

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

UNITED STATES OF AMERICA,)
the LOUISIANA DEPARTMENT OF)
ENVIRONMENTAL QUALITY)
and the STATE OF WISCONSIN,)
Plaintiffs,)
v.)
MURPHY OIL USA, Inc.,)
Defendant)
_____)

CIVIL ACTION NO. 3:10-cv-00563-bbc

CONSENT DECREE

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CONSENT DECREE

WHEREAS, Plaintiff the United States of America (“United States”), by the authority of the Attorney General of the United States and through its undersigned counsel, acting at the request and on behalf of the United States Environmental Protection Agency (“EPA”), Co-Plaintiff the Louisiana Department of Environmental Quality (“LDEQ,” “Louisiana” or “Co-Plaintiff”), and Co-Plaintiff the State of Wisconsin (“Wisconsin” or “Co-Plaintiff”) by the Wisconsin Department of Justice, have simultaneously filed a Complaint and lodged this Consent Decree against defendant Murphy Oil USA, Inc. (“Murphy” or “Defendant”) for alleged environmental violations at its refinery located in Superior, Wisconsin (the “Superior Refinery”) and its refinery located in Meraux, Louisiana (the “Meraux Refinery”);

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

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

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

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

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

WHEREAS, the United States also alleged in the Complaint with respect to the Murphy Refineries that, upon information and belief, Murphy 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 Murphy Refineries are located to the extent that such plans or rules implemented, adopted or incorporated the above-described Federal requirements;

WHEREAS, the Louisiana Department of Environmental Quality and the State of Wisconsin (“Wisconsin”) have joined in this matter alleging violations of their respective applicable SIP provisions and/or other state rules and regulations incorporating and implementing the foregoing federal requirements;

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

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

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

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

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

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

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

WHEREAS, by entering into this Consent Decree, Murphy has indicated that it is committed to proactively resolving environmental concerns relating to its operations;

WHEREAS, the United States anticipates that the affirmative relief in Part V of this Consent Decree will reduce emissions of nitrogen oxide by approximately 452 tons annually, will reduce emissions of sulfur dioxide by approximately 944 tons annually, and will also result in reductions of volatile organic compounds (“VOCs”), carbon monoxide (“CO”) and particulate matter (“PM”);

WHEREAS, on March 19, 2002, the United States, the State of Wisconsin, and Murphy entered into a consent decree covering the Superior Refinery in the case of *United States, et al. v. Murphy Oil USA, Inc.*, Case No. 00-C-409-C in the United States District Court for the Western District of Wisconsin (hereinafter the “2002 Consent Decree”), which the United States, the State of Wisconsin, and Murphy agree to jointly terminate within sixty (60) days after Entry of this Consent Decree;

WHEREAS, the Concerned Citizens Around Murphy (“CCAM”) filed an action and obtained a partial judgment in the matter of *Concerned Citizens Around Murphy v. Murphy Oil, U.S.A.*, Civ. No. 08-4986 in the United States District Court for the Eastern District of Louisiana with respect to the Meraux Refinery, and in consideration of the injunctive relief, and supplemental environmental and other projects required under this

Consent Decree, CCAM has agreed to dismiss the above-referenced matter as resolving the matters raised therein;

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

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

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

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

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

I. JURISDICTION AND VENUE

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

2. Venue is proper in the Western District of Wisconsin pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c) and 1395(a). Murphy consents to the personal jurisdiction of this Court, waives any objections to venue in this District, and does not object to the participation of the Louisiana

Department of Environmental Quality and the State of Wisconsin in this action.

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

II. APPLICABILITY AND BINDING EFFECT

4. The provisions of this Consent Decree shall apply to the Superior and Meraux Refineries, and shall be binding upon the United States, the Louisiana Department of Environmental Quality and the State of Wisconsin, and Murphy and its agents, successors, and assigns.

5. Murphy agrees not to contest the validity of this Consent Decree in any subsequent proceeding to implement or enforce its terms. Murphy further agrees that, in any action to enforce this Consent Decree, it shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

6. Effective from the Date of Entry of this Consent Decree until termination pursuant to Part XVII, Murphy agrees that the Superior and Meraux Refineries are covered by this Consent Decree. Effective from the Date of Entry of this Consent Decree, Murphy shall give written notice of this Consent Decree to any successors in interest to the Superior Refinery and/or the Meraux Refinery prior to the transfer of ownership or operation of any portion of either refinery and shall provide a copy of this Consent Decree to any successor in interest. Murphy shall notify the United States and the applicable Co-Plaintiff, in accordance with the notice provisions set forth in Paragraph 280 (“Notice”), of any successor in interest at least 30 days prior to any such transfer.

7. Murphy 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 or membership interest) in the Superior Refinery and/or Meraux Refinery, as applicable, upon the execution by the transferee of a modification to this Consent Decree, which makes the terms and conditions of this Consent Decree applicable to the transferee. In the event of such transfer, Murphy shall notify the United States and the applicable Co-Plaintiff in accordance with the notice provisions in Paragraph 280 (“Notice”). By no

earlier than 30 days after such notice, Murphy may file a motion to modify this Consent Decree with the Court to make the terms and conditions of this Consent Decree applicable to the transferee. Murphy shall be released from the obligations and liabilities of this Consent Decree unless the United States or the applicable Co-Plaintiff opposes the motion and the Court finds that the transferee does not have the financial and technical ability to assume the obligations and liabilities under this Consent Decree.

8. Except as provided in Paragraph 7, Murphy shall be solely responsible for ensuring that performance of the work required under this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and any attachments hereto. Murphy shall provide a copy of the applicable provisions of this Consent Decree to each consulting or contracting firm that is retained to perform work required under this Consent Decree upon execution of any contract relating to such work. Copies of the relevant portions of this Consent Decree do not need to be supplied to firms who are retained solely to supply materials or equipment to satisfy the requirements of this Consent Decree.

III. OBJECTIVES

9. It is the purpose of the Parties to this Consent Decree to further the objectives of the Clean Air Act.

IV. DEFINITIONS

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

A. “365-day rolling average” shall mean the average daily emission rate during the preceding 365 Operating Days. For purposes of clarity, the first day used in a 365-day rolling average compliance period is the first day on which the emission limit is effective, and the first complete 365-day average compliance period is 365 days later (*e.g.*, for a limit effective on January 1, the first day in the period is January 1 and the first complete 365-day period is December 31).

B. “7-day rolling average” shall mean the average daily emission rate during the preceding 7 Operating Days. For purposes of clarity, the first day used in a 7-day rolling average compliance period is the first day on which the emission limit is effective, and the first complete 7-day average compliance period is 7 days later (*e.g.*, for a limit effective on January 1, the first day in the period is January 1 and the first complete 7-day period is January 7).

C. “Acid Gas” shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine scrubber solution but does not include Tail Gas.

D. “Acid Gas Flaring” or “AG Flaring” shall mean the combustion of an Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device.

E. “Acid Gas Flaring Device” or “AG Flaring Device” shall mean any device 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 are identified in Appendix D to the Consent Decree. To the extent that, during the duration of this Consent Decree, the Refinery utilizes AG Flaring Devices other than those specified in Appendix D for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG Flaring Devices shall be covered under this Consent Decree.

F. “Acid Gas Flaring Incident” or “AG Flaring Incident” shall mean an incident that results in the continuous or intermittent combustion of Acid Gas and/or Sour Water Stripper Gas in one or more AG Flaring Devices that results in the emission of sulfur dioxide equal to, or in excess of, 500 pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide has been emitted in a 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of, 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. When AG Flaring occurs within a 24-hour period at more than one AG Flaring Device, the quantity of sulfur dioxide attributable to AG Flaring emitted from each AG Flaring Device shall be added together for purposes of determining whether

there is one AG Flaring Incident unless the root causes of the flaring at the various AG Flaring Devices are not related to each other.

G. “Calendar Quarter” shall mean the three month period ending on March 31st, June 30th, September 30th, and December 31st.

H. “CEMS” shall mean continuous emissions monitoring system.

I. “Certified Low-Leaking Valves” shall mean valves for which a manufacturer has issued either: (i) a written guarantee that the valve will not leak above 100 parts per million (ppm) for five years; (ii) a written guarantee, certification, or equivalent documentation that the valve has been tested pursuant to generally-accepted good engineering practices and has been found to be leaking at no greater than 100 ppm; or (iii) a written guarantee, certification, or equivalent documentation that the valve has been designed not to leak above 100 ppm.

J. “Certified Low-Leaking Valve Packing Technology” shall mean valve packing technology for which a manufacturer has issued either: (i) a written guarantee that the valve packing technology will not leak above 100 ppm for five years; (ii) a written guarantee, certification, or equivalent documentation that the valve packing technology has been tested pursuant to generally-accepted good engineering practices and has been found to be leaking at no greater than 100 ppm; or (iii) a written guarantee, certification, or equivalent documentation that the valve packing technology has been designed not to leak above 100 ppm.

K. “CO” shall mean carbon monoxide.

L. “Co-Plaintiffs” shall mean the Louisiana Department of Environmental Quality and the State of Wisconsin.

M. “Combustion Units” shall mean the heaters and boilers at the Murphy Refineries, and the compressors at the Meraux Refinery, listed on Appendix B.

N. “COMS” shall mean continuous opacity monitoring system.

O. “Consent Decree” or “Decree” shall mean this Consent Decree, including any and all appendices attached to this Consent Decree.

P. “Current Generation Ultra-Low NOx Burners” or “Current Generation ULNBs” shall mean those burners that are designed to achieve a NOx emission rate of less than or equal to 0.040 lb NOx/mmBTU (HHV) when firing natural gas at 3% stack

oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.040 lb NO_x/mmBTU (HHV).

Q. “Date of Entry” shall mean the date on which this Consent Decree is entered by the United States District Court for the Western District of Wisconsin.

R. “Date of Lodging” shall mean the date this Consent Decree is lodged with the United States District Court for the Western District of Wisconsin.

S. “Day” or “Days” shall mean a calendar day or days. “Working Day” shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business on the next Working Day, except when a compliance date is specified in this Consent Decree, compliance must be achieved on or before that date.

T. “Dual Carbon Bed System” shall mean either (a) a single canister with a primary and secondary carbon bed (“dual carbon bed”) in which the dual carbon bed configuration allows for breakthrough monitoring between the primary and secondary beds in accordance with the requirements of this Consent Decree and in accordance with 40 C.F.R. § 61.354(d), or (b) separate primary and secondary carbon canisters operated in series.

U. “EPA” or “U.S. EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

V. “ESP” shall mean an electrostatic precipitator.

W. “FCCU” as used herein shall mean a fluidized catalytic cracking unit and its regenerator.

X. “FCCU Catalyst Regenerator” shall mean a fluid catalytic cracking unit catalyst regenerator, as defined in 40 C.F.R. § 60.101.

Y. “Flaring Device” shall mean an AG and/or a HC Flaring Device.

Z. “Fresh Feed” shall mean the total of the Acid Gas produced from the Superior Refinery’s process amine generator and the Sour Water Stripper Gas. “Fresh Feed” shall not include the recycled Acid Gas from the TGU regenerator or sulfur pit fumes.

AA. “Fuel Oil” shall mean any liquid fossil fuel with sulfur content of

greater than 0.05% by weight.

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

CC. “Hydrocarbon Flaring Device” or “HC Flaring Device” shall mean a flare used to safely control (through combustion) any excess volume of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas. The HC Flaring Devices currently in service at the Murphy Refineries are identified in Appendix D to the Consent Decree. To the extent that, during the duration of the Consent Decree, either of the Murphy Refineries utilizes HC Flaring Devices other than those specified in Appendix D for the purposes of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, those HC Flaring Devices shall be covered under this Consent Decree.

DD. “Hydrocarbon Flaring Incident” or “HC Flaring Incident” shall mean an incident that results in the continuous or intermittent Hydrocarbon Flaring, except for Acid Gas, Sour Water Stripper Gas, or Tail Gas, at a Hydrocarbon Flaring Device that results in the emission of sulfur dioxide equal to or greater than five-hundred (500) pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide has been emitted in any 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of, 500 pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the HC Flaring Incident. When HC Flaring occurs within a 24-hour period at more than one HC Flaring Device the quantity of sulfur dioxide attributable to HC Flaring emitted from each HC Flaring Device shall be added together for purposes of determining whether there is one HC Flaring Incident unless the root causes of the flaring at the various HC Flaring Devices are not related to each other.

EE. “Hydrotreater Outage” shall mean the period of time during which the FCCU operation is affected as a result of catalyst change-out operations or shutdowns required by ASME pressure vessel requirements or state boiler codes, or as a result of Malfunction, that prevents the hydrotreater from effectively producing the quantity and

quality of feed necessary to achieve established FCCU emission performance.

FF. “LDEQ” shall mean the Louisiana Department of Environmental Quality and any successor departments or agencies of the State of Louisiana.

GG. “Low NO_x Combustion Promoter” shall mean a nonplatinum-based combustion catalyst added to the FCCU that minimizes NO_x emissions while maintaining its effectiveness as a combustion promoter.

HH. “LoTO_x” shall mean a NO_x control technology that includes a quench system, sufficient residence time, ozone injection ports, ozone generators, and oxygen supply, that uses ozone to oxidize NO_x which is then removed in a wet gas scrubber.

II. “Malfunction” shall mean, as specified in 40 C.F.R. § 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.”

JJ. “Meraux Refinery” shall mean the refinery owned and operated by Murphy in Meraux, Louisiana.

KK. “Murphy” or the “Murphy Refineries” shall mean the refineries owned and operated by Murphy in Meraux, Louisiana and in Superior, Wisconsin.

LL. “Natural Gas Curtailment” shall mean a restriction imposed by a public utility limiting the Superior Refinery’s ability to obtain or use natural gas.

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

NN. “NO_x” shall mean nitrogen oxides.

OO. “NO_x Reducing Catalyst Additive” shall mean a catalyst additive that is introduced to an FCCU to reduce NO_x emissions through reduction or controlled oxidation of intermediates.

PP. “Operating Day” shall mean a Day on which a minimum of 18 hours of valid emissions data are obtained.

QQ. “Paragraph” shall mean a portion of this Consent Decree identified by

an Arabic numeral.

RR. “Part” shall mean a portion of this Consent Decree identified by a Roman numeral.

SS. “PM” shall mean particulate matter as measured by 40 C.F.R. Part 60, Appendix A, Method 5B or 5F (front half only).

TT. “Parties” shall mean the United States, the Louisiana Department of Environmental Quality, the State of Wisconsin, and Murphy Oil U.S.A., Inc.

UU. “Qualifying Controls” for the purposes of NOx control technology for heaters and boilers, shall mean:

- (i) SCR or SNCR;
- (ii) Current Generation or Next Generation Ultra-Low NOx Burners;
- (iii) Other technologies or combination of technologies which Murphy demonstrates, to EPA’s satisfaction, will reduce NOx emissions to 0.040 lbs. per mmBTU or lower; or

(iv) NOx control technology may include the permanent shutdown of a heater or boiler with revocation of its federally enforceable operating and construction permits.

VV. “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.

WW. “Root Cause Analysis” shall mean a formal investigation that identifies the Root Cause and all significant contributing causes of an Acid Gas Flaring Incident, Tail Gas Incident, or Hydrocarbon Flaring Incident. The requirements for a Root Cause Analysis are set forth in Sections V.J. and V.K. of this Consent Decree.

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

YY. “Section” shall mean a portion of this Consent Decree identified by a capital letter.

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

AAA. “Selective Non-Catalytic Reduction” or “SNCR” shall mean an air pollution control system consisting of ammonia or urea injection without a catalyst bed to selectively catalyze the reduction of NO_x with ammonia or urea to nitrogen and water.

BBB. “Shutdown” as specified in 40 C.F.R. § 60.2, shall mean the cessation of operation of equipment for any purpose.

CCC. “Sour Water Stripper Gas” or “SWS Gas” shall mean the gas produced by the process of stripping refinery sour water.

DDD. “SO₂” shall mean sulfur dioxide.

EEE. “Startup” as specified in 40 C.F.R. § 60.2 shall mean the setting in operation of equipment for any purpose.

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

GGG. “Superior Refinery” shall mean the refinery owned and operated by Murphy in Superior, Wisconsin.

HHH. “Tail Gas” (“TG”) shall mean exhaust from the Claus train(s) and/or the Tail Gas Unit.

III. “Tail Gas Unit” or “TGU” shall mean a control system using a technology for reducing emissions of sulfur compounds from a Sulfur Recovery Plant.

JJJ. “Tail Gas Incident” shall mean combustion of Tail Gas that either:

(i) is combusted in a flare and results in excess emissions of 500 pounds or more of SO₂ in any 24-hour period; or

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

excess SO₂ emissions from the incinerator.

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

KKK. “United States” shall mean the United States of America, including the United States Department of Justice and the United States Environmental Protection Agency.

LLL. “Upstream Process Units” shall mean all amine contactors, amine scrubbers, and sour water strippers, as well as all process units that produce gaseous or aqueous waste streams that are processed at amine contactors, amine scrubbers, or sour water strippers.

MMM. “WDNR” shall mean the Wisconsin Department of Natural Resources and any successor departments or agencies of the State of Wisconsin.

V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS

A. NO_x Emissions Reductions from FCCUs

Summary: Pursuant to this Section, Murphy shall implement a program to reduce NO_x emissions with the installation and operation of emission reduction technologies pursuant to this Consent Decree at the Meraux FCCU and the Superior FCCU. Murphy is also required to incorporate the lower NO_x emission limits into its operating permits and will demonstrate future compliance with the lower emission limits through the use of CEMS. CEMS required under this Section are to be operated and data recorded pursuant to applicable law.

