

Exhibit 6

EXHIBIT 6

Consent Decree

*United States of America and the States of Illinois,
Louisiana and New Jersey, Commonwealth of Pennsylvania and
the Northwest Clean Air Agency v. ConocoPhillips Company,
Civil Action No. H-05-0258 (S.D. Tex. Dec. 5, 2005)*

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS

~~United States Courts
Southern District of Texas
FILED~~

~~JAN 27 2005~~

~~Michael N. Milby, Clerk of Court~~

United States Courts
Southern District of Texas
ENTERED

DEC 05 2005

Michael N. Milby, Clerk of Court

UNITED STATES OF AMERICA,
STATE OF ILLINOIS,
STATE OF LOUISIANA,
STATE OF NEW JERSEY,
COMMONWEALTH OF PENNSYLVANIA,
NORTHWEST CLEAN AIR AGENCY,

Plaintiffs,

v.

CONOCOPHILLIPS COMPANY,

Defendant.

CIVIL ACTION NO. **H-05-0258**

JUDGE

CONSENT DECREE

TABLE OF CONTENTS

I.	JURISDICTION AND VENUE	10
II.	APPLICABILITY AND BINDING EFFECT	11
III.	OBJECTIVES	14
IV.	DEFINITIONS	14
V.	AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS	28
	A. NO _x Emissions Reductions from FCCUs	28
	B. SO ₂ Emissions Reductions from FCCUs	53
	C. PM Emissions Reductions from FCCUs	65
	D. CO Emissions Reductions from FCCUs	69
	E. NSPS Applicability of FCCU Catalyst Regenerators	71
	F. NO _x Emissions Reductions from Combustion Units	73
	G. SO ₂ Emissions Reductions from and NSPS Applicability to Heaters and Boilers	82
	H. NSPS Applicability of Sulfur Recovery Plants	86
	I. NSPS Applicability of the Sulfuric Acid Plant at LAR Wilmington	98
	J. NSPS Applicability of Flaring Devices	99
	K. CERCLA/EPCRA	102
	L. Control of Acid Gas Flaring Incidents and Tail Gas Incidents	103
	M. Control of Hydrocarbon Flaring Incidents	112
	N. Benzene Waste Operations NESHAP Program Enhancements	114

O.	Leak Detection and Repair Program Enhancements	133
P.	Incorporation of Consent Decree Requirements into Federally Enforceable Permits	145
VI.	EMISSION CREDIT GENERATION	147
VII.	MODIFICATION TO IMPLEMENTATION SCHEDULES	149
VIII.	SUPPLEMENTAL/BENEFICIAL ENVIRONMENTAL PROJECTS	153
IX.	REPORTING AND RECORDKEEPING	161
X.	CIVIL PENALTY	162
XI.	STIPULATED PENALTIES	164
A.	Non-Compliance with Requirements for NO _x Emissions Reductions from FCCUs	165
B.	Non-Compliance with Requirements for SO ₂ Emissions Reductions from FCCUs	167
C.	Non-Compliance with Requirements for PM Emissions Reductions from FCCUs	169
D.	Non-Compliance with Requirements for CO Emissions Reductions from FCCUs	170
E.	Non-Compliance with Requirements for NSPS applicability of FCCU Catalyst Regenerators	170
F.	Non-Compliance with NO _x Emissions Reductions from Combustion Units	171
G.	Non-Compliance with SO ₂ Emissions Reductions from Heaters and Boilers	174
H.	Non-Compliance with Requirements for NSPS Applicability of Sulfur Recovery Plants	175

L.	Non-Compliance with Requirements for NSPS Applicability of the Sulfuric Acid Plant at LAR Wilmington	177
J.	Non-Compliance with Requirements for NSPS Applicability of Flaring Devices	177
K.	CERCLA/EPCRA	178
L.	Non-Compliance with Requirements for Control of Acid Gas Flaring Incidents and Tail Gas Incidents	178
M.	Non-Compliance with Requirements for Control of Hydrocarbon Flaring Incidents	181
N.	Non-Compliance with Requirements for Benzene Waste Operations NESHAP Program Enhancements	181
O.	Non-Compliance with Requirements for Leak Detection and Repair Program Enhancements	184
P.	Non-Compliance with Requirements Related Incorporating Consent Decree Requirements into Federally Enforceable Permits	186
Q.	Non-Compliance with Requirements Related to Supplemental/Beneficial Environmental Projects	186
R.	Non-Compliance with Requirements for Reporting and Recordkeeping	187
S.	Non-Compliance with Requirements for Payment of Civil Penalties	187
T.	General Provisions Related to Stipulated Penalties	188
XII.	INTEREST	190
XIII.	RIGHT OF ENTRY	190
XIV.	FORCE MAJEURE	191
XV.	RETENTION OF JURISDICTION/DISPUTE RESOLUTION	193
XVI.	EFFECT OF SETTLEMENT	196

XVII. GENERAL PROVISIONS 212

XVIII. TERMINATION 224

XIX. SIGNATORIES 227

TABLE OF APPENDICES

- A** List of Flaring Devices at the Covered Refineries
- B** List of Combustion Units
- C** List of Assets ConocoPhillips Purchased from the Premcor Refining Group in Hartford, Illinois
- D** Determining the Optimized Addition Rates of Catalyst Additives at the FCCUs
- E** Predictive Emissions Monitoring Systems for Heaters and Boilers with Capacities Between 150 and 100 mmBTU/hr
- F** FCCU NO_x Control Technology Design and Operating Parameters
- G** Study of Breakthrough in Dual Carbon Canisters
- H** Table of Violations Asserted by the Louisiana Department of Environmental Quality

CONSENT DECREE

WHEREAS, Plaintiff the United States of America ("United States"), by the authority of the Attorney General of the United States and through its undersigned counsel, acting at the request and on behalf of the United States Environmental Protection Agency ("EPA"), Co-Plaintiff the State of Illinois ("Illinois"), on behalf of the Illinois Environmental Protection Agency ("IEPA"), Co-Plaintiff the State of Louisiana ("Louisiana"), on behalf of the Louisiana Department of Environmental Quality ("LDEQ"), Co-Plaintiff the State of New Jersey ("New Jersey"), at the request and on behalf of the New Jersey Department of Environmental Protection ("NJDEP"), Co-Plaintiff the Commonwealth of Pennsylvania ("Pennsylvania") on behalf of the Pennsylvania Department of Environmental Protection ("PaDEP"), and Co-Plaintiff the Northwest Clean Air Agency ("NWCAA") have simultaneously filed a Complaint and lodged this Consent Decree against defendant ConocoPhillips Company ("COPC") for alleged environmental violations at COPC's petroleum refineries in the following locations: Belle Chasse, Louisiana ("Alliance Refinery"); City of Linden, New Jersey ("Bayway Refinery"); Borger, Texas ("Borger Refinery"); Carson, California ("LAR Carson"); Ferndale, Washington ("Ferndale Refinery"); Rodeo, California ("Rodeo Refinery"); Santa Maria, California ("Santa Maria Refinery"); Sweeny, Texas ("Sweeny Refinery"); Trainer, Pennsylvania ("Trainer Refinery"); Wilmington, California ("LAR Wilmington"); and Roxanna and Hartford, Illinois ("Wood River Refinery" and "Distilling West") (collectively "Covered Refineries");

WHEREAS, COPC also owns and operates three additional refineries which are covered by a Consent Decree entered in Civil Action Number H-01-4430 in the United States District Court for the Southern District of Texas and are not included in the "Covered Refineries" under this Consent Decree;

WHEREAS, the United States alleges, upon information and belief, that COPC has violated and/or continues to violate the following statutory and regulatory provisions:

1) Prevention of Significant Deterioration ("PSD") requirements found at Part C of Subchapter I of the Clean Air Act (the "Act"), 42 U.S.C. §§ 7475, and the regulations promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD Rules"); and "Plan Requirements for Non-Attainment Areas" at Part D of Subchapter I of the Act, 42 U.S.C. §§ 7502-7503, and the regulations promulgated thereunder at 40 C.F.R. § 51.165(a) and (b) and at Title 40, Part 51, Appendix S, and at 40 C.F.R. § 52.24 ("PSD/NSR Regulations"), for heaters and boilers and fluid catalytic cracking unit catalyst regenerators for nitrogen oxide ("NO_x"), sulfur dioxide ("SO₂"), carbon monoxide ("CO"), and particulate matter ("PM");

2) New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts A and J, under Section 111 of the Act, 42 U.S.C. § 7411 ("Refinery NSPS Regulations"), for sulfur recovery plants, fuel gas combustion devices, and fluid catalytic cracking unit catalyst regenerators;

3) Leak Detection and Repair ("LDAR") requirements promulgated pursuant to Sections 111 and 112 of the Act, and found at 40 C.F.R. Part 60 Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC ("LDAR Regulations"); and

4) National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Benzene Waste Operations promulgated pursuant to Section 112(e) of the Act, and found at 40 C.F.R. Part 61, Subpart FF ("Benzene Waste Operations NESHAP Regulations"); and

5) New Source Performance Standards found at 40 C.F.R. Part 60, Subpart H, under Section 111 of the Act, 42 U.S.C. § 7411 ("Sulfuric Acid Plant NSPS Regulations"), for sulfuric acid plants;

WHEREAS, the United States also specifically alleges with respect to the Covered Refineries that, upon information and belief, COPC has been and/or continues to be in violation of the state implementation plans ("SIPs") and other state and local rules and regulations adopted by the states and/or local air quality districts in which the Covered Refineries are located to the extent that such plans, rules, or regulations implement, adopt or incorporate the above-described federal requirements;

WHEREAS, the United States further alleges that COPC has violated and/or continues to violate the reporting requirements found at Section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(a), and Section 304(b) and (c) of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11004(b) and (c), and the regulations promulgated thereunder;

WHEREAS, Illinois, Louisiana, New Jersey, Pennsylvania, and NWCAA have joined in this matter alleging violations of their respective applicable SIP provisions and/or other state and/or local rules and regulations incorporating and implementing the foregoing federal requirements;

WHEREAS, on January 5, 2001, the Ferndale Refinery requested approval of an alternative means of emission limitation pursuant to 40 C.F.R. § 61.353 for its roughing filter system claiming it to be equivalent to an enhanced biodegradation unit under 40 C.F.R. § 61.348(b)(2)(ii)(B), but for which performance testing completed in February 2004 indicated that the system could not achieve a level of performance equivalent to an enhanced

biodegradation unit under 40 C.F.R. § 61.348(b)(2)(ii)(B), and therefore on April 12, 2004, COPC agreed to no longer pursue the approval of an alternate means of emission limitation but instead to install air pollution control equipment to comply with Benzene Waste Operations NESHAP ("BWON") regulations;

WHEREAS, COPC has not been able to demonstrate compliance with the PM and PM-10 emission limits for the fluidized catalytic cracking unit ("FCCU") at the Ferndale Refinery established by NWCAA in Order of Approval to Construct #733a ("Order of Approval"), Conditions D-4, D-1(b), and E-10(f) including those limitations which were intended to restrict emissions from the Ferndale FCCU project to below the significance levels for PM and PM-10 and thereby avoid the requirements of the PSD program for PM and PM-10;

WHEREAS, COPC has agreed to apply for a PSD permit amendment to include PM and PM-10 for the Ferndale FCCU in the PSD permit and to request a revision of NWCAA's Order of Approval containing conditions limiting PM and PM-10 from the FCCU once the Washington Department of Ecology issues an amended PSD permit which includes PM and/or PM-10;

WHEREAS, the State of New Jersey is in the process of reviewing a permit application for the FCCU at the Bayway Refinery which may result in emission limits more stringent than those in Paragraphs 77 and 84 and nothing in this Consent Decree precludes New Jersey from issuing such a permit nor precludes COPC from contesting such a permit;

WHEREAS, except as otherwise provided in Section V.H., COPC and New Jersey are and continue to be bound by a March 31, 1993 Administrative Consent Order (ACO) A930366, and this Consent Decree, except as otherwise provided in Section V.H. does not preclude or otherwise affect modification, termination, or enforcement of the ACO;

WHEREAS, upon Entry of this Decree, COPC will submit an enhancement to the Reasonably Achievable Control Technology ("RACT") Plan that it already has submitted to the NJDEP for Volatile Organic Compounds for the Bayway Refinery based upon actions that COPC will implement under this Consent Decree, and NJDEP will approve the enhanced RACT Plan;

WHEREAS, COPC denies that it has violated the foregoing statutory, regulatory, and SIP provisions and the state and/or local rules and regulations incorporating and implementing the foregoing federal requirements, and maintains that it has been and remains in compliance with all applicable statutes, regulations and permits and is not liable for civil penalties and injunctive relief;

WHEREAS, with respect to the provisions of Section V.L ("Control of Acid Gas Flaring Incidents and Tail Gas Incidents") of this Consent Decree, EPA maintains that "[i]t is the intent of the proposed standard [40 C.F.R. § 60.104] that hydrogen-sulfide-rich gases exiting the amine regenerator [or sour water stripper gases] be directed to an appropriate recovery facility, such as a Claus sulfur plant," see Information for Proposed New Source Performance Standards: Asphalt Concrete Plants, Petroleum Refineries, Storage Vessels, Secondary Lead Smelters and Refineries, Brass or Bronze Ingot Production Plants, Iron and Steel Plants, Sewage Treatment Plants, Vol. 1, Main Text at 28;

WHEREAS, EPA further maintains that the failure to direct hydrogen-sulfide-rich gases to an appropriate recovery facility -- and instead to flare such gases under circumstances that are not sudden or infrequent or that are reasonably preventable -- circumvents the purposes and intentions of the standards at 40 C.F.R. Part 60, Subpart J;

WHEREAS, EPA recognizes that "Malfunctions," as defined in Section IV of this Consent Decree and 40 C.F.R. § 60.2, of the "Sulfur Recovery Plants" or of "Upstream Process

Units" may result in flaring of "Acid Gas" or "Sour Water Stripper Gas" on occasion, as those terms are defined herein, and that such flaring does not violate 40 C.F.R. § 60.11(d) if the owner or operator, to the extent practicable, maintains and operates such units in a manner consistent with good air pollution control practice for minimizing emissions during these periods;

WHEREAS, based upon information available to COPC, COPC has provided an evaluation of the causes and corrective actions for the flaring incidents that occurred at the Covered Refineries for the five years prior to September 30, 2004, and that evaluation is contained in a document dated September 30, 2004;

WHEREAS, within forty-five (45) days after the Entry of this Consent Decree: (i) the United States, the State of Illinois, and COPC agree to jointly move to terminate the consent decree entered in the case of United States, et al. v. Shell Oil Co., et al., Civil Action No. 98-652-GPM (S.D. Ill. 1998); (ii) the United States and COPC agree to jointly move to terminate the consent decree entered in the case of United States v. Shell Oil Co., et al., Civil Action No. 97-539-WDS (S.D. Ill 1997); and within thirty (30) days of Lodging: (i) EPA agrees that COPC no longer will be subject to the reporting requirements of Appendix C of EPA's Clean Air Act Section 114(a) Request for Information dated December 12, 1994, regarding the Wood River Refinery;

WHEREAS, COPC has represented that it or a predecessor company assumed ownership and operation of the Covered Refineries on the following dates:

Alliance	September 8, 2000
Bayway	April 8, 1993
Borger	Prior to 1970
Ferndale	December 27, 1993
LAR Carson	April 1, 1997
LAR Wilmington	April 1, 1997
Rodeo	April 1, 1997

Santa Maria
Sweeny
Trainer
Wood River,
excluding Distilling West
Distilling West

April 1, 1997
Prior to 1970
February 2, 1996
June 1, 2000
July 31, 2003

WHEREAS, projects undertaken pursuant to this Consent Decree are for the purposes of abating or controlling atmospheric pollution or contamination by removing, reducing, or preventing the creation of emission of pollutants ("pollution control facilities") and as such, may be considered for certification as pollution control facilities by federal, state, or local authorities;

WHEREAS, EPA recently issued PSD Rules and PSD/NSR Regulations, see 67 Fed. Reg. 80186-80289 (2002), that identify and address "Pollution Control Projects" and "Clean Units" and the applicability of PSD/NSR permitting requirements to such Projects or Units;

WHEREAS, EPA previously issued guidance ("Pollution Control Projects and New Source Review (NSR) Applicability," July 1, 1994) identifying and addressing "Pollution Control Projects" and the applicability of PSD/NSR permitting requirements to such Projects;

WHEREAS, EPA agrees that under the recently issued PSD Rules and PSD/NSR Regulations that identify and address "Clean Units", see 67 Fed. Reg. 80186 et seq., units that accept the following emission limits under this Consent Decree may be considered as "Clean Units" with respect to the identified pollutants:

For FCCUs - 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis
- 25 ppmvd SO₂ at 0% O₂ on a 365-day rolling average basis
- 100 ppmvd CO at 0% O₂ on a 365-day rolling average basis
- 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis

For Heaters and Boilers - 0.020 lbs/mmBTU NO_x

Units with higher limits may be considered as "Clean Units" under applicable rules at the discretion of the permitting agency (for example, FCCUs controlled by LoTOx Systems where EPA has established NO_x limits pursuant to this Consent Decree). EPA also agrees that pursuant to applicable rules, state and local permitting agencies reserve the right to establish more stringent requirements, including emission limits, than those set forth above in this Paragraph for "Clean Units";

WHEREAS, EPA agrees that under recently issued PSD Rules and PSD/NSR Regulations that identify and address "Pollution Control Projects", see 67 Fed. Reg. 80186 et seq., and under prior EPA guidance ("Pollution Control Projects and New Source Review (NSR) Applicability," July 1, 1994), the following activities may be considered as "Pollution Control Projects" under such rules, regulations, and guidance, provided that COPC complies with the requirements for "Pollution Control Projects" under applicable federal, state, and local regulations and policies.

For FCCUs: Activities required to comply with Sections V.A and V.B of this Consent Decree (reduction of NO_x and SO₂ emissions by the use of hardware and/or the use of catalyst additives under the applicable protocol).

For Heaters and Boilers: Activities undertaken to comply with Paragraph 95 of this Consent Decree (reduction of NO_x emissions by 4951 tons through the installation of Qualifying Controls (as defined in Paragraph 94)).

EPA also agrees that pursuant to applicable rules, state and local permitting agencies reserve the right to establish more stringent requirements.

WHEREAS, EPA expects that COPC will design, operate and maintain the controls identified in the preceding Paragraph in a manner consistent with standard and reasonable air

pollution control practices, and that collateral emissions increases will be adequately addressed by COPC;

WHEREAS, the United States is engaged in a federal strategy for achieving cooperative agreements with petroleum refineries in the United States to achieve across-the-board reductions in emissions ("Global Settlement Strategy");

WHEREAS, COPC consents to the simultaneous filing of the Complaint and lodging of this Consent Decree against COPC (despite its denial of the allegations in the Complaint) in order to accomplish its objective of cooperatively reconciling the goals of the United States, the Co-Plaintiffs, and COPC under the Clean Air Act and the corollary state statutes and regulations, and therefore agrees to undertake the installation of air pollution control equipment and enhancements to its air pollution management practices at the Covered Refineries to reduce air emissions by participating in the Global Settlement Strategy;

WHEREAS, by entering into this Consent Decree, COPC has indicated that it is committed to pro-actively resolving environmental concerns relating to its operations;

WHEREAS, the United States anticipates that the affirmative relief and environmental projects identified in Sections V and VIII of this Consent Decree will reduce emissions of nitrogen oxide by approximately 10,000 tons annually, will reduce emissions of sulfur dioxide by approximately 37,200 tons annually, and will also result in reductions of volatile organic compounds and particulate matter ("PM");

WHEREAS, discussions between the Parties have resulted in the settlement embodied in the Consent Decree;

WHEREAS, COPC has waived any applicable federal or state requirements of statutory notice of the alleged violations;

WHEREAS, notwithstanding the foregoing reservations, the Parties agree that:

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

WHEREAS, the Parties recognize, and the Court by entering the Consent Decree finds, that the Consent Decree has been negotiated at arms length and in good faith and that the Consent Decree is fair, reasonable, and in the public interest;

NOW THEREFORE, with respect to the matters set forth in the Complaint, and in Section XVI of the Consent Decree ("Effect of Settlement"), and before the taking of any testimony, without adjudication of any issue of fact or law, and upon the consent and agreement of the Parties to the Consent Decree, it is hereby ORDERED, ADJUDGED and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action and over the Parties pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and 1367(a). In addition, this Court has jurisdiction over the subject matter of this action pursuant to Sections 113(b) and 167 of the CAA, 42 U.S.C. §§ 7413(b) and 7477, Section 325(b) of EPCRA, 42 U.S.C. § 11045(b), and Section 109(c) of CERCLA, 42 U.S.C. § 9609(c). The Complaint states a claim upon which relief may be granted for injunctive relief and civil penalties against COPC under the Clean Air Act, EPCRA, and CERCLA. The authority of the United States to bring this suit is vested in the United States Department of Justice by 28 U.S.C. §§ 516 and 519 and Section 305 of the CAA, 42 U.S.C. § 7605, Section 325 of EPCRA, 42 U.S.C. § 11045, and Section 109(c) of CERCLA, 42 U.S.C. § 9606(c).

2. Venue is proper in the United States District Court for the Southern District of Texas pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c), and 1395(a). COPC consents to the personal jurisdiction of this Court and waives any objections to venue in this District.

3. Notice of the commencement of this action has been given to the State of New Jersey, the Commonwealth of Pennsylvania, the State of Illinois, the State of Louisiana, the State of Texas, the California Air Resources Board, the South Coast Air Quality Management District, the San Luis Obispo County Air Pollution Control District, the Bay Area Air Quality Management District, the State of Washington, and the Northwest Clean Air Agency in the State of Washington, in accordance with Section 113(a)(1) of the Clean Air Act, 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 AND BINDING EFFECT

4. The provisions of the Consent Decree will apply to the Covered Refineries. The provisions of the Consent Decree will be binding upon the United States, the Co-Plaintiffs, and COPC, including COPC's officers, agents, servants, employees in their capacity as such, and all other persons and entities as provided for by Fed. R. Civ. P. 65(d).

5. COPC agrees not to contest the validity of the Consent Decree in any subsequent proceeding to implement or enforce its terms.

6. Effective from the Date of Entry of the Consent Decree until its termination, COPC agrees that the Covered Refineries are covered by this Consent Decree. To the extent that, pursuant to the requirements of Section XVIII, this Consent Decree terminates with respect to a particular Covered Refinery prior to the termination of the entire Consent Decree, this Paragraph applies to such Refinery until the Consent Decree terminates as to that particular Refinery.

Effective from the Date of Lodging of the Consent Decree, COPC will give written notice of the Consent Decree to any successors in interest prior to the transfer of ownership or operation of any portion of any Covered Refinery and will provide a copy of the Consent Decree to any successor in interest. COPC will notify the United States and the Applicable Co-Plaintiff in accordance with the notice provisions set forth in Paragraph 433 (Notice), of any successor in interest at least thirty (30) days prior to any such transfer.

7. Pursuant to Section 2-1304 of the Illinois Code of Civil Procedure, 735 ILCS 5/2-1304, the injunctive provisions of this Consent Decree applicable to the Wood River Refinery, including the Distilling West assets, will be a lien upon the real and personal estate, or both, of COPC within the Wood River Refinery, including Distilling West, until such provisions are fully complied with and such lien will have the same force and effect, and be subject to the same limitations and restrictions, as judgments for the payment of money.

8. COPC will condition any transfer, in whole or in part, of ownership of, operation of, or other interest (exclusive of any non-controlling non-operational shareholder interest) in, any Covered Refinery upon the execution by the transferee of a modification to the Consent Decree which makes the terms and conditions of the Consent Decree that apply to such Covered Refinery applicable to the transferee. As soon as possible prior to the transfer, COPC will notify the United States and the Applicable Co-Plaintiff of the proposed transfer and of the specific Consent Decree provisions that the transferee is assuming. Simultaneously, COPC will provide a certification from the transferee that the transferee has the financial and technical ability to assume the obligations and liabilities under this Consent Decree that are related to the transfer. By no later than sixty (60) days after the transferee executes a document agreeing to substitute itself for COPC for all terms and conditions of this Consent Decree that apply to the Covered

Refinery that is being transferred, the United States, the Applicable Co-Plaintiff, COPC, and the transferee will jointly file with the Court a motion requesting the Court to substitute the transferee as the Defendant for those terms and conditions of this Consent Decree that apply to the Covered Refinery that is being transferred. If COPC does not secure the agreement of the United States and the Applicable Co-Plaintiff to a Joint Motion within sixty (60) days, then COPC and the transferee may file a motion without the agreement of the United States and the Applicable Co-Plaintiff. The United States and the Applicable Co-Plaintiff thereafter may file an opposition to the motion. COPC will not be released from the obligations and liabilities of any provision of this Consent Decree unless and until the Court grants the motion substituting the transferee as the Defendant to those provisions.

9. Except as provided in Paragraph 8, COPC will 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 any attachments hereto. COPC will provide a copy of the applicable provisions of this Consent Decree to each consulting or contracting firm that is retained to perform work required under Sections V.N. and V.O of this Consent Decree, upon execution of any contract relating to such work. No later than thirty (30) days after the Date of Lodging of the Consent Decree, COPC also will provide a copy of the applicable provisions of this Consent Decree to each consulting or contracting firm that COPC already has retained to perform the work required under Sections V.N and V.O of this Consent Decree. Copies of the Consent Decree do not need to be supplied to firms who are retained to supply materials or equipment to satisfy requirements under this Consent Decree.

III. OBJECTIVES

10. It is the purpose of the Parties in this Consent Decree to further the objectives of the federal Clean Air Act and the rules and regulations promulgated thereunder, the Illinois Environmental Protection Act, 415 ILCS 5/1 – 58.17, the Louisiana Environmental Quality Act, LSA-R.S. 30:2001 et seq., New Jersey's Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., ("New Jersey Air Act") and the regulations adopted thereunder by NJDEP pursuant thereto at N.J.S.A. 7:27-1 et seq., the Pennsylvania Air Pollution Control Act, 35 P.S. § 4001 et seq., and the Washington Clean Air Act, Chapter 70.94 RCW.

IV. DEFINITIONS

11. Unless otherwise defined herein, terms used in the Consent Decree will have the meaning given to those terms in the Clean Air Act and the implementing regulations promulgated thereunder. The following terms used in the Consent Decree will be defined for purposes of the Consent Decree and the reports and documents submitted pursuant thereto as follows:

A. "Acid Gas" shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine solution.

B. "Acid Gas Flaring" or "AG Flaring" shall mean the combustion of Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device.

C. "Acid Gas Flaring Device" or "AG Flaring Device" shall mean any device at the Covered Refineries that is used for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid. The AG Flaring Devices currently in service at the Covered Refineries are included in Appendix A to the Consent Decree. To the extent that, during the duration of the Consent

Decree, any Covered Refinery utilizes AG Flaring Devices other than those specified in Appendix A for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG Flaring Devices shall be covered under this Consent Decree.

D. "Acid Gas Flaring Incident" or "AG Flaring Incident" shall mean the continuous or intermittent combustion of Acid Gas and/or Sour Water Stripper Gas that results in the emission of sulfur dioxide equal to, or in excess of, five-hundred (500) pounds in any twenty-four (24) hour period; provided, however, that if five-hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to or in excess of five-hundred (500) pounds of sulfur dioxide, then only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of flaring within the AG Flaring Incident.

E. "Alliance Refinery" shall mean the refinery owned and operated by COPC in Belle Chasse, Louisiana.

F. "AMP" or "Alternative Monitoring Plan" shall mean a monitoring plan, upon approval by EPA, that COPC may use in lieu of a regulatory monitoring requirement.

