§ 61.343-347 and 40 C.F.R.

§ 61.348(a)); or (b) have their uncontrolled benzene quantity count toward the 6 BQ Compliance Option. Nothing in this paragraph shall be construed to limit the ability of HFSNR to treat and manage Aqueous Benzene Wastes in accordance with the requirements of 40 C.F.R. § 61.355(k)(4).

4. By no later than July 29, 2025, and following the completion of the sewer system mapping project required by Paragraph 44.c, HFSNR shall submit to EPA and NMED for approval a plan that identifies the specific compliance strategy and schedule that HFSNR will implement to ensure that the Facility complies with the 6 BQ Compliance Option by no later than January 1, 2026 (the "BWON Compliance Plan"). For each instance of potential noncompliance with the 6 BQ Compliance Option identified in the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components, the BWON Compliance Plan shall describe:

a. All actions completed from the conclusion of the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components through the date of the submittal to correct noncompliance;

b. HFSNR's explanation of why it disagrees with any instance of any potential noncompliance that it chooses not to correct;

c. Consent Decree requirements that will directly address the potential noncompliance, and the schedule for completing the actions; and

d. Any additional measures HFSNR will take to address the potential noncompliance as soon as practicable, and the schedule for completing the actions.

5. The review and approval of the BWON Compliance Plan shall be done in accordance with Paragraphs 31-34 of the Consent Decree. The certification of compliance shall be done in accordance with Paragraph 41 of the Consent Decree.

6. **Annual Total Annual Benzene ("TAB") Report.** On or before April 1st of each calendar year, HFSNR shall submit its annual TAB report for the preceding calendar year as required pursuant to 40 C.F.R. § 61.357(d)(2).

7. **NSPS QQQ Applicability.** All IDSs, oil-water separators, and aggregate facilities at the Facility shall be affected facilities, as the terms are defined in 40 C.F.R. §§ 60.2 and 60.691, and shall be subject to and comply with the requirements of NSPS QQQ.

8. Storage Vessels (as defined in Appendix E (Storage Vessel Compliance Program) to the Consent Decree) that meet the definition of BWON Equipment or QQQ Equipment in this Consent Decree must follow the requirements of Section E (Enhanced Covered Storage Vessel Program) of Appendix E (Storage Vessel Compliance Program). For any such Storage Vessels, HFSNR's compliance with the requirements of Section E of Appendix E will satisfy the monitoring requirements of this Section. The requirements of the Enhanced Covered Storage Vessel Program in Section E of Appendix E are in addition to, and not in lieu of, the requirements of any applicable regulations for the Storage Vessels.

B. FACILITY COMPLIANCE STATUS

9. **Facility-wide BWON and NSPS QQQ Program Document.** Within 180 Days of the Effective Date, HFSNR shall develop a written facility-wide BWON and NSPS QQQ program document ("BWON and NSPS QQQ Program Document") for the Facility that describes: (i) facility-wide BWON and NSPS QQQ programs and lists the applicability of BWON and NSPS QQQ regulations to each piece of BWON Equipment and QQQ Equipment at

the Facility as well as the monitoring frequencies, Detectable Emissions limits, repair requirements, and control requirements by equipment type; (ii) identification of applicable BWON Equipment from the point of waste generation to treatment unit at the Facility for each controlled Aqueous Benzene Waste; (iii) a tracking program, including management of change ("MOC") as described in Paragraph 9.a; (iv) the roles and responsibilities of all employee and contractor personnel assigned to BWON and NSPS QQQ functions at the Facility; (v) identification of roles, including contractors, dedicated to BWON and NSPS QQQ compliance at the Facility and a summary of the roles within the BWON/NSPS QQQ compliance program in order to satisfy the requirements of the BWON and NSPS QQQ regulations and the requirements of this Appendix; (vi) a carbon canister monitoring plan consistent with the requirements of Paragraph 36; and (vii) HFSNR's plan to implement the BWON and NSPS QQQ requirements in this Appendix.

a. **Management of Change.** For each MOC process or analysis under the tracking program, HFSNR shall ensure that each piece of BWON Equipment or QQQ Equipment added or removed from the BWON and NSPS QQQ Program Document for any reason is evaluated to determine if it is or was subject to the BWON or NSPS QQQ regulations, and that such piece of BWON Equipment or QQQ Equipment is included or removed, as applicable, from the initial or on-going monitoring program and/or the annual TAB report.

b. HFSNR shall review its facility-wide BWON and NSPS QQQ Program Document on an annual basis and update it as needed by no later than December 31st of each year beginning with calendar year 2026.

C. WASTE STREAM INVENTORY

10. **Annual Program.** By no later than July 1, 2025, HFSNR shall continue to implement an annual program of reviewing process information for the Facility, including, but not limited to, construction projects, point of waste generation sampling, as appropriate, updates of specific waste stream documentation (i.e., vacuum trucks, flows measured and recorded in distributed control system), waste shipped off site, maintenance and turnaround activities, and review of MOCs, to ensure that all new benzene waste streams are included in the Facility's waste stream inventory and the annual TAB report required by the BWON regulations, and to ensure that all new waste management units are properly accounted for and managed in accordance with the BWON regulations. HFSNR shall identify and include each waste stream and whether it will be controlled for benzene emissions.

11. **Benzene Releases.** At least once per calendar year, HFSNR shall review all releases at the Facility to determine if benzene waste was generated. HFSNR shall account for all benzene wastes generated through such releases in its annual TAB calculation and report. All benzene wastes generated through such releases that are not managed solely in controlled waste management units shall count toward the 6 BQ Compliance Option compliance limit.

D. MONITORING – GENERAL REQUIREMENTS

12. **Method 21 Testing.**

a. For all Method 21 testing data, HFSNR shall use a flame ionization detector ("FID") attached to a datalogger, or equivalent equipment, which directly electronically records the Screening Value detected, the date and time that each Screening Value is taken, and the identification numbers of the monitoring equipment and technician.

b. HFSNR shall transfer all Method 21 testing data to the Facility's LDAR database on at least a weekly basis for recordkeeping purposes.

c. Notwithstanding the foregoing, HFSNR may use paper logs where appropriate (e.g., small rounds, remonitoring, or when data loggers are not available). Any manually recorded monitoring data shall be transferred to the electronic database within seven Days of monitoring.

d. HFSNR shall properly characterize any BWON Equipment and QQQ Equipment as DTM, UTM, and Inaccessible Equipment in accordance with the terms of this Appendix.

e. The DTM, UTM, and Inaccessible Equipment provisions in Paragraphs 15 and 16 below are applicable to this Appendix and do not relieve HFSNR of any monitoring required by other federal, state, or local standards. Nothing herein alters the applicable BWON and NSPS QQQ requirements for annual Method 21 monitoring of NDE Equipment.

13. **OGI Monitoring.**

a. All OGI surveys shall be conducted in accordance with the approved OGI Protocol developed in accordance with Paragraph 30 of the Consent Decree.

b. For any NDE Equipment observed during an OGI survey, HFSNR shall conduct Method 21 testing within 1 Business Day of observing hydrocarbons to confirm whether the observation is a source of Detectable Emissions (except for DTM, UTM, and Inaccessible Equipment).

14. **AVO Inspections.**

a. HFSNR shall contemporaneously document each deficiency discovered during audio, visual, or olfactory observations ("AVO Inspections").

b. HFSNR shall conduct AVO Inspections on applicable drains and aboveground sewer lines to monitor for any deficiencies including but not limited to cracking in caulk or epoxy, debris in drains, and indications of water levels or other conditions that would reduce the effectiveness of water seal controls.

c. For any NDE Equipment observed during an AVO Inspection, HFSNR shall conduct Method 21 testing within 1 Business Day of detecting a deficiency to confirm whether the observation is a source of Detectable Emissions (except for DTM, UTM, and Inaccessible Equipment).

d. For NDE Equipment, HFSNR shall visually observe any flow indicators to ensure vapors are routed to the control device on a weekly basis.

E. MONITORING REQUIREMENTS

15. **Initial Monitoring.** By no later than July 29, 2025, HFSNR shall initiate the following monitoring of BWON Equipment and QQQ Equipment and conduct the monitoring for a period of no less than 12 consecutive months. A table summarizing the frequency of these initial monitoring requirements by equipment type shall be maintained as part of the BWON and NSPS QQQ Program Document. To the extent this table conflicts with the requirements set forth in this Section E, the text of this Section E shall control.

a. **WWTP.**

(1) Monthly Method 21 Testing. HFSNR shall conduct monthly Method 21 testing of NDE Equipment at the WWTP.

(a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, monthly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any NDE Equipment that, at the time of the monthly monitoring, meets the definition of

UTM Equipment; monthly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring at NDE Equipment at the WWTP.

(a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of NDE Equipment at the WWTP.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

b. **Drains/Sewer Lines.**

(1) Quarterly Method 21 Testing. HFSNR shall conduct quarterly Method 21 testing of drains and aboveground sewer lines that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly and Semi-annual OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring at drains and aboveground sewer lines that are QQQ Equipment and semi-annual OGI monitoring at drains and aboveground sewer lines that are BWON Equipment.

(a) HFSNR shall repair the QQQ Equipment or BWON Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of drains and aboveground sewer lines that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

c. **Junction Boxes.**

(1) Monthly Method 21 Testing. HFSNR shall conduct monthly Method 21 testing of junction boxes that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, monthly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the monthly monitoring, meets the definition of UTM Equipment; monthly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring at junction boxes that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair the BWON Equipment or QQQ Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

d. **Junction Boxes Surrounded by Concrete.**

(1) Quarterly Method 21 Testing. HFSNR shall conduct quarterly Method 21 testing of junction boxes surrounded by concrete that are BWON Equipment or QQQ Equipment.

(a) If HFSNR detects a concentration of 500 ppm or above, HFSNR shall execute a repair in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly and Semi-annual OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring at junction boxes surrounded by concrete that are BWON Equipment and semi-annual OGI monitoring at junction boxes surrounded by concrete that are QQQ Equipment.

(a) HFSNR shall repair the BWON Equipment or QQQ Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes surrounded by concrete that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

e. **Junction Boxes Routing to a Closed Vent System.**

(1) Monthly Method 21 Testing. HFSNR shall conduct monthly Method 21 testing of junction boxes routing to a closed vent system that are NDE Equipment.

(a) HFSNR shall repair each source of Detectable Emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, monthly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any NDE Equipment that, at the time of the monthly monitoring, meets the definition of UTM Equipment; monthly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring of junction boxes routing to a closed vent system that are NDE Equipment.

(a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes routing to a closed vent system that are NDE Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

f. **Containers.**

(1) Initial Annual Method 21 Testing. HFSNR shall conduct an initial annual Method 21 testing of containers that are NDE Equipment.
   (a) HFSNR shall repair each source of Detectable Emissions in accordance with the requirements of Section K (Repairs).
   (b) For DTM Equipment and Inaccessible Equipment, HFSNR shall have a written plan that requires monitoring of the NDE Equipment at least once per calendar year.

(2) Semi-annual OGI Monitoring. HFSNR shall conduct semi-annual OGI monitoring of containers that are NDE Equipment.
   (a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Quarterly AVO Inspections. HFSNR shall conduct quarterly AVO Inspections of containers that are NDE Equipment.
   (a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

16. **Ongoing Monitoring.** Upon completion of the 12-month initial monitoring period required in Paragraph 15, HFSNR shall perform the following monitoring of BWON Equipment and QQQ Equipment, and conduct repairs as required. A table summarizing the frequency of these ongoing monitoring requirements by equipment type shall be maintained as part of the BWON and NSPS QQQ Program Document. To the extent that this table conflicts with the requirements set forth in this Section E (Monitoring Requirements), the text of this Section E shall control.

a. **WWTP.**

(1) Quarterly Method 21 Testing. HFSNR shall conduct quarterly Method 21 testing of NDE Equipment at the WWTP.
   (a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).
   (b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a

written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any NDE Equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly OGI Monitoring. HFSNR shall conduct quarterly OGI monitoring at NDE Equipment at the WWTP.

(a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of NDE Equipment at the WWTP.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

b. **Drains/Sewer Lines.**

(1) Quarterly Method 21 Testing. From completion of the 12-month initial testing period required in Paragraph 15 until the new sour water stripper ("New SWS") is operational pursuant to Paragraph 38, HFSNR shall conduct quarterly Method 21 testing of drains and aboveground sewer lines that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Semi-annual and Annual OGI Monitoring. From completion of the 12-month initial monitoring period required in Paragraph 15 through termination of this Consent Decree, HFSNR shall conduct semi-annual OGI monitoring at drains and aboveground sewer lines that are BWON Equipment and annual OGI monitoring at aboveground sewer lines that are QQQ Equipment. From completion of the 12-month initial monitoring period required in Paragraph 15 until the New SWS is operational pursuant to

Paragraph 38, HFSNR shall conduct annual OGI monitoring at drains that are QQQ Equipment.

(a) HFSNR shall repair the BWON Equipment or QQQ Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of drains and aboveground sewer lines that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

c. **Junction Boxes.**

(1) Quarterly Method 21 Testing. From completion of the 12-month initial testing period required in Paragraph 15 until the New SWS is operational pursuant to Paragraph 38, HFSNR shall conduct quarterly Method 21 testing of junction boxes that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each source of emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Semi-annual and Annual OGI Monitoring. From completion of the 12-month initial monitoring period required in Paragraph 15 through termination of this Consent Decree, HFSNR shall conduct semi-annual OGI monitoring at junction boxes that are BWON Equipment. From completion of the 12-month initial monitoring period required in Paragraph 15 until the New SWS is operational pursuant to Paragraph 38, HFSNR shall conduct annual OGI monitoring at junction boxes that are QQQ Equipment.

(a) HFSNR shall repair the BWON Equipment or QQQ Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

d. **Junction Boxes Surrounded by Concrete.**

(1) Quarterly Method 21 Testing. From completion of the 12-month initial testing period required in Paragraph 15 until the New SWS is operational pursuant to Paragraph 38, HFSNR shall conduct quarterly Method 21 testing of junction boxes surrounded by concrete that are BWON Equipment or QQQ Equipment.

(a) If HFSNR detects a concentration of 500 ppm or above, HFSNR shall execute a repair in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Semi-annual and Annual OGI Monitoring. From completion of the 12-month initial monitoring period required in Paragraph 15 through termination of this Consent Decree, HFSNR shall conduct semi-annual OGI monitoring at junction boxes surrounded by concrete that are BWON Equipment. From completion of the 12-month initial monitoring period required in Paragraph 15 until the New SWS is operational pursuant to Paragraph 38, HFSNR shall conduct annual OGI monitoring at junction boxes surrounded by concrete that are QQQ Equipment.

(a) HFSNR shall repair the BWON Equipment or QQQ Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes surrounded by concrete that are BWON Equipment or QQQ Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

e. **Junction Boxes Routing to a Closed Vent System.**

(1) Quarterly Method 21 Testing. HFSNR shall conduct quarterly Method 21 testing of junction boxes routing to a closed vent system that are NDE Equipment.

(a) HFSNR shall repair each source of Detectable Emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, quarterly monitoring is not required provided that HFSNR shall have a written plan that requires monitoring of such equipment at least once per calendar year.

(c) HFSNR is not required to monitor any NDE Equipment that, at the time of the quarterly monitoring, meets the definition of UTM Equipment; quarterly monitoring must resume when such equipment no longer meets that definition.

(2) Quarterly and Semi-annual OGI Monitoring. For junction boxes routing to a closed vent system that are NDE Equipment, HFSNR shall conduct quarterly OGI monitoring at junction boxes that are QQQ Equipment and semi-annual OGI monitoring at junction boxes that are BWON Equipment.

(a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Monthly AVO Inspections. HFSNR shall conduct monthly AVO Inspections of junction boxes routing to a closed vent system that are NDE Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

f. **Containers.**

(1) Annual Method 21 Testing. HFSNR shall conduct annual Method 21 testing of containers that are NDE Equipment

(a) HFSNR shall repair each source of Detectable Emissions in accordance with the requirements of Section K (Repairs).

(b) For DTM Equipment and Inaccessible Equipment, HFSNR shall have a written plan that requires monitoring of the NDE Equipment at least once per calendar year.

(2) Semi-annual OGI Monitoring. HFSNR shall conduct semi-annual OGI monitoring of containers that are NDE Equipment.

(a) HFSNR shall repair the NDE Equipment where hydrocarbon emissions were detected with the OGI in accordance with the requirements of Section K (Repairs).

(3) Quarterly AVO Inspections. HFSNR shall conduct quarterly AVO Inspections of containers that are NDE Equipment.

(a) HFSNR shall repair each deficiency discovered during AVO Inspections in accordance with the requirements of Section K (Repairs).

17. **Equipment Out of Service.** For equipment that is designated as "out of service" during a calendar quarter, the following inspection and monitoring shall apply:

a. If the equipment is out of service for all 3 months within the calendar quarter, Method 21 testing, OGI monitoring, and the AVO Inspections required in Paragraphs 15 and 16 do not apply;

b. If the equipment is in service for 2 of the 3 months within the calendar quarter, 2 of the 3 inspections (Method 21 testing, OGI monitoring, and AVO Inspection) are required;

c. If the equipment is in service for 1 of the 3 months within the calendar quarter, either Method 21 testing, OGI monitoring, or an AVO Inspection is required.

18. **Equipment Returning to Service.** For equipment that returns to service within a calendar quarter, the following inspection and monitoring shall apply:

a. If 2 full calendar months remain in the current quarter following the return date, both Method 21 testing and OGI monitoring in Paragraphs 15 and 16 are required for the remainder of the calendar quarter, and the AVO Inspection in Paragraphs 15 and 16 is not required;

b. If 1 full calendar month or greater remains in the quarter following the return date, Method 21 testing is required for the remainder of the quarter;

(1) If Method 21 testing was already completed in the calendar quarter, HFSNR shall conduct OGI monitoring.

c. If less than 2 weeks remain in the calendar quarter, the AVO Inspection, Method 21 testing, and OGI monitoring are not required for the remainder of the calendar quarter;

d. If greater than 2 weeks remain in the calendar quarter, but less than 1 full calendar month remains, HFSNR shall complete an AVO Inspection.

F. ADDITIONAL PASSIVE MONITORING FOR WWTP

19. HFSNR shall establish 5 benzene passive monitor housings at the locations identified in Attachment 1 (WWTP Additional Passive Monitoring Network Map and Table of Locations) to this Appendix in the Facility's WWTP (the "WWTP Additional Passive Monitoring Network") and ensure they are fully operational by no later than 30 Days after the Effective Date.

20. The WWTP Additional Passive Monitoring Network is not part of the Facility's benzene fenceline monitoring locations for purposes of compliance with 40 C.F.R. § 63.658, nor does the WWTP Additional Passive Monitoring Network demonstrate compliance with BWON regulations. Nonetheless, the monitoring shall comply with the methodology in Method 325A and Method 325B for 2-week passive monitoring of benzene. Passive monitoring shall continue at these locations on the same schedule the Facility uses for compliance with 40 C.F.R. § 63.658.

21. HFSNR shall continue operating the WWTP Additional Passive Monitoring for a period of 24 months from the date the New SWS is operational.

22. HFSNR shall conduct and include a qualitative review of the data collected by the WWTP Additional Passive Monitoring Network in the semi-annual reports required by Section VIII (Reporting Requirements) of the Consent Decree. The qualitative review shall include an evaluation of spikes or trends in the data for each monitoring location in the WWTP Additional Passive Monitoring Network and any measures taken by HFSNR to investigate and address the cause of any such analytical result.

G. NEW BWON EQUIPMENT AND QQQ EQUIPMENT MONITORING

23. By no later than 30 Days following the installation of any new BWON Equipment or QQQ Equipment at the Facility, HFSNR shall include the newly installed equipment in the monitoring program as set forth in either Paragraph 15 (Initial Monitoring) and Paragraph 16 (Ongoing Monitoring), as applicable.

H. BWON AND NSPS QQQ NDE ENGINEERING ASSESSMENT

24. By January 1, 2026, HFSNR shall have completed NDE Engineering Assessments for existing NDE Equipment.

25. HFSNR shall complete an NDE Engineering Assessment for each new NDE Equipment as follows:

a. The NDE Engineering Assessment shall evaluate the following elements of each piece of NDE Equipment:

(1) The engineering design basis for the equipment and its associated controls, including an assessment of the specific components of each piece of equipment;

(2) The operational design specifications of the equipment;

(3) Existing and newly developed repair methodologies to be used in maintaining the engineering and the operational design of each piece of equipment; and

(4) Preventative maintenance necessary to maintain the NDE status of equipment and its associated controls, including frequency of monitoring and measures to be implemented.

b. HFSNR shall retain a qualified third-party firm to conduct the required NDE Engineering Assessment for new equipment.

c. By no later than 3 months following completion of each NDE Engineering Assessment, HFSNR shall complete the following:

(1) For each piece of NDE Equipment that meets NDE, HFSNR shall finalize and maintain all engineering documents, including the NDE Engineering Assessment;

(2) For each piece of NDE Equipment that does not meet NDE (based on the NDE Engineering Assessment), HFSNR shall develop a corrective action plan, including a timeline to meet NDE and satisfy Paragraph 25.c.1. HFSNR shall establish and maintain all additional engineering documents detailing the updated design; and

(3) For each piece of NDE Equipment that is modified to meet the NDE requirements utilizing temporary controls, HFSNR shall develop a corrective action plan, including a timeline, to upgrade the temporary controls to permanent controls and submit to EPA and NMED for review.

d. **Deadlines.** For each piece of NDE Equipment operational as of the Effective Date, HFSNR shall submit to EPA and NMED for review all engineering documents resulting from the NDE Engineering Assessment as set forth in Paragraph 25.c, including any corrective action plan in Subparagraph 25.c.3, by January 1, 2026. Future NDE Engineering Assessments for each piece of NDE Equipment that becomes operational after the Effective Date shall be submitted by HFSNR in accordance with the deadlines set forth in Paragraph 25.c. The engineering documents and corrective action plans shall be reviewed and approved by both a senior engineer and an environmental manager at the Facility.

e. EPA or NMED may provide comments to HFSNR on the engineering documents.

f. HFSNR shall address any comments provided by EPA or NMED by no later than 90 Days of receipt of EPA or NMED's comments.

g. HFSNR shall maintain electronic copies of all engineering documents for each piece of BWON Equipment and QQQ Equipment at the Facility and ensure they are readily available.

26. HFSNR shall not operate any new piece of NDE Equipment before completion of an NDE Engineering Assessment.

I. BWON LOW-EMISSIONS USAGE

27. For all valves subject to an NDE standard, HFSNR shall repack or replace valves with Detectable Emissions of 500 ppm or greater above background with Low-E Packing or Low-E Valves unless the Low-E Valves or Low-E Packing are not commercially available based on an analysis conducted pursuant to Attachment 2 (Factors to be Considered and Procedures to Be Followed to Claim Commercial Unavailability).

28. For equipment other than valves, by December 31, 2026, and continuing annually thereafter, HFSNR shall review its existing NDE Engineering Assessments and engineering documents and determine whether improved and commercially available low-leak repair methods or repair technologies are suitable for use to reduce the occurrence of Detectable Emissions.

29. Emissions at or above 500 ppm detected during the first month after installation of the Low-E Valve or a valve using Low-E Packing will not invalidate the "Low-E" status or use of that type of valve or packing technology and will not compel the replacement of other

Low-E valves or Low-E packing technology of the same type installed on other valves that are operated to meet NDE. HFSNR shall comply with the requirements of this Appendix, including its repair, replacement, and reporting requirements, if emissions at or above 500 ppm are detected after the first month following the installation of the Low-E Valve or a valve using Low-E Packing.

J. ROOT CAUSE ANALYSIS

30. Within 90 Days of the Effective Date and continuing until termination of the Consent Decree, HFSNR shall conduct a root cause analysis for every piece of NDE Equipment where Detectable Emissions above an NDE standard have occurred twice at the same emission interface within any 60-month period of the Effective Date.

a. The requirement to conduct the Detectable Emissions Root Cause Analysis will not apply when two Detectable Emissions above an NDE standard have occurred on two distinct emission interface types on the same NDE Equipment.

b. HFSNR must commence each Detectable Emissions Root Cause Analysis by no later than 20 Days after the second occurrence of Detectable Emissions above the NDE standard.

c. Nothing in this paragraph amends HFSNR's obligation to complete repair attempts as required in Section K (Repairs).

d. For each Detectable Emissions Root Cause Analysis, HFSNR must evaluate the relevant engineering document(s) developed and approved, including an evaluation of whether improved and commercially available low leak repair methods or repair technologies are suitable for use to reduce the occurrence of Detectable Emissions above NDE from the relevant emission interface.

e. HFSNR shall identify the root cause(s) and corrective actions ("Root Cause Analysis CAP") to prevent Detectable Emissions above NDE from recurring and to prevent the reoccurrence of the same type of Detectable Emissions, as expeditiously as practicable, but no later than 75 Days after the second occurrence of Detectable Emissions above the NDE standard.

f. HFSNR shall implement the necessary corrective actions as expeditiously as practicable, but no later than 45 Days from identifying the root cause(s) in the Root Cause Analysis CAP. Except as specified in Paragraph 35, if any corrective action is not completed or is not expected to be completed within 45 Days from identification of the root cause(s) in the Root Cause Analysis CAP, HFSNR shall submit to EPA an NDE Corrective Action Plan ("NDE CAP") that explains the delay, together with a proposed schedule for completion of the action(s) as expeditiously as practicable. If HFSNR anticipates its schedule will extend more than 90 Days from identifying the root cause(s), HFSNR shall seek approval of its schedule from EPA and NMED in writing.

g. A dispute arising with respect to any aspect of an NDE CAP shall be resolved in accordance with Section XII (Dispute Resolution) of the Consent Decree.

h. Within 45 Days of completing the root-cause analysis and corrective action identified above, HFSNR must update and maintain in its electronic document retention system the relevant engineering document(s) with any corrective action(s) taken to prevent the reoccurrence of the same type of Detectable Emissions.

31. Nothing in Paragraph 30 is intended to relieve HFSNR from its obligations under BWON to record and report corrective actions required pursuant to 40 C.F.R. §§ 61.356 and 61.357.

K. REPAIRS

32. By the Effective Date, HFSNR shall perform a repair of BWON Equipment and QQQ Equipment if HFSNR, EPA, or NMED observes the following:

a. A Method 21 reading exceeding one of the following thresholds:

(1) NDE Equipment: 500 ppm above background.

(2) Non-NDE valves, conservation vents, and all other non-NDE Equipment: 500 ppm above background.

(3) Non-NDE pumps: 2,000 ppm above background.

(4) Junction Box: 500 ppm above background.

b. An OGI-imaged emission observation; or

c. An AVO Inspection deficiency.

33. **First Attempt at Repair.** HFSNR shall make a first repair attempt at BWON Equipment and QQQ Equipment (except for Storage Vessels) within 5 Days of either a Detectable Emission that exceeds the thresholds in Paragraph 32.a, a detection of hydrocarbon emissions with the OGI camera, or a deficiency discovered during an AVO Inspection.

a. If HFSNR determines that a first attempt at repair will cause damage to the BWON Equipment or QQQ Equipment and is therefore unable to make a first attempt at repair, HFSNR shall document this determination according to the following procedures:

(1) HFSNR shall document why a repair cannot be completed and the harm that will be caused by using any repair technique; and

(2) HFSNR shall require concurrence in this determination by HFSNR's environmental manager located at the Facility.

34. **Completion of Repair.** Except as provided below, HFSNR shall complete a repair of all BWON Equipment and QQQ Equipment within 15 Days of either a Detectable

Emission that exceeds the thresholds in Paragraph 32.a, a detection of hydrocarbons with the OGI camera, or a deficiency discovered during an AVO Inspection.

a. For each repair, HFSNR shall conduct Method 21 verification monitoring on NDE Equipment by the repair deadline to confirm NDE, unless the hydrocarbons were originally detected by an OGI camera and, at that time such equipment meets the definition of UTM Equipment, in which case the monitoring shall be conducted within 5 Days of resolution of the unsafe conditions; and

b. Repairs at junction boxes requiring excavation shall be completed within 45 Days of discovery of the leak source.

(1) HFSNR shall initiate excavation next to the junction box within 20 Days to identify any source of Detectable Emissions of 500 ppm or above occurring near or from the junction box itself.

(2) HFSNR shall identify the source(s) of Detectable Emissions as expeditiously as practicable, but no later than 45 Days from the initial 500 ppm detection.

(3) Except as specified in Paragraph 35 (Delay of Repair), if identification of the source(s) is not completed or is not expected to be completed within 45 Days of initial detection, HFSNR shall submit to EPA and NMED a Junction Box Excavation Corrective Action Plan ("Excavation CAP") that explains the reasons for the delay with a proposed schedule for the completion of the identification of source(s) as expeditiously as practicable.

35. **Delay of Repair ("DOR").** HFSNR may delay certain repairs only as follows:

a. Except for API Separators and valves, HFSNR may delay a required repair if it determines DOR is needed after repairs have been attempted.

b. HFSNR shall use drill-and-tap on valves and other equipment, as applicable, that are not able to be repaired using other repair attempts before placing such components on DOR pursuant to 40 C.F.R. § 61.350.

c. HFSNR's applicable process unit supervisor located at the Facility must approve the placement of any piece of BWON Equipment or QQQ Equipment on DOR.

d. During the DOR period, HFSNR shall monitor components monthly using Method 21 until the repair is completed and then continue monitoring in accordance with Paragraph 15 (Initial Monitoring) or Paragraph 16 (Ongoing Monitoring), as applicable.

e. HFSNR shall estimate benzene emissions during the DOR period in accordance with Section VII (Reporting Requirements) of the Consent Decree.

L. CARBON CANISTER MONITORING

36. **Carbon Canisters and Vacuum Trucks.** By the Effective Date, at all locations within the Facility where carbon canisters are currently installed and used as the control device for complying with the BWON or NSPS QQQ regulations, HFSNR shall comply with the following:

a. **Dual Carbon Canisters/Beds.**

(1) HFSNR shall install primary and secondary carbon canisters and operate them in series ("dual-canister"). HFSNR may comply with the requirements for dual-canisters required under this subparagraph by using a single canister with a "dual carbon bed" if the dual carbon bed configuration allows for breakthrough monitoring between the primary and secondary beds in accordance with this subparagraph.

(2) Breakthrough Definition. HFSNR shall use: (i) 50 ppmv VOC monitored using a FID or (ii) 50 ppmv VOC using a photo-ionization detector as the breakthrough threshold for the primary carbon canister or bed where an FID is unable to sustain a flame or when using a nitrogen purge system.

(3) Breakthrough Monitoring. HFSNR shall conduct breakthrough monitoring between the primary and secondary carbon canisters or beds and the outlet of the secondary carbon canister when there is actual flow to the carbon canister. Such monitoring shall be conducted in accordance with the frequency specified in 40 C.F.R. § 61.354(d) using the applicable breakthrough definition specified in Paragraph 36.a.2.

(4) Canister Replacement. When the condition of breakthrough from the primary carbon canister or bed occurs, as monitored between the primary and secondary carbon canister or carbon bed, HFSNR shall immediately reconfigure the secondary canister or bed as the new primary canister or bed and install a new secondary canister or bed. In all cases, any carbon canister or bed used as the primary unit shall have sufficient capacity to meet the breakthrough definition of this subparagraph. For purposes of this subparagraph, "immediately" means no later than 24 hours from breakthrough.

b. **Vacuum Truck Carbon Canisters.**

(1) For vacuum truck movements, HFSNR shall install and operate primary and secondary carbon canisters on all vacuum truck pump exhaust and operate them in series as the emission control operation.

(2) Breakthrough Definition. HFSNR shall use: (i) 50 ppmv VOC monitored using a FID or (ii) 50 ppmv VOC using a photo-ionization detector as the breakthrough threshold for the primary carbon canister or bed where an FID is unable to sustain a flame or when using a nitrogen purge system.

(3) Breakthrough Monitoring. HFSNR shall conduct breakthrough monitoring between the primary and secondary carbon canisters and the outlet of the secondary carbon canister and record the concentration once every hour of the carbon system's operation.

(4) Canister Replacement. When the condition of breakthrough from the primary carbon canister or bed occurs, as monitored between the primary and secondary carbon canister or carbon bed, HFSNR shall immediately reconfigure the secondary canister or bed as the

new primary canister or bed and install a new secondary canister or bed. In all cases, any carbon canister or bed used as the primary unit shall have sufficient capacity to meet the breakthrough definition of Paragraph 36.b.2. For purposes of this subparagraph, "immediately" means no later than 4 hours from breakthrough. If both canisters fail, HFSNR shall cease operation of the vacuum truck until 1 canister is replaced.

(5) Recordkeeping. HFSNR shall maintain the following records of breakthrough monitoring for vacuum trucks:

(a) Sample time and date;
(b) Monitoring results (ppmv); and
(c) Canister replacement log.

c. HFSNR shall maintain a readily available supply of fresh carbon canisters and carbon beds at the Facility at all times to ensure compliance with the canister replacement requirements of this Appendix.

d. HFSNR shall install, operate, and maintain a flow indicator at each carbon canister system (excluding vacuum trucks).

e. For any new waste management unit(s) or refinery process unit(s) at the Facility where carbon canisters will be installed and used as the control device for BWON or NSPS QQQ compliance, HFSNR shall comply with the dual-canister option.

M. BENZENE EMISSIONS REDUCTION ACTIVITIES AND CAPITAL PROJECTS

37. **Existing W-7 Sour Water Stripper.**

a. By the Effective Date, HFSNR shall operate and maintain the existing W-7 Sour Water Stripper ("Existing W-7 SWS") to ensure that effluent meets a flow-weighted average benzene concentration of no more than 8.0 ppmw on a weekly average for the initial 3 months following the Effective Date, and thereafter on a 12-month rolling average.

b. HFSNR shall monitor and record the benzene effluent concentration in Paragraph 37.a by sampling effluent from the outlet of the Existing W-7 SWS in accordance with

the procedures, but not the sampling frequency, set forth in 40 C.F.R. § 61.355(c)(3) by no later than the Effective Date. HFSNR shall sample weekly until the New SWS is operational.

c. HFSNR shall initiate an investigation within 1 Business Day of receiving a flow-weighted average benzene concentration sample result above 5.0 ppmw to determine the cause of the sample result. HFSNR shall expeditiously implement any measures needed to address the causes of the elevated benzene concentration and ensure that the benzene concentration in the effluent of the existing W-7 stripper does not reach or exceed 8.0 ppmw.

d. HFSNR shall record and report the flow-weighted average benzene concentration required by Paragraph 37.a as part of the semi-annual reports required by Section VIII (Reporting Requirements) of the Consent Decree.

e. HFSNR shall operate the Existing W-7 SWS with a maximum downtime of 176 hours per year, calculated on a 365-day rolling average. HFSNR may exclude the downtime hours of the Existing W-7 SWS when desalter effluent is managed in controlled waste management units before returning to the desalters.

f. HFSNR shall replace the packing material of the Existing W-7 SWS once every 6 months or such other time that is feasible based on operational requirements and conditions, unless HFSNR installs and operates parametric monitoring equipment to measure the stripper's differential pressure. HFSNR shall establish differential pressure limits to indicate the performance of the packing material when replacing the packing material beyond 6 months.

38. **New Sour Water Stripper.**

a. By no later than June 30, 2028, or 6 months prior to the startup of the new SWS ("New SWS"), whichever is earlier, HFSNR shall submit a pre-startup engineering design evaluation to EPA and NMED for the New SWS. It shall include: (1) an evaluation of the design,

including identifying process parameters that affect benzene removal (including but not limited to feed flow rate, stripper feed temperature, and gas feed rate) and recommended ranges for those process parameters that ensure meeting the benzene removal design and operating requirement; (2) proposed measures to address desalter wash water quality to minimize solids content carryover to ensure proper operation of the New SWS; and (3) planned operation of the New SWS to assure that the New SWS will achieve the requirements of this Paragraph.

b. By no later than December 31, 2028, any desalter effluent stream(s) shall be routed to and controlled by the New SWS and associated equipment. The New SWS shall be operated as follows:

(1) Any desalter effluent stream(s) shall be routed to the New SWS except during New SWS downtime, which may not exceed 88 hours calculated on a 365-day rolling average.

(2) Except for downtime periods not to exceed 88 hours, the New SWS must operate with an effluent limit of a flow-weighted average benzene concentration of no more than 2.0 ppmw on a weekly average for the initial 3 months of operation, and thereafter on a 12-month rolling average.

(3) HFSNR shall monitor and record the benzene effluent concentration in Paragraph 38.b.2 by sampling effluent from the outlet of the New SWS in accordance with the procedures, but not the sampling frequency, set forth in 40 C.F.R. § 61.355(c)(3) by no later than December 31, 2028. HFSNR shall sample weekly for 1 year after the New SWS is operational, and on a monthly basis thereafter.

(4) HFSNR shall ensure all vent gases from the New SWS are continuously routed to a control device, fuel gas system or process unit in accordance with the applicable BWON regulations.

(5) HFSNR shall install, operate, and maintain any equipment necessary to continuously monitor all process parameters that significantly affect performance of the New SWS in removing benzene at the New SWS on an hourly basis.

(6) HFSNR shall continuously maintain each parameter at any

minimum and/or maximum levels identified in engineering design documents or established during a performance test of the New SWS.

(7) Each of the parameters shall be continuously recorded.

(8) HFSNR shall inform EPA and NMED of any changes to parametric monitoring values in the semi-annual reports required by Section VIII (Reporting Requirements) of the Consent Decree.

c. Any waste streams resulting from the leaks, valve leak-by, maintenance waste, and sampling associated with the waste streams in Paragraph 38.b are not required to be routed to the New SWS and shall be managed in accordance with the applicable BWON regulations.

39. **API Separator Cover Gasket Upgrade.**

a. By no later than December 31, 2025, HFSNR shall replace the gasketing material on the roofs of 1 of the 2 API Separators with an NDE gasket (i.e., a gasket designed with a low-emission elastomer core enclosed within a chemically inert and low-stress barrier to ensure durability and sealing performance to achieve NDE), and each time the roof is removed from the API Separator prior to and subsequent to this replacement.

b. By no later July 1, 2027, HFSNR shall replace the gasketing material of the other API Separator roof with an NDE Gasket, and each time the roof is removed from the API Separator prior to and subsequent to this replacement.

c. Prior to July 1, 2027, if HFSNR observes Detectable Emissions at an API Separator as determined by testing in Section E (Monitoring Requirements) that are not capable of being repaired without placing the API Separator on DOR, HFSNR shall replace the gasketing material of the API Separator roof to an NDE Gasket by no later than 90 Days of the observation.

d. HFSNR shall maintain a sufficient supply of NDE Gaskets for any unscheduled maintenance or shutdown events.

40. **Groundwater Remediation Project.**

a. By no later than January 1, 2026, HFSNR shall comply with 40 C.F.R. § 61.343(b) by installing and operating pressure relief devices on Fixed Roof Storage Vessels (as defined in Appendix E (Storage Vessel Compliance Program) to the Consent Decree) used to manage Organic Benzene Wastes (i.e., skimmed oil) from groundwater remediation activities. The pressure relief device(s) shall meet the following specifications:

(1) The device(s) shall remain in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials; and

(2) HFSNR shall monitor process operations (i.e., tank pressure) to ensure that the integrity of pressure relief device and vacuum breaker is properly operating.

b. If the pressure relief devices vent to the atmosphere during normal operations, or if the Fixed Roof Storage Vessels used to manage Organic Benzene Wastes (i.e., skimmed oil) from groundwater remediation activities begin managing Aqueous Benzene Wastes, HFSNR shall install and operate a closed vent system to route emissions from the Storage Vessels to a control device.