11. Minimizing NO_x Emissions from the FCCUs. By no later than the Date of Lodging, the Murphy Refineries shall:

- a. Maintain and operate the Meraux and Superior FCCUs (including associated air pollution control equipment) in a manner consistent with good air pollution control practices for minimizing NO_x emissions, which shall include, but not be limited to: minimization and stabilization of FCCU catalyst regenerator excess O₂; and (at Meraux) optimization of the use of an ammonia conditioning agent for the ESP that is optimized for both PM removal and NO_x reduction; and

b. Cease adding conventional platinum-based combustion promoter in the Meraux and Superior FCCUs, and shall add only an EPA-approved Low NOx Combustion Promoter as a combustion promoter.

c. Murphy may use conventional combustion promoter on an intermittent basis as needed to avoid unsafe operation of the FCCU regenerator and to comply with CO emission limits. Murphy will undertake appropriate measures and/or adjust operating parameters with the goal of eliminating such use. Notwithstanding the foregoing, Murphy will not be required to adjust operating parameters in a way that would limit conversion or processing rates. From the Date of Lodging and continuing until the date that the final NOx limits of Paragraph 12.c apply, Murphy shall, within thirty (30) days of using a conventional combustion promoter, submit a report to EPA documenting when and why Murphy used the conventional combustion promoter and the actions taken to discontinue its use and return to the use of the EPA-Approved Low NOx Combustion Promoter.

12. NOx Emission Limits: Meraux Refinery. By no later than September 30, 2012, the Meraux Refinery shall have installed emission reduction technologies and/or implemented operational or other measures that are designed to meet a long-term FCCU emission limit of 20 ppmvd NOx @ 0% O₂ (365-day rolling average) and a short-term FCCU emission limit of 40 ppmvd NOx @ 0% O₂ (7-day rolling average).

a. Design Basis Report. By no later than the Date of Entry, the Meraux Refinery shall submit to EPA for review and comment a report detailing the emission reduction technology Murphy plans to install and operate by September 30, 2012 to meet a long-term FCCU emission limit of 20 ppmvd NOx @ 0% O₂ (365-day rolling average) and a short-term FCCU emission limit of 40 ppmvd NOx @ 0% O₂ (7-day rolling average).

b. Interim NOx Limit. By no later than September 30, 2012, the Meraux Refinery shall comply with an interim FCCU emission limit of 40 ppmvd NOx @ 0% O₂ (365-day rolling average) and 80 ppmvd NOx @ 0% O₂ (7-day rolling average), except as specifically provided in this Paragraph.

i. By no later than March 31, 2013, the Meraux Refinery shall comply with a final FCCU emission limit of 20 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 40 ppmvd NO_x @ 0% O₂ (7-day rolling average), unless Murphy demonstrates to EPA's satisfaction that the final FCCU limit cannot be met without the installation of additional control technology(s). Murphy shall notify EPA and LDEQ by no later than January 31, 2013 that the Meraux Refinery is unable to meet the final FCCU emission limit, and shall include in such notice all relevant emission data and other necessary documentation in support of Murphy's demonstration. Upon request by EPA, Murphy shall submit any additional available data that EPA determines it needs to evaluate the demonstration. EPA shall base its determination that the final NO_x emission limit cannot be met without the installation of additional control technology(s) on (i) the level of FCCU performance; (ii) a reasonable certainty of compliance; and (iii) any other available and relevant information.

ii. If EPA approves Murphy's demonstration that the final NO_x emission limit cannot be met without the installation of additional control technology(s), then the Meraux Refinery shall comply with an interim FCCU emission limit of 40 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 80 ppmvd NO_x @ 0% O₂ (7-day rolling average). If EPA does not approve Murphy's demonstration, then the Meraux Refinery shall comply with the final FCCU emission limit of 20 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 40 ppmvd NO_x @ 0% O₂ (7-day rolling average) by the date specified in EPA's notice of disapproval. If Murphy disagrees with EPA's determination, it shall invoke Dispute Resolution within thirty (30) days of Murphy's receipt of EPA's notice of disapproval. The Meraux Refinery shall continue to comply with the interim FCCU emission limit during the period of dispute resolution.

iii. Until a final FCCU limit is established pursuant to this Paragraph, the Meraux Refinery shall comply with the interim FCCU emission limit.

c. Final NO_x Limit.

i. If EPA has approved an interim FCCU emission limit pursuant to Paragraph 12.b.ii, then by no later than December 31, 2016, the Meraux Refinery shall install SCR, LoTO_x, or equivalent technology to control NO_x emissions from the FCCU and comply with a final FCCU emission limit of 20 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 40 ppmvd NO_x @ 0% O₂ (7-day rolling average).

ii. If EPA has not approved an interim FCCU emission limit pursuant to Paragraph 12.a.ii., then by no later than the date specified in Paragraph 12.b.i, or by the date specified in EPA's disapproval pursuant to Paragraph 12.b.ii, as applicable, the Meraux Refinery shall comply with an FCCU emission limit of 20 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 40 ppmvd NO_x @ 0% O₂ (7-day rolling average).

d. NO_x emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the interim or final 7-day rolling average emission limit required by this Paragraph, provided that during such periods Murphy implements good air pollution control practices to minimize NO_x emissions.

13. NO_x Emission Limits: Superior Refinery. In order to reduce NO_x emissions and establish a lower NO_x emission limit at the Superior Refinery, Murphy shall use NO_x Reducing Catalyst Additive and Low NO_x Combustion Promoter. The program to reduce NO_x emissions at this FCCU shall consist of a demonstration period using an EPA-approved NO_x Reducing Catalyst Additive to establish long term (*i.e.*, 365-day rolling average) and short term (*i.e.*, 7-day rolling average) NO_x emission limits.

a. NO_x Reducing Catalyst Additive. By no later than the Date of Lodging, Murphy shall identify, for EPA approval, the NO_x Reducing Catalyst Additive that Murphy proposes to use during the Demonstration Period for the Superior Refinery FCCU.

b. NO_x Reducing Catalyst Additive – Demonstration Period. By no later than the Date of Entry or the date of EPA's approval of the NO_x Reducing Catalyst Additive, whichever is sooner, the Superior Refinery shall commence an

18-month demonstration of the EPA-approved NO_x Reducing Catalyst Additive.

During the Demonstration Period, Murphy shall:

- i. Use only a Low NO_x Combustion Promoter as a combustion promoter and shall not use a conventional platinum-based combustion promoter;
 - ii. Add the EPA-approved NO_x Reducing Additive at a rate of 25 pounds per day;
 - iii. Maintain an ammonia injection rate into the regenerator flue gas at a point approximately twenty (20) feet downstream of the regenerator exit, as indicated in Appendix A, in the regenerator flue gas duct and at a rate of no less than 1.5 scfm of anhydrous ammonia on a 24-hour rolling average basis;
 - iv. Maintain an O₂ concentration in the flue gas as it exits the FCCU regenerator of not more than 1.8% on a 3-hour rolling average basis, and of not more than 1.3% on a 30-day rolling average basis; and
 - v. Operate the Superior FCCU in a manner that minimizes NO_x emissions to the extent practicable and without interfering with safe operation, conversion or processing rates.
- c. Upon request by EPA, Murphy shall submit any additional, reasonably available data that EPA determines it needs to evaluate the progress of the Demonstration Period. This additional information may include a request for periodic submission of data during the Demonstration Period.
- d. Demonstration Report. Sixty (60) days following completion of the Demonstration Period, Murphy will report the results of the demonstration (“Demonstration Report”) to EPA and WDNR. The Demonstration Report shall include, at a minimum, the following data on a daily average basis:
- i. Regenerator flue gas temperature;
 - ii. Coke burn rate in pounds per hour;
 - iii. FCCU feed rate (fresh feed) in barrels per day;
 - iv. FCCU feed API gravity (fresh feed);

- v. FCCU feed sulfur and basic nitrogen content as a weight % (fresh feed);
 - vi. Estimated percentage, and where available, actual percentage of each type of FCCU feed component (*i.e.*, atmospheric gas oil, vacuum gas oil, atmospheric tower bottoms, etc.) (fresh feed);
 - vii. Estimated percentage, and where available, actual percentage by volume of the FCCU feed (fresh feed) that is hydrotreated;
 - viii. Total catalyst addition rate;
 - ix. NO_x and SO₂ reducing catalyst additive and addition rates, conventional combustion promoter addition rates, and/or Low NO_x Combustion Promoter addition rates; and
 - x. Hourly and daily SO₂, NO_x, CO, and O₂ concentrations.
- Upon request by EPA, Murphy shall submit any additional, reasonably available data that EPA determines it needs to evaluate the Demonstration Period Data.

14. Establishing Final NO_x Emissions Limit: Superior Refinery.

a. In the Demonstration Report, Murphy shall propose 7-day rolling average and 365-day rolling average concentration-based (ppmvd) NO_x emission limits corrected to 0% O₂. These proposed NO_x emission limits shall be no higher than 40 ppmvd NO_x @ 0% O₂ (365-day rolling average) and 80 ppmvd NO_x @ 0% O₂ (7-day rolling average). The Superior Refinery shall comply with the NO_x emission limits it proposes for the FCCU beginning immediately upon submission of the Demonstration Report. The Superior Refinery shall continue to comply with these limits unless and until the Superior Refinery is required to comply with the emission limits set by EPA pursuant to Paragraph 14.b. Upon request by EPA, Murphy shall submit any additional, available data that EPA determines it needs to evaluate the demonstration.

b. EPA will use the data collected about the FCCU during the Demonstration Period, as well as all other available and relevant information, to establish final limits for NO_x emissions from the FCCU. EPA will establish 7-day rolling average and 365-day rolling average concentration-based (ppmvd)

NOx emission limits corrected to 0% O₂, and may establish alternative interim emission limits to be applicable during Hydrotreater Outages, periods of low FCCU charge rates (a rate of FCCU charge at less than 7,000 bpd) or other alternative operating scenarios. EPA will determine the limits based on:

- i. the level of performance during the Demonstration Period;
- ii. a reasonable certainty of compliance; and
- iii. any other available and relevant information.

EPA's limits shall not be less than 20 ppm (365-day rolling average) and 40 ppm (7-day rolling average).

c. If EPA proposes different limits than those proposed by Murphy in the Demonstration Report and Murphy does not dispute those limits within 30 days of receiving notification from EPA, the Superior Refinery shall comply with the EPA-established limits by no later than 90 days after EPA's notice. If Murphy disputes the EPA-established limits, it shall invoke Dispute Resolution within 30 days of Murphy's receipt of the EPA-established limits. During the period of dispute resolution, the Superior Refinery shall continue to comply with the limits proposed by Murphy in its Demonstration Report.

d. At any time prior to the establishment of the final NOx emission limits pursuant to Paragraph 14.b, Murphy may agree to accept a final FCCU emission limit for the Superior Refinery of 20 ppmvd NOx @ 0% O₂ (365-day rolling average) and 40 ppmvd NOx @ 0% O₂ (7-day rolling average). Murphy shall notify EPA and WDNR in writing of its acceptance of these emission limits. The effective date of the final NOx emission limits is the date of Murphy's notice to EPA and WDNR. Murphy shall have no further obligation to comply with the requirements of Paragraph 13, Paragraph 14.a and 14.c upon Murphy's acceptance of final NOx emission limits pursuant to this Subparagraph.

e. NOx emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 7-day rolling average NOx emission limit established pursuant to this Paragraph, provided that during such periods the Superior Refinery implements good air pollution control practices to minimize NOx emissions.

15. Demonstrating Compliance with FCCU NO_x Emission Limits. By no later than the Date of Lodging, the Murphy Refineries shall use NO_x and O₂ CEMS to monitor performance of the FCCUs and to report compliance with the terms and conditions of this Consent Decree. CEMS will be used to demonstrate compliance with the NO_x emission limits established pursuant to Paragraphs 12 (for the Meraux Refinery) and 14 (for the Superior Refinery). Murphy shall make CEMS data available to EPA, and LDEQ or WDNR (as applicable), upon request. Murphy shall install, certify, calibrate, maintain, and operate all CEMS at the Meraux and Superior Refineries required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. 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, Murphy must conduct either a Relative Accuracy Audit (RAA) or a Relative Accuracy Test Audit (RATA) on each CEMS at least once every three (3) years. Murphy must also conduct Cylinder Gas Audits each Calendar Quarter during which a RAA or a RATA is not performed.

B. SO₂ Emissions Reductions from FCCUs

Summary: Pursuant to this Section, Murphy is required to limit SO₂ emissions at the Meraux FCCU and the Superior FCCU. Murphy is also required to incorporate the lower SO₂ emission limits into its operating permits and will demonstrate future compliance with these limits through the use of CEMS. CEMS required under this Section are to be operated and data recorded pursuant to applicable law.

16. Final FCCU SO₂ Emission Limits – Meraux Refinery. By no later than the Date of Entry, the Meraux Refinery shall comply with a FCCU emissions limit of 25 ppmvd SO₂ @ 0% O₂ (365-day rolling average) and 50 ppmvd SO₂ @ 0% O₂ (7-day rolling average). SO₂ emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 7-day rolling average emission limit required by this Paragraph, provided that during such periods Murphy implements good air pollution control practices to minimize SO₂ emissions.

17. Final FCCU SO₂ Emission Limits – Superior Refinery. By no later than the Date of Entry, the Superior Refinery shall comply with a FCCU emissions limit of 25 ppmvd SO₂ @ 0% O₂ (365-day rolling average) and 50 ppmvd SO₂ @ 0% O₂ (7-day rolling average). SO₂ emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 7-day rolling average emission limit required by this Paragraph, provided that during such periods Murphy implements good air pollution control practices to minimize SO₂ emissions.

18. Demonstrating Compliance with FCCU SO₂ Emission Limits. By no later than the Date of Entry, the Murphy Refineries shall use an SO₂ and O₂ CEMS to monitor the performance of the FCCUs and to report compliance with the terms and conditions of this Consent Decree. Murphy shall make CEMS data available to EPA and LDEQ or WDNR (as applicable) upon request. Murphy shall install, certify, calibrate, maintain, and operate all CEMS at the Meraux and Superior Refineries required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. 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, Murphy must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Murphy must also conduct Cylinder Gas Audits each Calendar Quarter during which a RAA or a RATA is not performed.

19. Hydrotreater Outages. By no later than 30 days after the Date of Lodging, the Meraux Refinery will submit to EPA for approval, with a copy to LDEQ, a plan for the operation of the FCCU (including associated air pollution control equipment) during Hydrotreater Outages in a way that minimizes emissions as much as practicable. The plan will, at a minimum, consider the use of low sulfur feed, storage of hydrotreated feed, and an increase in additive addition rate. The 7-day average SO₂ emission limits established pursuant to this Consent Decree will not apply during periods of FCCU feed Hydrotreater Outages provided that the Meraux Refinery is in compliance with the hydrotreater outage plan and is maintaining and operating its FCCU in a manner consistent with good air pollution control practices.

C. PM Emissions Reductions from FCCUs

Summary: Murphy is required to control and limit particulate matter (“PM”) emissions from the Meraux and Superior FCCUs as provided in this Section.

20. NSPS Emission Limits for PM for the Meraux and Superior FCCUs. By no later than the Date of Entry, each of the Murphy Refineries shall comply with an emission limit of 1.0 pound of PM per 1,000 pounds of coke burned from the FCCUs.

21. NSR Emission Limits for PM for the Meraux and Superior FCCUs. At any time during the term of the Consent Decree, either of the Murphy Refineries may accept a Final PM Limit of 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis. For each of the Murphy Refineries that accepts such a limitation, that refinery shall, in accordance with Section V.N. of this Consent Decree, apply for a federally-enforceable permit that shall incorporate the Final PM Limit.

22. PM Testing for FCCU. The Murphy Refineries shall follow the stack test methodology specified in 40 C.F.R. § 60.106(b)(2) to measure PM emissions on the FCCUs. The Murphy Refineries shall propose and submit a stack test protocol to EPA, and LDEQ or WDNR (as applicable), for approval by EPA, not later than three (3) months after the Date of Entry. Each Refinery shall conduct the first stack test no later than twelve (12) months after the Date of Entry, and shall conduct annual stack tests at the FCCU.

23. PM emissions during periods of Malfunction shall not be used in determining compliance with the emission limit of 0.5 pounds of PM per 1,000 pounds of coke burned based on the average of three (3) 1-hour stack tests, provided that during such periods the Murphy Refineries implement good air pollution control practices to minimize PM emissions.

D. CO Emissions Reductions from FCCUs

Summary: The Murphy Refineries are required to operate the FCCUs in a manner that minimize CO emissions while complying with the NO_x limits required in this Section.

24. Final FCCU CO Emissions Limit. By no later than the Date of Entry, each of the Murphy Refineries shall limit CO emissions from the FCCUs to 500 ppmvd or less on a 1-hour average basis corrected to 0% O₂.

25. At any time during the term of this Consent Decree, either of the Murphy Refineries may accept a CO emissions limit of 100 ppmvd or less on a 365-day rolling average basis corrected to 0% O₂.

26. CO emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 1-hour 500 ppmvd emissions limit, provided that during such periods the Murphy Refineries implement good air pollution control practices to minimize CO emissions.

27. Demonstrating Compliance with FCCU CO Emission Limits. By no later than the Date of Entry, each of the Murphy Refineries shall use a CO CEMS to monitor the performance of each FCCU and to report compliance with the terms and conditions of this Consent Decree. Murphy shall make CEMS data available to EPA and LDEQ or WDNR (as applicable) upon request. Murphy shall install, certify, calibrate, maintain, and operate all CEMS at the Meraux and Superior Refineries required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. 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, Murphy must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Murphy must also conduct Cylinder Gas Audits each Calendar Quarter during which a RAA or a RATA is not performed.

E. NSPS Applicability of FCCU Catalyst Regenerators

28. By no later than the Date of Lodging for the FCCU Catalyst Regenerator at the Meraux Refinery and the Date of Entry for the FCCU Catalyst Regenerator at the Superior Refinery, each FCCU Catalyst Regenerator shall be an “affected facility” as that term is used in 40 C.F.R. Part 60, Subparts A and J, and shall be subject to and comply with the requirements of 40 C.F.R. Part 60, Subparts A and J, for SO₂, PM and CO.

Entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for the FCCUs shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

a. If prior to the termination of this Consent Decree, the FCCU becomes subject to NSPS Subpart Ja for a particular pollutant due to a “modification” (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja, in lieu of NSPS Subpart J, for that regulated pollutant to which a standard applies as a result of the modification.

b. If prior to the termination of this Consent Decree, the FCCU becomes subject to NSPS Subpart Ja due to a “reconstruction” (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for reconstructed FCCUs for all pollutants in lieu of Subpart J.

29. Opacity Monitoring at the FCCUs. By no later than the Date of Entry, each of the Murphy Refineries will continue to operate a Continuous Opacity Monitoring System (COMS) to monitor opacity at each of the Meraux and Superior FCCUs. The Murphy Refineries will install, certify, calibrate, maintain and operate all COMS required by this Consent Decree in accordance with 40 C.F.R §§ 60.11, 60.13 and Part 60 Appendix A, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B.