G. "Applicable Co-Plaintiff" or "Applicable State/Local Co-Plaintiff" shall mean the following states and/or local air quality districts with respect to the following refineries:

Alliance Refinery	State of Louisiana through the LDEQ
Bayway Refinery	State of New Jersey on behalf of NJDEP
Ferndale Refinery	NWCAA

Trainer Refinery Commonwealth of Pennsylvania through PaDEP

Wood River and State of Illinois on behalf of IEPA
Distilling West

H. "Baseline Total Catalyst Addition Rate" shall mean the daily average Total Catalyst, in pounds per day, added to an FCCU during the baseline period of a NO_x or SO₂ catalyst additive program.

I. "Bayway Crude Pipestill Heater" shall mean Heaters F-701 and F-751 at the Bayway Refinery which are connected through common ducting to a single stack.

J. "Bayway Refinery" shall mean the refinery owned and operated by COPC in the City of Linden, New Jersey.

K. "Borger Refinery" shall mean the refinery owned and operated by COPC in Borger, Texas.

L. "Calendar quarter" shall mean the three month period ending on March 31st, June 30th, September 30th, and December 31st.

M. "Capital Cost of a LoTOx System" or "Capital Cost" shall mean the projected installed costs, as determined during the design of the System, for a quench system, sufficient residence time, ozone injection ports, ozone generators, and oxygen supply.

N. "CEMS" shall mean continuous emissions monitoring system.

O. "CO" shall mean carbon monoxide.

P. "Combustion Units" shall mean the heaters, boilers, internal combustion engines, and combustion turbines at the Covered Refineries that are listed in Appendix B.

Q. "Consent Decree" or "Decree" or "CD" shall mean this Consent Decree, including any and all appendices attached to the Consent Decree.

R. "COPC" shall mean the ConocoPhillips Company and its successors and assigns.

S. "Co-Plaintiffs" shall mean the State of Illinois on behalf of IEPA, the State of Louisiana on behalf of the LDEQ, the State of New Jersey on behalf of the NJDEP, the Commonwealth of Pennsylvania on behalf of PaDEP, and the NWCAA.

T. "Covered FCCUs" shall mean the following FCCUs that COPC owns and/or operates:

Alliance Refinery:	Alliance FCCU
Bayway Refinery:	Bayway FCCU
Borger Refinery:	Borger FCCU 29 and Borger FCCU 40
Ferndale Refinery:	Ferndale FCCU
LAR Wilmington:	LAR Wilmington FCCU
Sweeny Refinery:	Sweeny FCCU 3 and Sweeny FCCU 27
Trainer Refinery:	Trainer FCCU
Wood River Refinery:	Wood River FCCU 1 and Wood River FCCU 2
Wood River Distilling West:	Distilling West FCCU

U. "Covered Refineries" or "Covered Refinery" or "Refineries" or "Refinery" shall mean the refineries owned and operated by COPC that are subject to the requirements of this Consent Decree: the Alliance Refinery, the Bayway Refinery, the Borger Refinery, the Ferndale Refinery, the LAR Carson Plant, the LAR Wilmington Plant, the Rodeo Refinery, the Santa Maria Refinery, the Sweeny Refinery, the Trainer Refinery, and the Wood River Refinery, including Distilling West (except where Distilling West is specifically excluded). The COPC refineries in Westlake, Louisiana, Billings, Montana, and Ponca City, Oklahoma are covered by a consent decree entered in Civil Action Number H-01-4430 in the Southern District of Texas and are not covered by this Consent Decree.

V. "Current Generation Ultra-Low NO_x Burners" shall mean those burners that are designed to achieve a NO_x emission rate of 0.020 to 0.040 lb NO_x/mmBTU (HHV) when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.040 lb NO_x/mmBTU (HHV).

W. "Date of Entry of the Consent Decree" or "Date of Entry" shall mean the date the Consent Decree is entered by the United States District Court for the Southern District of Texas.

X. "Date of Lodging of the Consent Decree" or "Date of Lodging" or "DOL" shall mean the date the Consent Decree is filed for lodging with the Clerk of the Court for the United States District Court for the Southern District of Texas.

Y. "Day" or "Days" as used herein shall mean a calendar day or days.

Z. "Distilling West" shall mean those assets of the Wood River Refinery that were owned and operated by Premcor prior to July 31, 2003, and all structures and equipment that COPC installed or used to integrate those assets with the Wood River Refinery. Provisions of this Consent Decree which apply to the Wood River Refinery also apply to Distilling West unless Distilling West is specifically excluded. A list of the assets that COPC purchased from Premcor is set forth in Appendix C.

AA. "Distilling West Combustion Units" shall mean Heater Nos. H-19, H-20, H-21, H-24, H-25, H-28, H-30, H-31, H-32, H-33, H-35, and H-36, and Boiler Nos. B-4, B-5, and B-6 physically located at Distilling West.

BB. "Enhanced SNCR" or "ESNCR" shall mean an air pollution control device consisting of ammonia injection with the addition of hydrogen as an enhanced reductant (or other reductants, reagents, or technology that will perform as well as or better than ammonia and

hydrogen on a particular CO Boiler, as demonstrated to and approved by EPA), but without a catalyst bed, to reduce NO_x.

CC. "FCCU" as used herein shall mean a fluidized catalytic cracking unit and its regenerator and associated CO boiler(s) (where present).

DD. "Ferndale Refinery" shall mean the refinery owned and operated by COPC in Ferndale, Washington.

EE. "Flaring Device" shall mean either an AG and/or an HC Flaring Device. The Flaring Devices that COPC owns and operates at the Covered Refineries are identified in Appendix A.

FF. "Fuel Oil" shall mean any liquid fossil fuel with a sulfur content of greater than 0.05% by weight.

GG. "Full Burn Operation" shall mean when essentially all of the CO produced in an FCCU regenerator is converted to CO₂ inside the regenerator and there is excess O₂ present in the regenerator flue gas. For Borger FCCUs 29 and 40, Full Burn Operation shall occur when less than 500 ppm CO and greater than 0.2% O₂ by volume is present in the regenerator flue gas.

HH. "Hydrocarbon Flaring" or "HC Flaring" shall mean the combustion of refinery-generated gases, except for Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, in a Hydrocarbon Flaring Device.

II. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean a device at the Covered Refineries that is used to safely control (through combustion) any excess volume of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Off Gas and/or Tail Gas. The HC Flaring Devices currently in service at the Covered Refineries are included in Appendix A to the Consent Decree, but shall also include the Paratone Flaring Device on the grounds of the Bayway Refinery. To the extent that, during the duration of the Consent Decree,

any Covered Refinery utilizes HC Flaring Devices other than those specified in Appendix A or the Paratone Flaring Device for the purpose of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas, those HC Flaring Devices shall be covered under this Consent Decree.

JJ. "Hydrocarbon Flaring Incident" or "HC Flaring Incident" shall mean the continuous or intermittent combustion of refinery-generated gases, except for Acid Gas or Sour Water Stripper Gas or Tail Gas, that results in the emission of sulfur dioxide equal to, or greater than five hundred (500) pounds in a twenty-four (24) hour period; provided, however, that if five-hundred (500) pounds or more of sulfur dioxide have been emitted in any twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to or in excess of five-hundred (500) pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the HC Flaring Incident.

KK. "Hydrotreater Outage" shall mean the period of time during which the operation of an FCCU is affected as a result of catalyst change-out operations or shutdowns required by ASME pressure vessel requirements or state boiler codes, or as a result of Malfunction, that prevents the hydrotreater from effectively producing the quantity and quality of feed necessary to achieve established FCCU emission performance.

LL. "IEPA" shall mean the Illinois Environmental Protection Agency and any successor departments or agencies of the State of Illinois.

MM. "Incremental Cost Effectiveness of a LoTOx System" or "Incremental Cost Effectiveness" shall mean:

$$\frac{[(acc + aoc)_1 - (acc + aoc)_2]}{[(ner)_1 - (ner)_2]}$$

Where:

acc = Annualized (15 year basis and 7% annual interest rate) Capital Cost of a LoTOx System (\$/yr)

aoc = Annual Operating Cost of a LoTOx System (\$/yr)

ner = NO_x emissions reduced from an Uncontrolled Baseline (tons per year)

Condition 1 is the lower ppm design level and Condition 2 is the higher ppm design level.

NN. "LAR" or "Los Angeles Refinery" shall mean COPC's integrated business operation that consists of the Los Angeles Refinery - Carson Plant and the Los Angeles Refinery - Wilmington Plant.

OO. "LAR Carson" or "LAR Carson Plant" shall mean the refinery owned and operated by COPC in Carson, California.

PP. "LAR Wilmington" or "LAR Wilmington Plant" shall mean the refinery owned and operated by COPC in Wilmington, California.

QQ. "LAR Wilmington Sulfuric Acid Plant" shall mean the sulfuric acid plant owned and operated by COPC at the LAR Wilmington Plant.

RR. "LDEQ" shall mean the Louisiana Department of Environmental Quality and any successor departments or agencies of the State of Louisiana.

SS. "Low NO_x Burners" shall mean those burners designed to achieve a NO_x emission rate of 0.06 lb NO_x/mmBTU (HHV) or less when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.06 lb NO_x/mmBTU (HHV).

TT. "Low NO_x Combustion Promoter" shall mean a catalyst that is added to an FCCU consistent with Appendix D that minimizes NO_x emissions while maintaining its effectiveness as a combustion promoter.

UU. "LoTOx System" shall mean a NO_x control technology that includes a quench system, sufficient residence time, ozone injection ports, ozone generators, and oxygen supply, that uses the ozone to oxidize NO_x which is then removed in a wet gas scrubber.

VV. "Malfunction" shall mean, as specified in 40 C.F.R. Part 60.2, "any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions."

WW. "Natural Gas Curtailment" shall mean a restriction imposed by a natural gas supplier limiting COPC's ability to obtain or use natural gas.

XX. "Next Generation Ultra-Low NO_x Burners" or "Next Generation ULNBs" shall mean those burners that are designed to achieve a NO_x emission rate of less than or equal to 0.020 lb NO_x/mmBTU (HHV) when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.020 lb NO_x/mmBTU (HHV).

YY. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successor departments or agencies of the State of New Jersey.

ZZ. "NO_x" shall mean nitrogen oxides.

AAA. "NO_x Additives" shall mean Low NO_x Combustion Promoters and NO_x Reducing Catalyst Additives.

BBB. "NO_x Reducing Catalyst Additive" shall mean a catalyst additive that is introduced to an FCCU to reduce NO_x emissions through reduction or controlled oxidation of intermediates consistent with Appendix D.

CCC. "NWCAA" shall mean the Northwest Clean Air Agency and any successor departments or agencies of the State of Washington.

DDD. "Operating Costs of a LoTOx System" or "Operating Costs" shall mean all costs, necessary and directly related to the operation of a LoTOx System, for maintenance, personnel, consumables, chemicals, and utilities. Utilities shall consist of electrical, steam, water supply, and compressed air costs.

EEE. "PaDEP" shall mean the Pennsylvania Department of Environmental Protection and any successor departments or agencies of the Commonwealth of Pennsylvania.

FFF. "Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral.

GGG. "Paratone Flaring Device" shall mean the Flaring Device owned and operated by Infineum, located on the grounds of the Bayway Refinery, and occasionally used by COPC.

HHH. "Parties" shall mean the United States, the Co-Plaintiffs, and COPC.

III. "PEMS" shall mean predictive emissions monitoring systems developed in accordance with Appendix E to this Consent Decree.

JJJ. "PM" shall mean particulate matter.

KKK. "Pollutant Reducing Catalyst Additive" shall mean either a NO_x Reducing Catalyst Additive or a SO₂ Reducing Catalyst Additive.

LLL. "Premcor" shall mean The Premcor Refining Group, Inc. and its agents, successors and assigns.

MMM. "Rodeo Refinery" shall mean the refinery owned and operated by COPC in Rodeo, California.

NNN. "Root Cause" shall mean the primary cause(s) of an AG Flaring Incident(s), Hydrocarbon Flaring Incident(s), or a Tail Gas Incident(s) as determined through a process of investigation.

OOO. "Root Cause Analysis" or "RCA" shall mean the term used internally by COPC to undertake the investigation and reporting requirements associated with Acid Gas Flaring Incidents, Hydrocarbon Flaring Incidents, and Tail Gas Incidents.

PPP. "San Francisco Refinery" shall mean COPC's integrated business operation that consists of the Rodeo Refinery and the Santa Maria Refinery.

QQQ. "Santa Maria Refinery" shall mean the refinery owned and operated by COPC in Santa Maria, California.

RRR. "Scheduled Turnaround" shall mean the shutdown of any emission unit or control equipment that is scheduled at least six months in advance of the shutdown and the purpose of such shutdown is to (1) perform general equipment cleaning and repairs due to normal equipment wear and tear; (2) perform required equipment tests and internal inspections; (3) install any unit or equipment modifications/additions, or make provisions for a future modification or addition; and/or (4) perform normal end-of-run catalyst changeouts or refurbishments.

SSS. "Scrubber-based NO_x Emission Reduction Technology" or "SNERT" shall mean a technology designed to achieve NO_x emissions of 20 ppm on a 365-day rolling average basis (or designed to achieve an alternative NO_x design concentration as approved by EPA pursuant to Paragraph 16), at 0% oxygen, from an FCCU flue gas stream, by chemically or biologically reacting NO_x such that it subsequently is removed in a wet gas scrubber.

TTT. "Selective Catalytic Reduction" or "SCR" shall mean an air pollution control device consisting of ammonia injection and a catalyst bed to selectively catalyze the reduction of NO_x with ammonia to nitrogen and water.

UUU. "7-day rolling average" and "365-day rolling average" shall mean the average emission rate during the preceding 7 or 365 days (as applicable) that the emission unit was operating.

VVV. "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the process of stripping refinery sour water.

WWW. "SO₂" shall mean sulfur dioxide.

XXX. "SO₂ Reducing Catalyst Additive" shall mean a catalyst additive that is introduced to an FCCU to reduce SO₂ emissions by reduction and adsorption.

YYY. "Sulfur Recovery Plant" or "SRP" shall mean a process unit that recovers sulfur from hydrogen sulfide by a vapor phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

ZZZ. "Sulfur Recovery Unit" or "SRU" shall mean a single component of a Sulfur Recovery Plant, commonly referred to as a Claus train.

AAAA. "Sweeny Refinery" shall mean the refinery owned and operated by COPC in Sweeny, Texas.

BBBB. "Tail Gas" shall mean exhaust gas from the Claus trains and the tail gas unit ("TGU") section of the SRP.

CCCC. "Tail Gas Incident" shall mean, for the purpose of this Consent Decree, combustion of Tail Gas that either is:

- i. Combusted in a flare and results in 500 pounds or more of SO₂ emissions in any twenty-four (24) hour period ; or

- ii. Combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO₂ emissions in any twenty-four (24) hour period. Only those time periods which are in excess of a SO₂ concentration of 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO₂ emissions from the incinerator.

COPC will use good engineering judgment and/or other monitoring data during periods in which the SO₂ continuous emission analyzer has exceeded the range of the instrument or is out of service.

DDDD. "Tail Gas Unit" or "TGU" shall mean a control system utilizing a technology for controlling emissions of sulfur compounds from a Sulfur Recovery Plant.

EEEE. "Torch Oil" shall mean FCCU feedstock or cycle oils that are combusted in the FCC regenerator to assist in starting up or restarting the FCCU, to allow hot standby of the FCCU, or to maintain regenerator heat balance in the FCCU.

FFFF. "Total Catalyst" shall mean all forms of catalyst added to the FCCU, including but not limited to base catalyst, equilibrium catalyst, and pollutant reducing catalyst.

GGGG. "Total Catalyst Addition Rate" shall mean the Total Catalyst added to an FCCU in pounds per day.

HHHH. "Total Cost Effectiveness of a LoTOx System" or "Total Cost Effectiveness" shall mean

$$\frac{\text{acc} + \text{aoc}}{\text{ner}}$$

Where:

acc = Annualized (15 year basis and 7 % annual interest rate) Capital Cost of a LoTOx System (\$/yr)

aoc = Annual Operating Cost of a LoTOx System (\$/yr)

net = NO_x emissions reduced from an Uncontrolled Baseline (tons per year)

III. "Trainer Refinery" shall mean the refinery owned and operated by COPC in Trainer, Pennsylvania.

JJJJ. "Uncontrolled Baseline" shall mean (i) 1771 tons per year of NO_x and 120 ppm of NO_x on a 365-day rolling average basis, at 0% oxygen, for the Alliance FCCU; and (ii) 481 tons of NO_x and 150 ppm of NO_x on a 365-day rolling average basis, at 0% oxygen, for the Wood River FCCU 1.

KKKK. "Upstream Process Units" shall mean all amine contactors, amine regenerators, and sour water strippers at the Covered Refineries, as well as all process units at the Covered Refineries that produce gaseous or aqueous waste streams that are processed at amine contactors, amine scrubbers, or sour water strippers.

LLLL. "Weight % Pollutant Reducing Catalyst Additive Rate" shall mean:

$$\frac{\text{Amount of Pollutant Reducing Catalyst Additive in Pounds per Day}}{\text{Baseline Total Catalyst Addition Rate}} \times 100\%$$

MMMM. "Wood River Refinery" shall mean the refinery owned and operated by COPC in Roxana and Hartford, Illinois, including Distilling West, except where Distilling West is specifically excluded.

V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS

A. NO_x Emissions Reductions from FCCUs

12. **Summary.** COPC will implement a program as set forth in Paragraphs 13 - 54 to reduce NO_x emissions from the Covered FCCUs, will incorporate lower NO_x emission limits at the Covered FCCUs into permits, and will demonstrate future compliance with the lower emission limits through the use of CEMS.

13. **Installation of an SCR System at Sweeny FCCU 27.** COPC will complete installation and begin operation of an SCR system at Sweeny FCCU 27 by no later than December 31, 2009. COPC will design the SCR system to achieve a NO_x concentration of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen. By no later than June 30, 2010, COPC will comply with a NO_x emission limit of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen.

14. **Installation of a Scrubber-Based NO_x Emission Reduction Technology at Wood River FCCU 1 and the Alliance FCCU (Paragraphs 14 - 26).** COPC will complete installation and begin operation of a Scrubber-Based NO_x Emission Reduction Technology ("SNERT") at the Wood River FCCU 1 by no later than December 31, 2010, and at the Alliance FCCU by no later than December 31, 2012.

15. **NO_x Design Concentration for SNERT.** Except as provided in Paragraph 16, COPC will design the SNERTs for the Wood River FCCU 1 and Alliance FCCU to achieve a NO_x concentration of 20 ppmvd on a 365-day rolling average basis at 0% oxygen ("20 ppm NO_x Design Concentration").

16. Alternative NO_x Design Concentration for a SNERT. By no later than

September 30, 2007, for the Wood River FCCU 1, and no later than September 30, 2009, for the Alliance FCCU, COPC may submit to EPA for approval a proposal to design a SNERT to a higher concentration than the 20 ppm NO_x Design Concentration. In such proposal, COPC must demonstrate that a LoTOx System for the respective FCCU meets one or more of the following conditions:

- (a) The Total Cost Effectiveness for a LoTOx System at that FCCU to achieve 40 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis is greater than \$20,000 per ton reduced;
- (b) The Incremental Cost Effectiveness for a LoTOx System at that FCCU for any 5 ppmvd increment between 40 ppmvd and 20 ppmvd at 0% O₂ is greater than \$20,000 per ton reduced; and/or
- (c) The Total Cost Effectiveness for a LoTOx System at that FCCU to achieve 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis is greater than \$10,000 per ton reduced.

If the Total Cost Effectiveness for a LoTOx System to achieve 40 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis is greater than \$20,000 per ton reduced, then the Alternative NO_x Design Concentration will be the lowest NO_x design concentration at which this cost does not exceed \$20,000 per ton reduced. If the Incremental Cost Effectiveness for a LoTOx System for any 5 ppmvd increment between 40 ppmvd and 20 ppmvd at 0% O₂ is greater than \$20,000 per ton reduced, then the Alternative NO_x Design Concentration will be the lower of: (i) the lowest NO_x design concentration at which the Incremental Cost Effectiveness at one of the increments does not exceed \$20,000 per ton reduced; or (ii) 40 ppmvd. If the Total Cost Effectiveness for a LoTOx System to achieve 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis is greater than \$10,000 per ton reduced, then the Alternative NO_x Design Concentration will be the lowest NO_x design concentration at which this cost does not exceed \$10,000 per ton reduced. COPC

will not design a SNERT to higher than 20 ppm NO_x unless and until EPA approves an Alternative NO_x Design Concentration.

17. If, by January 31, 2008, for the Wood River FCCU 1, or January 31, 2010, for the Alliance FCCU, COPC is not satisfied with EPA's response, or lack thereof, to a proposal submitted by COPC pursuant to Paragraph 16, then COPC will invoke the dispute resolution provisions of Section XV of this Decree between February 1 and February 28 of the applicable year. Failure by COPC to invoke Section XV during the month of February of the applicable year will constitute a waiver of COPC's right to dispute EPA's decision with respect to any Paragraph 16 proposal. For any disputes under this Paragraph, the informal period of negotiations will not extend beyond sixty (60) days.

18. Under either Paragraph 15 or 16, COPC will not be required to design a SNERT that: (i) results in ozone emissions in excess of that allowed by state permitting; (ii) violates the OSHA Process Safety Management requirements to: (1) operate equipment according to recognized and generally good engineering practices pursuant to 29 C.F.R. § 1910.119(d)(3)(ii), or (2) place the equipment consistent with facility siting determinations performed during the initial process hazard analysis pursuant to 29 C.F.R. § 1910.119(e); and/or (iii) results in wastewater discharges in excess of that allowed by the affected Refinery's then-current wastewater permit unless COPC can make changes at the Refinery to meet the then-current limits or unless the state permitting authority agrees to raise permit limits.

19. Design Submissions. By no later than the dates set forth in the table in Paragraph 20 ("Paragraph 20 Table"), COPC will submit to EPA and the Applicable Co-Plaintiff proposed process design specifications for the SNERT based on the 20 ppmvd NO_x Design Concentration, or, if approved by EPA, the Alternative NO_x Design Concentration. COPC will

propose process design specifications that, at a minimum, include appropriate design parameters (for example, if COPC selects a LoTOx System, COPC will include consideration of the design parameters set forth in Appendix F for LoTOx Systems). COPC and EPA agree to consult with each other on the development of the process design specifications for the SNERT prior to COPC's submission of final proposal.

20. Provided that COPC meets the deadlines for the submission of the process design specifications, EPA will provide comments, if any, to COPC by no later than the dates set forth in the Paragraph 20 Table. If EPA provides comments on the proposed design, COPC will submit to EPA, for final approval, with a copy to the Applicable Co-Plaintiff, a modified proposal that addresses EPA's comments by the dates set forth in the Paragraph 20 Table. If EPA does not provide comments on or approval of the final design by the dates set forth in the Paragraph 20 Table, COPC will proceed with the implementation of the final design. COPC will notify EPA and the Applicable Co-Plaintiff of any substantial changes to the SNERT design which may affect the performance of the SNERT by no later than thirty (30) days after COPC decides to change the design.

FCCU	(a) COPC elects to submit a proposal under ¶ 16	(b) COPC invokes dispute resolution (if necessary)	(c) COPC submits proposed process design specifications	(d) EPA comments on proposed process design specifications	(e) COPC submits modified process design specifications to address EPA comments	(f) EPA comments on the modified process design specifications
Alliance	No later than Sept. 30, 2009	Feb. 2010	No later than June 30, 2010	90 days after the submission in (c)	60 days after the comments in (d)	60 days after the submission in (e)
Wood River 1	No later than Sept. 30, 2007	Feb. 2008	No later than June 30, 2008	90 days after the submission in (c)	60 days after the comments in (d)	60 days after the submission in (e)

21. SNERT Optimization Studies and Demonstration Periods (Paragraphs 21 - 26).

By no later than the dates set forth in the table in Paragraph 25 ("Paragraph 25 Table"), COPC will begin a six (6) month study to optimize the performance of the SNERT to minimize NO_x emissions from the Alliance and Wood River 1 FCCUs ("SNERT Optimization Study"). During the SNERT Optimization Study, COPC will evaluate the effect of operating parameters on NO_x emissions, will monitor NO_x emissions and the operating parameters to identify optimum operating levels for the parameters that minimize NO_x emissions, and will operate the respective SNERT in a way that minimizes NO_x emissions.

22. By no later than the dates set forth in the Paragraph 25 Table, COPC will submit a report to EPA and the Applicable Co-Plaintiff that describes the results of the SNERT Optimization Study ("SNERT Optimization Study Report") and identifies the optimal operating levels for use in a demonstration period. In the SNERT Optimization Study Report, COPC will submit a protocol for an eighteen (18) month demonstration of the SNERT at the optimized operating levels.

23. By no later than the dates set forth in the Paragraph 25 Table, COPC will begin an eighteen (18) month demonstration of the SNERT at the optimized operating levels. During the demonstration period, COPC will continue to evaluate the effect of operating parameters on NO_x emissions and will make all reasonable efforts to operate at the optimal operating levels for those parameters that COPC can control.

24. If either or both of COPC's SNERTs is a LoTOx System, then during the optimization and demonstration period, COPC will not be required to add ozone at a rate that results in total costs for the sum of (i) electricity for ozone generation and oxygen production; and (ii) oxygen, for operation of a LoTOx System, in excess of:

- (a) For the first twelve (12) months of the optimization and demonstration periods, a running average annualized cost, calculated on a monthly basis, of \$4.4 million (to be adjusted for inflation at the time the optimization period begins) for the Alliance FCCU, and \$1.2 million (to be adjusted for inflation at the time the optimization period begins) for the Wood River FCCU 1; and
- (b) For each calendar month after month twelve (12) of the optimization and demonstration periods, a twelve (12) month rolling average cost of \$4.4 million (to be adjusted for inflation at the time the optimization period begins) for the Alliance FCCU, and \$1.2 million (to be adjusted for inflation at the time the optimization period begins) for the Wood River FCCU 1, on an annualized basis, calculated monthly.

For purposes of this Paragraph, the "running average annualized cost" will be calculated monthly according to the following equation:

$$\frac{[\sum_1^n \text{cost}_m]}{n} \times 12$$

Where "n" = month number within the optimization and demonstration period

25. By no later than the dates set forth in the Paragraph 25 Table, COPC will submit a written report ("SNERT Demonstration Report") to EPA and the Applicable Co-Plaintiff that sets forth the results of the demonstration.

FCCU	COPC commences SNERT Optimiz. Study	COPC commences SNERT demonstration	COPC submits Optimization Study Report	COPC completes SNERT demonstration	COPC submits SNERT Demonstration Report
Alliance	12/31/12	6/30/13	8/31/13	12/31/14	3/31/15
Wood River 1	12/31/10	6/30/11	8/31/11	12/31/12	3/31/13

26. In the SNERT Optimization and Demonstration Reports, COPC will identify the relevant operating parameters and their levels that result in the maximum reduction of NO_x emissions for each respective FCCU. Each Report will include, at a minimum, the following information on a daily average basis (unless otherwise noted below):

- (a) CO Boiler combustion temperature and flue gas flow rate (estimated or measured);
- (b) Coke burn rate in pounds per hour;
- (c) FCCU feed rate in barrels per day;
- (d) FCCU feed API gravity;
- (e) Estimated percentage or directly measured percentage (if available) of each type of FCCU feed component (i.e. atmospheric gas oil, vacuum gas oil, atmospheric tower bottoms, vacuum tower bottoms, etc.);
- (f) Amount and type of hydrotreated feed (i.e. volume % of feed that is hydrotreated and the type of hydrotreated feed such as AGO, VGO, CGO, ATB, VTB, etc.);
- (g) FCCU feed nitrogen (on a weekly basis) and FCCU feed sulfur (on a daily basis) content, as a weight %;
- (h) CO boiler firing rate and fuel type, if applicable
- (i) Ozone addition rates (if applicable);

- (j) Quench system inlet and outlet temperature (if applicable);
- (k) Power usage and, if applicable, oxygen usage;
- (l) Hourly average NO_x and O₂ concentrations at the point of emission to the atmosphere by means of a CEMS;
- (m) NO_x concentrations at the inlet to the SNERT during the Optimization Study (a process analyzer calibrated in accordance with manufacturer's recommendations may be used); and
- (n) Any other parameters that COPC identifies before the end of the optimization and/or demonstration period.

