EXHIBIT 1

TO NOTICE OF LODGING OF FIRST REVISED CONSENT DECREE

FIRST REVISED CONSENT DECREE

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN

UNITED STATES OF AMERICA, Plaintiff, and COUNTY OF WAYNE, MICHIGAN, STATE OF LOUISIANA, STATE OF MINNESOTA, Plaintiff-Intervenors, v. MARATHON ASHLAND PETROLEUM LLC Defendant.	)	Civil No. 4:01-CV-40119-PVG Judge Paul V. Gadola Magistrate Judge Donald A. Sheer

FIRST REVISED CONSENT DECREE

TABLE OF CONTENTS

TABLE OF APPENDICES

FIRST REVISED CONSENT DECREE

WHEREAS, Plaintiff the United States of America ("Plaintiff" or "the 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"), alleged upon information and belief in the complaint filed in this action on May 11, 2001, that Defendant Marathon Ashland Petroleum LLC ("MAP") had violated and/or continued to violate the requirements of the Clean Air Act and the regulations promulgated thereunder at its petroleum refineries at Robinson, Illinois; Garyville, Louisiana; Texas City, Texas; Catlettsburg, Kentucky; Detroit, Michigan; Canton, Ohio; and St. Paul Park, Minnesota ("Covered Refineries");

WHEREAS, the United States alleged in the Complaint that MAP had violated and continued to violate the following statutory and regulatory provisions:

1) Prevention of Significant Deterioration ("PSD") requirements 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), Part 51, Appendix S, and § 52.24 ("PSD/NSR Regulations") for heaters and boilers and fluid catalytic cracking unit catalyst regenerators for NOx, SO_2, CO and PM;

2) New Source Performance Standards ("NSPS") for sulfur recovery plants, fuel gas combustion devices, and fluid catalytic cracking unit catalyst regenerators 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");

3) Leak Detection and Repair ("LDAR") regulations found at 40 C.F.R. Part 60 Subparts VV and GGG, under Section 111 of the Act, and 40 C.F.R. Part 63, Subparts F, H, and CC, under Section 112(d) of the Act ("LDAR Regulations"); and

4) National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Benzene Waste, 40 C.F.R. Part 61, Subpart FF, and Section 112(e) of the Act, 42 U.S.C. § 7412(e) ("Benzene Waste NESHAP Regulations").

WHEREAS, the United States also alleged in the Complaint with respect to the Covered Refineries that, upon information and belief, MAP had been and continued to be in violation of the state implementation plans ("SIPs") and other state rules adopted by the states in which the Covered Refineries are located to the extent that such plans or rules implemented, adopted or incorporated the above-described Federal requirements;

WHEREAS, the United States further alleged in the Complaint that pursuant to Section 3008 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6928, MAP had violated and continued to violate certain requirements of RCRA at its Detroit and Robinson Refineries;

WHEREAS, pursuant to Section 325(c)(1) of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11045(c)(1), and Section 109(c) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9609(c), the United States alleged in the Complaint that MAP had violated Section 313 of EPCRA, 42 U.S.C. § 11023, and Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and the regulations promulgated thereunder at its Detroit Refinery;

WHEREAS, the State of Louisiana ("Louisiana"), State of Minnesota ("Minnesota"), and the County of Wayne, Michigan ("Wayne County"), filed Complaints-in-Intervention in 2001 seeking to intervene in this matter and alleging violations of their respective applicable SIP provisions and other state rules incorporating and implementing the foregoing federal requirements;

WHEREAS, a Consent Decree resolving the claims asserted by the United States, Louisiana, Minnesota, and Wayne County in the Complaint and Complaints-in-Intervention was lodged with this Court on May 11, 2001;

WHEREAS, this Court entered the Consent Decree on August 30, 2001 ("August 2001 Consent Decree");

WHEREAS, on March 11, 2005, the United States and MAP lodged a First Amendment to the August 2001 Consent Decree ("First Amendment") involving only the Texas City Refinery;

WHEREAS, this Court entered the First Amendment on June 20, 2005;

WHEREAS, the United States and MAP, in consultation with Plaintiff-Intervenors the State of Louisiana and the State of Minnesota, have engaged in negotiations regarding modifications to the August 2001 Consent Decree;

WHEREAS, after the Date of Entry of the August 2001 Consent Decree, the State of Michigan withdrew Plaintiff-Intervenor Wayne County's authority to enforce the Michigan air pollution control laws and therefore no one within Wayne County has any authority to engage in negotiations regarding the implementation or enforcement of the August 2001 Consent Decree;

WHEREAS, these negotiations have resulted in this First Revised Consent Decree;

WHEREAS, at the time of the lodging of the August 2001 Consent Decree, the United States and MAP estimated that the environmental projects (or measures) identified in the August 2001 Consent Decree would reduce annual emissions from MAP's refineries by the following amounts: 1) nitrogen oxide by approximately 8,000 tons; 2) sulfur dioxide by approximately 12,800 tons; 3) volatile organic compounds by approximately 120 tons; 4) particulate matter ("PM") by approximately 800 tons; and 5) carbon monoxide by approximately 1850 tons;

WHEREAS, the United States and MAP estimate that the implementation of the August 2001 Consent Decree and this First Revised Consent Decree will result in additional pollutant reductions of approximately 1200 tons per year more than the estimates in the August 2001 Consent Decree;

WHEREAS, with respect to the provisions of Paragraph 22 ("Acid Gas and Sour Water Stripper Gas Flaring") of this First Revised 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 Paragraph 11.X of this First Revised Consent Decree and 40 C.F.R. § 60.2, of the "Sulfur Recovery Plants" or of "Upstream Process Units" may result in "AG Flaring" of "Acid Gas" or "Sour Water Stripper Gas" on occasion, as those terms are defined herein, and that such AG 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, with respect to Paragraph 22 of the First Revised Consent Decree, MAP maintains that with respect to NSPS: (i) Flaring is not regulated with respect to sulfur dioxide emissions except for flares subject to 40 C.F.R. § 60.104(a)(1); and (ii) 40 C.F.R. § 60.104(a)(1) applies only to flares that are otherwise subject to NSPS and that are maintained to combust Acid Gases or Sour Water Stripper Gases on a continuous basis as a part of normal refinery operations;

WHEREAS, EPA recognizes that the combustion in a flare subject to 40 C.F.R. § 60.104(a)(1) of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions does not violate 40 C.F.R. § 60.104(a)(1);

WHEREAS, EPA agrees that the following emission control projects required by this Consent Decree are "environmentally beneficial projects" that could be considered to be pollution control projects where appropriate for New Source Review purposes: wet gas scrubbers, ultra low-NOx burners, selective catalytic reduction, LoTOx Systems, selective non-catalytic reduction, pollutant-reducing catalyst additives, electrostatic precipitators, third-stage separators, add-on controls for benzene waste, and sulfur recovery unit reliability improvements;

WHEREAS, EPA expects that MAP will design, operate and maintain the controls required by the August 2001 Consent Decree and this First Revised Consent Decree in a manner consistent with standard and reasonable air pollution control practices, and that collateral emissions increases will be adequately addressed by MAP;

WHEREAS, the requirements of Section V of the August 2001 Consent Decree and this First Revised Consent Decree are not for the purposes of penalty mitigation;

WHEREAS, by entering into the August 2001 Consent Decree and this First Revised Consent Decree, MAP is committed to pro-actively resolving environmental concerns related to its operations;

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

WHEREAS, MAP has denied and continues to deny the violations alleged in the Complaint and Complaints-in-Intervention, maintains that it has been and remains in compliance with all applicable regulations, and is not liable for civil penalties and injunctive relief. However, in the interest of settlement and to accomplish its objectives of cooperatively reconciling the United States', Louisiana's, Minnesota's, and MAP's goals under the Clean Air Act and corollary state statutes and regulations, MAP has agreed to undertake the installation of air pollution control equipment and enhancements to its air pollution management practices at its seven refineries to reduce air emissions;

WHEREAS, notwithstanding the foregoing reservations, MAP, the United States, Louisiana, and Minnesota agree that: a) settlement of the matters set forth in the Complaint and Complaints-in-Intervention by means of the August 2001 Consent Decree and this First Revised Consent Decree is in the best interests of the Parties and the public; and b) entry of the this First Revised Consent Decree without litigation is the most appropriate means of resolving this matter;

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

NOW THEREFORE, with respect to the matters set forth in the Complaint, Complaints-in-Intervention, and in Section XV of this First Revised 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 this First Revised Consent Decree, it is hereby ORDERED, ADJUDGED and DECREED as follows:

I. JURISDICTION AND VENUE

1. A. This Court has jurisdiction over the subject matter of this action and over the Parties pursuant to 28 U.S.C. §§ 1331, 1345 and 1355. In addition, this Court has jurisdiction over the subject matter of this action pursuant to Section 113(b) and 167 of the CAA, 42 U.S.C. § 7413(b) and 7477. The United States' Complaint states a claim upon which relief may be granted for injunctive relief and civil penalties against MAP under these same provisions of the Clean Air Act. Further, the United States and MAP agree that this Court has jurisdiction over the RCRA claims under Sections 3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925, and of the EPCRA claims under Sections 325(a), (b), and (c) of EPCRA, 42 U.S.C. § 11045(a), (b), and (c). Authority to bring this suit is vested in the United States Department of Justice by 28 U.S.C. §§ 516 and 519, 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. § 9609(c).

B. Venue is proper in the District of Eastern District of Michigan pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), Section 3008(a) of RCRA, 42 U.S.C. § 6928(a), Section 325(b) of EPCRA, 42 U.S.C. § 11045(b) and 28 U.S.C. §§ 1391(b) and (c), and 1395(a). MAP consents to the personal jurisdiction of this Court and waives any objections to venue in this District.

2. In 2001, notice of the commencement of this action was given to the: a) State of Ohio, State of Minnesota, State of Louisiana, State of Texas, State of Illinois, Commonwealth of Kentucky, and the State of Michigan 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); and b) the State of Michigan and State of Illinois as required by Section 3008(a)(2) of RCRA, 42 U.S.C. § 6928(a)(2).

3. Marathon Ashland Petroleum LLC is a limited liability company that owns and operates refineries in Robinson, Illinois; Garyville, Louisiana; Texas City, Texas; Catlettsburg, Kentucky; Detroit, Michigan; Canton, Ohio; and St. Paul Park, Minnesota. MAP has its principal operating offices in Findlay, Ohio. On September 1, 2005, MAP shall change its name to Marathon Petroleum Company LLC.

4. MAP is a "person" within the meaning of Section 302(e) of the CAA, 42 U.S.C. § 7602(e), and Section 1003(15) of RCRA, 42 U.S.C. § 6902(15), and Section 329(7) of EPCRA, 42 U.S.C. § 11049(7).

II. APPLICABILITY

5. A. This First Revised Consent Decree shall replace and supercede the August 2001 Consent Decree and the First Amendment to the August 2001 Consent Decree (the "Texas City Refinery Amendment"). The August 2001 Consent Decree was effective and enforceable from the Date of its Entry (August 30, 2001) until the Date of Entry of this First Revised Consent Decree. The Texas City Refinery Amendment was effective and enforceable from the Date of its Entry (June 20, 2005) until the Date of Entry of this First Revised Consent Decree. This First

Revised Consent Decree shall be effective and enforceable from its Date of Entry until termination pursuant to Section XVII.

B. The provisions of the First Revised Consent Decree shall apply to, and be binding upon MAP with respect to the Covered Refineries. In addition, with respect to each Covered Refinery, the First Revised Consent Decree shall be binding upon MAP and its officers, successors, and assigns, and upon the United States and the Plaintiff-Intervenors.

6. MAP agrees not to contest the validity of the First Revised Consent Decree in any subsequent proceeding to implement or enforce its terms.

7. A. Effective from the Date of Entry of the August 2001 Consent Decree until termination of this First Revised Consent Decree, MAP agrees that the refineries identified herein are covered by this First Revised Consent Decree. Effective from the Date of Lodging of the August 2001 Consent Decree until the Date of Entry of the First Revised Consent Decree, and effective from the Date of Entry of the First Revised Consent Decree until its termination, MAP shall give written notice of, respectively, the August 2001 Consent Decree and the First Revised Consent Decree to any successors in interest prior to transfer of ownership or operation of any portion of any Covered Refinery and shall provide a copy of the applicable Consent Decree to any successor in interest. MAP shall notify the United States in accordance with the notice provisions set forth in Paragraph 84 (Notice), of any successor in interest at least thirty (30) days prior to any such transfer.

B. MAP shall 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 this First Revised Consent Decree, which makes the terms and conditions of this First Revised Consent Decree that apply to such refinery applicable to the transferee. The Parties shall file that modification with the Court promptly upon such transfer. In the event of any such transfer of ownership or other interest in any Covered Refinery, MAP shall be released from the obligations and liabilities of

this First Revised Consent Decree provided that, at the time of such transfer, the transferee has the financial and technical ability to assume and has contractually agreed with MAP to assume these obligations and liabilities.

8. MAP shall provide a copy of the applicable provisions of this First Revised Consent Decree to each consulting or contracting firm that is retained to perform work required under this First Revised Consent Decree upon the execution of any contract relating to such work. To the extent that MAP has not already provided a copy of the August 2001 Consent Decree to each consulting or contracting firm that MAP already has retained to perform the work required under the August 2001 Consent Decree, MAP shall provide a copy of the applicable provisions of this First Revised Consent Decree to each such firm no later than thirty (30) days after the Date of Lodging of the First Revised Consent Decree. Copies of the First Revised Consent Decree do not need to be supplied to firms who are retained to supply materials or equipment to satisfy requirements under this First Revised Consent Decree.

III. OBJECTIVES

9. It is the purpose of the Parties in entering this First Revised Consent Decree to further the objectives of the Clean Air Act as described at Section 101 of the Clean Air Act, 42 U.S.C. § 7401, and, with respect to the Detroit and Robinson Refineries, it is the intention of MAP and the United States to further the purposes of RCRA, as described at Section 1002 of RCRA, 42 U.S.C. § 6902, and, with respect to the Detroit Refinery, it is the intention of MAP and the United States to further the purposes of Section 325(c)(1) of the EPCRA, 42 U.S.C. § 11045.

IV. DEFINITIONS

10. Unless otherwise defined herein, terms used in the First Revised Consent Decree shall have the meaning given to those terms in the Clean Air Act, and the implementing regulations promulgated thereunder. In addition, terms used in the First Revised Consent Decree in the provisions that relate specifically to obligations under RCRA shall have the meaning given to those terms in the statutes and implementing regulations promulgated thereunder.

11. The following terms used in the First Revised Consent Decree shall be defined for purposes of the First Revised 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. "AG Flaring" shall mean, for purposes of this First Revised Consent Decree, the combustion of Acid Gas and/or Sour Water Stripper Gas in a AG Flaring Device.

C. "AG Flaring Device" shall mean any device at the refineries that are subject of this First Revised Consent Decree 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 refineries are identified in Appendix A to this First Revised Consent Decree. To the extent that, during the duration of the August 2001 Consent Decree or this First Revised Consent Decree, any covered refinery utilizes AG Flaring Devices other than those specified herein for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG Flaring Devices shall be covered under this First Revised Consent Decree.