F. NO_x Emissions Reductions from Heaters and Boilers (Combustion Units)

Summary: The Murphy Refineries will implement a program to reduce and monitor NO_x emissions from the Heaters and Boilers at both refineries and the compressors at the Meraux Refinery listed in Appendix B (“Combustion Units”), through the implementation of the provisions of this Section.

30. Installation of Qualifying Controls for NO_x Emissions from Combustion Units. The Murphy Refineries will select one or any combination of the following “Qualifying Controls” to satisfy the requirements of Paragraphs 31, 34 and 35:

a. SCR or SNCR;

- b. Current Generation or Next Generation Ultra-Low NOx Burners;
 - c. Other technologies that the Murphy Refineries demonstrate to EPA's satisfaction will reduce NOx emissions to 0.040 lbs per mmBTU or lower;
- or
- d. Permanent shutdown of a Combustion Unit with surrender of its operating permit.

31. By no later than eight (8) years from the Date of Entry, the Murphy Refineries will use Qualifying Controls to reduce NOx emissions from the Combustion Units listed in Appendix B by at least 338 tons per year, so as to satisfy the following inequality:

$$\sum_{i=1}^n [(E_{\text{actual}})_i - (E_{\text{allowable}})_i] \geq 338 \text{ tons of NOx per year}$$

Where:

- $(E_{\text{allowable}})_i$ = [(The permitted allowable pounds of NOx per million BTU for Combustion Unit i, or, the requested portion of the permitted reduction pursuant to Paragraph 151/(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate capacity in million BTU per hour for Combustion Unit i) x (the lower of 8760 or permitted hours per year)];
- $(E_{\text{actual}})_i$ = The tons of NOx per year prior actual emissions during the refinery baseline years (unless prior actual emissions exceed allowable emissions, then use allowable) as shown in Appendix B for each Combustion Unit i listed in Appendix B; and
- n = The number of Combustion Units with Qualifying Controls from those listed in Appendix B that are selected by the Murphy Refineries to satisfy the requirements of the equation set forth in this Paragraph.

Permit limits established to implement this Paragraph may use a 365-day rolling average for Heaters and Boilers that use a CEMS or a predictive emissions monitoring system (PEMS) to monitor compliance.

32. List of Heaters and Boilers (Combustion Units). Appendix B provides the following information for the Combustion Units at each of the Murphy Refineries:

- a. The maximum physical heat input capacity in mmBTU/hr (HHV);

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

33. NOx Control Plan. By no later than 180 days after the Date of Entry, each of the Murphy Refineries will submit a detailed NOx control plan (“NOx Control Plan”) to EPA, with annual updates covering the prior calendar year on March 31st of each year thereafter until termination of the Consent Decree. Copies of the NOx Control Plans will be submitted to LDEQ or WDNR, as applicable. The NOx Control Plan and its updates will describe the achieved and anticipated progress of the NOx emissions reductions program for the Combustion Units and will contain the following information for each Combustion Unit that the Murphy Refineries plan to use to satisfy the requirements of Paragraphs 31, 34 and/or 35:

- a. All of the information in Appendix B;
- b. Identification of the type of Qualifying Controls installed or planned with date installed or planned (including identification of the Combustion Units to be permanently shut down);
- c. To the extent limits exist or are planned, the allowable NOx emission rates (in lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr (HHV)) obtained or planned with dates obtained or planned;
- d. The results of emissions tests, and annual average CEMS or PEMS data (in ppmvd at 3% O₂, lbs/mmBTU) conducted pursuant to Paragraph 36; and
- e. The amount in tons per year applied or to be applied toward satisfying Paragraph 31.

The NOx Control Plans required by this Paragraph will be for informational purposes only and may contain estimates. They will not be used to develop federally enforceable

permit requirements or other operating restrictions. The Murphy Refineries may change any projections, plans, or information that is included in the NO_x Control Plan or updates. Nothing in this Paragraph will affect any requirements for the development or submission of a NO_x control plan pursuant to otherwise applicable state or local law.

34. By no later than four (4) years from the Date of Entry, the Murphy Refineries shall have installed Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve, in the aggregate, two-thirds of the NO_x emissions reductions required by Paragraph 31. No later than four (4) years and ninety (90) days from the Date of Entry, Murphy shall provide to EPA, LDEQ and WDNR a report showing how the Murphy Refineries have satisfied the requirement of this Paragraph.

35. By no later than eight (8) years from the Date of Entry, Combustion Units with Qualifying Controls shall represent at least 30% of the total maximum heat input capacity or, if less, the allowable heat input capacity, as shown in Appendix B, of all heaters and boilers greater than 40 mmBTU/hr at each Murphy Refinery. Any Qualifying Controls can be used to satisfy this requirement, regardless of when the Qualifying Controls were installed.

36. Beginning no later than one hundred and eighty (180) days after installing Qualifying Controls on and commencing operation of a Combustion Unit that shall be used to satisfy the requirements of Paragraphs 31, 34 and 35, Murphy shall monitor the heaters or boilers at each Murphy Refinery as follows:

- a. For heaters and boilers with a capacity greater than 150 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS;
- b. For heaters and boilers with a capacity greater than 100 mmBTU/hr (HHV) but less than or equal to 150 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS, or monitor NO_x emissions with a PEMS developed and operated pursuant to the requirements of Appendix C (“Predictive Emissions Monitoring Systems for Heaters and Boilers with Capacities Between 100 and 150 mmBTU/hr”) of this Consent Decree;
- c. For heaters and boilers with a capacity of less than or equal to 100 mmBTU/hr (HHV), conduct an initial performance test and any periodic tests that

may be required by EPA or by the applicable State or local permitting authority under other applicable regulatory authority. Murphy shall report the results of the initial performance testing at the Meraux and Superior Refineries to EPA, and to LDEQ or WDNR (as applicable); and

d. Each of the Murphy Refineries shall use Method 7E in conjunction with Method 19 or an EPA-approved alternative test method to conduct initial performance testing for NO_x emissions required by Subparagraph 36.c.

Monitoring with a PEMS that is required by this Paragraph shall be conducted in accordance with the requirements of Appendix C. Units with Qualifying Controls installed before the Date of Entry that are subject to this Paragraph shall comply with this Paragraph by the Date of Entry.

37. Beginning no later than one hundred and eighty (180) days after installing Qualifying Controls and commencing operation of a heater or boiler that shall be monitored by use of a NO_x CEMS required by Paragraph 36 at each of the Murphy Refineries, Murphy shall install, certify, calibrate, maintain, and operate these CEMS in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. Unless Appendix F requirements are specifically required by NSPS or state regulations, 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, the Murphy Refineries must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The Murphy Refineries shall each conduct a Cylinder Gas Audit each Calendar Quarter during which a RAA or a RATA is not performed.

38. The requirements of this Section do not exempt the Murphy Refineries from complying with any and all Federal, state, regional, and local requirements that may mandate technology, equipment, monitoring, or other upgrades that are: (a) based on actions or activities occurring after the Date of Lodging of this Consent Decree; or (b) based upon new or modified regulatory, statutory, or permit requirements.

39. Murphy shall retain all records required to support its reporting requirements under this Section of the Consent Decree until its termination pursuant to

Section XVII. (Termination). Murphy shall make said records available to EPA, and LDEQ or WDNR (as applicable), upon request.

40. If Murphy transfers ownership of either the Meraux or Superior Refinery before achieving all of the NO_x reductions required by Paragraph 31, Murphy shall, as provided in Part II of this Consent Decree, notify EPA, and LDEQ or WDNR (as applicable) of the transfer, and shall submit an allocation to EPA, and LDEQ or WDNR (as applicable) for the share of NO_x reduction requirements of Paragraph 31 that shall apply individually to the transferred Refinery after such transfer. If Murphy chooses, such allocation may be zero.

G. SO₂ Emissions Reductions from and NSPS Applicability to Heaters and Boilers (Combustion Units)

Summary: Murphy is required by this Section to undertake measures to reduce SO₂ emissions from refinery heaters and boilers and other specified equipment by restricting H₂S in refinery fuel gas and by agreeing not to burn Fuel Oil, except as specifically permitted under the provisions set forth in this Section.

41. NSPS Applicability to Heaters and Boilers.

a. Upon the Date of Entry, each heater and boiler at the Murphy Refineries shall be an “affected facility” as defined by 40 C.F.R. § 60.2 under NSPS Subpart J, and shall comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix B. Heaters and boilers at the Superior Refinery not otherwise listed on Appendix B shall comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices by December 31, 2011.

b. If Murphy submits an alternative monitoring plan (“AMP”), the applicable Murphy Refinery shall submit to EPA a timely and complete AMP application with a copy to LDEQ or WDNR (as applicable). Such an AMP may be based on alternative monitoring for H₂S or SO₂. If an AMP is not approved, the applicable Murphy Refinery shall, within ninety (90) days of receiving notice of such disapproval, submit to EPA for approval, and send a copy to LDEQ or

WDNR (as applicable), a plan and schedule that provide for compliance with the monitoring requirements of NSPS Subpart J.

c. For heaters and boilers that become “affected facilities” as defined by 40 C.F.R. § 60.2, under NSPS Subpart J pursuant to this Paragraph, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

d. If prior to the termination of this Consent Decree, any heater or boiler becomes subject to NSPS Subpart Ja for a particular pollutant due to a “modification” (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja, in lieu of NSPS Subpart J, for that regulated pollutant to which a standard applies as a result of the modification.

e. If prior to the termination of this Consent Decree, any heater or boiler becomes subject to NSPS Subpart Ja due to a “reconstruction” (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.

42. Elimination/Reduction of Fuel Oil Burning.

a. Existing Combustion Devices. Effective on the Date of Lodging, Murphy shall not burn Fuel Oil in any Combustion Unit at either the Meraux or Superior Refinery in existence as of the Date of Lodging, except as provided in Paragraph 42.c for the Superior Refinery only.

b. Combustion Devices Constructed After Lodging. After the Date of Lodging, the Murphy Refineries shall not construct any new combustion device that burns Fuel Oil unless the air pollution control equipment controlling the combustion device either:

- i. has an SO₂ control efficiency of 90% or greater; or
- ii. achieves an SO₂ concentration of 20 ppm at 0% O₂ or less on a 3-hour rolling average basis.

Nothing in this Paragraph shall exempt the Murphy Refineries from securing all necessary permits before constructing a new combustion device.

- c. Commencing on the Date of Lodging, Fuel Oil burning at the Superior Refinery shall be limited such that:
- i. total SO₂ emission resulting from Fuel Oil burning will be no greater than 121 tons per year on a 365-day rolling average basis, and
 - ii. Fuel Oil may only be burned during the six-month period commencing November 1 and ending the following April 30.
 - iii. Fuel Oil may be combusted during periods of Natural Gas Curtailment. Fuel Oil combusted during periods of Natural Gas Curtailment will not be counted in the 365-day rolling average.

Compliance with this requirement at the Superior Refinery will be determined on a daily basis by the following the equation:

$$\sum_{i=1}^n [(DRFO_i \times FOD_i \times (SC_i/100) \times 2) / 2000_i] \leq \text{the limit in tons of SO}_2 \text{ per year}$$

Where:

DRFO_i = the amount of fuel oil combusted at the refinery for day i in gallons per day;

FOD_i = the average density of fuel oil combusted at the refinery for day i in pounds per gallon;

SC_i = the average sulfur content of the oil combusted at the refinery for day i in weight percent sulfur; and

n = the prior 365 calendar days.

H. Sulfur Recovery Plants

Summary: The Sulfur Recovery Plants (“SRPs”) at the Meraux and Superior Refineries are affected facilities under NSPS Subpart Ja, and are required to comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and Ja.

43. Sulfur Recovery Plants and NSPS Applicability. The Meraux Refinery has a single Sulfur Recovery Plant with two parallel Claus sulfur recovery units and is configured to allow gases to be routed to either sulfur recovery unit, with two Tail Gas Units serving as control devices. The Superior Refinery has a single 3-stage Sulfur

Recovery Plant consisting of a single Claus sulfur recovery unit and a single Tail Gas Unit serving as the control device.

a. Meraux Refinery SRP. The Meraux Refinery SRP is an “affected facility” as that term is used in 40 C.F.R. Part 60, Subparts A and Ja.

b. Superior Refinery SRP. The Superior Refinery SRP is an “affected facility” as that term is used in 40 C.F.R. Part 60, Subparts A and Ja.

44. Sulfur Recovery Plant Compliance.

a. NSPS Compliance. As of the Date of Lodging, the Meraux and Superior SRPs shall comply with all applicable provisions of NSPS set forth at 40 C.F.R. Part 60, Subparts A and Ja, including, but not limited to, the following:

i. Emission Limit. The Meraux and Superior SRPs shall, for all periods of operation of the SRPs, comply with 40 C.F.R. § 60.102a(f) at each SRP except during periods of Startup, Shutdown or Malfunction of the respective SRP, or during a Malfunction of a TGU serving as a control device for the SRP. For the purpose of determining compliance with the SRP emission limits of 40 C.F.R. § 60.102a(f), the “Startup/Shutdown” provisions set forth in NSPS Subpart A shall apply to each SRP and not to the independent startup or shutdown of a TGU serving as a control device for the SRP. However, the Malfunction exemption set forth in NSPS Subpart A shall apply to each SRP and to the TGU serving as the control device for the SRP.

ii. Monitoring. The Murphy Refineries shall monitor all TGU emissions points (*i.e.*, stacks and incinerators) to the atmosphere for tail gas emissions and shall monitor and report excess emissions from each SRP as required by 40 C.F.R. §§ 60.7(c), 60.13, and 60.106a. During the life of this Consent Decree, the Murphy Refineries shall conduct emissions monitoring from the SRPs with CEMS at all of the emission points, unless an SO₂ alternative monitoring procedure has been approved by EPA, per 40 C.F.R. § 60.13(i), for any of the emission points. The requirement for continuous monitoring of the SRP emission points is not

applicable to the Acid Gas Flaring Devices used to flare the Acid Gas or Sour Water Stripper Gas diverted from the SRPs.

iii. Entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for SRPs shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.104a(h).

iv. Effect of NSPS Subpart Ja Applicability at the Superior SRP. The acceptance of Subpart Ja applicability as provided in Paragraph 43.b shall have no effect on the Superior SRP's PSD compliance obligations.

b. PSD Compliance. As of the Date of Lodging, the Superior SRP shall limit SO₂ emissions from the SRP, except during periods of Startup, Shutdown and Malfunction, as follows:

i. When the sulfur input rate to the SRP meets or exceeds 6 long tons per day of Fresh Feed, SO₂ emissions shall not exceed 150 ppmvd SO₂ at 0% oxygen on a 24-hour rolling average; and

ii. Sulfur input to the SRP shall not exceed 30.0 long tons per day of Fresh Feed.

c. Caustic Scrubber. By no later than August 1, 2011, the Superior Refinery shall install and operate a caustic scrubber system to contact the flare gas with caustic solution to extract H₂S. The caustic scrubber system shall be designed to comply with NSPS Subpart Ja for fuel gas combustion devices and to handle normal flare load, amine unit outages, and SRP upsets going to the flare.

45. Sulfur Pit Emissions.

a. By no later than the Date of Entry, each of the Murphy Refineries shall route all sulfur pit emissions so that they are eliminated, controlled, or included and monitored as part of the SRP's emissions subject to the NSPS Subpart Ja limit for SO₂, 40 C.F.R. § 60.102a(f)(2).

b. Beginning no later than the Date of Entry, within 30 days of any violation of condition I.E.2.b.(17) of WDNR Air Pollution Operation Permit No.

816009590-P01 (or its successor permit) and/or 40 C.F.R. § 60.104(a)(2) at the Superior Refinery sulfur pit, Murphy shall submit a report to WDNR and EPA containing the following information:

i. The date, time and duration of the exceedance, including an estimate of the quantity of H₂S that was emitted, the basis for the calculation, and the steps taken by Murphy to minimize the quantity of H₂S emitted;

ii. An analysis of the cause(s) of the exceedance, a description of the remedial measure(s) taken to correct the cause(s) of the exceedance, and the steps taken to prevent a recurrence of the cause of the exceedance in the future; and

iii. Any other relevant information detailing Murphy's compliance with 40 C.F.R. § 60.11(d).

46. Preventive Maintenance and Operation Plans.

a. By no later than 180 days after the Date of Entry, the Murphy Refineries shall submit to EPA, with a copy to LDEQ and WDNR (as applicable), a summary of the plans either implemented or to be implemented for the enhanced operation and maintenance of the Murphy Refineries' SRPs, their associated TGUs, any supplemental control devices and the Upstream Process Units for each Refinery. This plan shall be termed a Preventive Maintenance and Operation Plan ("PMO Plan"). The PMO Plan shall be a compilation of the Murphy Refineries' approach for exercising good air pollution control practices and for minimizing SO₂ emissions from sulfur processing and other production processes at the refineries. PMO Plans shall have as their goals the elimination of Acid Gas Flaring and the operation of SRPs between Scheduled Maintenance turnarounds with the minimization of emissions. The PMO Plan shall include, but not be limited to, sulfur shedding procedures, startup and shutdown procedures of SRPs, control devices and Upstream Process Units, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any control device to coincide with scheduled turnarounds of major Upstream Process Units. The Murphy Refineries shall implement the PMO Plans at all times,

including periods of Startup, Shutdown and Malfunction of its SRPs. Changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO₂ emissions shall be summarized and reported by the Murphy Refineries to EPA and LDEQ or WDNR (as applicable) in the semi-annual report required under Part VIII.

b. EPA, LDEQ or WDNR do not, by their review of a PMO Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any of the actions that the Murphy Refineries may take pursuant to such PMO Plan will result in compliance with the provisions of the CAA or any other applicable federal, state, or local law or regulation. Notwithstanding the review by EPA or either state agency of a PMO Plan, the Murphy Refineries shall remain solely responsible for compliance with the CAA and such other laws and regulations.

47. Entry of this Consent Decree and compliance with the relevant monitoring requirements for the Murphy Refineries' SRPs shall satisfy the notice requirements of 40 C.F.R. § 60.7 (a) and the initial performance test requirement of 40 C.F.R. § 60.8 for such SRPs.