The SNERT Optimization and Demonstration Reports also will include a detailed description, with appropriate calculations, of the times, if any, during the optimization and demonstration periods where COPC asserts that the conditions set forth in Paragraph 24 were met.

27. COPC may notify EPA by no later than December 31, 2012 (for Wood River), and by no later than December 31, 2014 (for Alliance), of COPC's agreement to comply with NO_x emission limits of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen, effective on December 31, 2012, for Wood River FCCU 1, and effective on December 31, 2014, for the Alliance FCCU. If COPC makes such a notification, Paragraphs 14 - 26 no longer will apply for that FCCU after the date of the notification.

28. Installation and Operation of Enhanced SNCR at the Bayway FCCU; Borger FCCUs 29 and 40; the Ferndale FCCU; the Trainer FCCU; and Wood River FCCU 2 (Paragraphs 28 - 37). COPC will complete installation and will begin operation of an Enhanced SNCR system (or alternative technology at the Borger FCCUs 29 and 40 as provided for in Paragraph 39) at the following FCCUs by no later than the following dates:

Bayway FCCU	December 31, 2006
Borger FCCU 29	December 31, 2006
Borger FCCU 40	December 31, 2012
Ferndale FCCU	December 31, 2010
Trainer FCCU	December 31, 2006
Wood River FCCU 2	December 31, 2012

29. Enhanced SNCR Design. COPC will design the Enhanced SNCR systems to reduce NO_x emissions as much as feasible. By no later than the dates in the Table in Paragraph 30 ("Paragraph 30 Table"), COPC will submit to EPA and the Applicable Co-Plaintiff proposed process design specifications for the Enhanced SNCR systems. In that submission, COPC will propose process design specifications that, at a minimum, include consideration of the design parameters identified in Appendix F to this Consent Decree. COPC and EPA agree to consult with each other on the development of the process design specifications for the Enhanced SNCR systems prior to COPC's submission of final proposals.

30. Provided that COPC meets the deadlines for the submission of the process design specifications, EPA will provide comments, if any, to COPC by no later than the dates set forth in the Paragraph 30 Table. Prior to submitting its comments by the dates set forth in the Paragraph 30 Table, EPA will provide the Applicable Co-Plaintiff an opportunity for comment. If EPA provides comments on the proposed design, COPC will submit to EPA, for final approval, with a copy to the Applicable Co-Plaintiff, a modified proposal that addresses EPA's comments by the dates set forth in the Paragraph 30 Table. If EPA does not provide comments on or approval of the final design by the dates in the Paragraph 30 Table, COPC may proceed with the implementation of the final design. Thereafter, COPC will notify EPA and the

Applicable Co-Plaintiff of any substantial changes to the Enhanced SNCR design which may affect the performance of the Enhanced SNCR system by no later than 30 days after COPC decides to change the design.

FCCU	(a) COPC submits proposed process design specifications	(b) EPA comments on proposed process design specifications	(c) COPC submits modified process design specifications to address EPA comments	(d) EPA comments on the modified process design specifications
Bayway	No later than 30 days after DOL	No later than 60 days after the submission in (a)	No later than 30 days after the comments in (b)	No later than 30 days after the submission in (c)
Borger 29	No later than 3/31/05	45 days after the submission in (a)	30 days after the comments in (b)	15 days after the submission in (c)
Borger 40	No later than 12/31/10	2 mos. after the submission in (a)	2 mos. after the comments in (b)	2 mos. after the submission in (c)
Ferndale	No later than 12/31/08	2 mos. after the submission in (a)	2 mos. after the comments in (b)	2 mos. after the submission in (c)
Trainer	No later than Sept. 30, 2004	No later than 30 days after the submission in (a)	No later than 30 days after the comments in (b)	No later than 30 days after the submission in (c)
Wood River 2	No later than 12/31/10	2 mos. after the submission in (a)	2 mos. after the comments in (b)	2 mos. after the submission in (c)

31. Enhanced SNCR Optimization Studies and Demonstration Periods (Paragraphs 31- 37). By no later than the dates set forth in the table in Paragraph 35 ("Paragraph 35 Table"), COPC will submit to EPA and the Applicable Co-Plaintiff a protocol for implementing an Enhanced SNCR optimization study at each of the respective FCCUs. This protocol will include, at a minimum, consideration of the operating parameters set forth in Appendix F to this Consent Decree.

32. By no later than the dates set forth in the Paragraph 35 Table, COPC will begin a six (6) month study, in accordance with the protocol, to optimize the performance of the ESNCR system to minimize NO_x emissions from the respective FCCUs ("ESNCR Optimization Study"). During the ESNCR Optimization Study, COPC will evaluate the effect of operating parameters on NO_x emissions, will monitor NO_x emissions and the operating parameters to identify optimum operating levels for the parameters that minimize NO_x emissions, and will operate the respective FCCU and ESNCR system in a way that minimizes NO_x emissions as much as feasible without interfering with FCCU conversion or processing rates.

33. By no later than the dates set forth in the Paragraph 35 Table, COPC will submit a report to EPA and the Applicable Co-Plaintiff that describes the results of the ESNCR Optimization Study ("ESNCR Optimization Study Report") and identifies optimal operating levels for use in the demonstration period. COPC will propose, for EPA approval and for review and comment by the Applicable Co-Plaintiff, optimal operating levels for use in the demonstration period. EPA will not provide its approval of COPC's proposed operating levels prior to the commencement of the demonstration period. If, during the demonstration period, EPA disapproves COPC's proposed operating levels, extensions of all relevant deadlines, as agreed by the parties, may result.

34. By no later than the dates set forth in the Paragraph 35 Table, COPC will begin an eighteen (18) month demonstration of the ESNCR system at the optimized operating levels. During the demonstration period, COPC will continue to evaluate the effect of operating parameters on NO_x emissions and will operate the respective FCCU and ESNCR in a way that minimizes NO_x emissions as much as feasible without interfering with FCCU conversion or processing rates.

35. By no later than the dates set forth in the Paragraph 35 Table, COPC will submit a written report ("ESNCR Demonstration Report") to EPA and the Applicable Co-Plaintiff that sets forth the results of the demonstration.

FCCU	COPC submits proposed protocol for ESNCR Optimiz. Study	COPC commences ESNCR Optimiz. Study	COPC commences ESNCR demonstration	COPC submits ESNCR Optimization Study Report	COPC completes ESNCR demonstration	COPC submits ESNCR Demonstration Report
Bayway	9/30/06	3/31/07	9/30/07	11/30/07	3/31/09	5/31/09
Borger 29	9/30/06	3/31/07	9/30/07	11/30/07	3/31/09	5/31/09
Borger 40	9/30/12	3/31/13	9/30/13	11/30/13	3/31/15	5/31/15
Ferndale	9/30/10	3/31/11	9/30/11	11/30/11	3/31/13	5/31/13
Trainer	9/30/06	3/31/07	9/30/07	11/30/07	3/31/09	5/31/09
Wood River 2	9/30/12	3/31/13	9/30/13	11/30/13	3/13/15	5/31/15

36. In the ESNCR Optimization and Demonstration Reports, COPC will identify the relevant operating parameters and their levels that result in the maximum reduction of NO_x emissions from each respective FCCU. The Reports will include, at a minimum, the following information on a daily average basis (except where a different period is specified):

- (a) CO Boiler combustion temperature profiles (at existing measurement locations) and flue gas flow rate (estimated or measured);
- (b) Coke burn rate in pounds per hour;
- (c) FCCU feed rate in barrels per day;
- (d) FCCU feed API gravity;
- (e) Estimated percentage or directly measured percentage (if available) of each type of FCCU feed component (i.e. atmospheric gas oil, vacuum gas oil, atmospheric tower bottoms, vacuum tower bottoms, etc.);

- (f) Amount and type of hydrotreated feed (i.e. volume % of feed that is hydrotreated and the type of hydrotreated feed such as AGO, VGO, CGO, ATB, VTB, etc.);
- (g) FCCU feed nitrogen (on a weekly basis) and FCCU feed sulfur (on a daily basis) content, as a weight %;
- (h) CO boiler firing rate and fuel type, if applicable;
- (i) Reductant addition rates and ammonia slip (ppm), where applicable;
- (j) Power usage;
- (k) Reductant carrier medium;
- (l) Hourly average NO_x and O₂ concentrations at the point of emission to the atmosphere and, for O₂ only, in the flue gas leaving the CO Boiler; and
- (m) Any other parameters that COPC identifies before the end of the demonstration period.

Upon request by EPA, COPC will submit any additional data that EPA determines it needs to evaluate the ESNCR Optimization Study and demonstration.

37. For purposes of complying with Paragraph 36(l), COPC will utilize a CEMS to determine the NO_x and O₂ concentrations at the point of emission to the atmosphere. COPC will determine the O₂ concentrations in the flue gas after combustion in the CO boiler by process analyzer(s) calibrated in accordance with the manufacturer's recommendations. COPC will report the data or measurements in electronic format.

38. Accepting Hard Limits. For the Bayway FCCU, Borger FCCUs 29 and 40, the Ferndale FCCU, the Trainer FCCU, and/or Wood River FCCU 2, COPC may notify EPA and the Applicable Co-Plaintiff at any time prior to the due date for the submission of the ESNCR Demonstration Report for the respective FCCU of COPC's agreement to comply with NO_x emission limits of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen, effective no later than the due date of the submission of the ESNCR

Demonstration Report for the respective FCCU. If COPC makes such a notification, Paragraphs 28 - 37 will no longer apply for that FCCU after the date of the notification.

39. By no later than March 31, 2005, COPC may notify EPA of COPC's: (i) intent to decommission the CO Boilers at the Borger FCCUs, convert Borger FCCUs 29 and 40 to Full Burn Operation, and utilize high-pressure hydrotreating at greater than 1200 pounds per square inch ("psi") for the FCCU feed; and (ii) agreement to comply with the provisions of this Paragraph instead of Paragraphs 28 - 37. If COPC makes this notification, then by no later than December 31, 2007, COPC will (i) decommission its Borger CO Boilers, (ii) convert Borger FCCUs 29 and 40 to Full Burn Operation, and (iii) utilize high-pressure hydrotreating at greater than 1200 psi for 100% of the FCCU feed until the NO_x emission limits for Borger FCCUs 29 and 40 have been established pursuant to Paragraphs 50 - 51. COPC will commence the implementation of a NO_x Additives program at Borger FCCUs 29 and 40 in accordance with the requirements of Paragraphs 41 - 47 by no later than the dates set forth in those Paragraphs. As part of the next turnaround of the respective FCCU after conversion to Full Burn Operation, COPC will consider changes to the FCCU that may be necessary to: (i) minimize afterburn while using Low NO_x Combustion Promoter; and (ii) comply with CO emission limits while using Low NO_x Combustion Promoter. If COPC notifies EPA of its intent to comply with this Paragraph, then the requirements of Paragraphs 28 - 37 will not apply to Borger FCCUs 29 and 40. Nothing in this Paragraph releases COPC from its obligations to obtain any necessary permits required for making changes at the Borger Refinery.

40. Continued Shutdown of the Distilling West FCCU and Surrender of the Illinois State Permits. The Distilling West FCCU currently is shut down. This shutdown was not and is not required by this Consent Decree. By no later than thirty (30) days after the Date of Lodging

of the Consent Decree, COPC will surrender to the State of Illinois the following permits relating to the Distilling West FCCU: 75120010 (operating permit for the FCCU); 94040141 (construction permit for FCCU modifications); and 01100084 (construction permit for FCCU wet gas scrubber). If at any time prior to the termination of this Decree, COPC seeks to start up the Distilling West FCCU, COPC will apply for appropriate permits with the State of Illinois as a new emission source as defined in 35 Ill. Adm. Code 201.102 and meet all emission limits then applicable to new emission sources.

41. Use of NO_x Reducing Catalyst Additives and Low NO_x Combustion Promoters at Sweeny FCCU 3, the LAR Wilmington FCCU, and, if applicable, Borger FCCUs 29 and 40 (Paragraphs 41 - 47). The reduction of NO_x emissions from the LAR Wilmington FCCU, Sweeny FCCU 3, and Borger FCCUs 29 and 40 (if COPC provides notification under Paragraph 39) will be accomplished by the use of NO_x Reducing Catalyst Additives and Low NO_x Combustion Promoters as described in Paragraphs 42 - 47.

42. Hydrotreating at the Sweeny Refinery. By no later than June 1, 2006, COPC will have completed modifications to the operations of its Sweeny Refinery such that the feed to Sweeny FCCUs 3 and 27 is high-pressured hydrotreated at greater than 1200 pounds per square inch. COPC will high-pressure hydrotreat 100% of the feed at Sweeny FCCU 3 until both the NO_x and SO₂ emission limits have been established pursuant to Paragraphs 50 - 51 (NO_x) and Paragraphs 69 - 70 (SO₂). COPC will high-pressure hydrotreat 90% of the feed at Sweeny FCCU 27 until the SO₂ emissions limits have been established pursuant to Paragraphs 69 - 70.

43. NO_x Baseline Data and NO_x Model. By the dates set forth below, for the following baseline time periods, for the following FCCUs, COPC will submit to EPA and the Applicable Co-Plaintiff two reports: (1) a report of twelve (12) months of baseline data; and

(2) a report describing a model to predict uncontrolled NO_x concentration and mass emission rate:

<u>FCCU</u>	<u>Baseline Start</u>	<u>Baseline End</u>	<u>Report</u>
LAR Wilmington FCCU	12/31/05	12/31/06	2/28/07
Sweeny FCCU 3	6/30/06	6/30/07	8/31/07
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	12/31/07	12/31/08	2/28/09

The baseline data will include all data considered in development of the model on a daily average basis and, at a minimum, the following data on a daily average basis:

- (a) Regenerator dense bed, dilute phase, cyclone and flue gas temperatures;
- (b) Coke burn rate in pounds per hour;
- (c) FCCU feed rate in barrels per day;
- (d) FCCU feed API gravity;
- (e) Estimated percentage or directly measured percentage (if available) of each type of FCCU feed component (i.e. atmospheric gas oil, vacuum gas oil, atmospheric tower bottoms, vacuum tower bottoms, etc.);
- (f) Amount and type of hydrotreated feed (i.e. volume % of feed that is hydrotreated and the type of hydrotreated feed such as AGO, VGO, CGO, ATB, VTB, etc.);
- (g) FCCU feed sulfur and basic nitrogen content, as a weight %, except that if, after thirty (30) days of daily monitoring of the FCCU feed nitrogen content, the variability of the feed nitrogen content, as measured by the standard deviation of the data, is less than 30% of the mean, then COPC may commence monitoring and recording the feed nitrogen content through daily sampling composited on a weekly basis for the remainder of the baseline period; in addition, COPC may propose, for EPA approval, alternate sulfur and nitrogen data collection requirements.
- (h) CO boiler firing rate and fuel type, if applicable;
- (i) CO boiler combustion temperature, if applicable;

- (j) Total Catalyst addition rate;
- (k) NO_x and SO₂ Reducing Catalyst Additive and addition rates, conventional combustion promoter addition rates, and Low NO_x Combustion Promoter addition rates;
- (l) Hourly and daily SO₂, NO_x, CO, and O₂ concentrations at the point of emission to the atmosphere by means of a CEMS; and
- (m) Any other parameters that COPC identifies before the end of the demonstration period.

Upon request by EPA, COPC will submit any additional data that EPA determines it needs to evaluate the model. The report describing the model will include a description of how the model was developed including which parameters were considered, why parameters were eliminated, efforts and results of model validation, and the statistical methods used to arrive at the equation to predict uncontrolled NO_x concentration and mass emission rate.

44. Use of Low NO_x Combustion Promoter.

- (a) By no later than June 30, 2005, COPC will identify and notify EPA as to which EPA-approved brand of Low NO_x Combustion Promoter COPC will use at the LAR Wilmington FCCU. Beginning December 31, 2006, COPC will discontinue use of conventional combustion promoter and begin using this Low NO_x Combustion Promoter at the LAR Wilmington FCCU. COPC agrees that for the LAR Wilmington FCCU, there will be no optimization period to determine the effectiveness of Low NO_x Combustion Promoter. Prior to the establishment of NO_x limits pursuant to Paragraphs 50 - 51, COPC will not discontinue use of Low NO_x Combustion Promoter at the LAR Wilmington FCCU unless and until EPA approves the discontinuance.
- (b) By no later than the dates set forth in the Table in Paragraph 44(d) ("Paragraph 44(d) Table"), COPC will identify for EPA approval the brand of Low NO_x Combustion Promoter that COPC proposes to use for Sweeny FCCU 3 and, if applicable, Borger FCCUs 29 and 40, together with COPC's proposed functional equivalent rate, as determined by Appendix D.
- (c) If EPA has approved a Low NO_x Combustion Promoter brand prior to the completion of the baseline period, then immediately upon completion of the baseline period, and in accordance with the protocol set forth in Appendix D, COPC will commence a program for the full replacement of its conventional

combustion promoter with Low NO_x Combustion Promoter. COPC will complete this program by no later than the dates set forth in the Paragraph 44(d) Table. If EPA has not approved a brand prior to the completion of the baseline period, then all relevant deadlines will be modified as agreed by the parties.

- (d) COPC will submit a report on the above-described program by no later than the dates set forth in the Paragraph 44(d) Table. This report will identify the levels of afterburn and the reductions in NO_x emissions from the baseline at the historical level of use of conventional Pt-based combustion promoter and when Low NO_x Combustion Promoter is used.

<u>FCCU</u>	<u>COPC identifies Low NO_x Combustion Promoter and Functional Equivalent Rate</u>	<u>Replacement of Convent- ional Promoter with Low NO_x CO Promoter Starts</u>	<u>Replacement of Convent- ional Promoter with Low NO_x CO Promoter is Complete</u>	<u>Report Due</u>
Sweeny FCCU 3	12/31/06	6/30/07	12/31/07	3/1/08
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	6/30/08	12/31/08	6/30/09	8/31/09

- (e) COPC may use conventional combustion promoter on an intermittent basis during the optimization and demonstration periods as needed to avoid unsafe operation of the FCCU regenerator and to comply with CO emission limits. COPC will undertake appropriate measures and/or adjust operating parameters with the goal of eliminating such use. Notwithstanding the foregoing, COPC will not be required to adjust operating parameters in a way that would limit conversion or processing rates. Within thirty (30) days of using conventional combustion promoter, COPC will submit a report to EPA documenting when and why COPC used the conventional combustion promoter and the actions, if any, taken to return to the minimized level of use.
- (f) COPC may discontinue use of Low NO_x Combustion Promoters if COPC demonstrates to EPA that COPC has adjusted other parameters and that such promoter does not adequately control afterburn and/or causes CO emissions to approach or exceed applicable limits. Prior to the establishment of NO_x limits pursuant to Paragraphs 50 - 51, COPC will not discontinue use of Low NO_x Combustion Promoters unless and until EPA approves the discontinuance. Notwithstanding the foregoing, COPC will not be required to adjust operating parameters in a way that would limit FCCU conversion or processing rates.

45. NO_x Reducing Catalyst Additives – Short Term Trials

- (a) By no later than the dates set forth in the table in Paragraph 45(c), COPC will identify for EPA approval at least two commercially available brands of NO_x Reducing Catalyst Additives, for each FCCU, that COPC proposes to use for short term trials and submit a protocol to EPA for conducting the trials.
- (b) COPC will propose use of at least two brands of NO_x Reducing Catalyst Additives that are likely to perform the best in each FCCU. EPA will base its approval or disapproval on its assessment of the performance of the proposed brand of additives in other FCCUs, the similarity of those FCCUs to COPC's FCCUs, as well as any other relevant factors, with the objective of conducting trials of the brands of NO_x Reducing Catalyst Additives likely to have the best performance in reducing NO_x emissions. In the event that COPC submits less than two approvable brands of additives, EPA will identify other approved additives brands to COPC.
- (c) If EPA has approved two brands of NO_x Reducing Catalyst Additives by no later than the "trial start" date set forth below, then COPC will commence and complete the trials of those two brands and will submit a report to EPA that describes the performance of each brand that was trialed by the following dates for the following FCCUs:

<u>FCCU</u>	<u>COPC IDs 2 Additives and Submits Protocol</u>	<u>Trial Starts</u>	<u>Trial Ends</u>	<u>Report Date</u>
LAR Wilmington FCCU	6/30/05	12/31/06	6/30/07	7/31/07
Sweeny FCCU 3	6/30/06	12/31/07	6/30/08	7/31/08
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	12/31/08	6/30/09	12/31/09	1/31/10

If EPA has not approved two brands of additives by the "trial start" date, then all relevant deadlines will be modified as agreed by the parties.

- (d) In the report on the short-term trials, COPC will propose to use the best performing brand of additive as measured by percentage of NO_x emissions reduced and the concentration to which NO_x emissions were reduced in the trials, taking into account all relevant factors. EPA will either approve the proposed brand of additive or approve another brand of additive that was trialed for use in the optimization study. In approving an additive, EPA will consider the impact of the additive on the processing rate and/or the conversion capability if such

impacts cannot be reasonably compensated for by adjusting operating parameters. Upon request by EPA, COPC will submit any additional available data that EPA determines it needs to evaluate the trials.

46. NO_x Reducing Catalyst Additives – Optimization Study and Report

- (a) By no later than the dates set forth in the table in Paragraph 46(c) (“Paragraph 46(c) Table”), COPC will submit, for EPA approval, a proposed protocol consistent with the requirements of Appendix D for optimization studies to establish the optimized NO_x Reducing Catalyst Additive addition rates. The protocol will include methods to calculate effectiveness, cost effectiveness, methods for baseloading, and percent additive used at each increment tested.
- (b) If EPA has approved a brand of NO_x Reducing Catalyst Additive by no later than the “Optimization Start” date set forth in the Paragraph 46(c) Table, then COPC will commence and complete the optimization study of the NO_x Reducing Catalyst Additive in accordance with the approved protocol and Appendix D by no later than the dates set forth in the Paragraph 46(c) Table. If EPA has not approved a brand of NO_x Reducing Catalyst Additive by no later than the “Optimization Start” date, then all relevant deadlines will be modified as agreed by the parties.
- (c) By no later than the following dates, COPC will report the results of the NO_x Reducing Catalyst Additive Optimization Study and propose, for EPA approval, optimized addition rates of all catalysts and promoters to be used for the demonstration period.

<u>FCCU</u>	<u>Protocol Due</u>	<u>Optimization Start</u>	<u>Optimization End</u>	<u>Report Due</u>
LAR Wilmington FCCU	3/31/06	9/30/07	3/31/08	4/30/08
Sweeny FCCU 3	3/31/07	9/30/08	3/31/09	4/30/09
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	9/30/09	3/31/10	9/30/10	10/31/10

Upon request by EPA, COPC will submit any additional data that EPA determines it needs to evaluate the NO_x Reducing Catalyst Additive Optimization Study.

- (d) During the Optimization Study, COPC will successively add NO_x Reducing Catalyst at increments of 1.0, 1.5, and 2.0 Weight % NO_x Reducing Catalyst Additive. Once a steady state has been achieved at each increment, COPC will evaluate the performance of the NO_x Reducing Catalyst Additive in terms of NO_x emissions reductions and projected annualized costs. The final Optimized NO_x

Reducing Catalyst Additive Addition Rate, in pounds per day, will occur at the addition rate where either:

- (i) The FCCU meets 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average, in which case COPC will agree to accept a limit of 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis at the conclusion of the demonstration period;
- (ii) Incremental Pickup Factor <1.8 lb NO_x/lb additive;
- (iii) Total cost of the additive > \$10,000/ton NO_x removed; or
- (iv) FCCU is operating at 2.0% Weight % NO_x Reducing Catalyst Additive.

If an additive limits (i) the FCCU's ability to control CO emissions to below 500 ppmvd CO corrected to 0% O₂ on a 1-hour basis; and/or (ii) the FCCU's processing rate; and/or (iii) the FCCU's conversion capability, and this (these) effect(s) cannot be reasonably compensated for by adjusting other parameters, then the additive rate will be reduced to a level at which the additive no longer causes such effects.

47. NO_x Reducing Catalyst Additives – Demonstration Period and Report

- (a) By no later than the dates set forth in the table in Paragraph 47(b), while using Low NO_x Combustion Promoter (if it is needed and effective), COPC will commence and complete a demonstration of the EPA-approved NO_x Reducing Catalyst Additive at the optimized addition rates that COPC proposes unless EPA proposes different optimized addition rates. Delays by EPA in approving the optimized addition rate may result in extensions of the demonstration period and extensions of relevant deadlines as agreed by the parties.
- (b) By no later than the following dates, COPC will report to EPA and the Applicable Co-Plaintiff the results of the demonstration ("NO_x Additive Demonstration Report"). The NO_x Additive Demonstration Report will include, at a minimum, the NO_x and O₂ CEMS data recorded during the demonstration period and all baseline data on a daily average basis for the demonstration period.

<u>FCCU</u>	<u>Demonstration Start</u>	<u>Demonstration End</u>	<u>Report Due</u>
LAR Wilmington	3/31/08	12/31/10	3/1/11
Sweeny 3	3/31/09	12/31/11	3/1/12
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	9/30/10	3/31/12	5/31/12

- (c) During the demonstration period, COPC will both physically add NO_x Reducing Catalyst Additive and operate each FCCU, CO Boiler (where installed) and FCCU feed hydrotreaters (where installed) in a manner that minimizes NO_x emissions to the extent practicable without interfering with conversion or processing rates.

48. COPC may notify EPA at any time prior to the following dates of COPC's agreement to comply with NO_x emission limits of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen, effective on the following dates:

<u>FCCU</u>	<u>Date</u>
LAR Wilmington	3/1/11
Sweeny 3	3/1/12
Borger 29 and 40 (if COPC provides notification under Paragraph 39)	5/31/12

If COPC makes such a notification, Paragraphs 41 - 47 will no longer apply for the affected FCCU(s) after the date of the notification.

49. Establishing NO_x Emissions Limits for all Covered FCCUs but Sweeny FCCU 27.

Except where COPC has notified EPA of its intent to comply with NO_x emission limits of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen, COPC will propose a short-term (e.g., 3-hour, 24-hour, or 7-day rolling average) and a long term (365-day rolling average) concentration-based (ppmvd) NO_x emission limits as measured at 0% O₂ for the following FCCUs in the following reports:

Alliance FCCU
Wood River FCCU 1

SNERT Demonstration Report

Bayway FCCU
Ferndale FCCU
Trainer FCCU
Wood River FCCU 2

ESNCR Demonstration Report

Borger FCCUs 29 and 40

ESNCR Demonstration Report, or
if COPC makes notification pursuant to
Paragraph 39, the NO_x Additive
Demonstration Report

Sweeny FCCU 3
LAR Wilmington FCCU

NO_x Additive Demonstration Report

COPC may propose alternative emissions limits to be applicable during Hydrotreater Outages or other alternative operating scenarios. COPC will comply with the emission limits it proposes for each FCCU beginning immediately upon submission of the applicable report for that FCCU.