D.i. "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. An AG Flaring Incident may entail the sulfur dioxide emissions from multiple sources provided that the flaring is associated with one common event.

D.ii. "August 2001 Consent Decree" shall mean the Consent Decree entered by the United States District Court for the Eastern District of Michigan on August 30, 2001, and effective from August 30, 2001, until the Date of Entry of this First Revised Consent Decree.

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

F. "Canton Refinery" shall mean the refinery owned and operated by MAP at Canton, Ohio.

G. "Catlettsburg Refinery" shall mean the refinery owned and operated by MAP at Catlettsburg, Kentucky.

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

I. [Omitted.]

J.i. "Controlled Heaters and Boilers" shall mean Heaters and Boilers that meet the criteria specified in Paragraph 13.A and that are used to meet the requirements of Paragraph 13.B.

J.ii. "Covered Refineries" or "Covered Refinery" or "Refineries" or "Refinery" shall mean refineries owned and operated by MAP that are subject to the requirements of the August 2001 Consent Decree and this First Revised Consent Decree: the Canton, Catlettsburg, Detroit, Garyville, Robinson, St. Paul Park, and Texas City Refineries.

K. "CO" shall mean carbon monoxide.

L. "Current Generation Ultra-Low NOx Burner" is defined as those burners that are designed to achieve a NOx emission rate of 0.020 to 0.040 lb/mmBTU higher heating value ("HHV") when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual NOx emissions exceed 0.040 lb/mmBTU HHV.

M.i. "Date of Lodging of the August 2001 Consent Decree" shall mean May 11, 2001.

M.ii. "Date of Lodging of the First Revised Consent Decree" shall mean the date the First Revised Consent Decree is filed for lodging with the Clerk of the Court for the United States District Court for the Eastern District of Michigan.

N. i. "Date of Entry of the August 2001 Consent Decree" shall mean August 30, 2001.

N.ii. "Date of Entry of the First Revised Consent Decree" shall mean the date the First Revised Consent Decree is entered by the Clerk of the Court for the United States District Court for the Eastern District of Michigan.

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

P.i. "Detroit Refinery" shall mean the refinery owned and operated by MAP at Detroit, Michigan.

P.ii. "Enhanced SNCR" 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.

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

Q.ii. "First Revised Consent Decree" shall mean this First Revised Consent Decree, including any and all appendices attached to this First Revised Consent Decree.

Q.iii. "First Amendment to the August 2001 Consent Decree" or "Texas City Refinery Amendment" shall mean the First Amendment lodged with the United States District Court for the Eastern District of Michigan on March 11, 2005, and entered on June 20, 2005.

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

S. "Garyville Refinery" shall mean the refinery owned and operated by MAP at Garyville, Louisiana.

T. "Hydrocarbon Flaring" shall mean, for purposes of this First Revised Consent Decree, 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.

U. "Hydrocarbon Flaring Device" shall mean, a flare device 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. To the extent that the refinery utilizes flaring devices that are functionally equivalent and are in the same service as those specified above, those flaring devices shall be covered under this First Revised Consent Decree. The Hydrocarbon Flaring Devices are identified in Appendix A to this First Revised Consent Decree.

V. "Hydrocarbon Flaring Incident" (or "HC Flaring Incident") shall mean the continuous or intermittent flaring of refinery process gases, except for Acid Gas or Sour Water Stripper Gas or Tail Gas, at a Hydrocarbon Flaring Device that results in the emissions of sulfur dioxide equal to, or greater than five hundred (500) pounds in a 24-hour period; provided, however, an incident which extends for more than a 24-hr period will constitute one (1) Hydrocarbon Flaring Incident. The duration of a Hydrocarbon Flaring Incident shall be determined from the initial commencement until the time of its final termination. A Hydrocarbon Flaring Incident may entail the sulfur dioxide emissions from multiple sources within a 24-hour period provided that the flaring is associated with one common event.

W.i. "Low NOx Combustion Promotor" shall mean a catalyst that is added to a FCCU or a RCCU that minimizes NOx emissions while maintaining its effectiveness as a combustion promotor.

W.ii. "LoTOx System" shall mean a NOx control technology that includes a quench system, sufficient residence time, ozone injection ports, ozone generators, and oxygen supply, that uses that ozone to oxidize NOx which is then removed in a wet gas scrubber. For purposes of the Robinson LoTOx System required by this First Revised Consent Decree, MAP may use the existing residence time because the LoTOx System is a retrofit application.

X. "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."

Y. "MAP" shall mean:

i. With respect to the Canton Refinery and St. Paul Park Refinery, Marathon Ashland Petroleum LLC, its predecessors Ashland Inc. and Ashland Petroleum Company, its successors and assigns, and its officers, directors and/or Board of Managers, and employees in their capacities as such;

ii. With respect to the Catlettsburg Refinery, Marathon Ashland Petroleum LLC, its wholly-owned subsidiary Catlettsburg Refining, LLC, its predecessors Ashland Inc. and Ashland Petroleum Company, its successors and assigns, and its officers, directors and/or Board of Managers, and employees in their capacities as such; and

iii. With respect to the Detroit Refinery, Garyville Refinery, Robinson Refinery, and Texas City Refinery, Marathon Ashland Petroleum LLC, its predecessors Marathon Oil Company and Marathon Petroleum Company, its successors and assigns, and its officers, directors and/or Board of Managers, and employees in their capacities as such.

Effective September 1, 2005, MAP shall become and therefore include "Marathon Petroleum Company LLC."

Z. "Next Generation Ultra-Low NOx Burner" is defined as those burners that are designed to achieve a NOx emission rate of less than or equal to 0.020 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual NOx emissions exceed 0.020 lb/mmBTU HHV.

AA. "NOx" shall mean nitrogen oxides.

BB.i. "NOx Reducing Catalyst Additive" shall mean a catalyst additive that is introduced to an FCCU or an RCCU to reduce NOx emissions through reduction or controlled oxidation of intermediates.

BB.ii. "NOx Reducing System" shall mean either: (i) a Lo TOx System; or (ii) Enhanced SNCR with low NOx burners in a CO Boiler designed to achieve a NOx emission

rate of less than 0.060 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual NOx emissions exceed 0.060 lb/mmBTU HHV.

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

DD. "PM" shall mean particulate matter.

EE.i. "Parties" shall mean each of the signatories to the First Revised Consent Decree.

EE.ii. "Plaintiff-Intervenors" shall mean the States of Louisiana and Minnesota.

FF. "Prior Actual Level of Emissions" is defined as actual emissions of NOx in tons per year during calendar years 1999 and 2000 or other representative two year period (or prior allowable emissions where actuals exceed allowable) as presented in Appendix C (Two Year Actual Heater and Boiler NOx Emissions by Unit) to this First Revised Consent Decree.

GG. "Robinson Refinery" shall mean the refinery owned and operated by MAP at Robinson, Illinois.

HH. "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

II. "Scheduled Maintenance" shall mean any shutdown of any emission unit or control equipment that MAP schedules at least fourteen (14) days in advance of the shutdown for the purpose of undertaking maintenance of such unit or control equipment.

JJ. [Omitted.]

KK. "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the process of stripping refinery sour water. For the purposes of this Consent First Revised Decree, the off-gas from the de-salter (benzene) strippers at the Canton, Detroit, Garyville and Robinson refineries shall not be considered "Sour Water Stripper Gas."

LL. "SO_2 Adsorbing Catalyst Additive" shall mean a catalyst additive that is introduced to an FCCU or an RCCU to reduce SO_2 emissions by adsorption.

MM. [Omitted.]

NN. "SO_2" shall mean sulfur dioxide.

OO. "St. Paul Park Refinery" shall mean the refinery owned and operated by MAP at St. Paul Park, Minnesota.

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

QQ. "Tail Gas Unit" ("TGU") shall mean a control system utilizing a technology for reducing emissions of sulfur compounds from a Sulfur Recovery Plant.

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

i. Combusted in a flare and results in 500 pounds of SO_2 emissions in any 24 hour period ; or

ii. Combusted in a thermal incinerator and results in 500 pounds of SO_2 emissions in any 24-hour period. Only those time periods which are in excess of SO_2 concentration of 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator;

MAP shall use engineering judgment and/or other monitoring data during periods in which the SO_2 continuous emission analyzer has exceeded the range of the instrument or is out of service.

SS.i. "Texas City Refinery" shall mean the refinery owned and operated by MAP at Texas City, Texas.

SS.ii. "Texas City Refinery Amendment" shall mean the First Amendment to the August 2001 Consent Decree entered by the United States District Court for the Eastern District of Michigan on June 20, 2005.

TT. "Upstream Process Units" shall mean all amine contactors, amine scrubbers, 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.

V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS (OR MEASURES)

12. **NOx and CO Emission Reductions from FCCUs. Summary**. MAP shall reduce NOx emissions from the Canton FCCU, the Detroit FCCU, the Garyville FCCU, and the St. Paul Park FCCU by the use of NOx Reducing Catalyst Additives and Low NOx Combustion Promotors as described in Paragraphs 12.A. - 12.B. MAP shall reduce NOx emissions from Catlettsburg FCCU No. 109 (formerly an RCCU, but now converted to an FCCU) by the combination of controls described in Paragraph 12.C, including the use of NOx Reducing Catalyst Additives and Low NOx Combustion Promotors as described in Paragraphs 12.A. - 12.B. MAP no longer shall be required to implement specific controls to reduce NOx emissions from Catlettsburg FCCU No. 1 because MAP shut down that Unit on April 25, 2004. MAP shall reduce NOx emissions the Texas City FCCU by the installation and operation of a LoTOx System as described in Paragraph 12.D. MAP shall reduce NOx emissions from the Robinson FCCU by the installation and operation of a NOx Reducing System as described in Paragraphs 12.E - 12.G. MAP shall incorporate into operating permits NOx emissions limitations reflecting the NOx emissions continuously achievable with the application of these controls and will demonstrate future compliance with these lower emission limits through the use of continuous emissions monitoring systems ("CEMS").

A. **NOx Reducing Catalyst Additives and Low NOx Combustion Promotors ("NOx Additives")**:

i. MAP began to add Low NOx Combustion Promotors and NOx Reducing Catalyst Additives to determine optimized additive addition rates at each of the following FCCUs on the following dates:

a. Canton FCCU - May 8, 2002;

b. Catlettsburg FCCU No. 109 - June 21, 2004;

c. Detroit FCCU - June 3, 2002;

d. Garyville FCCU - April 22, 2002;

e. St. Paul Park FCCU - April 28, 2003.

ii. **NOx Additives Optimized Addition Rate**: As a result of the optimization studies that MAP undertook, MAP determined that Low NOx Combustion Promoter was "effective," as that term was used in Appendix B of the August 2001 Consent Decree. In addition, EPA approved the following brands of NOx Reducing Catalyst Additives and the following addition rates for use in the demonstration period described in Paragraph 12.B:

FCCU	Percentage	Lb/Day	Brand
Canton	0.75%	20 lb/day	CleanNOx 1
Catlettsburg	1.0%	85 lb/day	CleanNOx 1
Detroit	2.0%	72 lb/day	CleanNOx 3
Garyville	0.5%	75 lb/day	CleanNOx 1
St. Paul Park	0.7%	26 lb/day	CleanNOx 1

B. **NOx Additives Demonstration Period and Report:**

i. By no later than the dates set forth in the table below, MAP will, while using Low NOx Combustion Promoter, (a) commence and complete a demonstration of the NOx Reducing Catalyst Additives identified in Subparagraph 12.A.ii and (b) submit a report setting forth the results of the demonstration ("Catalyst Additive Demonstration Report"). For all but the St. Paul Park FCCU, MAP will add NOx Reducing Catalyst Additives at the optimized addition rate. For the St. Paul Park FCCU, because the NOx Reducing Catalyst Additive there is pre-mixed with other FCCU catalysts, MAP shall add NOx Reducing Catalyst Additive at not less than the optimized addition rate identified in Subparagraph 12.A.ii as measured on a 7-day rolling average basis.

FCCU	Demonstration Start	Demonstration End	Report Due
Canton	8/30/04	2/28/06	4/28/06
Catlettsburg	2/5/05	8/5/06	10/5/06
Detroit	10/1/04	4/1/06	6/1/06
Garyville	10/1/04	4/1/06	6/1/06
St. Paul Park	8/3/04	2/3/06	4/3/06

ii. MAP may use conventional combustion promoter on an intermittent basis during the demonstration period as needed to avoid unsafe operation of the FCCU regenerator and/or to comply with CO emission limits. MAP shall undertake appropriate measures and/or adjust operating parameters with the goal of eliminating such use. Notwithstanding the foregoing,

MAP shall not be required to adjust operating parameters in a way that would limit conversion or charge rates. By no later than August 31, 2005, MAP shall submit a report to EPA that documents when and why MAP used conventional combustion promoter for any period of the demonstration that preceded August 31, 2005. For any use of conventional combustion promoter that takes place after August 31, 2005, MAP shall submit a report to EPA documenting when and why MAP used the conventional combustion promoter and the actions, if any, taken to return to the minimized level of use within thirty (30) days of using conventional combustion promoter.

iii. Each Catalyst Additive Demonstration Report shall include, at a minimum, the following information on at least a daily, and where available an hourly, basis:

a. Regenerator flue gas temperature and flow rate;

b. Coke burn rate;

c. FCCU feed rate;

d. FCCU feed sulfur content;

e. CO boiler firing rate and fuel type;

f. Total fresh catalyst addition rate;

g. NOx Reducing Catalyst Additive and SO_2 Adsorbing Catalyst Additive addition rates;

h. Low-NOx and conventional CO promotor addition rates;

i. Reductant addition rates, where applicable;

j. Temperature profiles (in duct work after regenerator and in the CO Boiler);

k. Hourly average NOx and O_2 concentration; and

l. Cost.

C. **NOx Emission Reductions at Catlettsburg FCCU No. 109**:

i. By no later than March 1, 2004, MAP completed the following actions to reduce NOx emissions from Catlettsburg FCCU No. 109:

a. Installed and operated Low NOx burners (which were designed to achieve a NOx emission rate of 0.05 lb/mmBTU HHV) and flue gas recirculation on the South CO boiler (Equipment No. 2-116-B1);

b. Eliminated supplemental firing in the North CO Boiler (Equipment No. 2-116-B2). If MAP ever decides to reintroduce supplemental firing in the North CO Boiler, MAP shall install and operate Low NOx burners (which are designed to achieve a NOx emission rate of 0.05 lb/mmBTU HHV) and flue gas recirculation; and

c. Reduced the feed sulfur through hydrotreating the feed.

ii. By no later than June 21, 2004, MAP began to add Low NOx Combustion Promotor and thereafter NOx Reducing Catalyst Additive in accordance with the provisions of Paragraphs 12.A. - 12.B.

D. **Installation and Operation of a LoTOx System at the Texas City FCCU**: By the earlier of: (i) the next scheduled turnaround of at least twenty-five days of the Texas City FCCU; or (ii) December 31, 2007, MAP shall complete installation and begin operation of a LoTOx System at the Texas City FCCU and shall comply with an emission limit for NOx of 20 ppmvd (0% oxygen) on a 365-day rolling average basis and 40 ppmvd (0% oxygen) on a 7-day rolling average basis.