I. Flares and NSPS

Summary: All Flaring Devices at the Murphy Refineries are identified in Appendix D to this Consent Decree. These Flaring Devices are affected facilities (as that term is used in NSPS, 40 C.F.R. Part 60), and are subject to and required to comply with the fuel gas combustion device requirements of 40 C.F.R. Part 60, Subparts A and J. Such Flaring Devices may also be used as emergency control devices for the quick and safe release of gases generated as a result of Startup, Shutdown, or Malfunction.

48. Good Air Pollution Control Practices. On and after the Date of Lodging, Murphy shall at all times and to the extent practicable, including during periods of Startup, Shutdown, and/or Malfunction, implement good air pollution control practices to minimize emissions from its Flaring Devices as required by 40 C.F.R. § 60.11(d). Murphy shall implement such good air pollution control practices to minimize Hydrocarbon Flaring Incidents by investigating, reporting and correcting all such incidents in accordance with the procedures in Paragraph 66.

49. Flaring Devices and NSPS Applicability. Murphy owns and operates the Flaring Devices identified in Appendix D. Each such Flaring Device listed in Appendix D is an “affected facility” (as that term is used in NSPS, 40 C.F.R. Part 60) and by the dates specified in Appendix D shall comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and J for fuel gas combustion devices used as emergency control devices for quick and safe release of combustible gases.

a. Murphy shall meet the NSPS Subparts A and J requirements for each Flaring Device as follows:

i. Superior: By no later than the date listed in Appendix D for the Superior Refinery’s Flaring Devices, operate each Flaring Device as a fuel gas combustion device, monitoring each for the continuous or intermittent, routinely-generated refinery fuel gas streams put into the flare header. By no later than the date listed in Appendix D, Murphy shall comply with the applicable monitoring requirements of 40 C.F.R. §§ 60.7 and 60.105(a)(4).

ii. Meraux: By no later than the date listed in Appendix D for the Meraux Refinery’s Flaring Devices, Murphy shall design, install, operate and maintain a flare gas recovery system to control continuous or routine combustion in the Meraux Refinery’s Flaring Devices. By no later than the date specified in Appendix D, Murphy shall comply with the applicable monitoring requirements of 40 C.F.R. §§ 60.7 and 60.105(a)(4). In addition, until the flare gas recovery system is installed and operational, Murphy shall:

- (1) By no later than the Date of Lodging, continue to operate its process units in a manner to minimize the concentration of H₂S in continuous or routine streams going to the flares;
- (2) By no later than the Date of Lodging, not initiate any new projects that will generate fuel gas streams or that will increase the H₂S concentration in existing fuel gas streams vented to the flares, except (A) as specifically authorized by permit, or (B) to route to the flare gas system gas that

would otherwise be vented to the atmosphere. Murphy currently has flow monitors installed on each of the Meraux Flaring Devices, which shall continue to be calibrated, maintained, and operated. Murphy shall monitor using the existing flow monitors and daily grab samples for H₂S content, until installation of the H₂S CEMS or Total Sulfur continuous monitoring system by the date listed in Appendix D;

- (3) By no later than the Date of Lodging, implement a program to verify the integrity of process pressure safety valves (PSV), including valve inspection, testing and repair (the “PSV Program”);
- (4) By no later than July 31, 2010, comply with LDEQ Compliance Order & Notice of Potential Penalty (CO/NOPP) AE-CN-08-0122, AE-CN-08-0122A and AE-CN-08-0122B, including re-routing the Vacuum Vent from the vacuum heater, and the Middle Distillate Hydrotreating (MDH) Product Fractionator overhead receiver vent and the ROSE solvent surge drum vent from the flares to the fuel gas recovery system (the “HyJet Refinery Fuel Gas System”);
- (5) By no later than December 31, 2010, use all available information to complete an identification of each tie-in to the flare header and subheader(s), as applicable, within each process unit that vents gas to each flare (“Flare Header Mapping”), and update the Flare Header Mapping as more information becomes available ; and
- (6) Continue to operate in compliance with 40 C.F.R. § 60.18; and
- (7) Comply with the following emissions limits on the North and South Flares as interim limits, until the Title V permit

is revised to incorporate these interim limits pursuant to this Consent Decree for the time period prior to installation and operation of the flare gas recovery system;

- (a) H₂S: 50 lb/day cap over both flares;
- (b) SO₂: 668 tons per year (TPY) cap over both flares;
- (c) CO, NO_x, VOC, PM₁₀: not to exceed combined current permit limits in TPY and average pounds per hour (lb/hr) for GRP 0025 and GRP 0026 in Permit 2500-00001-V5; and
- (d) Maximum hourly limits for the following criteria pollutants at the North Flare:

<u>Pollutant</u>	<u>Limit</u>
CO	24.9 lb/hr
NO _x	4.6 lb/hr
VOC	9.4 lb/hr
PM ₁₀	0.6 lb/hr
SO ₂	97.7 lb/hr

b. Within one-hundred and eighty (180) days after the date listed in Appendix D for a Flaring Device, Murphy shall conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, Murphy may submit velocity calculations which demonstrate that the Flaring Device meets the performance specification required by 40 C.F.R. § 60.18. Murphy may utilize its demonstration of compliance with Refinery MACT I if such provides substantially equivalent assurance of NSPS compliance, as may then be determined by EPA after an opportunity for consultation with the appropriate Co-Plaintiff.

c. If prior to the termination of this Consent Decree, a Flaring Device becomes subject to NSPS Subpart Ja for a particular pollutant due to a “modification” (as that term is defined in the final Subpart Ja rule), the modified

affected facility shall be subject to and comply with NSPS Subpart Ja, in lieu of NSPS Subpart J, for that regulated pollutant to which a standard applies as a result of the modification.

d. If prior to the termination of this Consent Decree, a Flaring Device becomes subject to NSPS Subpart Ja due to a “reconstruction” (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.

50. Compliance with the Emission Limit at 40 C.F.R. § 60.104(a)(1).

a. Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases. For continuous or intermittent, routinely-generated refinery gases that are combusted in any Flaring Device, Murphy shall comply with the emission limit at 40 C.F.R. § 60.104(a)(1).

b. Non-Routinely Generated Gases. 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 emergency Malfunction are exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

51. Reserved.

J. Control of Acid Gas Flaring and Tail Gas Incidents

Summary: Murphy agrees to implement a program to investigate the cause of future Flaring Incidents, to take reasonable steps to correct the conditions that have caused or contributed to such Flaring Incidents, and to minimize the flaring of Acid Gas and Sour Water Stripper Gases. The procedures set forth in this Section V.J. require root cause analysis and corrective action for Acid Gas/Sour Water Stripper Gas Flaring Incidents and/or Tail Gas Incidents, and are also applied to the cause and correction of Hydrocarbon Flaring Incidents as provided in Section V.K.

52. Flaring History and Corrective Measures. Murphy has conducted a look-back analysis of Acid Gas Flaring Incidents and Tail Gas Incidents that occurred from 2005 through 2009, and has submitted a report on such incidents to EPA. By the Date of Entry, Murphy shall submit a corrective action report identifying such interim and/or long-term corrective actions, and a schedule for implementation, to minimize the likelihood of a recurrence of the root cause of a flaring event identified in the look-back analysis.

53. Acid Gas Flaring and Tail Gas Incidents. After the Date of Entry, Murphy shall investigate the cause of Acid Gas Flaring Incidents and Tail Gas Incidents under Paragraph 54 and take corrective action as set forth in Paragraph 55. Murphy shall continue to follow the investigation and corrective action procedure after termination of the Consent Decree or such other investigation and corrective action procedure that complies with 40 C.F.R. § 60.11(d), but the reporting and stipulated penalty provisions of this Section V.J. shall not apply after termination.

54. Investigation and Recordkeeping. No later than 45 days following the end of an Acid Gas Flaring Incident occurring after the Date of Entry, Murphy shall conduct an investigation into the Root Cause(s) of the incident and record the findings of the investigations, in a report. The report for each incident shall include, at a minimum, the following:

- a. The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a twenty-four (24) hour period or within subsequent, contiguous, non-overlapping twenty-four (24) hour periods, Murphy shall set forth the starting and ending dates and times of each release;
- b. An estimate of the quantity of SO₂ that was emitted and the calculations that were used to determine that quantity;
- c. The steps, if any, that Murphy took to limit the duration and/or quantity of SO₂ emissions associated with the Acid Gas Flaring Incident;
- d. A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;
- e. An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. The analysis shall discuss all reasonable alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If Murphy concludes that corrective

action(s) is (are) required under Paragraph 55, the report of the Acid Gas Flaring Incident in the Semi-Annual Report required by Paragraph 65 shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If Murphy concludes that corrective action is not required under Paragraph 55, the report shall explain the basis for that conclusion in the Semi-Annual Report;

f. A statement that: (a) specifically identifies each of the grounds for stipulated penalties in Paragraphs 57, 58 and 59 of this Consent Decree and describes whether the Acid Gas Flaring Incident falls under any of those grounds, provided, however, that Murphy may choose to submit with the Root Cause analysis a payment of stipulated penalties in the nature of settlement without the need to specifically identify the grounds for the penalty. Such payment of stipulated penalties shall not constitute an admission of liability, nor shall it raise any presumption whatsoever about the nature, existence or strength of Murphy's potential defenses; (b) if an Acid Gas Flaring Incident falls under Paragraph 59 of this Decree, describes which Subparagraph 59.a or 59.b applies and why; and (c) if an Acid Gas Flaring Incident falls under either Paragraph 58 or 59.b, states whether or not Murphy asserts a defense to the Acid Gas Flaring Incident, and if so, a description of the defense;

g. To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report required by this Paragraph 54, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 54.d and 54.e shall be completed; provided, however, that if Murphy has not completed its report or a series of reports containing the information required under this Paragraph within the 45-day time period (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of this Section V.J. shall apply, but Murphy shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Murphy's failure to complete the report required under this Paragraph within the time frame set forth.

Nothing in this Paragraph shall be deemed to excuse Murphy from its investigation, reporting, and corrective action obligations under this Section for any Acid Gas Flaring Incident which occurs after an Acid Gas Flaring Incident for which Murphy has requested an extension of time under this Paragraph 54.g; and

h. To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the completion of the report for the Acid Gas Flaring Incident required under this Paragraph, then, by no later than thirty (30) days after completion of the implementation of corrective action(s), Murphy shall supplement the report to identify the corrective action(s) taken and the dates of commencement and completion of implementation.

i. For the Superior Refinery only, prior to the date for completion of the caustic scrubber system specified in Paragraph 44.c, Murphy shall not be required to identify or implement corrective action(s) under this Paragraph and Paragraph 55 for Flaring Incidents unless more than 500 lbs. of SO₂ would have been released if the caustic scrubber system had been installed and in use.

55. Corrective Action.

a. In response to any Acid Gas Flaring Incident occurring after the Date of Entry, Murphy shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident.

b. EPA does not, by its agreement to the entry of this Consent Decree or by its failure to object to any corrective action that Murphy may take in the future, warrant or aver in any manner that any of Murphy's corrective actions in the future will result in compliance with the provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective actions or procedures under this Section V.J., Murphy shall remain solely responsible for non-compliance with the Clean Air Act and its implementing regulations. Nothing in this paragraph shall be construed as a

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

c. After a review of any report required by Paragraph 54 and submitted as required by Paragraph 65, EPA shall notify Murphy in writing of (1) any deficiencies in the corrective actions listed in the findings; and/or (2) any objections to the schedules of implementation of the corrective actions and explain the basis for EPA's objections. Murphy will implement an alternative or revised corrective action or implementation schedule based on EPA's comments. If a corrective action that EPA has identified as deficient has already commenced or is already completed, then Murphy is not obligated to implement corrective action identified by EPA for that Acid Gas Flaring Incident provided that Murphy completes the corrective action that it has identified and commenced. For purposes of this Paragraph 55.c., "commenced" means Murphy has (i) commenced actual physical construction on the corrective action, or (ii) completed the engineering design for the corrective action and has purchased or entered into a binding contractual obligation (with adverse consequences from its breach) to purchase equipment necessary to implement the corrective action. However, Murphy will be put on notice that such corrective action is deficient and not acceptable for remedying any subsequent, similar Root Cause(s) of any Acid Gas Flaring Incident. If EPA and Murphy cannot agree on the appropriate corrective action(s) or implementation schedule(s), if any, to be taken in response to a Root Cause, either party may invoke the Dispute Resolution provisions of Section XIV of the Consent Decree.

d. Nothing in this Section V.J. shall be construed to limit the right of Murphy to take such corrective actions as it deems necessary and appropriate immediately following an Acid Gas Flaring Incident or in the period during preparation and review of any reports required under this Paragraph.

56. Stipulated Penalties for Acid Gas Flaring Incidents. The provisions of Paragraphs 57 through 60 are to be used by EPA in assessing stipulated penalties for each Acid Gas Flaring Incident occurring after the Date of Entry of this Consent Decree and

by the United States in demanding stipulated penalties under this Section V.J. The provisions of Paragraphs 57 through 60 do not apply to Hydrocarbon Flaring Incidents.

57. The stipulated penalty provisions of Paragraph 66 shall apply to each Acid Gas Flaring Incident for which the Root Cause was one or more of the following acts, omissions, or events:

a. Error resulting from careless operation by the personnel charged with the responsibility for a SRP, TGU, or Upstream Process Unit;

b. Failure to follow written procedures; or

c. A failure of equipment that is due to a failure by Murphy to operate and maintain that equipment in a manner consistent with good engineering practice.

d. Root Causes Previously Addressed. The following Root Causes shall not provide a basis for asserting a Malfunction defense at the Superior Refinery, unless Murphy can demonstrate to EPA that such root cause(s) differs substantially from the Root Causes listed in this Paragraph 57.d, which were identified prior to Lodging of this Consent Decree pursuant to Paragraph 52: (1) hydrocarbons entering the SRP from the sour water stripper; (2) inadequate winterization of valve(s), piping, and/or instrumentation; (3) improperly sized electrical breakers that feed power to the SRP and amine unit; (4) sticking FCCU regeneration slide valve; (5) production of refinery fuel gas in excess of amine absorber capacity; and (6) improper gas-to-air ratio in the TGU feed heater.

58. If the Acid Gas Flaring Incident is not a result of one of the Root Causes identified in Paragraph 57, then the stipulated penalty provisions of Paragraph 66 shall apply if the Acid Gas Flaring Incident:

a. Results in emissions of SO₂ at a rate greater than twenty (20.0) pounds per hour continuously for three (3) consecutive hours or more and Murphy failed to act in accordance with its PMO Plan and/or to take any action during the Acid Gas Flaring Incident to limit the duration and/or quantity of SO₂ emissions associated with such incident; or

b. Causes the total number of Acid Gas Flaring Incidents in a rolling twelve (12) month period to exceed five (5).

59. With respect to any Acid Gas Flaring Incident not identified in Paragraphs 57 or 58, the following provisions shall apply:

a. First Time: If the Root Cause of the Acid Gas Flaring Incident was not a recurrence of the same Root Cause that resulted in a previous Acid Gas Flaring Incident that occurred since the Date of Entry, then:

i. If the Root Cause of the Acid Gas Flaring Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause shall be designated as an agreed-upon Malfunction for purposes of reviewing subsequent Acid Gas Flaring Incidents and the stipulated penalty provisions of Paragraph 66 shall not apply.

ii. If the Root Cause of the Acid Gas Flaring Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then Murphy shall implement corrective action(s) pursuant to Paragraph 55, and the stipulated penalty provisions of Paragraph 66 shall not apply.

b. Recurrence: If the Root Cause is a recurrence of the same Root Cause that resulted in a previous Acid Gas Flaring Incident that occurred since the Date of Entry, then Murphy shall be liable for stipulated penalties under Paragraph 66 unless:

i. The AG Flaring Incident resulted from a Malfunction; or

ii. The Root Cause previously was designated as an agreed-upon Malfunction under Paragraph 59.a.i; or

iii. The Acid Gas Flaring Incident had as its Root Cause the recurrence of a Root Cause for which Murphy had previously developed, or was in the process of developing, a corrective action plan and for which Murphy had not yet completed implementation.

60. Defenses. Murphy may raise the following affirmative defenses in response to a demand by the United States for stipulated penalties:

a. *Force Majeure*; or

b. Malfunction.

61. In the event a dispute under Paragraphs 56 through 60 is brought to the Court pursuant to the Dispute Resolution provisions of this Consent Decree, Murphy may also assert a Startup, Shutdown, and/or Malfunction defense (including for an individual SRP), but the United States shall be entitled to assert that such defenses are not available. If Murphy prevails in persuading the Court that the defenses of Startup, Shutdown, and/or Malfunction are available for Acid Gas Flaring Incidents under 40 C.F.R. § 60.104(a)(1), then Murphy shall not be liable for stipulated penalties for emissions resulting from such Startup, Shutdown, and/or Malfunction. If the United States prevails in persuading the Court that the defenses of Startup, Shutdown, and/or Malfunction are not available or applicable, then Murphy shall be liable for such stipulated penalties.

62. Other than for a Malfunction or *Force Majeure*, if no Acid Gas Flaring Incident occurs for a rolling 36-month period, then the stipulated penalty provisions of Paragraph 66 shall no longer apply. EPA may elect to reinstate the stipulated penalty provision if the applicable Murphy Refinery has an Acid Gas Flaring Incident which would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall thereafter apply to future Acid Gas Flaring Incidents and continue for the remaining life of this Consent Decree.