COPC will continue to comply with these limits unless and until COPC is required to comply with the emissions limits set by EPA pursuant to Paragraphs 50 - 51 below. Upon request by EPA, COPC will submit any additional, available data that EPA determines it needs to evaluate the demonstration.

50. EPA will use the data collected about each FCCU during the baseline period, the optimization period, and the demonstration period, as well as all other available and relevant information, to establish limits for NO_x emissions for the following FCCUs: Alliance, Bayway, Borger 29 and 40, Ferndale, Sweeny 3, Trainer, LAR Wilmington, and Wood River 1 and 2. EPA will establish a short term (*e.g.*, 3-hour, 24-hour, or 7-day rolling average) and a 365-day rolling average concentration-based (ppmvd) NO_x emission limits corrected to 0% O₂. EPA will determine the limits based on: (i) the level of performance during the baseline, optimization, and demonstration periods; (ii) a reasonable certainty of compliance; (iii) degradation of control efficiency caused by length of run; and (iv) any other available and relevant information. EPA will not establish a 365-day rolling average concentration-based NO_x limit lower than 20 ppm where COPC installs a LoTOx System.

51. EPA will notify COPC of its determination of the concentration-based NO_x emissions limit and averaging times for each FCCU, including how and whether emissions during Hydrotreater Outages are included in the 365-day rolling average. EPA may establish alternative emissions limits to be applicable during Hydrotreater Outages or other alternative operating scenarios. If EPA agrees with COPC's proposed limits, COPC will continue to comply with these limits. If EPA proposes different limits that COPC does not dispute within thirty (30) days of receiving notification from EPA, COPC will comply with the EPA-established limits by no later than thirty (30) days after notice. If COPC disputes the EPA-established limits, COPC will invoke the dispute resolution provisions of this Decree by no later than thirty (30) days after EPA's notice of the limits. During the period of dispute resolution, COPC will operate the SNERT and/or ESNCR systems, where applicable, under optimized operating conditions, and/or will continue to add NO_x Additives at the optimized rates, where applicable.

52. EPA will establish NO_x emission limits under Paragraphs 50 - 51 of this Consent Decree after an opportunity for comment by the Applicable Co-Plaintiff.

53. NO_x emissions during periods of startup, shutdown, or Malfunction of an FCCU, or during periods of Malfunction of an SCR, SNERT, ESNCR system, or Pollutant Reducing Catalyst Additive system will not be used in determining compliance with the short-term NO_x emission limits established pursuant to Paragraphs 13 and 51, provided that during such periods COPC implements good air pollution control practices to minimize NO_x emissions.

54. Demonstrating Compliance with FCCU NO_x Emission Limits. Beginning no later than the dates set forth below for each of the following FCCUs, COPC will use NO_x and O₂ CEMS to monitor performance of the FCCU.

<u>FCCU</u>	<u>CEMS</u>
Alliance	6/30/05
Bayway	DOL
Borger 29	9/30/05
Borger 40	9/30/05
Ferndale	DOL
LAR Wilmington	DOL
Sweeny 3	6/30/05
Sweeny 27	DOL
Trainer	12/31/06
Wood River 1	DOL
Wood River 2	DOL

The CEMS will be used to demonstrate compliance with the respective NO_x emission limits established pursuant to this Section V.A. of this Consent Decree. COPC will make CEMS data available to EPA and the Applicable Co-Plaintiff upon demand as soon as practicable. COPC will install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. For the Alliance, Borger, Sweeny, and LAR Wilmington FCCUs, unless Appendix F is otherwise required by the NSPS, state law or regulation, or a permit or approval, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, COPC must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit

("RATA") on each CEMS at least once every three (3) years. COPC must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

B. SO₂ Emissions Reductions from FCCUs

55. Summary. COPC will implement a program to reduce SO₂ emissions from the Covered FCCUs as set forth in Paragraphs 56 - 75. COPC will incorporate the lower SO₂ emission limits at the Covered FCCUs into permits and will demonstrate future compliance with the lower emission limits through the use of CEMS.

56. Continued Operation of a Wet Gas Scrubber at the Bayway and Ferndale FCCUs. COPC will continue the operation of the existing wet gas scrubbers at the Bayway and Ferndale FCCUs. By no later than the Date of Lodging, COPC will comply with an SO₂ concentration limit at the Bayway and Ferndale FCCUs of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd or lower on a 7-day rolling average basis, at 0% oxygen.

57. Installation and Operation of Wet Gas Scrubbers at the Alliance, Borger 29, Borger 40, Trainer, Wood River 1 and Wood River 2 FCCUs. By no later than the following dates for the following FCCUs, COPC will complete installation and begin operation of a WGS:

Alliance	December 31, 2009
Borger 29	December 31, 2006
Borger 40	December 31, 2015
Trainer	December 31, 2006
Wood River 1	December 31, 2008
Wood River 2	December 31, 2012

COPC will design the WGSs to achieve an SO₂ concentration of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each corrected to

0% O₂. By no later than the dates set forth above, COPC will comply with an SO₂ concentration limit of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd or lower on a 7-day rolling average basis, each corrected to 0% O₂.

58. Borger FCCUs 29 and 40. By no later than March 31, 2005, COPC may notify EPA of COPC's: (i) intent to decommission the CO Boilers at the Borger FCCUs, convert Borger FCCUs 29 and 40 to Full Burn Operation, and utilize high-pressure hydrotreating at greater than 1200 pounds per square inch ("psi") for the FCCU feed; and (ii) agreement to comply with SO₂ emission limits of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd or lower on a 7-day rolling average basis, at 0% O₂. If COPC makes this notification, then by no later than December 31, 2007, COPC will (i) decommission its Borger CO Boilers; (ii) convert Borger FCCUs 29 and 40 to Full Burn Operation; (iii) utilize high-pressure hydrotreating at greater than 1200 psi for 100% of the FCCU feed until the NO_x emission limits for Borger FCCUs 29 and 40 have been established pursuant to Paragraphs 50 - 51; and (iv) comply with SO₂ emission limits of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd or lower on a 7-day rolling average basis, at 0% O₂. If COPC makes this notification, the requirements of Paragraph 57 will not apply to Borger FCCUs 29 and 40. Nothing in this Paragraph releases COPC from its obligations to obtain any necessary permits required for making changes at the Borger Refinery.

59. Complying with Hard Limits for SO₂, NO_x and PM at the Alliance FCCU. By no later than December 31, 2009, COPC may notify EPA and LDEQ of COPC's agreement to comply with the following emission limits:

NO_x: 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, at 0% oxygen;

SO₂: 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, at 0% oxygen;

PM: 0.5 pounds PM per 1000 pounds coke burned on a 3-hour average basis.

If COPC makes that notification, COPC will comply with the SO₂ and PM limits in this Paragraph 59 by no later than December 31, 2009, and the NO_x limits in this Paragraph 59 by no later than June 30, 2010. If COPC makes that notification, COPC will no longer be required to comply with Paragraphs 14 - 26 and Paragraph 57, as those Paragraphs apply to the Alliance FCCU, after the date of the notification.

60. Continued Shutdown of the Distilling West FCCU and Surrender of the Illinois State Permits. The Distilling West FCCU currently is shut down. This shutdown was and is not required by this Consent Decree. By no later than thirty (30) days after the Date of Lodging of the Consent Decree, COPC will surrender to the State of Illinois the following permits relating to the Distilling West FCCU: 75120010 (operating permit for the FCCU); 94040141 (construction permit for FCCU modifications); and 01100084 (construction permit for FCCU wet gas scrubber). If at any time prior to the termination of this Decree, COPC seeks to start up the Distilling West FCCU, COPC will apply for appropriate permits with the State of Illinois as a new emission source as defined in 35 Ill. Adm. Code 210.102, and, in such permit application, will agree to install and operate a wet gas scrubber on the Distilling West FCCU designed to achieve an SO₂ concentration of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each at 0% O₂. By no later than one-hundred eighty (180) days after the startup of the WGS and at all times thereafter, COPC will demonstrate compliance with an SO₂ emission limit of 25 ppmvd or lower on a 365-day rolling average basis

and 50 ppmvd on a 7-day rolling average basis, each at 0% O₂. COPC will demonstrate compliance as set forth in Paragraph 73.

61. Use of SO₂ Reducing Catalyst Additives at the LAR Wilmington FCCU and Sweeny FCCUs 3 and 27: Summary. The reduction of SO₂ emissions from the LAR Wilmington FCCU and Sweeny FCCUs 3 and 27 will be accomplished by the use of SO₂ Reducing Catalyst Additives as described in Paragraphs 62 - 66.

62. SO₂ Baseline Data and SO₂ Model. By the dates set forth below, for the following baseline time periods, for the following FCCUs, COPC will submit to EPA and the Applicable Co-Plaintiff two reports: (1) a report of twelve (12) months of baseline data and (2) a report describing a model to predict uncontrolled SO₂ concentration and mass emission rate:

<u>FCCU</u>	<u>Baseline Start</u>	<u>Baseline End</u>	<u>Report</u>
LAR Wilmington	12/31/05	12/31/06	2/28/07
Sweeny 3	6/30/06	6/30/07	8/31/07
Sweeny 27	6/30/06	6/30/07	8/31/07

The baseline data will include all data considered in development of the model on a daily average basis, and, at a minimum, the data required in Paragraph 43. Upon request by EPA, COPC will submit any additional data that EPA determines it needs to evaluate the model. The report describing the model will include a description of how the model was developed including which parameters were considered, why parameters were eliminated, efforts and results of model validation, and the statistical methods used to arrive at the equation to predict uncontrolled SO₂ concentration and mass emission rate.

63. SO₂ Reducing Catalyst Additives – Short Term Trials

- (a) By no later than the dates set forth in the table in Paragraph 63(c), COPC will identify for EPA approval at least two commercially available brands of SO₂ Reducing Catalyst Additives, for each FCCU, that COPC proposes to use for short term trials and submit a protocol to EPA for conducting the trials.
- (b) COPC will propose use of at least two brands of SO₂ Reducing Catalyst Additives that are likely to perform the best in each FCCU. EPA will base its approval or disapproval on its assessment of the performance of the proposed brands of additives in other FCCUs, the similarity of those FCCUs to COPC's FCCUs, as well as any other relevant factors, with the objective of conducting trials of the brands of SO₂ Reducing Catalyst Additives likely to have the best performance in reducing SO₂ emissions. In the event that COPC submits less than two approvable brands of additives, EPA will identify other approved additives brands to COPC.
- (c) If EPA has approved two brands of SO₂ Reducing Catalyst Additives by no later than the "trial start" date set forth below, then COPC will commence and complete the trials of those two brands and will submit a report to EPA that describes the performance of each brand that was trialed by the following dates for each of the following FCCUs:

<u>FCCU</u>	<u>COPC IDs</u> <u>2 Additives</u> <u>and submits</u> <u>Protocol</u>	<u>Trial Starts</u>	<u>Trial Ends</u>	<u>Report</u> <u>Date</u>
LAR Wilmington	9/30/07	3/31/08	9/30/08	11/30/08
Sweeny 3	9/30/08	3/31/09	9/30/09	11/30/09
Sweeny 27	12/31/06	6/30/07	12/31/07	3/1/08

If EPA has not approved two brands of additives by the "trial start" date, then subsequent deadlines will be modified as agreed by the parties.

- (d) In the report on the short-term trials, COPC will propose to use the best performing brand of additive as measured by percentage of SO₂ emissions reduced and the concentration to which SO₂ emissions were reduced in the trials, taking into account all relevant factors. EPA will either approve the proposed brand of additive or approve another brand of additive that was trialed for use in the optimization study. In approving an additive, EPA will consider the impact of the additive on the processing rate and/or the conversion capability if such impacts cannot be reasonably compensated for by adjusting operating parameters. Upon

request by EPA, COPC will submit any additional available data that EPA determines it needs to evaluate the trials.

64. SO₂ Reducing Catalyst Additives – Optimization Study and Report

- (a) By no later than the dates set forth in the table in Paragraph 64(c) (“Paragraph 64(c) Table”), COPC will submit, for EPA approval, a proposed protocol consistent with the requirements of Appendix D for optimization studies to establish the optimized SO₂ Reducing Catalyst Additive addition rates. The protocol will include methods to calculate effectiveness, methods for baseloading, and percent additive used at each increment tested.
- (b) If EPA has approved a brand of SO₂ Reducing Catalyst Additive by no later than the “Optimization Start” date set forth in the Paragraph 64(c) Table, then COPC will commence and complete the optimization study of the SO₂ Reducing Catalyst Additive in accordance with the approved protocol and Appendix D by no later than the dates set forth in the Paragraph 64(c) Table. If EPA has not approved a brand of SO₂ Reducing Catalyst Additive by no later than the “Optimization Start” date, then subsequent deadlines will be modified as agreed by the parties.
- (c) By no later than the following dates, COPC will report the results of the SO₂ Reducing Catalyst Additive Optimization Study and propose, for EPA approval, optimized addition rates of all catalysts to be used for the demonstration period.

<u>FCCU</u>	<u>Protocol Due</u>	<u>Optimization Start</u>	<u>Optimization End</u>	<u>Report Due</u>
LAR Wilmington	6/30/08	12/31/08	6/30/09	7/31/09
Sweeny 3	6/30/09	12/31/09	6/30/10	7/31/10
Sweeny 27	9/30/07	3/31/08	9/30/08	10/31/08

Upon request by EPA, COPC will submit any additional data that EPA determines it needs to evaluate the SO₂ Reducing Catalyst Additive Optimization Study.

- (d) During the Optimization Study, COPC will successively add SO₂ Reducing Catalyst at increments of 5.0, 6.7, 8.4, and 10.0 Weight % SO₂ Reducing Catalyst Additive. Once a steady state has been achieved at each increment, COPC will evaluate the performance of the SO₂ Reducing Catalyst Additive in terms of SO₂ emissions reductions. The final Optimized SO₂ Reducing Catalyst Additive Addition Rate, in pounds per day, will occur at the addition rate where either:
 - (i) The FCCU meets 25 ppmvd SO₂ at 0% O₂ on a 365-day rolling average, in which case COPC will agree to accept a limit of 25 ppmvd SO₂ at 0% O₂

on a 365-day rolling average basis at the conclusion of the demonstration period;

- (ii) Incremental Pickup Factor <2.0 lb SO₂/lb additive; or
- (iii) FCCU is operating at 10.0% Weight % SO₂ Reducing Catalyst Additive.

If an additive limits the processing rate or the conversion capability in a manner that cannot be reasonably compensated for by adjustment of other parameters, then the additive level will be reduced to a level at which the additive no longer causes such effects.

65. SO₂ Reducing Catalyst Additives – Demonstration Period and Report

- (a) By no later than dates set forth in the table in Paragraph 65(b), COPC will commence and complete a demonstration of the EPA-approved SO₂ Reducing Catalyst Additive at the optimized addition rates that COPC proposes unless EPA proposes different optimized addition rates. Delays by EPA in approving the optimized addition rate may result in extensions of the demonstration period and extensions of relevant deadlines as agreed by the parties.
- (b) By no later than the following dates, COPC will report to EPA and the Applicable Co-Plaintiff the results of the demonstrations (“SO₂ Additive Demonstration Report”). The SO₂ Additive Demonstration Report will include, at a minimum, the SO₂ and oxygen CEMS data recorded during the demonstration period and all baseline data on a daily average basis for the demonstration period.

<u>FCCU</u>	<u>Demonstration Start</u>	<u>Demonstration End</u>	<u>Report Due</u>
LAR Wilmington	6/30/09	12/31/10	3/1/11
Sweeny 3	6/30/10	12/31/11	3/1/12
Sweeny 27	9/30/08	3/31/10	5/31/10

- (c) During the demonstration period, COPC will both physically add SO₂ Reducing Catalyst Additive and operate each FCCU, CO Boiler (where applicable) and FCCU feed hydrotreaters (where applicable) in a manner that minimizes SO₂ emissions to the extent practicable without interfering with conversion or processing rates.

66. If at any time during the trial, optimization, and/or demonstration of SO₂

Reducing Catalyst Additives at Sweeny FCCU 27, COPC demonstrates that the use of SO₂

Reducing Catalyst Additives significantly impairs COPC's ability to comply with the NO_x emission limits set for Sweeny FCCU 27 under Paragraph 13 of this Decree and cannot be reasonably compensated for by adjusting parameters other than the SO₂ Reducing Catalyst Additive, then EPA may approve a reduction of the SO₂ Reducing Catalyst Additive addition rate to a level at which the additive no longer causes such effects.

67. COPC may notify EPA at any time prior to the following dates of COPC's agreement to comply with SO₂ emission limits of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, at 0% oxygen, effective on the following dates:

<u>FCCU</u>	<u>Date</u>
LAR Wilmington	3/1/11
Sweeny 3	3/1/12
Sweeny 27	5/31/10

If COPC makes such a notification, Paragraphs 61 - 66 will no longer apply for the affected FCCU(s) after the date of the notification.

68. Establishing Final SO₂ Emission Limits at the LAR Wilmington FCCU, Sweeny FCCU 3 and Sweeny FCCU 27. Except where COPC has notified EPA of its intent to comply with SO₂ emission limits of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, at 0% oxygen, COPC will propose, in each SO₂ Additive Demonstration Report, final 7-day rolling average and 365-day rolling average concentration-based (ppmvd) SO₂ emission limits, at 0% oxygen, for the LAR Wilmington FCCU and Sweeny FCCUs 3 and 27. COPC may propose alternative emissions limits to be applicable during Hydrotreater Outages, startup of the FCCU, shutdown of the FCCU, or other

alternative operating scenarios. COPC will comply with the emission limits it proposes for each FCCU beginning immediately upon submission of the applicable report for that FCCU. COPC will continue to comply with these limits unless and until COPC is required to comply with the emissions limits set by EPA pursuant to Paragraphs 69 - 70 below. Upon request by EPA, COPC will submit any additional, available data that EPA determines it needs to evaluate the demonstration.

69. EPA will use the data collected about each FCCU during the baseline period, the optimization period, and the demonstration period, as well as all other available and relevant information, to establish limits for SO₂ emissions for the LAR Wilmington FCCU and for Sweeny FCCUs 3 and 27. EPA will establish a 7-day rolling average and a 365-day rolling average concentration-based (ppmvd) SO₂ emission limits at 0% oxygen. EPA will determine the limits based on: (i) the level of performance during the baseline, optimization, and demonstration periods; (ii) a reasonable certainty of compliance; and (iii) any other available and relevant information.

70. EPA will notify COPC of its determination of the concentration-based SO₂ emissions limit and averaging times for each FCCU, including how and whether emissions during Hydrotreater Outages are included in the 365-day rolling average. EPA may establish alternative emissions limits to be applicable during Hydrotreater Outages, startup of the FCCU, shutdown of the FCCU, or other alternative operating scenarios. If EPA agrees with COPC's proposed limits, COPC will continue to comply with these limits. If EPA proposes different limits that COPC does not dispute within thirty (30) days of receiving notification from EPA, COPC will comply with the EPA-established limits by no later than thirty (30) days after notice. If COPC disputes the EPA-established limits, COPC will invoke the dispute resolution

provisions of this Decree by no later than thirty (30) days after EPA's notice of the limits.

During the period of dispute resolution, COPC will continue to add SO₂ Reducing Catalyst Additives at the optimized rates and comply with any approved Hydrotreater Outage plan.

71. EPA will establish SO₂ emission limits under Paragraphs 69 - 70 of this Consent Decree after an opportunity for comment by the Applicable Co-Plaintiff.

72. SO₂ emissions during periods of startup, shutdown, or Malfunction of an FCCU controlled by catalyst additives, or during periods of Malfunction of an FCCU controlled by a WGS, or during periods of Malfunction of a WGS or Pollutant Reducing Catalyst Additive system will not be used in determining compliance with the short-term SO₂ emission limits established pursuant to Paragraphs 56, 57, and 70, provided that during such periods COPC implements good air pollution control practices to minimize SO₂ emissions.

73. Demonstrating Compliance with FCCU SO₂ Emission Limits. Beginning no later than the dates set forth below for each of the following FCCUs, COPC will use SO₂ and O₂ CEMS to monitor performance of the FCCU.

<u>FCCU</u>	<u>CEMS</u>
Alliance	6/30/05
Bayway	DOL
Borger 29	9/30/05
Borger 40	9/30/05
Ferndale	DOL
LAR Wilmington	DOL
Sweeny 3	6/30/05
Sweeny 27	DOL

Trainer	12/31/06
Wood River 1	DOL
Wood River 2	DOL

The CEMS will be used to demonstrate compliance with the respective SO₂ emission limits established pursuant to Section V.B. of this Consent Decree. COPC will make CEMS data available to EPA and the Applicable Co-Plaintiff upon demand as soon as practicable. COPC will install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. For the Alliance, Borger, Sweeny, and LAR Wilmington FCCUs, unless Appendix F is otherwise required by the NSPS, state law or regulation, or a permit or approval, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, COPC must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three (3) years. COPC must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

74. Hydrotreater Outages. For the following FCCUs, by the following dates, COPC will submit to EPA for approval, with a copy to the Applicable Co-Plaintiff, a plan for the operation of the FCCUs (including associated air pollution control equipment) during Hydrotreater Outages in a way that minimizes emissions as much as practicable.

<u>FCCU</u>	<u>Date</u>
LAR Wilmington FCCU	3/31/05
Sweeny FCCU 3	6/30/06
Sweeny FCCU 27	6/30/06

The plan will, at a minimum, consider the use of low sulfur feed, storage of hydrotreated feed, and an increase in additive addition rate. The short-term SO₂ emission limits established pursuant to this Consent Decree at the LAR Wilmington FCCU and Sweeny FCCUs 3 and 27 will not apply during periods of FCCU feed Hydrotreater Outages provided that COPC is in compliance with the plan and is maintaining and operating its FCCUs in a manner consistent with good air pollution control practices. The short-term NO_x emission limits established pursuant to this Consent Decree at the LAR Wilmington FCCU and Sweeny FCCU 3 will not apply during periods of FCCU feed Hydrotreater Outages provided that COPC is in compliance with the plan and is maintaining and operating its FCCUs in a manner consistent with good air pollution control practices. COPC will comply with the approved plan at all times, including periods of startup, shutdown, and Malfunction of the hydrotreater. In addition, in the event that COPC asserts that the basis for a specific Hydrotreater Outage is a shutdown (where no catalyst changeout occurs) required by ASME pressure vessel requirements or applicable state boiler requirements, COPC will submit a report to EPA and the Applicable Co-Plaintiff that identifies the relevant requirements and justifies COPC's decision to implement the shutdown during the selected time period.

75. At such time as COPC accepts an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis for both Borger FCCUs 29 and 40 as determined by the testing protocol in Paragraph 59, COPC may submit and utilize hydrotreater

outage plans for Borger FCCUs 29 and 40 consistent with the requirements of Paragraph 74. The Hydrotreater Outage Plans will be submitted to EPA for approval at the same time COPC submits the PM performance results for Borger FCCUs 29 and 40.

C. PM Emissions Reductions from FCCUs.

76. COPC will implement a program to reduce PM emissions from the Covered FCCUs as set forth in Paragraphs 77 - 83. COPC will incorporate the lower PM emission limits into permits and will demonstrate future compliance with the lower emission limits through PM testing as specified in this Section V.C.

77. PM Emission Limits for the Bayway, Borger 29, Borger 40, Trainer, Wood River 1 and Wood River 2 FCCUs. COPC will continue to operate the wet gas scrubber at the Bayway Refinery and will design the wet gas scrubbers at the Borger 29, Borger 40, Trainer, Wood River 1 and Wood River 2 FCCUs to achieve an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis. To the extent that, under Paragraph 58 of this Consent Decree, COPC does not install wet gas scrubbers at Borger FCCUs 29 and 40, this requirement will not apply. By no later than the following dates for the following FCCUs, COPC will comply with an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis determined by the testing protocol in Paragraph 83:

Bayway	Date of Lodging
Borger 29 (if applicable)	December 31, 2006
Borger 40 (if applicable)	December 31, 2015
Trainer	December 31, 2006

Wood River 1

December 31, 2008

Wood River 2

December 31, 2012

78. PM Emission Limits at the Alliance FCCU. By no later than December 31, 2009, COPC will comply with an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis determined by the testing protocol in Paragraph 83.

79. PM Control Measures and Emission Limits at the Ferndale FCCU

(a) By no later than December 31, 2006, COPC will complete modifications to the existing wet gas scrubber at the Ferndale FCCU to comply with an emission limit of no greater than 0.5 pounds PM per 1000 pounds of coke burned on a 3-hour average basis. By no later than June 30, 2007, COPC will comply with an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis at the Ferndale FCCU. By no later than June 30, 2007, COPC will conduct a performance test to demonstrate compliance with the emission limit of 0.5 pounds PM per 1000 pounds of coke burned on a 3-hour average basis by using 40 C.F.R. Part 60 Appendix A Method 5B.

(b) For the period between the Date of Lodging and the date that COPC demonstrates compliance with the emission limits pursuant to the requirements of Paragraph 79(a), COPC will comply with the following conditions at the Ferndale FCCU:

- (i) COPC will comply with an emission limit of 0.8 pound PM per 1000 pounds of coke burned on a 3-hour average basis when operating three scrubber water recirculation pumps;
- (ii) COPC will operate all three scrubber water recirculation pumps to the maximum extent practicable except during a pump Malfunction or periods of scheduled maintenance of a pump. COPC will optimize the operation of the pumps in order to minimize the periods of scheduled maintenance. COPC will not schedule maintenance on more than one pump at any given time and scheduled maintenance of a pump will not exceed one week. During a pump Malfunction, COPC will use best efforts to take all steps

necessary (including pump replacement) to minimize the amount of time the FCCU wet gas scrubber operates with fewer than three pumps.

(iii) By no later than six (6) months after the Date of Lodging, and once during each subsequent six (6) month period until December 31, 2006, COPC will conduct a performance test to demonstrate compliance with the emission limit set forth in Paragraph 79(b)(i) by using 40 C.F.R. Part 60 Appendix A Method 5B.

(c) By no later than December 31, 2004, COPC will submit a complete application to the Washington Department of Ecology for a revision to the existing PSD permit for the Ferndale FCCU to add PM and PM-10 emission limits to that permit. The permit application will propose an emission limit no higher than 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis as measured by 40 C.F.R. Part 60 Appendix A Method 5B. COPC will use its best efforts to have the Washington Department of Ecology review the application and timely issue a revised PSD permit.

(d) Prior to the issuance of a final PSD permit amendment which results from the application and any subsequent amended applications submitted pursuant to Paragraph 79(c), COPC will apply to NWCAA for a revision to the Order of Approval to Construct #733a to revise the PM and/or PM-10 emission limitations and the monitoring, operating, and reporting requirements in Conditions D-1(b), D-4, and E-10(f) to be consistent with the final PSD permit amendment obtained by COPC.

80. PM Emission Limits for the LAR Wilmington FCCU. COPC will continue to operate its existing ESP at the LAR Wilmington FCCU. By no later than December 31, 2008, COPC will comply with an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis at the LAR Wilmington FCCU.

81. Continued Shutdown of the Distilling West FCCU and Surrender of the Illinois State Permits. The Distilling West FCCU currently is shut down. This shutdown was not and is not required by this Consent Decree. By no later than thirty (30) days after the Date of Lodging of the Consent Decree, COPC will surrender to the State of Illinois the following permits relating to the Distilling West FCCU: 75120010 (operating permit for the FCCU); 94040141 (construction permit for FCCU modifications); and 01100084 (construction permit for FCCU wet gas scrubber). If at any time prior to the termination of this Decree, COPC seeks to start up the Distilling West FCCU, COPC will apply for appropriate permits with the State of Illinois as a new emission source as defined in 35 Ill. Adm.Code 201.102, and will, in such permit application, agree to install and operate a wet gas scrubber on the Distilling West FCCU designed to achieve an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis. By no later than one-hundred eighty (180) days after the startup of the WGS, and at all times thereafter, COPC will demonstrate compliance with a PM emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis. COPC will demonstrate compliance as set forth in Paragraph 83.