E. **Installation and Operation of a NOx Reducing System at the Robinson FCCU:** By no later than December 31, 2008, MAP shall complete installation and begin operation of a NOx Reducing System at the Robinson FCCU. The NOx Reducing System shall be either: (i) a LoTOx System; or (ii) Enhanced SNCR with low NOx burners in a CO Boiler designed to achieve a NOx emission rate of less than 0.060 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual NOx emissions exceed 0.060 lb/mmBTU HHV. NOx emission limits from the Robinson FCCU shall be established in accordance with Paragraph 12.H. or 12.I.

F. **Robinson FCCU NOx Reducing System Design Submissions:**

i. By no later than June 30, 2007, MAP shall submit to EPA proposed process design specifications for the NOx Reducing System at the Robinson FCCU. MAP shall propose process design specifications that, at a minimum, consider the design and operating considerations identified in Appendix D of this First Revised Consent Decree. MAP and EPA agree to consult

with each other on the development of the process design specifications for the NOx Reducing System prior to MAP's submission of a final proposal.

ii. Provided that MAP submits the proposed process design specifications by June 30, 2007, EPA shall provide comments, if any, to MAP by no later than August 30, 2007. If EPA provides comments on the proposed design, MAP shall submit to EPA, for final approval, a modified proposal that addresses EPA's comments by no later than October 30, 2007. If EPA does not provide comments on or approval of the final design by December 30, 2007, MAP shall proceed with the implementation of the final design. MAP shall notify EPA of any substantial changes to the NOx Reducing System which may affect its performance by no later than thirty (30) days after MAP decides to change the design.

G. **Robinson FCCU NOx Reducing Optimization Studies and Demonstration Periods**:

i. By no later than December 31, 2008, MAP shall begin a six (6) month study to optimize the performance of the NOx Reducing System to minimize NO_x emissions from the Robinson FCCU ("NOx Reducing System Optimization Study"). During the NOx Reducing System Optimization Study, MAP shall evaluate the effect of operating parameters on NO_x emissions, shall monitor NO_x emissions and the operating parameters to identify optimum operating levels for the parameters that minimize NO_x emissions, and shall operate the NOx Reducing System at the Robinson FCCU in a way that minimizes NO_x emissions.

ii. By no later than August 15, 2009, MAP shall submit a report to EPA that describes the results of the NOx Reducing System Optimization Study ("NOx Reducing System Optimization Study Report") and identifies the optimal operating levels for use in a demonstration period. In the NOx Reducing System Optimization Study Report, MAP shall submit a protocol for an eighteen (18) month demonstration of the NOx Reducing System at the optimized operating levels.

iii. By no later than October 1, 2009, MAP shall begin an eighteen (18) month demonstration of the NOx Reducing System at the optimized operating levels. During the

demonstration period, MAP shall continue to evaluate the effect of operating parameters on NO_x emissions and shall make all reasonable efforts to operate at the optimal operating levels for those parameters that MAP can control.

iv. If MAP installs a Lo TOx System to meet the requirements of Paragraph 12.E, MAP shall 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 $1.1 million (to be adjusted for inflation at the time the optimization period begins) for the Robinson FCCU; and

(b) For each calendar month after month twelve (12) of the optimization and demonstration periods, a twelve (12) month rolling average cost of $1.1 million (to be adjusted for inflation at the time the optimization period begins) for the Robinson FCCU, on an annualized basis, calculated monthly.

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

$$\frac{[\sum_{1}^{n} cost_n]}{n} \quad x \quad 12$$

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

v. By no later than May 15, 2011, MAP shall submit a written report ("NOx Reducing System Demonstration Report") to EPA that sets forth the results of the demonstration. In the NOx Reducing System Demonstration Report, MAP shall identify the relevant operating parameters and their levels that result in the maximum reduction of NO_x emissions for the Robinson FCCU. The NOx Reducing System Demonstration Report shall 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;

(i) Ozone addition rates, if applicable;

(j) Quench system inlet and outlet temperature, if applicable;

(k) CO boiler firing rate and fuel type;

(l) Reductant addition rates and ammonia slip (ppm), if applicable;

(m) Reductant carrier medium, if applicable;

(n) Power usage and, if applicable, oxygen usage;

(o) Hourly average NO_x and O_2 concentrations at the point of emission to the atmosphere by means of a CEMS;

(p) If applicable, NO_x concentrations at the inlet to the LoTOx System during the Optimization Study (a process analyzer calibrated in accordance with manufacturer's recommendations may be used);

(q) Any other parameters that MAP identifies before the end of the optimization and/or demonstration period; and

(r) Cost.

The NOx Reducing System Demonstration Report also shall include a detailed description, with appropriate calculations, of the times, if any, during the optimization and demonstration periods where MAP asserts that the conditions set forth in Paragraph 12.G.iv were met.

H. **Accepting Hard Limits for NOx Emissions from the Robinson FCCU:** MAP may notify EPA by no later than June 30, 2009, of MAP'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, 2008, for the Robinson FCCU. If MAP makes

such a notification, Paragraph 12.G no longer shall apply after the date of the notification, and Paragraph 12.I. no longer shall apply.

I. **Establishing NOx Emission Limits for MAP's FCCUs:**

i. NOx emission limits for the Texas City FCCU are established pursuant to Paragraph 12.D.

ii. For each FCCU where MAP is using NOx Additives, at any time prior to 60 days before the due date for the applicable Catalyst Additive Demonstration Report, MAP may propose to EPA for approval short-term (24-hour or 7-day rolling average) and long-term (365-day rolling average) NOx emission limits, at 0% oxygen, at that FCCU. If EPA approves such limits, MAP no longer is required comply with any outstanding requirements of Paragraphs 12.A. - 12.C. after the date of EPA's approval.

iii. The NOx emission limits from Catlettsburg FCCU No. 109 shall not be higher than 47.5 ppmvd (0% oxygen) on a 365-day rolling average basis, and may be lower depending upon the results of the limit-setting process in Subparagraph 12.I.v.

iv. The NOx emission limits from the Robinson FCCU shall not be higher than 45 ppmvd (0% oxygen) on a 365-day rolling average basis, and may be lower depending upon the results of the limit-setting process in Subparagraph 12.I.v; provided however, that MAP may propose, and EPA may approve, alternative emissions limits to be applicable during alternative operating scenarios, including but not limited to outages of the Robinson FCCU CO Boiler. In order for MAP to propose, and EPA to consider, alternative short-term emissions limits during CO Boiler outages, during the demonstration period, MAP must: (a) undergo CO Boiler outages; (b) switch the operation of the Robinson FCCU to full-burn during the outages; (c) exclusively use Low NOx combustion promoter, instead of conventional combustion promoter, during the outages; and (d) to the extent the outage is a planned event, cease using platinum-based conventional combustion promoter and switch to Low NOx Combustion Promoter at least eight weeks prior to the scheduled outage.

v. Except where Paragraphs 12.I.i. or 12.I.ii. apply, in each Catalyst Additive Report and in the Robinson FCCU NOx Reducing System Demonstration Report, MAP shall propose at least a short-term (24-hour or 7-day rolling average) and a long-term (365-day rolling average) NOx emission limit, each at 0% oxygen. MAP shall comply with the emission limits it proposes beginning immediately upon its submission to EPA of the applicable Catalyst Additive Demonstration Report and, for the Robinson FCCU, of the Robinson FCCU NOx Reducing System Demonstration Report. EPA shall establish a short-term (24-hour or 7-day rolling average) and a long-term (365-day rolling average) NOx emission limit, each at 0% oxygen, for all of MAP's FCCUs, except for the Texas City FCCU. EPA shall determine the limits based on the level of performance during the optimization and demonstration periods, a reasonable certainty of compliance, process variability, and all other available and relevant information. EPA shall notify MAP of its determination of concentration-based NOx emissions limits and averaging times for each unit. If EPA agrees with MAP's proposed limits, MAP shall continue to comply with these limits. If EPA proposes different limits that MAP does not dispute within thirty (30) days of receiving notification from EPA, MAP shall comply with the EPA-established limits by no later than thirty (30) days after notice. If MAP disputes the EPA-established limits, MAP shall invoke the dispute resolution provisions of this First Revised Consent Decree by no later than thirty (30) days after EPA's notice of the limits. During the period of dispute resolution, MAP shall operate the Robinson NOx Reducing System under optimized operating conditions and shall continue to add NO_x Additives at the optimized rates.

J. **Demonstrating Compliance with FCCU NOx Emission Limits**: MAP shall use a NOx CEMS to monitor performance and to report compliance with the terms and conditions of this First Revised Consent Decree at the following units, as soon as practicable but by no later than the following dates:

i. Catlettsburg Units 1 and 109 -- Date of Lodging of the August 2001 Consent Decree;

ii. Robinson FCCU -- December 31, 2001;

iii. Garyville FCCU -- December 31, 2001;

iv. Canton FCCU -- December 31, 2001;

v Detroit FCCU -- December 31, 2001;

vi. St. Paul Park FCCU -- May 31, 2002; and

vii. Texas City FCCU -- February 25, 2003.

MAP shall make all CEMS data available to EPA upon demand as soon as practicable. MAP shall install, certify, calibrate, maintain, and operate all CEMS required by this First Revised Consent Decree in accordance with the requirements of 40 CFR §§ 60.11, 60.13 and Part 60 Appendix A, the applicable performance specification test of 40 C.F.R. Part 60 Appendices B and F. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60 Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, MAP shall conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. Where installed, CEMS shall be used to demonstrate compliance with emission limits established under this First Revised Consent Decree. MAP shall install, calibrate, maintain, and operate all process analyzers required by this First Revised Consent Decree in accordance with the manufacturer's specifications. The NOx CEMS sampling point on the Detroit FCCU previously was located on the FCCU regenerator flue gas line upstream of the heat recovery boiler but that heat recovery boiler has been shut down. Since the shut down, MAP has located the CEMS sampling point for the Detroit FCCU at the point of emission to the atmosphere in the FCCU regenerator stack. MAP shall retain that same location for the CEMS sampling point on the Detroit FCCU for the duration of this First Revised Consent Decree.

K. **CO Emissions Control:**

i. For each refinery that implements a PAL for CO pursuant to Paragraph 26 of this First Revised Consent Decree, MAP shall limit carbon monoxide ("CO") emissions from its FCCUs to 150 ppmvd on a 365-day rolling average at 0% O_2 and 250 ppmvd on a 24-hour rolling average at 0% O_2 in accordance with the following schedule:

a. Catlettsburg Units 1 and 109 -- Date of application for the PAL;

b. Robinson FCCU -- Date of application for the PAL;

c. Garyville FCCU -- Date of application for the PAL;

d. Canton FCCU -- Date of application for the PAL;

e. St. Paul Park FCCU -- Date of application for the PAL;

f. Detroit FCCU -- Date of application for the PAL; and

g. Texas City FCCU -- Date of application for the PAL.

ii. MAP shall install and operate CEMS pursuant to this Paragraph to monitor CO and to report compliance with the terms and conditions of this First Revised Consent Decree, as soon as practicable but by no later than the following dates:

a. Catlettsburg Units 1 and 109 -- Date of Lodging of the August 2001 Consent Decree;

b. Robinson FCCU -- Date of Lodging of the August 2001 Consent Decree;

c. Garyville FCCU -- Date of Lodging of the August 2001 Consent Decree;

d. Canton FCCU -- December 31, 2001;

e. St. Paul Park FCCU -- May 31, 2002;

f. Detroit FCCU -- June 30, 2002; and

g. Texas City FCCU -- February 25, 2003.

Each CEMS shall be installed, certified, calibrated, maintained, and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11, 60.13 and Part 60 Appendix A, the applicable performance specification test of 40 C.F.R. Part 60 Appendices B and F. In lieu of the requirements of 40 C.F.R. Part 60 Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, MAP shall conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. Where installed, CEMS will be used to demonstrate compliance with emission limits established under this First Revised Consent Decree. The CO CEMS sampling point on the Detroit FCCU previously was located on the FCCU regenerator flue gas line upstream of the

heat recovery boiler but that heat recovery boiler has been shut down. Since the shut down, MAP has located the CEMS sampling point for the Detroit FCCU at the point of emission to the atmosphere in the FCCU regenerator stack. MAP shall retain that same location for the CEMS sampling point on the Detroit FCCU for the duration of this First Revised Consent Decree.

L. **Hydrotreater Outages:**

The short-term FCCU NOx emission limits established pursuant to this Paragraph 12 shall not apply during periods of hydrotreater outages at the Canton, Detroit, St. Paul Park, Garyville and Catlettsburg Refineries, provided that MAP is maintaining and operating the FCCUs (including associated air pollution control equipment) at these Refineries in a manner consistent with good air pollution control practices for minimizing emissions in accordance with an EPA-approved good air pollution control practices plan. By no later than thirty (30) days after the Date of Lodging of this First Revised Consent Decree, MAP shall submit to EPA for its approval a plan to minimize NOx emissions from these five FCCUs (including associated air pollution control equipment) during hydrotreater outages. MAP shall comply with the plan at all times, including periods of start up, shut down, and malfunction of the hydrotreater.

13. **NOx and CO Emissions Reductions from Heaters and Boilers:** MAP shall implement a program to reduce NOx emissions from refinery heaters and boilers. Reductions will be accomplished through the installation of NOx controls on the controlled heaters and boilers, the shut down of certain units and the acceptance of lower permitted emission levels. Future compliance with the lower emission limits will be determined through source testing, the use of CEMS, and where installed, predictive emissions monitoring systems ("PEMS"), or monitoring of indicator parameters.

A. MAP shall install NOx emission control technology on certain specified heaters and boilers at the Covered Refineries. MAP shall select one or any combination of the following methods for control of NOx emissions from individual heaters or boilers controlled by MAP pursuant to Paragraph 13.B:

i. SCR or SNCR;

ii. Current Generation Ultra-Low NOx Burners or Next Generation Ultra-Low NOx Burners;

iii. other technologies which MAP demonstrates to EPA's satisfaction will reduce NOx emissions to 0.040 lbs. per mmBTU or lower;

iv. where installation of Current Generation Ultra-Low NOx Burners or Next Generation Ultra-Low NOx Burners is technologically infeasible for cylindrical heaters and/or boilers (to include, but necessarily be limited to, the Ultraformer Charge Heaters 3-F-1 and 3-F-2 at the Robinson Refinery), MAP may propose an alternate NOx single burner technology which MAP demonstrates to EPA's satisfaction will reduce NOx emissions to 0.055 lbs. per mmBTU or lower; or

v. permanent shut down of heaters and boilers with surrender of all operating permits.

The heaters and boilers proposed for control by MAP shall be identified as required by this Paragraph 13.

B. On or before December 31, 2008, MAP shall complete a program to reduce the overall NOx emissions from the Controlled Heaters and Boilers at its Refineries in an amount greater than or equal to 3,866 tons per year from a prior actual to future allowable basis so as to satisfy the following inequality:

$$\sum_{i=1}^{n} [(E_{actual})_i - (E_{allowable})_i] \geq 3{,}866 \text{ tons of NOx per year}$$

Where:

$(E_{allowable})_i$ = [(The permitted allowable pounds of NOx per million BTU for heater or boiler i)/(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate capacity in million BTU per hour for heater or boiler i) x (the lower of 8760 or permitted hours per year)] ;

$(E_{Actual})_i$ = The tons of NOx per year prior actual emissions (unless prior actuals exceed allowable emissions, then use allowable) as shown in Appendix C for controlled heater or boiler i; and

n = The number of controlled heaters and boilers at all refineries applied towards satisfying the requirements of the equation set forth in this Paragraph 13 of this First Revised Consent Decree.