63. Emission Calculations.

a. Calculation of the Quantity of SO₂ Emissions Resulting from Acid Gas Flaring. For purposes of this Consent Decree, the quantity of SO₂ emissions resulting from an AG Flaring Incident shall be calculated by the following formula:

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

The quantity of SO₂ emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO₂ emitted shall be rounded to 10.1 tons.) For purposes of determining the occurrence of, or the total quantity of SO₂ emissions resulting from, an Acid Gas Flaring Incident that is comprised of intermittent Acid Gas Flaring, the quantity of SO₂ emitted shall be equal to the sum of the quantities of

SO₂ emitted during each 24-hour period starting when the Acid Gas was first flared.

b. Calculation of the Rate of SO₂ Emissions During Acid Gas Flaring. For purposes of this Consent Decree, the rate of SO₂ emissions resulting from an Acid Gas Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

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

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO₂ per hour, the emission rate shall be rounded to 20.0 pounds of SO₂ per hour; for a calculation that results in an emission rate of 20.05 pounds of SO₂ per hour, the emission rate shall be rounded to 20.1.)

c. Meaning of Variables and Derivation of Multipliers Used in the Equations in this Paragraph 63:

ER	=	Emission Rate in pounds of SO ₂ per hour
FR	=	Average Flow Rate to AG Flaring Device(s) during AG Flaring Incident in standard cubic feet per hour
TD	=	Total Duration of AG Flaring Incident in hours
ConcH ₂ S	=	Average Concentration of Hydrogen Sulfide in gas during AG Flaring Incident (or immediately prior to AG Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H ₂ S/scf gas)
8.44×10^{-5}	=	$[\text{lb mole H}_2\text{S}/379 \text{ scf H}_2\text{S}][64 \text{ lbs SO}_2/\text{lb mole H}_2\text{S}][\text{Ton}/2000 \text{ lbs}]$
0.169	=	$[\text{lb mole H}_2\text{S}/379 \text{ scf H}_2\text{S}][1.0 \text{ lb mole SO}_2/\text{lb mole H}_2\text{S}][64 \text{ lb SO}_2/1.0 \text{ lb mole SO}_2]$

The flow of gas to the Acid Gas Flaring Device(s) (“FR”) shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration (“ConcH₂S”) shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being

flared, by direct measurement by tutwiler or draeger tube analysis, or by any other method approved by EPA or the applicable Co-Plaintiff. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment. The report required to be prepared under Paragraph 54 shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

64. Tail Gas Incidents.

a. Investigation, Reporting, Corrective Action, and Stipulated Penalties. For Tail Gas Incidents, Murphy shall follow the same investigative, reporting, corrective action, and assessment of stipulated penalty procedures as those set forth in Paragraphs 54 through 62 for Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including scheduled and unscheduled Shutdowns of a Claus Sulfur Recovery Plant. Murphy shall continue to follow the Tail Gas Incident investigation and corrective action procedure after termination of the Consent Decree, but the reporting and stipulated penalty provisions of this Subsection shall not apply after termination.

b. Calculation of the Quantity of SO₂ Emissions Resulting from a Tail Gas Incident. For the purposes of this Consent Decree, the quantity of SO₂ emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

- i. If Tail Gas is combusted in an SRP incinerator, the SO₂ emissions are calculated using the methods outlined in Paragraph 63; or
- ii. If Tail Gas exceeding the 250 ppmvd SO₂ limit is emitted from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{Inc.}]_i [Conc. SO_2 - 250]_i [0.169 \times 10^{-6}]_i [(20.9 - \% O_2)/20.9]_i$$

Where:

ER_{TGI} = Emissions from Tail Gas at the SRP incinerator, SO₂ lb per 24-hour period

- TD_{TGI} = Total Duration (number of hours) when the incinerator CEMS exceeded 250 ppmvd SO₂ corrected to 0% O₂ on a rolling twelve hour average, in each 24 hour period of the Incident
- i = Each hourly average
- FR_{Inc.} = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident
- Conc. SO₂ = Each actual 12 hour rolling average SO₂ concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O₂, for each hour of the Incident.
- % O₂ = O₂ concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident
- 0.169×10^{-6} = [lb mole of SO₂ / 379 SO₂] [64 lbs SO₂ / lb mole SO₂] [1 x 10⁻⁶]

Standard conditions = 68 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO₂ data point is inaccurate or not available or a flow meter for FR_{Inc} does not exist or is inoperable, then estimates will be used based on best engineering judgment.

65. Semi-Annual Reporting. Within thirty (30) calendar days after the end of the first semi-annual period after the Date of Entry of the Consent Decree, and semi-annually on each subsequent January 31 and July 31 thereafter, Murphy shall submit a semi-annual report that includes copies of each and every report of all Acid Gas Flaring Incidents and Tail Gas Incidents, as required in Paragraph 54, that Murphy was required to prepare during the previous six month period (*e.g.*, July to December). Each Semi-Annual report shall also include a summary of the incidents including the following:

- a. Date;
- b. Summary of Root Cause(s);
- c. Duration;
- d. Amount of SO₂ released;
- e. Any associated penalties for each incident;
- f. Corrective Action completed; and

g. A list of all Acid Gas Flaring Incidents and Tail Gas Incidents for which corrective actions are still outstanding.

Such Semi-Annual report shall also include a summary analysis of any trends identified by Murphy in the number, Root Cause, types of corrective action, or other relevant information regarding Acid Gas and Tail Gas Incidents during the previous six-month period. Murphy shall submit the Semi-Annual Flaring Incident(s) reports as part of the Semi-Annual Progress Reports required pursuant to Section VIII (Reporting and Recordkeeping).

66. Nothing in this Section shall be understood to subject Murphy to stipulated penalties for Hydrocarbon Flaring Incidents under Paragraph 67. Murphy shall be liable for the following stipulated penalties for violations of the requirements of Section V.J. For each violation, the amounts identified below apply on the first day of violation, and are calculated for each incremental period of violation (or portion thereof):

a. Acid Gas Flaring Incidents for which Murphy is liable under this Section V.J., an amount calculated as follows:

Tons of SO ₂ Emitted in Acid Gas Flaring Incident	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 24 hours
5 Tons or Less	\$500 per ton	\$750 per ton	\$1000 per ton
Greater than 5 tons, but less than or equal to 15 tons	\$1,200 per ton	\$1,800 per ton	\$2,300 per ton, up to, but not exceeding, \$32,500 in any one calendar day
Greater than 15 tons	\$1,800 per ton, up to, but not exceeding, \$32,500 in any one calendar day	\$2,300 per ton, up to, but not exceeding, \$32,500 in any one calendar day	\$32,500 in any one calendar day

i. For purposes of calculating stipulated penalties pursuant to this subparagraph, only one cell within the matrix shall apply. Thus, for example, for an Acid Gas Flaring Incident in which the Acid Gas Flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of SO₂ are emitted, the penalty would be \$17,400 (14.5 x \$1,200); the penalty would not be \$13,900 [(5 x \$500) + (9.5 x \$1200)].

ii. For purposes of determining which column in the table set forth in this subparagraph applies under circumstances in which Acid Gas Flaring occurs intermittently during an Acid Gas Flaring Incident, the Acid Gas Flaring shall be deemed to commence at the time that the Acid Gas Flaring that triggers the initiation of an Acid Gas Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of Acid Gas Flaring within the Acid Gas Flaring Incident. Thus, for example, for Acid Gas Flaring within an Acid Gas Flaring Incident that (i) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (ii) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (iii) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further Acid Gas Flaring occurs within the Acid Gas Flaring Incident, the AG Flaring within the AG Flaring Incident shall be deemed to last 12.5 hours – not 1.5 hours – and the column for Acid Gas Flaring of “greater than 3 hours but less than or equal to 24 hours” shall apply.

b. For failure to timely submit any report required by Section V.J., or for submitting any report that does not conform substantially to its requirements:

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
Days 1-30	\$750
Days 31-60	\$1,500
Over 60 days	\$3,000

c. For those corrective action(s) which Murphy (i) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 55; or (ii) is required to undertake following dispute resolution, then, from the date of EPA’s receipt of Murphy’s Semi-Annual report under Paragraph 65 of this

Consent Decree until the date that either: (i) a final agreement is reached between EPA and Murphy regarding the corrective action; or (ii) a court order regarding the corrective action is entered, Murphy shall be liable for stipulated penalties as follows:

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
Days 1-120	\$50
Days 121-180	\$100
Days 181 - 365	\$300
Over 365 days	\$3,000

or

1.2 times the economic benefit resulting from Murphy's failure to implement the corrective action(s).

d. For failure to complete any corrective action under Paragraph 55 of this Consent Decree in accordance with the schedule for such corrective action agreed to by Murphy or imposed on Murphy pursuant to the dispute resolution provisions of this Consent Decree (with any such extensions thereto as to which EPA and Murphy may agree in writing):

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
Days 1-30	\$1,000
Days 31-60	\$2,000
Over 60 days	\$5,000

K. Control of Hydrocarbon Flaring Incidents

67. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, Murphy shall follow the same investigative, reporting, and corrective action procedures as those set forth in Paragraphs 53, 54 and 55 for Acid Gas Flaring Incidents; provided however, that in lieu of analyzing possible corrective actions under Paragraph 54 and taking interim and/or long-term corrective action under Paragraph 55 for a Hydrocarbon Flaring Incident attributable to the Startup or Shutdown of a unit that Murphy has previously analyzed under this Paragraph, Murphy may identify such prior analysis when submitting the report required under this Paragraph. Murphy shall submit the Hydrocarbon Flaring Incident(s) reports as part of the Semi-annual Progress Reports required pursuant to Section VIII (Reporting and Recordkeeping).

a. For the Meraux Refinery only, prior to the date for completion of the interim measures and installation of equipment specified in Paragraph 49.a.ii(4), Murphy shall not be required to identify or implement corrective action(s) under this Paragraph and Paragraph 55 for Hydrocarbon Flaring Incidents unless more than 500 lbs. of SO₂ would have been released if such interim measures and equipment had been installed and in use.

b. Murphy shall continue to follow the investigative and corrective action procedures after termination of this Consent Decree at both the Meraux and Superior Refineries, but the reporting provisions of this Subsection shall not apply after termination.

L. Benzene Waste Operations NESHAP Program Enhancements

Summary: In addition to complying with all applicable requirements of 40 C.F.R. Part 61, Subpart FF (“Benzene Waste Operations NESHAP,” “BWON” or “Subpart FF”), the Murphy Refineries agree to undertake the measures set forth in this Section V.L. to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

68. Current Compliance Status. The Murphy Refineries will utilize the following compliance options:

a. On and after the Date of Entry, the Meraux Refinery will comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (hereinafter referred to as the “6 BQ compliance option”);

b. The Superior Refinery has reported a Total Annual Benzene Quantity (“TAB”) of less than 10 Mg/yr.

69. Refinery Compliance Status Changes. Commencing on the Date of Entry of the Consent Decree and continuing through termination, the Murphy Refineries will not change the compliance status of any Refinery from the 6 BQ compliance option to the 2 Mg compliance option. If at any time from the Date of Lodging of the Consent Decree through its termination the Superior Refinery is determined to have a TAB equal to or greater than 10 Mg/yr, the Superior Refinery will utilize the 6 BQ compliance option. All changes must be undertaken in accordance with the regulatory provisions of the Benzene Waste Operations NESHAP.

70. One-Time Review and Verification of Each Refinery's TAB: Phase One of the Review and Verification Process.

a. Meraux Refinery. By no later than 180 days after the Date of Entry, the Meraux Refinery will complete a review and verification its TAB and compliance with the 6 BQ compliance option. The Meraux Refinery's Phase One review and verification process will include, but is not be limited to:

i. an identification of each waste stream that is required to be included in the TAB (*e.g.*, slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes (that meet the definition of waste under Subpart FF));

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 consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3); provided, however, that previous analytical data or documented knowledge of waste streams may be used in accordance with 40 C.F.R. § 61.355(c)(2), for streams not sampled;

iv. an identification of whether or not each TAB stream is controlled consistent with the requirements of Subpart FF; and

v. an identification of each stream sent to the sour water stripper.

b. Superior Refinery. By no later than 180 days after the Date of Entry, the Superior Refinery will complete a review and verification that its TAB is less than 10 Mg/yr. The Superior Refinery's Phase One review and verification process will include, but is not be limited to:

- i. an identification of each waste stream that is required to be included in the TAB (*e.g.*, slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes (that meet the definition of waste under Subpart FF));
- 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 consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3); provided, however, that previous analytical data or documented knowledge of waste streams may be used in accordance with 40 C.F.R. § 61.355(c)(2), for streams not sampled;
- iv. an identification of whether or not each TAB stream is controlled consistent with the requirements of Subpart FF; and
- v. an identification of each stream sent to the sour water stripper.

71. By no later than 90 days after completion of the Phase One review and verification process, each of the Murphy Refineries will submit to EPA and the applicable state agency a Benzene Waste Operations NESHAP Compliance Review and Verification Report (“BWON Compliance Review and Verification Report”) that sets forth the results of Phase One, including but not limited to the items identified in Paragraph 70.a (Meraux Refinery) and Paragraph 70.b (Superior Refinery), as well as the schematic required to be prepared under Paragraph 95. With respect to Paragraph 70.a.v and Paragraph 70.b.v., the BWON Compliance Review and Verification Report shall contain the following information for streams sent to the sour water stripper:

- a. Identification of each stream sent to the stripper (*i.e.*, equipment number), including identification of streams newly-identified during the Phase One review and verification process required by Paragraph 70;

- b. The concentration of ammonia and sulfur compounds in ppm by weight at the location where the stream exits the process unit component or storage tank prior to handling or treatment;
- c. Description of the basis for the determination of the concentration of ammonia and sulfur compounds for each stream (*e.g.*, material balance data, sampling, etc.);
- d. A schematic or diagram (showing equipment numbers) that identifies the origin of each stream, including process wastewater streams, upstream of the sour water stripper. Such schematic or diagram shall identify each waste management unit, storage tank, and process unit or process unit component upstream of the sour water stripper;
- e. An assessment of whether and how each tank, surface impoundment, container, drain system or oil-water separator, if any are present upstream of the stripper, compares to the physical control requirements listed in 40 C.F.R. §§ 61.343 - 61.347;
- f. A determination of whether or not the stream is managed in an enclosed system from its source to the sour water stripper. For purposes of this provision, the identification of the “enclosed system” should distinguish between streams that are transferred by hard-piping to the sour water stripper, and those that are transferred by any other “enclosed system” (together with a description of the non-hard-piped enclosed system), or conveyed to the stripper by other means. These should be identified in the schematic required by Paragraph 95; and
- g. The benzene content in any non-enclosed, non-sour water streams (*i.e.*, contains ammonia or sulfur compounds at concentrations of less than 10 ppm by weight) shall be included in the refinery’s TAB.

72. One-Time Review and Verification of the Murphy Refineries’ TAB: Phase Two of the Review and Verification Process. Based on EPA’s review of the BWON Compliance Review and Verification Reports and after an opportunity for consultation with the applicable state agency, EPA may select up to twenty (20) additional waste streams at each of the Murphy Refineries for sampling for benzene concentration. The Murphy Refineries will conduct the required sampling and submit the

results to EPA within sixty (60) days of receipt of EPA's request. The Murphy Refineries will use the results of this additional sampling to reevaluate the TAB and the uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification Report, as needed. To the extent that EPA requires the Murphy Refineries to sample a waste stream as part of the Phase Two review that the Murphy Refineries sampled and included as part of its Phase One review, the Murphy Refineries may average the results of such sampling. The Murphy Refineries will submit an amended BWON Compliance Review and Verification Report to EPA (with a copy to the applicable state agency) within one-hundred twenty (120) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA. This amended BWON Compliance Review and Verification Report will supersede and replace the originally-submitted BWON Compliance Review and Verification Report. In lieu of an amended BWON Compliance Review and Verification Report, Murphy may elect to submit a supplementary report that identifies all changes or differences identified during the Phase One sampling (Supplementary Phase Two BWON Verification Report). If either Murphy Refinery submits a Supplementary Phase Two Report, the originally-submitted BWON Compliance Review and Verification Report plus the Supplementary Phase Two BWON Verification Report shall constitute the final report. If Phase Two sampling is not required by EPA, the originally-submitted BWON Compliance Review and Verification Report will constitute the final report.

73. Amended TAB Reports. If the results of the BWON Compliance Review and Verification Report indicate that either of the Murphy Refineries' most recently-filed TAB reports does not satisfy the requirements of Subpart FF, the relevant Murphy Refinery will submit, by no later than one-hundred twenty (120) days after submittal of the BWON Compliance Review and Verification Report, an amended TAB report to the applicable state agency. If an amended TAB is provided as part of either of the Murphy Refinery's BWON Compliance Review and Verification Report, this will be deemed the amended TAB report for purposes of Subpart FF reporting to EPA.

74. Implementation of Actions Necessary to Correct Non-Compliance.

a. Superior Refinery. If the results of the BWON Compliance Review and Verification Report indicate that the Superior Refinery has a TAB of

over 10 Mg/yr, the Superior Refinery will submit to EPA and the WDNR, by no later than one-hundred eighty (180) days after submission of the BWON Compliance Review and Verification Report, a plan that identifies with specificity: (a) the actions it will take to ensure that the Refinery's TAB remains below 10 Mg/yr for 2010 and each calendar year thereafter; or (b) a compliance strategy and schedule that the Superior Refinery will implement to ensure that it complies with the 6 BQ compliance option as soon as practicable but by no later than June 30, 2011, if it cannot ensure a consistent TAB below 10 Mg/yr. In the event that new controls are required to be installed at the Superior Refinery to comply with the 6 BQ option, Murphy may propose for EPA and WDNR approval, a compliance plan for installation of such controls, which shall be completed as soon as practicable, but in no event longer than three (3) years from the date of submittal of the corrective action plan.

b. Meraux Refinery. If the results of the BWON Compliance Review and Verification Report indicate that the Meraux Refinery is not in compliance with the 6BQ compliance option, the Meraux Refinery shall submit to EPA and the LDEQ, by no later than one-hundred eighty (180) days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity the compliance strategy and schedule that the Meraux Refinery will implement to ensure that the Meraux Refinery complies with the 6 BQ compliance option as soon as practicable.

75. Implementation of Actions Necessary to Correct Non-Compliance: Review and Approval of Plans. Any plans submitted pursuant to Paragraph 74 will be subject to the approval of, disapproval of, or modification by EPA, after an opportunity for consultation with the applicable state agency. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, the Murphy Refineries will submit to EPA and the applicable state agency a revised plan that responds to all identified deficiencies. Unless EPA responds to the Murphy Refineries' revised plan within sixty (60) days, the Murphy Refineries will implement the proposed plan.

76. Implementation of Actions Necessary to Correct Non-Compliance: Certification of Compliance. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 74-75 to come into compliance with the applicable compliance option, the Murphy Refineries will submit its certification and a report to EPA and the applicable state agency that the Murphy Refineries comply with their respective compliance options under the Benzene Waste Operations NESHAP.