82. PM emissions during periods of startup, shutdown or Malfunction of the FCCU, or during periods of Malfunction of a wet gas scrubber or ESP will not be used in determining compliance with the emission limits of 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis set forth in Paragraphs 77 - 80, provided that during such periods COPC implements good air pollution control practices to minimize PM emissions.

83. Demonstrating Compliance with PM Emission Limits Set Forth in Section V.C and V.E. COPC will follow the test methods specified in 40 C.F.R. § 60.106(b)(2) to measure PM emissions from the FCCUs, except at the Bayway FCCU where COPC will follow

NJAC 7:27B-1. COPC will propose and submit the test methods to EPA for approval, with a copy to the Applicable Co-Plaintiff, by no later than three (3) months after the PM limit becomes effective at an FCCU. COPC will conduct the first test no later than six (6) months after the PM limit becomes effective at an FCCU. COPC will conduct annual tests at each FCCU and will submit the results in the first semi-annual report due under Section IX that is at least three (3) months after the test. Except with respect to the Bayway FCCU, upon demonstrating through at least three (3) annual tests that the PM limits are not being exceeded at a particular FCCU, COPC may request EPA approval to conduct tests less frequently than annually at that FCCU.

D. CO Emissions Reductions from FCCUs

84. CO Emissions Limits for the FCCUs. By no later than the following dates for the following FCCUs, COPC will comply with the following CO emission limits:

<u>FCCU</u>	<u>500 ppmvd 1-hour average at 0% oxygen</u>	<u>100 ppmvd 365-day rolling average at 0% oxygen</u>
Alliance	9/30/05	9/30/05
Bayway	DOL	DOL
Borger 29	DOL	Optional
Borger 40	DOL	Optional
Ferndale	DOL	DOL
LAR Wilmington	4/11/05	Optional
Sweeny 3	4/11/05	Optional
Sweeny 27	DOL	Optional
Trainer	12/31/06	Optional

Wood River 1	4/11/05	Optional
Wood River 2	4/11/05	Optional

85. CO emissions during periods of startup, shutdown or Malfunction of the FCCU will not be used in determining compliance with the emission limits of 500 ppmvd CO at 0% O₂ on a 1-hour average basis, provided that during such periods COPC implements good air pollution control practices to minimize CO emissions.

86. Demonstrating Compliance with CO Emission Limits. Beginning no later than the dates set forth below for each FCCU, COPC will use CO and O₂ CEMS to monitor performance of the FCCU:

<u>FCCU</u>	<u>CEMS</u>
Alliance	9/30/05
Bayway	DOL
Borger 29	9/30/05
Borger 40	9/30/05
Ferndale	DOL
LAR Wilmington	4/11/05
Sweeny 3	4/11/05
Sweeny 27	DOL
Trainer	12/31/06
Wood River 1	4/11/05
Wood River 2	4/11/05

The CEMS will be used to demonstrate compliance with the respective CO emission limits established pursuant to this Section V.D. COPC will make CEMS data available to EPA and the

Applicable Co-Plaintiff upon demand as soon as practicable. COPC will install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. For the Alliance, Borger, Sweeny, and LAR Wilmington FCCUs, unless Appendix F is otherwise required by the NSPS, state law or regulation, or a permit or approval, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, COPC must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three (3) years. COPC must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

E. NSPS Applicability of FCCU Catalyst Regenerators

87. The following FCCU catalyst regenerators will be "affected facilities," as that term is used in the Standards of Performance for New Stationary Sources ("NSPS"), 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and J for each of the following pollutants by the following dates:

	<u>SO₂</u>	<u>PM</u>	<u>CO</u>
Alliance	12/31/09	DOL	9/30/05
Bayway	DOL	DOL	DOL
Borger 29	12/31/06 (but see ¶ 88)	12/31/06	DOL
Borger 40	12/31/15 (but see ¶ 88)	4/11/05	DOL
Ferndale	DOL	DOL	DOL

LAR Wilmington	6/1/05	4/11/05	4/11/05
Sweeny 3	6/30/06	4/11/06	4/11/05
Sweeny 27	6/30/06	4/11/06	DOL
Trainer	12/31/06	12/31/06	12/31/06
Wood River 1	12/31/08	DOL	4/11/05
Wood River 2	12/31/12	DOL	4/11/05

88. For Borger FCCUs 29 and 40, if COPC makes the notification to EPA under Paragraph 58, the NSPS compliance dates for SO₂ will be December 31, 2007, instead of the dates set forth in Paragraph 87.

89. The deadlines imposed under Sections V.C and V.D will not affect COPC's obligation to comply with the MACT II (40 C.F.R. § 63.640) in a timely manner.

90. Opacity Monitoring at the FCCUs. By no later than the following dates, COPC will install and operate a Continuous Opacity Monitoring System ("COMS") to monitor opacity at each of the following FCCUs:

Alliance	DOL
Bayway	12/31/05
Borger 29	DOL
Borger 40	DOL
Ferndale	12/31/06
LAR Wilmington	4/11/05
Sweeny 3	DOL
Sweeny 27	DOL
Trainer	12/31/06

Wood River 1 DOL

Wood River 2 DOL

COPC will install, certify, calibrate, maintain, and operate all COMS required by this Consent Decree in accordance with 40 C.F.R §§ 60.11, 60.13 and Part 60 Appendix A, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B.

91. As an alternative to the requirement to install a COMS under Paragraph 90, COPC may request from EPA an AMP to demonstrate compliance with the NSPS opacity limits at 40 C.F.R. § 60.105(a)(1) for those FCCUs which have wet gas scrubbers by establishing operating limits as set forth in 40 C.F.R. § 63.1564(a)(2). If approved by EPA, COPC may utilize the AMP in lieu of a COMS.

92. For FCCU Catalyst Regenerators that become affected facilities under NSPS Subpart J pursuant to Paragraph 87, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for FCCUs will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

F. NO_x Emissions Reductions from Combustion Units

93. NO_x Emissions Reductions from Combustion Units: Overview. COPC will implement a program to reduce and monitor NO_x emissions from the Combustion Units in Appendix B through the implementation of the provisions of Paragraphs 94 - 104 of this Consent Decree. At the Distilling West Combustion Units, COPC will undertake the program set forth in Paragraphs 105 - 108, which, for COPC (not Premcor), will supercede and replace the requirements of the decree entered in the case of United States et al. v. Clark Refining and Marketing, Inc., Civ. Act. No. 99-87-GPM (Sept. 26, 2001).

94. Installation of Qualifying Controls for NO_x Emissions from Combustion Units.

(a) For Combustion Units other than internal combustion engines, COPC will select one or any combination of the following "Qualifying Controls" to satisfy the requirements of Paragraphs 95, 98, and 99:

- (i) SCR or SNCR;
- (ii) Current Generation or Next Generation Ultra-Low NO_x Burners;
- (iii) Other technologies that COPC demonstrates to EPA's satisfaction will reduce NO_x emissions to 0.040 lbs per mmBTU or lower; or
- (iv) Permanent shutdown of a Combustion Unit with surrender of its operating permit; provided however, that to the extent that the emissions reductions resulting from the permanent shutdown are used to satisfy the requirements of Paragraphs 95, 98, and 99, those reductions may not be used as reductions for the construction of new units or the modification of existing units permitted collectively as a single project with the shutdown, notwithstanding the provisions of Paragraph 262(d).

(b) For internal combustion engines ("ICEs"), COPC will select one or any combination of the following "Qualifying Controls" to satisfy the requirements of Paragraphs 95, 98, and 99:

- (i) Permanent shutdown of the ICE with surrender of the operating permit; provided however, that to the extent that the emissions reductions resulting from the permanent shutdown are used to satisfy the requirements of Paragraphs 95, 98, and 99, those reductions may not be used as reductions for the construction of new units or the modification of existing units permitted collectively as a single project with the shutdown, notwithstanding the provisions of Paragraph 262(d);
- (ii) Installation of combustion controls to automatically adjust fuel/air mixtures to minimize NO_x emissions combined with either: (a) installation of exhaust gas catalytic converters on 4-stroke engines; or (b) installation of Pre-Stratified Charge Systems on 2-stroke engines;
- (iii) Installation of other new technologies that COPC demonstrates to EPA's satisfaction will reduce NO_x emissions by 80% or greater versus an uncontrolled ICE.

95. On or before December 31, 2012, COPC will use Qualifying Controls to reduce NO_x emissions from the Combustion Units listed in Appendix B by at least 4951 tons per year, so as to satisfy the following inequality:

$$\sum_{i=1}^n [(E_{\text{actual}})_i - (E_{\text{allowable}})_i] \geq 4951 \text{ tons of NO}_x \text{ per year}$$

Where:

- (E_{allowable})_i = [(The permitted allowable pounds of NO_x per million BTU for Combustion Unit i, or, the requested portion of the permitted reduction pursuant to Paragraph 262)/(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate capacity in million BTU per hour for Combustion Unit i) x (the lower of 8760 or permitted hours per year)];
- (E_{Actual})_i = The tons of NO_x per year prior actual emissions during the refinery baseline years (unless prior actual emissions exceed allowable emissions, then use allowable) as shown in Appendix B for each Combustion Unit i listed in Appendix B; and
- n = The number of Combustion Units with Qualifying Controls from those listed in Appendix B that are selected by COPC to satisfy the requirements of the equation set forth in this Paragraph 95 of this Consent Decree.

96. Appendix B. Appendix B to this Decree provides the following information for the Combustion Units:

- (a) The maximum physical heat input capacity in mmBTU/hr (HHV);
- (b) The allowable heat input capacity in mmBTU/hr (HHV), if different from the maximum physical heat input capacity;
- (c) The baseline emissions rate for the agreed-upon baseline calendar years in lb/mmBTU (HHV) and tons per year;
- (d) the type of data used to derive the emissions estimate (*i.e.*, emission factor, stack test, or CEMS data); and

- (e) the utilization rate in annual average mmBTU/hr (HHV) for the agreed upon baseline calendar years.

97. NO_x Control Plan. COPC will submit a detailed NO_x control plan ("NO_x Control Plan") to EPA for review and comment by no later than June 30, 2005, with annual updates (covering the prior calendar year) on June 30 of each year thereafter until termination of the Consent Decree. Copies of the NO_x Control Plans will be submitted to the Applicable Co-Plaintiff. The NO_x Control Plan and its updates will describe the achieved and anticipated progress of the NO_x emissions reductions program for the Combustion Units and will contain the following information for each Combustion Unit that COPC plans to use to satisfy the requirements of Paragraphs 95, 98, or 99:

- (a) All of the information in Appendix B;
- (b) Identification of the type of Qualifying Controls installed or planned with date installed or planned (including identification of the Combustion Units to be permanently shut down);
- (c) To the extent limits exist or are planned, the allowable NO_x emission rates (in lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr (HHV)) obtained or planned with dates obtained or planned;
- (d) The results of emissions tests and annual average CEMS or PEMs data (in ppmvd at 3% O₂, lbs/mmBTU) conducted pursuant to Paragraph 100 and tons per year; and
- (e) The amount in tons per year applied or to be applied toward satisfying Paragraph 95.

Appendix B and the Control Plan and updates required by this Paragraph will be for informational purposes only and may contain estimates. They will not be used to develop permit requirements or other operating restrictions. COPC may change any projections, plans, or information that is included in the Control Plan or updates. Nothing in this Paragraph will affect any requirements for the development or submission of a NO_x control plan pursuant to otherwise

applicable state or local law (e.g., Bay Area Air Quality Management District Regulation 9, Rule 10).

98. By December 31, 2008, COPC will install sufficient Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve two-thirds of the NO_x emission reductions required by Paragraph 95. By no later than March 31, 2009, COPC will provide EPA and the Applicable Co-Plaintiff with a report showing how it satisfied the requirements of this Paragraph.

99. By no later than December 31, 2012, Combustion Units with Qualifying Controls will represent at least 30% of the total maximum heat input capacity or, if less, the allowable heat input capacity, as shown in Appendix B, of all of the Combustion Units located at a particular Covered Refinery. This 30% requirement will apply to the Combustion Units at the Wood River Refinery exclusive of the Distilling West Combustion Units. Any Qualifying Controls can be used to satisfy this requirement, regardless of when the Qualifying Controls were installed.

100. Beginning no later than one-hundred eighty (180) days after installing Qualifying Controls on and commencing operation of a Combustion Unit that will be used to satisfy the requirements of Paragraph 95, COPC will monitor the Combustion Units as follows:

- (a) For Combustion Units with a maximum physical capacity greater than 150 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS;
- (b) For Combustion Units with a maximum physical capacity greater than 100 mmBTU/hr (HHV) but less than or equal to 150 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS, or monitor NO_x emissions with a PEMS developed and operated pursuant to the requirements of Appendix E of this Consent Decree.
- (c) For Combustion Units with a maximum physical capacity of less than or equal to 100 mmBTU/hr (HHV), conduct an initial performance test and any periodic tests that may be required by EPA or by the applicable State or local permitting

authority under other applicable regulatory authority. The results of the initial performance testing will be reported to EPA and the Applicable Co-Plaintiff.

COPC will use Method 7E or an EPA-approved alternative test method to conduct initial performance testing for NO_x emissions required by subparagraph 100(c). Monitoring with a PEMS required by this Paragraph will be conducted in accordance with the requirements of Appendix E. Units with Qualifying Controls installed before the Date of Entry that are subject to this Paragraph will comply with this Paragraph by no later than June 30, 2006.

101. COPC will certify, calibrate, maintain, and operate the NO_x CEMS required by Paragraph 100 in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B.

102. The requirements of this Section V.F. do not exempt COPC from complying with any and all federal, state, regional, and local requirements that may require technology, equipment, monitoring, or other upgrades based on actions or activities occurring after the Date of Lodging of this Consent Decree, or based upon new or modified regulatory, statutory, or permit requirements.

103. COPC will retain all records required to support its reporting requirements under this Section V.F. until termination of the Consent Decree. COPC will submit such records to EPA and the Applicable Co-Plaintiff upon request.

104. If COPC transfers ownership of any refinery before achieving all of the NO_x reductions required by Paragraph 95, COPC will notify EPA and the Applicable Co-Plaintiff of that transfer and will submit an allocation to EPA and the Applicable Co-Plaintiff for that

refinery's share of NO_x reduction requirements of Paragraph 95 that will apply individually to the transferred refinery after such transfer. If COPC chooses, such allocation may be zero.

105. NO_x Emissions Reductions from the Distilling West Combustion Units:

Overview. COPC will undertake a program to install a combination of Current Generation Ultra Low-NO_x Burners, Next Generation Ultra Low-NO_x Burners and, where applicable, Low-NO_x Burners on the Distilling West Combustion Units at a cost of One Million Five-Hundred Thousand Dollars (\$1.5 million) (including engineering and installation costs); provided however, that the cost of the equipment alone will be not less than Nine-Hundred, Twenty Thousand Dollars (\$920,000). This program will be completed by no later than December 31, 2009.

106. NO_x Control Plan for the Distilling West Combustion Units. By no later than ninety (90) days after the Date of Lodging of this Consent Decree, COPC will submit to EPA and IEPA for their review and comment, an initial plan for NO_x emission reductions from the Distilling West Combustion Units ("NO_x Control Plan for the Distilling West Combustion Units"). For each Distilling West Combustion Unit, the Plan will include:

- (a) The maximum physical heat input capacity in mmBTU/hr (HHV);
- (b) The allowable heat input capacity in mmBTU/hr (HHV), if different from the maximum physical heat input capacity;
- (c) if the Combustion Unit has been restarted by the time of the submission of the initial NO_x Control Plan for the Distilling West Combustion Units, the actual NO_x emission rate and the type of data used to derive the emission estimate (*i.e.*, emission factor, stack test, or CEMS data);
- (d) if the Combustion Unit has not been restarted by the time of the submission of the initial NO_x Control Plan for the Distilling West Combustion Units, a projection of the date, if any, that COPC plans to restart the unit, as well as an identification of COPC's intent with respect to the type of data that COPC will use to measure the NO_x emission rate upon the restart;

- (e) an identification of all Distilling West Combustion Units at which COPC intends to install Low-NO_x Burners, Current Generation Ultra Low-NO_x Burners and/or Next Generation Ultra Low-NO_x Burners, the expected manufacturer and type of burners, the expected emission rate from the burners, and the projected date of installation; and
- (f) an identification of all Distilling West Combustion Units at which COPC has determined that the installation of Low-NO_x Burners, Current Generation Ultra Low-NO_x Burners and/or Next Generation Ultra Low-NO_x Burners is technically or commercially impracticable, and an explanation of the rationale behind this determination.

107. Updates to the NO_x Control Plan for the Distilling West Combustion Units. As part of the NO_x Control Plan and updates that COPC must submit pursuant to Paragraph 97 (including the first plan due on June 30, 2005), COPC will submit to EPA and IEPA for their review and comment, updates to the NO_x Control Plan for the Distilling West Combustion Units until such time as COPC has expended the One Million Five-Hundred Thousand Dollars (\$1.5 million) (including engineering and installation costs) and Nine-Hundred, Twenty Thousand Dollars (\$920,000) in equipment alone that COPC is required to spend. The updates will include the information set forth in Paragraph 106 and will identify the amount of funds expended to date, including a breakdown among engineering, installation, and equipment costs.

108. NO_x Emissions Limits at the Distilling West Combustion Units. By no later than one-hundred eighty (180) days after the installation of any Low-NO_x Burner, Current Generation Ultra Low-NO_x Burner, or Next Generation Ultra Low-NO_x Burner installed on the Distilling West Combustion Units pursuant to Paragraph 105, COPC will monitor the unit in accordance with the requirements of Paragraph 100. By no later than two-hundred forty (240) days after installation, COPC will propose to EPA and IEPA hourly and annual NO_x emission limits for the affected Distilling West Combustion Unit based on CEMS data, stack test results, and/or any additional source specific emission data. COPC will comply with the emission limits

immediately upon submission of the proposal unless and until EPA, after consultation with IEPA, sets a different emission limit. EPA, after consultation with IEPA, will approve the emission limits proposed by COPC or will propose alternative emission limits based on source specific emission data. COPC will immediately (or within thirty (30) days if EPA's limit is more stringent than the limit proposed by COPC) operate the affected Distilling West Combustion Unit so as to comply with the EPA-established emission limits. COPC will comply with the permitting requirements of Section V.P to ensure that the emissions limits for the Distilling West Combustion Units established pursuant to this Paragraph are enforceable by the United States and the State of Illinois.

109. Installation of SCR on the Bayway Crude Pipestill Heater. COPC will install and operate an SCR system on the Bayway Crude Pipestill Heater by no later than December 31, 2010. COPC will design the SCR system to achieve at least a 90% control efficiency for NO_x emissions from the Bayway Crude Pipestill Heater. The 90% control efficiency will apply to the equipment comprising the Bayway Crude Pipestill Heater at the time of the design of the SCR System and to the concentration and amount of NO_x emissions released to the atmosphere at the time of that design. Beginning no later than one-hundred eighty (180) days after installing the SCR System, COPC will monitor emissions from the Bayway Crude Pipestill Heater by means of a NO_x CEMS. COPC will certify, calibrate, maintain, and operate the NO_x CEMS in accordance with the requirements of Paragraph 101. COPC will demonstrate compliance with state permit limits for the Bayway Crude Pipestill Heater at the time and in the manner established by the NJDEP. NO_x emissions reductions from the Bayway Crude Pipestill Heater of 500 tons per year may not be used in satisfying the requirements of Paragraphs 95, 98, and 99. For purposes of this unit only, NO_x emissions reductions from the Bayway Crude Pipestill Heater greater than 500

tons per year from the 2002/2003 average NO_x baseline emissions of 903 tons are not included in the general prohibition against the use of Consent Decree emission reductions in Paragraph 261 to the extent these emissions reductions are not used in satisfying the requirements of Paragraphs 95 and 98.

G. SO₂ Emissions Reductions from and NSPS Applicability to Heaters and Boilers

110. NSPS Applicability of Heaters and Boilers at the Borger, Ferndale, Rodeo and Santa Maria Refineries and at Distilling West. By no later than the Date of Lodging, all heaters and boilers at the Borger, Ferndale, Rodeo, and Santa Maria Refineries and at Distilling West will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices.

111. NSPS Applicability of Heaters and Boilers at the Alliance Refinery. By no later than the Date of Lodging for all heaters and boilers at the Alliance Refinery except for heater 191-H-1, and by no later than December 31, 2006, for heater 191-H-1, the heaters and boilers at the Alliance Refinery will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices.

112. NSPS Applicability of Heaters and Boilers at the LAR Carson and Wilmington Plants. By no later than the Date of Lodging, all heaters and boilers at the LAR Carson and Wilmington Plants will comply with the emissions limits at 40 C.F.R. § 60.104(a)(1). By no later than March 31, 2005, COPC will submit one or more proposed AMP(s) to EPA for approval. All heaters and boilers at the LAR Carson and Wilmington Plants will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply

with the requirements of NSPS Subparts A and J for fuel gas combustion devices upon EPA's approval of the AMP.

113. NSPS Applicability of Heaters and Boilers at the Sweeny, Trainer, and Wood River (except for Distilling West) Refineries. By no later than June 30, 2005, COPC will submit a compliance plan for all heaters and boilers at the Sweeny, Trainer, and Wood River (except Distilling West) Refineries to EPA for approval, with a copy to the Applicable Co-Plaintiff, that identifies the activities and schedule necessary to ensure compliance with the requirements of 40 C.F.R. Part 60, Subparts A and J as soon as practicable. By no later than June 30, 2008, (and sooner if practicable), all heaters and boilers at the Sweeny, Trainer, and Wood River (except Distilling West) Refineries will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices.

114. NSPS Applicability of Heaters and Boilers at the Bayway Refinery.

(a) By no later than the Date of Lodging, all heaters and boilers at the Bayway Refinery, except for those listed in Subparagraph 114(b), will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices.

(b) Upgrade of the Refinery Fuel Gas System at the Bayway Refinery. By no later than December 31, 2010, COPC will complete an upgrade of the refinery fuel gas system at the Bayway Refinery to ensure that the fuel gas contains less than 0.1 grains of H₂S per dry standard cubic foot of fuel gas. By no later than June 30, 2011, the following heaters and boilers at the Bayway Refinery will be affected facilities, as that term is used in the NSPS, 40 C.F.R. Part 60,

and will be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices:

- F-701 (Pipestill Atmospheric Tower)
- F-702 (Pipestill Outboard Flash Tower)
- F-751 (Pipestill Vacuum Tower)
- F-101 (DSU1 gas oil heater)
- F-401 (DSU2 reactor heater)
- F-251 (FCCU feed preheater)
- F-101 (Powerformer hydrofiner)
- F-102 (Powerformer reheater)
- F-103 (Powerformer reheater)
- F-104 (Powerformer reheater)
- F-105 (Powerformer reheater)
- F-106 (Powerformer Regen gas heater)
- F-107 (Powerformer dryer heater)
- F-108 (Powerformer Reboiler heater)

115. For heaters and boilers that become affected facilities under NSPS Subpart J pursuant to this Section V.G, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

116. To the extent that COPC seeks to use an alternative monitoring method at a particular fuel gas combustion device to demonstrate compliance with the limits at 40 C.F.R. § 60.104(a)(1), COPC may begin to use the method immediately upon submitting the application

for approval to use the method, provided that the alternative method for which approval is being sought is the same as or is substantially similar to the method identified as the "Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas" attached to EPA's December 2, 1999, letter to Koch Refining Company LP.

117. Elimination/Reduction of Fuel Oil Burning.

(a) Existing Combustion Devices. From the Date of Lodging of this Consent Decree, COPC will not burn Fuel Oil in any existing combustion device at the Covered Refineries except: (i) during periods of Natural Gas Curtailment, Test Runs, or operator training; or (ii) for the Trainer Refinery, as set forth in Paragraph 118. These exemptions are not available for any combustion devices at Distilling West. Nothing in this prohibition limits COPC's ability to burn Torch Oil in an FCCU regenerator to assist in starting, restarting, maintaining hot standby, or maintaining regenerator heat balance.

(b) Combustion Devices Constructed After Lodging. After the Date of Lodging, COPC will not construct any new combustion device at the Covered Refineries that burns fuel oil unless the air pollution control equipment controlling the combustion device either (i) has an SO₂ control efficiency of 90% or greater; or (ii) achieves an SO₂ concentration of 20 ppm at 0% O₂ or less on a three-hour rolling average basis. Nothing in this Paragraph will exempt COPC from securing all necessary permits before constructing a new combustion device.

118. Commencing on the Date of Lodging, COPC will limit Fuel Oil burning at the Trainer Refinery to no greater than 900 barrels per day on a 365-day rolling average basis and will limit this Fuel Oil burning to Boilers B-6, B-7, and B-8. Fuel Oil combusted during periods of Natural Gas Curtailment will not be counted in the 365-day rolling average. By no later than

December 31, 2010, COPC will cease burning Fuel Oil in Boilers B-6, B-7, and B-8, except during periods of Natural Gas Curtailment, Test Runs, or operator training.

H. NSPS Applicability of Sulfur Recovery Plants

119. NSPS Applicability of SRPs. All of COPC's Sulfur Recovery Plants will be subject to NSPS Subpart J as affected facilities and will comply with the requirements of NSPS Subparts A and J, including all monitoring, recordkeeping, reporting, and operating requirements, by the following dates:

<u>SRP</u>	<u>Trains Comprising the SRP</u>	<u>NSPS Applicability Date</u>
Alliance SRP	SRU 591 SRU 592	Date of Lodging
Bayway SRP	SRU A SRU B SRU C	4/11/05
Borger	Unit 34 Unit 43	Date of Lodging
Ferndale SRP	Unit 19	Date of Lodging
LAR Carson SRP	LAR Carson Unit 1 LAR Carson Unit 2	Date of Lodging
LAR Wilmington SRP	LAR Wilmington Unit 138.1 LAR Wilmington Unit 138.2	4/11/05
Rodeo SRP	SRU 234 SRU 236 SRU 238	4/11/05
Santa Maria SRP	SRU A SRU B	4/11/05
Sweeny SRP	SRU A SRU B SRU C	Date of Lodging

Trainer SRP

SRU 41
SRU 42

4/11/05

Wood River SRP

SRU A
SRU C
SRU D

Date of Lodging

The SRPs set forth in this Paragraph will constitute the "Covered SRPs" for purposes of this Decree.

120. Compliance with NSPS Emission Limits. On and after the date of NSPS applicability for the Covered SRPs, COPC will, for all periods of operation of a Covered SRP, comply with 40 C.F.R. § 60.104(a)(2), except during periods of startup, shutdown or Malfunction of the SRP or Malfunction of the TGU or as provided in Paragraph 134.

121. Compliance with NSPS Operation and Maintenance Requirements. At all times on and after the date of NSPS applicability for the Covered SRPs, including periods of startup, shutdown, and Malfunction, COPC will, to the extent practicable, operate and maintain the SRPs and associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions pursuant to 40 C.F.R. § 60.11(d).

122. Compliance with Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. For SRPs that become affected facilities under NSPS Subpart J pursuant to Paragraph 119, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for SRPs will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

123. Elimination, Control, and/or Inclusion in Monitoring of Sulfur Pit Emissions. By no later than the following dates for the Covered SRPs, COPC will either eliminate, control, and/or include and monitor as part of a Covered SRP's emissions under 40 C.F.R.