41. **Stilling Well, Stormwater Lift Station, Weir Box, and Lift Basin Project.**

a. By the Effective Date, HFSNR shall complete a project to upgrade and redesign the covers of the following BWON Equipment and QQQ Equipment:

(1) Stilling Well (T-844),

(2) Stormwater Lift Station (T-846),

(3) Weir Box (T-845), and

(4) Lift Basin (T-1).

b. By the Effective Date, HFSNR shall install and operate a combination of fans or blowers to create a draft that will route VOC emissions from the BWON Equipment and QQQ Equipment identified in Paragraph 41.a to a carbon canister system that complies with the requirements of Paragraph 36.

c. HFSNR shall upgrade all pressure relief devices on the covers of the BWON Equipment and QQQ Equipment identified in Paragraph 41.a. Each pressure relief device shall vent through a closed vent system to carbon canisters that comply with the requirements of Paragraph 36, except when a pressure relief device in the closed vent system is necessary to prevent damage to equipment.

42. **Tank Water Draw Project.**

a. By June 30, 2025, HFSNR shall complete a project to permanently reroute tank water draws at T-0401, T-0411, and T-450 to T-0437.

43. **Aggressive Biological Treatment ("ABT") Project.**

a. HFSNR shall continue to operate a temporary thermal oxidizer to control VOC emissions from the ABT tanks, T-0801 and T-0836, when in service until the capital project in Paragraph 43.b is installed and operating in compliance with all permit terms and conditions and applicable regulatory requirements. HFSNR may request that EPA and NMED approve a change in the temporary control strategy (i.e., thermal oxidizer) upon a showing that the proposed alternative strategy will achieve at least an equivalent level of VOC control. By no later than December 31, 2026, HFSNR shall submit to EPA and NMED a detailed engineering

design document, including a projected wastewater flow diagram, of the upgrades being implemented to the ABT portion of the WWTP.

b. By no later than December 31, 2027, HFSNR shall implement a capital project to upgrade and improve the WWTP's biological activity through the following actions:

(1) The wastewater entering the ABT tanks shall be sufficiently cooled to maintain the temperatures within an established range to ensure sufficient biological activity;

(2) The internal components of the ABT tanks, such as the air spargers and diffusers, shall be upgraded; and

(3) A review of existing systems to ensure adequate oil and solids removal.

c. As an alternative to the project described in Paragraph 43.b, HFSNR may consider a thermal oxidizer in lieu of a biological activity system that provides at least an equivalent level of VOC control. If HFSNR elects to proceed with the alternative, the following shall apply:

(1) By no later than December 31, 2026, HFSNR shall submit to EPA and NMED a detailed engineering design document, including a projected wastewater flow diagram, of the thermal oxidizer system to be implemented for the ABT tanks.

(2) The thermal oxidizer shall be appropriately designed to ensure the system can demonstrate a 99 percent or greater VOC and HAP destruction efficiency.

(3) Within 6 months following commencement of operation of the new thermal oxidizer system, HFSNR shall perform an initial performance test.

(4) HFSNR shall submit a test protocol at least 90 Days in advance of the initial performance test to EPA and NMED, in accordance with Section XVI (Notices) of the Consent Decree.

(5) HFSNR shall submit to EPA and NMED a written test report within 60 Days of conducting the initial performance test and the parameters established for operation of the thermal oxidizer

system, in accordance with Section XVI (Notices) of the Consent Decree.

N. BWON EQUIPMENT AND QQQ EQUIPMENT: SEWER SYSTEM EVALUATION

44. HFSNR shall perform the following sewer system evaluation for all BWON Equipment and QQQ Equipment:

a. By the Effective Date, HFSNR shall complete a review and inventory of its current compliance strategy for all IDS components, including, but not limited to drains, cleanouts, and junction boxes. HFSNR's review and inventory shall include the work completed during the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components, and any other efforts initiated by HFSNR to satisfy this requirement.

b. By the Effective Date, HFSNR shall ensure that all deficient BWON and NSPS QQQ IDS components, including all such deficient components identified in the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components, have been permanently controlled or corrected in accordance with the applicable BWON or NSPS QQQ regulations. The deficient BWON and NSPS QQQ IDS components identified in the Third-Party TAB Study and Compliance Review and Field Verification of IDS Components include but are not limited to drains, cleanouts, and junction boxes.

c. By no later March 31, 2025, HFSNR shall complete a geographic information system mapping project for the BWON and NSPS QQQ IDS components at the Facility. The sewer maps shall be maintained and readily available upon inspection by EPA or NMED.

O. TRAINING

45. By no later than the Effective Date, HFSNR shall develop and implement a BWON Equipment and QQQ Equipment training protocol that includes inspection training as follows:

a. HFSNR shall ensure that all staff and contractors conducting visual inspections of BWON Equipment or QQQ Equipment receive annual training and must include:

(1) Computer-based training that verifies understanding of key concepts necessary for effective visual inspections; and

(2) On-the-job training elements in the field.

P. BWON/NSPS QQQ AUDITS

46. By no later than 24 months after the Effective Date, and every 2 years thereafter until termination of the Consent Decree, HFSNR shall conduct a third-party BWON/NSPS QQQ Audit as set forth below:

a. HFSNR shall conduct no fewer than 3 BWON/NSPS QQQ Audits prior to termination of this Consent Decree.

b. For at least the first 3 audits, HFSNR shall retain a third-party auditor with experience conducting refinery BWON and NSPS QQQ audits. Subsequent audits may be conducted internally by personnel from other refineries or corporate who have knowledge of the BWON and NSPS QQQ regulations.

c. The selected third-party auditor shall not be a contractor that HFSNR has retained in the past to implement the operational requirements of this Consent Decree unless HFSNR obtains advance written approval from EPA and NMED.

d. Each BWON and NSPS QQQ Audit shall include, but not be limited to, reviewing compliance with 40 C.F.R. Part 61, Subpart FF, 40 C.F.R. Part 60, Subpart QQQ, the

requirements of this Consent Decree, and the following activities for BWON Equipment and QQQ Equipment:

(1) TAB Review and Reverification. The third-party auditor shall review the TAB, with review and verification taking place for one third of the total number of process units that are contributors to the TAB during each audit, such that all process units are covered by the end of all three audits. The WWTP shall be included in the review and reverification effort for each of the audits.

(2) Consent Decree, BWON and NSPS QQQ Control Requirements Compliance Review. The third-party auditor shall review and ascertain compliance for the Facility as a whole and for each IDS and waste management unit in the Facility with each applicable requirement (e.g., emission standards, monitoring, record keeping and reporting) of the Consent Decree, and the BWON and NSPS QQQ regulations.

(3) Calculating a Comparative Testing Audit Leak Percentage. For each process unit that is audited, each type of NDE Equipment subject to Method 21 testing requirements in this Consent Decree shall be monitored to calculate a Detectable Emission percentage broken down by process unit and specific categories of NDE Equipment, including above-ground lines, IDSs, oil-water separators, and other waste management units. The testing that takes place during the audit shall be called "comparative testing," and the leak percentages derived from the comparative monitoring shall be called the "Comparative Testing Audit Leak Percentage." The third-party auditor shall conduct a comparative monitoring audit pursuant to this paragraph during each BWON/NSPS QQQ Audit and/or in conjunction with the LDAR audit.

(4) Calculating the Historic Average Leak Percentage from Prior Periodic Testing Events. The third-party auditor shall calculate the historic average leak percentage for each type of NDE Equipment that is subject to the comparative monitoring third-party audits. The percentage shall be derived from the prior monitoring period completed during the immediately preceding 24 months and shall be called the "Historic Average Leak Percentage."

(5) Calculating the Comparative Testing Leak Ratio. For each process unit that is audited, the ratio of the Comparative Testing Audit Leak Percentage from Paragraph 46.d.3 to the Historic Average Leak Percentage from Paragraph 46.d.4 shall be calculated. If a calculated ratio yields an infinite result, HFSNR shall assume 1

Detectable Emission from a piece of equipment was found in the process unit through its routine monitoring during the 24-month period before the audit, and the ratio shall be recalculated.

47. **Audit Corrective Action Plan ("Audit CAP").**

a. **Requirements of the Audit CAP.** By no later than 60 Days of receiving each final BWON/NSPS QQQ Audit report, HFSNR shall develop an Audit CAP if the results of a BWON/NSPS QQQ Audit identify any noncompliance, deficiencies, or if the Comparative Testing Leak Ratio calculated pursuant to Paragraph 46.d.5 is 3.0 or higher. The Audit CAP shall describe the actions that HFSNR shall take to correct the noncompliance, deficiencies and/or the systemic causes of a Comparative Testing Leak Ratio that is 3.0 or higher. The Audit CAP shall also include a schedule by which those actions shall be completed. HFSNR shall complete each corrective action as expeditiously as possible, with the goal of completing each action within 60 Days after HFSNR's submission of the BWON/NSPS QQQ Audit CAP.

b. If any action is not completed or is not expected to be completed within 120 Days of receiving each final BWON/NSPS QQQ Audit report, HFSNR shall explain the reasons in a subsequent CAP ("Revised Audit CAP") to be submitted pursuant to Paragraph 47.c, together with a proposed schedule for completion of the action(s) as expeditiously as practicable.

c. **Submission of the Audit CAP to EPA and NMED**. By no later than 120 Days of receiving each final BWON/NSPS QQQ Audit report, HFSNR shall submit the Audit CAP and the Revised Audit CAP (if necessary) to EPA and NMED, together with a certification of the completion of corrective action(s) set forth in the Audit CAP. HFSNR shall provide the status of any ongoing CAPs in the semi-annual reports required by Section VIII (Reporting Requirements) of the Consent Decree.

d. **Audit CAP Review.**

(1) After review of the Audit CAP or Revised Audit CAP submitted under Paragraph 47.c, EPA, after consultation with NMED, will notify HFSNR in writing of: (i) any deficiencies in the corrective actions identified in the Audit CAP, and/or (ii) any objections to the schedules for the corrective actions. EPA will also explain the basis for its objection(s) to the corrective actions and/or schedule(s).

(2) Within 45 Days of receipt of any disapproval from EPA, HFSNR shall submit an amended Audit CAP that addresses the deficiencies that EPA identified. HFSNR shall implement the amended Audit CAP either pursuant to the schedule that EPA proposed or, if EPA did not so specify, as expeditiously as practicable. If a corrective action that EPA has identified as deficient has already been completed by the time of EPA's notification, HFSNR shall not be obligated to submit or implement an amended CAP for that corrective action. HFSNR shall be on notice, however, that EPA has determined that the corrective action is deficient and not acceptable for remedying the same or similar noncompliance, deficiencies and/or the systemic causes of a Comparative Testing Leak Ratio that is 3.0 or higher.

(3) A dispute arising with respect to any aspect of an Audit CAP shall be resolved in accordance with the Dispute Resolution provisions of this Consent Decree.

Q. BWON/NSPS QQQ PROGRAM RECORDKEEPING REQUIREMENTS

48. Except as provided in the OGI Protocol approved pursuant to Paragraph 30 of the Consent Decree, HFSNR shall retain all records required to be maintained in accordance with this Section for a period of 5 years or until termination, whichever is longer, unless applicable regulations require the records to be maintained longer.

49. By no later than 365 Days following the Effective Date, HFSNR shall maintain records as follows:

a. BWON/NSPS QQQ inspection results collected pursuant to Paragraphs 15and 16 shall be stored in a centralized database system; and

b. BWON/NSPS QQQ program data shall be stored in a centralized system such as a spreadsheet workbook or a database. At a minimum, this includes all data necessary to generate the annual TAB report and a comprehensive list of controlled waste management units.

50. Nothing in Paragraphs 48 and 49 shall relieve HFSNR of the obligation to comply with Section XIII (Information Collection and Retention) of the Consent Decree.

R. EOL BENZENE SAMPLING

51. HFSNR shall conduct quarterly EOL benzene determinations as follows:

a. If no changes will be made to the sampling locations or methods for flow calculations currently used in the quarterly and annual benzene determinations for the Facility, HFSNR shall comply with and continue sampling in accordance with the Facility's existing EOL Sampling Plan.

b. HFSNR shall calculate a quarterly uncontrolled benzene quantity. If any quarterly uncontrolled benzene quantity is greater than 1.5 Mg, HFSNR shall initiate an internal investigation that includes additional sampling to identify the cause or source of the potentially elevated benzene quantities. HFSNR shall identify the strategy and schedule to ensure that the Facility does not exceed 6 Mg of uncontrolled benzene for the calendar year, if applicable. HFSNR shall submit this plan to EPA and NMED within 30 Days of the end of the calendar quarter which resulted in a projection of greater than 6 Mg/yr.

c. HFSNR shall sample all uncontrolled waste streams that count toward the 6 Mg Compliance Option and contain greater than 0.05 Mg/yr of benzene on an annual basis.

d. If HFSNR concludes that changes in processes, operations, or other factors at the Facility render the EOL Sampling Plan to no longer provide a representative basis for estimating the Facility's quarterly or annual EOL benzene quantity, then by no later than 90

Days after HFSNR makes this determination. HFSNR shall submit a revised EOL Sampling Plan for EPA review and approval. HFSNR shall comply with and commence sampling under the revised EOL Sampling Plan by no later than the first full calendar quarter following submittal of the plan to EPA, regardless of whether the plan has been approved at that time.

Attachment 1 to Appendix A

WWTP Additional Passive Monitoring Network
Map and Table of Locations

Monitor Location	Coordinates
Passive Monitor 1	32.84945, -104.39297
Passive Monitor 2	32.84987, -104.39318
Passive Monitor 3	32.85021, -104.39236
Passive Monitor 4	32.85031, -104.39335
Passive Monitor 5	32.85119, -104.39322

Attachment 2 to Appendix A

Factors to be Considered and Procedures to Be Followed to Claim Commercial Unavailability

This Attachment outlines the factors HFSNR shall consider and a process it shall follow when determining whether a certified Low-Emissions Packing is "commercially unavailable" pursuant to Paragraph 27 of Appendix A (Wastewater and BWON Program) and Paragraph 10 of Appendix B (LDAR Program). HFSNR may consider additional factors other than those identified in this Attachment when making its determination of commercial unavailability.

I. FACTORS TO CONSIDER WHEN DETERMINING COMMERCIAL UNAVAILABILITY

A. Nothing in the Consent Decree or this Attachment requires HFSNR to utilize any valve or packing that is not suitable for its intended use.

B. The following factors are relevant in determining whether a certified Low-Emissions Valve or a valve that utilizes certified Low-Emissions Packing is commercially unavailable to replace or repack a valve subject to an NDE Standard (Appendix A – Wastewater and BWON Program) or an Existing Covered Valve (Appendix B – LDAR Program):
    1. Valve type (e.g., ball, gate, butterfly, needle) (neither the Consent Decree nor this Attachment requires consideration of a different type of valve than the type that is being replaced);
    2. Nominal valve size (e.g., 2 inches, 4 inches);
    3. Compatibility of materials of construction with process chemistry and product quality requirements;
    4. Valve service and operating conditions (e.g., temperature, pressure);
    5. Service life;
    6. Packing friction (e.g., impact on operability of valve);
    7. Whether the valve is part of a packaged system;
    8. Retrofit requirements (e.g., re-piping or space limitations); and
    9. Other relevant considerations.

C. The following factors may also be relevant, depending upon the location of the valve:
    1. In cases where the valve is a component of equipment that HFSNR is licensing or leasing from a third party, valve or valve packing specifications identified by the lessor or licensor of the equipment of which the valve is a component (including components that are part of a design package by a specialty equipment provider as part of a larger process unit); or

2. Valve or valve packing vendor or manufacturer recommendations for the relevant refinery unit and/or process unit components.

II. PROCEDURES FOR ASSERTING COMMERCIAL UNAVAILABILITY

HFSNR shall comply with the following procedures if it seeks to assert commercial unavailability under Paragraph 27 of Appendix A (Wastewater and BWON Program) or Paragraph 10 of Appendix B (LDAR Program):

A. Except as set forth below, HFSNR must contact a reasonable number of vendors of valves or valve packing that HFSNR, in good faith, believes may have valves or valve packing suitable for the intended use, taking into account the relevant factors listed in Section I above.
    1. For purposes of this Consent Decree, a reasonable number of vendors presumptively shall mean no less than three.
    2. If fewer than three vendors are contacted, the determination of whether such fewer number is reasonable shall be based on the factors set forth in Section I.C. above, or on a demonstration that fewer than three vendors offer valves or valve packing considering factors set forth in Section I.B. above.

B. HFSNR shall obtain a written representation from each vendor, or equivalent documentation, that a particular valve or valve packing is not available as "Low-Emissions" from that vendor for the intended conditions or use.
    1. "Equivalent documentation" may include e-mail or other correspondence or data showing that a valve or valve packing suitable for the intended use does not meet the definition of Low-Emissions Valve or Low-Emissions Packing in Appendices A and B or that the valve or packing is not suitable for the intended use.
    2. If a vendor does not respond or refuses to provide a written representation or equivalent documentation, "equivalent documentation" may consist of records of HFSNR's attempts to obtain a response from such vendor.

C. Each semi-annual report required by Paragraph 39 of the Consent Decree shall identify each instance when a Low-Emissions Valve or a valve that utilizes Low-Emissions Packing was not commercially available. HFSNR shall provide a complete explanation of the basis for its claim of commercial unavailability, including, as an attachment to the status report, all relevant documentation. This report shall be valid for a period of 365 Days from the date of the report for the specific valve involved and all other similar valves, taking into account the factors listed in Section I above.

Appendix B

LDAR Program

WHEREAS, HFSNR made improvements to the Facility's LDAR compliance program through retraining, enhancements, additional oversight of LDAR contractors, and retention of a new LDAR contractor company.

Definitions:

Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Paragraph and Subparagraph references in this Appendix are references to the Paragraphs and Subparagraphs in this Appendix.

"Biennially" shall mean once every two calendar years.

"Control valve" shall mean a device that manipulates a flowing fluid, such as gas, steam, water, or chemical compounds to compensate for the load disturbance and keeps the regulated process variable as close as possible to the desired set point.

"Covered Equipment" shall mean the equipment in all Covered Process Units in VOC service that are regulated under any "equipment leak" provision of 40 C.F.R. Parts 60, 63, or any applicable State equipment leak regulation. Connectors that are Covered Equipment for the purposes of this Appendix are only those Connectors in light liquid/gas vapor service in the Artesia Refinery's South Plant and Wastewater Treatment Plant.

"Connectors" means flanged, screwed, or other joined fittings used to connect 2 pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered Connectors for the purpose of this Appendix.

"Covered Process Unit" shall mean any process unit that is, or under the terms of this Appendix becomes, subject to the equipment leak provisions of 40 C.F.R. Part 60, Subpart GGGa ("NSPS Subpart GGGa") (and by reference 40 C.F.R. Part 60, Subpart VVa ("NSPS Subpart VVa")).

"Existing Valves" shall mean all valves (excluding pressure relief valves) that are installed in a Covered Process Unit at the Facility prior to the Effective Date.

"LDAR" or "Leak Detection and Repair" shall mean the leak detection and repair activities required by any LDAR Regulations.

"LDAR Auditor" shall mean a third-party auditor meeting the requirements of Paragraph 14.b.

"LDAR Corrective Action Plan" shall mean the plan described in and required by Paragraph 15.

"LDAR Database" shall mean an electronic database that is used to record data generated for compliance with applicable LDAR Regulations and that is capable of exporting data in a reasonably usable format.

"LDAR Personnel" shall mean all HFSNR's contractors and employees who perform any of the following activities at the Facility: LDAR monitoring; LDAR data input; maintenance of LDAR monitoring devices; leak repairs on equipment subject to LDAR Regulations; and/or any other field duties required by LDAR Regulations or this Appendix.

"LDAR Regulations" shall collectively mean the regulations set forth in NSPS Subpart GGGa (and by reference NSPS Subpart VVa), MACT CC, as well as applicable State, or local equipment leak requirements that require the use of Method 21 to monitor for equipment leaks and also require the repair of leaks discovered through such monitoring.

"Leak" or "Leaking" shall mean:

(1) A Screening Value at or above the leak definition in the applicable LDAR Regulations, and as set forth in Table 2; or
(2) Any emissions detected from Covered Equipment through olfactory, visual, or auditory sensing that meet or exceed the threshold values set forth in Table 2.

"Low-Emissions Packing" or "Low-E Packing" shall mean a valve packing product that meets the specifications set forth in subparagraphs (1) or (2) below. "Low-E Injectable Packing" is a type of Low-E Packing product (also meeting the specifications set forth in subparagraphs (1) or (2) below) capable of being injected into a valve either through a "pre-drill and tap" port supplied as part of the original valve design by the valve manufacturer, or a traditional "drill-and-tap" repair of the valve as described in Paragraph 8.

(1) A valve packing product, independent of any specific valve, for which the manufacturer has issued a written warranty that the packing will not emit fugitives at greater than 100 parts per million (ppm), and that, if it does emit at greater than 100 ppm at any time in the first 5 years after installation, the manufacturer will replace the product; provided, however, that no packing product shall qualify as "Low-E" by reason of written warranty unless the valve packing product first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions; or
(2) A valve packing product, independent of any specific valve, that has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions, and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm.

"Low-Emissions Valve" or "Low-E Valve" shall mean either of the following:

(1) A valve (including its specific packing assembly or stem sealing component) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does emit at greater than 100 ppm at any time in the first 5 years after installation, the manufacturer will replace the valve; provided, however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either:

a. first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions; or
b. is an "extension" of another valve that qualified as "Low-E" under this subparagraph; or

(2) A valve (including its specific packing assembly) that:

a. has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or
b. is an "extension" of another valve that qualified as "Low-E" under this subparagraph.

For purposes of this definition, being an "extension of another valve" means that the characteristics of the valve that affect sealing performance (e.g., type of valve, stem motion, tolerances, surface finishes, loading arrangement, and stem and body seal material, design, and construction) are the same or essentially equivalent as between the tested and the untested valve.

"Monthly" shall mean a calendar month (e.g., January 1 through January 31) except as otherwise provided in applicable LDAR Regulations.

"Process Unit" shall mean components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

"Process Unit Shutdown" shall mean a work practice or operational procedure that stops production from a Covered Process Unit or part of a Covered Process Unit during which it is technically feasible to clear process material from a Covered Process Unit or part of a Covered Process Unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered Process Unit Shutdowns:

(1) An unscheduled work practice or operational procedure that stops production from a Covered Process Unit or part of a Covered Process Unit for less than 24 hours.
(2) An unscheduled work practice or operational procedure that would stop production from a Covered Process Unit or part of a Covered Process Unit for a shorter period of time than would be required to clear the Covered Process Unit or part of the Covered Process Unit of materials and start up the unit and would result in greater emissions than delay of repair of Leaking components until the next scheduled Process Unit Shutdown.
(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

"Repair Verification Monitoring" shall mean monitoring following a repair attempt in order to determine whether the Screening Value is below the applicable leak definition in the LDAR Regulations or this Appendix or that the Leak has been eliminated.

"Screening Value" shall mean the highest concentration that is recorded at a piece of Covered Equipment as it is monitored for the relevant monitoring event in accordance with Method 21.

"South Plant" shall mean the following Covered Process Units: (1) Atmospheric Crude Distillation Unit, (2) Saturates Gas Plants, (3) Skid Treaters Unit, (4) Propane Butane Column Unit, and (5) Flasher/Vacuum Distillation Unit.

I. COMPLIANCE REQUIREMENTS

A. NSPS APPLICABILITY

1. **GGGa Applicability.** No later than 90 Days after the Effective Date, each Process Unit at the Facility shall be an "affected facility" as that term is defined in NSPS Subpart GGGa.

B. LDAR PROGRAM

2. **LDAR Program Applicability.** The requirements of this Appendix ("LDAR Program") shall apply to all Covered Equipment and all Covered Process Units at the Facility. The requirements of this LDAR Program are in addition to, and not in lieu of, the requirements of any other LDAR Regulations that may apply to a piece of Covered Equipment. If there is a conflict between the LDAR Regulations and this LDAR Program, HFSNR shall follow the more stringent of the requirements.

3. **LDAR Program Document.**

   a. By no later than 90 Days after the Effective Date, HFSNR shall develop a facility-wide document ("LDAR Program Document") that describes:

      (1) The LDAR Program (e.g., applicability of regulations to Covered Process Units and/or specific equipment; leak definitions; monitoring frequencies; repairs; recordkeeping; reporting);

      (2) The list of Existing Valves in Covered Process Units in the LDAR Database at the time of submission, organized by Covered Process Units.

      (3) Tracking programs (e.g., Management of Change) that ensure that new pieces of equipment added to the Facility for any reason are

integrated into the LDAR Program and that pieces of equipment that are taken out of service are removed from the LDAR Program;

(4) The roles and responsibilities of all employees and contractor personnel assigned to LDAR functions at the Facility and the training each will receive under Paragraph 12 (Training); and

(5) A qualitative review of how the number of personnel dedicated to LDAR functions is sufficient to satisfy the requirements of the LDAR Program.

b. HFSNR shall submit the initial LDAR Program Document to EPA and NMED in accordance with Section XVI (Notices) of the Consent Decree. By no later than December 31 of each year after submission of the initial LDAR Program Document, HFSNR shall review and update the LDAR Program Document.

c. If requested by the EPA or NMED, HFSNR shall provide a copy of the LDAR Program Document, pursuant to the provisions of Section XVI (Notices) of the Consent Decree, within 14 Days of the request.

4. **Monitoring Frequency.** By no later than the Effective Date for valves and pumps, and by no later than 180 Days after the Effective Date for Connectors, HFSNR shall comply with the periodic monitoring frequencies in Table 1, unless (a) more frequent monitoring is required by applicable federal, State, or local laws or regulations; or (b) the relevant Covered Process Unit has been permanently shut down.

TABLE 1

Equipment Type	Monitoring Frequency
Valves	Quarterly
Connectors	Biennially
Pumps	Monthly

5. Compliance with the monitoring frequencies in Table 1 is not required when an applicable LDAR Regulation excludes or exempts, fully or partially, monitoring at a periodic frequency (e.g., an exemption for equipment that is designated as unsafe-to-monitor or difficult-

to-monitor, or an exemption for pumps that have no externally actuated shaft), provided that HFSNR satisfies all applicable conditions and requirements for the exclusion or exemption set forth in the applicable LDAR Regulation.

6. **Method 21 Data Logging.**

a. Beginning on the Effective Date, for all Covered Equipment, HFSNR shall comply with Method 21 in performing LDAR monitoring, using an instrument equipped with a flame ionization detector attached to a data logger which directly records electronically the Screening Value detected at each piece of Covered Equipment, the date and time that each Screening Value is taken, and the identification numbers of the monitoring instrument and the technician. HFSNR shall transfer this monitoring data to the Facility's LDAR Database on at least a weekly basis for recordkeeping purposes.

b. Notwithstanding the foregoing, HFSNR may use paper logs where appropriate (e.g., small rounds, remonitoring, or when data loggers are not available). Any manual recorded monitoring data shall be transferred to the electronic database within 7 Days of monitoring.

c. If during LDAR monitoring, a piece of Covered Equipment is discovered that is not listed in the data logger, HFSNR is permitted to monitor the piece of Covered Equipment and record, by any means available, the Screening Value, the date and time of the Screening Value, and the identification numbers of the monitoring instrument and technician. In such an instance, the failure to initially record the information electronically in the data logger does not constitute a violation of this Paragraph's requirement to record the required information electronically, provided that HFSNR thereafter adds the piece of Covered Equipment and all the information regarding the monitoring event including the Screening Value, the date and time of

the Screening Value, and the identification numbers of the monitoring instrument and technician, into the LDAR Database within 10 Days of discovering the piece of Covered Equipment. HFSNR shall report any such Covered Equipment not listed in the LDAR Database in the next semi-annual report under Section VIII (Reporting Requirements) of the Consent Decree and shall document whether the piece of Covered Equipment was discovered through a federal, State, or local investigation or by HFSNR or the LDAR Auditor.

7. **Action Levels.** Beginning on the Effective Date, if a Screening Value is at or above the applicable Leak definition in Table 2, HFSNR shall perform repairs, replacements, or repacking, in accordance with Paragraphs 8 through 10.

TABLE 2

Equipment Type	Leak Definition (ppm)
Valves	500
Connectors	500
Pumps	2,000

a. For purposes of the Leak definitions in Table 2, HFSNR may elect to adjust the monitoring instrument readings for background pursuant to applicable LDAR Regulations.

b. **Leaks Identified by Audio, Visual, or Olfactory ("AVO") Means.** Beginning on the Effective Date, for all Covered Equipment, and all valves and pumps in heavy liquid service, if at any time, including outside of periodic monitoring, evidence of a potential Leak is detected through AVO sensing, HFSNR shall comply with all applicable LDAR Regulations and, if repair is required, with Paragraph 8 (Repairs) and Paragraph 9 (Delay of Repair).

8. **Repairs.**

a. **First Attempt at Repair.** By no later than 5 Days after detecting a Leak, HFSNR shall perform a first attempt at repair.

b. **Repair.** By no later than 15 Days after detection, HFSNR shall repair the Leaking piece of the Covered Equipment or place the piece of Covered Equipment on the Delay of Repair ("DOR") list, provided that HFSNR has complied with all applicable LDAR Regulations and requirements of this Paragraph, Paragraph 9 (Delay of Repair), and Paragraph 10 (Valve Replacement and Improvement Program).

c. **Repair Verification Monitoring.** By no later than 180 Days after the Effective Date, HFSNR shall perform Repair Verification Monitoring no later than 1 Business Day after each attempt at repair of a Leaking piece of Covered Equipment. No Covered Equipment will be considered repaired until Repair Verification Monitoring demonstrates there is no Leak.

d. **Proactive Repair Attempt for Valves.** By no later than 180 Days after the Effective Date, for any valve, excluding Control Valves, and other valves that LDAR personnel are not authorized to repair, that has a Screening Value greater than or equal to 250 ppm and less than 500 ppm, HFSNR shall make an initial attempt to repair the valve and eliminate the Leak by no later than 5 Days after detecting the Leak. Repair Verification Monitoring in accordance with Paragraph 8.c shall be performed to determine if the initial attempt at repair has been successful. If, upon Repair Verification Monitoring, the Screening Value is less than 500 ppm, no further repairs under this Paragraph shall be required for that monitoring event for that valve. If, upon Repair Verification Monitoring, the Screening Value is greater than or equal to 500 ppm, HFSNR shall undertake the requirements in Paragraph 8

(Repairs), Paragraph 9 (Delay of Repair), and Paragraph 10 (Valve Replacement and Improvement Program), as applicable (and all deadlines for such requirements shall be based on the date of the failed Repair Verification Monitoring).

e. **Drill-and-Tap for Valves (Other than Control Valves).** By no later than 180 Days after the Effective Date, HFSNR shall attempt technically feasible repair methods, including at least one drill-and-tap repair for any Leaking valve (other than Control Valves or pressure relief valves subject to LDAR Regulations), before placing such valve on the DOR list in accordance with this Paragraph 8.e.1 through 8.e.5.

(1) Valves Subject to Drill-and-Tap Requirements. This Paragraph 8.e applies to valves (other than Control Valves or pressure relief valves subject to LDAR Regulations) for which other repair attempts have failed to reduce emissions below the applicable Leak definition and that HFSNR is unable to remove from service.

(2) Required Sealant Re-Injection. If the first sealant injection performed as part of the drill-and-tap repair is unsuccessful at repairing the Leak, HFSNR shall perform a second injection of an appropriate sealing material.

(3) Alternative for Low-E Injectable Packing. As an alternative to the drill-and-tap repair method for Leaking valves that are Covered Equipment (other than Control Valves) set forth in Paragraph 8.e.5 or in circumstances where Low-E Packing is required under Paragraph 10 (Valve Replacement and Improvement Program), HFSNR may attempt a drill-and-tap repair using Low-E Injectable Packing. If a drill-and-tap repair using Low-E Injectable Packing fails to reduce emissions below the applicable Leak definition after one injection of Low-E Injectable Packing, HFSNR shall place the valve on the DOR list.

(4) Drill-and-Tap Exceptions. Drill-and-tap is not required:

(a) When Paragraph 10.e.3.b applies; or

(b) When there is a safety, major mechanical, major product quality, or environmental issue with repairing the valve using the drill-and-tap method, in which case HFSNR shall document the reason(s) why any drill-and-tap attempt was not performed prior to placing any valve on the DOR list.

(5) Timing for Drill-and-Tap Repairs & Provisions for DOR Listing.

(a) If a drill-and-tap attempt can reasonably be completed within the 15-Day repair period, HFSNR shall complete the drill-and-tap attempt in that time period.

(b) If a drill-and-tap attempt cannot reasonably occur within the 15-Day repair period (e.g., if HFSNR's drill-and-tap contractor is not local and must mobilize to the Facility), HFSNR provisionally may place the valve on the DOR list pending attempting the drill-and-tap repair as expeditiously as practicable. Absent one of the exceptions found in Paragraph 8.e.4 above or as otherwise agreed to in writing by EPA, in consultation with NMED, in no event may HFSNR take more than 30 Days from the initial Leak detection to attempt a drill-and-tap repair. If Repair Verification Monitoring demonstrates that there is no Leak, the valve shall be removed from the provisional DOR list and considered repaired.

f. Nothing in this Paragraph is intended to prevent HFSNR from taking Leaking Covered Equipment out of service; provided, however, that prior to placing the Covered Equipment back in service, HFSNR must repair the Leak or must comply with the requirements of Paragraph 9 (Delay of Repair) to place the piece of Covered Equipment on the DOR list.

9. **Delay of Repair.** Beginning no later than 180 Days after the Effective Date, for all Covered Equipment placed on the DOR list, HFSNR shall:

a. **Supervisor Sign-Off for Delay of Repair.** Require sign-off from the relevant Covered Process Unit supervisor or person of similar authority for any piece of Covered Equipment that is technically infeasible to repair without a Process Unit Shutdown, and maintain records of such supervisor sign-off.

b. **Repair of Devices on Delay of Repair.** Undertake periodic monitoring of the Covered Equipment placed on the DOR list at the frequency specified in Paragraph 4 (Monitoring Frequency) (unless more frequent monitoring is required under applicable LDAR Regulations); and either:

(1) Repair the Covered Equipment within the time frame required by the applicable LDAR Regulation; or

(2) If Paragraph 10 (Valve Replacement and Improvement Program) applies, replace, repack, or improve the Covered Equipment according to the timeframes set forth in Paragraph 10.

c. **Delay of Repair Limits.** No more than 0.10% of the total valves subject to LDAR Regulations at the Facility shall be on the DOR list at any time. If HFSNR agrees to (i) repack a valve with Low-E Valve Packing Technology or (ii) replace a Leaking valve with a Low-E Valve at the next Process Unit Shutdown, such valve shall not be included in computing the applicable percentage limitation of valves that may be on the DOR list at any one time. HFSNR shall provide the calculation for the DOR limit and a list of all valves designated by HFSNR for repacking or replacing with Low-E Valve Packing Technology in reports submitted to EPA and NMED under Section VIII (Reporting Requirements). Covered Equipment may be considered repaired and removed from the DOR list if, for 2 successive monitoring periods, no Leak is detected as set forth in 40 C.F.R. § 60.482-9a(f).

10. **Valve Replacement and Improvement Program.**

a. Beginning no later than 180 Days after the Effective Date, HFSNR shall implement the Valve Replacement and Improvement Program set forth in this Paragraph to improve the emissions performance of the valves at the Facility that are Covered Equipment in each Covered Process Unit.

b. All references to "valves" in this Paragraph exclude pressure relief valves.

c. **Proactive Initial Valve Tightening Work Practices for Each Newly-Installed or Repacked Valve.** Beginning no later than 180 Days after the Effective Date, HFSNR shall undertake the work practices specified in this Paragraph with respect to each new valve that is subject to LDAR Regulations that is installed, whether the new valve replaces an

Existing Valve or is newly added to a Covered Process Unit, and each Existing Valve that is repacked. Upon installation, or re-installation in the case of repacking, and prior to the valve's exposure, or re-exposure, in the case of repacking, to process fluids, HFSNR shall ensure that the valve's packing gland nuts or their equivalent (e.g., pushers) are tightened to:

(1) The manufacturer's recommended gland nut or packing torque; or

(2) Any alternative appropriate tightness, determined in HFSNR's judgment, that will minimize the potential for fugitive emission Leaks of any magnitude.

d. **Installing New Valves.** Except as provided in Paragraphs 10.d.1-3 below, and Paragraph 10.g (Commercial Unavailability of a Low-E Valve or Low-E Packing), HFSNR shall ensure that each new valve (other than a valve that serves as the closure device on an open-ended line) that it installs in each Covered Process Unit will be regulated under applicable LDAR Regulations when installed and either is a Low-E Valve or is fitted with Low-E Packing. This requirement applies to entirely new valves that are added to a Covered Process Unit and to Existing Valves that are replaced in a Covered Process Unit for any reason other than a required replacement or repacking pursuant to Paragraph 10.e.

(1) Paragraph 10.d shall not apply in emergencies or exigent circumstances requiring immediate installation or replacement of a valve where a Low-E Valve or Low-E Packing is not available on a timely basis, provided however, that as soon as practicable, but in no event later than the next Process Unit Shutdown, HFSNR shall install a Low-E Valve or Low-E Packing. Any such instance shall be reported in the next semi-annual report due under Section VIII (Reporting Requirements).

(2) Paragraph 10.d shall not apply to valves that are installed temporarily for a short-term purpose and then removed (e.g., valves connecting a portion of the Covered Process Unit to a testing device).

(3) Paragraph 10.d shall not apply to instrumentation and sampling valves in service on piping with a diameter of 5/8 inches or less.

e. **Required Replacement or Repacking of Leaking Existing Valves with Low-E Valves or Low-E Packing that have Screening Values at or above 2,500 ppm Followed by a Second Screening Value at or Above 500 ppm within 60 months.**

(1) Except as provided in Paragraph 10.g (Commercial Unavailability of a Low-E Valve or Low-E Packing), for each Existing Valve (excluding control valves) that has a Screening Value at or above 2,500 ppm during any monitoring event (excluding repair verification monitoring) and any subsequent Screening Value at or above 500 ppm any time within the 60 months following the date of the initial 2,500 ppm screening value, HFSNR shall either replace the Existing Valve with a Low-E Valve or repack the Existing Valve with Low-E Packing. In determining the applicability of this Paragraph to Leaking Existing Valves, HFSNR need not consider Repair Verification Monitoring conducted in accordance with Paragraph 8.c or the monitoring conducted while a valve is on DOR list. The 60-month period re-commences following replacement or repacking of the Existing Valve.