77. Carbon Canisters. The Murphy Refineries will comply with the requirements of Paragraphs 78-88 at all locations where (a) carbon canister(s) is (are) utilized as a control device under the Benzene Waste Operations NESHAP. To the extent that any applicable state or local rule, regulation, or permit contains more stringent definitions, standards, limitations, or work practices than those set forth in Paragraphs 78-88, then those definitions, standards, limitations or work practices will apply instead.

78. Installation of Dual Carbon Bed Systems Operated in Series. By no later than 180 Days after the Date of Entry, the Murphy Refineries will replace all single carbon canisters or dual canister systems in parallel with dual carbon bed systems operated in series.

79. Report Certifying Installation. By no later than 240 Days after the Date of Entry, the Murphy Refineries will submit a report to EPA and the applicable state agency certifying the completion of the installations required by Paragraph 78. The report will include a list of all locations within each Refinery where dual carbon bed systems were installed, the installation date of each dual carbon bed system, the date that each dual carbon bed system was put into operation, whether the Murphy Refineries are monitoring for breakthrough for VOCs or benzene, and the concentration of the monitored parameter that each Refinery uses as its definition of “breakthrough.” The Murphy Refineries must provide written notification to EPA and the applicable state agency at least thirty (30) days prior to changing either the parameter that it is monitoring and/or the concentration that it defines as “breakthrough.”

80. Prohibition of Use of Single Bed Canisters. Except as expressly provided in Paragraph 85, the Murphy Refineries will not use single bed carbon canisters for any

new units or installations that require vapor control pursuant to the Benzene Waste Operations NESHAP at any of its Refineries.

81. Definition of “Breakthrough” in Dual Carbon Bed Systems. For dual carbon bed systems in series and depending upon the parameter that each Murphy Refinery decides to monitor, “breakthrough” between the primary and secondary carbon bed is defined as any reading equal to or greater than either 50 ppm volatile organic compounds (“VOC”) or 1 ppm benzene. At its option, each Murphy Refinery may utilize a concentration for “breakthrough” that is lower than 50 ppm VOC or 1 ppm benzene.

82. Monitoring for Breakthrough in Dual Carbon Bed Systems. By no later than the later of 180 Days after the Date of Entry, or seven (7) days after the installation of any new dual carbon bed system, the Murphy Refineries will start to monitor for breakthrough between the primary and secondary carbon beds at times when there is actual flow to the dual carbon bed system, in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and will monitor the outlet of the secondary carbon bed on a monthly basis or at the design replacement interval of the secondary carbon bed (whichever is less) to verify the proper functioning of the system. In the event there is no flow to the dual carbon bed system, the Refinery shall document the lack of flow and remonitor at the next monitoring period.

83. Replacing Canisters in Dual Carbon Bed Systems. The Murphy Refineries will replace the original primary carbon bed (or route the flow to an appropriate alternative control device) immediately when breakthrough is detected. The original secondary carbon bed will become the new primary carbon bed and a fresh carbon bed will become the secondary bed unless both the primary and secondary carbon beds are replaced. For purposes of this Paragraph, “immediately” will mean eight (8) hours for canisters of 55 gallons or less and twenty-four (24) hours for canisters greater than 55 gallons. If a Refinery chooses to define breakthrough for primary carbon bed replacement at 5 ppm or lower VOC, that Refinery may replace primary canisters of 55 gallons or less within twenty-four (24) hours of detecting breakthrough. Where breakthrough is detected on a Saturday, Sunday, or federal holiday, replacement must occur within 48 hours or on the next business day, whichever is sooner.

84. In lieu of replacing the primary carbon bed immediately, the Murphy Refineries may elect to monitor the secondary carbon bed on the day breakthrough between the primary and secondary carbon bed is identified and each calendar day thereafter. This daily monitoring will continue until the primary carbon bed is replaced. If the monitored parameter (either benzene or VOC) is detected above background levels at the outlet of the secondary carbon bed during this period of daily monitoring, both carbon beds must be replaced within eight (8) hours.

85. Limited Use of Single Bed Canisters. The Murphy Refineries may utilize properly-sized single bed canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For single bed canisters operated as part of a single canister system, breakthrough is defined for purposes of this Decree as any reading of VOC or benzene above background. Beginning no later than the Date of Entry, the Murphy Refineries will monitor for breakthrough from single bed carbon canisters each day there is actual flow to the carbon canister.

86. Replacing Canisters in Single Bed Canister Systems. The Murphy Refineries will replace the single bed carbon canister with a fresh carbon canister or with fresh carbon, discontinue flow or route the stream to an alternate, appropriate device immediately when breakthrough is detected. For this Paragraph, “immediately” will mean eight (8) hours for single bed canisters of 55 gallons or less and twenty-four (24) hours for single bed canisters greater than 55 gallons. Where breakthrough is detected on a Saturday, Sunday, or federal holiday, replacement must occur within 48 hours or on the next business day, whichever is sooner. If flow to a single bed canister is discontinued under this Paragraph, such canister may not be placed back into BWON vapor control service until it has been appropriately regenerated or replaced.

87. Maintaining Canister Supplies. The Murphy Refineries will maintain a supply of fresh carbon or carbon canisters at each Refinery at all times.

88. Records relating to Canisters. Records for the requirements of Paragraphs 78-87 will be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

89. Annual Review. By no later than 180 days after the Date of Entry, the Murphy Refineries will modify existing management of change procedures or develop a new program to annually review process and project information for each Refinery,

including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory during the life of the Consent Decree.

90. Laboratory Audits.

a. The Murphy Refineries will conduct audits of all laboratories that perform analyses of the Murphy Refineries' benzene waste NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed.

b. By no later than one year after the Date of Entry, the Murphy Refineries will complete audits of all of the laboratories they use to perform analyses of benzene waste NESHAP samples. From and after one year from the Date of Entry, the Murphy Refineries will audit any new laboratory to be used for analyses of benzene waste NESHAP samples prior to such use.

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

d. The Murphy Refineries may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure that its Refineries comply with this Consent Decree and Subpart FF rest solely with the Murphy Refineries.

e. In lieu of conducting laboratory audits as required by this Paragraph, the Murphy Refineries may elect to use a laboratory that is accredited under the National Environmental Laboratory Accreditation Program ("NELAP") no more often than on an alternating basis (*i.e.*, following a laboratory audit performed as required by this Paragraph, Murphy may use a NELAP accredited laboratory in lieu performing its own audit pursuant to this Paragraph). For the Meraux Refinery only, the laboratory shall be accredited by both NELAP and the Louisiana Environmental Laboratory Accreditation Program ("LELAP").

91. Benzene Spills. For each spill at a Murphy Refinery after Date of Entry, each Murphy Refinery shall review the spill to determine if benzene waste, as defined by Subpart FF, was generated. For each spill involving the release of more than 10 pounds

of benzene in a 24-hour period, the Refinery: (i) shall include benzene waste generated by the spill in the relevant Refinery's TAB, as required by 40 C.F.R. § 61.342; and (ii) shall account for such benzene waste in accordance with the applicable compliance option calculations, as appropriate under Subpart FF, unless the benzene waste is properly managed in controlled waste management units at the Refinery.

92. Training. By no later than the 90 days after the Date of Entry, the Murphy Refineries will develop and begin implementation of annual (*i.e.*, once each calendar year) training for all employees asked to draw benzene waste samples.

93. Additional Training:

a. By no later than the Date of Entry, the Murphy Refineries will complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste Operations NESHAP.

b. By no later than 6 months after the Date of Entry, the Meraux Refinery will complete an initial training program regarding these procedures identified pursuant to Paragraph 93.a for all operators assigned to this equipment. Comparable training will also be provided to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, “refresher” training in these procedures will be performed at a minimum on a three (3) year cycle.

c. The Superior Refinery will comply with the provisions of Paragraph 93.a and 93.b if and when its TAB reaches 10 Mg/yr, or in the event that the Superior Refinery increases its refining capacity and is required to utilize the 6 BQ compliance option pursuant to Paragraph 69. The Superior Refinery will propose a schedule for training at the same time that it proposes a plan, pursuant to Paragraph 74, that identifies the compliance strategy and schedule that the Superior Refinery will implement to come into compliance with the 6 BQ compliance option.

94. Training: Contractors. As part of the Murphy Refineries’ training programs, the Murphy Refineries must ensure that the employees of any contractors hired to perform the requirements of Paragraphs 92 and 93 are properly trained to implement all applicable provisions of this Section V.L.

95. Benzene-Containing Waste Management: Schematics. The Murphy Refineries will include in the BWON Compliance Review and Verification Report required to be submitted to EPA and the applicable state agency pursuant to Paragraph 71 schematics for each Refinery that:

- a. depict the waste management units (including sewers) that handle, store, and transfer wastewater, sour water and waste, slop, or off-spec oil streams;
- b. identify the control status of each waste management unit; and
- c. show how the waste streams are transferred within the Refinery.

The Murphy Refineries will include with the schematics a quantification of all uncontrolled waste, slop, or off-spec oil movements at the Refinery. If requested by EPA, the Murphy Refineries will submit to EPA within ninety (90) days of the request, revised schematics regarding the characterization of the wastewater, sour water, and waste, slop, off-spec oil streams and the appropriate control standards.

96. Waste/Slop/Off-Spec Oil Management: Non-Aqueous Benzene Waste Streams. At the Meraux Refinery, and at the Superior Refinery if the TAB equals or exceeds 10 Mg/year, all waste management units handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, will meet the applicable control standards of Subpart FF.

97. Waste/Slop/Off-Spec Oil Management: Aqueous Benzene Waste Streams. For purposes of calculating each Refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), the Murphy Refineries will include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments will be made to such calculations to avoid the double-counting of benzene. For purposes of complying with the 6 BQ compliance option, all waste management units handling benzene waste streams will either meet the applicable control standards of Subpart FF or will have their uncontrolled benzene quantity count toward the applicable 6 BQ limit.

98. Benzene Waste Operations Sampling Plans: General. By no later than 180 days after Date of Entry, the Murphy Refineries will submit to EPA and the applicable state agency benzene waste operations sampling plans designed to describe the sampling

of benzene waste streams that the Murphy Refineries will undertake to estimate quarterly and annual TABs for the Superior Refinery, or quarterly and annual uncontrolled benzene quantities under the 6 BQ compliance option for the Meraux Refinery.

99. Benzene Waste Operations Sampling Plans: Content Requirements.

a. The Superior Refinery (TAB under 10 Mg/yr). The sampling plan will identify:

- i. all waste streams that contributed 0.05 Mg/yr or more at the point of generation to the previous year's TAB calculations; and
- ii. the proposed sampling locations and calculation methods to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 102;
- iii. the proposed sampling locations on the schematic developed pursuant to Paragraph 95; or
- iv. the items identified under Paragraph 99.b.i-iii if it is determined that the TAB equals or exceeds 10 Mg/yr and it is then subject to the 6 BQ Compliance Option under Paragraph 69.

The sampling plan will require the Superior Refinery to take and have analyzed, in each Calendar Quarter, at least three representative samples from all waste streams identified in Paragraph 99.a.i and all locations identified in Paragraph 99.a.ii.

b. The Meraux Refinery (6 BQ Compliance Option). The sampling plans will identify:

- i. all uncontrolled waste streams that count toward the 6 BQ calculation and contain greater than 0.05 Mg/yr of benzene at the point of generation;
- ii. the proposed sampling locations and calculation methods to be used in calculating projected quarterly and calendar year annual uncontrolled benzene quantity calculations under the terms of Paragraph 102; and
- iii. the proposed sampling locations on the schematic developed pursuant to Paragraph 95.

The sampling plan will require the Meraux Refinery to take, and have analyzed, in each Calendar Quarter, at least three representative samples from all waste streams identified in Paragraph 99.b.i and all locations identified in Paragraph 99.b.ii.

c. Compliance Plan under Paragraph 74. If the Superior Refinery must implement a compliance plan under Paragraph 74, the Superior Refinery may submit a proposed sampling plan that does not include sampling points in locations within the Refinery that are subject to changes proposed in the compliance plan. To the extent that the Superior Refinery believes that such sampling will not be effective until it completes implementation of the compliance plan, by no later than sixty (60) days prior to the due date for the submission of the sampling plan, the Superior Refinery may request EPA approval for postponing its submitting a sampling plan and commencing sampling until the compliance plan is completed. Should EPA disapprove, the Superior Refinery will submit a plan by the due date in Paragraph 75.

100. Benzene Waste Operations Sampling Plans: Timing for Implementation. The Murphy Refineries will implement the sampling required under each sampling plan during the first full Calendar Quarter after the Murphy Refineries submit the plan for each Refinery. The Murphy Refineries will continue to implement the sampling plan (i) unless and until EPA disapproves the plans; or (ii) unless and until the Murphy Refineries modify the plans, with EPA's approval, under Paragraph 101.

101. Benzene Waste Operations Sampling Plans: Modifications.

a. Changes in Processes, Operations or Other Factors. If changes in processes, operations or other factors lead any of the Murphy Refineries to conclude that a proposed or approved sampling plan may no longer provide an accurate basis for estimating the relevant Murphy Refinery's quarterly or calendar year annual TABs or benzene quantities under Paragraph 102, then by no later than ninety (90) days after the relevant Murphy Refinery determines that the plan no longer provides an accurate measure, the relevant Murphy Refinery will submit to EPA and the applicable state agency a revised plan for EPA approval. In the first full Calendar Quarter after submitting the revised plan, the relevant

Murphy Refinery will implement the revised plan. The relevant Murphy Refinery will continue to implement the revised plan unless and until EPA disapproves the revised plan after an opportunity for consultation with the applicable state agency.

b. Requests for Modifications. After two (2) years of implementing a sampling plan, any Murphy Refinery may submit a request to EPA for approval, with a copy to the applicable state agency, to revise its sampling plan, including sampling frequency. The relevant Murphy Refinery will not implement any proposed revisions under this Subparagraph until EPA provides its approval after an opportunity for consultation with the applicable state agency.

102. Quarterly and Annual Estimations of TABs and Uncontrolled Benzene Quantities. At the end of each Calendar Quarter and based on sampling results and approved flow calculations, the Superior Refinery will calculate a quarterly and projected annual TAB; and the Meraux Refinery will calculate its quarterly and projected calendar year annual uncontrolled benzene quantity. In making these calculations, the Murphy Refineries will use the average of the three samples collected at each sampling location. If these calculations do not identify any potential exceedances of the benzene quantities identified in Paragraph 103, the Murphy Refineries will submit these calculations in the reports due under Part VIII of this Decree.

103. Corrective Measures: Basis. Except as set forth in Paragraph 104, the Murphy Refineries will implement corrective measures if:

a. For the Superior Refinery, the quarterly TAB equals or exceeds 2.5 Mg or the projected annual TAB equals or exceeds 10 Mg for the then-current compliance year. If required to comply with the 6 BQ compliance option pursuant to this Consent Decree, the Superior Refinery shall comply with the requirements of Paragraph 103.b.

b. For the Meraux Refinery, the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected calendar year annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year.

104. Exception to Implementing Corrective Measures. If a Murphy Refinery can identify the reason(s) in any particular Calendar Quarter that the quarterly and

projected calendar year annual calculations result in benzene quantities in excess of those identified in Paragraph 103 and states that it does not expect such reason or reasons to recur, then that Murphy Refinery may exclude the benzene quantity attributable to the identified reason(s) from the projected calendar year quantity. If that exclusion results in no potential exceedances of the benzene quantities identified in Paragraph 103, that Murphy Refinery will not be required to implement corrective measures under Paragraph 103, and that Murphy Refinery may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 106. At any time that a Murphy Refinery proceeds under this Paragraph, the refinery will describe how it satisfied the conditions in this Paragraph in the reports due under Part VIII of this Consent Decree.

105. Compliance Assurance Plan. If a Murphy Refinery meets one or more conditions in Paragraph 103 (except as provided under Paragraph 104), then by no later than sixty (60) days after the end of the Calendar Quarter in which one or more of the conditions were met, that Murphy Refinery will submit a compliance assurance plan to EPA for approval, with a copy to the applicable state agency. In that compliance assurance plan, the refinery will identify the cause(s) of the potentially-elevated benzene quantities, all corrective actions that the refineries has taken or plan to take to ensure that the cause(s) will not recur, and the schedule of actions that the refinery will take to ensure that the subject refinery complies with the Benzene Waste Operations NESHAP for the calendar compliance year. The relevant Murphy Refinery will implement the plan unless and until EPA disapproves the plan after an opportunity for consultation with the applicable state agency.

106. Third-Party Assistance. If at least one of the conditions in Paragraph 103 exists at a particular refinery in two consecutive quarters, and the provisions of Paragraph 104 do not apply, then that refinery will retain a third-party contractor during the following quarter to undertake and complete a TAB study and compliance review at that refinery within 90 days (*i.e.*, by the end of the following Calendar Quarter). By no later than ninety (90) days after the refinery receives the results of the third-party TAB study and compliance review, that refinery will submit such results and a plan and schedule for remedying any deficiencies identified in the third-party study and compliance review to

EPA and the applicable state agency. The refinery will implement the proposed plan unless and until EPA disapproves the plan after an opportunity for consultation with the applicable state agency.

107. Miscellaneous Measures. The provisions of this Paragraph will apply to the Meraux Refinery by no later than 180 days after the Date of Entry, and to the Superior Refinery by no later than the date it submits and certifies compliance with the compliance strategy under Paragraph 74:

- a. Conduct monthly visual inspections of all Subpart FF water traps within the Refinery's individual drain systems;
- b. Identify and mark all area drains that are segregated stormwater drains as defined in 40 C.F.R. § 61.341;
- c. On a weekly basis, visually inspect all Subpart FF conservation vents on process sewers for detectable leaks; reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, a Murphy Refinery may submit a request to the applicable EPA Region to modify the frequency of the inspections. Nothing in this Paragraph (c) will require the Murphy Refineries to monitor conservation vents on fixed roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has occurred, the Murphy Refineries may elect to visually inspect such indicators on a monthly basis and, if flow is then detected, the Murphy Refineries will then visually inspect that indicator on a weekly basis for four (4) weeks. If flow is detected during any two (2) of those four (4) weeks, the Murphy Refineries will install a carbon canister on that vent until appropriate corrective action(s) can be implemented to prevent such flow; and
- d. Manage and treat all groundwater remediation wastes in accordance with 40 C.F.R. § 61.342(e).