For purposes of this Subparagraph 13.B., MAP may use an emission limit as the "permitted allowable" used to calculate "$E_{allowable}$" that applies to a common stack provided that all heaters and boilers which are tied into that stack are controlled by this First Revised Consent Decree. Provided further, however, that if such heaters and boilers which are tied into a common stack are not all controlled under this First Revised Consent Decree, MAP may use the permitted or maximum heat input rate capacity of the controlled heater(s), the common stack emission limit, and the controlled heater(s) baseline to calculate the emission reduction from the controlled heaters.

C. Appendix C to this First Revised Consent Decree provides the following information for each of the heaters and boilers at each of the Covered Refineries:

i. the maximum heat input capacities and allowable heat input capacities in mmBTU/hr (HHV);

ii. the baseline actual emission rate for both calendar years 1999 and 2000 in lbs/mmBTU (HHV) and tons per year;

iii. the type of data used to derive the emission estimate (i.e. emission factor, stack test, or CEMS data) and the averaging period for the data used;

iv. the baseline utilization rate in annual average mmBTU/hr (HHV) for calendar years 1999 and 2000, or with respect to the Detroit Refinery and Robinson Refinery 1998 and 1999; and

v. MAP's initial identification of the heaters and boilers that are either already controlled and those that are likely to be controlled in accordance with Paragraph 13.A and 13.B.

D. MAP shall submit a detailed NOx control plan ("Control Plan") to EPA for review and comment by no later than four months after the Date of Lodging of the August 2001 Consent Decree, with annual updates on March 31 of each year until termination of the First Revised Consent Decree. MAP shall implement the Control Plan in accordance with the requirements of the August 2001 Consent Decree and this First Revised Consent Decree. The Control Plan and its updates shall describe the progress of the NOx emissions reductions program for heaters and boilers and contain the following for each heater and boiler at each Covered Refinery:

i. All of the information in Appendix C;

ii. Identification of all heaters and boilers that MAP has controlled and plans to control to reduce NOx emissions;

iii. Identification of the type of controls installed or planned with date installed or planned (including identification of the heaters and boilers to be permanently shutdown);

iv. The allowable NOx emissions (in lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr (HHV)) obtained or planned with dates obtained or planned;

v. The results of emissions tests and annual average CEMS data (in ppmvd at 3% O_2, lb/mmBTU, and tons per year) conducted pursuant to Paragraph 13.G;

vi. The amount in tons per year applied or to be applied toward satisfying Paragraph 13.B; and

vii. A description of the achieved and anticipated annual progress towards meeting the July 31, 2005 and December 31, 2008 emission reductions described on a refinery-by-refinery basis.

E. MAP shall make two-thirds of the NOx emissions reductions required by Paragraph 13.B by July 31, 2005. MAP shall demonstrate that it has installed NOx controls on the Controlled Heaters and Boilers and obtained or applied for enforceable limits that will achieve the required reductions pursuant to Paragraph 13 and Paragraphs 24.A and 25 (Permitting) by certifying no later than September 30, 2005, that it has complied.

F. By no later than December 31, 2008, Controlled Heaters and Boilers shall represent at least 30% of the allowable heat input capacity of all heaters and boilers greater than 40 mm/BTU at each Covered Refinery. The heater and boiler heat input capacity for each Covered Refinery shall be based on the allowable heat input capacity during the 1999-2000 baseline period.

G. By the date of installation of controls on a heater and boiler, MAP shall monitor the process heaters and boilers that are being controlled to meet the requirements under Paragraph 13.B as follows:

i. For heaters and boilers with a capacity greater than 150 mmBTU/hr (HHV), install or continue to operate NOx CEMS;

ii. For heaters and boilers with a capacity of less than or equal to 150 mmBTU/hr (HHV) but greater than100 mmBTU/hr (HHV), install or continue to operate a NOx CEMS, or install a parametric emission monitoring system ("PEMS"); and

iii. For heaters and boilers with a capacity of less than or equal to 100 mmBTU/hr (HHV) conduct an initial performance test and/or utilize a portable continuous analyzer. The results of this testing shall be reported based upon the average of three (3) one hour testing periods.

For purposes of this First Revised Consent Decree, MAP may monitor from a common stack all emissions from Controlled Heaters and Boilers which are tied into that common stack. Monitoring and testing conducted by MAP under this Paragraph 13.G by the use of portable continuous analyzers, PEMS, or source testing shall be conducted in accordance with the requirements of Appendices E and F; provided however, that MAP shall not be required to install a NOx CEMS on any heater or boiler listed on Appendix C with a design firing rate of greater than 100 mmBTU/hr (HHV), if, after the installation of the control technology, the design firing rate drops below 100 mmBTU/hr (HHV). At the Garyville Refinery, MAP shall not be required to install a NOx CEMS on Crude Atmosphere Heaters 10-14-01 and 10-14-02 and HF Alky Iso-stripper Reboiler Heaters 27-14-01 and 27-14-02 until no later than December 31, 2002. At the Catlettsburg Refinery, MAP shall not be required to install a NOx CEMS on Crude Charge Heater #3 (both 2-23-B-3 and 2-23-B-4) and Saturates Gas Plant Heater 2-30-B-1 until November 1, 2004.

H.i. Within 180 days after installing the controls on a heater and boiler, MAP shall certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the requirements of 40 CFR §§ 60.11, 60.13 and Part 60 Appendix A, the applicable performance specification test of 40 C.F.R. Part 60 Appendices B and F. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, MAP shall conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. For the NOx CEMS located on the Crude Charge Heater 1-F-1 at the Robinson Refinery, consistent with the rationale of 40 C.F.R. § 60.105(a)(3)(iii), MAP shall use a relative accuracy limit of 4 ppm and a daily calibration drift action level of 1 ppm.

Where installed, CEMS will be used to demonstrate compliance with emission limits established under this First Revised Consent Decree.

ii. For monitoring by means of a PEMS, MAP shall install, calibrate, maintain, and operate all process analyzers required by this First Revised Consent Decree in accordance with the manufacturer's specifications.

iii. For monitoring by means of performance tests, the results of the performance test shall be used to develop the representative operating parameters for each unit as well as indicators of compliance with the emission limit. The operating parameters shall include, at a minimum, combustion oxygen, air preheat temperature, and firebox temperature. MAP shall evaluate the necessity of using firebox or bridgewall temperatures and additional operating parameters and agrees to use such parameters as a means of monitoring performance where MAP and EPA mutually agree to the effectiveness of the parameters in predicting NOx emissions.

I. The requirements of this Paragraph 13 do not exempt MAP from complying with any and all federal, state and local requirements that may require technology upgrades based on actions or activities occurring after the Date of Lodging of the August 2001 Consent Decree.

J. MAP shall retain all records required to support its reporting requirements under this Paragraph 13 until termination of the First Revised Consent Decree. MAP shall submit such records to EPA upon request.

K. If MAP proposes to transfer ownership of any Covered Refinery before the requirements of Paragraph 13 have been met, MAP shall notify EPA of that transfer and shall submit a proposed allocation to EPA for that Covered Refinery's share of tonnage reduction requirements of Paragraph 13 that will apply individually to that Covered Refinery after such transfer.

L. **CO Emissions from Heaters and Boilers**: For each Covered Refinery seeking to implement a PAL for CO pursuant to Paragraph 26 of this First Revised Consent Decree, by the date of application to EPA for the PAL, MAP shall limit CO emissions from all heaters and boilers to 0.060 lb/mmBTU on a 24-hour rolling average basis and 0.040 lb/mmBTU on a

365-day rolling average basis. For each Covered Refinery that implements a PAL for CO pursuant to Paragraph 26 of this First Revised Consent Decree, MAP shall monitor CO emissions to demonstrate compliance with this requirement as follows:

i. For heaters and boilers with a capacity greater than 150 mmBTU/hr (HHV), install or continue to operate CO CEMs;

ii. For heaters and boilers with a capacity of less than or equal to 150 mmBTU/hr (HHV) but greater than 100 mmBTU/hr (HHV), install or continue to operate a CO CEMS, or install a parametric emission monitoring system ("PEMS"); and

iii. For heaters and boilers with a capacity of less than or equal to 100 mmBTU/hr (HHV) conduct an initial performance test and/or utilize a portable continuous analyzer. The results of this testing shall be reported based upon the average of three (3) one hour testing periods.

14. **SO_2 Emission Reductions from FCCUs**: MAP shall implement a program to reduce SO_2 emissions from the FCCUs at the Covered Refineries by: installing and operating a new Wet Gas Scrubber at the Texas City FCCU; continuing to operate the existing Wet Gas Scrubbers at the Robinson and Garyville FCCUs; permanently shutting down Catlettsburg FCCU Unit 1; using SO2 Adsorbing Catalyst Additive and continued hydrotreatment at Catlettsburg FCCU Unit 109 and at the Detroit FCCU; and using SO_2 Adsorbing Catalyst Additive at the Canton FCCU and the St. Paul Park FCCU. MAP shall incorporate lower SO_2 emission limits into operating permits and demonstrate future compliance with the lower emission limits through the use of CEMS.

A. **SO_2 Emission Limits at the Texas City FCCU:**

i. By no later than March 31, 2003, MAP shall complete installation and begin operation of a Wet Gas Scrubber ("WGS") to control emissions from the Texas City FCCU. MAP shall design and operate the WGS to achieve an SO_2 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% oxygen.

ii. By no later than March 1, 2005, and continuing thereafter, MAP shall comply with an SO_2 concentration limit at the Texas City FCCU of 20 ppmvd on a 365-day rolling average basis, at 0% oxygen. That emission limit already has been incorporated into Texas City's Title V permit.

B. **SO_2 Emission Limits at the Robinson FCCU**: By no later than the Date of Lodging of the August 2001 Consent Decree, MAP shall operate its Robinson FCCU so that SO_2 emissions from this unit do not exceed 25 ppmvd based on a 365-day rolling average and 50 ppmvd based on a 7-day rolling average, each at 0% oxygen.

C. **SO_2 Emission Limits at the Garyville FCCU:** By no later than the Date of Lodging of the August 2001 Consent Decree, MAP shall operate its Garyville FCCU so that SO_2 emissions from this unit do not exceed 25 ppmvd based on a 365-day rolling average and 50 ppmvd based on a 7-day rolling average, each at 0% oxygen. MAP shall demonstrate compliance pursuant to its State-approved PEMS, until such time as it has installed and certified its CEMS pursuant to Paragraph 14.H of the August 2001 Consent Decree.

D. **SO_2 Emission Limits for Catlettsburg FCCUs No. 1 and No. 109**:

i. Unit No. 1: By no later than April 30, 2004, MAP shall permanently shut down FCCU No. 1.

ii. Unit No. 109: By no later than March 31, 2004, MAP shall convert Unit No. 109 to a fluid catalytic cracking unit and achieve 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 % oxygen.

E. **Application of SO_2 Adsorbing Catalyst Additives at the Detroit, Canton and St. Paul Park FCCUs**: MAP began to add SO_2 Adsorbing Catalyst Additives to determine the optimized additive addition rates for SO_2 Adsorbing Catalyst Additives at the Detroit FCCU on April 1, 2002, and at the St. Paul Park FCCU on January 27, 2003. Prior to March 30, 2002, MAP already was adding SO_2 Adsorbing Catalyst Additives at the Canton FCCU at a rate greater than 10% and accepted an additive addition rate of 10% (the maximum rate required under the August 2001 Consent Decree) without undertaking an optimization study.

ii. **SO2 Adsorbing Catalyst Additives Optimized Addition Rate**: EPA approved the following brands of SO2 Adsorbing Catalyst Additives and the following optimized addition rates:

FCCU	Percentage	Lb/Day	Brand
Canton	10%	350 lb/day	SuperSOxGetter™
Detroit	7.5%	164 lb/day	SuperSOxGetter™
St. Paul Park	7.5%	280 lb/day	SOxGetter™

At its option, MAP may elect to use SuperSOxGetter™ at the St. Paul Park FCCU at a rate of 165 pounds per day during the demonstration period in Paragraph 14.F.

F. **SO2 Adsorbing Catalyst Additives Demonstration:** MAP commenced demonstrations of the SO2 Adsorbing Catalyst Additives at the optimized rates set forth in Paragraph 14.E.ii at the Canton FCCU on December 24, 2004, at the Detroit FCCU on January 12, 2004, and at the St. Paul Park FCCU on January 29, 2004.

G. **SO2 Emission Limits for the Canton, Detroit, and St. Paul Park FCCUs:**

i. By no later than September 15, 2005, for the Canton FCCU, and June 30, 2006, for St. Paul Park and Detroit FCCUs, MAP shall comply with the following SO2 emission limits:

FCCU	7-day rolling average limit (0% oxygen)	365-day rolling average limit (0% oxygen)
Canton	100 ppmvd	50 ppmvd
Detroit	70 ppmvd	35 ppmvd
St. Paul Park	100 ppmvd	50 ppmvd

ii. At all times between the commencement of the demonstration periods identified in Paragraph 14.F and the dates in Paragraph 14.G.i., MAP shall add the SO2 Adsorbing Catalyst Additives identified in Paragraph 14.E.ii. at the optimized addition rates identified therein.

H. **Monitoring Emissions and Demonstrating Compliance with FCCU Emission Limits**: MAP shall use an SO_2 CEMS to measure SO_2 emissions and to report compliance with the terms and conditions of this First Revised Consent Decree at the following FCCUs by the dates specified:

i. Robinson FCCU - Date of Lodging of the August 2001 Consent Decree

ii. Catlettsburg Unit No.109 - Date of Lodging of the August 2001 Consent Decree

iii. Catlettsburg Unit No. 1 - Date of Lodging of the August 2001 Consent Decree

iv. Garyville FCCU -- December 31, 2001;

v. Texas City FCCU -- February 25, 2003;

vi. Canton FCCU - December 31, 2001;

vii. St. Paul Park FCCU - May 31, 2002;

viii. Detroit FCCU - December 31, 2001;

All CEMS data collected by MAP shall be made available to EPA upon demand as soon as practicable. The SO_2 CEMS sampling point on the Detroit FCCU previously was located on the FCCU regenerator flue gas line upstream of the heat recovery boiler but that heat recovery boiler has been shut down. Since the shut down, MAP has located the CEMS sampling point for the Detroit FCCU at the point of emission to the atmosphere in the FCCU regenerator stack. MAP shall retain that same location for the CEMS sampling point on the Detroit FCCU for the duration of this First Revised Consent Decree.

I. **CEMS**: All CEMS installed and operated pursuant to this Paragraph will be installed, certified, calibrated, maintained, and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11, 60.13 and 40 C.F.R. Part 60 Appendix A, the applicable performance specification test of 40 C.F.R. Part 60 Appendices A and B. In lieu of the requirements of 40 C.F.R. Part 60 Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, MAP shall conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. Where installed, CEMS will be used to demonstrate compliance with emission limits established under this First Revised Consent Decree. MAP shall install, calibrate, maintain, and operate all process analyzers required by this First Revised Consent Decree in accordance with the manufacturer's specifications.