(2) Timing. HFSNR shall replace or repack an Existing Valve pursuant to Paragraph 10.e.1 by no later than 30 Days after the monitoring event that triggered the replacing or repacking requirement, unless HFSNR complies with either of the following:

(a) *Permissible Delay Despite Diligent Efforts.* Where replacement or repacking does not require a Process Unit Shutdown, delayed replacement or repacking beyond the 30-Day deadline is permissible only if HFSNR meets the following criteria:

1) As expeditiously as practicable, but no later than the 30-Day deadline, HFSNR must take actions necessary to obtain the required valve or valve packing, including all necessary associated materials, and retain documentation of the actions taken and the date of each such action;

2) If, despite HFSNR's efforts to comply with Paragraph 10.e.2.a.1 above, the required valve or valve packing, including all necessary associated materials, is not available in time to complete the installation within 30 Days, HFSNR must take all reasonable actions to minimize emissions from the valve pending completion of the required replacing or repacking. Examples may include, as determined

in HFSNR's sole discretion, but are not limited to 1) repair; 2) more frequent monitoring, with additional repairs as needed; or 3) where practical, interim replacing or repacking of a valve with a valve that is not a Low-E Valve or with packing that is not Low-E Packing; and

3) As soon as practicable following HFSNR's receipt of the Low-E Valve or Low-E Valve Packing, including all necessary associated materials, HFSNR must perform the required replacement or repacking.

(b) *Delay Due to Planned FCCU Turnaround.* Where an Existing Valve triggers Paragraph 10.e.1 within 6 calendar months prior to the Planned FCCU Turnaround, replacement or repacking is not required until the next Process Unit Shutdown after the Planned FCCU Turnaround. HFSNR shall develop a list of components that will be replaced with Low-E Valve or Low-E Valve Packing during the next Process Unit Shutdown that meet this criteria.

(c) *Delay Due to Required Process Unit Shutdown (Other than the Planned FCCU Turnaround)*. If replacing or repacking requires a Process Unit Shutdown, HFSNR shall replace or repack the Existing Valve during the first Process Unit Shutdown that follows the monitoring event that triggered the requirement to replace or repack the valve, unless HFSNR:

1) Documents that insufficient time existed between the monitoring event and the Process Unit Shutdown to enable HFSNR to purchase and install the required Low-E Valve or Low-E Valve packing technology; and

2) Replaces or repacks the valve at the next Process Unit Shutdown that occurs after HFSNR's receipt of the Low-E Valve or Low-E Valve packing, including all necessary associated materials.

(3) Applicable Requirements Pending Replacement or Repacking.

(a) *Actions Required Pursuant to Applicable Regulations.* For each Existing Valve that has a Leak, HFSNR shall comply with all applicable LDAR Regulations and the LDAR

Program, including repair and DOR, pending replacing or repacking pursuant to Paragraph 10.e.

(b) *Applicability of Drill-and-Tap Requirements*. HFSNR shall not be required to comply with the drill and tap requirements of Paragraph 8 (Repairs) if HFSNR completes the replacing or repacking pursuant to Paragraph 10.e no later than 30 Days after detecting the Leak. If HFSNR does not complete the replacing or repacking within 30 Days, or if at the time of the Leak detection HFSNR reasonably can anticipate that they might not be able to complete the replacing or repacking within 30 Days, HFSNR shall comply with all applicable requirements of Paragraphs 8 (Repairs) and 9 (Delay of Repair).

f. **Provisions Related to Low-E Valves and Low-E Packing.**

(1) Low-E Status Not Affected by Subsequent Leaks. If, during monitoring or after installation, a Low-E Valve or a valve using Low-E Packing has a Leak, the Leak in and of itself is not a violation of this Appendix, does not invalidate the "Low-E" status or use of that type of valve or packing technology, and does not require replacing other, non-Leaking valves or packing technology of the same type.

(2) Repairing Low-E Valves. If, during monitoring or after installation, a Low-E Valve or a valve using Low-E Packing has a Leak, Paragraphs 8 (Repairs) and 9 (Delay of Repair) shall apply.

(3) Replacing or Repacking Low-E Valves. HFSNR shall replace or repack a Low-E Valve or a valve using Low-E Packing in accordance with the procedures and requirements for replacing or repacking Leaking Existing Valves under Paragraph 10.e when:

(a) The Low-E Valve or valve with Low-E Packing is found Leaking during any monitoring event; or

(b) HFSNR replaces or repacks a Low-E Valve or Valve with Low-E Packing for any reason.

g. **Commercial Unavailability of a Low-E Valve or Low-E Packing.**

HFSNR shall not be required to utilize a Low-E Valve or Low-E Packing to replace or repack a valve if a Low-E Valve or Low-E Packing is commercially unavailable. The factors relevant to the question of commercial unavailability and the procedures that HFSNR must follow to assert

that a Low-E Valve or Low-E Packing is commercially unavailable are set forth in Attachment 1 (Factors to be Considered and Procedures to Be Followed to Claim Commercial Unavailability).

h. **Records of Low-E Valves and Low-E Packing.** Prior to installing any Low-E Valves or Low-E Packing, or if not possible before installation, then as soon as possible after installation, HFSNR shall secure from each manufacturer documentation that demonstrates that the proposed valve or packing technology meets the definition of "Low-E Valve" and/or "Low-E Packing." HFSNR shall submit the documentation to EPA or NMED upon request.

i. Nothing in Paragraphs 10.d – 10.f requires HFSNR to use any valve or valve packing technology that is not appropriate for its intended use in a Covered Process Unit.

11. **Management of Change.**

a. **Management of Change Protocol.** By no later than 90 Days after the Effective Date, HFSNR shall implement a "Management of Change Protocol," that shall ensure that:

(1) Each valve, pump, and Connector added to a Covered Process Unit at the Facility for any reason is evaluated to determine if it is subject to LDAR Regulations;

(2) Each valve, pump, and Connector that was subject to the LDAR Program is eliminated from the LDAR Program if it is physically removed from a Covered Process Unit; and

(3) Any monitoring data, including monitoring relating to each valve, pump, and Connector that is removed from any Covered Process Unit, is maintained in accordance with the applicable LDAR Regulations and this Appendix.

12. **Training.**

a. **Training Protocol.** By no later than 180 Days after the Effective Date, HFSNR shall develop a training protocol for the Facility (or, as applicable, require its contractor(s) to develop a training protocol for the contractor's employees).

b. **Initial Training.** By no later than 180 Days after the Effective Date, HFSNR shall ensure that all LDAR Personnel have completed training on all aspects of LDAR, including this LDAR Program, that are relevant to the person's duties.

c. **Refresher Training.** Once per calendar year starting in the calendar year after completion of initial training, HFSNR shall ensure that all LDAR Personnel complete refresher training; provided, however, that refresher training is not required if an individual's employment at the Facility ceases prior to the end of the calendar year or an individual's duties no longer include implementing the LDAR Program or LDAR Regulations.

d. **New LDAR Personnel Training.** After the development of the training protocol in Paragraph 12.a and continuing until termination of this Appendix, HFSNR shall ensure (or as applicable, require its contractor to ensure for the contractor's employees) that new LDAR Personnel are sufficiently trained no more than 90 Days prior to any field involvement (other than supervised involvement for purposes of training) with LDAR and/or the LDAR Program.

13. **Quality Assurance/Quality Control.**

a. **Daily Certification by Monitoring Technicians.** Commencing by no later than 180 Days after the Effective Date, on each Day that monitoring occurs, at the end of such monitoring, HFSNR shall ensure that each monitoring technician certifies that the data collected accurately represents the monitoring performed for that Day by requiring the monitoring technician to sign a form (in writing or electronically) that identifies the monitoring technician and includes the following certification:

> On [insert date], I reviewed the monitoring data that I collected today and to the best of my knowledge and belief, the data accurately represents the monitoring that I performed today.

b. **QA/QC Requirements.** Commencing by no later than the first full calendar quarter (i.e., period of 3 calendar months ending on March 31, June 30, September 30, or December 31) after 180 Days after the Effective Date, at times that are not announced to the LDAR monitoring technicians, an LDAR-trained employee or contractor of HFSNR, who does not serve on a routine basis as an LDAR monitoring technician at the Facility, shall undertake the following no less than once per calendar quarter at the Facility, except for Paragraph 13.b.7, which shall be undertaken on a semi-annual basis:

(1) Verify that Covered Equipment was monitored at the appropriate frequency;

(2) Verify that proper documentation and sign-offs have been recorded for all Covered Equipment placed on the DOR list;

(3) Verify that repairs have been performed in the required periods;

(4) Review monitoring data and Covered Equipment counts (e.g., number of pieces of Covered Equipment monitored per Day) for feasibility and unusual trends;

(5) Verify that proper calibration records and monitoring instrument maintenance information are maintained;

(6) Verify that LDAR records are maintained as required; and

(7) Observe in the field each LDAR monitoring technician who is conducting Leak detection monitoring to ensure that monitoring during the quarterly QA/QC is being conducted as required.

c. HFSNR shall promptly correct any deficiencies detected or observed through the QA/QC review in Paragraph 13 and maintain, in electronic format, a log that: (i) records the date and time that the reviews, verifications, and observations required by this Paragraph are undertaken; and (ii) describes the nature and timing of any corrective actions taken. HFSNR shall submit the log, including any planned corrective actions, to EPA and NMED with each semi-annual report required by Paragraph 39 of the Consent Decree.

14. **LDAR Audits.**

a. **Audit Schedule.** Until termination of this Consent Decree, HFSNR shall ensure that LDAR audits under this Appendix ("LDAR Audits") are conducted every other year in accordance with the following schedule:

(1) The first LDAR Audit shall include all Covered Process Units at the Facility. HFSNR shall ensure that the LDAR Auditor conducts his/her first Day of on-site inspection for the first LDAR audit no later than December 31, 2025;

(2) Each subsequent LDAR Audit shall include all Covered Process Units at the Facility. HFSNR shall ensure that the LDAR Auditor conducts his/her first Day of on-site inspection for the second LDAR audit no sooner than 2 years after and within the same calendar quarter that the first LDAR Audit Report (see Paragraph 14.e) was submitted.

b. **LDAR Auditor Selection Requirements.** For the LDAR Audits to be conducted under this Appendix, HFSNR shall retain a third-party with experience in conducting LDAR Audits that is a different entity than the Facility's regular LDAR contractor. HFSNR shall not hire any LDAR Auditor employed pursuant to this Appendix as a regular LDAR contractor for the Facility during the life of this Appendix.

c. **Audit Scope & Content.** For each Covered Process Unit, each LDAR Audit shall include:

(1) A review of compliance with all applicable LDAR Regulations, including:

(a) A determination of the LDAR requirements applicable to each Covered Process Unit at the Facility; and

(b) A review of LDAR requirements related to valves and pumps in heavy liquid service;

(2) A review and/or verification of the same items that are required to be reviewed and/or verified in Paragraphs 13.b.1 – 13.b.7;

(3) A review of whether any pieces of Covered Equipment that are

required to be in the LDAR Program are not included;

(4) "Comparative Monitoring" as described in Paragraph 14.d; and

(5) A review of the Facility's compliance with this Appendix (LDAR Program).

d. **Comparative Monitoring.** Comparative monitoring during LDAR Audits shall be undertaken as follows:

(1) Calculating a Comparative Monitoring Audit Leak Percentage. Covered Equipment shall be monitored in order to calculate a Leak percentage for each Covered Process Unit. Under this Paragraph, the monitoring that takes place during an LDAR Audit shall be called "Comparative Monitoring" and the Leak percentages derived from the Comparative Monitoring shall be called the "Comparative Monitoring Audit Leak Percentages."

(2) Calculating the Historic, Average Leak Percentage from Prior Periodic Monitoring Events. HFSNR shall average the Leak percentages from the following monitoring periods immediately preceding the Comparative Monitoring to calculate the "Historic, Average Leak Percentage" for each type of Covered Equipment. The Historic, Average Leak Percentage shall be broken down by the Covered Process Unit and type of Covered Equipment.

(a) Valves – 4 quarterly monitoring periods;

(b) Pumps – 12 monthly monitoring periods

(3) Calculating the Comparative Monitoring Leak Ratio. For each Covered Process Unit, the ratio of the Comparative Monitoring Audit Leak Percentage from Paragraph 14.d.1 to the Historic, Average Leak Percentage from Paragraph 14.d.2 shall be calculated. This ratio shall be called the "Comparative Monitoring Leak Ratio." If the denominator in this calculation is "zero," it shall be assumed (for purposes of this calculation but not for any other purpose under this Appendix or under any applicable laws and regulations) that one Leaking piece of Covered Equipment was found in the Process Unit through routine monitoring during the monitoring periods referenced in Paragraph 14.d.2 before the Comparative Monitoring.

During each LDAR Audit, Leak rates shall be calculated for each Covered Process Unit where comparative monitoring was performed. During each LDAR Audit, HFSNR shall conduct comparative monitoring in at least 3 Covered Process Units at the Facility. HFSNR shall monitor Covered Equipment at a

statistically significant percentage in each Covered Process Unit audited. Comparative monitoring at the Facility shall rotate, such that a different Covered Process Unit is audited before a subsequent audit of a Covered Process Unit is performed.

e. **LDAR Audit Reports.** Within 120 Days after completing the LDAR Auditor's first Day of on-site inspection for any LDAR Audit of the Facility, HFSNR shall submit to EPA and NMED a written report prepared by the LDAR Auditor ("Audit Report") that describes:

(1) A summary of findings with respect to the topics specified in Paragraphs 14.c.1 – 14.c.3 and 14.c.5;

(2) The Comparative Monitoring Audit Leak Percentage for each Process Unit calculated pursuant to Paragraph 14.d.1;

(3) The Comparative Monitoring Leak Ratio for each Process Unit calculated pursuant to Paragraph 14.d.3; and

(4) The Historic, Average Leak Percentage by Covered Equipment.

HFSNR shall submit validated raw data in spreadsheet format with respect to the Comparative Monitoring described in Paragraph 14.d to EPA or NMED upon request.

15. **Corrective Action.**

a. **Scope of Corrective Action.** HFSNR shall complete each corrective action at the Facility necessary to address both:

(1) Any noncompliance or deficiencies identified during, or as a result of, the LDAR Audit; and

(2) Any equipment Leaks from Covered Equipment if the Comparative Monitoring Leak Ratio calculated pursuant to Paragraph 14.d.3 is 3.0 or higher *and* the Comparative Monitoring Audit Leak Percentage calculated pursuant to Paragraph 14.d.1 is greater than or equal to 0.5 percent at a Covered Process Unit.

b. **Timing/Schedule for Corrective Action.** If HFSNR has not completed each corrective action required under Paragraph 15.a within 90 Days of the submission of the Audit Report (or all such corrective actions are not expected to be completed within 90 Days),

HFSNR shall develop an LDAR Corrective Action Plan ("LDAR CAP") for the Facility in accordance with Paragraph 15.c.

c. **LDAR CAP.**

(1) Required Contents of an LDAR CAP. An LDAR CAP shall:

(a) Explain the reasons why each such corrective action was not completed within 90 Days of the submission of the Audit Report; and

(b) Propose a schedule for prompt completion of all such corrective action(s) as expeditiously as practicable.

(2) Submission of the LDAR CAP. By no later than 120 Days after submission of the Audit Report, HFSNR shall submit the LDAR CAP to EPA and NMED.

(3) Review and Approval of the LDAR CAP. EPA, in consultation with NMED, may submit comments on the LDAR CAP within 30 Days. Within 15 Days after receipt of any comments from EPA, HFSNR may submit a reply. Disputes arising with respect to any aspect of an LDAR CAP shall be resolved in accordance with Section XII (Dispute Resolution).

(4) LDAR CAP Implementation. HFSNR shall implement the corrective action(s) in the LDAR CAP in accordance with HFSNR's schedule (and, if applicable, any LDAR CAP modifications).

(5) LDAR CAP Modification. If HFSNR must modify the type of corrective action(s) to be performed or the schedule for completion in the LDAR CAP, HFSNR shall request modification of the LDAR CAP by a written submission that includes an explanation of the reasons for the modification and that otherwise complies with Paragraph 15.c.1. The proposed LDAR CAP modification shall be submitted in accordance with Paragraph 15.c.2 and reviewed and approved in accordance with Paragraph 15.c.3.

16. **Certification of Compliance.**

a. Within 180 Days after the submission of each Audit Report, HFSNR shall certify to EPA and NMED that, to the signer's best knowledge and belief formed after reasonable inquiry:

(1) The Facility is in compliance with all applicable LDAR Regulations and this LDAR Program, except as otherwise identified;

(2) HFSNR has completed all corrective actions at the Facility, if applicable, or is in the process of completing all corrective actions pursuant to the LDAR CAP; and

(3) All Covered Equipment at the Facility that is subject to LDAR Regulations has been identified and included in the LDAR Program.

b. To the extent that HFSNR cannot make the certifications specified in Paragraphs 16.a.1 – 16.a.3 in all respects, they shall specifically identify any deviations from such requirements.

c. If all corrective action(s) required under Paragraph 15.a are not complete at the time of original certification under Paragraph 16.a, HFSNR shall submit a supplemental certification by no later than 30 Days after the date of completion of all such corrective action(s).

17. **LDAR Program Compliance Status Reports.** On the dates and for the time periods set forth in Section VIII (Reporting Requirements) of the Consent Decree, HFSNR shall include a separate, clearly-identified section in each semi-annual report that shall be titled "LDAR Program Compliance Status Report" and that shall contain the information identified in Paragraph 39 of the Consent Decree.

Attachment 1 to Appendix B

Factors to be Considered and Procedures to Be Followed to Claim Commercial Unavailability

This Attachment outlines the factors HFSNR shall consider and a process it shall follow when determining whether a certified Low-Emissions Packing is "commercially unavailable" pursuant to Paragraph 27 of Appendix A (Wastewater and BWON Program) and Paragraph 10 of Appendix B (LDAR Program). HFSNR may consider additional factors other than those identified in this Attachment when making its determination of commercial unavailability.

I. FACTORS TO CONSIDER WHEN DETERMINING COMMERCIAL UNAVAILABILITY

A. Nothing in the Consent Decree or this Attachment requires HFSNR to utilize any valve or packing that is not suitable for its intended use.

B. The following factors are relevant in determining whether a certified Low-Emissions Valve or a valve that utilizes certified Low-Emissions Packing is commercially unavailable to replace or repack a valve subject to an NDE Standard (Appendix A – Wastewater and BWON Program) or an Existing Covered Valve (Appendix B – LDAR Program):
    1. Valve type (e.g., ball, gate, butterfly, needle) (neither the Consent Decree nor this Attachment requires consideration of a different type of valve than the type that is being replaced);
    2. Nominal valve size (e.g., 2 inches, 4 inches);
    3. Compatibility of materials of construction with process chemistry and product quality requirements;
    4. Valve service and operating conditions (e.g., temperature, pressure);
    5. Service life;
    6. Packing friction (e.g., impact on operability of valve);
    7. Whether the valve is part of a packaged system;
    8. Retrofit requirements (e.g., re-piping or space limitations); and
    9. Other relevant considerations.

C. The following factors may also be relevant, depending upon the location of the valve:
    1. In cases where the valve is a component of equipment that HFSNR is licensing or leasing from a third party, valve or valve packing specifications identified by the lessor or licensor of the equipment of which the valve is a component (including components that are part of a design package by a specialty equipment provider as part of a larger process unit); or

2. Valve or valve packing vendor or manufacturer recommendations for the relevant refinery unit and/or process unit components.

II. PROCEDURES FOR ASSERTING COMMERCIAL UNAVAILABILITY

HFSNR shall comply with the following procedures if it seeks to assert commercial unavailability under Paragraph 27 of Appendix A (Wastewater and BWON Program) or Paragraph 10 of Appendix B (LDAR Program):

A. Except as set forth below, HFSNR must contact a reasonable number of vendors of valves or valve packing that HFSNR, in good faith, believes may have valves or valve packing suitable for the intended use, taking into account the relevant factors listed in Section I above.
    1. For purposes of this Consent Decree, a reasonable number of vendors presumptively shall mean no less than three.
    2. If fewer than three vendors are contacted, the determination of whether such fewer number is reasonable shall be based on the factors set forth in Section I.C. above, or on a demonstration that fewer than three vendors offer valves or valve packing considering factors set forth in Section I.B. above.

B. HFSNR shall obtain a written representation from each vendor, or equivalent documentation, that a particular valve or valve packing is not available as "Low-Emissions" from that vendor for the intended conditions or use.
    1. "Equivalent documentation" may include e-mail or other correspondence or data showing that a valve or valve packing suitable for the intended use does not meet the definition of Low-Emissions Valve or Low-Emissions Packing in Appendices A and B or that the valve or packing is not suitable for the intended use.
    2. If a vendor does not respond or refuses to provide a written representation or equivalent documentation, "equivalent documentation" may consist of records of HFSNR's attempts to obtain a response from such vendor.

C. Each semi-annual report required by Paragraph 39 of the Consent Decree shall identify each instance when a Low-Emissions Valve or a valve that utilizes Low-Emissions Packing was not commercially available. HFSNR shall provide a complete explanation of the basis for its claim of commercial unavailability, including, as an attachment to the status report, all relevant documentation. This report shall be valid for a period of 365 Days from the date of the report for the specific valve involved and all other similar valves, taking into account the factors listed in Section I above.

Appendix C

Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring

Section 1 Background and Purpose

1.1 As part of the settlement embodied in the Consent Decree, HFSNR shall establish and operate 2 networks of monitoring devices to monitor benzene concentrations at the fenceline of its Artesia Refinery: an eGC Network and an Enhanced Passive Monitoring Network. HFSNR shall undertake root cause analyses and corrective actions as provided in this Protocol.

1.2 As part of the settlement embodied in the Consent Decree, HFSNR shall also establish and operate a network of monitoring devices to monitor benzene concentrations in Artesia, New Mexico. The purpose of this network is to provide the Artesia community with information about the ambient air concentrations of benzene.

Section 2 Definitions

2.1 Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 *et seq.* Except as otherwise specifically stated herein, all Section references in this Appendix are references to the Sections in this Appendix.

2.2 "Appropriate Corrective Action" means corrective actions, taken as expeditiously as possible, to bring benzene concentrations below the Investigation Thresholds in Section 5.1, to address the eGC Root Cause, and to prevent future Threshold Exceedances from the same primary, underlying, systemic, and contributing causes. Appropriate Corrective Actions may include changes to operating and maintenance procedures.

2.3 "Benzene FLM Regulations" means the regulations at 40 C.F.R. § 63.658.

2.4 "Community eGC" means the eGC required to be established and operated pursuant to Section 7.

2.5 "Community Monitoring Network" means the Community Passive Monitors and the Community eGC.

2.6 "Community Passive Monitors" means the benzene passive monitors required to be established and operated pursuant to Section 7.

2.7 "Continuing Event" means one or more of the following:

2.7.1 Two or more non-overlapping Threshold Exceedances at one or more eGCs that are separated in time by less than 36 hours;

2.7.2 Threshold Exceedances at 2 or more eGCs that overlap in time; or

2.7.3 A Threshold Exceedance caused by a benzene emission source that was also identified as causing or contributing to a prior Threshold Exceedance and that has ongoing benzene emissions (such as, for example, a benzene emission source that has been identified but not yet corrected).

2.8 "eGC" means a portable gas chromatography analyzer capable of collecting and analyzing continuous time-integrated air samples for benzene in 10-minute increments without interference from other compounds such as the eGC Gas Chromatography Analyzer manufactured by ENMET LLC with continuous sampling and a benzene "Wax-2" column.

2.9 "eGC Corrective Action" means corrective action to be performed pursuant to Section 6 to bring eGC-recorded benzene concentrations below the Investigation Thresholds set forth in Section 5.1.

2.10 "eGC Corrective Action Plan" means the corrective action plan developed and submitted by HFSNR under Section 6.2.1.

2.11 "eGC Network" means the network of eGCs required to be established and operated pursuant to Section 3.

2.12 "eGC Root Cause" means the primary, underlying, systemic causes, and any other immediate, contributing causes of the emission of benzene causing a Threshold Exceedance. An eGC Root Cause may include operating and maintenance procedures.

2.13 "eGC Root Cause Analysis" means an assessment conducted through a process of Investigation to determine the eGC Root Cause.

2.14 "Enhanced Passive Monitoring Network" means the enhanced network of passive monitors required to be established and operated by Section 4.

2.15 "Existing Passive Monitoring Network" means the network of passive monitors required to be established and operated to comply with the Benzene FLM Regulations.

2.16 "Investigation" means an investigation required to be performed pursuant to Section 5 to identify the source and eGC Root Cause of a Threshold Exceedance.

2.17 "Method 325A" means, as used in this Protocol, Method 325A as set forth in 40 C.F.R. Part 63, Appendix A, other than Sections 8.2 (Determining Sample Locations), 9.3 (Duplicate and Field Blanks), and 12.1 (Calculate Annual Average Fenceline Concentrations), for purposes of monitoring benzene over a two-week period.

2.18 "Method 325B" means, as used in this Protocol, Method 325B as set forth in 40 C.F.R. Part 63, Appendix A, other than Sections 8.3 (Calculating the Number of Tubes Required for a Monitoring Exercise), 9.3 (Field Blanks), and 9.4 (Duplicate Samples), for purposes of sample preparation and analysis of benzene collected onto sorbent tubes using passive sampling.

2.19 "Mobile GC" means a trailer-mounted eGC or Traditional GC maintained by HFSNR solely for Investigations, as required by Section 3.3.

2.20 "Protocol" means this Protocol for eGC Network, Enhanced Passive Monitoring, and Community Monitoring.

2.21 "Revised eGC Corrective Action Plan" means the corrective action plan amended and resubmitted by HFSNR under Section 6.2.3.

2.22 "Threshold Exceedance" shall have the meaning set forth in Section 5.1.

2.23 "Traditional GC" means a portable gas chromatography analyzer capable of collecting and analyzing air samples for benzene and other potential contaminants of concern in ten-minute increments. The instrument must be a laboratory grade GC requiring AC power with a computer interface.

Section 3 eGC Fenceline Network

3.1 eGC Network. HFSNR shall establish a network of eGCs at the Artesia Refinery that are co-located with the following 10 passive benzene monitoring locations that were established by HFSNR pursuant to the Benzene FLM Regulations: 1a, 5a, 8a, 10a, 11a, 12a, 13a, 14a, 15a, and 16a. These locations are identified on Attachment 1 hereto. Once the eGCs have been placed in the field, the latitude and longitude of each shall be documented.

3.2 Co-Location. For purposes of this Protocol, co-location shall include locations adjacent to the designated passive monitors or, if not practicable due to space or other considerations, as near to the designated passive monitors as reasonably possible (but still within Artesia Refinery property).

3.3 Mobile GCs for Investigation. In addition to the eGCs required for the eGC Network, unless otherwise agreed to by EPA, in consultation with NMED, HFSNR shall maintain one eGC to be used solely for Investigations. HFSNR shall also maintain one Traditional GC to be used solely for Investigations. Both the additional eGC and the Traditional GC shall be trailer-mounted such that each can be moved throughout the Artesia Refinery.

3.4 Operation and Maintenance of the eGCs and Traditional GC. The eGC Network shall be operated continuously, except when individual eGCs are offline due to malfunctions or for maintenance. 6-hour ("6-hr") and 24-hour ("24-hr") rolling clock average benzene concentrations will be calculated hourly for each eGC. Other requirements for the operation and maintenance of the eGCs and the Traditional GC are set forth in Attachment 3.

3.5 Uptime/Downtime. Data availability for benzene shall not fall below 90 percent on a calendar quarterly basis for each individual monitor location in the eGC Network and for each Mobile GC (for the time such Mobile GC is deployed), exclusive of periods of calibrations, and periods of planned maintenance and malfunctions that necessitate replacement of the eGC (for up to 48 hours per eGC replacement).

3.6 MET Data.

3.6.1 HFSNR must collect meteorological data from a meteorological station that is sited in accordance with EPA Method 325A. HFSNR shall follow the calibration and standardized procedures for meteorological measurements in EPA-454/B-08-002 (Quality Assurance Handbook for Air Pollution Measurement Systems) as required by 40 C.F.R. § 63.658(d)(3).

3.6.2 HFSNR must collect wind speed and direction from anemometers located at each of the eGC locations in the eGC Network. Wind speed and direction shall be recorded in 10-minute averages that correlate with the sampling cycles of the eGCs in the eGC Network.

Section 4 Enhanced Passive Monitoring

4.1 Enhanced Passive Monitoring Network. HFSNR shall establish 6 benzene passive monitor housings at the following 6 locations that were formerly used by HFSNR pursuant to the Benzene FLM Regulation but are no longer in use for that purpose: 1, 2, 3, 4, 5, and 6. These locations are identified on Attachment 1 with latitude and longitude.

4.2 Operations; Methodology. The Enhanced Passive Monitoring Network is not part of the Artesia Refinery's benzene fenceline monitoring locations for purposes of compliance with the Benzene FLM Regulations. Nonetheless, the monitoring shall comply with the methodology in Method 325A and Method 325B for 2-week passive monitoring of benzene. Passive monitoring shall continue at these locations on the same schedule the Artesia Refinery uses for compliance with the Benzene FLM Regulations.

4.3 Additional eGC Requirement. In the event that the analytical result of the passive monitoring at any one location in the Enhanced Passive Monitoring Network exceeds the values stated below, HFSNR shall acquire one additional eGC to be co-located at such location for a minimum of 1 year: (a) a result greater than 18.0 $\mu g/m^3$ for any 2-week passive monitoring period at any one Enhanced Passive Monitoring Network location; or (b) a result greater than 9.0 $\mu g/m^3$ for any two 2-week passive monitoring periods at any one Enhanced Passive Monitoring Location in a single calendar quarter. (Results refer to final results after quality control/quality assurance and do not include any invalid results.)

4.3.1 HFSNR shall make a good faith effort to acquire and deploy the additional eGC by 45 Days from receipt of the passive monitoring analytical results at issue but in no event shall such deployment take longer than 90 Days unless an alternative schedule is approved by EPA, in consultation with NMED.

4.3.2 The additional eGC shall be deemed to be part of the eGC Network while it is in operation.

Section 5 Investigations

5.1 Investigation Thresholds. Exceedance of 1 or more of the following Investigation Thresholds at any one eGC in the eGC Network shall trigger the requirement for an

Investigation pursuant to this Protocol: (a) 6-hr rolling clock average greater than 27.0 µg/m^3; or (b) 24-hr rolling clock average greater than 18.0 µg/m^3. An exceedance of an Investigation Threshold is a "Threshold Exceedance."

5.2 Investigation Timing. Investigations shall be commenced promptly, no later than 3 Days after the Threshold Exceedance. For Continuing Events, successive Investigations are not required after each Threshold Exceedance if HFSNR demonstrates that the same eGC Root Cause is contributing to the Continuing Event and that additional investigation is not necessary. The demonstration that additional investigation is not necessary shall be submitted in the Progress Reports required under Section 10.2.

5.3 Investigation Steps. The objective of the Investigation is to conduct an eGC Root Cause Analysis. The Parties recognize that there are multiple factors that can be considered in determining the scope of any Investigation, including but not limited to the duration and magnitude of the Threshold Exceedance. All Investigations will include the following sequential steps set out below. Initiation of these steps is considered commencement of an Investigation.

5.3.1 Identify the potential source(s) of benzene causing or contributing to the Threshold Exceedance based on the data from the eGC Network; operator knowledge (e.g., such as a malfunction or release); and an initial visual field investigation of the potential source area.

5.3.2 If the source(s) of benzene causing or contributing to the Threshold Exceedance are identified pursuant to the tasks in Section 5.3.1, HFSNR shall proceed to conduct an eGC Root Cause Analysis as required by Section 5.3.7.

5.3.3 If the source(s) of benzene causing or contributing to the Threshold Exceedance cannot be identified pursuant to the tasks in Section 5.3.1, HFSNR will deploy personnel to perform handheld benzene surveillance using devices and/or other appropriate methods such as photo ionization detectors (e.g., Tiger monitors), forward-looking infrared cameras, and/or other monitoring and/or sampling in an effort to determine the potential source.

5.3.4 If the source(s) of benzene causing or contributing to the Threshold Exceedance are identified pursuant to the tasks in Section 5.3.3, HFSNR shall proceed to conduct an eGC Root Cause Analysis as required by Section 5.3.7.

5.3.5 If the source(s) of benzene causing or contributing to the Threshold Exceedance cannot be identified pursuant to the tasks in Section 5.3.3, HFSNR will deploy the Mobile GCs to the potential source area. The data will be evaluated on a 6-hr basis to determine if the source(s) of benzene causing or contributing to the Threshold Exceedance can be identified. HFSNR may also continue to conduct additional handheld benzene surveillance. If the source(s) of the Threshold Exceedance is not identified in 48 hours, or a longer period if approved by EPA in consultation with NMED, HFSNR shall move the Mobile GCs and make additional attempt(s) to identify the source.

5.3.6 In addition to the steps identified above, HFSNR may take other investigative measures as it deems appropriate, such as early eGC Corrective Action at potential source area(s) or use of other technologies in addition to those specified above.

5.3.7 All Investigations shall also include an eGC Root Cause Analysis for any identified source(s) of benzene emissions that is causing or contributing to a Threshold Exceedance. The eGC Root Cause Analysis shall include analysis of any operating or maintenance procedures that may be an eGC Root Cause.

5.4 Termination of an Investigation. Investigations may be terminated upon identifying the eGC Root Cause or as follows:

5.4.1 At any time if HFSNR determines and provides written analysis and evidence in the report required by Section 10.1 that a Threshold Exceedance is the result of emissions outside the Artesia Refinery.

5.4.2 If the eGC Network benzene concentrations return to and remain below the Threshold Exceedance levels for 48 consecutive hours.

Section 6 eGC Corrective Action

6.1 eGC Corrective Action in General. The objective of eGC Corrective Action is to both bring benzene concentrations below the Investigation Thresholds set forth in Section 5.1 and address the eGC Root Cause to prevent future Threshold Exceedances from the same primary, underlying, systemic, and contributing causes. The Parties recognize that not every Investigation will necessitate eGC Corrective Action(s), and, where required, there are multiple factors that must be considered in determining the eGC Corrective Action for any given source. There is no single form of corrective action that is necessarily the best option for any given source. HFSNR will take eGC Corrective Action using its best engineering judgment.

6.2 Investigation and Corrective Action Reports; Timing of eGC Corrective Action.

6.2.1 HFSNR shall submit to EPA and NMED an Investigation and Corrective Action Report no more than 15 Days after the Threshold Exceedance or within 5 Business Days of identification of the eGC Root Cause, whichever is earlier. The Investigation and Corrective Action Report shall be in the form provided in Attachment 4 and shall include a summary of the Investigation, an eGC Corrective Action Plan describing the Appropriate Corrective Action, including any changes to operating or maintenance procedures, and a schedule for implementing the Appropriate Corrective Action expeditiously. If at the time that HFSNR submits an Investigation and Corrective Action Report required by this Section 6.2.1 the Investigation has not yet been terminated, HFSNR shall provide an explanation of why the Investigation has not been completed and any other steps to be taken. HFSNR need not await submittal of the eGC Corrective Action Plan to commence Appropriate Corrective Action but will begin to comply with the eGC Corrective Action Plan, at the latest, upon submittal.

6.2.2 If at the time that HFSNR submits an Investigation and Corrective Action Report required by Section 6.2.1 the Investigation has not yet been terminated pursuant to Section 5.4, HFSNR will submit an updated Investigation and Corrective Action Report, in the form provided in Attachment 4, within 15 Days of terminating the Investigation.

6.2.3 After reviewing the Investigation and Corrective Action Report, and after consultation with NMED, EPA will notify HFSNR in writing of: (i) any deficiencies in compliance with this Protocol, and/or (ii) any objections to the corrective actions or the schedules for the corrective actions. HFSNR shall address any comments made by EPA on the eGC Corrective Action Plan by amending and resubmitting the plan within 5 Business Days of receipt of EPA comments. HFSNR shall begin to comply with the Revised eGC Corrective Action Plan upon submittal.

6.2.4 The eGC Corrective Action Plan and/or the Revised eGC Corrective Action Plans plan may be modified if necessary and as additional information becomes available. HFSNR shall report the updated plan and/or revised plan in an Investigation and Corrective Action Report and in the form provided in Attachment 4.

Section 7 Community Monitoring

7.1 Community Passive Monitors. HFSNR shall establish 6 benzene passive monitor housings at 6 locations within 0.5 miles of the Artesia Refinery boundary. One of these locations shall be within the grounds of Roselawn Elementary School. These locations are identified on Attachment 2 with latitude and longitude. HFSNR will take reasonable steps to place the passive monitors in a manner than minimizes the potential for vandalism (e.g., out of easy reach from the ground).

7.2 Meteorological Data. HFSNR must collect wind speed and direction from an anemometer co-located at the Community eGC location. Wind speed and direction shall be recorded on 10-minute averages corresponding to the 10-minute averages for the Community eGC data, exclusive of any downtime due to vandalism (provided that HFSNR takes prompt action to restore the impacted monitor). Temperature and barometric pressure data shall be obtained from the meteorological station at the Artesia Refinery.

7.3 Passive Monitor Operations. The Community Passive Monitors shall be monitored in compliance with the methodology in Method 325A and Method 325B for 2-week passive monitoring of benzene, exclusive of any downtime due to vandalism (provided that HFSNR takes prompt action to restore the impacted monitor). For convenience, passive monitoring shall occur on the same schedule the Artesia Refinery follows for compliance with the Benzene FLM Regulations.

7.4 Community eGC. HFSNR shall establish one Community eGC to be co-located with the passive monitors located within the grounds of Roselawn Elementary School. This location is identified on Attachment 2 with latitude and longitude. The location will be secured with fencing to minimize the potential for vandalism.

7.5 Uptime/Downtime. Data availability for benzene for the Community eGC shall not fall below 90 percent on a calendar quarterly basis for the Community eGC, exclusive of any

downtime due to vandalism (provided that HFSNR takes prompt action to restore the impacted monitor) and exclusive of periods of calibrations, and periods of planned maintenance and malfunctions that necessitate replacement of the Community eGC (for up to 48 hours per eGC replacement).

7.6 Operation and Maintenance of the eGC. The Community eGC shall be operated continuously, except when the Community eGC is offline due to malfunctions, for maintenance, or due to vandalism (provided that HFSNR takes prompt action to restore the impacted monitor). More detailed requirements for the operation and maintenance of the Community eGC are set forth in Attachment 3.

7.7 Vandalism. In the event a Community Passive Monitor or the Community eGC is vandalized, HFSNR shall notify EPA and NMED pursuant to Section XVI (Notices) of the Consent Decree and take prompt action to restore the impacted Community Passive Monitor or the Community eGC and will so notify EPA and NMED when the restoration is complete. HFSNR shall also consider additional reasonable security measures, if any, to further minimize the likelihood of further vandalism.

Section 8 Relationship of Protocol to the Benzene FLM Regulations

8.1 In General. The Protocol is not required by the Benzene FLM Regulation, and the data generated pursuant to this Protocol are not intended to be used for that purpose or reported to EPA's Compliance and Emissions Data Reporting Interface (known as "CEDRI"). Furthermore, the Enhanced Passive Monitoring Network and Community Network are not part of the Artesia Refinery's benzene fenceline monitoring locations.

8.2 Investigations and Corrective Actions. Section 5 and Section 6 of this Protocol are not intended to be a substitute for the root cause analysis and corrective action requirements of the Benzene FLM Regulations and are to be used for the limited purposes of this Protocol only. However, any Investigations and eGC Corrective Actions performed pursuant to this Protocol may be used towards meeting the requirements of Benzene FLM Regulations if the root cause analysis and corrective action requirements of those regulations are required pursuant to 40 C.F.R. § 63.658(g), provided that all requirements of those regulations are met.

Section 9 Commencement and Duration of Protocol

9.1 Commencement. The eGC Network, the Enhanced Passive Monitoring Network, and the Community Monitoring Network shall be established and fully operational by 30 Days after the Effective Date. Other elements of this Protocol shall become effective as provided herein.