§ 60.104(a)(2), all sulfur pit emissions. The LAR Wilmington Plant and the Rodeo Refinery will upgrade existing systems to meet this requirement. "Control" for purposes of this Paragraph includes routing sulfur pit emissions into a contactor box of a Beavon Stretford TGU evaporator. For purposes of this Paragraph, the pelletizer at the Santa Maria Refinery and the acid plant at the LAR Wilmington Plant are not "Covered SRPs."

<u>SRP</u>	<u>Compliance Date</u>
Alliance SRP	The earlier of (i) the first SRP turnaround after 12/31/05; or (ii) 12/31/08
Bayway SRP	Date of Lodging
Borger SRP	6/30/06
Ferndale SRP	Date of Lodging
LAR Carson SRP	Date of Lodging
LAR Wilmington SRP	6/30/07
Rodeo SRP	6/30/06
Santa Maria SRP	The earlier of (i) the first SRP turnaround after 12/31/05; or (ii) 12/31/08
Sweeny SRP	Date of Lodging
Trainer SRP	6/30/06
Wood River SRP	Date of Lodging

124. Monitoring all Emissions Points and Installing CEMS. By no later than the following dates for the Covered SRPs, COPC will monitor all tail gas emission points (stacks) to the atmosphere from the respective SRP and will install and operate a CEMS in accordance with NSPS Subpart J, except where COPC timely submits an AMP:

<u>SRP</u>	<u>Date</u>
Alliance SRP	Date of Lodging
Bayway SRP	4/11/05
Borger SRP	Date of Lodging
Ferndale SRP	Date of Lodging
LAR Carson SRP	Date of Lodging
LAR Wilmington SRP	4/11/05
Rodeo SRP	4/11/05
Santa Maria SRP	4/11/05
Sweeny SRP	Date of Lodging
Trainer SRP	4/11/05
Wood River SRP	Date of Lodging

COPC must monitor all emissions from the Tail Gas Units associated with these SRPs through the use of an NSPS-compliant CEMS, but COPC may submit an AMP, by no later than March 31, 2005, for any CEMS that, as of the Date of Lodging, has lower span values than NSPS specifications. To the extent that COPC seeks an AMP to monitor any other tail gas emission point to the atmosphere, COPC will submit complete AMPs for all such points by no later than March 31, 2005. If EPA does not approve an AMP, COPC will install and operate a CEMS at the respective emission point in accordance with NSPS Subpart J by no later than eighteen (18) months after receipt of EPA's disapproval.

125. Preventive Maintenance and Operation Plans for the Covered Refineries. By no later than April 1, 2005, COPC will submit to EPA and the Applicable Co-Plaintiff a Preventive Maintenance and Operation Plan ("PMO Plan") for the enhanced operation and maintenance of

the Covered Refineries' SRPs, the associated Tail Gas Units ("TGUs"), any supplemental control devices, and the Upstream Process Units for each Covered Refinery. The PMO Plan will be a compilation of COPC's approaches for exercising good air pollution control practices and for minimizing SO₂ emissions at each of these Refineries. The PMO Plan will identify actions to promote the continuous operation of the Covered SRPs between scheduled maintenance turnarounds with minimization of emissions. The PMO Plan will include, but not be limited to, sulfur shedding procedures, startup and shutdown procedures, hot standby procedures, emergency procedures, and schedules to coordinate maintenance turnarounds of the SRP Claus trains and TGUs to coincide with scheduled turnarounds of major Upstream Process Units. COPC will comply with the PMO Plan at all times, including periods of startup, shutdown, and Malfunction of the SRP or Malfunction of the TGU. COPC will modify the Plan as needed to continue to enhance operation and maintenance of the SRPs, TGUs, supplemental control devices, and Upstream Process Units as new equipment is installed, changes/improvements in procedures to minimize Acid Gas Flaring Incidents and/or SO₂ emissions are identified, and/or other changes occur at a Covered Refinery. Any modifications made by COPC to PMO Plans will be identified in each January 31 report due under Section IX of this Decree. Compliance with a PMO Plan will constitute compliance with this Paragraph and with the expectations of so much of Paragraph 159(a) as relates to the PMO Plan.

126. EPA and the Applicable Co-Plaintiff do not, by their review of a PMO Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any of the actions that COPC may take pursuant to a PMO Plan will result in compliance with the provisions of the Clean Air Act or any other applicable federal, state, regional, or local law or regulations. Notwithstanding the review of a Plan by the EPA and the Applicable Co-Plaintiff,

COPC will remain solely responsible for compliance with the Clean Air Act, the applicable state/local acts, and such other laws and regulations.

127. Optimization Studies for the Alliance, Bayway, Santa Maria, and Wood River SRPs. COPC will conduct optimization studies for the Claus trains of the Alliance, Bayway, Santa Maria, and Wood River SRPs in order to establish optimal operating parameters and recovery targets for each SRP during Scheduled Turnarounds of the associated TGUs. The optimization studies of the Claus trains of the SRPs will meet the following minimum requirements:

- (a) Detailed evaluation of plant design capacity, equipment design information, operating parameters and efficiencies, including catalytic activity and material balances;
- (b) The expected composition of the acid gas and sour water stripper gas feed to the SRP during Scheduled Turnarounds of the TGUs;
- (c) A thorough review of each critical piece of process equipment and instrumentation within the Claus train that is designed to correct deficiencies or problems that prevent the Claus train from achieving its optimal sulfur recovery efficiency and expanded periods of operation;
- (d) Establishment of baseline data through testing and measurement of key parameters throughout the Claus train;
- (e) For any key parameters that have been determined to be at less than optimal levels, initiation of logical, sequential, or stepwise changes designed to move such parameters toward their optimal values;
- (f) Establishment of any new operating or testing procedures for optimal SRP performance during a Scheduled Turnaround of the TGU;
- (g) After optimization at normal operating conditions, development of a calibrated thermodynamic process model which will be used to predict SRP performance during Scheduled Turnarounds of the TGU. If test runs are necessary to develop this model, such test runs will include measurement of key parameters throughout the Claus trains and a comparison of the analysis of acid gas and sour water stripper gas composition to the expected composition from (b) above;

- (h) If necessary after development of the calibrated thermodynamic process model, initiation of logical, sequential, or stepwise changes designed to move any key parameters that were determined to be at less than optimal levels toward their optimal levels.

128. SRP Optimization Study Report and Implementation. By no later than the following dates for the following SRPs, COPC will submit to EPA and the Applicable Co-Plaintiff a report (the "SRP Optimization Study Report") on the results and recommendations of optimization studies of the Claus trains for the Alliance, Bayway, Santa Maria, and Wood River SRPs:

Bayway SRP	June 30, 2005
Wood River SRP	December 31, 2005
Santa Maria SRP	June 30, 2006
Alliance SRP	September 30, 2006

The SRP Optimization Study Report will include a schedule for implementing the Report's recommendations, if any, to enhance SRP performance. COPC will implement the physical changes, if any, and operating parameters, if any, recommended in the SRP Optimization Study Report according to the schedule set forth therein. COPC will not be required to make any physical changes that would restrict or adversely affect the operation of the Alliance, Bayway, Santa Maria, and Wood River SRPs under normal operating conditions. COPC will incorporate the results of the optimization studies into the Preventive Maintenance and Operation Plans required under Paragraph 125.

129. Performance Standards after Optimization Studies for the Alliance, Bayway, Santa Maria, and Wood River SRPs.

(a) Periods of Applicability of Performance Standards for the Alliance, Bayway, Santa Maria, and Wood River SRPs. For the Alliance, Bayway, Santa Maria, and Wood River SRPs, COPC will comply with the performance standards established pursuant to Subparagraphs 129(b) - (d) during all periods of Scheduled Turnarounds of the associated TGUs.

(b) Proposing Performance Standards. In the Optimization Study Reports for the Alliance, Bayway, Santa Maria, and Wood River SRPs, COPC will propose a performance standard (percent recovery rate range or other performance standard) for each Claus train based upon expected SRP performance during a Scheduled Turnaround of the SRP. The reports will also include, if necessary, a schedule for implementing related optimization study recommendations that are necessary to comply with COPC's proposed standard. Unless and until notified by EPA pursuant to Subparagraph 129(c) below, COPC will comply with its proposed performance standard during the periods identified in Subparagraph 129(a) above.

(c) If EPA does not provide a response to COPC's proposed performance standard by the following dates, then COPC will utilize the performance standard that it proposes:

Bayway SRP	September 30, 2005
Wood River SRP	June 30, 2006
Santa Maria SRP	December 31, 2006
Alliance SRP	March 31, 2007

If, by the dates set forth above, EPA determines that a more stringent performance standard and/or a different implementation schedule than those proposed by COPC is appropriate and can be achieved with a reasonable certainty of compliance, EPA will so notify COPC. Unless, within ninety (90) days of its receipt of that notice, COPC disputes EPA's determination(s), COPC will

comply with such new standard during the periods identified in Subparagraph 129(a) above and/or with the new schedule as set forth in EPA's response.

(d) During the first Scheduled Turnaround of the Alliance, Bayway, Santa Maria, and Wood River TGUs after December 31, 2005, COPC will evaluate the actual performance of the Claus trains at the optimized levels and, based on that evaluation, may propose to modify the performance standard established under Subparagraph (b) or (c). COPC will propose a more stringent standard if actual experience demonstrates a reasonably certainty of compliance with a more stringent standard. COPC will comply with any revised performance standard that it proposes under this Subparagraph under the same conditions set forth in Subparagraph (c), except that EPA's response date will be no later than six (6) months after COPC proposes a new performance standard.

130. Optimization Studies for the Beavon Stretford TGUs at the Bayway and Santa Maria SRPs. By no later than June 30, 2005; for the Bayway TGU, and no later than June 30, 2006, for the Santa Maria TGU, COPC will complete a study (the "Beavon Stretford TGU Optimization Study") and submit a report (the "Beavon Stretford TGU Optimization Report") that evaluates the equipment, instrumentation, operating practices, maintenance practices and waste disposal practices associated with the Beavon Stretford TGUs at the Bayway and Santa Maria SRPs to cover, at a minimum, best practices for:

- (a) preventing pluggage in the absorber vessels;
- (b) promoting optimal flotation of the sulfur froth;
- (c) minimizing sulfate and thiosulfate salt formation;
- (d) disposal or on-line regeneration of the Stretford catalyst;
- (e) production and filtration of the sulfur filter cake;

- (f) minimizing emissions of carbonyl sulfide;
- (g) addressing temporary overload of the Stretford solution;
- (h) maintaining the optimum alkalinity levels in Stretford solution; and
- (i) maintaining optimal water content in absorber off-gas as an indicator of proper absorber chemistry.

The goal of the studies on the Beavon Stretford TGU Optimization Study is to identify means for optimizing the performance, minimizing emissions and waste streams, and maximizing the run lengths between scheduled maintenance.

131. COPC will submit the Beavon Stretford TGU Optimization Reports to EPA and to the Applicable Co-Plaintiff. The Reports will describe the results of the Beavon Stretford TGU Optimization Study and will set forth a schedule for the expeditious implementation of the Report's recommendations for the Bayway and Santa Maria TGUs. If EPA and/or the Applicable Co-Plaintiff does not notify COPC in writing within ninety (90) days of the receipt of the Bayway Beavon Stretford TGU Optimization Report and within one-hundred eighty (180) days of the receipt of the Santa Maria Beavon Stretford TGU Optimization Report that it objects to one or more aspects of the recommendations or the implementation schedule, if any, then the recommendations and/or schedules will be deemed acceptable for purposes of compliance with this Paragraph and Paragraph 132. If EPA and/or the Applicable Co-Plaintiff does object, in whole or in part, to the proposed recommendations and/or schedules of implementation, or, where applicable, to the absence of such recommendations and/or schedules, it will notify COPC of that fact within ninety (90) days of the receipt of the Bayway Beavon Stretford TGU Optimization Report and within one-hundred eighty (180) days of the receipt of the Santa Maria Beavon Stretford TGU Optimization Report. If EPA and/or the Applicable Co-Plaintiff and

COPC cannot agree on the appropriate recommendations and/or schedules, if any, to be taken, the dispute resolution provisions of Section XV of the Consent Decree may be invoked.

132. COPC will implement the physical changes, if any, and the operating practices, if any, set forth in the approved Beavon Stretford TGU Optimization Report as reflecting good engineering practice and/or good air pollution control practice according to the approved schedule. COPC will not be required to make any physical changes that would restrict or adversely affect the operation of the Bayway and Santa Maria SRPs under normal operating conditions. COPC will incorporate the results of the Beavon Stretford TGU Optimization Report into the respective PMO Plans required under Paragraph 125.

133. Investigating and Sharing Best Practices for Optimization of Beavon Stretford TGU's. By no later than December 31, 2006, COPC will complete an investigation of the best practices for operating, maintaining, and optimizing the performance of Beavon Stretford TGU's. This investigation will include the studies undertaken pursuant to Paragraph 130, discussions with other companies that operate Beavon Stretford TGU's, a review of the literature on Beavon Stretford TGU's, a review of regulations on Beavon Stretford TGU's, and a review of the procedures used at the Beavon Stretford TGU's associated with COPC's LAR Wilmington and Rodeo SRPs. COPC will prepare a document that compiles the results of the investigation. This document will not contain confidential business information and will be written in a manner that may be shared easily with other companies that own and operate Beavon Stretford TGU's. COPC will distribute this document to EPA and the Applicable State/Local Co-Plaintiffs by no later than ninety (90) days after completing the investigation. At the same time that COPC distributes the document to EPA and the Applicable State/Local Co-Plaintiffs, COPC will advise EPA and the Applicable State/Local Co-Plaintiffs of the timing and manner of the distribution of the

document to the refining industry. Nothing in this Paragraph will require COPC to violate any licensing or other use agreement COPC may have with the manufacturers of Beavon Stretford TGUs. COPC will incorporate the results of its best practices investigation, as applicable, into the PMO Plans required under Paragraph 125 for those Refineries that operate Beavon Stretford TGUs.

134. Until December 31, 2013, COPC will not be in violation of Paragraphs 119 and 120 of this Consent Decree during Scheduled Turnarounds of the TGUs at the Alliance, Bayway, Santa Maria, and Wood River Refineries if:

- (a) exceedances of the emission limits in Paragraph 120 are due to the Scheduled Turnaround of the associated TGU;
- (b) COPC fully complies with Paragraphs 125 - 133; and
- (c) With respect to each individual Refinery, COPC complies with the conditions set forth below:
 - (i) Alliance: Excluding Scheduled Turnarounds of the TGU that occur when the entire Alliance Refinery is shut down: (A) COPC conducts only one Scheduled Turnaround of the TGU between the Date of Lodging and December 31, 2013; (B) the FCCU is shut down during that one Scheduled TGU Turnaround; and (C) the Scheduled TGU Turnaround does not last longer than thirty (30) days.
 - (ii) Bayway: (A) COPC conducts only three Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) the FCCU is shut down during each of these three Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than thirty-five (35) days.
 - (iii) Santa Maria Refinery: (A) COPC conducts only two Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) the calciner is shut down during each of these two Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than thirty (30) days.

- (iv) Wood River Refinery: (A) COPC schedules only two Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) one FCCU is shut down during each of these two Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than twenty-one (21) days.

135. Redirection of the Bayway SRP Feed. If and when COPC submits a complete application or notice (whichever is applicable) to NJDEP to revise, modify, or surrender the permit(s) relating to the Bayway SRP and TGU for the purpose of shutting down the Bayway SRP and redirecting the SRP feed to an independent sulfuric acid plant, then COPC may submit a request to EPA and NJDEP (for the approval of both) to waive compliance with the requirements of Paragraphs 127 through 132 as they apply to the Bayway Refinery. If EPA or NJDEP does not respond to the request within ninety (90) days, the request will be deemed approved. To the extent that the request is approved, the exception set forth in Paragraph 134 will expire at the later of (i) the date of the approval of the request; or (ii) December 31, 2006.

I. NSPS Applicability of the Sulfuric Acid Plant at LAR Wilmington

136. By no later than the Date of Lodging, the sulfuric acid plant at the LAR Wilmington Plant will comply with the emission limits at 40 C.F.R. §§ 60.82 and 60.83. By no later than March 31, 2005, COPC will submit one or more proposed AMPs to EPA for approval. The sulfuric acid plant at the LAR Wilmington Plant will be an "affected facility," as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and H upon EPA's approval of the AMP(s), or upon completion of such other action as may be required by Paragraph 427.

137. Compliance with this Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. Entry of this Consent Decree and compliance with the applicable

monitoring requirements for sulfuric acid plants will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

J. NSPS Applicability of Flaring Devices

138. NSPS Applicability of Flaring Devices. COPC owns and operates the Flaring Devices that are identified in Appendix A. These Flaring Devices are or will become affected facilities as that term is used in the NSPS at such time as COPC certifies compliance and accepts NSPS applicability under Paragraphs 142 - 143.

139. Compliance Methods for Flaring Devices. For each Flaring Device, COPC will elect to use one or any combination of following compliance methods:

- (a) Operate and maintain a flare gas recovery system to control continuous or routine combustion in the Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor and maintain records of hydrogen sulfide in the gas as otherwise required by 40 C.F.R. §§ 60.105(a)(4) and 60.7;
- (b) Operate the Flaring Device as a fuel gas combustion device and comply with NSPS monitoring requirements by use of a CEMS pursuant to 40 C.F.R. § 60.105(a)(4) or with a predictive monitoring system approved by EPA as an alternative monitoring system pursuant to 40 C.F.R. § 60.13(i);
- (c) Eliminate the routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and operate the Flaring Device such that it receives only process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions; or
- (d) Eliminate to the extent practicable routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and monitor the Flaring Device by use of a CEMS and a flow meter; provided however, that this compliance method may not be used unless COPC: (i) demonstrates to EPA that the Flaring Device in question emits less than 500 pounds per day of SO₂ under normal conditions; (ii) secures EPA approval for use of this method as the selected compliance method; and (iii) uses this compliance method for five or fewer of the Flaring Devices listed in Appendix A.

140. For the compliance method described in Paragraph 139(b), to the extent that COPC seeks to use an alternative monitoring method at a particular Flaring Device to

demonstrate compliance with the limits at 40 C.F.R. § 60.104(a)(1), COPC may begin to use the method immediately upon submitting the application for approval to use the method, provided that the alternative method for which approval is being sought is the same as or is substantially similar to the method identified as the "Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas" attached to EPA's December 2, 1999, letter to Koch Refining Company LP.

141. Compliance Plan for Flaring Devices (Paragraphs 141 - 142). For each Covered Refinery, COPC will submit a Compliance Plan for Flaring Devices to EPA and the Applicable Co-Plaintiff by no later than December 31, 2007. The Plan will have the objective of reducing to the extent practicable: (i) the routing of continuous or intermittent, routinely-generated fuel gas streams that contain hydrogen sulfide of greater than 230 mg/dscm (0.10 gr/dscf) to Flaring Devices; and (ii) the characterization of streams that COPC considers to be the result of alleged malfunctions, process upsets, and/or relief valve leakage by taking into consideration the source and frequency of the stream.

142. In each Refinery's Compliance Plan for Flaring Devices, COPC will:

- (a) Certify compliance with one of the four compliance methods set forth in Paragraph 139 and accept NSPS applicability for at least (i) 50% of the system-wide Flaring Devices identified in Appendix A; and (ii) one Flaring Device per Refinery where such Refinery has three or more Flaring Devices;
- (b) Identify the Paragraph 139 compliance method used for each Flaring Device that COPC identifies under Subparagraph 142(a);
- (c) Describe the activities that COPC has taken or anticipates taking, together with a schedule, to meet the objectives of Paragraph 141 at each Refinery; and
- (d) Describe the anticipated compliance method and schedule that COPC will undertake for the remaining Flaring Devices identified in Appendix A.

143. By no later than December 31, 2011, COPC will certify compliance to EPA and the Applicable Co-Plaintiff with one of the four compliance methods in Paragraph 139 and will accept NSPS applicability for all of the Flaring Devices in Appendix A.

144. Performance Tests. By no later than ninety (90) days after bringing a Flaring Device into compliance by using one or more of the methods in Paragraph 139, COPC will conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, COPC may submit velocity calculations that demonstrate that the Flaring Device meets the performance specification required by 40 C.F.R. § 60.18.

145. The combustion in a Flaring Device of process upset gases or fuel gas that is released to the Flaring Device as a result of relief valve leakage or other emergency malfunctions is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

146. Good Air Pollution Control Practices. On and after the Date of Entry of this Decree, COPC, at all times, including during periods of startup, shutdown, and or Malfunction, will, to the extent practicable, maintain and operate the Flaring Devices in Appendix A, and associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions pursuant to 40 C.F.R. § 60.11(d).

147. Compliance with Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. For Flaring Devices that become affected facilities under NSPS Subpart J pursuant to Paragraphs 142 and 143, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for Flaring Devices will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

148. Periodic Maintenance of Flare Gas Recovery Systems. The Parties recognize that periodic maintenance may be required for properly designed and operated flare gas recovery systems. To the extent that COPC currently operates or will operate flare gas recovery systems, COPC will take all reasonable measures to minimize emissions while such periodic maintenance is being performed.

149. Safe Operation of Refining Processes. The Parties recognize that under certain conditions, a flare gas recovery system may need to be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes. Nothing in this Consent Decree precludes COPC from temporarily bypassing a flare gas recovery system under such circumstances.

K. CERCLA/EPCRA

150. To the extent that, during the course of COPC's development of the Compliance Plans for Flaring Devices required by Paragraph 141, COPC discovers information possibly demonstrating a failure by COPC to comply with the reporting requirements for continuous releases of SO₂ pursuant to Section 103(c) of CERCLA and/or Section 304 of EPCRA, including the regulations promulgated thereunder, a voluntary disclosure by COPC of any such violations will not be deemed "untimely" under EPA's Audit Policy or any Co-Plaintiff's audit policy, solely on the ground that it is submitted more than twenty-one (21) days after it is discovered, provided all such disclosures are made by no later than December 31, 2007 (the due date for the Compliance Plans for Flaring Devices).

L. Control of Acid Gas Flaring Incidents and Tail Gas Incidents

151. Past Acid Gas Flaring Analysis. COPC has identified Acid Gas Flaring Incidents that have occurred at the Covered Refineries in recent years and has described their probable causes and estimated emissions. COPC has implemented (or is in the process of implementing) corrective actions to address the root causes of the prior incidents and to minimize the number and duration of Acid Gas Flaring Incidents.

152. Future Acid Gas Flaring and Tail Gas Incidents: General. COPC agrees to implement a program to investigate the cause of future Acid Gas Flaring and Tail Gas Incidents, to take reasonable steps to correct the conditions that cause or contribute to such Acid Gas Flaring and Tail Gas Incidents, and to minimize Acid Gas Flaring and Tail Gas Incidents. COPC will follow the procedures in this Section V.L to evaluate whether future Acid Gas Flaring and Tail Gas Incidents occurring after the Date of Entry of this Decree are due to Malfunctions or are subject to stipulated penalties. The procedures set forth in Section V.L require a Root Cause Analysis ("RCA") and corrective action for all types of Acid Gas Flaring and Tail Gas Incidents. The procedures require stipulated penalties for Acid Gas Flaring and Tail Gas Incidents if the Root Causes are not due to Malfunctions.

153. Investigation and Reporting (Root Cause Analysis). By no later than forty-five (45) days following the end of an Acid Gas Flaring or Tail Gas Incident, COPC will submit a report to EPA and the Applicable Co-Plaintiff that sets forth the following:

- (a) The date and time that the Acid Gas Flaring or Tail Gas Incident started and ended. To the extent that the Acid Gas Flaring or Tail Gas Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, COPC will set forth the starting and ending dates and times of each release;

- (b) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;
- (c) The steps, if any, that COPC took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring or Tail Gas Incident;
- (d) A detailed analysis that sets forth the Root Cause and all contributing causes of that Acid Gas Flaring or Tail Gas Incident, to the extent determinable;
- (e) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring or Tail Gas Incident resulting from the same Root Cause or contributing causes in the future. The analysis will discuss the alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes will be evaluated. If COPC concludes that corrective action(s) is (are) required under Paragraph 154, the report will include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If COPC concludes that corrective action is not required under Paragraph 154, the report will explain the basis for that conclusion;
- (f) A statement that:
 - (1) Specifically identifies each of the grounds for stipulated penalties in Paragraphs 158 and 159 of this Decree and describes whether or not the Acid Gas Flaring or Tail Gas Incident falls under any of those grounds;
 - (2) if an Acid Gas Flaring or Tail Gas Incident falls under Paragraph 161 of this Decree, describes which Subparagraph (161(a) or 161(b)) applies and why;
 - (3) if an Acid Gas Flaring or Tail Gas Incident falls under either Paragraph 159 or Paragraph 161(b), states whether or not COPC asserts a defense to the Incident, and if so, a description of the defense;
- (g) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of this Paragraph 153 will be submitted. However, if COPC has not submitted a report or a series of reports containing the information required to be submitted under this Paragraph within the forty-five (45) days (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring or Tail Gas Incident, the stipulated penalty provisions of Paragraph 332 will apply, but COPC will retain the right to dispute, under the dispute resolution provisions of this Consent Decree, any demand for stipulated penalties that was issued as a result of

COPC's failure to submit the report required under this Paragraph 153 within the time frame set forth. Nothing in this Paragraph 153 will be deemed to excuse COPC from its investigation, reporting, and corrective action obligations under this Section V.L for any Acid Gas Flaring or Tail Gas Incident which occurs after an Acid Gas Flaring or Tail Gas Incident for which COPC has requested an extension of time under this Paragraph 153.

- (h) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph 153, then, by no later than thirty (30) days after completion of the implementation of corrective action(s), COPC will submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

154. Corrective Action (Paragraphs 154 - 157). In response to any AG Flaring or Tail Gas Incident occurring after the Date of Entry, COPC will take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all contributing causes of that AG Flaring or Tail Gas Incident.

155. If EPA does not notify COPC in writing within forty-five (45) days of receipt of the report(s) required by Paragraph 153 that it objects to one or more aspects of the proposed corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s) and schedule(s) will be deemed acceptable for purposes of compliance with Paragraph 154 of this Decree. EPA does not, however, by its consent to the entry of this Consent Decree or by its failure to object to any corrective action that COPC may take in the future, warrant or aver in any manner that any corrective actions in the future will result in compliance with the provisions of the Clean Air Act, corollary state/local acts, or their implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective measures or procedures under this Section V.L, COPC will remain solely responsible for non-compliance with the Clean Air Act, corollary state/local acts, and their implementing regulations. Nothing in this Section V.L will be

construed as a waiver of EPA's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations.

156. If EPA does object, in whole or in part, to the proposed corrective action(s) and/or the schedule(s) of implementation, or, where applicable, to the absence of such proposal(s) and/or schedule(s), it will notify COPC of that fact within forty-five (45) days following receipt of the report(s) required by Paragraph 153 above. If EPA and COPC cannot agree on the appropriate corrective action(s), if any, to be taken in response to a particular Acid Gas Flaring or Tail Gas Incident, either Party may invoke the Dispute Resolution provisions of Section XV of the Consent Decree.

157. Nothing in this Section V.L will be construed to limit the right of COPC to take such corrective actions as it deems necessary and appropriate immediately following an Acid Gas Flaring or Tail Gas Incident or in the period during preparation and review of any reports required under this Section.