J. **Hydrotreater Outages:**

The 7-day FCCU SO_2 emission limits established pursuant to this Paragraph 14 shall not apply during periods of hydrotreater outages at Canton, Detroit, St. Paul Park, and Catlettsburg Refineries, provided that MAP is maintaining and operating the FCCUs (including associated air pollution control equipment) at these Refineries in a manner consistent with good air pollution

control practices for minimizing emissions in accordance with an EPA-approved good air pollution control practices plan. By no later than thirty (30) days from the Date of Lodging of this First Revised Consent Decree, MAP shall submit to EPA for its approval a plan to minimize SO_2 emissions from the Canton, Detroit, St. Paul Park, and Catlettsburg FCCUs (including associated air pollution control equipment) during hydrotreater outages. MAP shall comply with the plan at all times, including periods of start up, shut down, and malfunction of the hydrotreater.

15. **SO_2 and PM Emissions Reductions from Heaters and Boilers**: MAP shall undertake the following measures to reduce SO_2 emissions from refinery heaters and boilers by eliminating or minimizing the burning of fuel oil and restricting H_2S in refinery fuel gas as follows:

A. **Elimination/Reduction of Oil Burning**: Except as provided in Appendix G, upon the Date of Entry of the August 2001 Consent Decree, MAP shall discontinue burning Fuel Oil in all heaters and boilers at the Covered Refineries. This prohibition shall not apply during periods of natural gas curtailment by suppliers.

B. **NSPS Applicability To Heaters and Boilers:**

i. Upon the Date of Entry of the August 2001 Consent Decree, MAP shall accept NSPS Subpart J applicability for all heaters and boilers, except where an alternate schedule for NSPS Subpart J compliance is set forth in Appendix H.

ii. The #4 and #5 Topper Crude Charge Heaters at MAP's Texas City Refinery shall not be subject to the emissions limitations set forth in 40 C.F.R. § 60.104(a)(1) for all periods between March 1, 2005, and February 28, 2006, in which the Valero refinery in Texas City, Texas, fails to supply MAP with fresh amine for the reduction of the hydrogen sulfide concentration in MAP's Texas City refinery fuel gas, provided that MAP complies with the following requirements: (1) during all such periods, MAP shall exercise good air pollution control practices to minimize emissions of sulfur dioxide; (2) to the extent commercially available and logistically feasible, MAP shall purchase low sulfur gas oil for processing in the

Texas City FCCU; (3) MAP shall engage in communications and dialogue with Valero in an effort to secure more consistent amine regeneration services from Valero at Valero's Texas City refinery; (4) MAP shall comply with the plantwide annual sulfur dioxide emissions limitations set forth in Paragraph 26.L. and (5) by no later than March 15, 2006, MAP shall submit a report to EPA setting forth the amount of sulfur dioxide emitted from the #4 and #5 Topper Crude Charge Heaters for the period between March 1, 2005, and February 28, 2006, including the calculations that were used to determine the emissions estimate.

C. **Permitting:** MAP shall apply to incorporate into the relevant permits the NSPS Subpart J limits for hydrogen sulfide ("H_2S") content of fuel gas or SO_2 emissions, where appropriate, for each heater and boiler as set forth in this Section.

D. **Annual Report:** In each semi-annual report due under Section VIII on January 31 of each year, MAP shall include a provision certifying its compliance with this Paragraph 15. The provision shall include, at a minimum, the amounts and sulfur content of Fuel Oil burned in any refinery heater and boiler and the status of NSPS Subpart J compliance for each heater and boiler.

E. **PM Emissions from Heaters and Boilers:** For each refinery that implements a PAL for PM pursuant to Paragraph 26 of this First Revised Consent Decree, by the date of application to EPA for the PAL, MAP shall limit PM emissions from each heater and boiler to 0.005 lb/mmBTU(HHV) on a 365-day rolling average and 0.010 lb/mmBTU(HHV) on a 24-hour rolling average.

F. **PM Monitoring -- Heaters and Boilers**: MAP shall demonstrate compliance with the emissions limits set forth in Paragraph 15.E by application of 40 C.F.R. Part 60 Appendix A, Method 5, if requested by EPA or the States.

G. **Additional SO_2 Emissions Limits for Heaters and Boilers in a PAL**: For each Covered Refinery seeking to implement a PAL for SO_2 pursuant to Paragraph 26, by the date of application to EPA for the PAL, MAP shall limit SO_2 emissions from all heaters and boilers that burn fuel gas only to 0.040 lb SO_2/mmBTU (HHV) or 125 ppmvd H_2S in fuel gas each on a

365-day rolling average basis. For purposes of determining an equivalent lb SO_2/mmBTU if the125 ppmvd H_2S option is selected for a heater or boiler, for use as the permitted concentration in Section II.B. and daily concentration in section III.A.3. of Appendix P, the following equation shall be used:

SO_2 emission rate in lb/mmBTU = [H_2S concentration ppmvd/1,000,000] x [1/(379 dscf/lb-mole)] x 34 lb/lb-mole x (64 lb/lb-mole/34 lb/lb-mole) / [fuel gas higher heating value (mmBTU/dscf)]

For each Covered Refinery that implements a PAL for SO_2 pursuant to Paragraph 26, MAP shall monitor SO_2 emissions and calculate a daily SO_2 emission rate by measuring the H_2S content of the fuel gas to demonstrate compliance with the 0.040 lb SO_2/mmBTU requirement as follows:

Calendar daily average SO_2 emission rate in lb/mmBTU = [calendar daily average H_2S concentration ppmvd/1,000,000] x [1/(379 dscf/lb-mole)] x 34 lb/lb-mole x (64 lb/lb-mole/34 lb/lb-mole) / [calendar daily average fuel gas higher heating value (mmBTU/dscf)]

The 365-day rolling average shall be calculated on a daily basis for each heater and boiler by summing the calendar daily average SO_2 emission rate in pounds per mmBTU for the prior 365 days and then dividing by 365.

16. **NSPS Applicability and Particulate Matter Emissions -- FCCU Controls:**

A. **NSPS Applicability**: MAP's FCCU Regenerators shall be affected facilities subject to the requirements of NSPS Subpart A and J for each relevant pollutant by the dates specified in Appendix I.

B. **Particulate Matter Emissions**

i. **Canton**: MAP shall reduce PM emissions at the Canton FCCU to 0.9 pound per 1000 pounds of coke burned on a 3-hour rolling average basis. MAP shall achieve these reductions through the installation of a third-stage separator. MAP shall meet this limit by no later than April 30, 2004.

ii. **St. Paul Park:** MAP shall reduce PM emissions at the St. Paul Park FCCU to 0.9 pounds per 1000 pounds of coke burned on a 3-hour rolling average basis. MAP shall achieve these reductions through installation of a third stage separator. MAP shall meet this limit by no later than December 31, 2007.

iii. **Detroit:** MAP shall reduce PM emissions at the Detroit FCCU to 1 pound per 1000 pounds of coke burned on a 3-hour rolling average basis. MAP shall achieve these reductions through installation of an electrostatic precipitator. MAP shall meet this limit by no later than December 31, 2004.

iv. **Texas City**: MAP shall reduce PM emissions at the Texas City FCCU to 1 pound per 1000 pounds of coke burned on a 3-hour rolling average basis. MAP shall achieve these reductions through installation of a wet gas scrubber by no later than March 31, 2003.

v. **Robinson & Garyville**: On the Date of Lodging of the August 2001 Consent Decree, MAP shall comply with an emissions limit of 1 pound per 1000 pounds of coke burned on a 3-hour rolling average basis for PM emissions at the Robinson and Garyville FCCUs.

vi. **Catlettsburg**: MAP shall reduce PM emissions at the FCCU Nos. 1 and 109 to 1 pound per 1000 pounds of coke burned on a 3-hour rolling average basis. MAP shall achieve these reductions through installation of an electrostatic precipitator or baghouse. MAP shall meet this limit by no later than June 30, 2004.

C. **Additional PM Limits:** For each Covered Refinery that implements a PAL for PM pursuant to Paragraph 26 of this First Revised Consent Decree, by the date of application to EPA for the PAL, MAP shall limit PM emissions from each FCCU to 0.5 pounds per 1000 pounds of coke burned on a 365-day rolling average basis and 1 pounds per 1000 pounds of coke burned on a 3-hour rolling average basis.

D. **PM Monitoring -- FCCU**:

i. MAP shall install and operate either a continuous opacity monitoring system or an EPA-approved alternative monitoring plan to monitor PM emissions on each FCCU at each

Covered Refinery. MAP shall demonstrate compliance with the emissions limits set forth in Paragraph 16.C by application of 40 C.F.R. Part 60 Appendix A, Method 5, 5B, or 5F.

ii. Canton PM CEMS Study: MAP shall comply with the work requirements and schedule regarding a CEMS study at the Canton Refinery as set forth in Appendix Q. The United States agrees that MAP's agreement to perform the obligations set forth in Appendix Q relieves MAP of any responsibility to undertake or complete the study required in Appendix C of a consent decree entered in 1999 in the matter of United States v. Ashland Inc., Civil Action No. 98-157 (E.D. Ky).

17. **Hydrocarbon Flaring/NSPS Applicability -- Flares:**

A. **Hydrocarbon Flaring**

i. **NSPS Applicability**: All Hydrocarbon Flaring Devices identified in Appendix A are subject to NSPS Subpart J as fuel gas combustion devices and are used as emergency control devices for quick and safe release of gases generated by a Malfunction, Startup and Shutdown.

ii. **Good Air Pollution Control Practices**: MAP shall comply with the NSPS obligation to implement good air pollution control practices as required by 40 C.F.R. § 60.11(d) to minimize flaring activity.

iii. **Hydrocarbon Flaring**: For Hydrocarbon Flaring Incidents, MAP shall follow the investigative and corrective action procedures described in Paragraphs 22.A and 22.B of this First Revised Consent Decree for AG Flaring. Stipulated penalties under either Paragraphs 22.C or 48.A shall not apply to Hydrocarbon Flaring Incident(s). Hydrocarbon Flaring Incidents will be reported in the semi-annual reports due under Paragraph 33, rather than on an incident-by-incident basis. Reports on Hydrocarbon Flaring Incidents which occur within the last forty-five days of a semi-annual period may be included in the next semi-annual report submitted under Paragraph 33. Follow-up reports describing completion of corrective actions that were identified in a prior report of a Hydrocarbon Flaring Incident may be reported in the semi-annual report covering the period in which the corrective action was completed. In lieu of analyzing possible corrective actions under Paragraph 22.A.i.e and taking interim and/or long-term

corrective action under Paragraph 22.B.i for a Hydrocarbon Flaring Incident attributable to the start up or shut down of a unit that MAP has previously analyzed, MAP may identify such prior analysis when submitting the report required under this Paragraph.

B. **NSPS Compliance Schedule - 40 CFR 60.104(a)(1)**: To comply with applicable NSPS requirements for the combustion of certain, routinely generated refinery fuel gases at the Flaring Devices identified in Appendix J, MAP will either monitor these streams or take action to eliminate their routes to a Flaring Device by the dates specified in Appendix J. The combustion of gases generated by the Startup, Shutdown or Malfunction of a refinery process unit or released to a Flaring Device as a result of relief valve leakage or other emergency Malfunction shall be exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1). For each of the routinely or continuously generated refinery fuel gas stream combusted in a Flaring Device identified in Appendix A, MAP shall monitor and report on the emissions with continuous emission monitors as required by 40 C.F.R. § 60.105(a)(4) or with a parametric monitoring system approved as an alternative monitoring system under 40 C.F.R. § 60.13(i).

18. **Benzene Waste NESHAP Program Enhancements**:

In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), MAP agrees to undertake, at each of the Covered Refineries, the measures set forth in Paragraphs 18.B through 18.Q to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

A. Compliance Status on Date of Lodging of August 2001 Consent Decree. MAP shall comply with the compliance options specified below:

i. On the Date of Lodging of the August 2001 Consent Decree, MAP's Garyville Refinery shall comply with the compliance option set forth at 40 C.F.R. § 61.342(c), utilizing the exemptions set forth in 40 C.F.R. § 61.342(c)(2) and (c)(3)(ii) (hereinafter referred to as the "2 Mg compliance option");

ii. On the Date of Lodging of the August 2001 Consent Decree, MAP's Canton Refinery, Catlettsburg Refinery, and Texas City Refinery shall comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (herein referred to as the "6BQ compliance option");

iii. By no later than December 31, 2003, MAP's Detroit Refinery completed implementation of all actions necessary to ensure compliance with the 6BQ compliance option, consistent with the provisions of Paragraph 19.A of this First Revised Consent Decree;

iv. By no later than December 31, 2002, MAP's Robinson Refinery completed implementation of all actions necessary to ensure compliance with the 6BQ compliance option, consistent with the provisions of a consent decree entered in an action styled United States v. Marathon Oil Co., et al., Civil Action No. 99-4023-JPG (S.D. Ill) ("Marathon/Robinson Benzene NESHAP Civil Action");

v. On or before April 30, 2001, MAP reported that it had a TAB of less than 10 Mg/yr at its St. Paul Park Refinery, in accordance with Subpart FF.

B. **Refinery Compliance Status Changes**.

i. Commencing on the Date of Lodging of the August 2001 Consent Decree and continuing through termination of this First Revised Consent Decree, MAP shall not change the compliance status of any Covered Refinery from the 6BQ compliance option to the 2 Mg compliance option. If at any time from the Date of Lodging of the August 2001 Consent Decree through its termination, the St. Paul Park Refinery is determined to have a TAB equal to or greater than 10 Mg/yr, MAP shall not utilize the 2 Mg compliance option. MAP shall consult with EPA and the appropriate state agency before making any change in compliance strategy not expressly prohibited by this Paragraph 18.B. All changes must be undertaken in accordance with the regulatory provisions of the Benzene Waste NESHAP.

ii. In accordance with the requirements of Paragraph 18.D.ii, MAP shall install controls at the St. Paul Park Refinery necessary to meet the requirements of the 6BQ compliance option as soon as practicable but no later than September 30, 2007.