9.1.1 With respect to the Enhanced Passive Monitoring Network and the Community Passive Monitors, HFSNR shall commence placing passive sample tubes at each location starting with the first regularly-scheduled 2-week passive monitoring period after all elements of the eGC Network are fully established and operational, but no later than 55 Days after the Effective Date.

9.2 Duration. This Protocol, as applied to the eGC Network and the Community Monitoring Network shall survive termination of the Consent Decree by incorporation into the appropriate NMED Permits. Protocol requirements shall not be removed from or modified in permits prior to 90 Days after providing notice of such permit modification directly to the Air Quality Bureau Compliance & Enforcement Section Chief in accordance with Section XVI (Notices) of the Consent Decree. Protocol requirements shall not be removed from or modified in permits prior to the completion of the public engagement process deemed necessary by the Air Quality Bureau.

9.3 Termination of the Enhanced Passive Monitoring Network. After HFSNR has (i) complied with the Enhanced Passive Monitoring Network provisions of this Protocol (Section 4) and (ii) has not, for at least 1 year, exceeded at any monitoring location the thresholds set forth in Section 4.3 for adding an additional eGC, HFSNR may seek approval to terminate the Enhanced Passive Monitoring Network. EPA, in consultation with NMED, shall respond to any such request.

9.4 New Technologies. If new technological developments occur such that alternative technologies may be advantageous in comparison to the technologies specified in this Protocol, HFSNR may request revisions to this Protocol to incorporate such new developments. EPA, in consultation with NMED, shall respond to any such request.

Section 10 Reports

10.1 Investigation and Corrective Action Reports. HFSNR shall submit Investigation and Corrective Action Reports, in the form provided in Attachment 3, in accordance with the deadlines and requirements of Section 6. The Parties recognize that each Investigation and any Corrective Action(s) will be tailored to the facts of the matter, and therefore the length and level of detail in each report may vary.

10.2 Progress Reports. For the duration of the Consent Decree, HFSNR will summarize its progress toward completing the Protocol in the semi-annual reports required by Section VIII (Reporting Requirements) of the Consent Decree. The information for each period shall include:

10.2.1 The date the eGC Network, the Enhanced Passive Monitoring Network, and the Community Monitoring Network were fully established and operational. This date may be before the Effective Date.

10.2.2 Any maintenance performed on an eGC, Mobile GC, Traditional GC, or Community eGC.

10.2.3 The data availability rate for each eGC in the eGC Network and the Community eGC.

10.2.4 Any vandalism impacting any Community Passive Monitor or the Community eGC and corrective measures.

10.2.5 Any monitors in the Enhanced Passive Monitoring Network that exceeded a threshold in Section 4.3 for co-locating an eGC and the monitoring result that exceeded the threshold.

10.2.6 A list of and status of any ongoing or concluded Investigation(s) required to be conducted, if any, during the relevant period. The status update shall include the date the Investigation commenced; any determination that additional investigation for a Continuing Event is not necessary (as described in Section 5.2); the Investigation steps taken (as described in Section 5.3) and the results and findings of those steps; the basis for the termination of an Investigation (as described in Section 5.4); the date that HFSNR submitted the Investigation and eGC Corrective Action Report (as required by Section 10.1); and, the date that HFSNR submitted an Initial or Revised eGC Corrective Action Plan (as required by Section 6.2).

10.2.7 An update regarding Corrective Action(s), both completed and not completed, in prior period(s), if any.

10.2.8 A list of all times that each eGC calibration check relative percent difference ("RPD") exceeds 25% for any of the 24-hour periods between calibrations, along with a description of why the calibration check RPD exceeded 25% and what adjustments were made to equipment to ensure that valid, accurate data will be collected.

10.2.9 A list of dates for preventative maintenance work on each eGC, including filter replacements, calibration gas replacements, scrubber replacements, and manufacturer refurbishments.

Section 11 Public Posting to Ensure Public Transparency

11.1 Mock Website. By 30 Days after the Effective Date, HFSNR shall (i) provide to EPA and NMED an active/live/not password protected URL to a mockup of the publicly available website ("Website") to be used to report monitoring data pursuant to this Section, and (ii) include a statement indicating that the website is properly indexed (including, but not limited to the following search terms: "benzene," "fenceline monitoring," and the Artesia Refinery name and location) with the major search engines (e.g., Google, Bing, Yahoo) to allow the public to easily find the website.

11.2 Posting to the Website. Starting no later than 30 Days after the date of the submission under Section 11.1, HFSNR shall commence posting to the Website: (i) each individual sample result of the validated data for each monitor of the eGC Network and the Community eGC; (ii) 6-hr rolling clock averages of the validated benzene data from the eGCs in the eGC Network and the Community eGC; (iii) 24-hr rolling clock average of the validated benzene data from the eGCs in the eGC Network and the Community eGC; (iv) 14-day rolling clock averages of the validated benzene data from the eGCs in the eGC Network and the Community eGC; (v) the validated sample results for each individual passive monitor in the Enhanced Passive Monitoring Network, the Existing Passive Monitoring Network, and each Community Passive Monitor; (vi) the annual average difference values (commonly known as the "ΔC") based on the validated sample results

from Existing Passive Monitoring Network; and (vii) any Investigation and Corrective Action Report required by Section 10, and any corrective action plan submitted to comply with the Benzene FLM Regulations.

11.3 Frequency of Posting. The individual sample results, 6-hr, 24-hr, and 14-day rolling clock averages from the eGC Network and the Community eGC shall be posted within 1 hour of when ENMET makes the data available to HFSNR. For the Enhanced Passive Monitoring Network, Existing Passive Monitoring Network, and Community Passive Monitors, the sample results and the ΔC values shall be posted within 21 Days of the end of the bi-weekly sampling period. Any Investigation and Corrective Action Reports required under Section 10 and any corrective action plan submitted to comply with the Benzene FLM Regulations shall be posted within 7 Days of submitting those reports to EPA.

11.4 Format. Data must be presented in a tabular format. Any Investigation and Corrective Action Reports required under Section 10 and any corrective action plan submitted to comply with the Benzene FLM Regulations posted to the website may be redacted to protect confidential business information.

11.5 Map. The Website must include a map of the eGC Network, Enhanced Passive Monitoring Network, and the Community Monitoring Network, and must make clear which sampling results correlate with which monitoring station.

11.6 Languages. The Website must provide all narrative information in both English and Spanish. Spanish language information may be provided through a third-party translate function on the Website.

Section 12 Modifications

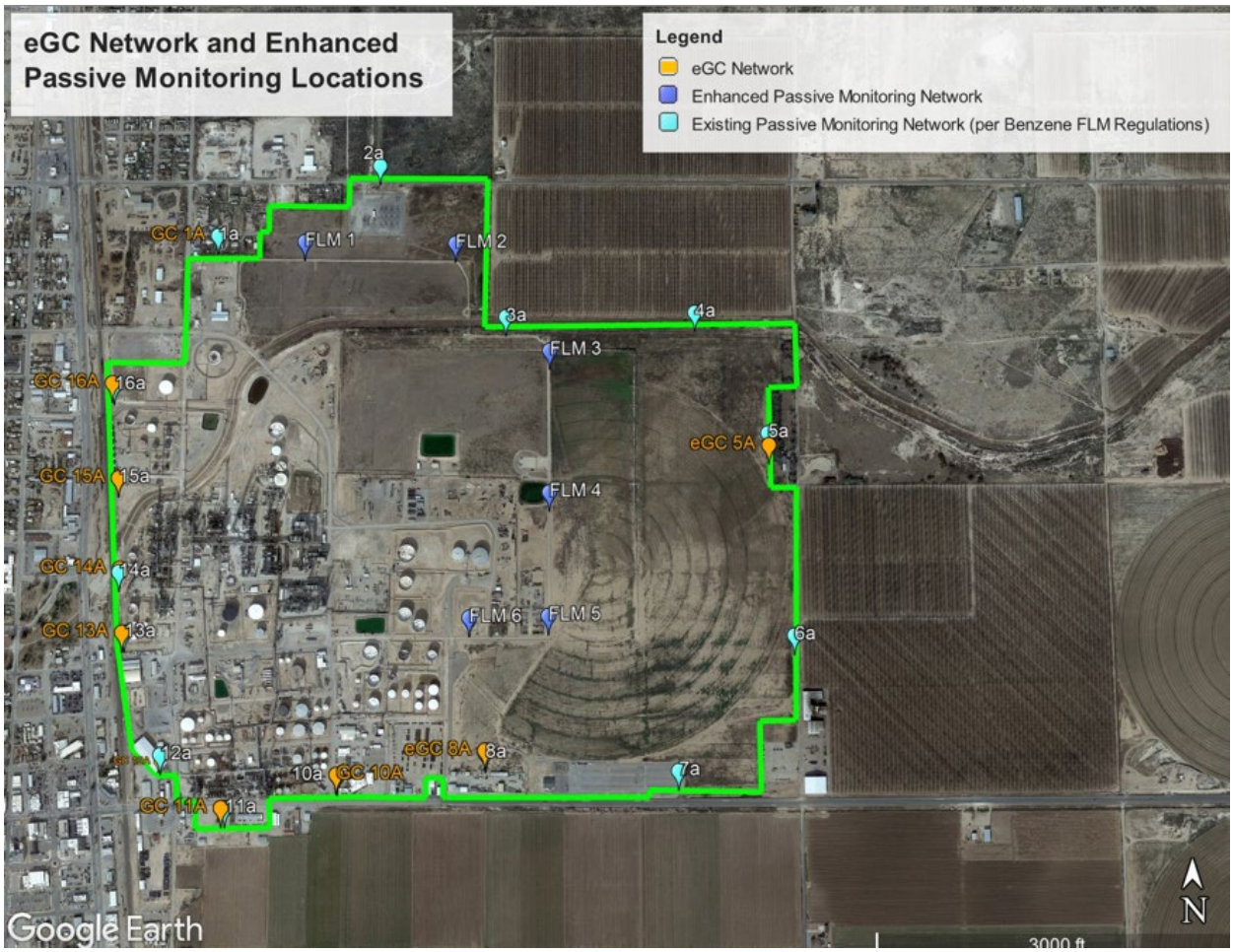
12.1 Modifications to this protocol are non-major modifications of the Consent Decree that will become effective upon written agreement of the Parties.

Attachments

1. Figure showing locations of eGC Network and Enhanced Passive Monitoring Network.
2. Figure showing locations of Community Monitoring Network.
3. eGC and Traditional GC Operating Procedures and Maintenance.
4. Investigation and eGC Corrective Action Report Template.

Attachment 1 to Appendix C

eGC Network and Enhanced Passive Monitoring Network Map and Table of Locations

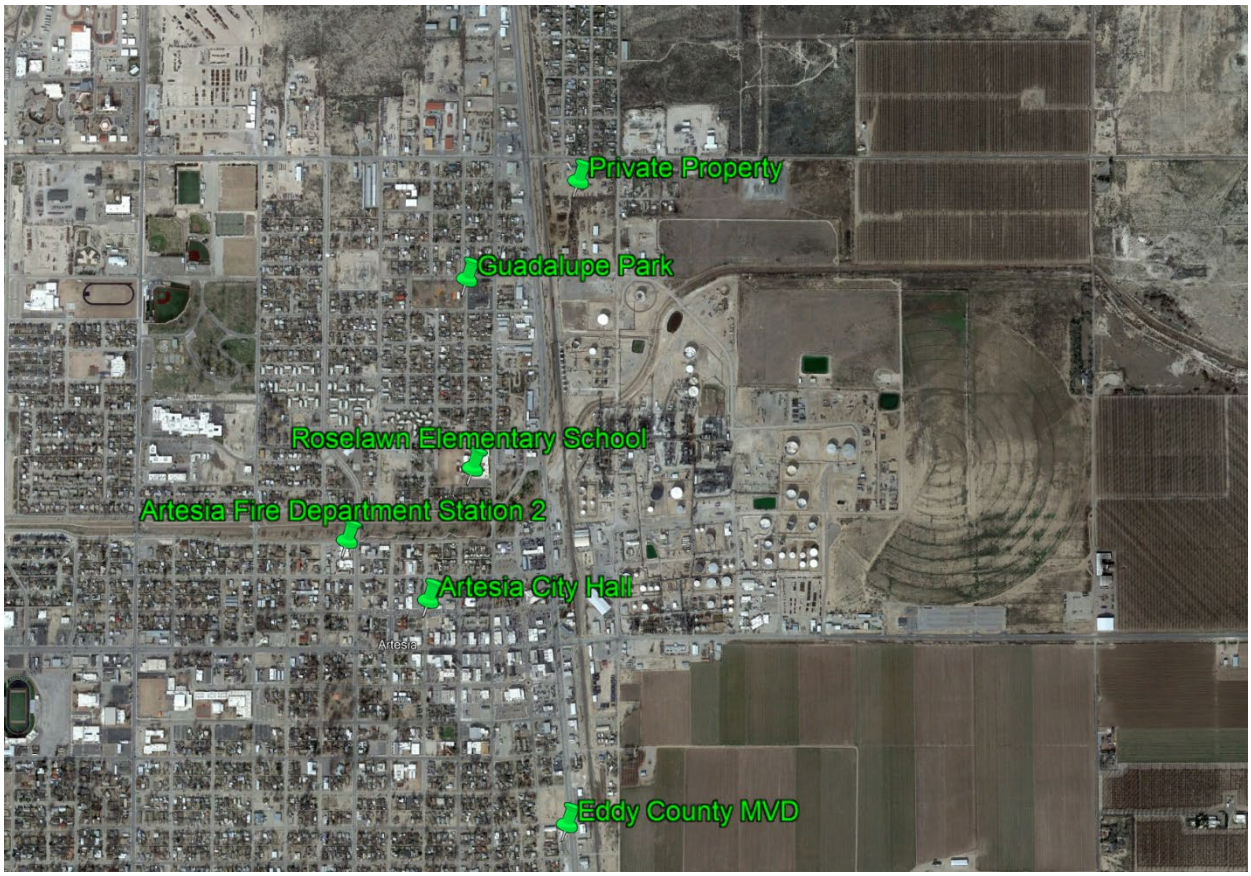


Monitor Type and Location	Coordinates
Existing Passive Monitor – 1a	32.85532 -104.39454
Existing Passive Monitor – 2a	32.85710 -104.38998
Existing Passive Monitor – 3a	32.85350 -104.38637
Existing Passive Monitor – 4a	32.85350 -104.38206
Existing Passive Monitor – 5a	32.85044 -104.37907
Existing Passive Monitor – 6a	32.84610 -104.37834
Existing Passive Monitor – 7a	32.84274 -104.38182
Existing Passive Monitor – 8a	32.84327 -104.38687
Existing Passive Monitor – 10a	32.84273 -104.39094
Existing Passive Monitor – 11a	32.84196 -104.39402
Existing Passive Monitor – 12a	32.84388 -104.39658
Existing Passive Monitor – 13a	32.84601 -104.39695
Existing Passive Monitor – 14a	32.84756 -104.39714
Existing Passive Monitor – 15a	32.84962 -104.39724
Existing Passive Monitor – 16a	32.85170 -104.39745

Monitor Type and Location	Coordinates
eGC – 1a	32.85540 -104.39460
eGC – 5a	32.85038 -104.37903
eGC – 8a	32.84330 -104.38690
eGC – 10a	32.84272 -104.39105
eGC – 11a	32.84200 -104.39410
eGC – 12a	32.84325 -104.39586
eGC – 13a	32.84600 -104.39690
eGC – 14a	32.84748 -104.39708
eGC – 15a	32.84960 -104.39720
eGC – 16a	32.85185 -104.39746
Enhanced Passive Monitor – 1	32.85535 -104.39185
Enhanced Passive Monitor – 2	32.85530 -104.38778
Enhanced Passive Monitor – 3	32.85263 -104.38514
Enhanced Passive Monitor – 4	32.84944 -104.38511
Enhanced Passive Monitor – 5	32.84645 -104.38513
Enhanced Passive Monitor – 6	32.84630 - 104.38730

Attachment 2 to Appendix C

Community Network
Map and Table of Locations



Monitor Type and Location	Coordinates
Private Property (passive monitor) – C1	32.85593 -104.39707
Guadalupe Park (passive monitor) – C2	32.85293 -104.40108
Roselawn Elementary School (passive monitor and Community eGC) – C3	32.84167 -104.40083
Artesia Fire Department Station 2 (passive monitor) – C4	32.84497 -104.40530
Artesia City Hall (passive monitor) – C5	32.84316 -104.40239
Eddy County MVD (passive monitor) – C6	32.83643 -104.39735

Attachment 3 to Appendix C

eGC, Traditional GC, and Community eGC Network Operation and Maintenance

The terms used herein shall have the meaning set forth in Section 2 of the Protocol; for convenience, the definitions of "eGC," "Mobile GC," and "Traditional GC" are restated below.

1. HFSNR shall ensure that the following measurement methods are used:

    a. "eGC" means a portable gas chromatography analyzer capable of collecting and analyzing continuous time-integrated air samples for benzene in ten-minute increments without interference from other compounds such as the eGC Gas Chromatography Analyzer with a "Wax 2" column and a continuous sampling module manufactured by ENMET LLC (Part Number X2150401 with Wax Column Configuration and eGC continuous Sampling Module).

    b. "Mobile GC" means a trailer-mounted eGC or Traditional GC maintained by HFSNR solely for Investigations, as required by Section 3.3.

    c. "Traditional GC" means a portable gas chromatography analyzer capable of collecting and analyzing air samples for benzene and other potential contaminants of concern in ten-minute increments. The instrument should be a laboratory grade GC requiring AC power with a computer interface.

2. HFSNR shall ensure that the measurement frequency meets the following requirements:

    a. Benzene measurements (whether by eGC or Traditional GC) will be collected in 10-minute increments.

    b. The 10-minute measurements will be captured on a datalogger and stored in a database.

3. HFSNR shall ensure that calibrations meet the following requirements:

    a. eGC – Calibration will be conducted once every 24 hours while in use using compressed gas from an external, certified calibration gas cylinder (e.g. benzene at 10 parts per billion (ppb)).

    b. Traditional GC – A zero and span check will be performed daily. A multipoint calibration will be conducted once per quarter while in use using compressed gas from an external, certified calibration gas cylinder, or after any alterations to the GC. The multipoint calibration is done by diluting a 1 part per million (ppm) standard to achieve a span of 0-200 ppb. The calibration will be checked by introducing a 10 ppb standard.

4. HFSNR shall ensure that data is validated as required below:

a. For each eGC:

i. For every calibration, the instrument software will complete a calibration validation check and determine if the calibration passed or failed.

1. No less frequently than every 3 Days, the network operator will review the past calibrations for the eGCs that are in use.

2. If there are any calibration check fails, the network operator will determine why the calibration failed and adjust/repair/replace equipment as necessary.

ii. If a calibration check fails, data will be invalidated back to the last passing calibration check.

iii. For every calibration validation check the eGC software completes, HFSNR must also calculate the relative percent difference (RPD) between the reported calibration concentration and the known gas calibration cylinder concentration.

1. No less frequently than every 3 Days, HFSNR must review the past calibration check RPDs performed for each eGC that is in use.

2. If the calibration check RPD exceeds 25% for any of the 24-hour periods between calibrations, HFSNR must determine why the calibration check RPD exceeded 25% and adjust/repair/replace equipment as necessary in order to ensure that valid, accurate data will be collected.

3. Calibration check RPD must be calculated by the following equation:

$$RPD = \frac{|x_i - C|}{(x_i + C) / 2} \cdot 100$$

Where:

RPD = the relative percent difference (%) for calibration check *i*
X_i = the reported calibration concentration for calibration check *i*
C = the known gas calibration cylinder concentration

b. For the Traditional GC:

i. The Traditional GC completes one point quality control (QC) and zero checks every Day.

1. No less frequently than every 3 Days the Traditional GC is in use, the network operator will review the past span and zero checks.

2. If any QC checks fail, the network operator will determine why the calibration check failed and adjust/repair/replace equipment as necessary.

ii. No less frequently than every 3 Days the Traditional GC is in use, a comparison of the calibration gas chromatogram will be done against the reference calibration curve. If the concentration values are off by +/- 30%, the network operator will troubleshoot the reasons for the failed calibrations. A multipoint calibration will be performed following any adjustments/repairs/replacements.

iii. If a QC check fails, data will be invalidated back to the last passing QC check.

5. HFSNR shall ensure that the following maintenance requirements are met:

a. For each eGC in use, HFSNR shall:

i. Remotely observe operating parameters of the eGC no less frequently than every 3 Days.

ii. Inspect the eGC weekly to observe the sample inlet filter, carrier gas scrubber, and the residual pressure of the calibration cylinder.

iii. Replace filters as needed.

iv. Replace calibration gases as needed.

v. Replace the scrubber while a section of the blue dye region remains within the window decal affixed to the scrubber assembly. (The scrubber uses an indicator dye that changes color from blue (dry) to pink (wet).)

vi. Send the eGC back to the manufacturer for refurbishment when the instrument has completed no more than 40,000 analysis runs.

vii. Follow any additional maintenance requirements and guidance from the manufacturer of the eGC.

b. For the Traditional GC when in use, HFSNR shall:

i. Remotely observe operating parameters of the GC no less frequently than every 3 Days.

ii. Physically inspect the Traditional GC on a weekly basis.

iii. Replace the inlet filter monthly.

iv. Replace support/calibration gases as needed.

v. Verify once every 2 weeks that adsorbent traps are heating and cooling as planned (40-250 degrees C), and that carrier gas pressure is stable (20 ml/min).

vi. Replace the sample traps as needed based on calibration results.

c. HFSNR shall ensure that data availability for benzene does not fall below 90 percent on a calendar quarterly basis for each eGC in the eGC Network, Community eGC, and for the Mobile GCs (for the time such Mobile GCs are deployed), exclusive of periods of calibrations, and periods of planned maintenance and malfunctions that necessitate replacement of the eGC (for up to 48 hours per eGC replacement).

Attachment 4 to Appendix C

Investigation and eGC Corrective Action Report Template

1.	Investigation and eGC Corrective Action Report Number:
1.1.	Prepared by:
1.2.	Report date:
1.3.	Report history (if this is an updated report):
2.	Date and details of Threshold Exceedance (Protocol Section 5.1):
2.1.	If Threshold Exceedance is/was a Continuing Event, additional details and justification (Protocol Section 5.2):
2.2.	If Threshold Exceedance was determined to have been caused by emissions not from the Refinery, additional details and documentation (Protocol Section 5.4.1)
3.	Date(s) of Investigation (Protocol Section 5.2):
3.1.	Steps to identify potential source areas(s), consult with Refinery personnel, and conduct initial visual field investigation (Protocol Section 5.3.1):
3.2.	If required, steps to conduct further benzene surveillance (Protocol Section 5.3.3):
3.3.	If required, steps to utilize Mobile eGC and/or Traditional GC (Protocol Section 5.3.5):
3.4.	Any other steps in support of the Investigation (Protocol Section 5.3.6):
3.5.	Basis for termination of Investigation (Protocol Section 5.4):
3.6.	eGC Root Cause Analysis (Protocol Section 5.3.7):
3.7.	If required, explanation of why Investigation has not been completed and any other steps to be taken (Protocol Section 6.2.1):
3.8.	Summary/Conclusions based on Investigation:
4.	Date of eGC Corrective Action Plan submission (Protocol Section 6.2.1):
4.1.	eGC Corrective Action Plan (include implementation schedule, current status of implementation, and dates implemented) (Protocol Sections 6.1 & 6.2):

4.2.	Revised eGC Corrective Action Plan, if any (include current status of implementation and dates implemented) (Protocol Section 6.2.3 and 6.2.4):
4.3.	Summary/results of eGC Corrective Action:
5.	Other information, if any (optional):

Appendix D

Flaring Compliance Program

WHEREAS, HFSNR has implemented measures to minimize flaring in the interim period before the installation of the Flare Gas Recovery System ("FGRS") (as defined below).

Definitions:

Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Paragraph and Subparagraph references in this Appendix are references to the Paragraphs and Subparagraphs in this Appendix.

"Available for Operation" means, with respect to a Compressor within a FGRS, that the Compressor is capable of commencing the recovery of Potentially Recoverable Gas as soon as practicable but not more than 30 minutes after the Need for a Compressor to Operate arises. The period of time, not to exceed five minutes, allowed by this definition for the startup of a Compressor will be included in the amount of time that a Compressor is Available for Operation. The periods provided for in Subparagraphs 9.a and 9.b may be included in the amount of time that the Compressors are Available for Operation.

"Capable of Receiving Flare Sweep Gas, Flare Supplemental Gas, and/or Waste Gas" shall mean, for a Covered Flare, that the flow of Flare Sweep Gas, as defined in 40 C.F.R. § 63.641, Flare Supplemental Gas, as defined in 40 C.F.R. § 63.641, and/or Waste Gas is/are not prevented from being directed to a Covered Flare by means of closed valves and/or blinds.

*"*Compressor*"* shall mean, with respect to a FGRS, a mechanical device designed and installed to assist in recovering gas from a Flare header.

"Covered Flare" or "Covered Flares" means each of the following Flares:

- North Plant Flare – FL-400,
- South Plant Flare – FL-401,
- Fluid Catalytic Cracking Unit ("FCC") Flare – FL-402,
- Alky Flare – FL-403, and
- Gas Oil Hydrotreater ("GOHT") Flare – FL-404.

"Flare" shall have the meaning in NSPS Subpart Ja, 40 C.F.R. § 60.101a, except when the term is used with respect to requirements in NESHAP Subpart CC, 40 C.F.R. § 63.670-671, in which case it shall have the definition set forth in 40 C.F.R. § 63.641.

"Flare Gas Recovery System" and "FGRS" shall mean a system of at least one Compressor, piping, and associated water seal, rupture disk, or similar device used to divert gas from a Flare and direct the gas to the fuel gas system or to a fuel gas combustion device other than a Flare where a portion of the heat produced is recovered and used or to a product, co-product, by-product, or raw material recovery system.

"Flare Purge Gas" or "Purge Gas" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"Flare Vent Gas" or "Vent Gas" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"Flare Sweep Gas" or "Sweep Gas" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"Flare Supplemental Gas" or "Supplemental Gas" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"In Operation" with respect to a Flare, shall mean any and all times that any gas (e.g., Waste Gas, Flare Vent Gas, Flare Purge Gas, or Pilot Gas) is or may be vented to a Flare. A Flare that is In Operation is Capable of Receiving Flare Sweep Gas, Flare Supplemental Gas, and/or Waste Gas unless all flow of Flare Sweep Gas, Flare Supplemental Gas, and Waste Gas flow is prevented by means of closed valves and/or blinds.

"Need for a Compressor to Operate" shall mean: (i) for a situation in which no Compressor within the FGRS is recovering gas: when a Potentially Recoverable Gas flow rate to the Covered Flare(s) serviced by the FGRS exists in a 15-minute block period; or (ii) for a situation in which one or more Compressors within the FGRS already are recovering gas: when the Potentially Recoverable Gas flow rate (determined on a 15-minute block average) exceeds the capacity of the operating Compressor(s).

"PSA Hydrogen" shall mean the high-purity hydrogen product stream from a pressure swing adsorption ("PSA") unit. The PSA offgas byproduct stream is not PSA Hydrogen.

"Pilot Gas" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"Potentially Recoverable Gas" means the Flare Sweep Gas, Flare Supplemental Gas, and/or Waste Gas (including hydrogen, nitrogen, oxygen, carbon dioxide, carbon monoxide, and/or water) directed to a Covered Flare's or group of Covered Flares' FGRS.

"Total Steam" shall have the meaning given to this term in 40 C.F.R. § 63.641.

"Waste Gas" shall mean the mixture of all gases (including, but not limited to, hydrogen, nitrogen, oxygen, carbon dioxide, carbon monoxide, and/or water) from Facility operations that is directed to a Covered Flare for the purpose of disposing of the gas. "Waste Gas" does not include Pilot Gas, Total Steam, Flare Sweep Gas, Flare Purge Gas, or Flare Supplemental Gas, each as defined in 40 C.F.R. § 63.641. For the purposes of this definition only, "Waste Gas" shall also include gases directed to a Covered Flare from operation of the adjacent facility owned and operated by the Artesia Renewable Diesel Company.

I. COMPLIANCE REQUIREMENTS

A. MACT CC Flare Gas Combustion Efficiency Standard

1. As of the Effective Date, each Covered Flare has been and shall continue to be subject to the provisions and requirements of NESHAP Subparts A and CC, 40 C.F.R. §§ 63.1-16, 640-642, 655, and 670-71, and HFSNR shall comply with all applicable requirements in NESHAP Subparts A and Subpart CC.

B. Flare Gas Recovery System (FGRS)

2. NSPS Subparts A and Ja. Beginning on the Effective Date, each Covered Flare has been and shall continue to be an "affected facility" within the meaning of, and subject to, Subparts A and Ja of 40 C.F.R. Part 60, and HFSNR shall comply with all provisions and requirements of Subparts A and Ja applicable to the Covered Flares, including all emission standards, and operating, monitoring, recordkeeping, and reporting requirements.

3. No later than 90 Days after commencement of operation of the FGRS required by Paragraph 4, HFSNR shall revise the Flare Management Plans for the North Plant Flare and GOHT Flare as required by NSPS Subpart Ja, 40 C.F.R. § 60.103a(a), to reflect the installation and operation of the FGRS required by Paragraph 4 including updating the following elements of the Flare Management Plan, and submit a copy of the updated plan to EPA and NMED in accordance with Section XVI (Notices) of the Consent Decree:

a. the assessment of whether discharges to the North Plant Flare and GOHT Flare from process units, ancillary equipment, and fuel gas systems can be minimized (40 C.F.R. § 60.103a(a)(2));

b. the description of the FGRS required by Paragraph 5 (40 C.F.R. § 60.103a(a)(3)(vii));

c. the evaluation of baseline flow to the North Plant Flare and GOHT Flare (40 C.F.R. § 60.103a(a)(4));

d. the procedures to minimize or eliminate discharges to the North Plant Flare and GOHT Flare during the planned startup and shutdown of the Facility process units and ancillary equipment that are connected to the North Plant Flare and GOHT Flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the revision of the Flare Management Plan (40 C.F.R. § 60.103a(a)(5)); and

e. procedures to minimize the frequency and duration of outages of the FGRS and procedures to minimize the volume of gas flared during such outages, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the revision of the Flare Management Plan (40 C.F.R. § 60.103a(a)(7)).

4. By November 30, 2026, HFSNR shall complete installation and commence operation of a FGRS at the header of the North Plant Flare and GOHT Flare that has an operating design capacity of at least 125 kscf/hr. and operates with at least two Compressors, each with design capacity of at least 62.5 kscf/hr. The design capacity shall be at standard pressure (1 atmosphere) and temperature (68 degrees Fahrenheit) and assumes a molecular weight of recovered gas of 29 lbs/lb-mole.

5. HFSNR shall operate the FGRS in a manner to minimize Waste Gas to the North Plant Flare and GOHT Flare while ensuring safe refinery operations.

6. HFSNR shall operate the FGRS consistent with good engineering and maintenance practices and in accordance with the manufacturer's specifications.

7. The FGRS must have two Compressors Available for Operation 95% of the time when the North Plant Flare or GOHT Flare is In Operation and at least one of the two Compressors Available for Operation 100% of the time the North Plant Flare or GOHT Flare is In Operation based on an 8,760-hour rolling sum, summed hourly, except during periods described in Paragraph 9 below.

8. HFSNR shall monitor the time the Compressor is Available for Operation by tracking whether the electrical switchgear is open or closed for the Compressor when any portion of the Facility is operating (or by any other tracking method that EPA approves in advance of use).

9. The requirements of Paragraphs 7 and 8 shall not apply:

a. During periods of maintenance on equipment within the FGRS up to 450 hours based on a five-year rolling sum, summed for each Day. HFSNR will make best efforts to schedule these maintenance activities during process unit turnarounds and to minimize the generation of Waste Gas during such periods of maintenance.

b. During periods when both Compressors are shut down consistent with the Compressor manufacturer's specifications for safety-instrumented systems shutdowns to preserve the mechanical integrity of the Compressor (for example, as a result of high pressure or temperature or air ingress into the North Plant Flare or GOHT Flare). By no later than 45 Days after any such period, HFSNR must investigate the primary cause and all contributing causes of the outage and must implement, as expeditiously as practicable, corrective action, if any, to prevent a recurrence of the cause(s).

10. Requirements Related to PSA Hydrogen. By no later than November 30, 2026, HFSNR must route PSA Hydrogen around the FGRS directly to the GOHT Flare as described and shown in Attachment 1 to this Appendix.

11. HFSNR shall compile and include the following information relating to compliance with the requirements of this Appendix in the semi-annual reports submitted pursuant to Section VIII (Reporting Requirements) of the Consent Decree beginning with the first semi-annual report after installation of the FGRS.

a. A list of the hours during the reporting period that the North Plant Flare or GOHT Flare was In Operation.

b. A list of the hours during the reporting period that the FGRS was operating with one Compressor Available for Operation and two Compressors Available for Operation.

c. A list of the hours during the reporting period that each of the two required Compressors was Available for Operation.

d. A list of the hours excluded as periods of maintenance shutdowns under Paragraph 9.a and a description of the maintenance performed in each excluded hour.

e. A list of the hours excluded as periods of shut down for safety and mechanical integrity under Paragraph 9.b above, and a description that includes the date and duration of the shutdown, cause(s), corrective action, and the status of the implementation of corrective action.

f. For each hour in the reporting period, the result of the calculation of the percent of time, calculated separately, with one Compressor Available for Operation and with two Compressors Available for Operation, while either the GOHT Flare or the North

Plant Flare was In Operation as required by Paragraph 7 above using the following calculation methodology.

$$Compressor\ Availability\ \% = \frac{A + B + C}{D} \times 100$$

where:

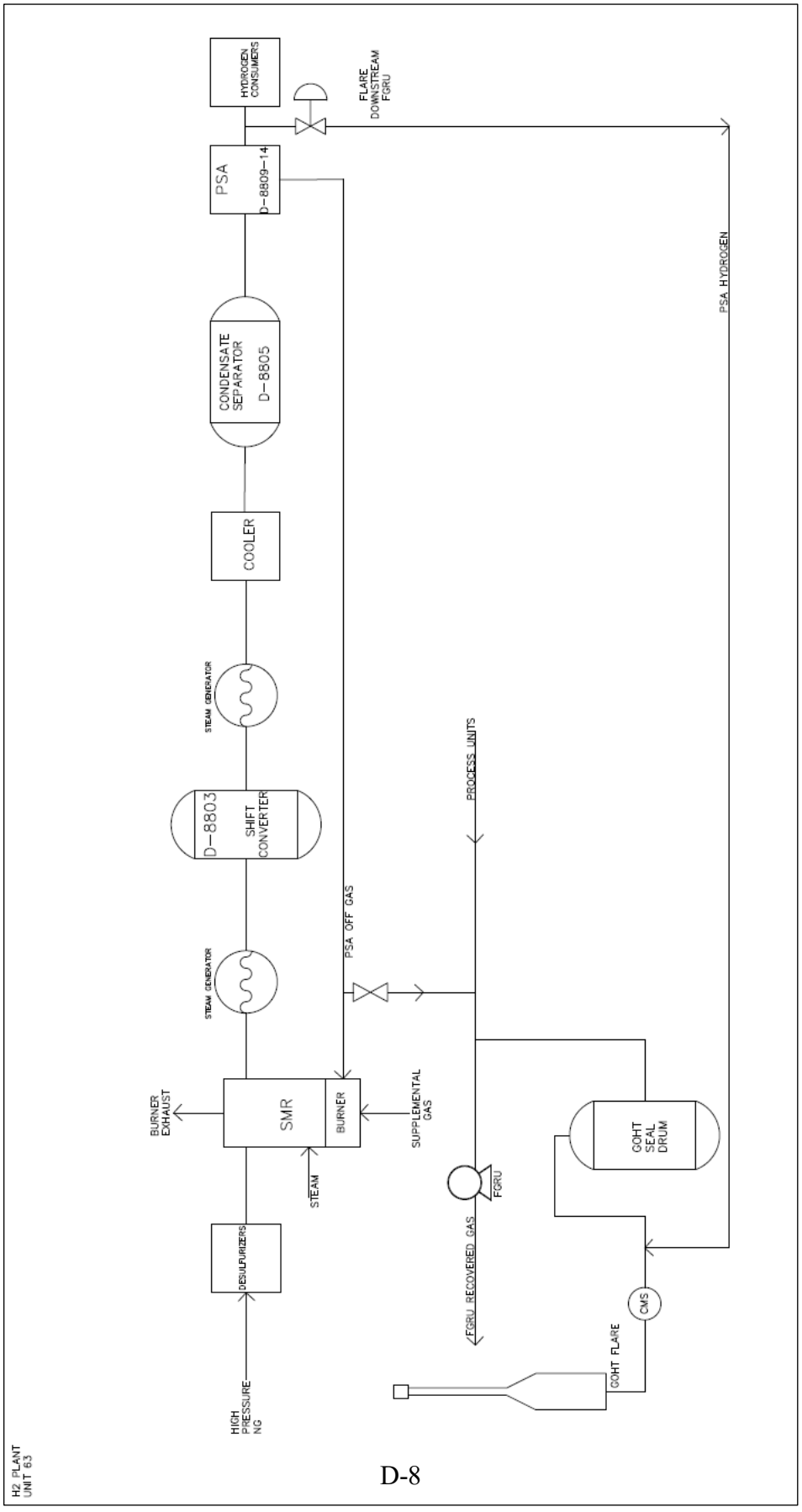
A = Hours that a Compressor(s) is (are) Available for Operation during the previous 8,760 hours

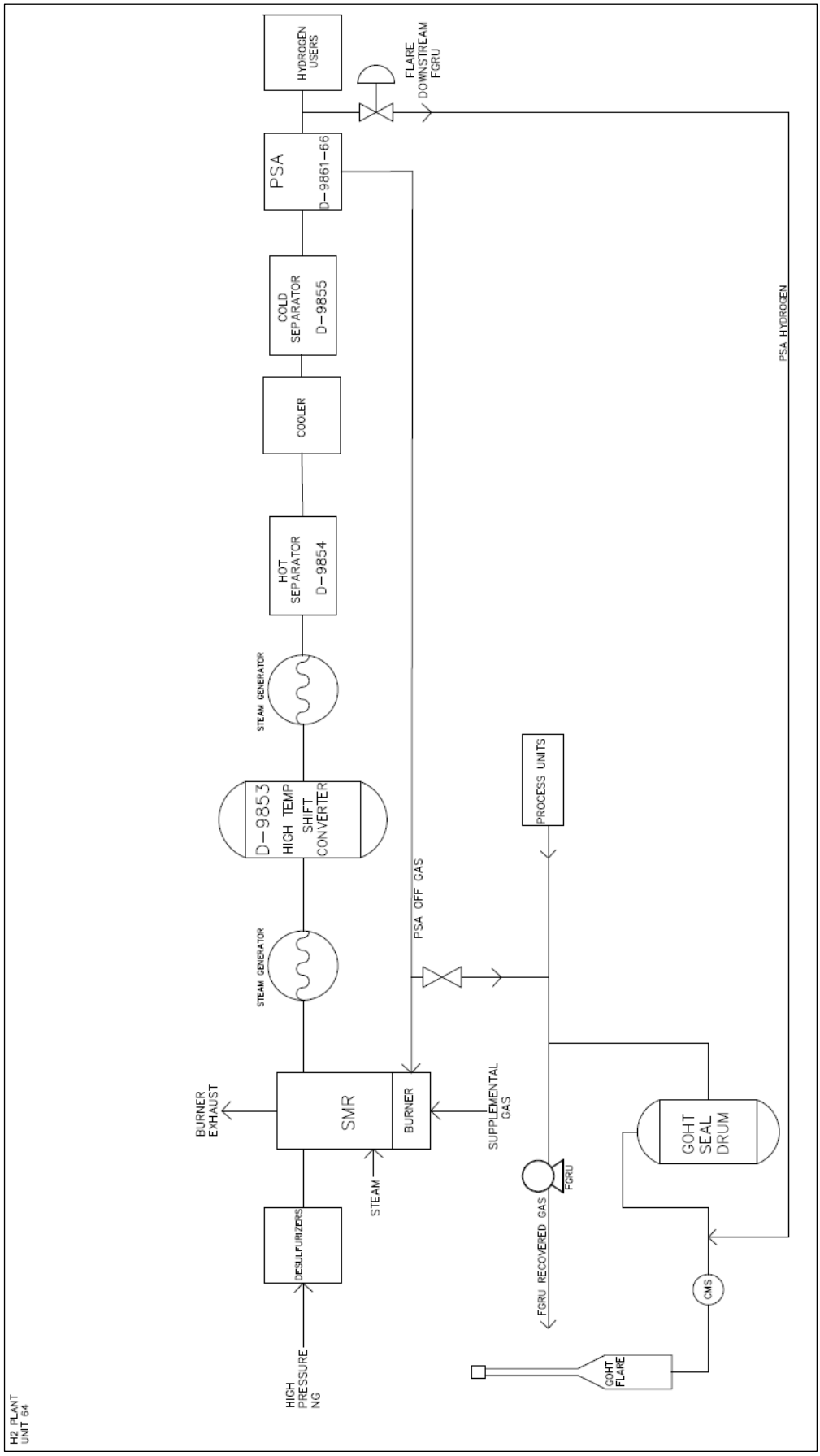
B = Maintenance shutdown hours excluded during the previous 8,760 hours as capped in Paragraph 9.a

C = Safety/mechanical integrity shutdown hours excluded during the previous 8,760 hours pursuant to Paragraph 9.b

D = Hours where the North Plant Flare and/or the GOHT Flare were In Operation during the previous 8,760 hours

Attachment 1 to Appendix D




HYDROGEN USERS
FLARE DOWNSTREAM FGRU
PSA D-9861-66
COLD SEPARATOR D-9855
COOLER
HOT SEPARATOR D-9854
STEAM GENERATOR
D-9853 HIGH TEMP SHIFT CONVERTER
STEAM GENERATOR
PROCESS UNITS
PSA OFF GAS
PSA HYDROGEN
BURNER EXHAUST
SMR
BURNER
SUPPLEMENTAL GAS
GOHT SEAL DRUM
STEAM
FGRU
FGRU RECOVERED GAS
DESULFURIZERS
CMS
GOHT FLARE
HIGH PRESSURE NG
H2 PLANT UNIT 64

Appendix E

Storage Vessel Compliance Program

WHEREAS, HFSNR has decommissioned and demolished T-0057 to address concerns by EPA and NMED regarding benzene emissions from T-0057.