158. Stipulated Penalties for AG Flaring and Tail Gas Incidents (Paragraphs 158 - 161). The stipulated penalty provisions of Paragraph 332 will apply to any Acid Gas Flaring or Tail Gas Incident for which the Root Cause is one or more of the following acts, omissions, or events:

- (a) Error resulting from careless operation by the personnel charged with the responsibility for the Sulfur Recovery Plant, TGU, or Upstream Process Units;
- (b) A failure of equipment that is due to a failure by COPC to operate and maintain that equipment in a manner consistent with good engineering practice;
- (c) Failure to follow written procedures; or

(d) For each of the following Covered Refineries:

(1) Alliance

- (i) Steam jacketing leaks in lines between SRP and TGU; or
- (ii) Failure of 1391-X-1 and subsequent shutdown of the reformer unit

(2) Bayway

- (i) Inadequate winterization of control valve UPO52 controlling acid gas; or
- (ii) C101 governor valve linkage failure

(3) Borger

- (i) Sulfur condenser leaks into SRU 34

(4) Ferndale

- (i) Failure to follow facility-specific winterization program; or
- (ii) Inadequate winterization of the SWS overhead accumulator level control taps; or
- (iii) Inadequate winterization of the SRP waste heat boiler level sensing lines

(5) LAR Wilmington

- (i) False signal to SRU feed control valves causing valves to close

Except for a force majeure event, COPC will have no defenses to a demand for stipulated penalties for an Acid Gas Flaring or Tail Gas Incident under this Paragraph 158.

159. The stipulated penalty provisions of Paragraph 332 will apply to any Acid Gas Flaring Incident or Tail Gas Incident that either:

- (a) Results in emissions of sulfur dioxide at a rate greater than twenty (20.0) pounds per hour continuously for three (3) consecutive hours or more and COPC failed to act in a manner consistent with the PMO Plan and/or to take any action during the Acid Gas Flaring Incident or Tail Gas Incident to limit the duration and/or quantity of SO₂ emissions associated with such Incident; or
- (b) (i) For Acid Gas Flaring Incidents, causes the total number of Acid Gas Flaring Incidents per Refinery in a rolling twelve (12) month period to exceed five; or

(ii) for Tail Gas Incidents, causes the total number of Tail Gas Incidents per Refinery in a rolling twelve (12) month period to exceed five.

160. In response to a demand by the United States for stipulated penalties with respect to any Acid Gas Flaring Incident or Tail Gas Incident falling under Paragraph 159, COPC will be entitled to assert a Malfunction and/or force majeure defense. In the event that a dispute arising under Paragraph 159 is brought to the Court pursuant to the dispute resolution provisions of this Consent Decree, nothing in this Paragraph is intended or will be construed to prevent COPC from asserting its view that startup, shutdown, and Malfunction defenses are available for Paragraph 159 Acid Gas Flaring Incidents or Tail Gas Incidents, nor to prevent the United States from asserting its view that such defenses are not available. In the event that an AG Flaring Incident or a Tail Gas Incident falls under both Paragraph 158 and Paragraph 159, then Paragraph 158 will apply.

161. The stipulated penalty provisions of Paragraph 332 will apply to Acid Gas Flaring and Tail Gas Incidents other than those identified in Paragraphs 158 and 159 as follows:

- (a) First Time: No stipulated penalties will apply if the Root Cause is a first time occurrence of a Root Cause provided:
 - (1) If the Root Cause of the Acid Gas Flaring Incident or Tail Gas Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause will be designated as an agreed-upon Malfunction for purposes of reviewing subsequent Acid Gas Flaring Incidents;
 - (2) If the Root Cause of the Acid Gas Flaring Incident or Tail Gas Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then COPC will implement corrective action(s) pursuant to Paragraphs 154 - 157.
- (b) Recurrence: Stipulated penalties will apply if the Root Cause is a recurrence of the same Root Cause of a previous Acid Gas Flaring Incident or Tail Gas Incident that occurred since the Date of Entry unless:

- (1) the AG Flaring Incident or Tail Gas Incident resulted from a Malfunction; or
 - (2) the Root Cause previously was designated as an agreed-upon Malfunction under Paragraph 161(a)(1); or
 - (3) the AG Flaring Incident or Tail Gas Incident was a recurrence of an event for which COPC had previously developed, or was in the process of developing, a corrective action plan but COPC had not yet completed implementation.
- (c) In the event that a dispute arising under Subparagraph 161(b) is brought to the Court pursuant to the dispute resolution provisions of this Consent Decree, nothing in Subparagraph 161(b) is intended or will be construed to deprive COPC from asserting that startup, shutdown, and Malfunction defenses are available for Acid Gas Flaring Incidents and Tail Gas Incidents, nor to deprive the United States from asserting that such defenses are not available.

162. Other than for a Malfunction or force majeure, if no Acid Gas Flaring Incident, no Tail Gas Incident, and no violation of the emission limits under Paragraph 120 occur at a Covered Refinery for a rolling thirty-six (36) month period, then the stipulated penalty provisions of Paragraph 332 no longer apply to that Covered Refinery. EPA may elect to prospectively reinstate the stipulated penalty provision if COPC has an Acid Gas Flaring or Tail Gas Incident which would otherwise be subject to stipulated penalties. EPA's decision to reinstate stipulated penalty provisions will not be subject to dispute resolution. Once reinstated, the stipulated penalty provision will apply to future AG Flaring and Tail Gas Incidents at that Covered Refinery and will continue until termination of this Consent Decree.

163. Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring Incidents. For purposes of this Consent Decree, the quantity of SO₂ emissions resulting from AG Flaring will be calculated by the following formula:

$$\text{Tons of SO}_2 = [\text{FR}][\text{TD}][\text{ConcH}_2\text{S}][8.44 \times 10^{-5}].$$

The quantity of SO₂ emitted will be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.05 tons, the quantity of SO₂ emitted will be rounded to 10.1 tons; for a calculation that results in a number equal to 10.04 tons, the quantity of SO₂ emitted will be rounded to 10.0 tons.) For purposes of determining the occurrence of, or the total quantity of SO₂ emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO₂ emitted will be equal to the sum of the quantities of SO₂ flared during each such period of intermittent AG Flaring.

164. Calculation of the Rate of SO₂ Emissions During AG Flaring. For purposes of this Consent Decree, the rate of SO₂ emissions resulting from AG Flaring will be expressed in terms of pounds per hour, and will be calculated by the following formula:

$$ER = [FR][ConcH_2S][0.169].$$

The emission rate will be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO₂ per hour, the emission rate will be rounded to 20.0 pounds of SO₂ per hour; for a calculation that results in an emission rate of 20.04 pounds of SO₂ per hour, the emission rate will be rounded to 20.0.)

165. Meaning of Variables and Derivation of Multipliers used in the Equations in Paragraphs 163 and 164:

ER =	Emission Rate in pounds of SO ₂ per hour
FR =	Average Flow Rate to Flaring Device(s) during Flaring, in standard cubic feet per hour
TD =	Total Duration of Flaring in hours
ConcH ₂ S =	Average Concentration of Hydrogen Sulfide in gas during Flaring (or immediately prior to Flaring if all gas is being flared) expressed as a volume fraction (scf H ₂ S/scf gas)

$$8.44 \times 10^{-5} = [\text{lb mole H}_2\text{S}/379 \text{ scf H}_2\text{S}][64 \text{ lbs SO}_2/\text{lb mole H}_2\text{S}][\text{Ton}/2000 \text{ lbs}]$$

$$0.169 = [\text{lb mole H}_2\text{S}/379 \text{ scf H}_2\text{S}][1.0 \text{ lb mole SO}_2/1 \text{ lb mole H}_2\text{S}][64 \text{ lb SO}_2/1.0 \text{ lb mole SO}_2]$$

Standard conditions: 60 degree F; 14.7 lb_{force}/sq.in. absolute

The flow of gas to the AG Flaring Device(s) ("FR") will be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH₂S") will be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) will be estimated according to best engineering judgment. The report required under Paragraph 153 will include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

166. Calculation of the Quantity of SO₂ Emissions Resulting from a Tail Gas Incident.

For the purposes of this Consent Decree, the quantity of SO₂ emissions resulting from a Tail Gas Incident will be calculated by one of the following methods, based on the type of event:

- (a) If the Tail Gas Incident is combusted in a flare, the SO₂ emissions are calculated using the methods outlined in Paragraphs 163 - 165; or
- (b) If the Tail Gas Incident is an event exceeding the 250 ppmvd (NSPS J limit), from a monitored Sulfur Recovery Plant incinerator or stack, then the following formula applies:

$$ER_{TGI} = \frac{TD_{TGI}}{\sum_{i=1} [FR_{inc.}]_i} [\text{Conc. SO}_2 - 250]_i [0.169 \times 10^{-6}] \left[\frac{20.9 - \% O_2}{20.9} \right]_i$$

Where:

ER_{TGI} = Emissions from Tail Gas at the Sulfur Recovery Plant incinerator or stack, SO₂ lb over a twenty-four (24) hour period

TD_{TGI} = Total Duration (number of hours) when the incinerator or stack CEMS exceeded 250 ppmvd SO_2 corrected to 0% O_2 on a rolling twelve (12) hour average, in each twenty-four (24) hour period of the Incident

i = Each hourly average

FR_{inc} = Incinerator or Stack Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

Conc. SO_2 = Each actual twelve (12) hour rolling average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator or stack exhaust gas, ppmvd corrected to 0% O_2 , for each hour of the Incident

% O_2 = O_2 concentration (CEMS data) in the incinerator or stack exhaust gas in volume % on dry basis for each hour of the Incident

$$0.169 \times 10^{-6} = [\text{lb mole of } SO_2 / 379 SO_2] [64 \text{ lbs } SO_2 / \text{lb mole } SO_2] [1 \times 10^{-6}]$$

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{inc} does not exist or is inoperable, then estimates will be used based on best engineering judgment.

M. Control of Hydrocarbon Flaring Incidents

167. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, COPC will follow the same investigative, reporting, and corrective action procedures as those outlined in Paragraphs 153 - 157 for Acid Gas Flaring and Tail Gas Incidents. However:

- (a) Hydrocarbon Flaring Incidents will be reported in a Covered Refinery's quarterly/semi-annual reports due under Section IX rather than on an incident-by-incident basis;
- (b) For each of the Flaring Devices identified in Appendix A, COPC may prepare and submit a single RCA for one or more Root Causes found by that analysis to routinely recur. COPC will inform EPA and the Applicable Co-Plaintiff that it is electing to report only once on that Root Cause(s). Unless EPA or the Applicable Co-Plaintiff objects within thirty (30) days of receipt of the RCA, such election will be effective;

- (c) For the six (6) month period after the installation of a flare gas recovery system (that is, during the time in which the flare gas recovery system is being commissioned), COPC will not be required to undertake Hydrocarbon Flaring Incident investigations if the root cause of the Hydrocarbon Flaring Incident is directly related to the commissioning of the flare gas recovery system;
- (d) In lieu of analyzing possible corrective actions under Paragraph 153 and taking interim and/or long-term corrective action under Paragraph 154 for a Hydrocarbon Flaring Incident attributable to the startup or shutdown of an Upstream Process Unit that COPC has previously analyzed under this Paragraph 167, COPC may identify such prior analysis when submitting the report required under this Paragraph 167.
- (e) To the extent that a Hydrocarbon Flaring Incident at a Covered Refinery has as its Root Cause the bypass of a flare gas recovery system for safety or maintenance reasons as set forth in Paragraphs 148 - 149, COPC will be required to describe only the HC Flaring Incident and to list the date, time, and duration of such Incident in the quarterly/semi-annual reports due under Section IX.

168. Stipulated penalties under Paragraphs 158 - 161 and Paragraph 332 do not apply to Hydrocarbon Flaring Incident(s).

169. The formulas at Paragraphs 163 - 165 used for calculating the quantity and rate of sulfur dioxide emissions during AG Flaring Incidents will be used to calculate the quantity and rate of sulfur dioxide emissions during HC Flaring Incidents.

170. For Distilling West, COPC will continue to implement operating practices designed to reduce flaring and associated emissions from coker drum switch cycles. As part of its efforts to reduce flaring, COPC will continuously operate the COPC-upgraded coker drum gas recovery system during all periods during which coker drums are switched. The immediately-preceding sentence will no longer apply if COPC installs a flare gas recovery system on the Distilling West Flare in accordance with Paragraph 139(a).

N. Benzene Waste Operations NESHAP Program Enhancements

171. In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste Operations NESHAP" or "Subpart FF"), COPC agrees to undertake, at each of the Covered Refineries, the measures set forth in this Section V.N to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

172. Current Compliance Status. COPC will comply with the following compliance options:

- (a) On the Date of Lodging, COPC's Bayway and Trainer Refineries will comply with the compliance option set forth at 40 C.F.R. § 61.342(c) and (c)(3)(ii) (hereinafter referred to as the "2 Mg compliance option");
- (b) On the Date of Lodging, COPC's Ferndale Refinery will comply with the 2 Mg compliance option, with the exception of the work required under Paragraph 174;
- (c) On the Date of Lodging, COPC's Alliance, Borger, LAR Wilmington, Sweeny, and Wood River (including Distilling West) Refineries will comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (the "6 BQ compliance option");
- (d) By no later than January 31, 2005, COPC's LAR Carson Plant will comply with the 6 BQ compliance option;
- (e) On or before April 30, 2004, COPC reported that it had a Total Annual Benzene ("TAB") of less than 10 Mg/yr at its Rodeo and Santa Maria Refineries.

173. Refinery Compliance Status Changes. Commencing on the Date of Entry of the Consent Decree and continuing through termination, COPC will not change the compliance status of any Refinery from the 6 BQ compliance option to the 2 Mg compliance option. If at any time from the Date of Lodging of the Consent Decree through its termination, the Rodeo or Santa Maria Refineries are determined to have a TAB equal to or greater than 10 Mg/yr, COPC will utilize the 6 BQ compliance option. COPC will consult with EPA and the Applicable Co-

Plaintiff before making any change in compliance strategy not expressly prohibited by this Paragraph 173. All changes must be undertaken in accordance with the regulatory provisions of the Benzene Waste Operations NESHAP.

174. Compliance Schedule for the Ferndale Refinery. By no later than December 31, 2005, COPC will cease using the roughing filter at the Ferndale Refinery as part of that Refinery's wastewater treatment system and will instead route all wastewater exiting from the induced gas flotation units to a modified biological portion of the wastewater treatment system that COPC will design, construct, maintain and operate in compliance with the definition of an "enhanced biodegradation unit" pursuant to 40 C.F.R. § 61.348(b)(2)(ii)(b). By no later than fifteen (15) days after the end of the calendar quarter in which this Consent Decree is lodged, and on a quarterly basis thereafter until completion of the installation, COPC will submit a report to EPA Region 10 and NWCAA regarding the progress of the modifications to the wastewater treatment plant. These quarterly reports will be submitted in addition to any other reporting requirement of this Decree and will include a description of COPC's progress in implementing the modifications, including but not limited to, designing, ordering, procuring, installing, and modifying the plant, a description of any problems encountered or anticipated with respect to meeting the requirements of this Paragraph, and any other matters that COPC believes should be brought to the attention of EPA or NWCAA.

175. One-Time Review and Verification of Each Covered Refinery's TAB: Phase One of the Review and Verification Process. By no later than September 30, 2005, for the Bayway, Borger, Ferndale, LAR Carson, Rodeo and Santa Maria Refineries, and by no later than March 31, 2006, for the Alliance, LAR Wilmington, Sweeny, Trainer, and Wood River Refineries, COPC will complete a review and verification of each Covered Refinery's TAB and

each Covered Refinery's compliance with the applicable compliance option. For each Covered Refinery, COPC's Phase One review and verification process will include, but not be limited to:

- (a) an identification of each waste stream that is required to be included in the Covered Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes (that meet the definition of waste under Subpart FF));
- (b) a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;
- (c) an identification of the benzene concentration in each waste stream, including sampling for benzene concentration at no less than 10 waste streams per Covered Refinery consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3); provided however, that previous analytical data or documented knowledge of waste streams may be used in accordance with 40 C.F.R. § 61.355(c)(2), for streams not sampled; and
- (d) an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF.

176. By no later than two (2) months after the dates set forth in Paragraph 175, COPC will submit to EPA and the Applicable Co-Plaintiff a Benzene Waste Operations NESHAP Compliance Review and Verification report ("BWON Compliance Review and Verification Report") for each Covered Refinery that sets forth the results of Phase One, including but not limited to the items identified in (a) through (d) of Paragraph 175.

177. One-Time Review and Verification of Each Covered Refinery's TAB: Phase Two of the Review and Verification Process. Based on EPA's review of the BWON Compliance Review and Verification Reports, by no later than ninety (90) days after receipt of COPC's submission of the report required by Paragraph 176, EPA may select up to twenty (20) additional waste streams at each Covered Refinery for sampling for benzene concentration. COPC will conduct the required sampling and submit the results to EPA within sixty (60) days of receipt of

EPA's request. COPC will use the results of this additional sampling to reevaluate the TAB and the uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification Report, as needed. To the extent that EPA requires COPC to sample a waste stream as part of the Phase Two review that COPC chose to sample as part of the Phase One review, COPC may average the results of the two sampling events. COPC will submit an amended BWON Compliance Review and Verification Report within one-hundred twenty (120) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA. This amended BWON Compliance Review and Verification Report will supercede and replace the originally-submitted BWON Compliance Review and Verification Report. If Phase Two sampling is not required by EPA, the originally-submitted BWON Compliance Review and Verification Report will constitute the final report.

178. Amended TAB Reports. If the results of the BWON Compliance Review and Verification Report indicate that a Covered Refinery's most recently-filed TAB report does not satisfy the requirements of Subpart FF, COPC will submit, by no later than one-hundred twenty (120) days after completion of the BWON Compliance Review and Verification Report, an amended TAB report to the applicable state agency. COPC's BWON Compliance Review and Verification Report will be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

179. Implementation of Actions Necessary to Correct Non-Compliance:
Non-Compliance with the 2 or 6 Mg Options. If the results of the BWON Compliance Review and Verification Report indicate that COPC is not in compliance with the 2 Mg compliance option at the Bayway, Ferndale, or Trainer Refineries or the 6 BQ compliance option at the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny or Wood River Refineries, then, for

each such Refinery not in compliance, COPC will submit to EPA and the Applicable Co-Plaintiff, by no later than one-hundred twenty (120) days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity the compliance strategy and schedule that COPC will implement to ensure that subject Covered Refinery complies with the applicable compliance option as soon as practicable.

180. Implementation of Actions Necessary to Correct Non-Compliance: Rodeo and Santa Maria Refineries. If the results of the BWON Compliance Review and Verification Report indicate that the Rodeo or Santa Maria Refinery has a TAB of over 10 Mg/yr, COPC will submit to EPA, by no later than one-hundred eighty (180) days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity: (a) the actions that the Refinery will take to ensure that, by no later than one-hundred eighty (180) days after submission of the plan, the Refinery's TAB, for the duration of this Consent Decree, remains below 10 Mg/yr; or (b) if the Refinery cannot ensure a consistent TAB of below 10 Mg/yr within one-hundred eighty (180) days, then the compliance strategy and schedule that COPC will implement to ensure that the subject Refinery complies with the 6 BQ compliance option by no later than one year after submission of the plan.

181. Implementation of Actions Necessary to Correct Non-Compliance: Review and Approval of Plans Submitted Pursuant to Paragraphs 179 and 180. Any plans submitted pursuant to Paragraphs 179 and 180 will be subject to the approval of, disapproval of, or modification by EPA, which will act in consultation with the Applicable Co-Plaintiff. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, COPC will submit to EPA and the Applicable Co-Plaintiff a revised plan that responds to all identified

deficiencies. Unless EPA responds to COPC's revised plan within sixty (60) days, COPC will implement the plan.

182. Implementation of Actions Necessary to Correct Non-Compliance: Certification of Compliance. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 179 and 180 to come into compliance with the applicable compliance option, COPC will submit its certification and a report to EPA and the Applicable Co-Plaintiff that, as to the subject Refinery, the Refinery complies with the Benzene Waste Operations NESHAP.

183. Carbon Canisters (Paragraphs 183 - 194). COPC will comply with the requirements of Paragraphs 183 - 194 at all locations at the Covered Refineries where (a) carbon canister(s) is (are) utilized as a control device under the Benzene Waste Operations NESHAP. To the extent that any applicable state or local rule, regulation, or permit contains more stringent definitions, standards, limitations, or work practices than those set forth in Paragraphs 183 - 194, then those definitions, standards, limitations or work practices will apply instead.

184. Installation of Primary and Secondary Canisters Operated in Series. By no later than September 30, 2005, COPC will replace all single carbon canisters or dual canister systems in parallel with primary and secondary carbon canisters and operate them in series.

185. Report Certifying Installation. By no later than October 31, 2005, COPC will submit a report to EPA and the Applicable Co-Plaintiff certifying the completion of the installation. The report will include a list of all locations within each Refinery where secondary carbon canisters were installed, the installation date of each secondary canister, the date that each secondary canister was put into operation, whether COPC is monitoring for breakthrough for VOCs or benzene, and the concentration of the monitored parameter that each Refinery uses as

its definition of "breakthrough." COPC must provide written notification to EPA at least thirty (30) days prior to changing either the parameter that it is monitoring for breakthrough or the concentration that it defines as "breakthrough."

186. Prohibition of Use of Single Canisters. Except as expressly provided in Paragraph 191, from the Date of Lodging of the Consent Decree through termination, COPC will not use single carbon canisters for any new units or installations that require vapor control pursuant to the Benzene Waste Operations NESHAP at any of its Refineries.

187. Definition of "Breakthrough" in Dual Canister Systems. For dual carbon canister systems in series, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than either 50 ppm volatile organic compounds ("VOC") or 1 ppm benzene (depending upon the parameter that COPC decides to monitor). At its option, COPC may utilize a concentration for "breakthrough" at any of its Refineries that is lower than 50 ppm VOC or 1 ppm benzene. At any time, COPC may conduct a study of the effectiveness of the VOC and benzene concentration limits set forth in this Paragraph as these limits are applied at a particular Refinery. This study will last no less than two (2) years and must be performed in accordance with the guidelines established in Appendix G. COPC will submit a schedule and statement of work to EPA and the Applicable Co-Plaintiff at least ninety (90) days prior to beginning such work. COPC will submit a report to EPA and the Applicable Co-Plaintiff summarizing the results of the study within ninety (90) days of completion and may request a revision of the limits under this Paragraph, for the particular Refinery studied, based upon the results of that study and any other relevant information.

188. Monitoring for Breakthrough in Dual Canister Systems. By no later than the later of (i) September 30, 2005; or (ii) seven (7) days after the installation of any new dual canister,

COPC will start to monitor for breakthrough between the primary and secondary carbon canisters at times when there is actual flow to the carbon canister, in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and will monitor the outlet of the secondary canister on a monthly basis or at its design replacement interval (whichever is less) to verify the proper functioning of the system.

189. Replacing Canisters in Dual Canister Systems. COPC will replace the original primary carbon canister (or route the flow to an appropriate alternative control device) immediately when breakthrough is detected. The original secondary carbon canister (or a fresh carbon canister) will become the new primary carbon canister and a fresh carbon canister will become the secondary canister. For purposes of this Paragraph 189, "immediately" will mean eight (8) hours for canisters of 55 gallons or less, twenty-four (24) hours for canisters greater than 55 gallons. If a Refinery chooses to define breakthrough for primary carbon canister replacement at 5 ppm or lower VOC, that Refinery may replace primary canisters of 55 gallons or less within twenty-four (24) hours of detecting breakthrough.

190. In lieu of replacing the primary canister immediately, COPC may elect to monitor the secondary canister the day breakthrough between the primary and secondary canister is identified and each calendar day thereafter. This daily monitoring will continue until the primary canister is replaced. If the monitored parameter (either benzene or VOC) is detected at the outlet of the secondary canister during this period of daily monitoring, both canisters must be replaced within eight (8) hours.

191. Limited Use of Single Canisters. COPC may utilize properly sized single canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For canisters operated as part of a single canister system, breakthrough is defined for

purposes of this Decree as any reading of VOC or benzene above background. Beginning no later than March 1, 2005, COPC will monitor for breakthrough from single carbon canisters each business day (Monday through Friday, excluding legal holidays) there is actual flow to the carbon canister.

192. Replacing Canisters in Single Canister Systems under Paragraph 191. COPC will replace the single carbon canister with a fresh carbon canister, discontinue flow, or route the stream to an alternate, appropriate device immediately when breakthrough is detected. For this Paragraph 192, "immediately" will mean eight (8) hours for canisters of 55 gallons or less and twenty-four (24) hours for canisters greater than 55 gallons. If, under this Paragraph, flow to a single canister is discontinued, such canister may not be placed back into BWON vapor control service until it has been appropriately regenerated.

193. Maintaining Canister Supplies. COPC will maintain a supply of fresh carbon canisters at each Refinery at all times.

194. Records relating to Canisters. Records for the requirements of Paragraphs 183 - 193 will be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

195. Annual Review. By no later than September 30, 2005, COPC will modify existing management of change procedures or develop a new program to annually review process and project information for each Refinery, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory during the life of the Consent Decree.

196. Laboratory Audits (Paragraphs 196 - 200). COPC will conduct audits of all laboratories that perform analyses of COPC's benzene waste NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed.

197. By no later than September 30, 2005, COPC will complete at least three audits of laboratories used by it. By March 31, 2006, COPC will complete audits of all other laboratories used by it. After March 31, 2006, COPC will audit any new laboratory to be used for analyses of benzene waste NESHAP samples prior to such use.

198. If COPC has completed an audit of any laboratory on or after June 30, 2003, COPC will not be required to perform additional audits of those laboratories pursuant to Paragraph 197, above.

199. During the life of this Consent Decree, COPC will conduct subsequent laboratory audits, such that each laboratory is audited every two (2) years.

200. COPC may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure that its Refineries comply with this Consent Decree and Subpart FF are solely COPC's.

201. Benzene Spills. Beginning on the Date of Entry, for each spill at each Covered Refinery, COPC will review such spills to determine if more than 10 pounds of benzene waste was generated in any twenty-hour (24) hour period. COPC will include the benzene generated by such spills in the TAB and in the uncontrolled benzene quantity calculations for each Refinery in accordance with the applicable compliance option as required by Subpart FF.

202. Training. By no later than April 1, 2005, COPC will develop and begin implementation of annual (i.e., once each calendar year) training for all employees asked to draw benzene waste samples at each of the Covered Refineries.

203. Training: All but the Rodeo and Santa Maria Refineries. By no later than June 30, 2005, for all Covered Refineries except Rodeo and Santa Maria, COPC will complete the development of standard operating procedures for all control equipment used to comply with

the Benzene Waste Operations NESHAP. By no later than March 31, 2006, COPC will complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training will also be provided to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, "refresher" training in these procedures will be performed at a minimum on a three (3) year cycle.

204. Training: Rodeo and Santa Maria Refineries. The Rodeo and Santa Maria Refineries will comply with the provisions of Paragraph 203 if and when their TABs reach 10 Mg/yr. COPC will propose a schedule for training at the same time that COPC proposes a plan, pursuant to Paragraph 180, that identifies the compliance strategy and schedule that COPC will implement to come into compliance with the 6 BQ compliance option.

205. Training: Contractors. As part of COPC's training program, COPC must ensure that the employees of any contractors hired to perform the requirements of Paragraphs 202 and 203 are properly trained to implement all applicable provisions of this Section V.N.