108. Recordkeeping and Reporting Requirements for this Section V.L: Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Part VIII (Recordkeeping and Reporting). At the times specified in the

applicable provisions of this Section V.L, the Murphy Refineries will submit, as and to the extent required, the following reports to EPA and the applicable state agency:

- a. BWON Compliance Review and Verification Report (§71), as amended, if necessary (§72);
- b. Amended TAB Report, if necessary (§73);
- c. Plan for the Superior Refinery to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (§71), or through sampling (§99);
- d. Compliance certification, if necessary (§76);
- e. Report certifying the completion of the installation of dual carbon bed systems (§79);
- f. Schematics of waste/slop/off-spec oil movements (§95), as revised, if necessary;
- g. Sampling Plans (§99), and revised Sampling Plans, if necessary (§101); and
- h. Plan to ensure that uncontrolled benzene does not equal or exceed, as applicable, 6 Mg/yr (§105).

109. Recordkeeping and Reporting Requirements for this Section V.L: As Part of Either the Reports Required under 40 C.F.R. § 61.357 or the Progress Report Procedures of Part VIII (Recordkeeping and Reporting). The Murphy Refineries will submit the following information as part of the information submitted in either the quarterly report required pursuant to 40 C.F.R. § 61.357(d)(6) and (7) (“Section 61.357 Reports”) or in the reports due pursuant to Part VIII of this Decree:

- a. Sampling Results under Paragraphs 101 and 102. The report will include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the quarterly and projected calendar year TAB (for the Superior Refinery) and the quarterly and projected calendar year uncontrolled benzene quantity (for the Meraux Refinery);
- b. Training. Initial and/or subsequent training conducted in accordance with Paragraphs 92-94; and

c. Laboratory Audits. Initial and subsequent audits conducted pursuant to Paragraph 90, through the Calendar Quarter for which the quarterly report is due, including in each such report, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit. If a Murphy Refinery has elected to use a NELAP accredited lab, the report shall identify each laboratory used and shall include documentation of NELAP accreditation for each laboratory used.

110. At any time after two years of reporting pursuant to the requirements of Paragraph 109, the Murphy Refineries may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Paragraph 109. This request may include a request to report the previous year's projected calendar year TAB and uncontrolled benzene quantity in the Part VIII report due on January 31 of each year, rather than semi-annually on January 31 and July 31 of each year. The Murphy Refineries will not change the due dates for its reports under Paragraph 109 unless and until EPA approves the Murphy Refineries' request after an opportunity for consultation with the applicable state agency.

111. Certifications Required in this Section V.L. Certifications required under this Section V.L will be made in accordance with the provisions of Part VIII.

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

Summary: In addition to complying with all applicable Leak Detection and Repair ("LDAR") regulations, the Murphy Refineries agree to the measures set forth in this Section V.M, including audits of the components in light liquid and gaseous service at each of its refineries to determine compliance with LDAR requirements and to correct any areas of non-compliance, as well as refinery-wide measures to minimize or eliminate fugitive emissions from components in light liquid and gaseous service.

112. As of the Date of Entry, each existing "process unit" (as defined by 40 C.F.R. § 60.591) at each of the Murphy Refineries shall become an "affected facility" for purposes of 40 C.F.R. Part 60, Subpart GGG. Except as specifically identified in this Paragraph, each process unit shall become subject to and comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of this Section as of the Date of Entry. By no later than two (2) years after the Date of Entry, the following process units

constructed prior to 1983 shall become subject to and comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of this Section:

a. Superior Refinery: #1 Duf; #2 Duf; #1 Hydrobon; #2 Hydrobon; Alkylation Plant; Boiler House; Crude; FCCU; Merox; Platformer; Sulfur Plant; Tail Gas Treatment; Tank Farm.

b. Meraux Refinery: Vacuum; Gasoline and Kerosene Caustic Treater; Oily Water Stripper; #1 Sour Water Stripper; ROSE; #1 Amine; Merox; #2 FCCU and Gas Con; Diesel Hydrotreater; Alkylation; Crude; Platformer; Platformer Regenerator; Hydrobon; Tank Farm.

113. In order to minimize or eliminate fugitive emissions of volatile organic compounds (“VOCs”), benzene, volatile hazardous air pollutants (“VHAPs”), and organic hazardous air pollutants (“HAPs”) from equipment in light liquid and/or in gas/vapor service, the Murphy Refineries shall implement the enhancements at Paragraph 114 through Paragraph 143 to the LDAR programs under Title 40 of the Code of Federal Regulations, Part 60, Subpart GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC. The terms “equipment,” “in light liquid service” and “in gas/vapor service” shall have the definitions set forth in the applicable provisions of Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC.

114. Written Refinery-Wide LDAR Program. By no later than 90 days after Date of Entry, the Murphy Refineries shall develop and maintain a written, Refinery-wide program for compliance with all applicable federal and state LDAR regulations. The Murphy Refineries shall implement this program on a Refinery-wide basis and update such program as may be necessary to ensure continuing compliance through and after termination. The Refinery-wide program shall include at a minimum:

a. A facility-wide leak rate goal that includes specific process-unit leak rate goals that will be a target for achievement;

b. An identification of all equipment in light liquid and/or in gas/vapor service in the Murphy Refineries that has the potential to leak VOCs, HAPs, VHAPs, and benzene;

c. Procedures for identifying leaking equipment within process units;

- d. Procedures for repairing and keeping track of leaking equipment;
- e. Procedures (*e.g.*, a Management of Change program) to ensure that components subject to LDAR requirements that are added to each facility during scheduled maintenance and construction activities are integrated into the LDAR program;
- f. A process for evaluating new and replacement LDAR equipment that includes active consideration of equipment or techniques that will minimize leaks and/or eliminate chronic leakers; and
- g. A definition of “LDAR Personnel” (to include all refinery employees and contractors having any LDAR responsibilities) and a process for accountability, and identifying for each facility the person or position that will be the “LDAR Coordinator” as required by Paragraph 135. Consistent with the Murphy Refineries’ management authority, this person shall have the responsibility to implement improvements to the LDAR program.

115. By no later than 90 days after Date of Entry, the Murphy Refineries shall submit a copy of each refinery’s initial written LDAR Program to EPA and to the applicable state agency. EPA shall review and may comment on the written program after an opportunity for consultation with the applicable state agency. The Murphy Refineries shall address EPA’s comments (if any). A description of program changes shall be maintained on-site during the term of the Consent Decree but need not be submitted to the agencies.

116. Training. The Murphy Refineries will commence implementation of the following training programs:

- a. By no later than 180 days after the Date of Entry, for any employee newly-assigned to LDAR responsibilities, the Murphy Refineries shall require that each such employee satisfactorily complete LDAR training prior to beginning any LDAR work;
- b. By no later than 180 days after the Date of Entry, for all the Murphy Refineries’ employees assigned specific LDAR responsibilities as a primary job function, such as monitoring technicians, database users, QA/QC personnel and the LDAR Coordinator, the Murphy Refineries shall provide and

require completion of annual LDAR refresher training and initial training before the employee begins LDAR responsibilities;

c. By no later than 180 days after the Date of Entry, for all employee operations and maintenance personnel, the Murphy Refineries shall provide and require completion of an initial training program that includes instruction on aspects of LDAR that are relevant to the person's duties. Refresher training for these personnel shall be performed every three years; and

d. If contract employees are performing LDAR work, the Murphy Refineries shall maintain copies of all training records, as required under this Paragraph, for the contract employees.

117. LDAR Audits. The Murphy Refineries shall implement the Refinery-wide audits set forth in Paragraphs 118-122 to ensure each Refinery's compliance with all applicable LDAR requirements. The LDAR audits shall include but not be limited to:

- a. Performing comparative monitoring;
- b. Reviewing records to ensure that monitoring and repairs were completed in the required periods;
- c. Reviewing component identification procedures, tagging procedures and data management procedures; and
- d. Observing the LDAR technicians' calibration and monitoring techniques.

During the LDAR audits, leak rates shall be calculated for each process unit where comparative monitoring was performed.

118. Initial Compliance Audit. By no later than six (6) months after the Date of Entry, the Meraux Refinery shall engage a third-party contractor to undertake a refinery-wide audit of its compliance with the LDAR regulations to include, at a minimum, each of the audit requirements set forth in Paragraphs 117-121. By no later than twelve (12) months after the Date of Entry, the Superior Refinery shall engage a third-party contractor to undertake a refinery-wide audit of its compliance with the LDAR regulations to include, at a minimum, each of the audit requirements set forth in Paragraphs 117-121. Within 45 days of completion of the each audit and by no later than 12 months after the Date of Entry (for the Meraux Refinery) and 18 months from the

Date of Entry (for the Superior Refinery), Murphy shall report to EPA and the applicable state agency any areas of non-compliance identified as a result of its refinery-wide audit and submit in writing a proposed compliance schedule for correcting the non-compliance. Within 60 days of completing each audit, the Murphy Refineries shall certify to EPA that the refinery: is in compliance; has completed related corrective action (if necessary); and/or is on a compliance schedule.

119. Third-Party Audits.

a. The Meraux Refinery shall retain an independent contractor(s) with expertise in LDAR program requirements to perform a third-party audit of its LDAR program at least once every four years.

b. The Superior Refinery shall retain an independent contractor(s) with expertise in LDAR program requirements to perform a third-party audit of its LDAR program at least once every four years. After the first third-party audit conducted pursuant to this Consent Decree, the Superior Refinery may thereafter elect to conduct internal audits only in lieu of subsequent third-party audits under this Paragraph 119, provided the first third-party audit demonstrates that the following criteria are met:

i. Continued good comparative monitoring is maintained at the Superior Refinery, as defined by an audit leak rate that is no more than one standard deviation greater than the historic average leak rate of 1.78% (as documented in the 2004 and 2006 third party LDAR audits conducted under the 2002 Consent Decree); and

ii. No more than a 1% cumulative error in all components overlooked (specifically, missed monitoring events, missed repair deadlines, and overlooked valves and pumps) from the Superior Refinery's LDAR program.

If Murphy elects to conduct internal audits in lieu of subsequent third-party audits, Murphy shall submit a report to EPA and WDNR demonstrating that the criteria of Paragraph 119.b.i-ii are satisfied by no later than 90 days prior to the date that the second third-party audit is required to be initiated at the Superior Refinery. This report shall also include a notification of Murphy's intent to

conduct internal audits in lieu of subsequent third party audits. If EPA, after review of Murphy's report and after consultation with WDNR, disagrees that the criteria of Paragraph 119.b.i-ii are satisfied, EPA shall notify Murphy that subsequent third-party audits are still required under this Paragraph. If Murphy disagrees with EPA's determination, it shall invoke Dispute Resolution within thirty (30) days of Murphy's receipt of EPA's notification.

120. Internal Audits. The Murphy Refineries shall conduct internal audits of its LDAR programs by sending personnel familiar with LDAR program requirements from one Refinery to audit the other Refinery. The Murphy Refineries shall complete the first internal LDAR audit by no later than two years after the third-party audit is conducted according to Paragraph 119. Internal audits of each of the Murphy Refineries shall be conducted at least once every four years thereafter. The Murphy Refineries may elect to retain third-parties to undertake these internal audits, provided that an audit occurs every two (2) years.

121. Audit Every Two Years. To ensure that an audit at each of the Murphy Refineries occurs every two years, third-party and internal audits shall be separated by two years. If Murphy makes the demonstration required by Paragraph 119.b, internal audits shall be conducted every two years at the Superior Refinery.

122. Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to Paragraphs 118-120 identify any areas of noncompliance, the Murphy Refineries shall implement all steps necessary: to correct the area(s) of non-compliance as soon as practicable, and to prevent a recurrence of the cause of the noncompliance to the extent practicable. Until two years after termination of this Consent Decree, the Murphy Refineries shall retain the audit reports generated pursuant to Paragraphs 118-120 and shall maintain a written record of the corrective actions that the Refinery takes in response to any deficiencies identified in any audits. In the semi-annual report submitted pursuant to the provisions of Part VIII of this Consent Decree (Recordkeeping and Reporting) for the first two Calendar Quarters of each year, the Murphy Refineries shall submit the audit reports and corrective action records for audits performed and actions taken during the previous calendar year.

123. Internal Leak Definition for Valves and Pumps. The Murphy Refineries shall utilize the internal leak definitions in Paragraphs 124-125 for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.

124. Leak Definition for Valves. By no later than 180 Days after the Date of Entry, the Murphy Refineries shall utilize an internal leak definition of 500 ppm VOCs for all of the Refineries' valves, excluding pressure relief devices.

125. Leak Definition for Pumps. By no later than 180 Days after the Date of Entry, the Murphy Refineries shall utilize an internal leak definition of 2,000 ppm VOCs for all of the Refineries' pumps.

126. Reporting of Valves and Pumps Based on the Internal Leak Definitions. For regulatory reporting purposes, the Murphy Refineries may continue to report leak rates in valves and pumps against the applicable regulatory leak definition or use the lower, internal leak definitions specified in Paragraphs 124-125. The Murphy Refineries will identify in its report which definition is being used.

127. Recording, Tracking, Repairing and Re-Monitoring Leaks Based on the Internal Leak Definitions. By no later than 180 days after the Date of Entry, the Murphy Refineries shall record, track, repair and remonitor all leaks in excess of the internal leak definitions in Paragraphs 124-125. The Murphy Refineries shall have five (5) days to make an initial repair attempt and remonitor the component under Paragraph 128 and thirty (30) days either to make repairs and remonitor leaks that are greater than the internal leak definitions but less than the applicable regulatory leak definitions or to place the component on the delay of repair list according to Paragraph 139. All records of repairs, repair attempts, and remonitoring shall be maintained for the life of the Consent Decree.

128. Initial Attempt at Repair of Valves. Beginning no later than 180 days after the Date of Entry, the Murphy Refineries shall promptly make an "initial attempt" at repair on any valve that has a reading greater than 200 ppm of VOCs, excluding control valves and other valves that LDAR personnel are not authorized to repair. The Murphy Refineries, or its designated contractor, shall re-monitor the leaking valve within five (5) days of identification. If the re-monitored leak reading is below the internal leak

definition in Paragraph 124, no further action will be necessary. If the re-monitored leak reading is greater than the internal leak definition in Paragraph 124, the Murphy Refineries shall repair the leaking valve according to the requirements under Paragraph 127. All records of repairs, repair attempts, and remonitoring shall be maintained for the life of the Consent Decree.

129. LDAR Monitoring Frequency: Pumps. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for pumps becomes applicable pursuant to the provisions of Paragraph 125, the Murphy Refineries shall begin monitoring pumps in light liquid service, other than dual-mechanical seal pumps or pumps vented to a control device, at the lower leak definition on a monthly basis.

130. LDAR Monitoring Frequency: Valves. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for valves becomes applicable pursuant to the provisions of Paragraph 124, the Murphy Refineries shall monitor valves, other than difficult-to-monitor or unsafe-to-monitor valves, on a quarterly basis.

131. Monitoring after Turnaround or Maintenance. The Murphy Refineries will have the option of monitoring affected valves and pumps within process unit(s) after completing a documented maintenance, startup, or shutdown activity without having leaks, detected at concentrations greater than the leak definitions required by this Consent Decree but less than regulatory leak definitions, count as a scheduled monitoring activity, provided the Murphy Refineries monitor according to the following schedule:

- a. For events involving 250 or fewer valves and pumps, monitor within one week of the documented maintenance, startup or shutdown activity;
- b. For events involving greater than 250 but fewer than 500 valves and pumps, monitor within two (2) weeks of the documented maintenance, startup, or shutdown activity; and
- c. For events involving greater than 500 and up to 1000 valves and pumps, monitor within four (4) weeks of the documented maintenance, startup, or shutdown activity.

132. Electronic Storing and Reporting of LDAR Data. The Murphy Refineries have and will continue to maintain an electronic database for recordkeeping and reporting of LDAR data.

133. Electronic Data Collection During LDAR Monitoring and Transfer. Beginning no later than the Date of Entry, the Murphy Refineries shall use dataloggers and/or electronic data collection devices during LDAR monitoring. The Murphy Refineries, or its designated contractor, shall use its best efforts to transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database of Paragraph 132. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, and instrument and operator identification. The Murphy Refineries may use paper logs where necessary or more feasible (*e.g.*, small rounds, remonitoring, or when dataloggers are not available or broken), and shall record, at a minimum, the identification of the technician undertaking the monitoring, the date, the daily start and end time for monitoring, and the identification of the monitoring equipment. The Murphy Refineries shall transfer any manually recorded monitoring data to the electronic database of Paragraph 132 within seven days of monitoring. The Murphy Refineries shall maintain the LDAR information required by this paragraph for the life of the Consent Decree, and shall provide such LDAR information in the original electronic format upon request by EPA or the applicable state agency.

134. QA/QC of LDAR Data. Beginning no later than the Date of Entry, the Murphy Refineries shall develop and implement procedures to ensure a quality assurance/quality control (“QA/QC”) review of all data generated by LDAR monitoring technicians. The Murphy Refineries shall ensure that monitoring data collected by monitoring technicians is reviewed for QA/QC by the appropriate refinery personnel daily. At least once per Calendar Quarter, the Murphy Refineries shall QA/QC the monitoring data collected during the quarter which shall include, but not be limited to, an evaluation of the number of components monitored per technician, time between monitoring events, and abnormal data patterns. Results from LDAR monitoring shall be reported to the appropriate operating supervisors daily.

135. LDAR Personnel. By no later than the Date of Entry, the Murphy Refineries shall establish a program that will hold LDAR personnel accountable for LDAR performance. The Murphy Refineries shall maintain a position responsible for LDAR management, with the authority to implement improvements (“LDAR Coordinator”).