WHEREAS, HFSNR has constructed a geodesic dome over T-0401 converting it from an External Floating Roof Storage Vessel (as defined below) to an Internal Floating Roof (as defined below) Storage Vessel.

WHEREAS, HFSNR installed a new roof on T-0411 which incorporates a new roof assembly, new primary and secondary roof seals, and unslotted guidepoles.

WHEREAS, HFSNR completed several improvements and enhancements to T-0821, including but not limited to the replacement of the wiper gasket on the guidepole sliding cover, and replacement of the breather vent Rim Seal (as defined below) gasket with a new assembly.

WHEREAS, HFSNR has completed a project to install rundown temperature indicators and alarm systems for 59 of 62 Covered Storage Vessels (as defined below) at the Facility.

Definitions:

Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Paragraph and Section references in this Appendix are references to the Paragraphs and Sections in this Appendix.

"Covered Storage Vessel" shall mean each existing and newly installed Storage Vessel at the Facility that has a design capacity greater than 40,000 gallons and that satisfies the criteria for one of the following categories of Storage Vessels defined below.

(1) "Category A-1 IFR Covered Storage Vessel" shall mean a Storage Vessel with an IFR that stores a VOL (as defined below) with a Maximum True Vapor Pressure ("MTVP") greater than or equal to 0.75 psia.

(2) "Category A-2 EFR Covered Storage Vessel" shall mean a Storage Vessel with an EFR that stores a VOL with MTVP greater than or equal to 0.75 psia.

(3) "Category B IFR/EFR Covered Storage Vessel" shall mean a Storage Vessel with either an EFR or IFR that stores a VOL with a MTVP less than 0.75 psia.

(4) "Category C Fixed Roof Covered Storage Vessel" shall mean a Storage Vessel with a Fixed Roof that stores a VOL with a MTVP less than 0.75 psia.

The Covered Storage Vessels and their category and intended service, as well as other agreed terms, are set forth in the Covered Storage Vessel Inspection/Monitoring Chart.

"Covered Storage Vessel Inspection/Monitoring Chart" shall mean the chart summarizing the Covered Storage Vessels and their category and intended service, as well as other agreed terms,

in Attachment 1 or any updated version that becomes part of the Storage Vessel Document in compliance with Paragraph 5.

"Deck Fittings" shall mean openings in the deck of the Floating Roof and include, but are not limited to access hatches, gauge floats, gauge-hatches, deck drains, deck legs, guidepoles, and automatic bleeder vents (i.e., vacuum breakers).

"Degassed" or "Degassing" shall mean the removal of organic vapors from the Covered Storage Vessel.

"Empty" or "Emptied" shall mean the partial or complete removal of stored VOL from a Covered Storage Vessel. Covered Storage Vessels that contain VOL only as clingage, or in pools due to tank bottom irregularities, are considered completely empty.

"External Floating Roof" or "EFR" shall mean a Floating Roof located in a Covered Storage Vessel without a Fixed Roof.

"Fixed Roof" means a roof that is mounted (i.e., permanently affixed) on a Covered Storage Vessel and that does not move with fluctuations in stored liquid level.

"Floating Roof" shall mean a roof that floats on the surface of the VOL in a Covered Storage Vessel.

"Floating Roof Defects" shall mean the following conditions/defects:

(1) Floating Roof not resting on the surface of the VOL, except when the Floating Roof is supported by its leg supports or other support devices;
(2) VOL on the Floating Roof;
(3) Rim Seals are detached;
(4) Visible gaps between the seal(s) and the wall of the Storage Vessel except as allowed by the Storage Vessel Regulations (as defined below);
(5) Visible holes, tears, or other openings in the Rim Seals or seal fabric; or
(6) Floating Roof, Deck Fittings, or Rim Seals not functioning as designed.

"Internal Floating Roof" or "IFR" shall mean a floating roof located in a Covered Storage Vessel with a Fixed Roof. An External Floating Roof located in a Covered Storage Vessel to which a Fixed Roof has been added shall be considered an Internal Floating Roof.

"Isolated from Service" shall mean the Covered Storage Vessel no longer receives material and has been isolated from the process using blinds, air gaps, or block valves.

"Maximum True Vapor Pressure" or "MTVP" shall mean the equilibrium partial pressure exerted by volatile organic compounds in the VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature.

"Optical Gas Imaging" or "OGI" shall mean the detection of hydrocarbon and VOC emissions with an OGI camera as set forth in the approved OGI protocol developed in accordance with Paragraph 30 of the Consent Decree.

"Removed from Service" shall mean that the Covered Storage Vessel has been Isolated from Service and Emptied.

"Rim Seal" shall mean a closure device attached to the rim of a Floating Roof deck that completely spans the annular space in a continuous fashion between the deck and the wall of the Storage Vessel. When a Floating Roof has only one such device, it is a primary seal. When there are two seals (one mounted above the other), the lower seal is the primary seal and the upper seal is the secondary seal.

"Storage Vessel" shall mean a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of VOL or other materials. The following shall not be considered Storage Vessels:

(1) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere;
(2) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships;
(3) Process tanks, as the term is defined in 40 C.F.R. Part 60, Subpart Kc; or
(4) Vessels with capacities smaller than 40 cubic meters (10,566 gallons).

"Storage Vessel Regulations" collectively mean the federal, State, and local laws, regulations, and requirements that are applicable to the Facility's Covered Storage Vessels, as well as any effective permits incorporating such requirements, other than the requirements of this Appendix.

"True Vapor Pressure" or "TVP" shall mean the equilibrium partial pressure exerted by volatile organic compounds in the VOL at the actual liquid storage temperature.

"Volatile Organic Liquid" or "VOL" shall mean any organic liquid which can emit volatile organic compounds (as defined in 40 C.F.R. § 51.100) into the atmosphere.

"Vapor Tight" shall mean a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 ppm, above background, measured using Method 21.

"Vapor Tight Deck Fitting and Component" shall mean the set of Deck Fittings that must be Vapor Tight for the purposes of this Appendix. Vapor Tight Deck Fittings include:

(1) Sample and/or gauge hatches;
(2) Gauge float wells;
(3) Automatic bleeder vents (i.e., vacuum breakers);
(4) Access hatches and manways;
(5) Open deck drains;

(6) Rim space vents (except when excess pressure is present in the vapor pocket between the seal and the rim area of a Floating Roof Storage Vessel and causes the vent to release vapors to relieve pressure);
(7) Guidepole caps and/or covers;
(8) Deck leg sleeves with socks; and
(9) Pontoon hatches.

"Visible Vapors" shall mean that hydrocarbon emissions are imaged with an OGI camera when inspections are conducted in accordance with the approved OGI protocol developed in accordance with Paragraph 30 of the Consent Decree.

I. COMPLIANCE REQUIREMENTS

A. STORAGE VESSEL APPLICABILITY

1. No later than 60 Days after the Effective Date, each Category A-1 IFR Covered Storage Vessel or Category A-2 EFR Covered Storage Vessel storing a VOL with MTVP greater than 0.75 psia and less than 11.1 psia shall comply with either the requirements in NESHAP Subpart WW (National Emission Standards for Storage Vessels - Control Level 2) or NESHAP Subpart SS (National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process). Category A-1 IFR Covered Storage Vessels and Category A-2 EFR Covered Storage Vessels at the Facility must comply with the requirements of this Appendix and shall not follow the overlap provisions allowed in 40 C.F.R. § 63.640(n)(2) if there is a conflict between those provisions and the requirements of this Appendix.

2. No later than 60 Days after the Effective Date, each Category A-1 IFR Covered Storage Vessel or Category A-2 EFR Covered Storage Vessel storing a VOL with MTVP greater than or equal to 11.1 psia shall comply with the requirements in NESHAP Subpart SS.

3. If there is a conflict between the applicable Storage Vessel Regulations and this Covered Storage Vessel program, HFSNR shall follow the more stringent of the

requirements.

B. COVERED STORAGE VESSEL PROGRAM

4. **Covered Storage Vessel Program Applicability.** The requirements of this Covered Storage Vessel program shall apply to each Covered Storage Vessel at the Facility as described in this Appendix. The requirements of this Covered Storage Vessel program are in addition to, and not in lieu of, the requirements of any other Storage Vessel Regulations that may apply.

5. **Storage Vessel Document.**

a. By no later than 180 Days after the Effective Date, HFSNR shall develop a facility-wide document ("Storage Vessel Document") that at a minimum contains and/or describes:

(1) A current copy of the Covered Storage Vessel Inspection/Monitoring Chart;

(2) The Covered Storage Vessel program (e.g., applicability of regulations to specific storage vessels; temperature monitoring protocols that detail procedures for how to monitor and respond to the temperature alarms; landing alarms (e.g., when the Floating Roof is approaching a height where any automatic bleeder vent opens, when the Floating Roof has reached the landing height); inspection requirements and frequencies; corrective actions; recordkeeping; reporting);

(3) The roles and responsibilities of all employees and contractor personnel assigned to Covered Storage Vessel program functions at the Facility;

(4) A current copy of the training protocol developed under Paragraph 26.a;

(5) A qualitative description of how the number of personnel dedicated to Covered Storage Vessel program functions is sufficient to satisfy the requirements of the Storage Vessel program; and

(6) Tracking programs that ensure that Covered Storage Vessels that

undergo a change of service (e.g., changes in TVP or HAP content) are accurately captured in the Covered Storage Vessel program.

b. HFSNR shall submit the initial Storage Vessel Document to EPA and NMED in accordance with Section XVI (Notices) of the Consent Decree no later than 180 Days after the Effective Date. By no later than December 31 of each year after the year of submission of the initial Storage Vessel Document, HFSNR shall review and update the Storage Vessel Document.

c. If requested by EPA or NMED, HFSNR shall provide a copy of the Storage Vessel Document, pursuant to the provisions of Section XVI (Notices) of the Consent Decree, within 14 Days of the request.

d. **Management of Change**. HFSNR shall use the Facility's management of change procedure to review any change of service of Covered Storage Vessels. HFSNR shall ensure that the Covered Storage Vessel is fit for service based on the intended VOL and that the Covered Storage Vessel is managed under the appropriate category of Covered Storage Vessels under this Appendix and complies with the applicable Storage Vessel Regulations.

C. ALARMS AND MONITORING SYSTEMS

6. **Temperature Monitoring.** By no later than 90 Days after the Effective Date, HFSNR shall install and continuously operate monitors capable of measuring and recording the actual temperature of the VOL stored in each Covered Storage Vessel in accordance with the following:

a. HFSNR may use existing temperature monitors on individual Covered Storage Vessels or on the rundown lines, so long as the rundown temperature monitors are located after any cooling mechanism such as heat exchangers or fin fan coolers.

b. HFSNR shall establish a Monthly Maximum Temperature for each Covered

Storage Vessel to help ensure that the vessel does not exceed any applicable MTVP. The Monthly Maximum Temperature shall be the temperature that helps ensure the MTVP of the VOL: (1) does not exceed 11.1 psia for each EFR or IFR Storage Vessel, (2) does not exceed 0.75 psia for each Fixed Roof Storage Vessel, and (3) does not exceed any MTVP threshold established or represented in any effective construction permit or Title V Permit issued to HFSNR by NMED.

c. HFSNR shall establish the Monthly Maximum Temperature based on sampling or other characterization of the VOL's Reid Vapor Pressure ("RVP") in each Covered Storage Vessel. The RVP and Monthly Maximum Temperature shall be adjusted for seasonal blend changes, adjustments to gasoline blend stocks, or if HFSNR suspects the current RVP is not representative of the current VOL.

d. HFSNR shall establish a Daily Maximum Temperature equal to the Monthly Maximum Temperature to help ensure that each Covered Storage Vessel does not exceed the Monthly Maximum Temperature.

e. The actual temperature of the VOL in each Covered Storage Vessel will be continuously monitored and recorded on a 5-minute block average basis and then averaged to produce 1-hour block averages and 24-hour rolling averages.

f. By no later than 90 Days after the Effective Date, HFSNR shall install and continuously operate an alarm system that will alert an operator when any 24-hour rolling average reaches 95% of the Daily Maximum Temperature for any Covered Storage Vessel.

g. If the actual temperature of the VOL in any Covered Storage Vessel on a 24-hour rolling average reaches 95% of the Daily Maximum Temperature for such vessel, corrective and/or preventative action(s) will be initiated within 1 Day to prevent the stored VOL

from reaching the Monthly Maximum Temperatures. Following any verifications of actual temperatures and vapor pressures, if applicable, corrective and/or preventative action(s) shall include one or more of the following:

(1) Reduction, cessation, or diversion of flow from the Covered Storage Vessel dependent upon the temperature of the VOL;

(2) Initiation of product draw from the Covered Storage Vessel;

(3) Equalization of the level of the Covered Storage Vessel with a lower temperature tank that is in a compatible service; and/or

(4) Other measures to prevent the Covered Storage Vessel from reaching the Daily Maximum Temperature including, but not limited to: (1) changing the service of the Covered Storage Vessel and (2) adding additional cooling equipment.

h. Event follow-up:

(1) In the event the Daily Maximum Temperature of a Covered Storage Vessel was exceeded, HFSNR shall conduct a review and evaluation regarding the effectiveness of the corrective and/or preventative action(s) implemented pursuant to Paragraph 6.g. HFSNR shall take additional actions as necessary to ensure the applicable MTVP in Paragraph 6.b is not exceeded in the future. HFSNR must document the review and evaluation following each exceedance and the additional actions.

7. **Overfill Prevention.** Beginning on the Effective Date, HFSNR shall install and continuously operate each Covered Storage Vessel with a monitoring system using tank alerts and/or alarm systems to prevent an overfill of Covered Storage Vessels.

8. **Landing Protection.** Beginning on the Effective Date, HFSNR shall install and continuously operate each Floating Roof Covered Storage Vessel with a monitoring system that provides HFSNR a visual or audible signal that alerts an operator when the Floating Roof is approaching a height where any automatic bleeder vent opens.

D. CONSTRUCTION, INSTALLATION, AND UPGRADE PROJECTS

9. **Geodesic Dome Installation.** HFSNR shall install geodesic domes at the

following 6 EFR Covered Storage Vessels: T-0079, T-0401, T-0402, T-0411, T-0450, and T-0821. The geodesic domes shall be completed in accordance with the timelines in Table 1:

TABLE 1: Geodesic Dome Installation

Covered Storage Vessels	Installation Completion Date
Any 2 Covered Storage Vessels	December 31, 2025
Any 2 Remaining Covered Storage Vessels	December 31, 2026
Final Remaining 2 Covered Storage Vessels	March 31, 2028

a. Prior to installation of the geodesic domes, HFSNR shall re-inspect the primary seal for holes, tears, or other openings in the Rim Seal or seal fabric and complete a seal gap inspection to ensure compliance with the gap requirements of the Storage Vessel Regulations and this Appendix.

b. Following the installation of the geodesic domes, the Covered Storage Vessel will be considered an IFR Covered Storage Vessel and must comply with all applicable requirements for IFR Covered Storage Vessels in the Storage Vessel Regulations and this Appendix.

10. **T-0434 Fixed Roof Storage Vessel.**

a. Beginning on the Effective Date, HFSNR shall cease naphtha flows into T-0434. Any future naphtha flows used to flush diesel piping shall be directed to a Floating Roof Storage Vessel.

b. By June 30, 2027, or 90 Days after the Planned FCCU Turnaround, T-0434 shall be Removed from Service and Degassed. HFSNR shall not subsequently store VOL in T-0434 unless and until HFSNR installs a Floating Roof in the Storage Vessel. HFSNR shall submit design documentation for the T-0434 roof design in the next semi-annual report required

under Section VIII (Reporting Requirements) of this Consent Decree after selecting the design. Upon T-0434's return to service with a Floating Roof, the Storage Vessel will be an IFR Storage Vessel and must comply with all applicable requirements for IFR Storage Vessels in the Storage Vessel Regulations and this Appendix. HFSNR shall report T-0434's return to service in the next semi-annual report required under Section VIII (Reporting Requirements) of this Consent Decree.

11. **IFR Covered Storage Vessel Seal Upgrades.**

a. HFSNR shall upgrade 6 IFR Covered Storage Vessels equipped with double, vapor-mounted wiper seals to a mechanical shoe primary seal with a rim-mounted, secondary seal. The upgrades shall be completed at the following IFR Covered Storage Vessels in accordance with the timelines in Table 2:

TABLE 2: Seal Upgrade Schedule

Tank	Completion Date
T-0109	December 31, 2024
T-0011	December 31, 2031
T-0107	December 31, 2029
T-0111	December 31, 2029
T-0415	December 31, 2031
T-0417	December 31, 2031

b. If an IFR Covered Storage Vessel is Removed from Service and Degassed at an earlier date than the timeline provided in Table 2 due to a planned outage, HFSNR shall complete the seal upgrades required in Paragraph 11.a during the outage.

12. **External Floating Roof Covered Storage Vessel Deck Leg Socks.** By January 1, 2026, HFSNR shall install deck leg socks designed to reduce emissions on each Category A-2 EFR Covered Storage Vessel deck leg. If deck leg socks are removed to adjust the

pinning height or for other maintenance events, HFSNR shall reinstall deck leg socks no later than 10 Business Days following the event.

E. ENHANCED COVERED STORAGE VESSEL PROGRAM

13. **Operational Requirements.** Within 180 Days after the Effective Date, HFSNR shall operate and maintain Category A-1 IFR and A-2 EFR Covered Storage Vessels in accordance with the requirements of Section E. HFSNR shall ensure compliance with these operational requirements by conducting the inspections required under Paragraph 15 and making any necessary repairs pursuant to Paragraph 16.

a. **Internal Floating Roof Covered Storage Vessels.**

(1) HFSNR shall operate and maintain all Category A-1 IFR Covered Storage Vessels to ensure no Floating Roof Defects.

(2) With the exception of Ethanol IFR Storage Vessels, HFSNR shall operate and maintain Category A-1 IFR Covered Storage Vessels to ensure: (a) no Visible Vapors from each external vent (e.g., brow vents, circumference vents) and (b) the LEL of the headspace between the IFR and the Fixed Roof is at or below 25 percent on a 5-minute rolling average without the use of purge gas.

b. **External Floating Roof Covered Storage Vessels.**

(1) HFSNR shall operate and maintain Category A-2 EFR Covered Storage Vessels to ensure no Floating Roof Defects.

(2) With the exception of Sour Water EFR Covered Storage Vessels, HFSNR shall operate and maintain Category A-2 EFR Covered Storage Vessels to ensure: (a) no Visible Vapors from any Deck Fitting, Rim Seal, or other deck component, such as open deck drains or pontoon hatches; and (b) Vapor Tight Deck Fittings and Components on the Floating Roof of the EFR Covered Storage Vessel are Vapor Tight.

c. **Sour Water External Floating Roof Covered Storage Vessels**. HFSNR shall continuously maintain a diesel-range (or heavier) hydrocarbon blanket over Sour Water EFR Covered Storage Vessels, except during periods of maintenance, to ensure optimal

containment. The liquid blanket must be skimmed and replenished as necessary and at least once per month to ensure the blanket is adequately maintained. If HFSNR fails to continuously maintain a hydrocarbon blanket over Sour Water EFR Covered Storage Vessels, other than for maintenance events, HFSNR shall begin complying with the requirements for Category A-2 EFR Covered Storage Vessels within 60 Days. HFSNR shall notify EPA and NMED in accordance with Section XVI (Notices) of the Consent Decree within 60 Days of either Covered Storage Vessel becoming subject to the enhanced monitoring requirements of this Appendix.

d. **Fixed Roof Storage Vessels.** HFSNR shall operate and maintain each Category C Fixed Roof Covered Storage Vessel to ensure no Visible Vapors from any pressure/vacuum relief valve or emergency relief valve, except when relieving pressure as designed.

14. **Category B IFR/EFR Covered Storage Vessels.** Category B IFR/EFR Covered Storage Vessels are exempt from the requirements of Section E (Enhanced Covered Storage Vessel Program), and each Category B IFR/EFR Covered Storage Vessel shall be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions.

15. **Inspection Requirements.** Beginning on the Effective Date, HFSNR shall inspect Covered Storage Vessels in accordance with the following and as set forth in in the Covered Storage Vessel Inspection/Monitoring Chart. If there is a conflict between the Covered Storage Vessel Inspection/Monitoring Chart and the inspection requirements of Paragraph 15, HFSNR shall follow the requirements of this Paragraph 15.

a. **Internal Floating Roof Covered Storage Vessels.**

TABLE 3: IFR Inspection Summary

Inspection Method	Covered Storage Vessels	Frequency
OGI	Category A-1 IFR Covered Storage Vessels (excluding Ethanol Covered Storage Vessels)	Semi-annual
LEL	Category A-1 IFR Covered Storage Vessels (excluding Ethanol Covered Storage Vessels)	Annual
Visual	Category A-1 IFR Covered Storage Vessels	Annual

(1) OGI. In accordance with Table 3 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct semi-annual OGI surveys. OGI surveys shall be conducted and evaluated in accordance with the OGI Protocol.

If HFSNR observes Visible Vapors from any external vent (e.g., brow vents, circumference vents), HFSNR shall either: (1) conduct a visual inspection of the entirety of the Floating Roof per Paragraph 15.a.3., Deck Fittings, and Rim Seals; or (2) conduct LEL measurements per Paragraph 15.a.2. The visual inspection or LEL measurements shall be conducted within 10 Days of the observation. No further OGI observation is necessary after conducting the follow-up inspections.

(2) Lower Explosive Limit ("LEL"). In accordance with Table 3 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual LEL monitoring of the headspace between the IFR and the Fixed Roof. LEL Monitoring shall be conducted in accordance with Attachment 2 ("LEL Monitoring Procedures"). If HFSNR is unable to conduct an LEL measurement pursuant to the requirements in the LEL Monitoring Procedures due to the conditions described in Paragraph 3.c and 3.d of Attachment 2 (LEL Monitoring Procedures) , HFSNR shall conduct an LEL measurement as soon as practicable and this shall not be a violation of the frequency requirements of Paragraph 15.a or the 10-Day follow-up LEL requirement of Paragraph 15.a.1.

If any 5-minute rolling average LEL measurements are above 25% of the LEL, HFSNR may take one additional LEL measurement within the next three 3 Days in accordance with Attachment 2. If the 5-minute rolling average for the second measurement is also greater than 25% of the LEL, HFSNR shall take corrective action as specified in Section F.

(3) Visual Inspection. In accordance with Table 3, HFSNR shall conduct annual visual inspections through multiple manways and hatches (if necessary) to observe the entirety of the Floating Roof, Deck Fittings, and Rim Seals. HFSNR shall consider lighting conditions within the Covered Storage Vessel, ambient light during sunny conditions, distance from hatches and/or manways to the Floating Roof, and the level of the Covered Storage Vessel during the visual inspection. HFSNR shall take photographs of the Floating Roof visible to the inspector during each visual inspection.

If HFSNR observes any Floating Roof Defects, HFSNR shall take corrective action as specified in Section F.

If HFSNR is unable to view the entirety of the Floating Roof, Deck Fittings, and Rim Seals during a visual inspection, HFSNR shall identify the specific circumstance(s) causing the inspector to be unable to satisfy the visual inspection requirements and complete a compliant visual inspection within 60 Days. A subsequent visual inspection shall not be a violation of the frequency requirements of Paragraph 15.a., provided that HFSNR is able to view the entirety of the Floating Roof, Deck Fittings, and Rim Seals. HFSNR may utilize tools such as mirrors, cameras, or drones to view the components as needed. Identification of holes or tears in the Rim Seal are only required for the seal that is visible from the top of the Storage Vessel.

b. **External Floating Roof Covered Storage Vessels.**

TABLE 4: EFR Inspection Summary

Inspection Method	Covered Storage Vessels	Frequency
Platform OGI	Category A-2 EFR Covered Storage Vessels (excluding Sour Water EFR Covered Storage Vessels)	Annual
Floating Roof OGI	Category A-2 EFR Covered Storage Vessels (excluding Sour Water EFR Covered Storage Vessels)	Annual
Method 21	Category A-2 EFR Storage Vessels (excluding Sour Water EFR Covered Storage Vessels)	Annual
Visual	Category A-2 EFR Covered Storage Vessels	Annual
Secondary Seal	Category A-2 EFR Covered Storage Vessels	Annual
Primary Seal	Category A-2 EFR Covered Storage Vessels	Every 5 years

(1) Platform OGI. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual surveys from the platform of the Covered Storage Vessel ("Platform OGI Inspection"). The Platform OGI Inspection shall be conducted at no less than 5 months and no greater than 7 months from the Floating Roof OGI Inspection, visual inspections, and seal gap measurements. The Platform OGI Inspection shall be conducted and evaluated in accordance with the OGI Protocol.

If HFSNR observes Visible Vapors from the Floating Roof, Deck Fittings, or Rim Seals, HFSNR shall take corrective action as specified in Section F.

(2) Floating Roof OGI. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual surveys from the deck of the Floating Roof ("Floating Roof OGI Inspection"). Floating Roof OGI Inspections shall be conducted concurrently with Method 21 inspections, visual inspections, and any seal gap measurements. The Floating Roof OGI Inspection shall be conducted and evaluated in accordance with the OGI Protocol.

If HFSNR observes Visible Vapors from the Floating Roof, Deck Fittings, or Rim Seals, HFSNR shall take corrective action as specified in Section F.

(3) Method 21. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual Method 21 monitoring at Vapor Tight Deck Fittings and Components to ensure they are Vapor Tight.

If any Vapor Tight Deck Fitting and Components do not satisfy the Vapor Tight requirements, HFSNR shall take corrective action as specified in Section F.

(4) Visual Inspection. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual visual inspections from the deck of the Floating Roof. The visual inspection must verify whether the automatic bleeder vent is in the closed position with no visible gaps and inspect the Rim Seals and deck leg socks to ensure no Floating Roof Defects. The visual inspection must also assess the condition of the vacuum breaker gasket, Rim Seals, and deck leg socks to ensure no deteriorated conditions. The Floating Roof shall be free of vegetative growth to minimize excess weight, and drains shall be free of dirt and debris to allow for proper drainage.

If HFSNR observes any Floating Roof Defects, HFSNR shall take corrective action as specified in Section F.

(5) Secondary Seal. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall complete an annual measurement of the secondary seal. Seal gap measurements shall be conducted in accordance with 40 C.F.R. § 63.1063(d)(3)(i). The ratio of seal gap area to Covered Storage Vessel diameter for the secondary seal shall not exceed 21.2 square centimeters per meter (1 square inch per foot), and the maximum gap width shall not exceed 1.27 centimeters (0.5 inches) except when the secondary seal must be pulled back or removed to inspect the primary seal.

If HFSNR discovers any gaps where the ratio of accumulated area of Rim Seal gaps to Covered Storage Vessel diameter exceeds 21.2 square centimeters per meter or the maximum gap width exceeds 1.27 centimeters (0.5 inches) or other Floating Roof Defects during the measurement, HFSNR shall take corrective action as specified in Section F.

(6) Primary Seal. In accordance with Table 4 and the Covered Storage Vessel Inspection/Monitoring Chart, HFSNR shall complete a measurement of the primary seal every 5 years. Seal gap measurements shall be conducted in accordance with 40 C.F.R. § 63.1063(d)(3)(i). The ratio of seal gap area to Covered Storage Vessel diameter for the primary seal shall not exceed 212 square centimeters per meter of vessel diameter (10 square inches per foot of vessel diameter), and the maximum gap width shall not exceed 3.81 centimeters (1.5 inches).

If HFSNR discovers any gaps where the ratio of accumulated area of Rim Seal gaps to Covered Storage Vessel diameter exceeds 212 square centimeters per meter or the maximum gap width exceeds 3.81 centimeters (1.5 inches) or other Floating Roof Defects during the seal measurement, HFSNR shall take corrective action as specified in Section F.

c. **Fixed Roof Storage Vessels.**

TABLE 5: Fixed Roof Inspection Summary

Inspection Method	Covered Storage Vessels	Frequency
OGI	Category C Fixed Roof Covered Storage Vessels	Annual

(1) OGI Survey. In accordance with Table 5 and the current Covered

Storage Vessel Inspection/Monitoring Chart, HFSNR shall conduct annual OGI surveys at all pressure/vacuum relief valves and any emergency relief valve on the Fixed Roof. OGI surveys shall be conducted and evaluated in accordance with the OGI Protocol.

If HFSNR observes Visible Vapors from any pressure/vacuum relief or emergency relief valves HFSNR shall inspect and verify that the relief valves are operating as designed and, if necessary, make any repairs within the timeframes provided in Section F. No further OGI observation is necessary after conducting the follow-up verification.

d. **Floating Roof Out of Service Inspections.**

(1) HFSNR shall visually inspect the Floating Roof, the primary seal, the secondary seal, gaskets, slotted membranes, sleeve seals, wipers, other fitting controls, and any other sealing fabric each time the Covered Storage Vessel is Removed from Service and Degassed for defects and deterioration. If a Covered Storage Vessel will be Removed from Service for an API 653 Internal Inspection, HFSNR shall inspect the components listed above prior to their removal. HFSNR shall take corrective actions as specified in Section F.

F. COVERED STORAGE VESSEL REPAIRS

16. **Repair Requirements.** HFSNR shall initiate repairs at a Covered Storage Vessel if HFSNR discovers any conditions that require corrective action, as described in Paragraph 15.a through 15.d ("Inspection Failures"). Additionally, HFSNR shall implement the following corrective actions below, specific to the Inspection Failure(s) discovered during the inspections:

a. **Vapor Tight Deck Fitting and Components at EFR Covered Storage Vessels.** For an Inspection Failure at any Vapor Tight Deck Fitting and Component, HFSNR shall conduct an assessment into the operational condition and integrity of the equipment to ensure it is returned to a Vapor Tight condition. HFSNR shall document each assessment and repair attempt. If the Vapor Tight Deck Fitting and Component cannot be returned to a Vapor Tight condition after two repair attempts, and the gasket or seal gap requirements of 40 C.F.R. § 63.1063(d)(1)(v) are met, no further action is required until a subsequent Inspection Failure is

observed.

b. **LEL Exceedances at IFR Covered Storage Vessels.** Following any corrective actions for exceeding LEL measurements greater than 25% of the LEL, if HFSNR is unable to complete a repair at the source of the LEL exceedance within the timeframes specified in Paragraph 15, HFSNR must conduct a root cause analysis to determine if the design and/or condition of the Floating Roof is a source of the LEL exceedances. If HFSNR determines through the root cause analysis that the Floating Roof is significantly contributing to the LEL Inspection Failures under Paragraph 15, HFSNR shall consider a new Floating Roof design, including but not limited to full-contact aluminum IFRs, welded seams, and cable-suspension Floating Roofs. HFSNR shall identify the root cause(s) and necessary corrective actions to prevent the LEL exceedances in a corrective action plan. If HFSNR is unable to complete the corrective actions pursuant to the timelines in Paragraphs 18 and 19, the IFR Covered Storage Vessel shall be Removed from Service, and HFSNR shall implement the corrective action plan prior to returning the IFR Storage Vessel to service.

c. **Visible Vapors.** If HFSNR observes Visible Vapors from the Floating Roof, Deck Fittings, or Rim Seals on an EFR Covered Storage Vessel, HFSNR shall make reasonable efforts to identify the source of the emissions and make any necessary repairs or adjustments to address the emissions. These efforts, at a minimum, must include a visual inspection of the Floating Roof, Deck Fittings, and/or Rim Seal. If HFSNR continues to detect Visible Vapors during the Repair Verification, HFSNR shall make a second attempt to reduce the emissions. If HFSNR is unable to identify a Floating Roof Defect and determines the Floating Roof, Deck Fittings, or Rim Seals has been properly maintained and in normal working condition, HFSNR is not required to make additional repair attempts unless HFSNR observes a

subsequent OGI observation with an increase in the size, density, or flowrate of the Visible Vapors.

d. **Rim Seals at Floating Roof Covered Storage Vessels.** For an Inspection Failure at any Rim Seal, HFSNR shall conduct an assessment into the operational condition and integrity of the Rim Seal to determine if it is fit for continued service. HFSNR shall document each assessment and repair.

e. **Floating Roof Out of Service Inspections.** For an Inspection Failure discovered during an out of service inspection, HFSNR must repair each item as necessary so that none of the defects identified during the inspection exist before filling or refilling the Covered Storage Vessel with VOL. HFSNR shall document each assessment and repair.

17. **Covered Storage Vessel Repair Verification.** HFSNR shall reinspect the Covered Storage Vessel consistent with the requirements of Paragraph 15 following repairs to confirm a successful repair of the original Inspection Failure.

18. **Covered Storage Vessel Repair Timelines.** Repairs shall be initiated within 10 Days following the discovery of the Inspection Failure and be completed by no later than 45 Days, or the Covered Storage Vessel must be Removed from Service, except as allowed by Paragraph 19.

19. **Delayed Covered Storage Vessel Repairs.** If a repair cannot be completed and the Covered Storage Vessel cannot be Removed from Service within 45 Days, HFSNR may use up to two extensions of up to 30 Days. Documentation of a decision to use extension(s) shall include: (1) a description of the deficiency requiring corrective actions; (2) an explanation that alternate storage capacity is unavailable; and (3) a schedule of actions that will ensure that the failure(s) discovered during the inspection will be repaired or the vessel will be Removed from

Service. If it is determined per Paragraph 15.a that the Floating Roof is contributing to an LEL Inspection Failure and the alternative storage capacity is unavailable, HFSNR will provide a timeline for changing the Floating Roof configuration in the next in the next semi-annual report required under Section VIII (Reporting Requirements) of the Consent Decree.

G. COVERED STORAGE VESSEL DEGASSING OPERATIONS

20. **Covered Storage Vessel Degassing and Control Requirements.** HFSNR shall not begin Degassing a Category A-1 IFR or Category A-2 EFR Covered Storage Vessel unless the vapors are routed through a closed vent system to a control device and in accordance with the requirements of this Paragraph. The Covered Storage Vessel may be opened to set up equipment (*e.g.,* making connections to a control device) for the operations but must not be actively Degassing during this time period.

21. HFSNR shall continue operation of the control device during Degassing until the vapor space concentration in the Category A-1 IFR Covered Storage Vessel or Category A-2 EFR Covered Storage Vessel is less than 10 percent of the LEL or, for nonflammable liquids, 5,000 ppmv as methane, for at least one hour after Degassing operations have ceased. HFSNR shall determine the VOC concentration using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.

22. During Degassing, HFSNR shall reduce emissions of VOCs by at least 98% by weight by venting emissions through a closed vent system to a flare or any combination of non-flare control devices ("Degassing Control Devices").

23. HFSNR shall conduct an initial performance test or engineering study of the Degassing Control Device, using approved EPA test methods or other approved procedures, to

demonstrate that the device can achieve the required control efficiency required by Paragraph 22. HFSNR shall monitor any parameters necessary to ensure the device is functioning properly and achieving the control efficiency in Paragraph 22. If HFSNR utilizes a portable Degassing Control Device (e.g., portable thermal oxidizer), a performance test or engineering study will not be required so long as the combustion chamber temperature is at least 1,400 degrees Fahrenheit (°F) and the VOC vapors routed to the Degassing Control Device are limited or restricted to ensure at least a 0.5 second combustion chamber residence time when the device is in use. Any monitoring device used to comply with the Degassing requirements must be installed, calibrated, maintained, and operated according to the manufacturer's instructions.

24. HFSNR shall ensure that Degassing equipment (e.g., pumps, hoses, and connections) is free of liquid leaks and shall be designed and operated to be Vapor Tight when VOC vapors are routed to the Degassing Control Device. HFSNR shall inspect Degassing equipment once per each Degassing event to ensure it is free of liquid leaks and Vapor Tight during each Degassing operation.

25. HFSNR shall operate the Degassing Control Device in a manner consistent with safety and good air pollution control practices for minimizing emissions.