C. **One-Time Review and Verification of Each Refinery's TAB and, as applicable, Each Refinery's Compliance with the 2 Mg or 6 BQ Compliance Options**.

i. Detroit and Robinson Refineries: By no later July 30, 2001, MAP's Detroit Refinery shall have completed a review and verification of the Detroit Refinery's TAB. MAP's Robinson Refinery already has completed a review and verification of its TAB. Consistent with the agreements set forth in Paragraph 19.A of this First Revised Consent Decree and in the consent decree entered into in the Marathon/Robinson Benzene NESHAP Civil Action, MAP shall implement all actions necessary to ensure compliance with the 6BQ compliance option at its Detroit and Robinson Refineries. The provisions of Paragraphs 18.C.ii, 18.C.iii, and 18.D. shall not apply to the Detroit and Robinson Refineries.

ii. All Refineries Except Detroit and Robinson: Phase One of the Review and Verification Process. By no later than 270 days from the Date of Lodging of the August 2001 Consent Decree, MAP shall complete a review and verification of each Refinery's TAB, and, except for St. Paul Park, each Refinery's compliance with the 2 Mg or 6BQ compliance option, as applicable. For each Refinery, MAP's review and verification process shall include, but not be limited to: (i) an identification of each waste stream that is required to be included in the 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); (ii) 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; (iii) an identification of the benzene concentration in each waste stream, including sampling for benzene concentration at no less than 10 waste streams per 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, 40 C.F.R. § 61.355(c)(2), for streams not sampled; and (iv) an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF. By no later than thirty (30) days following the completion of Phase One of the review and verification process, MAP

shall submit a Benzene Waste NESHAP Compliance Review and Verification report ("BWN Compliance Review and Verification Report") that sets forth the results of Phase One, including but not limited to the items identified in (i) through (iv) of this Paragraph 18.C.ii. At its option, MAP may submit one BWN Compliance Review and Verification Report that includes the results of all Refineries or may submit five separate BWN Compliance Review and Verification Reports.

iii. All Refineries Except Detroit and Robinson: Phase Two of the Review and Verification Process. Based on EPA's review of the BWN Compliance Review and Verification Report(s), EPA may select up to 20 additional waste streams at each Refinery for sampling for benzene concentration. MAP will conduct the required sampling and submit the results to EPA within ninety (90) days of receipt of EPA's request. MAP will use the results of this additional sampling to recalculate the TAB and the uncontrolled benzene quantity and to amend the BWN Compliance Review and Verification Report, as needed. To the extent that EPA requires MAP to re-sample a Phase One waste stream as part of this Phase Two review, MAP may average the results of the two sampling events. MAP shall submit an amended BWN Compliance Review and Verification Report within ninety (90) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA.

D. **All Refineries Except Robinson and Detroit: Implementation of Actions Necessary to Correct Non-Compliance**.

i. Amended TAB Reports. If the results of the BWN Compliance Review and Verification Report(s) indicate(s) that the Refinery's most recently-filed TAB report does not satisfy the requirements of Subpart FF, MAP shall submit, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), an amended TAB report to the appropriate state agency. MAP's BWN Compliance Review and Verification Report(s) shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

ii. St. Paul Park Refinery.

a. MAP undertook a BWN Compliance Review and Verification process at the St. Paul Park Refinery in accordance with the requirements of Paragraph 18.C of the August 2001 Consent Decree. This review and verification process resulted in finding a TAB of under 10 Mg/yr. Therefore, MAP was not required to submit a compliance plan and strategy pursuant to Paragraph 18.D.ii of the August 2001 Consent Decree for the St. Paul Park Refinery.

b. Based on the results of sampling undertaken in 2004 and 2005 pursuant to Paragraph 18.M of the August 2001 Consent Decree, the United States, Minnesota, and MAP agree that by no later than September 30, 2005, MAP shall submit to EPA, to Region 5 of EPA, and to the Minnesota Pollution Control Authority, a plan that identifies with specificity the compliance strategy and schedule that MAP will implement to ensure that the St. Paul Park Refinery installs the controls necessary to comply with the 6BQ compliance option as soon as practicable, but not later than September 30, 2007. This plan shall include MAP's adoption of all of the requirements of this Paragraph 18 that apply to a refinery covered under the 6BQ compliance option; provided however, that if the St. Paul Park Refinery already has adopted some of these requirements, MAP shall assert that it will continue to comply with those requirements. In its compliance strategy and schedule, MAP shall evaluate the feasibility of accelerating the installation of Benzene Waste NESHAP controls on waste management units at the St. Paul Park Refinery that are or may be significant sources of benzene emissions but currently have limited or no controls.

c. By no later than the Date of Lodging of this First Revised Consent Decree and continuing until the St. Paul Park Refinery complies with the 6BQ compliance option, MAP shall continue to undertake the following measures to monitor and/or minimize benzene emissions from the St. Paul Park Refinery: (i) sample the benzene concentration in the desalter effluent water twice a month; (ii) optimize desalter operations to minimize benzene concentrations in the desalter effluent water while protecting downstream process equipment; (iii) maintain

compliance with 40 C.F.R. Subpart QQQ at the Refinery's oily-water sewer system; and (iv) refuse to accept for processing condensate crude.

d. By no later than September 30, 2005, MAP shall undertake the following measures to monitor and/or minimize benzene emissions from the St. Paul Park Refinery: (i) comply with the requirements of the 6BQ compliance option for the Refinery's organic waste streams; (ii) control and monitor Tank 117 in accordance with the requirements of the Benzene Waste NESHAP; and (iii) control and monitor the vac trucks in Benzene Waste NESHAP service at the Refinery in accordance with the requirements of the Benzene Waste NESHAP.

e. Commencing with the third calendar quarter in 2005 and continuing until MAP complies with the 6BQ compliance option at the St. Paul Park Refinery, MAP shall submit to EPA Region 5 and the MPCA by no later than 30 days after the end of each calendar quarter, the results of all benzene sampling during the prior calendar quarter at the Refinery.

iii. Canton, Catlettsburg, Garyville and Texas City Refineries. If the results of the BWN Compliance Review and Verification Report(s) indicate that MAP is not in compliance with the 6BQ compliance option at the Canton, Catlettsburg and/or Texas City Refineries, or the 2 Mg compliance option at the Garyville Refinery, then, for each such Refinery not in compliance, MAP shall submit to EPA, to the appropriate EPA Region, and to the appropriate state agency, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), a plan that identifies with specificity the compliance strategy and schedule that MAP will implement to ensure that the subject Refinery complies with its applicable compliance option as soon as practicable.

iv. Review and Approval of Plans Submitted Pursuant to Paragraphs 18.D.ii and 18.D.iii. Any plans submitted pursuant to Paragraphs 18.D.ii and 18.D.iii shall be subject to the approval of, disapproval of, or modification by EPA, which shall act in consultation with the appropriate state agency. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, MAP shall submit to EPA and the appropriate state agency a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with

conditions, MAP shall implement the plan. Disputes arising under this Paragraph 18.D.iv. shall be resolved in accordance with the dispute resolution provisions of this Decree.

v. Certification of Compliance with the 2 Mg or 6 BQ Compliance Option, as Applicable. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 18.D.ii and 18.D.iii to come into compliance with the applicable compliance option, MAP shall submit a report to EPA that, as to each Refinery, the Refinery complies with the Benzene Waste NESHAP.

E. **Carbon Canisters:** MAP shall comply with the requirements of this Paragraph 18.E at all locations at MAP's Refineries where a carbon canister(s) is utilized as a control device under the Benzene Waste NESHAP.

i. Except for the Detroit and Robinson Refineries, by no later than 270 days after the Date of Lodging of the August 2001 Consent Decree, MAP shall complete installation of primary and secondary carbon canisters and operate them in series. For the Detroit and Robinson Refineries, MAP shall complete installation of primary and secondary carbon canisters and operate them in series by no later than such time as MAP completes installation and start-up of the equipment necessary to ensure compliance with the 6 BQ option at those Refineries. By no later than thirty (30) days following completion of the installation of the dual canisters, MAP shall submit a report certifying the completion of the installation. The report shall include a list of all locations within each Refinery where secondary carbon canisters were installed, the installation date of each secondary canister, and the date that each secondary canister was put into operation. From the Date of Lodging of the August 2001 Consent Decree through termination of the First Revised Consent Decree, MAP shall not use single carbon canisters for any new units or installations that require control pursuant to the Benzene Waste NESHAP at any of its Refineries. For dual carbon canister systems, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 200 ppm volatile organic compounds ("VOC") or 5 ppm benzene. If, however, EPA determines, in consultation with MAP, that the results of the study in Paragraph 18.O.ii demonstrate that a concentration of less

than 200 ppm VOCs or 5 ppm benzene is a more appropriate measure of breakthrough, then, for purposes of this Paragraph 18.E.i., "breakthrough" shall be re-defined consistent with EPA's determination.

ii. By no later than the later of (a) seven (7) days after the installation of each secondary carbon canister; or (b) when MAP, using its best efforts, first detects that there is actual flow to the primary and secondary canister, MAP shall start to monitor for breakthrough between the primary and secondary carbon canister 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).

iii. MAP shall replace the original primary carbon canisters with fresh carbon canisters immediately when breakthrough is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister unless MAP chooses to replace both the primary and the secondary canister when breakthrough is detected. For this Paragraph 18.E.iii., "immediately" shall mean within twenty-four (24) hours.

iv. MAP shall maintain a supply of fresh carbon canisters at each Refinery at all times.

v. Records for the requirements of Paragraph 18.E. shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

F. **Annual Program.** MAP shall establish an annual program of reviewing process 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.

G. **Laboratory Audits**. MAP shall conduct audits of all laboratories that perform analyses of MAP's benzene waste NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed.

i. By no later than 180 days after the Date of Lodging of the August 2001 Consent Decree, MAP shall conduct audits of the laboratories used by two (2) of its Refineries. MAP shall complete audits of the laboratories used by the remaining MAP Refineries within twelve

(12) months of the Date of Lodging of the August 2001 Consent Decree. In addition, MAP shall audit any new laboratory used for analyses of benzene samples prior to use of the new laboratory.

ii. If MAP has completed audits of any laboratory in the one year period prior to the Date of Lodging of the August 2001 Consent Decree, additional audits of those laboratories pursuant to Paragraph 18.G.i. shall not be required.

iii. During the life of the August 2001 Consent Decree and this First Revised Consent Decree, MAP shall conduct subsequent laboratory audits, such that each laboratory is audited every two (2) years.

iv. MAP may rely upon an audit conducted by another refiner that has a consent decree with the United States which contains Benzene Waste NESHAP laboratory audit requirements that are substantially similar to the requirements of this Paragraph 18.G provided that the audit is not more than two years old. If MAP relies upon an audit conducted by another refiner, MAP must first ensure that the laboratory has corrected any adverse findings in such audit.

H. **Benzene Spills.** For each spill at each Refinery, MAP shall review such spills to determine if benzene waste was generated. MAP shall include benzene generated by such spills in the TAB and the uncontrolled benzene quantity calculations for each Refinery.

I. **Training.**

i. By no later than ninety (90) days from the Date of Lodging of the August 2001 Consent Decree, MAP shall develop and begin implementation of annual (i.e., once each calendar year) training for all employees asked to draw benzene waste samples.

ii. Canton, Catlettsburg, Garyville, and Texas City Refineries: For the Canton, Catlettsburg, Garyville, and Texas City Refineries, by no later than 180 days from the Date of Lodging of the August 2001 Consent Decree, MAP shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP. By no later than 270 days thereafter, MAP shall complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training shall also be provided to any persons who subsequently become operators, prior to their

assumption of this duty. Until termination of this First Revised Consent Decree, "refresher" training in these procedures shall be performed on a three year cycle.

iii. Detroit and Robinson Refineries: The Robinson Refinery shall comply with the provisions of Paragraph 18.I.ii; provided however, that the development of the standard operating procedures and the initial training shall be completed by no later than December 31, 2002. The Detroit Refinery shall comply with the provisions of Paragraph 18.I.ii; provided however, that the development of the standard operating procedures and the initial training shall be completed by no later than June 30, 2003.

iv. St. Paul Park Refinery: By no later than 90 days after the installation of the controls necessary to comply with the 6BQ compliance option, the St. Paul Park Refinery shall comply with the provisions of Paragraph 18.I.ii.

v. As part of MAP's training program, MAP must ensure that the employees of any contractors hired to perform the requirements of this Paragraph are properly trained to implement all provisions of this Paragraph at their respective Refineries.

J. **Waste/Slop/Off-Spec Oil Management**.

i. By no later than ninety (90) days after the Date of Lodging of the August 2001 Consent Decree, MAP shall submit to EPA, for each of MAP's Refineries, schematics that: (a) depict the waste management units (including sewers) that handle, store, and transfer waste/slop/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. Representatives from MAP and EPA thereafter shall confer about the appropriate characterization of each Refinery's waste/slop/off-spec oil streams and the necessary controls, if any, for the waste management units handling such oil streams, for purposes of each Refinery's TAB calculation and, except for St. Paul Park each Refinery's compliance with the applicable compliance option. At a mutually-agreed upon time, MAP shall submit, if necessary, revised schematics that reflect the Parties' agreements regarding the characterization of these oil streams and the appropriate control standards.

ii. Organic Benzene Waste Streams. For: (a) the Canton, Catlettsburg, Garyville, and Texas City Refineries from the Date of Lodging of the August 2001 Consent Decree; (b) the Detroit Refinery after July 1, 2003; (c) the Robinson Refinery after January 1, 2003; and (d) the St. Paul Park Refinery after September 30, 2005, all waste management units handling "organic" benzene wastes, as defined in Subpart FF, shall meet the applicable control standards of Subpart FF. If, as a result of the discussions between MAP and EPA pursuant to Paragraph 18.J.i, the Parties agree that controls not already in place are necessary on any waste management unit handling organic benzene wastes, the Parties shall agree, in writing, to a schedule, not to exceed two years, for the completion of the installation of the necessary controls.

iii. Aqueous Benzene Waste Streams. For purposes of calculating each Refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), MAP shall 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). For purposes of complying with the 2 Mg. or 6BQ compliance option, all waste management units handling aqueous benzene waste streams shall either meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 2 or 6 megagram limit.

iv. Plan to Quantify Uncontrolled Waste/Slop/Off-Spec Oil Streams. By no later than ninety (90) days after EPA has approved the schematics, as revised if necessary, required under Paragraph 18.J.i., MAP shall submit, for each of its Refineries, a plan(s) to quantify waste/slop/off-spec oil movements for all benzene waste streams which are not controlled. EPA will review the plan and may recommend revisions consistent with Subpart FF. Upon plan approval, MAP shall maintain records quantifying such movements.

v. Disputes under this Paragraph 18.J.. shall be resolved in accordance with the dispute resolution provisions of this First Revised Consent Decree.