206. Waste/Slop/Off-Spec Oil Management: Schematics. By no later than September 30, 2005, for the Bayway, Borger, Ferndale, LAR Carson, Rodeo and Santa Maria Refineries, and by no later than March 31, 2006, for the Alliance, LAR Wilmington, Sweeny, Trainer, and Wood River Refineries, COPC will submit to EPA and the Applicable Co-Plaintiff schematics for each Refinery that: (a) depict the waste management units (including sewers) that handle, store, and transfer waste, slop, or off-spec oil streams; (b) identify the control status of each waste management unit; and (c) show how such oil is transferred within the Refinery. COPC will include with the schematics a quantification of all uncontrolled waste, slop, or off-spec oil movements at the Refinery. If requested by EPA, COPC will submit to EPA within

ninety (90) days of the request, revised schematics regarding the characterization of these waste, slop, off-spec oil streams and the appropriate control standards.

207. Waste/Slop/Off-Spec Oil Management: Non-Aqueous Benzene Waste Streams.

All waste management units handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, will meet the applicable control standards of Subpart FF.

208. Waste/Slop/Off-Spec Oil Management: Aqueous Benzene Waste Streams. For

purposes of calculating each Refinery's TAB pursuant to the requirements of 40 C.F.R.

§ 61.342(a), COPC will include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments will be made to such calculations to avoid the double-counting of benzene. For purposes of complying with the 2 Mg or 6 BQ compliance option, all waste management units handling benzene waste streams will either meet the applicable control standards of Subpart FF or will have their uncontrolled benzene quantity count toward the applicable 2 Mg or 6 BQ limit.

209. Benzene Waste Operations Sampling Plans: General. COPC will submit to EPA

for approval, with a copy to the Applicable Co-Plaintiff, benzene waste operations sampling plans designed to describe the sampling of benzene waste streams that COPC will undertake to estimate quarterly and annual TABs (for the Refineries with TABs of under 10 Mg/yr) or quarterly and annual uncontrolled benzene quantities (for the Refineries under the 6 BQ or 2 Mg compliance options).

210. Benzene Waste Operations Sampling Plan: Due Dates for Submission. COPC

will submit the sampling plans by no later than the following dates for the following Refineries:

Bayway, Borger, Ferndale 12/31/05
LAR Carson, Rodeo, Santa Maria

Alliance, LAR Wilmington, 6/30/06
Sweeny, Trainer, Wood River

211. Benzene Waste Operations Sampling Plans: Content Requirements.

(a) Santa Maria and Rodeo (TABs of under 10 Mg/yr). The sampling plans for the Santa Maria and Rodeo Refineries will identify:

- (i) all waste streams that contributed 0.05 Mg/yr or more to the previous year's TAB calculations; and
- (ii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraph (a)(i) and all locations identified in Subparagraph (a)(ii).

(b) Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny, and Wood River (6 BQ Compliance Option). The sampling plans for the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny and Wood River Refineries will identify:

- (i) all uncontrolled waste streams that count toward the 6 BQ calculation and contain greater than 0.05 Mg/yr of benzene; and
- (ii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraph (b)(i) and all locations identified in Subparagraph (b)(ii).

(c) Bayway, Ferndale, and Trainer (2 Mg. Compliance Option). The sampling plans for the Bayway, Ferndale, and Trainer Refineries will identify:

- (i) all uncontrolled waste streams that count toward the 2 Mg calculation and contain greater than 0.05 Mg/yr of benzene;
- (ii) all uncontrolled waste streams that qualify for the 10 ppmw exemption (40 C.F.R. § 61.342(c)(2)) and contain greater than 0.1 Mg/yr of benzene; and
- (iii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraphs (c)(i) and (c)(ii) and all locations identified in Subparagraph (c)(iii).

(d) Refineries that Must Implement Compliance Plans under Paragraphs 179 and 180.

For any Covered Refinery that must implement a compliance plan under either Paragraph 179 or 180, COPC may submit a proposed sampling plan that does not include sampling points in locations within the Refinery that are subject to changes proposed in the compliance plan. To the extent that COPC believes that sampling at a Covered Refinery which will be under a compliance plan will not be effective until COPC completes implementation of the compliance plan, COPC, by no later than sixty (60) days prior to the due date for the submission of the sampling plan, may ask for EPA's approval in postponing submitting a sampling plan and commencing sampling until the compliance plan is completed. Unless EPA provides its approval, COPC will submit a plan by the due date in Paragraph 210.

212. Benzene Waste Operations Sampling Plans: Timing for Implementation. COPC will implement the sampling required under each sampling plan during the first full calendar quarter after COPC submits the plan for the Refinery. COPC will continue to implement the sampling plan (i) unless and until EPA disapproves the plan; or (ii) unless and until COPC modifies the plan, with EPA's approval, under Paragraph 213.

213. Benzene Waste Operations Sampling Plans: Modifications.

(a) Changes in Processes, Operations, or Other Factors. If changes in processes, operations, or other factors lead COPC to conclude that a sampling plan for a Covered Refinery may no longer provide an accurate basis for estimating that Refinery's quarterly or annual TABs or benzene quantities under Paragraph 214, then by no later than ninety (90) days after COPC determines that the plan no longer provides an accurate measure, COPC will submit to EPA and the Applicable Co-Plaintiff a revised plan for EPA approval. In the first full calendar quarter after submitting the revised plan, COPC will implement the revised plan. COPC will continue to implement the revised plan unless and until EPA disapproves the revised plan.

(b) Bayway Refinery. By no later than sixty (60) days after completing implementation of the project identified in Paragraph 268, COPC will notify EPA and the NJDEP about whether a revised sampling plan for the Bayway Refinery is necessary. If a revised plan is necessary, the notice will include the revised plan for approval by EPA. In the first full calendar quarter after submitting the revised plan, COPC will implement the revised plan. COPC will continue to implement the revised plan unless and until EPA disapproves the revised plan.

(c) Requests for Modifications. After two (2) years of implementing a sampling plan, COPC may submit a request to EPA for approval, with a copy to the Applicable Co-Plaintiff, to

revise a Covered Refinery's sampling plan, including sampling frequency. EPA will not unreasonably withhold its consent. COPC will not implement any proposed revisions under this Subparagraph until EPA provides its approval.

214. Quarterly and Annual Estimations of TABs and Uncontrolled Benzene Quantities.

At the end of each calendar quarter and based on sampling results and approved flow calculations, COPC will calculate a quarterly and projected annual: (i) TAB for the Rodeo and Santa Maria Refineries; and (ii) uncontrolled benzene quantity for the remaining Covered Refineries. In making this calculation, COPC will use the average of the three samples collected at each sampling location. If these calculations do not identify any potential violations of the benzene waste operations NESHAP, COPC will submit these calculations in the reports due under Section IX of this Decree.

215. Corrective Measures: Basis. Except as set forth in Paragraph 216, COPC will implement corrective measures at the applicable Covered Refinery if:

- (a) For the Rodeo or Santa Maria Refineries, the quarterly TAB equals or exceeds 2.5 Mg or the projected annual TAB equals or exceeds 10 Mg for the then-current compliance year;
- (b) For the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny, or Wood River Refineries, the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year;
- (c) For the Bayway, Ferndale, and Trainer Refineries, the quarterly uncontrolled benzene quantity equals or exceeds 0.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 2 Mg for the then-current compliance year.

216. Exception to Implementing Corrective Measures. If COPC can identify the reason(s) in any particular calendar quarter that the quarterly and projected annual calculations result in benzene quantities in excess of those identified in Paragraph 215, and COPC can state

that it does not expect that reason or reasons to recur, then COPC may exclude the benzene quantity attributable to the identified reason(s) from the projected calendar year quantity. If that exclusion results in no potential violation of the Benzene Waste Operation NESHAP, COPC will not be required to implement corrective measures under Paragraph 217, and COPC may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 218. At any time that COPC proceeds under this Paragraph, COPC will describe how it satisfied the conditions in this Paragraph in the reports due under Section IX of this Decree.

217. Compliance Assurance Plan. If COPC meets one or more conditions in Paragraph 215 for implementing corrective measures, then by no later than sixty (60) days after the end of the calendar quarter in which one or more of the conditions were met, COPC will submit a compliance assurance plan to EPA for approval, with a copy to the Applicable Co-Plaintiff. In that compliance assurance plan, COPC will identify the cause(s) of the potentially-elevated benzene quantities, all corrective actions that COPC has taken or plans to take to ensure that the cause(s) will not recur, and the schedule of actions that COPC will take to ensure that the subject refinery complies with the Benzene Waste Operations NESHAP for the calendar year. COPC will implement the plan unless and until EPA disapproves.

218. Third-Party Assistance. If, in two consecutive quarters, at least one of the conditions in Paragraph 215 exists at a particular Refinery, then COPC will retain a third-party contractor during the third calendar quarter to undertake a TAB study and compliance review at that Refinery. By no later than ninety (90) days after COPC receives the results of the third-party TAB study and compliance review, COPC will submit the results to EPA and the Applicable Co-Plaintiff and submit a plan and schedule for remedying any deficiencies identified in the

third-party study and compliance review. COPC will implement the plan unless and until EPA disapproves.

219. Miscellaneous Measures. The provisions of this Paragraph will apply to all Covered Refineries except the Rodeo and Santa Maria Refineries from September 30, 2005, through termination, and to the Rodeo and Santa Maria Refineries, if their TABs reach 10 Mg/yr, from such time as a compliance strategy under Paragraph 180 is implemented until termination of the Consent Decree:

- (a) Conduct monthly visual inspections of all Subpart FF water traps within the Refinery's individual drain systems;
- (b) Identify and mark all area drains that are segregated storm water drains;
- (c) On a weekly basis, visually inspect all Subpart FF conservation vents on process sewers for detectable leaks; reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, COPC may submit a request to the Applicable EPA Region to modify the frequency of the inspections. EPA will not unreasonably withhold its consent. Nothing in this Paragraph 219(c) will require COPC to monitor conservation vents on fixed roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has occurred, COPC may elect to visually inspect such indicators on a monthly basis and, if flow is then detected, COPC will then visually inspect that indicator on a weekly basis for four (4) weeks. If flow is detected during any two (2) of those four (4) weeks, COPC will install a carbon canister on that vent until appropriate corrective action(s) can be implemented to prevent such flow;
- (d) Conduct quarterly monitoring of the controlled oil-water separators in benzene service in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347; and
- (e) Manage all groundwater remediation wastes that are covered by Subpart FF at each of its Refineries in appropriate waste management units under and as required by the Benzene Waste Operations NESHAP.

220. Recordkeeping and Reporting Requirements for this Section V.N: Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Section

IX (Recordkeeping and Reporting). At the times specified in the applicable provisions of this Section V.N, COPC will submit, as and to the extent required, the following reports to EPA and the Applicable Co-Plaintiff:

- (a) BWON Compliance Review and Verification Report (§ 176), as amended, if necessary (§ 177);
- (b) Amended TAB Report, if necessary (§ 178);
- (c) Plan for the Alliance, Bayway, Borger, Ferndale, LAR Carson, LAR Wilmington, Sweeny, Trainer and/or Wood River Refineries to come into compliance with the applicable compliance option, if the BWON Compliance Review and Verification Reports indicate non-compliance (§ 179);
- (d) Plan for the Rodeo and/or Santa Maria Refineries to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (§ 180), or through sampling (§ 217);
- (e) Compliance certification, if necessary (§ 182);
- (f) Report certifying the completion of the installation of dual carbon canisters (§ 185);
- (g) Schematics of waste/slop/off-spec oil movements (§ 206), as revised, if necessary;
- (h) Sampling Plans (§ 211), and revised Sampling Plans, if necessary (§ 213);
- (i) Plan to ensure that uncontrolled benzene does not equal or exceed, as applicable, 2 or 6 Mg/yr (§ 217)

221. Recordkeeping and Reporting Requirements for this Section: As Part of Either the Reports Required under 40 C.F.R. § 61.357 or the Progress Report Procedures of Section IX (Recordkeeping and Reporting). COPC will submit the following information as part of the information submitted in either the quarterly report required pursuant to 40 C.F.R. § 61.357(d)(6) and (7) ("Section 61.357 Reports") (for all but the Rodeo and Santa Maria Refineries) or in the reports due pursuant to Section IX of this Decree:

- (a) Sampling Results under Paragraphs 209 - 214. The report will include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the quarterly and projected calendar year TAB (for the Rodeo and Santa Maria Refineries) and the quarterly and projected calendar year uncontrolled benzene quantity (for the remaining Covered Refineries);
- (b) Training. Initial and/or subsequent training conducted in accordance with Paragraphs 202 - 205;
- (c) Laboratory Audits. Initial and subsequent audits conducted pursuant to Paragraphs 196 - 200, through the calendar quarter for which the quarterly report is due, including in each such report, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit.

222. At any time after two years of reporting pursuant to the requirements of Paragraph 221, COPC may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Subparagraphs 221(a), (b), and/or (c). This request may include a request to report the previous year's projected calendar year TAB and uncontrolled benzene quantity in the Section IX report due on January 31 of each year, rather than semi-annually on January 31 and July 31 of each year. COPC will not change the due dates for its reports under Paragraph 221 unless and until EPA approves COPC's request.

223. Certifications Required in this Section V.N. Certifications required under this Section V.N will be made in accordance with the provisions of Section IX.

O. Leak Detection and Repair ("LDAR") Program Enhancements

224. General. In order to minimize or eliminate fugitive emissions of volatile organic compounds ("VOCs"), benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from equipment in light liquid and/or in gas/vapor service, COPC will undertake the enhancements in this Section V.O to its LDAR programs under Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V;

Part 63, Subparts F, H, and CC; and applicable state or local LDAR requirements at each Refinery that is subject to this Consent Decree. The terms "equipment," "in light liquid service" and "in gas/vapor service" will have the definitions set forth in the applicable provisions of Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC; and applicable state and/or local LDAR regulations. COPC is not required to include in the enhanced program described herein any equipment or units not in light liquid or gas/vapor service and not otherwise subject to any applicable federal, state, regional, or local LDAR regulation.

225. Written Refinery-Wide LDAR Program. By no later than September 30, 2005, COPC will develop and maintain, for each of the Covered Refineries, a written LDAR program for compliance with all applicable federal, state, regional, and local LDAR regulations. This written program may be specific to each Refinery and will include all process units subject to federal, state, regional, and/or local LDAR regulations ("Refinery-Wide program"). Until termination of this Decree, COPC will implement the program on a Refinery-wide basis and COPC will update each such program as may be necessary to ensure continuing compliance. Each Refinery's program will include at a minimum:

- (a) An overall, Refinery leak rate goal that will be a target for achievement on a process-unit-by-process-unit basis;
- (b) An identification of all equipment in light liquid and/or in gas/vapor service that has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained by the Refinery;
- (c) Procedures for identifying leaking equipment within process units that are owned and maintained by the Refinery;
- (d) Procedures for repairing and keeping track of leaking equipment;

- (e) A process for evaluating new and replacement equipment to promote consideration and installation of equipment that will minimize leaks and/or eliminate chronic leakers;
- (f) A description of the Refinery's LDAR monitoring organization and a designation of the person or position that is responsible for LDAR management and that has the authority to implement LDAR improvements at the Refinery; and
- (g) Procedures (e.g., a Management of Change program) to ensure that components subject to LDAR requirements added to each Refinery during maintenance and construction are integrated into the LDAR program.

226. Training. By no later than December 31, 2005, COPC will commence

implementation of the following training programs at each Covered Refinery:

- (a) For personnel newly-assigned to LDAR responsibilities, COPC will require LDAR training prior to each employee beginning such work;
- (b) For all COPC employees specifically assigned LDAR responsibilities, such as monitoring technicians, database users with permissions or rights to modify LDAR data, QA/QC personnel and the LDAR Coordinator, COPC will provide and require annual LDAR training. The first such training will be completed by not later than March 31, 2006;
- (c) For all other COPC operations and maintenance personnel, such as operators and mechanics performing valve packing and designated unit supervisors reviewing for delay of repair work, COPC will provide and require completion of an initial training program that includes instruction on aspects of LDAR that are relevant to the person's duties. The first such training will be completed by not later than September 30, 2006. Refresher training in LDAR for these personnel will be performed at a minimum on a three (3) year cycle; and
- (d) If contract employees are performing LDAR work, COPC's contractor will make its training information and records available to COPC.

227. LDAR Audits (Paragraphs 227 - 231). COPC will implement Refinery audits

according to the schedule and requirements set forth in Paragraphs 228 - 231 to ensure each Refinery's compliance with all applicable LDAR requirements. The LDAR audits will include but not be limited to, comparative monitoring, records review to ensure monitoring and repairs

are performed in required timeframes, tagging, data management, and observation of the LDAR technicians' calibration and monitoring techniques.

228. Initial Audits. By no later than dates set forth in Paragraph 229, COPC will complete an initial third-party audit at each Covered Refinery, submit all such audit reports to EPA and the Applicable Co-Plaintiff, including an identification of any non-compliance issues, and certify that such Refinery is then in compliance with applicable LDAR requirements. For non-compliance that cannot reasonably be remedied within ninety (90) days after the dates set forth in Paragraph 229 for completing the initial third party audit, COPC will submit and adhere to an EPA-approved compliance schedule to remedy such non-compliance.

229. Third-Party Audits. COPC will retain a contractor(s) to perform a third-party audit of the Refinery's LDAR program at least once every four (4) years. The first third-party audit and report for the Alliance, Bayway, Ferndale, and Sweeny Refineries will be completed no later than December 31, 2005; the first third-party audit and report for the Borger, LAR Carson, Santa Maria, Trainer, and Wood River Refineries will be completed by no later than December 31, 2006; and the first third-party audit and report for the LAR Wilmington and Rodeo Refineries will be completed by no later than April 1, 2007.

230. Internal Audits. COPC will conduct internal audits of each Refinery's LDAR program by sending personnel familiar with the LDAR program and its requirements from one or more of COPC's other Refineries or locations to audit another COPC Refinery. COPC will complete an internal LDAR audit by no later than two (2) years from the date of the completion of the third-party audits required in Paragraphs 228 and 229. COPC will perform an internal audit of the each Refinery's LDAR program at least once every four (4) years. COPC may elect

to retain third-parties to undertake the internal audit, provided that an LDAR audit at each Refinery occurs every two (2) years.

231. Audit Every Two Years. To ensure that an audit occurs every two (2) years at each Refinery, once a Refinery's initial third-party audit is completed, the remaining third-party and internal audits at that Refinery will be separated by not more than two (2) years.

232. Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to Paragraphs 228 - 230 identify any areas of non-compliance, COPC will implement, as soon as practicable, all steps necessary to correct the area(s) of non-compliance and to prevent, to the extent practicable, a recurrence of the cause of such non-compliance. By no later than ninety (90) days after the completion of any audit report identifying any areas of non-compliance, COPC will submit a letter to EPA and the Applicable Co-Plaintiff certifying the completion of the necessary corrective actions. To the extent that one or more items of corrective action cannot be completed within ninety (90) days, the letter will identify the schedule for the completion of the actions. Until two (2) years after termination of the Consent Decree, COPC will retain the audit reports generated pursuant to Paragraphs 228 - 230 and will maintain a written record of the corrective actions that COPC takes in response to deficiencies identified in any audits.

233. Internal Leak Definition for Valves and Pumps. COPC will utilize the internal leak definitions set forth in Paragraphs 234 - 235 for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.

234. Leak Definition for Valves. By no later than March 1, 2005, for the LAR Carson, LAR Wilmington, Rodeo, and Sweeny Refineries, and by no later than June 30, 2006, for the

Alliance, Bayway, Borger, Ferndale, Santa Maria, Trainer, and Wood River Refineries, COPC will utilize an internal leak definition of no greater than 500 ppm VOCs for each Refinery's valves in light liquid and/or gas/vapor service, excluding pressure relief devices.

235. Leak Definition for Pumps. By no later than the following dates for the following Refineries, COPC will utilize an internal leak definition of no greater than 2000 ppm for each Refinery's pumps in light liquid and/or gas/vapor service:

Alliance, Bayway, LAR Carson, LAR Wilmington, Rodeo, and Sweeny	March 1, 2005
Ferndale, Santa Maria, and Wood River	June 30, 2006
Borger and Trainer	June 30, 2007

236. Reporting of Valves and Pumps Based on the Internal Leak Definitions. For regulatory reporting purposes, COPC may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the internal leak definitions specified in Paragraphs 234 - 235. The report will specify which definition is being used.

237. Recording, Tracking, Repairing and Re-Monitoring Leaks Based on the Internal Leak Definitions. COPC will record, track, repair and re-monitor all leaks in excess of the internal leak definitions of Paragraphs 234 - 235 at such time as those definitions become applicable. Unless state, regional or local rules specify more stringent first attempt periods, COPC will make a first attempt to repair and re-monitor all components other than valves covered under Paragraph 238 within five (5) calendar days and will either complete the repairs and re-monitor the leaks or place such component on the Refinery's delay of repair list within thirty (30) days.

238. Initial Attempt at Repair of Valves. By no later than March 31, 2005, COPC will make an "initial attempt" to repair any valve that has a reading greater than 200 ppm of VOCs, excluding control valves and components that LDAR monitoring personnel are not authorized to repair. COPC or its designated contractor will make this "initial attempt" at repair and will re-monitor the leak within one (1) day of identification. If the re-monitored leak reading is greater than the applicable leak definition, COPC may delay further repairs up to five (5) days after initial identification in order to assess the persistence of the leak (re-monitoring again). Unless the re-monitored leak rate is greater than the applicable leak definition, no further action will be necessary. If COPC can demonstrate with sufficient, statistically significant monitoring data over a period of at least two (2) years that "initial attempts" to repair at 200 ppm worsen or do not improve refinery leak rates, COPC may request EPA to reconsider or amend this requirement.

239. LDAR Monitoring Frequency: Pumps. When the lower internal leak definition for pumps in light liquid and/or gas/vapor service becomes applicable under Paragraph 235 and unless more frequent monitoring is required by applicable federal, state, regional and/or local requirements, COPC will monitor pumps at the internal leak definition on a monthly basis.

240. LDAR Monitoring Frequency: Valves. When the lower internal leak definition for valves becomes applicable under Paragraph 234 and unless more frequent monitoring is required by applicable federal, state, regional and/or local requirements, COPC will monitor valves in light liquid and/or gas/vapor service at the internal leak definition on a quarterly basis (other than difficult to monitor or unsafe to monitor valves). No monitoring skip periods are permitted.

241. Monitoring after Turnaround or Maintenance. COPC will have the option of monitoring affected valves and pumps within process unit(s) after completing a documented maintenance, startup, or shutdown activity without having the results of the monitoring count as a scheduled monitoring activity, provided COPC monitors according to the following schedule:

- (a) For events involving 1000 or fewer valves and pumps, monitor within one week of the documented maintenance, startup or shutdown activity;
- (b) For events involving greater than 1000 but fewer than 5000 valves and pumps, monitor within two (2) weeks of the documented maintenance, startup, or shutdown activity;
- (c) For events involving greater than 5000 valves and pumps, monitor within four (4) weeks of the documented maintenance, startup, or shutdown activity.

242. Electronic Storing and Reporting of LDAR Data. COPC has and will continue to maintain an electronic database for storing and reporting LDAR data at all of the Covered Refineries. By no later than February 1, 2005, the electronic database will include data identifying the date and time of the monitored event, and the operator and instrument used in the monitored event.

243. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter. By no later than January 31, 2005, for all but the Trainer and Wood River Refineries, and by no later than January 1, 2006, for the Trainer and Wood River Refineries, COPC will use data loggers and/or electronic data collection devices during all Method 21 LDAR monitoring. COPC, or its designated contractor, will use its/their best efforts to transfer, by the end of the next business day electronic data from electronic data logging devices to the electronic database of Paragraph 242. For all Method 21 monitoring in which an electronic data collection device is used, the collected monitoring data will include a time and date stamp and identify the operator/monitoring technician and the monitoring instrument used. COPC may use paper logs

where necessary or more feasible for Method 21 monitoring (e.g., small rounds, re-monitoring, or when data loggers are not available or broken), and will record, at a minimum, the identity of the technician, the date, the technicians' daily monitoring starting and ending times, and an identification of the monitoring equipment. COPC will use its best efforts to transfer any manually recorded monitoring data to the electronic database of Paragraph 242 within seven (7) days of monitoring.

244. QA/QC of LDAR Data. By no later than March 31, 2005, COPC, or a third party contractor retained by COPC, will develop and begin implementing procedures for quality assurance/quality control ("QA/QC") reviews of all data generated by LDAR monitoring technicians. COPC periodically will ensure that monitoring data provided by its technicians is reviewed daily for QA/QC by the technicians. At least once per calendar quarter, COPC will perform a QA/QC review of COPC's and any contractor's monitoring data which will include, but not be limited to: number of components monitored per technician, time between monitoring events, and abnormal data patterns.

245. Calibration. COPC will conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21.

246. Calibration Drift Assessment. By no later than February 1, 2005, COPC will conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. COPC will conduct the calibration drift assessment using approximately 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, COPC will re-monitor all valves that were monitored since the last calibration that had a reading greater than

100 ppm and will re-monitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm. COPC will retain its calibration records for two (2) years after performing the calibration.

247. Delay of Repair. By no later than January 1, 2006, COPC will take the following actions for any equipment that it intends and is allowed to place on the "delay of repair" list under applicable regulations:

- (a) Require electronic or written sign-off by the unit supervisor within 30 days of identifying that a piece of equipment is leaking at a rate greater than the applicable leak definition that such equipment qualifies for delayed repair under applicable regulations,
- (b) Include equipment that is placed on the "delay of repair" list in COPC's regular LDAR monitoring,
- (c) Use its best efforts to isolate and repair pumps identified as leaking at the applicable regulatory leak definition, or, when applicable pursuant to Paragraph 235, 2000 ppm or greater.

248. Delay of Repair: Valves Only. In addition to the requirements of Paragraph 247, by no later than January 1, 2006, COPC will take the following actions for leaking valves, other than control valves and pressure relief valves, that COPC is required to repair under applicable regulations:

- (a) Use the "drill and tap"(or equivalent) repair method, rather than place a valve on the "delay of repair" list, if it is leaking at a rate of 10,000 ppm or greater, unless COPC can demonstrate that there is a safety or major environmental concern by attempting to repair the leak in this manner;
- (b) Perform a first, and if necessary a second, "drill and tap" (or equivalent) repair method within thirty (30) days after detecting a leak of 10,000 ppm or greater;
- (c) After two (2) unsuccessful attempts to repair a leaking valve through the "drill and tap" (or equivalent) repair method, COPC may place the leaking valve on its "delay of repair" list.

249. New Method of Repair for Leaking Valves. If a new valve repair method not currently in use by the refining industry is planned to be used by COPC, COPC will advise EPA prior to implementing such a method or, if prior notice is not practicable, as soon as practicable after implementation.

250. Chronic Leakers. A valve will be classified as a "chronic leaker" under this Paragraph if it leaks above 5000 ppm twice in any consecutive four (4) quarters, unless the valve has not leaked in the six (6) consecutive quarters prior to the relevant process unit turnaround. Following the identification of a "chronic leaker" non-control valve, COPC will replace, repack, or perform similarly effective repairs on the chronic leaker during the next process unit turnaround occurring at the later of June 30, 2005, or six (6) months after the Date of Entry of this Decree. After Entry of this Decree, COPC and EPA may agree in writing to modifications of the chronic leaker requirements of this Paragraph 250 and any such modifications will be considered non-material under Paragraph 437.

251. Recordkeeping: Refinery-Wide LDAR Program. COPC will retain a copy of each Refinery's Refinery-Wide LDAR Program developed pursuant to Paragraph 225 in the files of each Covered Refinery.

252. Reporting: As Part of the First Progress Report Due under the Consent Decree. Consistent with the requirements of Section IX (Recordkeeping and Reporting), at the later of: (i) the first progress report due under the Consent Decree; or (ii) the first progress report in which the requirement becomes due, COPC will include the following:

- (a) A certification of the implementation of the "first attempt at repair" program of Paragraph 238;
- (b) A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 244;