H. TRAINING

26. HFSNR shall implement a Covered Storage Vessel training program at the Facility that includes the following:

a. **Training Protocol.** By no later than 180 Days after the Effective Date, HFSNR shall develop a training protocol for the Facility (or, as applicable, require its contractor(s) to develop a training protocol for the contractor's employees).

b. **Initial Training.** By no later than 180 Days after the Effective Date, HFSNR shall ensure that all employees and contractor personnel assigned to Covered Storage Vessel functions at the Facility have completed training on all aspects of Covered Storage Vessel compliance, including the Storage Vessel Regulations and this Covered Storage Vessel program.

c. **Refresher Training.** Once per calendar year, starting in the calendar year after completion of the initial training, HFSNR shall ensure that all employees and contractor personnel assigned to Covered Storage Vessel program functions at the Facility complete refresher training. Refresher training is not required if an individual's employment at the Facility ceases prior to the end of the calendar year or no longer involves duties relevant to Covered Storage Vessel functions at the Facility.

d. **New Employee/Contractor Personnel Training.** After the development of the training protocol in Paragraph 26.a, and continuing until termination of the Consent Decree, HFSNR shall ensure that new employees and contractor personnel assigned to Covered Storage Vessel program functions at the Facility are sufficiently trained no more than 90 Days prior to any field involvement pertaining to Covered Storage Vessels at the Facility, other than supervised involvement for purposes of training.

I. VAPOR PRESSURE SIMULATION

27. By no later than 5 years after the Effective Date, HFSNR shall confer with EPA and NMED on a protocol for measuring the vapor pressure of VOLs stored in Covered Storage Vessels ("VP Protocol") that satisfies the following:

a. The VP Protocol shall reference standardized methods for sampling and distillation for each VOL.

b. The VP Protocol shall provide an analysis of each pseudo-component and

how it will provide an appropriate representation of each petroleum fraction.

c. The VP Protocol shall provide an analysis for the stock density, explain how the figures were derived, and whether HFSNR will use an overall stock density or base it off the density of each pseudo-component.

d. HFSNR may include heated Covered Storage Vessels within the scope of the VP Protocol if HFSNR can clearly demonstrate whether there are any effects of cracking within the Facility's heated Covered Storage Vessels.

28. Within 90 Days of conferring with EPA and NMED, HFSNR shall submit a final VP Protocol subject to EPA and NMED review, comment, and approval. Within 60 Days of receiving comments from EPA or NMED, HFSNR shall submit a revised VP Protocol.

29. Following approval, HFSNR shall implement the VP Protocol at a minimum of 3 distinct types of VOLs from Coverage Storage Vessels, such as asphalt, gas oil, or fuel oil. Results may be used to represent the TVP for these VOLs after obtaining the results provided the VP Protocol was followed.

30. Within 60 Days of completing the measurements in accordance with the VP Protocol, HFSNR shall report the results to EPA and NMED as required under Section XVI (Notices) of the Consent Decree.

J. COVERED STORAGE VESSEL AUDIT

31. By no earlier than 5 years after the Effective Date and prior to termination of the Consent Decree, HFSNR shall conduct a third-party audit of Covered Storage Vessels at the Facility ("Storage Vessel Audit") as set forth below:

a. HFSNR shall retain a third-party auditor ("Covered Storage Vessel Auditor") with experience in evaluating compliance with the Storage Vessel Regulations. The

Storage Vessel Auditor shall not be an entity employed by HFSNR for Covered Storage Vessel program functions at the Facility during the life of the Consent Decree.

b. For each Covered Storage Vessel at the Facility, the Storage Vessel Audit shall include:

(1) A review of compliance with applicable Storage Vessel Regulations, and

(2) A review of compliance with the Appendix.

c. Within 120 Days of commencing the Covered Storage Vessel Audit, the Covered Storage Vessel Auditor shall prepare and simultaneously submit to HFSNR, EPA, and NMED a written report ("Covered Storage Vessel Audit Report") that describes a summary of findings with respect to the compliance review pursuant to Paragraph 31.b.

d. By no later than 60 Days of receiving the Covered Storage Vessel Audit Report, HFSNR shall develop a Covered Storage Vessel Audit Corrective Action Plan ("Covered Storage Vessel Audit CAP") to address any findings by the Covered Storage Vessel Auditor. The Covered Storage Vessel Audit CAP shall include a schedule by which those actions will be completed. HFSNR shall complete each corrective action as expeditiously as possible and by no later than 180 Days after receiving the Covered Storage Vessel Audit Report unless the corrective action requires a turnaround or implementation of a capital or expense project that cannot be completed within 180 Days after receiving the Covered Storage Vessel Audit Report.

K. RECORDKEEPING

32. **Covered Storage Vessel Specifications.** HFSNR shall maintain readily accessible records for the life of each Covered Storage Vessel showing the dimensions of the Covered Storage Vessel, an analysis showing the capacity of the Covered Storage Vessel, MTVP, HAP content, and the configuration of all Deck Fittings and Rim Seals.

33. **Inspection Records.** HFSNR shall maintain records of inspection results collected pursuant to Paragraphs 15.a-c, corrective actions pursuant to Paragraph 16, repair verifications pursuant to Paragraph 17, and repair delays pursuant to Paragraph 19.

34. Except as provided in the OGI Protocol approved pursuant to Paragraph 30 of the Consent Decree, HFSNR shall retain all records required to be maintained in accordance with this Appendix for a period of 5 years, or until termination, whichever is longer, unless applicable regulations require the records to be maintained longer.

Attachment 1 to Appendix E

Covered Storage Vessel Inspection/Monitoring Chart

This chart represents the applicability of the inspection and monitoring provisions within Appendix E (Storage Vessel Compliance Program) to Covered Storage Vessels at the Facility as of the Effective Date. The applicable category for a Covered Storage Vessel may change based on a change of service for the Covered Storage Vessel, resulting in different inspection and monitoring provisions applying to the Covered Storage Vessel than those described below. The most current version of this chart is required to be maintained as part the Storage Vessel Document pursuant to Paragraph 5 of Appendix E (Storage Vessel Compliance Program) and shall be used in lieu of this version.

Covered Storage Vessel Category[a]	Covered Storage Vessels and Current Service		Enhanced Inspections						Enhanced Monitoring			
			OGI	Method 21	LEL	Visual	Seal Inspections – Secondary	Seal Inspections – Primary	Temperature monitoring	Tank roof landing monitoring	High level alarm monitoring	Degassing controls
Category A-1 IFR Covered Storage Vessels (19 Storage Vessels)	T-0011 - Reformate T-0012 - Reformate T-0020 - Gasoline T-0021 - Gasoline T-0022 - Gasoline T-0023 - Gasoline T-0056 - Reformate T-0081 - Crude T-0107 - Isom, Plat, SB, LCN T-0108 - Alkylate	T-0109 - Alkylate T-0111 - Gasoline T-0112 - Splitter Bottoms T-0124 - Reformate T-0401 - Isom Gasoline T-0415 - Alkylate T-0417 - Gasoline T-0439 – Naphtha T-0452 – Ethanol[b]	Semi-Annual	N/A	Annual	Annual	N/A	N/A	Yes	Yes	Yes	Yes
Category A-2 EFR Covered Storage Vessels (13 Storage Vessels)	T-0079 - Reformate[d] T-0117 - Splitter Bottoms T-0402 - Lt Cat Naphtha[d] T-0411 - Splitter Bottoms[d] T-0412 - Splitter Bottoms T-0435 - Slop Oil T-0437 - Crude T-0450 - Crude[d] T-0737 - Sour Water[c] (EFR) T-0802 - Sour Water[c] (EFR)	T-0821 - Lt Cat Naphtha[d] T-1225 - Crude T-0830 – Stormwater Surge	Semi-Annual, 1 from platform and 1 from the deck	Annual (Vapor Tight Deck Fittings and Components only)	N/A	Annual	Annual	Every 5 years For the EFR storage vessels that will receive geodesic domes (T-450, T-402, T-821, T-411, T-079), HFSNR will perform a primary seal inspection prior to installing the geodesic dome.	Yes	Yes	Yes	Yes

Category B IFR/EFR Covered Storage Vessels (6 Storage Vessels)	T-0413 - Kerosene (IFR) T-0418 – Kerosene (IFR) T-0451 – Biodiesel (IFR)	T-0829 – RO Reject Water (IFR)[e] T-0834- Diesel (EFR) T-0835 - Diesel (EFR)	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes	Yes	N/A
Category C Fixed Roof Covered Storage Vessels (23 Storage Vessels)	T-0055 - Str Sour Water T-0059 - Lt Cycle Oil T-0061 - Lt Cycle Oil T-0063 - Carbon Blk Oil T-0065 - Carbon Blk Oil T-0075 - Carbon Blk Oil T-0082 - Fuel Oil T-0110 - Asphalt T-0400 - Gas Oil T-0410 - Asphalt T-0419 - Diesel T-0420 - Lt Cycle Oil	T-0422 - Lt Cycle Oil T-0423 - Lt Cycle Oil T-0431 - Fuel Oil T-0432 - Fuel Oil T-0433 - Gas Oil T-0434 – Diesel[f] T-0438 - Gas Oil T-0814 - Asphalt T-0815 - Diesel T-0838 - Diesel T-1227 - Asphalt	Annual	N/A	N/A	N/A	N/A	N/A	Yes	N/A	Yes	N/A

Notes:

[a] These are specific Appendix E Covered Storage Vessel category definitions that are not intended to be the same as the categories defined in the applicable Storage Vessel Regulations. HFSNR will continue to comply with the applicable Storage Vessel Regulations.

[b] T-0452 is considered a Category A-1 IFR Covered Storage Vessel for purposes of Appendix E; however, it contains ethanol and is therefore not subject to Paragraphs 13.a.2, 15.a.1, and 15.a.2.

[c] T-0737 & T-0802 are considered Category A-2 EFR Covered Storage Vessels for purposes of Appendix E; however, they contain sour water and are therefore not subject to Paragraphs 13.b.2, 15.b.1, 15.b.2, and 15.b.3, provided the requirements in Paragraph 13.c are met.

[d] These storage vessels are considered Category A-2 EFR Covered Storage Vessels as of the Effective Date but will become Category A-1 IFR Covered Storage Vessels after installation of geodesic domes pursuant to Paragraph 9.

[e] T-0829 is considered a Category B IFR/EFR Covered Storage Vessel as of the Effective Date but is not subject to any of the requirements of Appendix E because it is located downstream of the ABT Tanks and only stores reverse osmosis reject water with very low MTVP.

[f] T-0434 is considered a Category C Fixed Roof Covered Storage Vessel as of the Effective Date but will become a Category A-1 IFR Covered Storage Vessel after installation of a Floating Roof pursuant to Paragraph 10.b.

Attachment 2 to Appendix E

LEL Monitoring Procedures

This Attachment contains the procedures for measuring the concentrations of organic vapor in the vapor space above the Floating Roof to determine the percentage of the LEL of such vapors within the Covered Storage Vessels. Compliance with the LEL limit in Paragraph 13.a of Appendix E must be determined based on the procedures specified in the paragraphs below.

1. HFSNR must conduct LEL monitoring as part of the IFR Covered Storage Vessel inspection requirements as specified in Paragraph 15.a of Appendix E. If there is an exceedance of the LEL limit, HFSNR must re-monitor in accordance with Paragraph 17 of Appendix E within 30 Days after repair or placing the Storage Vessel back in service.

2. The calibration of the LEL meter must be checked per manufacturer specifications immediately before and after the measurements as specified in Paragraphs 2.a and 2.b of this Attachment. If tubing will be used for the measurements, the tubing must be attached during calibration so that the calibration gas travels through the entire measurement system. The tubing must be non-crimping and made of Teflon or other inert material.

a. Conduct the span check using a calibration gas recommended by the LEL meter manufacturer. The calibration gas must contain a single hydrocarbon at a concentration of the vapor corresponding to 50 percent of the LEL (e.g., 2.50 percent by volume when using methane as the calibration gas). The vendor must provide a Certificate of Analysis for the gas, and the certified concentration must be within ±2 percent (e.g., 2.45 percent to 2.55 percent by volume when using methane as the calibration gas). The LEL span response must be between 49 percent and 51 percent. If the span check prior to the measurements does not meet this requirement, the LEL meter must be recalibrated or replaced. If the span check after the measurements does not meet this requirement, the LEL meter must be recalibrated or replaced, and the measurements must be repeated.

b. Check the instrumental offset response using a certified compressed gas cylinder of zero air or an ambient environment that is free of organic compounds. The pre-measurement instrumental offset response must be 0 percent LEL. If the LEL meter does not meet this requirement, the LEL meter must be recalibrated or replaced.

3. Conduct the monitoring measurements as specified in Paragraphs 3.a through 3.d of this Attachment. If tubing is necessary to obtain the measurements, the tubing must be non-crimping and made of Teflon or other inert material.

a. Measurements of the vapors within the IFR Covered Storage Vessel must be collected no more than 3 feet above the Internal Floating Roof.

b. Measurements must be taken for a minimum of 20 minutes, logging the measurements at least once every 15 seconds, or until one 5-minute

average as determined according to Paragraph 5.b of this Attachment exceeds the limit specified in Paragraph 13.a of Appendix E.

c. Measurements shall be taken when the wind speed at the top of the IFR Covered Storage Vessel is 5 mph or less to the extent practicable, but in no case shall measurements be taken when the sustained wind speed at the top of the Storage Vessel is greater than the annual average wind speed at the site or 15 mph, whichever is less.

d. Measurements should be conducted when the Internal Floating Roof is floating with limited product movement (limited filling or emptying of the storage vessel).

4. To determine the actual concentration of the vapor within the Covered Storage Vessel, the percent of the LEL "as the calibration gas" must be corrected according to one of the procedures in Paragraph 4.a or 4.b of this Attachment. Alternatively, if the LEL meter used has correction factors that can be selected from the meter's program, HFSNR may enable this feature to automatically apply one of the correction factors in Paragraph 4.a or 4.b of this Attachment.

a. Multiply the measurement by the published vapor correction factor for the specific LEL meter, stored VOL, and calibration gas used; or

b. If there is no published correction factor for the specific LEL meter used and the vapors of the stored VOL, multiply the measurement by the published correction factor for butane as a surrogate for determining the LEL of the vapors of the stored VOL. The correction factor must correspond to the calibration gas used.

5. Use the calculation procedures in Paragraphs 5.a through 5.c of this Attachment to determine compliance with the LEL limit in Paragraph 13.a of Appendix E.

a. For each minute while measurements are being taken, determine the 1-minute average reading as the arithmetic average of the corrected individual measurements (taken at least once every 15 seconds) during the minute.

b. Starting with the end of the fifth minute of data, calculate a 5-minute rolling average as the arithmetic average of the previous 5 1-minute readings determined under Paragraph 5.a of this Attachment. Determine a new 5-minute average reading for every subsequent 1-minute reading.

c. Each 5-minute rolling average must meet the LEL limit specified in Paragraph 13.a of Appendix E.

Appendix F

Heat Exchanger Program

WHEREAS, HFSNR has made improvements to the Facility's Heat Exchanger Compliance program through replacement of 90 heat exchanger bundles, development of compliance tracking tools, implementation of enhanced monitoring, and enhanced training of site inspectors.

Definitions:

Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Section and Paragraph references in this Appendix are references to the Sections and Paragraphs in this Appendix.

"Cooling Water Chemical Monitoring Program" shall mean the program established by HFSNR in the Heat Exchange Monitoring Program Document to monitor certain changes in cooling water chemistry, chemical usage, or chemical additions that may indicate a Cooling Water Heat Exchanger Leak.

"Cooling Water Heat Exchange System" shall mean a device or collection of devices used to transport and/or cool the water in a closed-loop recirculation system (i.e., cooling tower system) In VOC Service or In Organic HAP Service. The cooling tower system consists of a cooling tower, all Cooling Water Heat Exchangers serviced by that cooling tower, and all water lines to and from these Cooling Water Heat Exchangers.

"Cooling Water Heat Exchanger" shall mean a Covered Heat Exchanger within a Cooling Water Heat Exchange System (excluding heat exchangers that operate with the minimum pressure on the cooling water side at least 35 kPa greater than the maximum pressure on the process side).

"Cooling Water Heat Exchanger Leak" shall mean the detection of a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or greater, on a monthly basis, using the Modified El Paso Method (as defined below) at the cooling tower return line or any representative riser within the cooling tower prior to exposure to air for each Cooling Water Heat Exchange System.

"Covered Heat Exchanger" shall mean a Facility heat exchanger In VOC Service or In Organic HAP Service that is tube bundle type equipment including shell-and-tube, air-cooled, and pipe-in-pipe exchangers as described in API Standard 660 (Shell-and-Tube Heat Exchangers) and API Standard 661 (Petroleum, Petrochemical, and Natural Gas Industries Air-Cooled Heat Exchangers). Covered Heat Exchangers do not include other types of process equipment that are designed to transfer heat including but not limited to steam reboilers, fired process heater or boilers, or other equipment that removes heat such as condensers or columns.

"Failure Type" shall mean the cause of a Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak as determined by testing, inspections, or a Root Cause Failure

Analysis as applicable. For the purpose of this Appendix, there are three Failure Types:

(1) "Chemically-Induced Failure Type" – The primary cause is metallurgical deterioration of the heat exchanger components including but not limited to general corrosion, pitting corrosion, stress corrosion, galvanic corrosion and crevice corrosion.

(2) "Gasket-Related Failure Type" – The primary cause is the failure of a gasket to properly seal due to a chemical and/or mechanical wear of heat exchanger components and/or installation errors.

(3) "Mechanically-Induced Failure Type" – The primary cause is physical or mechanical wear that does not qualify as a Chemically-Induced Failure Type or a Gasket-Related Failure Type and includes but is not limited to metal erosion, steam or water hammer, vibration, thermal fatigue, thermal expansion and/or loss of cooling water.

"Heat Exchange Monitoring Program" shall mean the program described in Section I.A.

"In VOC Service" and "In Organic HAP Service" shall have the meanings set forth in 40 C.F.R. § 60.481a and 40 C.F.R. § 63.641, respectively.

"Modified El Paso Method" shall mean the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by the Texas Commission on Environmental Quality, January 31, 2003, using a flame ionization detector ("FID") analyzer for on-site determination as described in Section 6.1 of the Modified El Paso Method.

"Non-Cooling Water Heat Exchanger" shall mean a Covered Heat Exchanger that is not a Cooling Water Heat Exchanger.

"Non-Cooling Water Heat Exchanger Leak" shall mean a leak of VOC to the atmosphere from a Non-Cooling Water Heat Exchanger in excess of 500 ppmv above background using Method 21.

"Root Cause Failure Analysis" or "RCFA" shall mean an investigation to evaluate and determine the underlying event(s) and/or condition(s) responsible for a Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak.

I. COMPLIANCE REQUIREMENTS

A. HEAT EXCHANGE MONITORING PROGRAM

1. **Heat Exchange Monitoring Program Applicability.**

HFSNR shall implement a Heat Exchange Monitoring Program by no later than 180 Days after the Effective Date. The requirements of this Heat Exchange Monitoring Program

shall apply to Cooling Water Heat Exchangers, except as provided herein. The requirements of this Heat Exchange Monitoring Program are in addition to, and not in lieu of, the requirements of any applicable regulations or standards that apply to Covered Heat Exchangers. If there is a conflict between any applicable regulations or standards and this Heat Exchange Monitoring Program, HFSNR shall follow the more stringent of the requirements.

2. **Heat Exchange Monitoring Program Document.**

a. By no later than 180 Days after the Effective Date, HFSNR shall develop a written facility-wide Heat Exchange Monitoring Program Document for the Facility that describes:

(1) The following information for each Cooling Water Heat Exchanger:

(a) Inspection and maintenance program, including general applicability of and compliance with 40 C.F.R. § 63.654 and applicable standards;
(b) Database used for tracking and managing the time-based or risk-based inspections; and
(c) Protocols for testing and inspection, repair, replacements, and deferrals.

(2) A program developed by HFSNR that will identify changes in cooling water chemistry, chemical usage, or chemical additions that could indicate a Cooling Water Heat Exchanger Leak (the "Cooling Water Chemical Monitoring Program").

(3) A list of Facility heat exchangers that are excluded from the requirements for Cooling Water Heat Exchangers because they operate with the minimum pressure on the cooling water side at least 35 kPa greater than the maximum pressure on the process side.

(4) The roles and responsibilities of all employees and contractor personnel assigned to any functions of the Heat Exchange Monitoring Program at the Facility.

(5) The Facility's training protocol to ensure that all employees and third-party contractors responsible for conducting any monitoring using the Modified El Paso Method and implementing the Cooling Water Chemical Monitoring Program are familiar with the requirements of

this Consent Decree related to Heat Exchange Monitoring Program compliance.

(6) The Quality Assurance/Quality Control requirements necessary for the Modified El Paso Method.

b. HFSNR shall submit the initial Heat Exchange Monitoring Program Document to EPA and NMED in accordance with Paragraph 7 and Section XVI (Notices) of the Consent Decree no later than 180 Days after the Effective Date. By no later than December 31 of each year after the year of submission of the initial Heat Exchange Monitoring Program Document, HFSNR shall review and update the program document as needed.

3. **Monitoring.**

a. Beginning no later than 180 Days after the Effective Date, HFSNR shall perform monitoring of each Cooling Water Heat Exchange System at the Facility in accordance with the following:

(1) HFSNR shall perform monthly monitoring of Cooling Water Heat Exchanger Systems for Cooling Water Heat Exchanger Leaks.

(2) If a monitoring event indicates a Cooling Water Heat Exchanger Leak, HFSNR shall initiate additional monitoring within 1 Business Day at the Cooling Water Heat Exchange System where the leak was detected (if needed) and begin investigating the individual Cooling Water Heat Exchanger exit line(s) or the group of Cooling Water Heat Exchangers covered by a selected monitoring location(s) within a Cooling Water Heat Exchange System to identify the cause or source of the Cooling Water Heat Exchanger Leak.

b. Beginning no later than 180 Days after the Effective Date, if the Cooling Water Chemical Monitoring Program indicates a possible Cooling Water Heat Exchanger Leak, HFSNR shall conduct monitoring using the Modified El Paso Method within 2 Business Days to determine if there is a Cooling Water Heat Exchanger Leak.

c. If HFSNR identifies a suspected Non-Cooling Water Heat Exchanger Leak by any means, HFSNR shall conduct monitoring using Method 21 within 2 Business Days on the exterior of the Non-Cooling Water Heat Exchanger at the suspected leak location and surrounding interface points to determine if there is a Non-Cooling Water Heat Exchanger Leak.

4. **Inspections and Testing.**

a. By no later than 180 Days after the Effective Date, HFSNR shall perform routine time-based or risk-based inspections and testing of Cooling Water Heat Exchangers according to the protocols identified in the Heat Exchange Monitoring Program Document, unless HFSNR properly completes a deferral form prior to the scheduled inspection. All inspections shall follow recognized and generally accepted good engineering practices and be consistent with any site-specific protocols identified in the Heat Exchange Monitoring Program Document.

5. **Repairs, Corrective Actions, and Failures.**

a. If HFSNR identifies a Cooling Water Heat Exchanger Leak, HFSNR shall repair the Cooling Water Heat Exchanger Leak to reduce the measured concentration of total strippable hydrocarbon concentration to below 6.2 ppmv using the Modified El Paso Method at the cooling tower return line as soon as practicable, but no later than 45 Days after identifying the Cooling Water Heat Exchanger Leak, except as provided in Paragraph 5.c. Repairs may include, but are not limited to, the actions described in 40 C.F.R. § 63.654(d)(1)-(5). HFSNR shall confirm through additional monitoring that any repairs have reduced the measured concentration of total strippable hydrocarbon concentration to below 6.2 ppmv using the Modified El Paso Method at the cooling tower return line.

b. If HFSNR identifies a Non-Cooling Water Heat Exchanger Leak, HFSNR shall repair the Non-Cooling Water Heat Exchanger to reduce VOC emissions to the atmosphere to below 500 ppmv above background using Method 21 as soon as practicable, but no later than 45 Days after identifying the Non-Cooling Water Heat Exchanger Leak, except as provided in Paragraph 5.c. HFSNR shall confirm through additional monitoring that any repairs have reduced VOC emissions to the atmosphere to below 500 ppmv above background by confirming with Method 21 monitoring on the exterior of the Non-Cooling Water Heat Exchanger at the suspected leak location and surrounding interface points.

c. The repair times in Paragraphs 5.a. and 5.b. shall not apply if HFSNR demonstrates the following: (i) the repair is technically infeasible without a shutdown of the Covered Heat Exchanger; (ii) there is a safety, major mechanical, major product quality, or environmental issue associated with the repair attempt; or (iii) equipment, parts, or personnel are not available. HFSNR shall record and report the basis, including any relevant records to demonstrate the basis for the delay in accordance with Section XVI (Notices) of the Consent Decree.

d. HFSNR shall complete a RCFA within 150 Days of identification of a Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak. HFSNR shall identify the Failure Type in a RCFA Report. The RCFA Report shall include, but is not limited to, the following elements as applicable:

(1) Monitoring, inspection, and/or testing results of the Covered Heat Exchanger, as applicable, to determine the Failure Type;

(2) Review of relevant operating conditions prior to and at the time the Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak was detected for any contributing causes;

(3) Date(s) and description(s) of any Covered Heat Exchanger that was repaired, replaced, or eliminated, or where other corrective

action was performed, to address the Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak; and

(4) Subsequent evaluations and any updates to the relevant engineering document(s) to address minimum and maximum pressures, plugging issues, velocity, flow rates, and thermal efficiencies, as necessary, based on the Failure Type.

6. **Recordkeeping Requirements.**

a. HFSNR shall retain all relevant records for each Cooling Water Heat Exchanger Leak and Non-Cooling Water Heat Exchanger Leak. If requested by EPA or NMED, HFSNR shall make such records available to EPA or NMED upon request. Records include, but are not limited to, the following:

(1) The date(s) the Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak was initially discovered;

(2) The date(s) and results of any findings regarding additional non-routine monitoring required pursuant to Paragraph 3;

(3) The date(s) and results of any findings regarding all routine time-based or risk-based inspections and testing for Cooling Water Heat Exchangers required pursuant to Paragraph 4 and any applicable deferral forms completed prior to the scheduled inspection;

(4) Documentation of methods, techniques, or instruments used to detect the Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak;

(5) Calculation of any emissions exceeding any authorized or permitted VOC limit at a cooling tower within a Cooling Water Heat Exchange System; and

(6) Any leak where the Covered Heat Exchanger has been determined to be unfit for service and scheduled for replacement or elimination.

7. **Reporting Requirements.**

a. HFSNR shall submit the following certified reports and documents in accordance with Section VIII (Reporting Requirements) of the Consent Decree:

(1) The initial Heat Exchange Monitoring Program Document developed pursuant to Paragraph 2.

(2) All RCFA Reports generated in accordance with Paragraph 5.d.

(3) Within the semi-annual Consent Decree report, include the following information:

(a) Any missed monitoring under Paragraph 3;

(b) Any missed routine or non-routine inspection and/or testing under Paragraph 4;

(c) Completed deferral forms at Cooling Water Heat Exchangers under Paragraph 4;

(d) Cooling Water Heat Exchanger Leaks and estimated excess emissions from the associated cooling tower, if applicable;

(e) For any repairs delayed for a Cooling Water Heat Exchanger Leak or Non-Cooling Water Heat Exchanger Leak, documentation supporting claims for the basis of any delay pursuant to Paragraph 5.c.; and

(f) Any replacement or elimination of a Cooling Water Heat Exchanger that is unrelated to a Cooling Water Heat Exchanger Leak.

Appendix G

Emissions Testing Program

WHEREAS, the Parties discussed various options for testing and measurement related to VOC and benzene emissions from the Facility and Facility sources, and agreed to the Facility emissions testing and other requirements as set forth herein.

WHEREAS, with respect to Facility emissions testing, the Parties agree that solar occultation flux technology, used in combination with other technologies, may provide qualitatively useful short-term information about relative VOC and benzene emissions levels from area sources and may potentially be useful for identifying previously unidentified emissions, leaks, or other abnormal fugitive VOC and benzene emissions.

WHEREAS, HFSNR neither admits nor agrees that the results of the Refinery Emissions Test (as defined below) required by this Appendix and, if HFSNR elects to proceed, the Adjunct Refinery Emissions Test provide accurate and/or representative quantitative VOC and benzene emissions data regarding the Facility, discrete Facility areas, or individual sources at the Facility.

Refinery Emissions Test

1. Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 et seq. Except as otherwise specifically stated herein, all Paragraph references in this Appendix are references to the Paragraphs in this Appendix.

2. No earlier than 6 months prior to requesting termination of the Consent Decree pursuant to Section XXI (Termination), HFSNR shall conduct an emissions test intended to provide qualitative, short-term information about relative VOC and benzene emissions levels from the Facility (the "Refinery Emissions Test") in accordance with Paragraph 3.

3. No later than 120 Days prior to conducting the Refinery Emissions Test, HFSNR shall submit to EPA a proposed test protocol ("Proposed Test Protocol") that is substantially similar to the protocol set forth in Attachment 1, except as provided herein. Given the potential for scientific and/or technological developments and improvements in emissions testing subsequent to the Effective Date, HFSNR may include in the Proposed Test Protocol proposed improvements based on scientific and/or technological developments, along with a justification for any material changes to Attachment 1. Within 30 Days of receipt of the Proposed Test Protocol, EPA, in consultation with NMED, shall approve the Proposed Test Protocol if it is substantially similar to Attachment 1 or shall approve or deny the Proposed Test Protocol if it is not substantially similar. If the Proposed Test Protocol is rejected, within 30 Days of receipt of EPA's rejection, or such other time that HFSNR and EPA may agree, HFSNR shall revise and resubmit the Proposed Test Protocol. The Proposed Test Protocol shall be deemed approved if EPA does not take action within 30 Days of receipt of the original or, if applicable, revised proposal. HFSNR may not commence the Refinery Emissions Test until EPA, in consultation with NMED, has approved the Proposed Test Protocol or it is deemed approved.

4. In addition to the Refinery Emission Test required by Paragraph 3, HFSNR may at its sole discretion elect to perform an adjunct emissions test ("Adjunct Refinery Emissions Test") using a different method than the Refinery Emissions Test. If HFSNR so elects, then no later than 120 Days prior to conducting the Refinery Emissions Test, it shall submit to EPA a proposed adjunct test protocol ("Proposed Adjunct Test Protocol") that is substantially similar to the protocol set forth in Attachment 2, except as provided herein. Given the potential for scientific and/or technological developments and improvements in emissions testing subsequent to the Effective Date, HFSNR may include in the Proposed Adjunct Test Protocol proposed improvements based on scientific and/or technological developments, along with a justification for any material changes to Attachment 2. Within 30 Days of receipt of the Proposed Adjunct Test Protocol, EPA, in consultation with NMED, shall approve the Proposed Adjunct Test Protocol if it is substantially similar to Attachment 2 or shall approve or deny the Proposed Adjunct Test Protocol if it is not substantially similar. If the Proposed Adjunct Test Protocol is rejected, within 30 Days of receipt of EPA's rejection, or such other time that HFSNR and EPA may agree, HFSNR shall revise and resubmit the Proposed Adjunct Test Protocol or elect not to proceed. The Proposed Adjunct Test Protocol shall be deemed approved if EPA does not take action within 30 Days of receipt of the original or, if applicable, revised proposal. HFSNR may not commence the Adjunct Refinery Emissions Test until EPA, in consultation with NMED, has approved the Proposed Adjunct Test Protocol or it is deemed approved. If HFSNR elects to proceed with the Adjunct Refinery Emissions Test, that test shall be performed concurrently with the Refinery Emissions Test to the extent reasonably practicable.

5. HFSNR shall submit a final report for the Refinery Emissions Test and, if HFSNR elects to proceed, the Adjunct Refinery Emissions Test, within 90 Days of the completion of the test(s), or such other time that HFSNR and EPA may agree.

6. HFSNR shall have no obligation under the Consent Decree to take any action(s) in response to or based upon the results of the Refinery Emissions Test or Adjunct Refinery Emissions Test.

Attachment 1 to Appendix G

Protocol For Refinery Emissions Test

1. Test Plan Summary

The main objectives of the test plan are to measure site specific emission rates of benzene and volatile organic compounds excluding methane ("VOC"), along with repeated mobile concentration/column grid mapping to identify the distribution of benzene and VOC emissions across the site. Site specific benzene and VOC emissions will be calculated based on the results of measurements using three technologies described below, together with wind speed and direction data and complementary canister samples, which will be taken to a lab and analyzed via gas chromatograph with a flame ionization detector ("GC FID") and a mass spectrometer ("MS"). The technology utilized will be solar occultation flux ("SOF"), mobile extractive Fourier Transform InfraRed spectroscopy ("MeFTIR"), and mobile white cell differential optical absorption spectroscopy ("MeDOAS").

SOF will be used to measure emissions of alkanes (and alkenes if present), combining measured slant vertical columns with wind speed and direction measurements. Plume concentrations and concentration ratios of benzene and VOC to alkanes will be characterized both at the fenceline and closer to sources in specific source plumes. MeFTIR and MeDOAS will be used for the concentration measurements of alkanes and benzene. Both indirect and tracer gas assisted emission assessment quantification with MeFTIR and MeDOAS will be used on specific sources as applicable.

Indirectly measured emissions ("IME") utilize the directly measured alkane emission by SOF combined with concentration ratios of benzene to alkane measured by MeDOAS and MeFTIR. All instruments operate by sampling a source plume multiple times in order to obtain data with improved temporal coverage and suppress impact of any intermittent emissions. The indirectly measured emission estimation then operates on the average values. Simultaneous measurements are generally performed with the different instruments, but additional data will be sampled with MeDOAS and MeFTIR also during nighttime and cloudy conditions when SOF is not operating. The extractive MeDOAS and MeFTIR measurements will be complemented by canister samples of specific target VOC plumes for subsequent GC analysis, quality assurance and quality control ("QA/QC"), and data extrapolation purposes. Although not necessarily simultaneously measured, it is assumed that the different instrument measurements represent the same source plumes.

Wind speed and wind direction will be measured at multiple locations by means of a wind mast and a moveable vertical wind profiler (light detection and ranging, "LIDAR") on a continuous basis.

The emission results generated in the proposed test plan will be statistical averages over a specific time period, based on repeated measurements by multiple methods, and not reflect snap-shot emissions at a specific instant in time. Depending on site layout, meteorological conditions and plume accessibility the measurements will represent emissions from an area rather than emissions from a specific piece of equipment.

The aggregate uncertainty of the measurements including methods, observations and meteorology will be assessed within the study.

2. Test Program

a. Objectives

The main objectives of the test plan are to measure site specific mass emission rates of benzene and VOC, along with repeated mobile concentration/column grid mapping to identify the distribution of benzene and VOC emissions across the site. Additionally, the test plan will be performed in a manner that will allow comparison of certain data described herein (e.g., data from fenceline measurements) with data from HFSNR's existing benzene monitoring network. The objectives will be met by taking the steps identified below and described in more detail herein.

- Collect appropriate background measurements. All SOF, MeFTIR, and MeDOAS measurements of benzene and VOC are done as enhancement measurements over the present background, and background spectra are collected before each new measurement series and optically removed from the subsequent site plume measurements. After each measurement transect (typically 10-15 minutes duration), the background is observed again, effectively by observing if the enhancement over (start) background is back to zero, or if the background value has changed during the time of the measurement series. Typically, a measurement is conducted in a box, going both upwind and downwind of the source, to observe any incoming/interfering emissions from other source areas or a changing background. If a significant change in background is observed, the measurement would be disregarded because of the uncertainty caused by the background change.
- Measure emissions of alkanes emerging from the plant by SOF measurements of slant vertical columns combined with wind speed and direction measurements.
- Characterize plume concentration ratios of benzene and VOC to alkanes both at fenceline and closer to sources, for indirect emission assessment. Mobile and stationary MeFTIR and MeDOAS will be used for the concentration measurements.
- Characterize key target VOC plumes (as identified by the MeFTIR and MeDOAS measurements) with canister samples for subsequent GC analysis. The canister data will be used for QA/QC purposes of MeFTIR and MeDOAS data and for extrapolation of canister VOC by indirect VOC emission assessment where VOC concentration ratios versus alkanes are combined with SOF alkane emission results.
- As applicable, deploy tracer gas measurements inside the facility to quantify specific sources and also utilize HFSNR's OGI equipment.
- Measure wind speed and wind direction at multiple locations by means of wind mast and a moveable vertical wind profiler (LIDAR) on a continuous basis.

- Obtain GPS time and location stamps for all measurements.
- During the test period, obtain production rates and logs of major production activities that could impact observed emissions, and obtain logs for any deviations from normal production.

b. Test Matrix

10 good measurement days with good sun and wind conditions will be conducted to characterize and quantify the emissions and to pinpoint specific sources. This extent of the survey will also give some understanding of the temporal aspect of any emissions, and whether an observed emission originates from an intermittent or continuous emission source. The overall VOC emissions will be measured by combined measurements of different VOC compounds. SOF will provide direct emission measurements of alkanes. Extractive measurements by MeFTIR, MeDOAS, and canister samples will provide further VOC speciation of alkane, alkene, and aromatic VOCs. The mass ratio of different VOCs versus alkanes will then be used to obtain indirect emission estimates by combining the VOC mass ratios with the alkane emissions obtained by SOF.

Table 1. Test matrix of main measurement targets. SOF, MeFTIR, MeDOAS and canisters will be operated on all targets.

Estimated Measurement Day	Area of Focus	Primary Gases	Comment
1-3	Multiple transects around the facility and on site overall facility characterization	Benzene, VOC	Overall measurements to establish total facility emissions and identify specific areas of concern
4-5	Product tanks and crude tanks Night-time fenceline concentration measurements	Benzene, VOC	Identify specific tanks/equipment emissions, tracer gas/OGI as deemed necessary Measurements inside facility
6-7	Process and loading areas	Benzene, VOC	Identify specific tanks/equipment emissions, tracergas/OGI as deemed necessary Measurements inside facility

8-9	Wastewater treatment area Night-time fenceline concentration measurements	Benzene, VOC	Assess emission contribution from wastewater treatment Measurements inside facility
10	Fenceline measurements of the aggregate site plume-overall facility characterization	Benzene, VOC	Overall measurements to establish total facility emissions

Table 2. Test method overview and detection limits. SOF will provide direct measurements of alkane emissions. Emissions of other VOCs will be derived by extractive plume measurements using MeFTIR, MeDOAS and canister samples, where VOC mass fractions versus alkanes will be used along with SOF alkane emissions to indirectly obtain the total VOC emission.

Method:	**SOF**	**MeFTIR**	**MeDOAS**
Compounds	**Alkanes**: (CnH2n+2) **Alkenes**: (CnH2n)	**Alkanes:** (CnH2n+2) **Alkenes**: (CnH2n) **N2O (tracer)**	**Benzene** **BTEX**
Detection limit Column	1-2 mg/m2	1-10 ppbv	Benzene 0.5 ppbv, BTEX 1-5 ppbv
Detection limits Direct Flux (SOF) or inferred flux from concentration ratios by MeFTIR/MeDOAS combined with direct flux from SOF	0.5-1 kg/h	0.2-2 kg/h	Benzene: 0.2 kg/h BTEX: 0.5-2 kg/h
Detection limits with tracer release and MeFTIR+MeDOAS nearby (20-100 m) localized source		Alkanes, alkenes: 0.25 kg/h	Benzene: 0.1 kg/h BTEX: 0.25

Wind Speed Tolerance	1.5-12 m/s		
Sampling Time Resolution	1-5 s	5-15 s	8-10 s
Measured Quantity [unit]	Integrated vertical column mass [mg/m2]	Mass concentration at Vehicle height [mg/m3]	Mass concentration at Vehicle height [mg/m3]
Indirect Quantity [unit]	Mass Flux [kg/h]	1) Alkane ratio of ground plume combined with SOF gives height information [m] 2) Alkane flux [kg/h] via tracer release	Combined with MeFTIR and SOF gives Mass Flux [kg/h] (IME) or combined with MeFTIR + tracer [kg/h]
Additional data	Vehicle GPS-coordinates, Plume wind speed and direction	Vehicle GPS-coordinates Plume wind direction	Vehicle GPS-coordinates, Plume wind direction

3. Sampling Locations

Measurements will be conducted in a mobile mode, where the mobile lab is driven near the facility installations and further away at the fenceline.