K. **End of Line Sampling (6 BQ Compliance Option)**. The provisions of this Paragraph 18.K shall apply to the Canton, Catlettsburg, and Texas City Refineries from the Date

of Lodging of the August 2001 Consent Decree through termination of the First Revised Consent Decree; shall apply to the Detroit Refinery from July 1, 2003, through termination of the First Revised Consent Decree; shall apply to the Robinson Refinery from January 1, 2003, through termination of the First Revised Consent Decree; and shall apply to the St. Paul Park Refinery upon the installation of controls necessary to comply with the 6BQ compliance option through termination of the First Revised Consent Decree (hereinafter "Applicability Dates for Paragraph 18.K").

i. By no later than four (4) months after the start of the Applicability Dates for Paragraph 18.K, MAP shall submit to EPA for approval a plan(s) for an "end of the line" ("EOL") determination of the benzene quantity in uncontrolled waste streams. MAP's proposed plan shall include, but not be limited to, sampling locations, methods for flow calculations, and the assumed volatilization rate(s) to be used in calculating the uncontrolled benzene quantity. Any disputes regarding plan approval under this Paragraph 18.K. shall be resolved in accordance with the dispute resolution provisions of the First Revised Consent Decree. Delays in the approval of the plan(s) for one or more Refineries shall not constitute grounds for delays in commencing the sampling program for Refineries that have received approval.

ii. If, during the Applicability Dates for Paragraph 18.K, changes in processes, operations, or other factors lead MAP to conclude that the approved sampling locations, approved methods for determining flow calculations, and/or assumed volatilization rates no longer provide an accurate measure of a Refinery's EOL benzene quantity, MAP shall submit a revised plan to EPA for approval.

iii. On a monthly basis, MAP shall conduct EOL sampling, commencing during the first month of the first full calendar quarter after MAP receives written approval from EPA of the sampling plan for the particular Refinery. MAP shall take, and have analyzed, three representative samples from each approved sampling location. MAP shall use the average of these three samples as the benzene concentration for the stream at the approved location. Based on the EOL monthly sampling results, the approved flow calculations, and the volatilization

assumptions, MAP shall calculate the sum of the EOL benzene quantity for the three months contained within the respective quarter. Nothing in this Paragraph 18.K. shall preclude MAP from taking representative samples more frequently within any calendar month, provided that MAP identifies the basis for the additional samples. Such samples shall be included in calculating the average monthly EOL benzene quantity.

iv. If the sum of the EOL benzene quantity for the three month period contained within a quarter equals or exceeds 1.2 Mg., MAP shall take and have analyzed three representative samples, drawn on separate days during the subsequent calendar quarter, of each uncontrolled stream containing benzene over 0.05 Mg/yr, as identified in the most recently submitted TAB report (hereinafter "Sampling of >0.05 Streams"). MAP shall undertake Sampling of >0.05 Streams for the purpose of trying to identify the cause or source of the potentially elevated benzene quantities.

v. MAP shall continue to undertake Sampling of >0.05 Streams in the second quarter after the EOL benzene quantity exceeded 1.2 Mg unless either: (i) the EOL benzene quantity in the first quarter of the Sampling of > 0.05 Streams demonstrates that the Refinery's EOL benzene quantity, prorated on a yearly basis, will be below 4.8 Mg/yr; or (ii) MAP discovers and corrects the cause of the potentially elevated benzene quantities and EPA concurs in MAP's diagnosis and corrective measures.

vi. If the sum of the EOL benzene quantity for two consecutive quarters indicates that the EOL benzene quantity, prorated on a yearly basis, will exceed 4.8 Mg/yr, and MAP has not discovered and corrected the cause of the potentially elevated benzene through the process of Sampling of >0.05 Streams, MAP shall take and have analyzed three representative samples, drawn on separate days during the third calendar quarter, of each uncontrolled stream containing benzene over 0.03 Mg/yr, as identified in the most recently submitted TAB report (hereinafter "Sampling of > 0.03 Streams"). MAP shall undertake Sampling of >0.03 Streams for the purpose of continuing to try to identify the cause or source of the potentially elevated benzene quantities.

vii. Sampling of >0.05 and/or >0.03 Streams shall not be required if MAP advises EPA, and EPA concurs, that the potentially elevated benzene quantities can be attributed to an identifiable event, such as a spill to the sewer or a turnaround. After such an identifiable event, however, MAP shall calculate its projected uncontrolled benzene quantity for the calendar year in which the event occurs. If that projection is greater than 6 mg/yr, then MAP shall submit to EPA for approval a plan that either (a) identifies with specificity the compliance strategy and schedule that MAP will implement to ensure that the subject Refinery does not exceed 6 Megagrams of uncontrolled benzene for the calendar year; or (b) if as a result of the quantity of benzene released during the event MAP is unable to propose a plan to ensure that the subject Refinery's uncontrolled benzene for the calendar year will be 6 Megagrams or less, then MAP shall identify the actions to be taken to minimize the uncontrolled benzene for the remainder of the year. MAP shall submit this plan within thirty (30) days after the end of the quarter which resulted in a projection of greater than 6 Mg/yr of uncontrolled benzene. Sampling of >0.05 and/or >0.03 Streams shall not excuse MAP from continuing to take monthly EOL samples.

viii. If in three consecutive quarters (a) the sum of the benzene quantity indicates that MAP's EOL benzene quantity, prorated on a yearly basis, will exceed 4.8 Mg/yr; or (b) MAP's sampling of >0.05 and/or >0.03 streams indicates that MAP's projected uncontrolled benzene for the calendar year will exceed 6 Megagrams, and MAP has not discovered and corrected, with EPA's concurrence, the cause of the potentially elevated benzene through the process of Sampling of >0.05 and >0.03 Streams, then, in the fourth quarter, MAP shall retain a third party contractor to undertake a comprehensive TAB study and compliance review ("Third-Party TAB Study and Compliance Review"). By no later than the last day of the fourth quarter, MAP shall submit a proposal to EPA that identifies the contractor, the contractor's scope of work, and the contractor's schedule for the Third-Party TAB Study and Compliance Review. Unless, within thirty (30) days after EPA receives this proposal, EPA disapproves or seeks modifications, MAP shall authorize the contractor to commence work. By no later than thirty (30) days after MAP receives the results of the Third-Party TAB Study and Compliance Review, MAP shall submit

the results to EPA. MAP and EPA subsequently shall discuss informally the results of the Third-Party TAB Study and Compliance Review. By no later than ninety (90) days after MAP receives the results of the Third-Party TAB Study and Compliance Review, or such other time as MAP and EPA may agree, MAP shall submit to EPA for approval a plan that addresses any deficiencies identified in the Third-Party TAB Study and Compliance Review and any deficiencies that EPA brought to MAP's attention as a result of the Third-Party TAB Study and Compliance Review. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, MAP shall submit to EPA a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with conditions, MAP shall implement the plan.

L. **End of Line Sampling (2 Mg Compliance Option)**. For the Garyville Refinery, from the Date of Lodging of the August 2001 Consent Decree through termination:

i. MAP shall comply with the requirements of Paragraphs 18.K.i. through 18.K.viii., except that: (a) "0.4 Mg" shall be substituted at each location in Paragraph 18.K where the phrase "1.2 Mg" is used; (b) "1.6 Mg/yr" shall be substituted at each location in Paragraph 18.K where the phrase "4.8 Mg/yr" is used; (c) "2" Mg/yr shall be substituted in Paragraph 18.K.vii for "6" Mg/yr; and

ii. MAP shall measure quarterly, consistent with the requirements of 40 C.F.R. §§ 61.355(c)(1) and (3), the concentration of all waste streams that qualify for the 10 ppm exemption (see 40 C.F.R. § 61.342(c)(2)) and contain greater than 0.1 Mg/yr of benzene. MAP shall begin this sampling during the first full calendar quarter after the Date of Lodging of the August 2001 Consent Decree. After two years, EPA will evaluate the quarterly sampling results to determine the appropriateness of less frequent sampling.

M. **End of Line Sampling (TAB is less than 10 Mg/yr)**. For the St. Paul Park Refinery, from the Date of Lodging of the August 2001 Consent Decree through the date of submission of an End of Line sampling plan for the St. Paul Park Refinery pursuant to Paragraph 18.K.i:

i. MAP shall, once per calendar year commencing in 2002, conduct sampling, consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3), of all waste streams containing benzene that contributed 0.05 Mg/yr or more to the previous year's TAB calculation;

ii. By no later than ninety (90) days after the Date of Lodging of the August 2001 Consent Decree, or such other time as is mutually agreed upon, representatives from EPA and the Minnesota Pollution Control Agency ("MPCA") shall meet at the St. Paul Park Refinery with representatives from MAP for the purpose of identifying an appropriate procedure for conducting EOL sampling and measuring EOL benzene quantities at that Refinery. EPA, the MPCA, and MAP shall confer about potential EOL sample locations, shall review process and flow information and oil movement transfers, and shall evaluate the effect of remediation activities at the St. Paul Park Refinery on EOL sampling and EOL benzene quantities. Benzene in wastes generated by remediation activities shall not be included in the calculation of the EOL benzene quantity at the St. Paul Park Refinery. By no later than thirty (30) days after EPA and the MPCA have met with MAP at the St. Paul Park Refinery, MAP shall submit a plan to EPA for approval that contains proposed sampling locations and methods for flow calculations to be used in the EOL determination of benzene quantity. Any disputes regarding plan approval shall be resolved in accordance with the dispute resolution provisions of the August 2001 Consent Decree. If, during the life of this First Revised Consent Decree, changes in processes, operations, or other factors lead MAP to conclude that either the approved sampling locations and/or the approved methods for determining flow calculations no longer provide an accurate measure of the St. Paul Park Refinery's EOL benzene quantity, MAP shall submit a revised plan to EPA for approval.

iii. On a quarterly basis, MAP shall conduct an EOL determination of benzene quantity, commencing in the first full calendar quarter after MAP receives written approval from EPA of the sampling plan for the St. Paul Park Refinery. MAP shall take, and have analyzed, at least three representative samples from each approved sampling location. MAP shall use the average of these three samples as the benzene concentration for the stream at the approved location.

Based on the EOL quarterly sampling results and the approved flow calculations, MAP shall calculate the quarterly EOL benzene quantity.

iv. Because, by no later than September 30, 2005, MAP shall submit a compliance strategy and schedule to install the controls necessary to comply with the 6BQ compliance option at the St. Paul Refinery as soon as practicable, the requirements of Subparagraphs 18.M.iv. - vi. of the August 2001 Consent Decree no longer shall apply.

N. **Miscellaneous Measures.**

i. MAP shall manage all groundwater remediation conveyance systems at each of its Refineries having such systems in accordance with the Benzene Waste NESHAP.

ii. The provisions of this Paragraph18.N.ii. shall apply to: (a) the Canton, Catlettsburg, Garyville, and Texas City Refineries from the Date of Lodging of the August 2001 Consent Decree through termination of the First Revised Consent Decree; (b) the Robinson Refinery by no later than December 31, 2002, through termination of the First Revised Consent Decree; (c) the Detroit Refinery by no later than June 30, 2003, through termination of the First Revised Consent Decree; and (d) the St. Paul Park Refinery, by no later than 90 days after the installation of the controls necessary to comply with the 6BQ compliance option through termination of the First Revised Consent Decree. MAP shall:

a. Conduct monthly visual inspections of all water traps within the Refinery's individual drain systems;

b. Identify and mark all area drains that are segregated stormwater drains;

c. On a weekly basis, visually inspect all conservation vents or indicators 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, MAP may submit a request to the appropriate EPA Region to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent. Nothing in this Paragraph 18.N.ii.c. shall require MAP to monitor conservation vents on fixed roof tanks.

d. For the Texas City Refinery and for the Robinson Refinery, conduct quarterly monitoring of the oil-water separators in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347.

Notwithstanding Paragraph 18.N.ii.(d), for the St. Paul Park Refinery, MAP shall implement the provisions of Paragraph 18.N.ii.b from the Date of Lodging of the August 2001 Consent Decree through termination of the First Revised Consent Decree.

iii. For purposes of the August 2001 Consent Decree and the First Revised Consent Decree, MAP is not required to control the overhead gas from the Benzene Waste NESHAP strippers at the Canton, Detroit, Garyville, and Robinson Refineries by directing it through a condenser so long as such overhead gas is routed to the fuel gas system through a closed vent system.

O. **Projects/Investigations**.

i. By no later than one-hundred eighty (180) days after the Date of Entry of the August 2001 Consent Decree, MAP reported that it already had installed closed purge sampling devices on sampling points on waste and process streams consistent with safety, feasibility, and cost, and with the requirements of 40 C.F.R., Part 63, Subpart CC. MAP believes that a project or investigation involving these closed loop systems will have little effect on benzene emissions.

ii. By January 31, 2002, MAP shall commence a study of the effectiveness of the benzene and VOC limits proposed under Paragraph 18.E.i. This study shall last no more than two (2) years and will be performed in accordance with the guidelines established in Appendix K. MAP shall submit a report summarizing the results of the study by May 8, 2004.

P. **Recordkeeping and Reporting Requirements for this Paragraph**

i. **Outside of the Reports Required under 40 C.F.R. § 61.357 and under the Semi-Annual Progress Report Procedures of Section VIII (Recordkeeping and Reporting)**. At the times specified in the applicable provisions of this Paragraph, MAP shall submit, as and to the extent required, the following reports to EPA, to the applicable EPA Region, and to the applicable state agency:

a. BWN Compliance Review and Verification Report (¶ 18.C.ii.), as amended, if necessary (¶ 18.C.iii.);

b. Amended TAB Report, if necessary (¶ 18.D.i.);

c. Plan for St. Paul Park to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWN Compliance Review and Verification Report (¶ 18.D.ii.), or the Third-Party TAB Study and Compliance Review that may result from EOL sampling (¶ 18.M.vi);

d. Plan for the Canton, Catlettsburg, Garyville, and/or Texas City Refineries to come into compliance with the applicable compliance option, if the BWN Compliance Review and Verification Reports indicate non-compliance (¶ 18.D.iii.);

e. Compliance certification, if necessary (¶ 18.D.v.);

f. Report certifying the completion of the installation of dual carbon canisters (¶ 18.E.i.);

g. Schematics of waste/slop/off-spec oil movements (¶ 18.J.i.), as revised, if necessary (¶ 18.J.i.);

h. Schedule to complete implementation of controls on waste management units handling organic benzene waste, if necessary (¶ 18.J.ii.);

i. Plan to quantify uncontrolled waste/slop/off-spec oil movements (¶ 18.J.iv.)

j. EOL Sampling Plans (¶¶ 18.K.i., 18.L.i, 18.M.ii.), and revised EOL Sampling Plans, if necessary (¶¶ 18.K.ii., 18.L.i., 18.M.ii.);

k. Plan to ensure that uncontrolled benzene does not equal or exceed, as applicable, 2, 6, or 10 Mg/yr -- or is minimized -- based on projected calendar year uncontrolled benzene quantities as determined through EOL sampling (¶¶ 18.K.vii., 18.L.i, 18.M.v.)

l. Proposal for a Third-Party TAB Study and Compliance Review, if necessary (¶¶ 18.K.viii., 18.L.i., 18.M.vi.);

m. Third-Party TAB Study and Compliance Review, if necessary (¶¶ 18.K.viii., 18. L.i., 18.M.vi.);

n. Plan to implement the results of the Third-Party TAB Study and Compliance Review, if necessary (¶¶ 18.K.viii., 18.L.i., 18.M.vi.);

o. Report on installation of closed purge sampling devices (¶ 18.O.i.);

p. Results of the study of "breakthrough" in carbon canisters (¶ 18.O.ii.).

ii. **As part of Either the Reports Required under 40 C.F.R. § 61.357 or the Semi-Annual Progress Report Procedures of Section VIII (Recordkeeping and Reporting)**.

a. Canton, Catlettsburg, Garyville, and Texas City Refineries. In addition to the information submitted in the quarterly reports required pursuant to 40 C.F.R. §§ 61.357(d)(6) and

(7) ("Section 61.357 Reports"), the Canton, Catlettsburg, Garyville, and Texas City Refineries shall include the following information in those reports:

(1) Laboratory Audits. In the first Section 61.357 Report due after entry of the August 2001 Consent Decree, MAP shall identify all laboratory audits that MAP completed pursuant to the provisions of Paragraph 18.G starting in the one year period prior to the Date of Lodging of the August 2001 Consent Decree and continuing through the calendar quarter for which the quarterly report is due. MAP shall include, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit. In each subsequent Section 61.357 Report, MAP shall identify all laboratory audits that were completed pursuant to the provisions of Paragraph 18.G during the calendar quarter, 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. MAP may submit a summary of the findings and corrective actions from the laboratory audits rather than submitting the entire laboratory audit report;

(2) Training. In the first Section 61.357 Report due after entry of the August 2001 Consent Decree, MAP shall describe the measures that it took to comply with the training provisions of Paragraph 18.I, starting from the Date of Lodging of the August 2001 Consent Decree and continuing through the calendar quarter for which the first quarterly report is due. In each subsequent Section 61.357 Report, MAP shall describe the measures that MAP took to comply with the training provisions of Paragraph 18.I during the calendar quarter;

(3) EOL Sampling Results. Once EOL sampling is required under this Paragraph 18, MAP shall include the following information in each Section 61.357 Report:

(a) Three Months of Monthly EOL Sampling Results. MAP shall report the results of the three months of monthly EOL sampling undertaken pursuant to Paragraphs 18.K.iii. and 18.L.i. for the calendar quarter. The report shall include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the months contained within the respective quarter;

(b) Sampling of >0.05 Streams or Sampling of >0.03 Streams. If the quarter is one in which MAP is required to undertake Sampling of >0.05 Streams or Sampling of >0.03 Streams at any Refinery, MAP also shall: (A) submit the results of those sampling events; (B) describe the actions that MAP is taking to identify and correct the source of the potentially elevated benzene quantities; and (C) to the extent that MAP identifies actions to correct the potentially elevated benzene quantities, specifically seek EPA's concurrence with MAP's proposal;

(4) Quarterly Sampling at the Garyville Refinery of 10 ppm-exempted streams of >0.1 Mg/yr benzene. In the first Section 61.357 Report due after entry

of the August 2001 Consent Decree, and in each subsequent Section 61.357 Report, the Garyville Refinery shall report the results of the quarterly, non-EOL sampling required pursuant to the provisions of Paragraph 18.L.ii. The Report shall include a list of all waste streams sampled and the results of the benzene analysis for each sample.

b. Detroit and Robinson Refineries. In lieu of Section 61.357 Reports, the Detroit and Robinson Refineries shall submit information required by this Paragraph 18.P.ii.b. in Progress Reports pursuant to the requirements of Section VIII of this First Revised Consent Decree. For each six month reporting period, those Refineries shall submit the information described in Paragraphs 18.P.ii.a.(1)-(3). After completion of work required to ensure that the Detroit and Robinson Refineries comply with the 6BQ compliance option, those two Refineries may elect to submit the information described in Paragraphs 18.P.ii.a.(1)-(3) in their Section 61.357 Reports.

c. St. Paul Park Refinery. In lieu of a Section 61.357 Report, the St. Paul Park Refinery shall submit information required by this Paragraph 18.P.ii.c. in Progress Reports pursuant to the requirements of Section VIII of this First Revised Consent Decree. For each six month reporting period, the St. Paul Park Refinery shall submit the information described in Paragraphs 18.P.ii.(a)(1)-(2), and the following information:

(1) The annual, non-EOL sampling required at the St. Paul Park Refinery pursuant to the requirements of Paragraph 18.M.i. (this information shall be submitted in the first progress report of each year);

(2) The results of the quarterly EOL sampling undertaken pursuant to Paragraph M.iii. for the calendar quarter. The report shall include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the respective quarter. The St. Paul Park Refinery shall identify whether the semi-annual benzene quantity equals or exceeds 5.0 Mg/yr and whether the projected calendar year benzene quantity equals or exceeds 10 Mg/yr. If either condition is met, the St. Paul Park Refinery shall include in the report the plan required pursuant to Paragraph 18.M.iv and/or 18.M.v., and shall specifically seek EPA's concurrence in the plan.

After the St. Paul Park Refinery completes the installation of the measures necessary to comply with the 6BQ compliance option, the St. Paul Park Refinery may elect to submit the information required in Paragraph18.P.ii.a.(1)-(3) through Section 61.357 Reports instead of the Progress Reports due under Section VIII of this First Revised Consent Decree.

Q. **Agencies to Receive Reports, Plans and Certifications Required in the Paragraph; Number of Copies.** MAP shall submit all reports, plans and certifications required to be submitted under this Paragraph to EPA and to the appropriate EPA Region. Where indicated, MAP also shall submit the information to the appropriate state agency. By agreement between MAP and each of the offices that are to receive the materials in this Paragraph, MAP may submit the materials electronically.

19. **Benzene Measures at the Detroit and Texas City Refineries**:

A. **Benzene Waste NESHAP Compliance Measures at the Detroit Refinery**

i. **Overview**. By no later than December 31, 2003, MAP shall complete implementation of all actions necessary to ensure that the Detroit Refinery complies with the Benzene Waste NESHAP compliance option set forth at 40 C.F.R. § 61.342(e) (hereinafter "the 6BQ compliance option"). Commencing on July 1, 2003, MAP shall comply with all standards of Subpart FF that are applicable to facilities utilizing the 6BQ compliance option, and with the monitoring, recordkeeping, and reporting requirements of 40 C.F.R. §§ 61.354, 61.356, and 61.357, respectively, as applicable to facilities utilizing the 6BQ compliance option.

ii. **Closed-Vent Systems and Control Devices Currently Operating at the Refinery.** By no later than ninety (90) days after the Date of Lodging of the August 2001 Consent Decree, MAP shall submit to Region 5 of U.S. EPA an identification of all closed-vent systems and control devices that already are operational at the Detroit Refinery that meet the standards of 40 C.F.R. § 61.349. Until termination of this First Revised Consent Decree, MAP shall continue to operate these systems and devices in accordance with the requirements of 40 C.F.R. § 61.349, unless MAP notifies Region 5 of U.S. EPA in writing of its intent to discontinue the operation of any such system or device, describes its reasons for seeking to discontinue the use, and does not receive an objection from U.S. EPA within sixty (60) days of U.S. EPA's receipt of the written notice.

iii. **Organic Benzene Wastes**

a. Meaning of Organic Benzene Wastes. "Organic benzene wastes" mean facility wastes that have a flow-weighted annual average benzene waste content of less than 10 percent.

b. Organic Benzene Wastes -- General. By no later than December 31, 2003, and continuing until termination of this First Revised Consent Decree, MAP shall manage and treat all organic benzene waste streams at the Detroit Refinery in accordance with the requirements of 40 C.F.R. § 61.342(c)(1), as referenced in 40 C.F.R. § 61.342(e)(1).

c. Control of Waste Management Units in Organic Benzene Waste Service. In accordance with the schedule set forth below, MAP shall complete installation of the controls necessary to comply with the applicable standards for the following waste management units that are in organic benzene waste service at the Detroit Refinery:

Unit Identification	Applicable Standard: 40 C.F.R. §:	Date of Completion
SR Platformer Aromatics Sump (aka CP Sump)	61.346	12/31/01
Piping from the CP Sump to the CP Flare Knock-Out Drum	61.346	12/31/01
CP Flare Knock-Out Drum, secondary	61.343	12/31/01
Piping from CP Flare Knock-Out Drum to Refinery slop system	61.346	12/31/01
Piping from Disulfide Separator to Refinery slop system	61.346	12/31/01
Tanks 8, 508, and 23	61.351	6/30/01
Piping from Tank 507 to Tanks 508 and 23	61.346	6/30/03
Gravity Drum near Tank 507 and Gravity Drum near Tank 59	61.343	6/30/03
Tanks 29T40 and 29T41 (formerly Tanks 6A and 6B)	61.343	12/31/03
Piping from Tanks 29T40 and 29T41 to Tanks 508 and 23	61.346	6/30/03
Piping from Unifiner, Alkylation, and Crude Flare Knock-Out Drums to Tanks 23 and 508	61.346	6/30/01
Trucks that Unload into Gravity Drum near Tank 507 and into Gravity Drum near Tank 59	61.345	6/30/03
Vacuum Trucks that Unload into Tanks 23 and 507	61.345	6/30/03

d. Waste Management Units in Organic Benzene Waste Service -- Future Identification or Development. If, at any time prior to the termination of this First Revised Consent Decree, MAP: (i) identifies a waste management unit(s) in organic benzene waste service that is/are not identified in Paragraph 19.A.iii.c; or (ii) creates organic benzene waste streams that are intended to be directed to waste management units other those identified in Paragraph 19.A.iii.c. or discharged to any uncontrolled part of the individual drain system at the Refinery, then, within thirty (30) after the identification or creation, MAP shall notify Region 5 of U.S. EPA in writing of the identification or creation, shall describe the actions, if any, that MAP had to take, or will take, to comply with the requirements of 40 C.F.R. § 61.342(c)(1), and shall set forth a schedule, if necessary, for achieving compliance. MAP may proceed with its proposed actions unless U.S. EPA notifies MAP, within thirty (30) days of receipt of MAP's notice, of U.S. EPA's objections to MAP's plans.

iv. **Aqueous Benzene Wastes.**

a. Meaning of Aqueous Benzene Wastes. "Aqueous benzene wastes" mean facility wastes (including remediation and process unit turnaround waste) with a flow-weighted annual average benzene waste content of 10 percent or greater, on a volume basis as total water, or any waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent.

b. Aqueous Benzene Wastes -- General. Commencing no later than June 30, 2003, and continuing until termination, MAP shall manage and treat all aqueous benzene wastes at the Detroit Refinery in accordance with the requirements of 40 C.F.R. § 61.342(e)(2).

c. Compliance Measures for Aqueous Benzene Wastes.

(1) Installation, Operation, and Maintenance of a Desalter Water Flash Column. By no later than June 30, 2003, MAP shall complete the installation of a new unit -- designated by MAP as the "desalter water flash column" -- downstream of the Detroit Refinery's desalter that will serve as a "benzene treatment process," as that term is used in 40 C.F.R. § 61.348. By that

same date, MAP shall complete installation of all equipment necessary to ensure that the vapor lines leading off of the vessel that will serve as the flash column and leading off of the overhead receiver comply with the requirements of 40 C.F.R. § 61.349.

(2) Individual Drain System Components in the Melvindale and Crude Tank Farms. By no later than June 30, 2003, MAP shall complete the installation of controls that comply with the requirements of 40 C.F.R. § 61.346 on all components of the individual drain system that are located in the Melvindale and Crude Tank farms at the Detroit Refinery. The Melvindale and Crude Tank farms are depicted in Appendix M to this First Revised Consent Decree.

(3) Tank 507. By no later than June 30, 2003, MAP shall complete the installation of controls on Tank 507 that comply with the requirements of 40 C.F.R. §§ 61.351(a)(1).

(4) Truck-Loading Terminal. By no later than June 30, 2003, MAP shall re-route through a system controlled pursuant to the requirements of Subpart FF the aqueous benzene wastes from the truck-loading area at the bulk gasoline terminal.

d. Testing, Monitoring, and Reporting Requirements for New Installations. Commencing no later than July 1, 2003, and continuing until termination of this First Revised Consent Decree, MAP shall comply with all applicable Subpart FF testing, monitoring, and reporting requirements for the new desalter water flash column, the new components of the individual drain system at the Melvindale and Crude Tank farms, Tank 507, and the new installations at the truck-loading terminal.

e. Containers, Tanks, Components of the Individual Drain System and Other Waste Management Units in Aqueous Benzene Waste Service. Commencing no later than July 1, 2003, for all containers, tanks, components of the individual drain system and any other waste management units in aqueous benzene waste service at the Detroit Refinery, MAP shall either install controls consistent with the requirements of Subpart FF or shall calculate the benzene from any uncontrolled units toward the 6 Megagram limitation of 40 C.F.R. § 61.342(e)(2).

v. **Certification of Completion of Compliance Measures**

By no later than sixty (60) days after MAP concludes that all requirements in Paragraphs 19.A.iii and 19.A.iv have been fully performed, MAP shall submit to Region 5 of U.S. EPA a report that describes with particularity the actions that MAP took to comply with the provisions of Paragraphs 19.A.iii and 19.A.iv. As part of that report, MAP shall certify completion of the requirements and that the Detroit Refinery complies with the 6BQ compliance option. At its option, U.S. EPA may elect to inspect the Refinery. If, after a review of the written report, U.S. EPA determines that any requirements have not been completed, U.S. EPA shall notify MAP in writing of the activities it must undertake to complete the requirements. MAP shall perform all activities described in U.S. EPA's notice in accordance with the specifications established therein, subject to MAP's right to invoke the dispute resolution provisions of Section XIV. When U.S. EPA concludes, based on the initial, or any subsequent request for a Certification of Completion that the requirements in Paragraphs 19.A.iii and 19.A.iv been fully performed by MAP, U.S. EPA shall so notify MAP in writing.

B. **Benzene Minimization Program at the Texas City Refinery**.

i. **Third-Party Consultant.** By no later than thirty (30) days after the Date of Lodging of the August 2001 Consent Decree, MAP shall retain a third-party consultant to assist in: (i) developing and implementing a plan to investigate the possible emission sources at the Texas City Refinery that contribute to benzene in the ambient air at and around the Texas City Refinery; and (ii) recommending actions at the Texas City Refinery to minimize benzene in the ambient air.

ii. **Investigation Plan.** By no later than ninety (90) days after the Date of Lodging of the August 2001 Consent Decree, MAP shall submit to EPA and the a plan to investigate ("Investigation Plan") the possible emission sources that contribute to benzene in the ambient air at and around the Texas City Refinery. In developing the Investigation Plan, MAP and its consultant shall consider, among other available materials, internal operating and maintenance records and the ten reports issued by the Laboratory and Mobile Monitoring Section and the

Toxicology and Risk Assessment Section of the Texas Natural Resource Conservation Commission ("TNRCC") that date from December 12, 1995, through April 20, 2001. The Investigation Plan shall include but not be limited to, measures designed to investigate and evaluate: the sources of episodic increases in benzene in the ambient air (that is, incidents that cause short-term spikes in ambient benzene concentration); the effectiveness of the enhanced biodegradation unit in consuming the benzene that enters it; the integrity of all tanks storing or handling materials which contain benzene, including but not limited to, the clay treater charge tank 117, the plant solvent tank 115, the wet solvent tank 113, and sludge tank 132; the integrity of the hatches/covers on water draw pits for slop oil tanks at the wastewater treatment plant; the procedures used at the centrifuge to treat slop oil and sludges, including procedures for temporary storage; and the carbon canister used to control the DAF and slop oil tank emissions when the oxidizer is inoperable . The Investigation Plan shall include a schedule for conducting the investigation.

iii. **Action Plan.** After approval of the Investigation Plan, MAP shall implement it. By no later than sixty (60) days after completing the Investigation Plan, MAP shall submit the results to EPA. At the same time, MAP shall submit to EPA a plan that identifies the actions ("Action Plan") that MAP shall take to minimize benzene emissions from the sources identified in the investigation. The Action Plan shall include, but not be limited to, if and as appropriate, a schedule of implementation for one-time actions and a schedule of periodic monitoring and maintenance for ongoing actions. After approval of the Action Plan, MAP shall implement it.

iv. **Approval by EPA.** The Investigation and Action Plans shall be subject to the approval of, disapproval of, or modification by EPA. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, MAP shall submit to EPA a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with conditions, MAP shall implement the revised plan. Disputes arising under this Paragraph shall be resolved in accordance with the dispute resolution provisions of this Decree.