Figure 1 displays planned main routes for the mobile measurements pending approval based on operational and safety constraints. The close-by measurement routes will be driven slowly in order to obtain good spatial resolution in the continuous measurements, and hence gain knowledge of specific emission locations, if any.

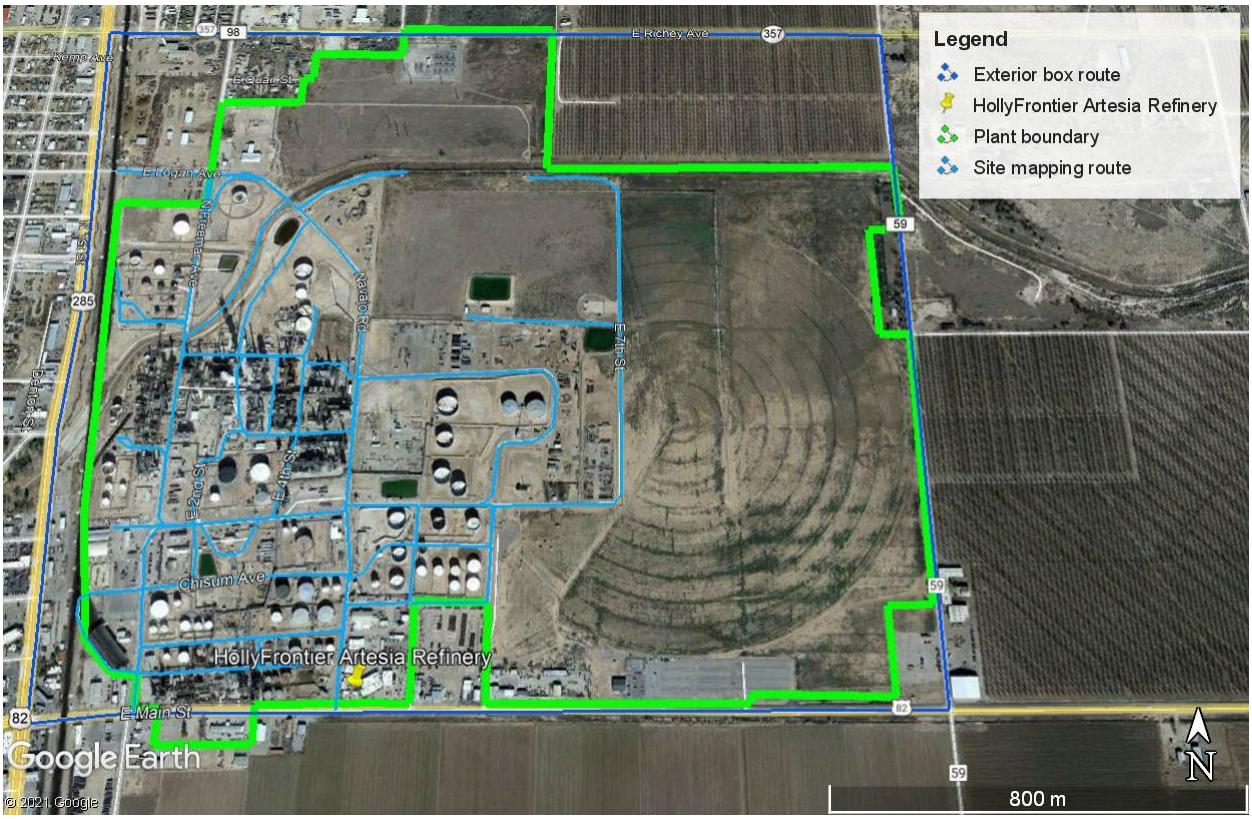


Figure 1: The facility map and the routes in which the measurements will be conducted.

The fenceline routes will be used to screen the overall site emissions as well as to attempt to identify any interfering emissions from neighboring sites.

The wind will be monitored by a moveable vertical wind profiler (LIDAR) that will be placed near the location of the measurements.

Concentration measurements for screening and concentration ratios will be done from the mobile lab platform on all routes. Specific sources, as identified during the screening, may also be identified with tracer release measurements when applicable.

At a minimum, the process areas delineated in Figure 2, that were measured in the 2022 testing, shall be replicated for specific and discrete testing as further described in Table 3.

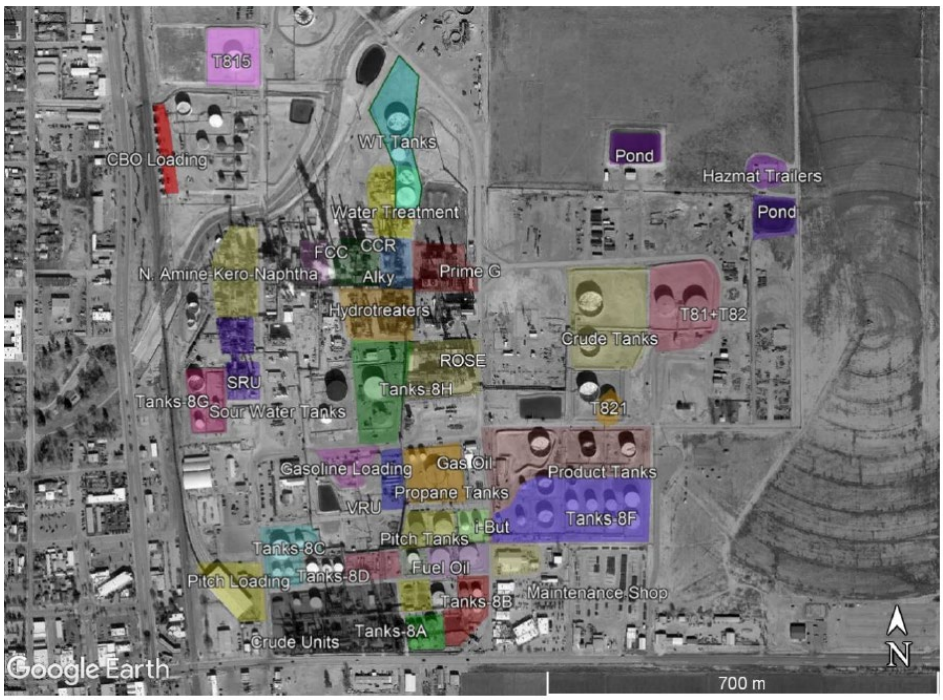


Figure 2. Location of specific sampled units within the facility. Map from Google Earth™, 2022.

Table 3. Summary of Area Emissions.

Area	Days	N	Alkane				Benzene		
			Median	Average	SD	CI-95%	Emission	Ratio	Ratio
			[kg/h	[kg/h]	[kg/h]	[kg/h]	[kg/h]	N	[%]
Product Tanks									
Pitch & Fuel Oil									
Crude Units									
Water Treatment (WT)									
WT+PrimeG+ Alky+DHT									

4. Sampling and Analytical Procedures

a. Test Methods

The measurement vehicle or "mobile lab" is equipped with 3 optical instruments for gas monitoring: SOF, MeFTIR, and MeDOAS. The individual measurement methods are described below.

SOF measures gas columns through the atmosphere by means of light absorption, utilizing infrared light from the direct sun. MeFTIR and MeDOAS both measure ground level concentrations. Both instruments are used in extractive mode where ambient air is pumped from attached inlet tubing through the optical cell while being analyzed in real time. MeDOAS analyzes benzene and BTEX components, whereas MeFTIR samples alkanes and alkenes. In addition, canister samples are taken in parallel to the MeFTIR and MeDOAS for additional speciation of present VOC by GC-FID-MS analysis and for QA/QC of the compounds being measured by the other methods.

Accurate wind data is necessary in order to compute emission fluxes. Wind information is derived from several different sources. A moveable wind LIDAR is used to measure vertical profiles of wind speed and wind direction from 10-300 m height. The LIDAR data is combined with data from a 10 m wind mast. Figure 3 gives a general overview of the measurement setup and the data flow.

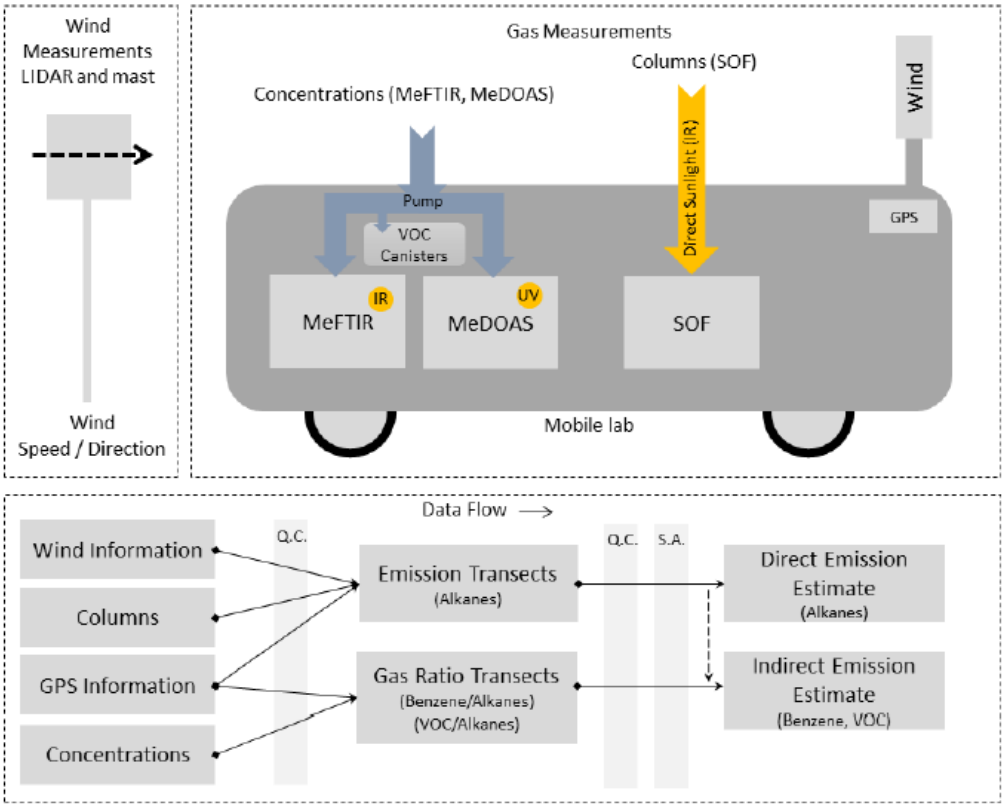


Figure 3. Overview of the mobile lab main instruments; SOF, MeFTIR, MeDOAS, canisters and wind measurements and simplified data flow diagram (lower panel). The data flow describes what information that goes into the flux emission estimates. Direct flux emissions are given from measured columns (SOF) of alkanes while indirect fluxes are calculated via gas concentration ratios (MeFTIR,MeDOAS and canisters) versus alkanes. See Appendix 1 for principal equations. All emission flux estimates are based on statistical analysis of measured data. Q.C. = Quality Control, S.A.= Statistical Analysis (see Appendix for details).

In order to derive final emission flux estimates, the GPS-tagged gas column measurements by SOF are combined with wind data and integrated across plume transects at the various source locations. Gas mass ratio measurements versus alkanes obtained by MeFTIR and MeDOAS are then combined with the direct flux of alkanes measured by SOF to indirectly estimate the emissions for benzene and BTEX. In the same manner, additional VOC mass concentration data from canister samples of target plumes will be used for indirect emission assessment using SOF data.

The overall uncertainty for emission estimates based on optical remote sensing methods, such as the proposed SOF method, is dominated by uncertainties in the wind field. In the flux calculation, the measured (vertical or slant) concentration columns are associated with an average plume transportation speed. In this process the wind speed and direction are first measured, and in the next stage the concentration profile (e.g., the plume allocation by height) is addressed in order to attribute a plume transportation speed. Additional information about the accuracy and precision of all of the methods is provided in Appendix 1.

b. Process Data

In order to cross-correlate observed emission plumes with plant operation activities, during the test period HFSNR will obtain pertinent process data and maintain detailed logs including:

- Production rates and times for terminal loading operations.
- Logs for any deviations from normal production that may impact benzene and VOC emissions.

5. QA/QC Activities

a. SOF

- Verify that FTIR spectrometer is operational (e.g., that all internal operational check flags are in order, such as laser amplitude, interferometer block, etc.).
- Verify that GPS is operational and has sufficient amount of satellites (3+).
- Check that data storage disc has sufficient space.
- Check that amplification for the solar tracker is properly set so that the tracker can lock properly on the sun without oscillating.
- Check that vibration mounts are sufficiently filled with air.

- Check light intensity so that the ADC (analog-digital converter) receives more than 1500 for the InSb (indium antimonide) detector.
- Check interferogram for any abnormal oscillations.
- Check that an RMS of <0.15% can be achieved in stationary mode.
- Check retrieved concentration columns in different vehicle orientations to verify that the tracker is properly aligned (alkane column offsets <3 mg/m2).
- Check stationary stability in retrieved concentration columns to verify operation and stable background.
- Check for consistent background columns at the plume edges before and after the plume scan and note significant deviations.
- Check spectral fit to observe any interfering absorption not handled by the evaluation retrieval.

b. MeFTIR

- Verify that FTIR spectrometer is operational (e.g., that all internal operational check flags are in order, such as laser amplitude, interferometer block, etc.).
- Verify that GPS is operational and has sufficient amount of satellites (3+).
- Check that data storage disc has sufficient space.
- Check that amplification for the sandwich detector is properly set so that both channels are operational without saturation.
- Check that vibration mounts are sufficiently filled with air.
- Check that light intensity is sufficient.
- Check interferogram for any abnormal oscillations.
- Verify pump operation and pressure in the gas cell (a few mbars below ambient in normal operation).
- Check that an RMS of <0.2% can be achieved in stationary mode.
- Check stationary stability in retrieved concentration to verify operation and stable background.
- Check for consistent background concentrations at the plume edges before and after the plume scan and note significant deviations. Consistent concentrations at the plume edges along with upwind measurements will indicate if significant interfering inflow of the target species is taking place.
- Check spectral fit to observe any interfering absorption not handled by the evaluation retrieval.
- Check background concentrations for consistency (N2O).
- Verify pathlength with laser/halogen lamp.
- Conduct spike tests with sample gas.

c. MeDOAS

- Verify that DOAS spectrometer is operational (e.g., that all internal operational check flags are in order, such as shutter, slit width, grating, etc.).
- Verify that GPS is operational and has sufficient amount of satellites (3+).

- Check that data storage disc has sufficient space.
- Check that vibration mounts are operational.
- Verify pump operation and pressure in the gas cell (a few mbars below ambient in normal operation).
- Check light intensity and adjust exposure so that the detector does not get saturated at any wavelength (e.g., less than 65,000 counts for a single spectrum at all columns of the CCD).
- Check that an RMS of <0.05% can be achieved in stationary mode.
- Check stationary stability in retrieved concentrations to verify operation and stable background.
- Check for consistent background concentrations at the plume edges before and after the plume scan and note significant deviations. Consistent concentrations at the plume edges along with upwind measurements will indicate if significant interfering inflow of the target species is taking place.
- Check spectral fit to observe any interfering absorption not handled by the evaluation retrieval.
- Verify pathlength with laser/halogen lamp.
- Conduct spike tests with sample gas.

d. Wind LIDAR

- Verify that the LIDAR is aligned towards true north (e.g., compensate for the magnetic declination at the site).
- Verify that the instrument has a free field of view within a ±17-degree cone from zenith.
- Verify that power supply is operational and battery capacity sufficient.
- Check that backscatter signal is sufficient for wind data retrieval in the 10-300 m range.
- Check that data storage disc has sufficient space.
- Observe wind LIDAR data output at start-up.
- Backup wind data on a daily basis.

e. Wind Tower

- Verify that the wind tower is aligned towards true north (e.g., compensate for the magnetic declination at the site).
- Verify that the wind meter is not obstructed.
- Verify that power supply is operational and battery capacity sufficient.
- Check that wind speed and direction data are reasonable.
- Check that data logger has sufficient space.
- Observe wind logger data at start-up.

- Backup wind data on a daily basis.

f. Canisters

- Maintain chain of custody.
- Check canister for vacuum prior to sampling.
- Flush any sample restrictors/nozzles prior to sampling.
- Record time from vacuum to full canister for consistency check.
- Note initial and final canister pressure.
- Label canister with location, time (start and stop), date, and operator.

6. Reporting and Data Reduction Requirements

a. Report Format

TABLE OF CONTENTS
1.0 Introduction
1.1 Summary of Test Program
1.2 Key Personnel
2.0 Source and Sampling Location Descriptions
2.1 Process Description
2.2 Control Equipment Description
2.3 Sampling Locations
2.4 Background Locations
3.0 Summary and Discussion of Results
3.1 Objectives and Test Matrix
3.2 Field Test Changes and Problems
3.3 Summary of Results
4.0 Sampling and Analytical Procedures
4.1 Emission Test Methods
4.2 Sample Identification and Custody
4.3 Limitations and Uncertainties
5.0 QA/QC Activities
APPENDICES

The report will include electronic copies of relevant data used to derive the emissions estimates.

b. Data Reduction and Summary

The test plan comprises several measurement instrumentations from which data will be combined to cover the test plan objectives. The main objectives are to attempt to quantify overall emissions of benzene and VOC from the Facility and to identify sources of the emissions. The measurements include:

- Optical remote sensing techniques (SOF) with main data output being geo-tagged vertical mass columns of alkanes.
- Wind measurements, resulting in wind speed and wind direction data at various positions and altitudes.
- Geotagged concentration measurements (MeFTIR, MeDOAS, and canisters), providing leak search mapping, mass concentration, and mass concentration ratios of benzene and VOC to alkanes at various positions.
- Tracer gas measurements by MeFTIR and MeDOAS at specific sources for direct quantification, resulting in average concentration ratios, tracer release rates, and derived source emission rates.

The measurements (according to Section 4) are mobile in nature, hence concentration and column data are associated with a GPS position (rather than a static location), and related to current wind speed and wind direction at the time of the measurement.

The measurements integrate the cross section of the emission plume from the site, and on the upwind side for any background influence respectively. The data reduction, resulting in the emission estimates, include assessment of any upwind fluxes interfering with the measured flux on the downwind side of the source(s). Table 4 summarizes the data reduction steps and units.

Table 4. Summary data reduction table.

Method	Component	Unit	Associated Data	Resulting Data and Unit
SOF	Vertical integrated concentration column: Alkanes	[mg/m2]	GPS positions, wind speed and direction, mass concentration ratios	Emission estimate, kg/h [(mg/m2) x (m) x (m/s) => kg/h]
MeFTIR	Mass concentrations: Alkanes, tracer gas	[µg/m3]	GPS positions, MeDOAS	Average mass concentration ratios, [(µg/m3) / (µg/m3) => unitless]
MeDOAS	Mass concentrations: Benzene, BTEX	[µg/m3]	GPS positions, MeFTIR	Average mass concentration ratios, [(µg/m3) / (µg/m3) => unitless]
Canisters	Mass concentrations: VOC (alkanes, alkenes, aromatics)	[µg/m3]	GPS positions, MeFTIR MeDOAS	Average mass concentration ratios, [(µg/m3) / (µg/m3) => unitless]
GPS	Latitude, Longitude, Time	[Deg N], [deg W], [s]		
Wind LIDAR	Wind speed and wind direction at different heights	[m/s], [deg 0-359]		
Wind tower	Wind speed and wind direction	[m/s], [deg 0-359]		

Attachment 2 to Appendix G

Protocol for Alternative Refinery Emissions Test

1. Test Plan Summary

The main objectives of the test plan are to measure site specific mass emission rates of benzene and volatile organic compounds excluding methane ("VOC"), along with repeated mobile concentration/column grid mapping to identify the distribution of benzene and VOC emissions across the site. The project objective is to conduct individual point flux measurements on a multi-dimensional grid along upwind and downwind fencelines and other locations and elevations up to 100 meters in altitude. The mobile monitoring platform and an unmanned aerial vehicle (UAV) will be used to perform real time analysis of air samples at multiple elevations at HFSNR. A spectrometer installed on the van will be used to detect the plumes. The total flux will be calculated using the proton-transfer-reaction time-of-flight mass spectrometer ("PTR-TOF-MS"), a photoionization detector ("PID"), a 3D ultrasonic anemometer, and a bi-variate flux model. This will provide mobile monitoring measurements of point and total flux (mass/time) for both benzene and VOCs for the determination of the ambient concentration flux measurements moving across the refinery fenceline and other locations.

2. Test Program

This section summarizes the proposed instrumentation and methods that will be employed during the test program.

a. The PTR-TOF-MS

PTR-TOF-MS provides real-time measurement of multiple VOCs, including benzene, at ultra-trace levels (i.e., in the ppt and low-ppb range). Its strengths lie with the ability to measure VOCs in real-time (1-second increments) and continuously compared to a gas chromatograph ("GC") system, which is commonly the method of choice to measure VOCs using a variety of detectors. The PTR-TOF-MS is equipped with a time-of-flight mass spectrometer that gives the capability of high sensitivity and mass resolution. Hydronium (H3O+) will be the reagent ion used during the benzene testing. The proton-transfer chemistry takes place in a drift-tube reactor. The ionization can be characterized as soft since there is no significant fragmentation in most of the VOCs. This allows for an easier interpretation of the mass spectra. The PTR-TOF-MS can detect organic compounds that are volatile and have a proton affinity higher than H2O (691 kJ mol-1).

The PTR-TOF-MS technology provides immediate measurement with ultra-low, part per trillion (ppt) identification of benzene, while following sampling and QA/QC protocols analogous to various EPA and ASTM reference methods. ASTM Method D8460-22 "Standard Test Method for Quantification of Volatile Organic Compounds Using Proton Transfer Reaction Mass Spectrometry" (ASTM D8460-22) has been recently published on the use of the PTR-TOF-MS for the detection and analysis of VOCs in the air. This technology has been used by multiple governmental organizations such as DOE, NOAA, NASA, EPA, SCAQMD, and CARB and provides real time data at 1 point per second responses and may be deployed in various mobile setting, including a mobile van platform for fast response or a path integrated average validation of fenceline technologies. The PTR-TOF-MS sampling system will be validated for field testing

of benzene using USEPA Method 301 "Field Validation of Pollutant Measurement Methods from Various Waste Media" ("M301"). This method proposes a test method to meet a US EPA requirement in the absence of a validated method. This testing method includes procedures for determining and documenting the quality (i.e., systematic error (bias) and random error (precision)) of the measured concentrations from an effected source. M301 is a self-validating method (i.e., if the M301 required sampling criteria can be met using the proposed instrumentation package, then the sampling system is deemed "valid" upon successful completion of the validation criteria and standards specified within the various sections of M301). The PTR-TOF-MS has been tested and validated for multiple compounds from various sources.

b. The PTR-TOF-MS Mobile Laboratory

The mobile platform houses a PTR-TOF-MS instrument, auxiliary instrumentation to perform in-field measurements and a full weather station with GPS unit.

In addition, the mobile platform is equipped with a PID that can measure VOC (detection limit =100 ppb). The mobile platform is designed to house additional instrumentation when needed for non-routine testing. The lab is built on a van and outfitted to allow for continuous monitoring while driving at highway speeds and in any season. The system can be operated in both day and night hours and in inclement weather conditions.

Two main sampling options are available: (i) direct feed through a snorkel above the roof top of the vehicle, or (ii) by attaching a sampling hose (up to 100 meters) to a side-port of the van. This allows sampling from locations not readily accessible to the mobile lab.

The combination of the PTR-TOF-MS with the mobile laboratory represents a real time mobile platform technology. A 3D ultrasonic anemometer will be used to determine point flux measurements by examining wind velocity and direction at elevation and across a grid of equally spaced points up to elevations of 100 meters. This system provides granularity with high confidence and accuracy, and eliminates any assumptions that are taken when using generalized flux/emission models to determine the fenceline flux and the total emissions.

c. The Spectrometer

The spectrometer is chosen for applications requiring high sensitivity, good UV-NIR response and wide dynamic range. The spectral range in which the detector responds is 165-1100nm. It can use the sunlight as the light source during outdoor operations (Figure 1). It provides data in a time resolution of 5 seconds. The device is lightweight 0.96 kg (2.1 lb.) and with a small footprint (148.6 x 109.2 x 46.4 mm) which makes it ideal for an installation on the top of the mobile platform. This spectrometer will be configured for the measurement of benzene and will be used to identify any plumes.

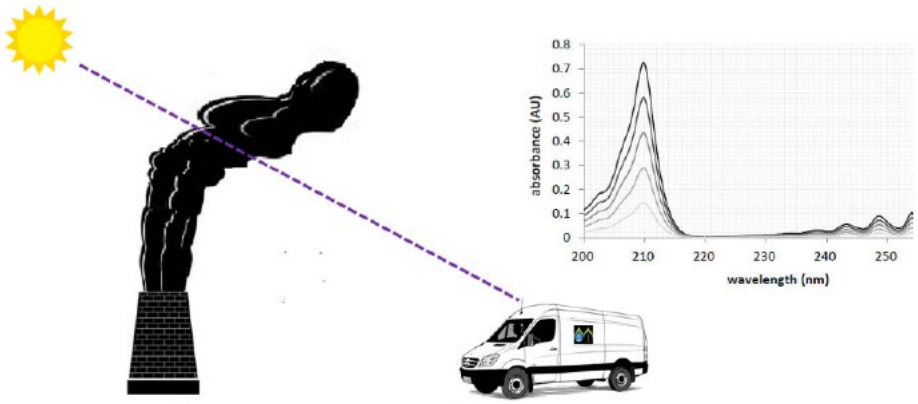


Figure 1. Detection of plumes using a UV NIR spectrometer.

d. Vertical Distribution of Gas Emissions Using an UAV

A program will be focused on the use of UAVs equipped with sensors that can be used for detection of leaks and fugitive emissions inside, as well as outside, the fenceline of chemical facilities. These UAVs are equipped with optical gas imaging (OGI) cameras and mid-infrared absorption spectroscopic detectors that can identify VOCs and methane specific leaks.

The UAVs will be combined with the PTR-TOF-MS mobile platform. The 100 meter 1/8" I.D. PTFE sampling line from the PTR-TOF-MS mobile laboratory will be mounted on the sampling UAV. The length and size of the tubing has been selected based on the total weight that the UAV can carry.

The PTFE sample line, along with an altimeter, will be flown to specific heights using the UAV to collect and send air samples to the mobile platform located at ground level. The air sample is then split and sent to a PID and the PTR-TOF-MS for total hydrocarbon and benzene analysis, respectively.

A 3D ultrasonic anemometer will also be installed on the top of the UAV. The 3D ultrasonic anemometer is used to generate point calculations of wind vectors and velocities in upward or downward directions at the location of the UAV. The combination of the anemometer with the PTR-TOF-MS measurements to determine point flux values, provides granularity and eliminates many of the assumptions that must be made with more generalized flux/emission models currently being used to determine fenceline flux and plant emission factors (Figure 2). The data will be utilized to create a map of columnated average point flux measurements and will also be used to calculate total fenceline flux measurements for benzene and total VOC.

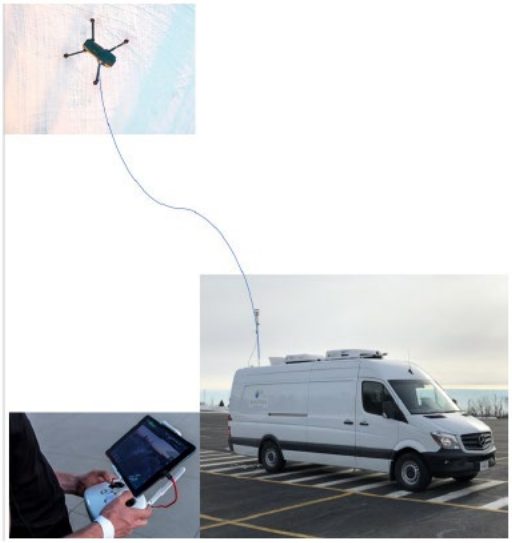


Figure 2. Real time measurements of benzene and VOC at different altitudes using a UAV with the PTR-TOF-MS mobile platform.

This system can be utilized to measure concentrations of benzene and VOC at a point in time and space across a grid of equally spaced points across various fencelines around and within a facility to provide a point flux at that location. The point flux calculations are systematically graphed on a planar representation of the location and integrated across all points to provide a total location flux for benzene and total VOC up to 100 meters in height above the location. The mobile platform is then moved to the next location and repeated until all representative points are measured and wind velocity is determined at that all points. The UAV can perform measurements in ambient temperatures ranging from -20°C to 50°C in the absence of heavy precipitation. It can also handle wind speeds up to 33.5 mph. The mobile laboratory can perform continuous measurements without restrictions related to any environmental factors.

The accuracy of the system is estimated to be +/- 5% for each measurement (1 data point per second) at a point in time and space which is coupled to the wind velocity and direction at that point with unprecedented detection limits of <100 ppt for benzene and 100 ppb for total VOC. Each point may be measured for a period of time required to obtain a representative benzene and total VOC measurement at 1 data point per second and from 1-12 meters per second wind velocity.

e. Flux Calculations

The calculations are based upon a bi-variate flux model where one or more interacting plumes affect each other in time and space. A bi-variate Gaussian profile is fit to all concentration and anemometer measurements collected for the specific identified plume. A single plume may be modeled based upon empirical data gathered at site from absolute measurements of benzene and total VOC by first driving the PTR-TOF-MS mobile platform along the relevant locations actively scanning through a snorkel for ground level plume measurements at time increments of

1 data point per second with a sensitivity of approximately 100 part per trillion (ppt) for benzene and 100 ppb for total VOC. Once a plume is detected, as benzene plumes are almost always touching the ground, the mode of the plume is found and absolute measurements are made with the UAV equipped with a 1/8" PTFE line actively pulling ambient air at a flowrate of 2 lpm at elevation to find the mean, median, and mode of the plume. The calculation for a single plume is as follows:

$$G(y,z) = \frac{A}{2\pi\sigma_y\sigma_z} exp\left\{-\frac{1}{2}\left[\frac{(y-m_y)^2}{{\sigma_y}^2} + \frac{(z-m_z)^2}{{\sigma_z}^2}\right]\right\}$$

The bivariate Gaussian has 5 unknown independent parameters:

A = normalizing coefficient which adjusts for the peak value of the bivariate surface;

m_y and m_z = peak locations in Cartesian coordinates; and

σ_y and σ_z = standard deviations in Cartesian coordinates.

The example output from this distribution is modeled through the following (Figure 3).

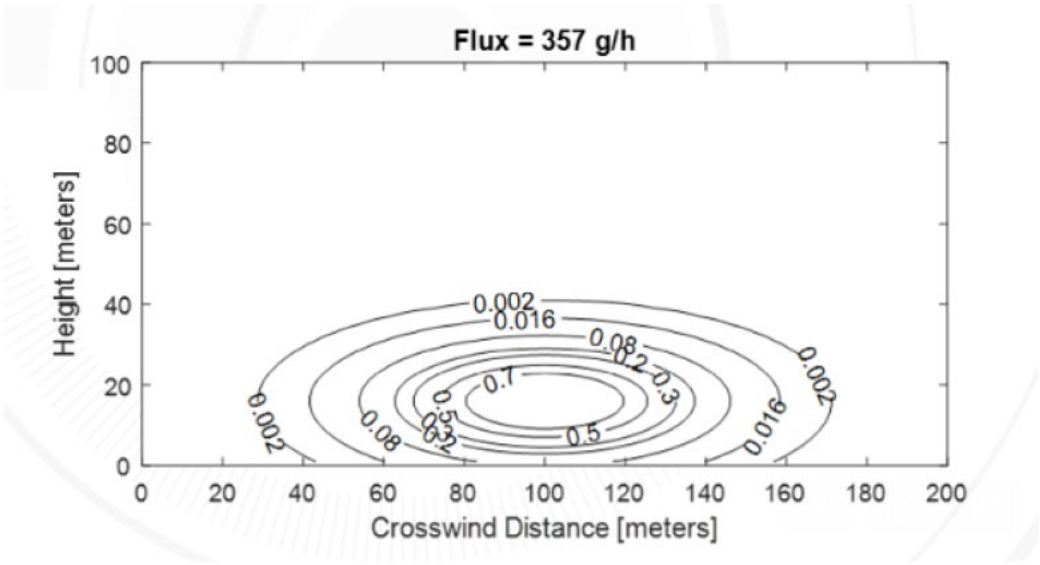


Figure 3. Single plume distribution.

When two plumes are overlapping as in the vertical plane, they may be modeled using the plot of the concentration contours as in the following example output (Figure 4).

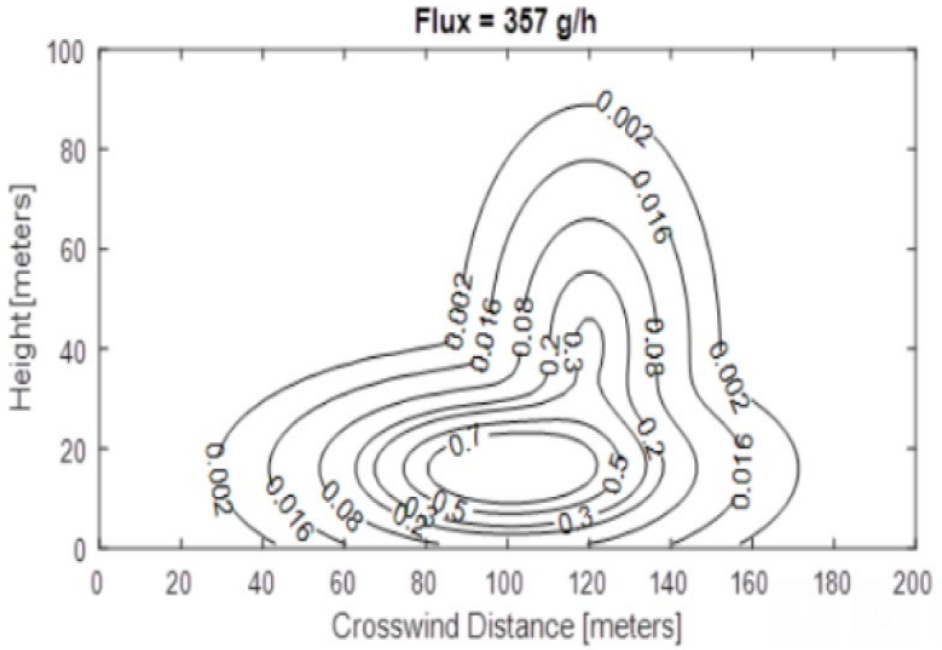


Figure 4. Two plumes plume overlapping contour.

f. Grid Sample Collection along Fenceline Distance

The emission mass flux (Q) of species (j) for a single transect (T) across the plume (P) long path (l), can be expressed by the following integral (Si-units in gray brackets):

$$Qj \text{ [kg/s]} = \bar{vT}\text{[m/s]} \cdot \int Cj \text{ [kg/m2]} \cdot \sin(\alpha l)\, dl \text{ [m]} \quad (2)$$

where,

$\bar{vT}$ = the average wind speed at plume height for the transect,
C = the measured column densities for the species j
αl = the angles between the wind directions and driving directions
dl = the driving distance across the plume

3. Operations

This section describes the proposed operation plan. In the first step the mobile platform will perform ground-based measurements inside and outside the fenceline (Figure 5). This step is focused on the identification of large emissions plumes.

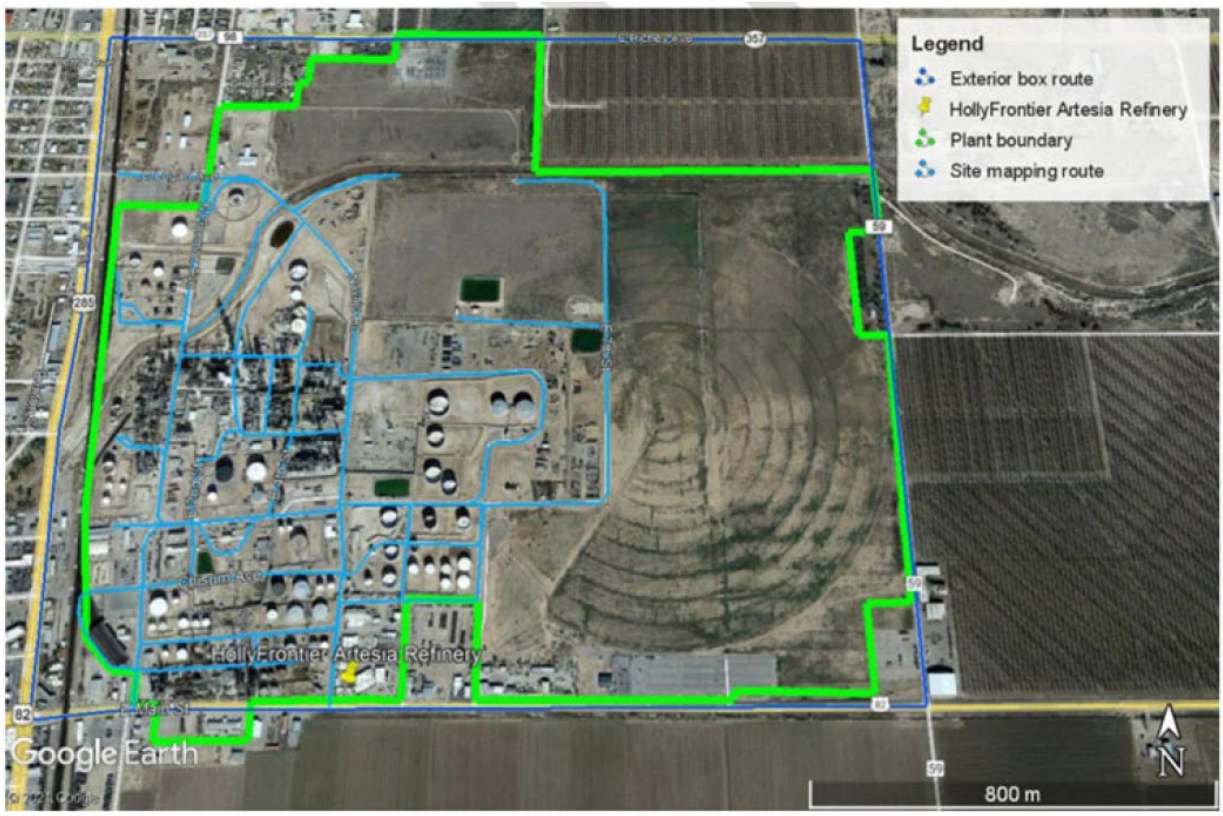


Figure 5. The facility map and the routes in which the measurements will be conducted. The cyan line indicates the locations in which ground level measurements will be conducted using the mobile lab. The blue line indicates the route in which downwind fenceline measurements will be conducted at the ground level and at high altitude measurements using the mobile lab and the UAV. The green line is the plant boundary.

In the second step, the mobile platform will collect and analyze downwind air samples, at the fenceline. The spectrometer is used to detect the location of the plume. The PTR-TOF-MS concentration measurements at the ground level confirm the location and the peak concentration of benzene in the plume. When the benzene concentration is over 2-3 times the background levels (upwind), the mobile platform stops and the GPS coordinates are noted.

The platform is then driven through the plume at a speed of 10 mph and at least 3 repeated passes are made at the ground level to create an averaged cross wind horizontal profile.

The platform is then parked at the location where the highest benzene and total VOC concentration was measured (the mode of a Gaussian profile) and equipment is dispatched that allows elevation of the UAV up to 3 times, collecting data both up and also while driving (6 vertical profiles around the peak of the horizontal profile).

A bi-variate Gaussian profile of all the concentration data collected for the specific identified plume is plotted. In addition, the profile of wind speed and direction is determined and combined with the concentration values in any pixel of the bi-variate Gaussian plume. The total flux is calculated by spatial integration of the concentration of each compound.

This procedure is repeated around the facility on both upwind and downwind sides of the relevant locations. The number of the flux measurements conducted will be dependent on the number of the plumes identified each day's sampling period. A summation of all point and vertical fluxes measured and calculated with their relevant signs (upwind negative, downwind positive) provides the total flux. The flux for each event is produced in real time at the mobile platform. The total flux is calculated in the post analysis validated report.

At a minimum, the process areas delineated in Figure 6 shall be included for specific and discrete testing as further described in Table 1.

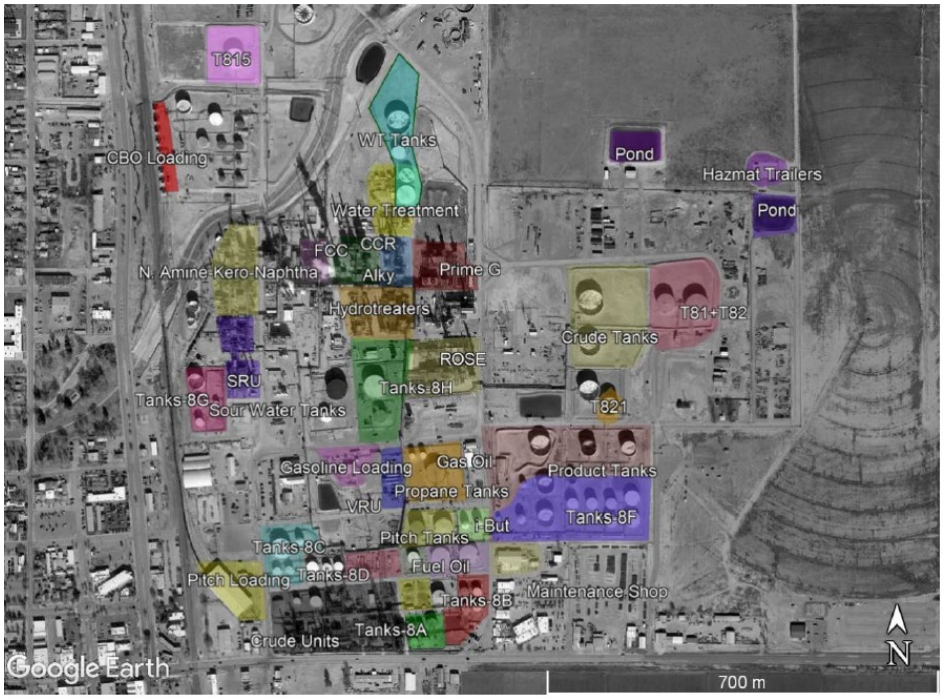


Figure 6. Location of specific sampled units within the facility. Map from Google Earth™, 2022.

At a minimum, the process areas summarized in Table 1 shall be included for specific and discrete testing and Table 1 shall be completed.

Table 1. Summary of area emissions.

Area	Days	N	Total VOC				Benzene		
			Median [kg/h]	Average [kg/h]	SD [kg/h]	CI-95% [kg/h]	Emission [kg/h]	Ratio N	Ratio [%]
CCR+HT44-45									
FCC									
SRUs									
Tanks CBO+8J									
T815									

Crude Tanks									
Product Tanks									
Pitch & Fuel Oil									
Crude + Product Tanks									
Crude Units									
Texas Ave – Chisum box									
Candy Cane									
Blending Sump (near Maintenance Shop)									
Water Treatment (WT)									
WT+PrimeG + Alky+DHT									
WT+Alky+DHT									
WT+PrimeG									
WT Tanks									
Tanks 8G									
T81+T82									
Sour water									
Gasoline loading									

Appendix H

Protocol for Leak Detection Sensor Network

Section 1 Background and Purpose

1.1 As part of the settlement embodied in the Consent Decree, HFSNR shall operate a Leak Detection Sensor Network at its Artesia Refinery consistent with this Protocol.

Section 2 Definitions

2.1 Except as otherwise defined herein, the terms herein shall have the meaning defined in the Consent Decree and the Clean Air Act, 42 U.S.C. § 7401 *et seq.* Except as otherwise specifically stated herein, all Section references in this Appendix are references to the Sections in this Appendix.

2.2 "Initial Screening Investigation" has the meaning set forth in Section 5.2.

2.3 "LDSN" means the Leak Detector Sensor Network of existing Molex, LLC ("Molex") sensors and related equipment in the Crude Unit. See Attachment 1.

2.4 "LDSN Auditor" means the independent third-party auditor retained by HFSNR pursuant to Section 6.1.

2.5 "Leak" means leak from a source as defined in Table 1.

2.6 "Operation Period" means the period of time the LDSN is required to be in operation pursuant to Section 3.1.

2.7 "Protocol" means this Protocol for Leak Detector Sensor Network.

2.8 "PSL" means potential source location.

2.9 "PSL box" means the rectangle(s) identified by the LDSN as the PSL of leaks which is depicted as part of the PSL Notification.

2.10 "PSL Notification" means a 72-hour lookback performed a minimum of once per day that includes the previous 24-hour period to determine the percent of time positive detections were registered. Positive detections are defined as peak excursions above the detection floor. If positive detections are registered for at least 5 percent of the time during the rolling 72-hour lookback, a PSL Notification must be issued.

2.11 "PSL Update Notification" has the meaning set forth in Section 5.4.

2.12 "Second Screening Investigation" has the meaning set forth in Section 5.3.

2.13 "Sensor" means an individual Molex sensor that is part of the LDSN.

Section 3 Leak Detection Sensor Network

3.1 HFSNR shall operate the LDSN in compliance with this Protocol for 2 years from no earlier than January 1, 2025, and no later than the Effective Date. In the event this period does not include all of the 6 initial monthly LDSN audits and 6 subsequent quarterly LDSN audits required by Section 6.1 for any reasons (including the departure of an LDSN Auditor), HFSNR shall continue to operate the LDSN until all of the 6 initial monthly LDSN audits and 6 subsequent quarterly LDSN audits required by Section 6.1 have been completed.

Section 4 Network Quality Assurance and Quality Control Measures

4.1 Each sensor must be tested periodically for responsivity with a bump test as provided below and wireless communication by challenging it with isobutylene gas or another appropriate standard. HFSNR must maintain records in accordance with Section 7.8.

4.2 HFSNR must conduct a bump test on each sensor quarterly.

4.2.1 At a minimum, quarterly bump tests must be conducted no more than 123 Days apart.

4.2.2 The bump test must be conducted with isobutylene gas or another appropriate standard (e.g., with similar response factors) and include a mechanism to provide nominally ambient level moisture to the gas (within 25 percent of ambient relative humidity).

4.2.3 The bump test is successful if the response of the sensor exceeds 50 percent of the nominal value of the standard. The bump test may be repeated immediately up to 2 additional times if the first bump test is unsuccessful.

4.2.4 If the bump test is unsuccessful after the third attempt, the sensor must be recalibrated or replaced with a calibrated sensor within 24 hours of the third unsuccessful attempt. After recalibration, a new bump test must be conducted following the procedure outlined above.

4.2.5 HFSNR must maintain records of the bump test in accordance with Section 7.8.

4.3 The health of each sensor must be confirmed for power and data transmission at least once every 15 minutes. Data transmission must occur at least once every 15 minutes. Appropriate corrective actions must be taken for any sensors that fail to (i) collect data in accordance with Section 4.3.1 and (ii) record data in accordance with Section 4.3.2 to ensure any errors or malfunctions are corrected in a timely manner. Such periods are considered downtime until corrected.

4.3.1 The sensor must be capable of maintaining a detection floor of less than 10 ppbe on a 10-minute average. The detection floor is determined at 3 times the standard deviation of the previous 10 minutes of data excluding excursions related to emissions peaks.

$$Detection\ Floor_{Sensor\ n} = 3 \times SD_{Local\ n}$$

Detection $Floor_{Sensor\ n}$ = Calculated detection floor of sensor n (ppbe)

$SD_{Local\ n}$ = Local (previous ten minutes) standard deviation of measurements excluding transient spikes (sensor raw output typically in mV)

4.3.2 The sensor must record data at a rate of once per second.

4.3.3 If a sensor repair is necessary, HFSNR must test the responsivity and wireless communication of the sensor through a bump test according to the procedure specified in Section 4.2.

4.3.4 HFSNR must maintain records of sensor health in accordance with Section 7.8.

4.4 The LDSN software shall check the sensor detection floor daily at approximately 00:00 UTC to confirm each sensor detection floor remains below the established threshold of 10 ppbe during at least one 10-minute period in the past 72-hour period. If a sensor does not pass the detection floor review, then a sensor fault notification shall be issued, and the sensor issue shall be corrected through repair, replacement, or another appropriate measure, unless HFSNR can demonstrate the sensor was continuously experiencing positive detections during this time.

4.5 At least once each calendar quarter, HFSNR shall conduct a check for wind direction to ensure the wind sensor is properly oriented to the north. If the wind sensor is not within 15 degrees of true north, it must be adjusted to point to true north. At a minimum, quarterly wind direction checks must be conducted no more than 123 Days apart. The results of the quarterly check for wind direction must be kept in accordance with Section 7.11.

4.6 Downtime. The sensor network must continuously collect data as specified in Section 4.3, except as specified in this paragraph:

4.6.1 The rolling 12-month average operational downtime of each individual sensor must be less than or equal to 10 percent.

4.6.2 Operational downtime is defined as a period of time for which the sensor fails to collect or transmit data as specified in Section 4.3 or the sensor is out-of-control as specified in Section 4.6.3.

4.6.3 A sensor is out-of-control if it fails a bump test or if the sensor output is outside of range. The beginning of the out-of-control period for a failed bump test is defined as the time of the failure of any bump test. The end of the out-of-control period is defined as the time when either the sensor is recalibrated and passes a bump test, or a new sensor is installed and passes the responsivity and communication challenge. The out-of-control period for a sensor outside of range starts at the time when the sensor first reads outside of range and ends when the sensor reads within range again.

4.6.4 The downtime for each sensor must be calculated each calendar month. Once 12 months of data are available, at the end of each calendar month, HFSNR must calculate the 12-month average by averaging that month with the previous 11 calendar months. HFSNR must determine the rolling 12-month average by recalculating the 12-month average at the end of each month.

4.6.5 HFSNR must maintain records of the downtime for each sensor in accordance with Section 7.16.

Section 5 Detection Response Framework

5.1 When a new PSL Notification or PSL Update Notification is received, the requirements in this Section apply.

5.2 Initial Screening Investigation

5.2.1 The Initial Screening Investigation must begin within 3 Business Days of receiving a new PSL Notification and meet the following requirements.

5.2.1.1 The Initial Screening Investigation must investigate all potential leak sources in the full area of the process unit within the PSL box as drawn and provided in the PSL Notification.

5.2.1.2 The Initial Screening Investigation must utilize flame ionization detectors ("FID") and optical gas imaging ("OGI") cameras as follows: OGI must be used to identify potential leaks. See OGI Protocol (approved by EPA pursuant to Paragraph 30 of the Consent Decree). HFSNR may also, but is not required to, use another screening tool not specified above that is capable of finding potential leak sources and meeting requirements of Method 21 for a VOC monitoring instrument, such as a photoionization detector ("PID"), prior or subsequent to using OGI. Any potential leaks identified using OGI and/or another screening tool must then be confirmed using an FID consistent with Section 5.2.1.3.

5.2.1.3 Each potential leak source identified in the Initial Screening Investigation must be monitored by EPA Method 21 as specified in section 60.485a(b) of 40 CFR part 60, subpart VVa.

5.2.1.4 If an instrument reading equal to or greater than the concentrations in Table 1 is measured, a leak is detected.

5.2.2 The maximum instrument reading must be recorded for each leak identified. A weatherproof and readily visible identification shall be attached to the leaking equipment. The identification may be removed once the component has been repaired, with the repair confirmed through follow up EPA Method 21 monitoring.

5.2.3 Detected Leaks

5.2.3.1 If the leak source is subject to the LDAR program specified in Appendix B (LDAR Program) of the Consent Decree, it shall be repaired as specified in Table 1 or placed on delay of repair in compliance with the applicable regulatory subpart.

5.2.3.2 If the leak source is not subject to LDAR but is within the LDSN, repairs must be completed and verified within 30 Days of identification or placed on delay of repair. Delay of repair of equipment for which non-LDAR leaks have been detected will be allowed when repair cannot be completed within 30 Days of identification and one of the following criteria applies: (a) repair is technically infeasible without a process unit shutdown; (b) non-LDAR equipment is isolated from the process and does not remain in contact with process fluids; (c) emissions of purged material resulting from immediate repair are likely to be greater than fugitive emissions likely to result from delay of repair; or (d) for pumps, the repair requires use of a dual mechanical seal system that includes a barrier fluid system. Repair of this equipment must occur prior to the end of the next process unit shutdown or prior to ending the equipment's isolation from the process and returning process fluids to the equipment. These requirements do not supersede repair requirements for other applicable regulations. Delay of repair of a leak source that is not subject to LDAR is not required to be counted towards delay of repair limitations in Paragraph 9.c of Appendix B (LDAR Program) of the Consent Decree.

5.2.3.3 If the leak source is determined to be associated with authorized emissions (e.g., regulated emissions from a stack or process equipment that are not fugitive emissions), the facility must document this information for the record as required by 7.14, and the PSL Notification can be closed.

5.2.4 If a single leak is detected at 3,000 ppmv or greater by EPA Method 21, the investigation is complete and the PSL Notification can be closed once this leak and any other leaks found by Method 21 during this investigation have been repaired in accordance with the applicable subpart(s). For non-LDAR equipment leaks, the investigation is complete and the PSL Notification can be closed when the repair has been verified by EPA Method 21.

5.2.5 If a total of 3 leaks are detected below 3,000 ppmv by EPA Method 21, the investigation is complete, and the PSL Notification can be closed once these leaks and any other leaks found by Method 21 during this investigation have been repaired in accordance with the applicable subpart(s). For non-LDAR equipment leaks, the investigation is complete and the PSL Notification can be closed when the repair has been verified by EPA Method 21.

5.2.6 For each Initial Screening Investigation in which a potential leak source is not identified after a minimum of 30 minutes of active screening pursuant to Section 5.2.1.2 within the PSL box, record a depiction of the path taken on the PSL box

diagram by the technician(s) during the Initial Screening Investigation, and preserve the entirety of any OGI video taken, and preserve the FID and other screening tool (if any) values and associated specific components monitored. Include the date and time of the start and end of the Initial Screening Investigation. Include a description of what specific monitoring technology was utilized throughout the path, where, and for what time range. The PSL Notification must remain open, but the Initial Screening Investigation may stop.

5.3 A Second Screening Investigation must be conducted within 7 Days of stopping the Initial Screening Investigation as described in Section 5.2.6. The requirements specified in Section 5.2 apply to this Second Screening Investigation, except that the Second Screening Investigation may only be stopped as provided in Section 5.2.6 following either: (a) a minimum of 30 minutes of active screening within the original PSL box associated with the PSL Notification (or PSL Update Notification if applicable) that triggered the Initial Screening Investigation, as currently displayed by the LDSN equipment, of which at least 15 minutes of screening must be Method 21 monitoring with an FID; or (b) until the potential leak source(s) are identified in accordance with Section 5.2.4 and 5.2.5, whichever occurs first.

5.4 If no potential leak source(s) are identified during the Second Screening Investigation, and the PSL detection level increases by more than 2 times the initial detection level, a PSL Update Notification must be sent to facility personnel based on the higher detection level. A new Initial Screening Investigation must occur within 3 Business Days of receiving that PSL Update Notification, following the requirements specified in Section 5.2.1. The requirements of Sections 5.2.2 through 5.2.6 apply to the new Initial Screening Investigation, and a new Second Screening Investigation must be conducted in accordance with Section 5.3 if the new Initial Screening Investigation is stopped in accordance with Section 5.2.6.

5.4.1 Until the PSL Notification and/or PSL Update Notification is closed in accordance with conditions set forth in Sections 5.2 or 5.5, the requirements of the Initial Screening Investigation and Second Screening Investigation must be re-initiated under Sections 5.2 and 5.3 each time the PSL detection level increases to more than 2 times the detection level that triggered the last Initial Screening Investigation.

5.5 If no potential leak source has been identified following the Initial Screening Investigation or Second Screening Investigations in Sections 5.2 and 5.3, including additional investigations that are conducted due to higher PSL detection levels as set forth in Section 5.4, the PSL Notification and/or PSL Update Notification can be closed after meeting the conditions specified in either Sections 5.5.1 or 5.5.2.

5.5.1 If 14 Days have passed since a positive detection within the PSL box (i.e., there have been no peak excursions above the detection floor), the PSL Notification and/or PSL Update Notification may be closed.

5.5.2 If 90 Days have passed since the original PSL notification, a full survey of the LDAR applicable components within the PSL must be conducted with EPA Method 21 within 10 Days. All leaks identified during this survey must be repaired and verified, after which the PSL Notification and/or PSL Update Notification will be closed. If no leaks are identified in this final screening, "no leak source found" must be recorded and the PSL Notification and/or PSL Update Notification will be closed.

Section 6 LDSN Auditor

6.1 HFSNR shall retain an independent third-party LDSN Auditor to conduct audits of HFSNR's compliance with this Protocol as provided herein. The LDSN audits shall occur monthly for the first 6 months and quarterly thereafter. The LDSN Auditor shall commence performance of obligations set forth in this Section by 30 Days after HFSNR commences operation of the LDSN.

6.2 HFSNR and EPA have agreed on an initial LDSN Auditor. In the event a successor LDSN Auditor is needed, HFSNR shall retain a successor LDSN Auditor consistent with the requirements set forth in this Section.

6.2.1 Within 30 Days after the departure of the initial LDSN Auditor, HFSNR shall submit to EPA the name and qualifications of at least 3 proposed successor LDSN Auditors (the "Proposed LDSN Auditors") that HFSNR certify meet the following conditions:

6.2.1.1 A Proposed LDSN Auditor shall have a minimum of 5 years of experience using Method 21, have conducted LDAR compliance audits at a minimum of 5 different petroleum refineries, and: (i) be trained in accordance with Section 10 of 40 C.F.R. Part 60, Appendix K by a person meeting the qualifications of a "Senior OGI camera operator" as defined in Appendix K; or (ii) otherwise received sufficient training, described in HFSNR's submittal to EPA pursuant to this Section, to perform the obligations of the LDSN Auditor in the use of OGI.

6.2.1.2 The Proposed LDSN Auditor and its employees have not conducted research, development, design, construction, financial, engineering, legal, consulting nor other advisory services for HFSNR or any other entity associated with the Artesia Refinery within the last 3 years; provided, however, that the Proposed LDSN Auditor may nonetheless meet the requirement for independence by ensuring that employees who, before working for the Proposed LDSN Auditor's firm conducted research, development, design, construction, or consulting services for HFSNR (as an employee or contractor) do not participate on, manage, or advise the audit team.

6.2.1.3 The Proposed LDSN Auditor, nor any of its employees while employed at another company, were not involved in any LDAR compliance monitoring at the Artesia Refinery.

6.2.2 EPA will notify HFSNR in writing whether it approves of any of the 3 Proposed LDSN Auditors. Within 30 Days of EPA approval, HFSNR shall retain one or more of the EPA-approved Proposed LDSN Auditors, who shall then become the successor LDSN Auditor(s). HFSNR shall ensure that all audit personnel who conduct or otherwise participate in audit activities shall certify that they satisfy the conditions set forth in Section 6.2.1 before receiving any payment from HFSNR.

6.2.2.1 If EPA rejects all 3 of the Proposed LDSN Auditors, within 14 Days of receipt of EPA's rejection notification, or such other time that HFSNR and EPA may agree, HFSNR shall submit to EPA for approval another 3 Proposed LDSN Auditors that meet the qualifications set forth in Section 6.2.1.

6.3 HFSNR shall require that the LDSN Auditor(s) act independently and objectively when performing all activities.

6.4 HFSNR shall provide the LDSN Auditor(s) with full access to the LDSN and provide or otherwise make available any necessary personnel, documents, and Artesia Refinery environmental, health, and safety training to fully perform all duties required by this Section.

6.5 At each LDSN Audit, the LDSN Auditor shall be onsite at the Artesia Refinery for at least two 8-hour Days actively conducting the requirements of each monthly or quarterly LDSN Audit. During that time, the LDSN Auditor shall:

6.5.1 Conduct an Initial or Second Screening Investigation for any open PSL Notifications or Updated PSL Notifications and document the identification of any leaks or non-identification of leaks as required by Section 5.

6.5.2 Review all records of Initial and Second Screening Investigations that have occurred since the last LDSN Audit, including OGI video records, to determine whether HFSNR followed the requirements of Section 5 and the recordkeeping requirements of Section 7.

6.5.3 With any remaining time, conduct training on implementation of the LDSN Protocol, implementation of the OGI Protocol in general, and conducting Method 21 monitoring in general.

6.6 The LDSN Audit is not required if there are no open PSL Notifications or Updated PSL Notifications, and the conditions for conducting an Initial Screening Investigations or Second Screening Investigations have not occurred since the last LDSN Audit.

6.7 During the LDSN Audit, the LDSN Auditor may conduct the survey in 5.5.2.

6.8 Within 15 Days of the completion of each LDSN Audit, the LDSN Auditor shall prepare and submit to HFSNR a report identifying:

6.8.1 Components monitored and leaks identified during screening investigations for any open PSL Notifications or Updated PSL Notifications.

6.8.2 Any deviations from the requirements of Section 5 (including the requirements of the OGI Protocol), or recordkeeping requirements of Section 7 that were identified during the monthly audit.

6.9 Within 30 Days of the end of the Operation Period, the LDSN Auditor shall provide HFSNR a Final LDSN Audit Report that:

6.9.1 Evaluates HFSNR's compliance with Section 5.

6.9.2 Estimates the emissions reduced by HFSNR having found the leak earlier than otherwise required by the applicable LDAR regulations with a detailed explanation of how the emissions were estimated.

Section 7 Recordkeeping

7.1 The following LDSN records must be maintained.

7.2 LDSN map. A map of the location of the Molex devices in the Crude Unit that constitute the LDSN. See Attachment 1.

7.3 A list of equipment subject to LDAR requirements in the Crude Unit with identification numbers, equipment type, standard type (EPA Method 21, no detectable emissions, or AVO work practice requirements) and the applicable NSPS or NESHAP subparts to which the LDAR equipment is subject. If equipment is removed or added to service, this list shall be updated and provided to EPA as part of the semi-annual report required by Section VIII (Reporting Requirements) the Consent Decree.

7.4 Sensor response factors. Records of the sensor response factors for the applicable process streams.

7.5 Manufacturer information. Manufacturer, measurement principle, response factors, and detection level for each sensor.

7.6 Sensor placement information. Records of sensor placement, including geographic information system ("GIS") coordinates and elevation of the sensor from the ground, and diagrams showing the location of each sensor and the detection radius of each sensor. One diagram must show all sensors, with an indication of the level each sensor is located on. Additional diagrams showing sensor layout must be provided for each level of the LDSN.

7.7 Annual review. Records of each annual review of each management of change ("MOC") in the Crude Unit. For each MOC, records of the determination that Sections 7.7.1, 7.7.2, or 7.7.3 applies. The annual review must also address updates to the diagrams in Attachment

1 of each sensor or the list of equipment identification numbers in 7.3. A total of 2 annual reviews of the LDSN are to be conducted during the Operation Period to verify that the sensor placement remains appropriate to achieve a response factor of less than or equal to 3 in the Crude Unit.

7.7.1 The changes are within the Crude Unit (i.e., no further than 50 feet from a sensor node in the horizontal plane and no more than 20 feet from a sensor node in the vertical plane) and the response factor of any new process streams is less than or equal to 3.

7.7.2 The response factor for any new process streams is less than or equal to 3 and additional sensor nodes are being added to the LDSN such that all the LDAR-applicable components within the Crude Unit are no further than 50 feet from a sensor node in the horizontal plane and no more than 20 feet from a sensor node in the vertical plane.

7.7.3 The components will be added to an applicable EPA Method 21, no detectable emissions, or AVO work practice where the LDSN would not provide coverage.

7.8 Sensor testing. Records of initial and subsequent calibrations, bump tests for responsivity and wireless communication initially and upon sensor repair or reset, quarterly bump tests, bump tests prior to PSL closure where leaks have not been found within 90 Days, and bump tests following out-of-control periods, including dates and results of each calibration and bump test, as well as a description of any required corrective action and the date the corrective action was performed. Records of calibration gases used for the bump tests, the ambient moisture level during the bump tests, and the mechanism for providing nominally ambient level moisture to the gas during the bump tests. Records of sensor health related to power and data transmission.

7.9 Raw sensor readings. Additionally, for each sensor, the percent of time positive detections were registered during the rolling 72-hour period including the previous 24-hour period, and the minimum, average, and maximum detection floor must be recorded at least once each day. Positive detections are defined as peak excursions above the detection floor.

7.10 Network meteorological data. HFSNR must conduct a check at least once each calendar quarter for the wind direction to ensure the wind sensor is properly oriented to north. If the wind sensor is not within 15 degrees of true north it must be adjusted to true north.

7.11 Wind sensor orientation. The results of each quarterly check of the wind sensor orientation. Record the latitude and longitude coordinates of the original location of the wind sensor. The wind sensor must remain within 300 feet of the original location. Record each movement of the wind sensor, the latitude and longitude coordinates for the new location, and the distance in feet between the new location and the original location.

7.12 PSL Notification and PSL Update Notification documentation. For each PSL Notification and PSL Update Notification, the record must include the notification date, investigation start date, investigation results including the date each leak was found, leaking component location description, EPA Method 21 reading, repair action taken, date of repair, and EPA

Method 21 reading after repair. Additionally, for equipment placed on delay of repair, note that the equipment was placed on delay of repair and the reason for the delay of repair.

7.13 PSL documentation where PSL is not closed out after the Initial Screening Investigation. For each PSL that cannot be closed out after the Initial Screening Investigation, the record must include each screening investigation performed, including the depiction of the path taken on the PSL box by the technician(s) during the Initial Screening Investigation, the start and end date and times of the investigation, any OGI video taken during the investigation, and any Method 21 readings observed during the investigation. The record must also include the date of each PSL Update Notification sent to facility personnel when the PSL detection level increases by 2 times the initial detection level.

7.14 If a PSL Notification or PSL Update Notification is caused by an authorized emission source or a source outside the LDSN, the documentation must include the notification date, investigation start date, investigation results, emission source identification, and description of the authorized emissions or source outside the LDSN.

7.15 Records of PSL Notifications and PSL Update Notifications closed out where no cause of the PSL Notification and/or PSL Update Notification was determined. Note whether the investigation was closed because 14 Days had passed since a positive detection within the PSL box or the investigation was closed following the EPA Method 21 inspection conducted 90 Days after the original PSL Notification and/or PSL Update Notification.

7.16 Sensor downtime. For each sensor, the date and time of the beginning and end of each period of operational downtime.

7.17 Deviations. Records of deviations where a deviation means HFSNR fails to meet any requirement or obligation established in this Protocol.

Section 8 Reporting

8.1 HFSNR shall submit as part of the semi-annual report required by Section VIII (Reporting Requirements) of the Consent Decree the following information:

8.1.1 For each PSL Notification and PSL Update Notification, the notification date, investigation start date, investigation results including the date each leak was found, component ID, type of component, EPA Method 21 reading, date of repair. For each PSL Notification that was not closed out after the initial investigation, the date of each PSL Update Notification sent to facility personnel when the PSL detection level increases by 2 times the initial detection level, each investigation start date, and results for each investigation.

8.1.2 Identification of equipment placed on delay of repair and the facts that explain each delay of repair.

8.1.3 The number of PSL Notifications and PSL Update Notifications that were closed out where no cause of the PSL Notification and/or PSL Update Notifications was determined. Note how many PSL Notifications and/or PSL Update Notifications

were closed because 14 Days had passed since a positive detection within the PSL box and how many investigations were closed following the EPA Method 21 inspection conducted 90 Days after the original PSL Notification.

8.1.4 The number of PSL Notifications and PSL Update Notifications that were closed because the emissions were authorized.

8.1.5 The number of PSL Notifications and PSL Update Notifications that were closed because the source was found to be outside the LDSN.

8.1.6 The operational downtime percentage for each sensor determined each month.

8.1.7 For each sensor that fails a bump test, identification of the sensor, date of failed bump test, and corrective action taken.

8.1.8 Reports of deviations recorded under Section 7.17 which occurred in the semi-annual reporting period, including the date, start time, duration, description of the deviation, and corrective active.

8.1.9 Copies of all LDSN Auditor reports submitted to HFSNR during the reporting period.

8.2 HFSNR shall submit a report with the first semi-annual report that is more than 60 Days after the conclusion of each annual review required by Section 7.7 that contains the following:

8.2.1 An update to the diagram in Attachment 1.

8.2.2 An update to the list of equipment identification numbers described in 7.3, including a summary of changes made.

8.2.3 An analysis verifying that the sensor placement remains appropriate to achieve a response factor of less than or equal to 3 in the Crude Unit, including any determinations that 7.7.1, 7.7.2, or 7.7.3 applies.

8.3 HFSNR shall submit a Final LDSN Report with the first semi-annual report that is more than 60 Days after the conclusion of the Operation Period that contains the following:

8.3.1 A list of all leaks found during the Operation Period based on PSL Notifications and PSL Updated Notifications, including:

8.3.1.1 Component ID;

8.3.1.2 Component type;

8.3.1.3 Date leak found;

8.3.1.4 Screening value in ppm; and

8.3.1.5 Date leak repaired.

8.3.2 The emission reduction estimate provided by the LDSN Auditor in the Final LDSN Audit Report, as required by Section 6.9.2.

8.3.3 A summary of the aggregate costs of implementing this Protocol by category: (a) cost of the LDSN itself; (b) cost of the LDSN Auditor(s); (c) estimate cost of conducting Initial Screening Investigations and Second Screening Investigations; and (d) estimated cost of repairing leaks found pursuant to this Protocol.

8.3.4 Copies of all the Final LDSN Audit Report prepared by the LDSN Auditor.

Table 1 to Appendix H

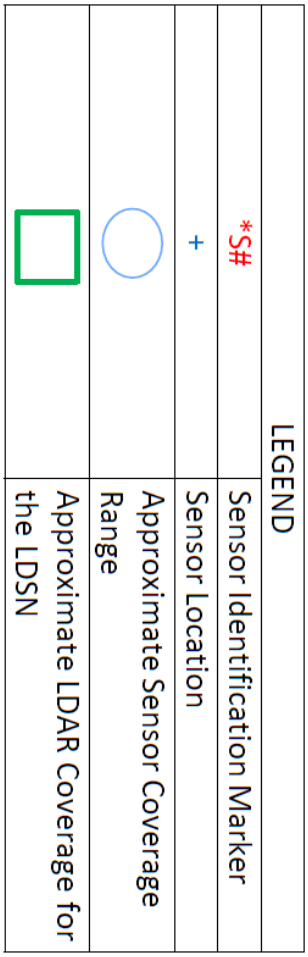
TABLE 1—APPLICABLE LEAK DEFINITIONS FOR COMPONENTS IN THE LDSN–DRF SYSTEM

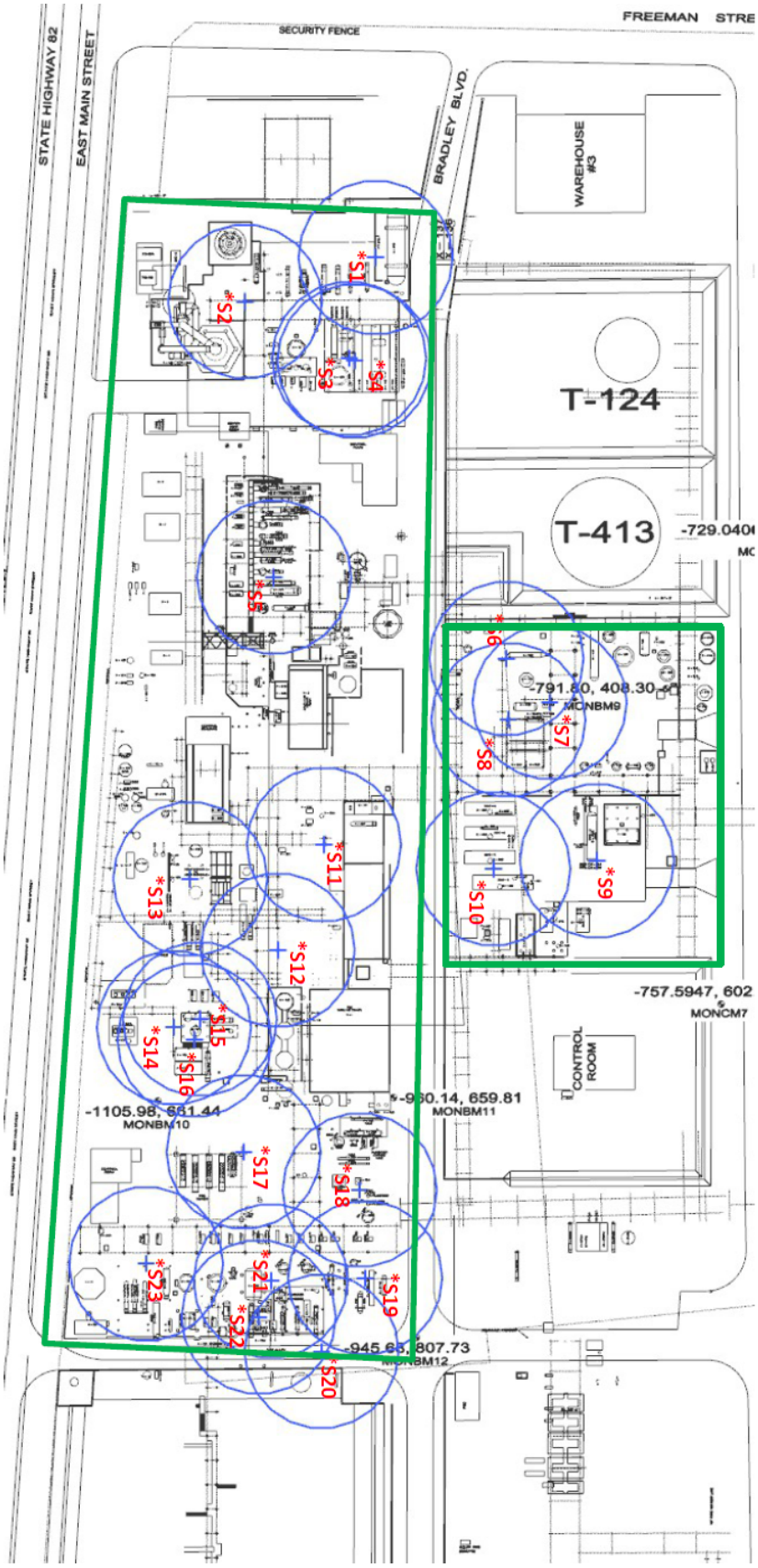
LDSN leak source classification	Leak source component class	LDSN leak definition	Initial repair attempt (days)	Final effective repair (days)	Final repair Confirmation
LDAR Component Leak—''LDAR	Pumps in Light Liquid Service—GGGa/VVa	2,000 ppmv	5	15	<2,000 ppmv
LDAR Component Leak—''LDAR''	Compressor—GGGa/VVa	500 ppmv	5	15	<500 ppmv
LDAR Component Leak—''LDAR''	Pressure relief devices in gas/vapor service – GGGa/VVa	500 ppmv	5	15	<500 ppmv
LDAR Component Leak—''LDAR''	Connectors in gas/vapor service and in light liquid service– GGGa/VVa	500 ppmv	5	15	<500 ppmv
LDAR Component Leak—''LDAR'	Valves in gas/vapor service and in light liquid service—GGGa/VVa	500 ppmv	5	15	<500 ppmv
LDAR Component Leak—''LDAR'	Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service—GGGa/VVa	10,000 ppmv	5	15	<10,000 ppmv
LDAR Component Leak—''LDAR'	Closed vent systems and control devices—GGGa/VVa	500 ppmv	5	15	<500 ppmv
Non-LDAR Component Leak—''Emission Event''	Agitator—Hydrocarbon (HC) but non LDAR	10,000 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<10,000 ppmv
Non-LDAR Component Leak—''Emission Event'	Compressor—HC but non LDAR	2,000 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<2,000 ppmv
Non-LDAR Component Leak—''Emission Event''	Connector—HC but non LDAR	500 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<500 ppmv
Non-LDAR Component Leak—''Emission Event''	Pump—HC but non LDAR	2,000 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<2,000 ppmv
Non-LDAR Component Leak—''Emission Event''	Relief Device—HC but non LDAR	500 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<500 ppmv
Non-LDAR Component Leak—''Emission Event''	Valve—HC but non LDAR	500 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<500 ppmv
Non-LDAR Component Leak—''Emission Event''	Other	500 ppmv	Follow repair requirements of Paragraph II.1.d.1.		<500 ppmv
''Authorized Emission''[1]	Authorized Emission	N/A	N/A	N/A	N/A

[1] Authorized emissions may include emissions from a stack or otherwise allowed. These emissions are not considered equipment leaks for purposes of this DRF.

Attachment 1 to Appendix H

The LDSN





Marker	Asset ID	Unit	GPS Lat (DD)	GPS Long (DD)	Elevation (Ft)
S1	ART18	2A-43	32.843067	-104.394936	3
S2	ART20	2A-43	32.842889	-104.394792	3
S3	ART19	2A-43	32.843022	-104.394797	3
S4	ART22	2A-43	32.843022	-104.394797	43
S5	ART21	2A-43	32.842936	-104.394347	3
S6	ART24	16-41	32.843344	-104.394161	3
S7	ART25	16-41	32.843475	-104.394108	3
S8	ART28	16-41	32.843389	-104.394067	17
S9	ART26	16-41	32.843522	-104.393753	3
S10	ART27	16-41	32.843361	-104.393725	3
S11	ART01	2B-21-35	32.843097	-104.393822	3
S12	ART03	2B-21-35	32.843031	-104.393689	3
S13	ART07	2B-21-35	32.842789	-104.393647	3
S14	ART08	2B-21-35	32.842892	-104.393258	3
S15	ART17	2B-21-35	32.842956	-104.393447	30
S16	ART15	2B-21-35	32.842956	-104.393447	13
S17	ART12	2B-21-35	32.842978	-104.393119	3
S18	ART09	2B-21-35	32.843192	-104.393139	3
S19	ART10	2B-21-35	32.843183	-104.392864	3
S20	ART11	2B-21-35	32.843167	-104.392750	3
S21	ART16	2B-21-35	32.843031	-104.392869	30
S22	ART13	2B-21-35	32.842975	-104.392792	3
S23	ART14	2B-21-35	32.842847	-104.392858	3