136. Adding New Valves and Pumps.

a. Management of Change. By no later than the Date of Entry, the Murphy Refineries shall establish a tracking program for maintenance records (*e.g.*, a Management of Change program) to ensure that valves and pumps added to the Refineries during maintenance and construction are integrated into the LDAR program.

b. Newly-Installed Valves. By no later than two years from the Date of Entry, the Murphy Refineries shall:

i. Ensure that all newly installed valves (other than sampling and instrumentation valves in service on piping with a diameter of 5/8” or less) are fitted, prior to installation, with a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology; and

ii. Modify its purchasing procedures to ensure that each refinery evaluates the availability of valves and valve packing that meets the requirements for a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology at the time that the valves, valve packing and/or equipment is acquired for the relevant Murphy refinery.

c. Commercial Unavailability Exception. Murphy shall not be required to utilize a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology to replace or repack a valve if a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology is commercially unavailable, in accordance with the provisions of Appendix E.

d. If Murphy exercises the Commercial Unavailability Exception under this Paragraph for any valve, then Murphy shall:

i. Include the following in the Semi-Annual Reports required under this Section: (1) identify each valve for which it could not comply

with the requirement to replace or repack the valve with a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology; (2) all of the information and documentation specified in Appendix E for each valve claimed to be commercially unavailable; and (3) identify the commercially-available valve or packing technology that comes closest to meeting the requirements for a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology.

ii. Murphy shall install the valve(s) or packing technology it has identified to be commercially available that comes closest to meeting Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology requirements.

e. Ongoing Assessment of Availability. Murphy may use a prior determination of Commercial Unavailability of a valve or valve packing pursuant to this Paragraph and Appendix E for a subsequent Commercial Unavailability claim for the same valve or valve packing (or valve or valve packing in the same or similar service), provided that the previous determination was completed within the preceding 12-month period. After one year, Murphy must conduct a new assessment of the availability of a valve or valve packing meeting Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology requirements.

137. Calibration. The Murphy Refineries shall conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, App. A, EPA Reference Test Method 21, and shall maintain records of the calibrations for the life of the Consent Decree.

138. Calibration Drift Assessment. Beginning no later than the Date of Entry, the Murphy Refineries shall conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. The Murphy Refineries shall conduct the calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, the Murphy Refineries shall remonitor all valves that were monitored since the last calibration that had a reading greater than

100 ppm and shall remonitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm.

139. Delay of Repair. Beginning no later than the Date of Entry, the Murphy Refineries shall implement the following requirements for any equipment that it is allowed to place on the “delay of repair” list for repair under 40 C.F.R. § 60.482-9(a):

a. For all equipment:

i. Require sign-off by the appropriate operating supervisor that the piece of equipment is technically infeasible to repair without a process unit shutdown, before the component is eligible for inclusion on the “delay of repair” list; and

ii. Include equipment that is placed on the delay of repair list in the Murphy Refineries’ regular LDAR monitoring.

b. For valves: For valves (other than control valves) leaking at a rate of 10,000 ppm or greater that cannot otherwise be repaired, the Murphy Refineries shall use “drill and tap” or similarly effective repair methods to repair such leaking valves, rather than placing the valve on the “delay of repair” list, unless the Murphy Refineries can demonstrate that there is a safety, mechanical or major environmental concern posed by repairing the leak in this manner. The Murphy Refineries shall make two repair attempts (if necessary) using “drill and tap” or similarly effective repair method within 30 days of identification of the leak. After two unsuccessful attempts to repair a leaking valve under this Paragraph 139.b, the Murphy Refineries may place the leaking valve on its “delay of repair” list.

c. In addition, for the Superior Refinery only:

i. Limit on Delay of Repair: By no later than the Date of Entry, no more than 0.20% of all valves may be on the delay of repair list at any one time.

ii. Any valve on the delay of repair list that will be replaced with a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology at the next process unit shutdown may be excluded from equipment subject to the Limit on Delay of Repair, as applicable.

Any such valves not so replaced shall be subject to the Limit on Delay of Repair.

d. As provided in 40 C.F.R. § 60.482-9(f), if a component has not leaked for two (2) consecutive months, it may be removed from the delay of repair list.

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

141. Chronic Leaker Program. The Murphy Refineries shall replace or repack all chronically leaking non-control valves at the next process unit turnaround. A chronic leaker shall be defined as any component which leaks above 10,000 ppm in any two quarters between refinery turnarounds during the life of the Consent Decree.

142. Reporting. Consistent with the requirements of Part VIII (Recordkeeping and Reporting), the Murphy Refineries shall include the information set forth below in the designated quarterly progress report(s):

a. First Semi-Annual Progress Report Due under the Consent Decree.

At the later of: (i) the semi-annual progress report due under the Consent Decree; or (ii) the first semi-annual progress report in which the requirement becomes due, the Murphy Refineries shall include the following:

- (1) Copies of the written Refinery-wide LDAR Program required by Paragraph 114;
- (2) A certification of the implementation of the lower leak definitions and monitoring frequencies in Paragraphs 123, 124, 125, 129 and 130;
- (3) A certification of the implementation of the “initial attempt at repair” program of Paragraph 128;
- (4) A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 134;

- (5) An identification of the individual at each Refinery responsible for LDAR performance as required by Paragraph 114.g;
- (6) A certification of the development of a tracking program for new valves and pumps added during maintenance and construction as required by Paragraph 136;
- (7) A certification of the implementation of the calibration drift assessment procedures of Paragraph 138;
- (8) A certification of the implementation of the “delay of repair” procedures of Paragraph 139; and
- (9) A certification of the implementation of the “chronic leaker” program of Paragraph 141.

b. Semi-Annual Progress Report for the First Two Calendar Quarters of Each Year. In the semi-annual progress report that the Murphy Refineries submit pursuant to Part VIII for the first two Calendar Quarters of each year, the Murphy Refineries shall include an identification of each audit that was conducted pursuant to the requirements of Paragraphs 118-120 in the previous calendar year including an identification of the auditors, a summary of the audit results, and a summary of the actions that the Murphy Refineries took or intend to take to correct all deficiencies identified in the audits.

143. Reports due under 40 C.F.R. § 63.654. In each report due under 40 C.F.R. § 63.654, the Murphy Refineries shall include:

- a. Training. Information identifying the measures that the Murphy Refineries took to comply with the provisions of Paragraph 116; and
- b. The following information on LDAR monitoring and repairs:
 - i. the number of valves and pumps present in each process unit during the quarter;
 - ii. the number of valves and pumps monitored in each process unit;
 - iii. an explanation for missed monitoring if the number of valves and pumps present exceeds the number of valves and pumps monitored during the quarter;

- iv. the number of valves and pumps found leaking;
- v. the number of “difficult to monitor” pieces of equipment monitored;
- vi. a list of all equipment currently on the “delay of repair” list and the date each component was placed on the list;
- vii. the number of repair attempts not completed promptly according to Paragraph 128 or completed within 5 days pursuant to Paragraph 127;
- viii. the number of repairs not completed within thirty (30) days or placed on the delay of repair list according to Paragraph 127 and/or Paragraph 139; and
- ix. the number of chronic leakers that do not get repaired according to the requirements of Paragraph 141.

N. Incorporation of Consent Decree Requirements into Federally Enforceable Permits

144. Obtaining Permit Limits for Consent Decree Emission Limits That Are Effective Upon Date of Entry. Except as set forth below, by no later than 180 days after the Date of Entry, Murphy shall submit applications to the relevant permitting authority to incorporate the emission limits and standards required by this Consent Decree that are effective as of the Date of Entry into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. For the consolidated Title V construction and operating permit program in the State of Louisiana, by no later than 180 days after the Date of Entry, Murphy shall submit to LDEQ the appropriate applications, amendments and/or supplements to incorporate as an applicable requirement the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry, to ensure that the emission limits and standards that are effective as of the Date of Entry shall survive the termination of this Consent Decree in accordance with Paragraph 147A. If another application for a permit or permit modification (or, for the Meraux Refinery, appropriate application, amendment and/or supplement) is due for the same emissions unit within 365 days of the

Date of Entry, Murphy shall submit both such applications by the application/renewal date. Upon issuance of such permits or in conjunction with such permitting, Murphy shall file any applications necessary to incorporate the requirements of those permits into the Title V permit for the relevant Murphy Refinery.

145. Obtaining Permit Limits For Consent Decree Emission Limits That Become Effective After Date of Entry. Except as set forth below, as soon as practicable, but in no event later than 180 days after the effective date or establishment of any emission limits and standards required by this Consent Decree other than those effective as of the Date of Entry, Murphy shall submit applications to the relevant permitting authority to incorporate those emission limits and standards into federally enforceable minor or major new source review permits, or other permits (other than Title V permits) which are federally enforceable. For the consolidated Title V construction and operating permit program in the State of Louisiana, by no later than 180 days after the effective date or establishment of any emission limits and standards required by this Consent Decree other than those effective as of the Date of Entry, Murphy shall submit to LDEQ the appropriate applications, amendments and/or supplements to incorporate as an applicable requirement the emissions limits and standards required by the Consent Decree that are effective after of the Date of Entry, to ensure that the emission limits and standards that are effective after of the Date of Entry shall survive the termination of this Consent Decree in accordance with Paragraph 147A. Upon issuance of such permit or in conjunction with such permitting, Murphy shall file any applications necessary to incorporate the requirements of that permit into the Title V permit for the relevant Murphy Refinery when issued.

146. Mechanism for Title V Incorporation. The Parties agree that the incorporation of any emission limits or other standards into the Title V permit for the Refinery as required by Paragraphs 144 and 145 shall be in accordance with the applicable state or local Title V rules.

147. Construction Permits. Murphy agrees to obtain all required, federally enforceable permits for the construction of the pollution control technology and/or the installation of equipment necessary to implement the requirements of this Consent Decree.

147A. Obligations that Shall Survive Consent Decree Termination. The requirements imposed by the following provisions of this Consent Decree shall survive termination of the Consent Decree under Section XVII:

a. Emission Limits and Standards. The following Consent Decree requirements shall constitute emission limits and standards that shall survive termination of the Consent Decree by virtue of being incorporated into federally-enforceable permits:

i. Subparagraphs 12.c and 14.b, c, and d (as applicable), and Paragraph 15 in Subsection V.A (*FCCU NO_x limits*);

ii. Paragraphs 16, 17, and 18 in Subsection V.B (*FCCU SO₂ limits*);

iii. Paragraphs 20 and 21 (if applicable as of the date of termination) in Subsection V.C (*FCCU PM limits*);

iv. Paragraphs 24, 25 (if applicable as of the date of termination), and 27 in Subsection V.D (*FCCU CO limits*);

v. Paragraphs 28 and 29 in Subsection V.E (*FCCU Regenerator limits*);

vi. Paragraphs 31, 34, 35, 36, and 37 in Subsection V.F (*Heater and Boiler limits*);

vii. Subparagraph 41.a and Paragraph 42 in Subsection V.G (*NSPS for Heaters and Boilers and SO₂ controls*);

viii. Paragraphs 43 and 44.a (*NSPS for SRPs*), Subparagraph 44.b (*PSD for SRP*) and Subparagraph 45.a in Subsection V.H (*NSPS for sulfur pit*); and

ix. Paragraphs 48, 49.a, and 50 in Subsection V.I (*NSPS for flaring devices*).

b. Certain Other Requirements.

i. Subparagraph 46.a (as specified therein) in Subsection V.H (*PMO Plans*);

ii. Paragraph 53 (as specified therein) and Subparagraph 64.a (as specified therein) in Subsection V.J (*Corrective action for acid gas and tail gas flaring incidents*);

iii. Paragraph 67 (as specified therein) in Subsection V.K (*Corrective action for hydrocarbon flaring incidents*);

iv. All of Subsection V.N (*Incorporation of CD Requirements into permits*); and

v. All of Section VI (*Emission Credit Generation*).

c. Agreement Required for Changes to Surviving Requirements. In the event Murphy should ever seek, after termination of this Consent Decree, to delete or modify an emission limit or standard surviving termination by virtue of Subparagraph 147A.a, such emission limit or standard shall not be deleted or modified unless EPA and the applicable Co-Plaintiff shall have first agreed in writing to the deletion or modification. In the event that Murphy should ever seek to delete or modify any of the certain other requirements surviving termination pursuant to Subparagraph 147A.b, such requirement shall not be deleted or modified unless EPA and the applicable Co-Plaintiff shall have first agreed in writing to the deletion or modification.

VI. EMISSION CREDIT GENERATION

Summary: This Part addresses the use of emissions reductions that will result from the installation and operation of the controls required by this Consent Decree (“CD Emissions Reductions”) for the purpose of emissions netting or emissions offsets.

148. General Prohibition. Murphy shall not generate or use any NO_x, SO₂, PM, VOC, or CO emissions reductions, or apply for and obtain any emission reduction credits, that result from any projects conducted or controls utilized pursuant to this Consent Decree as netting reductions or emissions offsets in any PSD, major non-attainment, and/or synthetic minor New Source Review permit or permit proceeding.

149. Exception to General Prohibition. Notwithstanding the general prohibition set forth in Paragraph 148, Murphy may use 25 tons per year of NO_x and 40 tons per year of SO₂ from CD Emissions Reductions as credits or offsets in any PSD,

major non-attainment and/or minor NSR permit or permit proceeding occurring after the Date of Lodging of the Consent Decree with respect to the Meraux Refinery, provided that the new or modified emissions units at which credits are being used: (1) is being constructed or modified for purposes of compliance with clean fuels requirements applicable to marine fuels, consistent with MARPOL Annex VI requirements; and (2) has a federally enforceable, non-Title V Permit (*i.e.*, a permit issued pursuant to the State of Louisiana's consolidated Title V construction and operating permit program) that reflects the following requirements that are applicable to the pollutants for which credits are being used:

- a. For heaters and boilers, a limit of 0.027 lbs. NO_x per million BTU on a 3-hour rolling average basis;
- b. For heaters and boilers, a limit of 0.10 grains of H₂S per dry standard cubic foot of fuel gas or 20 ppmvd SO₂ corrected to 0% O₂ both on a 3-hour rolling average;
- c. For heaters and boilers, no liquid or solid fuel firing authorization;
- d. For FCCUs, a limit of 20 ppmvd NO_x corrected to 0% O₂ or less on a 365-day rolling average basis;
- e. For FCCUs, a limit of 25 ppmvd SO₂ corrected to 0% O₂ or less on a 365-day rolling average basis;
- f. For FCCUs, a limit of 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis; and
- g. For SRPs, a limit of 100 ppmvd SO₂ at 0% oxygen on a 24-hour rolling average basis.

150. Conditions Precedent to Utilizing Exception to General Prohibition.

Utilization of the exception set forth in Paragraph 149 to the general prohibition against the generation or utilization of CD Emissions Reductions set forth in Paragraph 148 is subject to the following conditions:

- a. Under no circumstances shall Murphy use CD Emissions Reductions for netting and/or offsets prior to the time that actual CD Emissions Reductions have occurred;

b. CD Emissions Reductions may be used only at the Murphy Refinery that generated them;

c. The CD Emissions Reductions provisions of this Consent Decree are for purposes of this Consent Decree only and neither Murphy nor any other entity may use CD Emissions Reductions for any purpose, including in any subsequent permitting or enforcement proceeding, except as provided herein; and

d. Murphy still shall be subject to all federal, state and local regulations applicable to the PSD, major non-attainment and/or minor NSR permitting process.

151. Outside the Scope of the General Prohibition. Nothing in this Part is intended to prohibit Murphy from seeking to, or LDEQ or WDNR (as applicable) from denying Murphy's request to:

a. utilize or generate emissions credits from refinery units that are covered by this Consent Decree to the extent that the proposed credits or reductions represent the difference between the emissions limitations set forth in or required by this Consent Decree for these refinery units and the more stringent emissions limitations that Murphy may elect to accept for these refinery units in a permitting process; or

b. utilize or generate emissions credits or reductions on refinery units that are not subject to an emission limitation pursuant to this Consent Decree; or

c. utilize or generate emissions credits or reductions from heaters and boilers on which Qualifying Controls have been installed, provided that such reductions are not included in Murphy's demonstration of compliance with the requirements of Paragraphs 31, 34, and 35 of this Consent Decree; or

d. utilize emissions reductions pursuant to this Consent Decree for the Meraux or Superior Refinery's compliance with any rules or regulations designed to address regional haze or the non-attainment status of any area (excluding PSD and Non-Attainment New Source Review Rules, but including, for example, RACT rules) that apply to the particular Refinery. Notwithstanding the preceding sentence, Murphy will not trade or sell any emissions reductions obtained under this Consent Decree.

For purposes of subparagraph a. of this Paragraph, where an emissions limitation established or required by this Consent Decree is expressed in terms of a numeric limit on a unit's emissions (*e.g.*, in pounds per million Btu or parts per million), Murphy may utilize the difference between the numeric emissions limitation set forth in or required by this Consent Decree and the more stringent numeric emissions limitation Murphy has elected to accept under a permitting process for the unit. Where an emissions limitation set forth or required by this Consent Decree is not expressed in terms of numeric limit on the unit, Murphy may not so utilize or generate emissions credits from the project or control required by this Consent Decree.

**VII. SUPPLEMENTAL ENVIRONMENTAL AND OTHER PROJECTS AND
ADDITIONAL INJUNCTIVE RELIEF**

Summary: In addition to the injunctive relief required by Part V, Murphy will implement a Supplemental Environmental Project and additional injunctive relief and special projects to further reduce emissions and/or provide other environmental and community benefits.

A. SUPPLEMENTAL ENVIRONMENTAL PROJECT

152. In accordance with the requirements and schedule set forth in this Part VII, Murphy shall spend no less than \$1.5 million to implement the Supplemental Environmental Project (“SEP”) as provided in Paragraphs 153-156 below.

153. Meraux API Separators Emission Reduction Supplemental Environmental Project. By no later than 12 months after the Date of Entry, Murphy shall complete a SEP designed to reduce emissions from the two above-ground API Separators at the Meraux Refinery by 1780 pounds per year of VOCs (including benzene) and other pollutants, as follows:

- a. For the two above-ground API Separators, Murphy shall:
 - i. By no later than 180 Days after the Date of Entry, complete the engineering and design of planned upgrades;
 - ii. By no later than 1 year after the Date of Entry, upgrade the roof panel sealing systems on the fixed roof covers; and
 - iii. By no later than 1 year after the Date of Entry, replace the natural gas blanket, natural gas sweep, and thermal oxidizer with a

nitrogen-based system that purges into an activated carbon emission control system.

b. To improve storm water management during rain events, Murphy shall:

i. By no later than 180 Days after the Date of Entry, complete the engineering and design of planned upgrades;

ii. By no later than 1 year after the Date of Entry, adjust underflow and overflow weirs to optimize hydraulic flow and oil skimming; and

iii. By no later than 1 year after the Date of Entry, upgrade the oil-skimming and removal capacity at the API Separator Lift Sump, Forebay of the Storm Surge Basin, and Storm Surge Basin.

c. By no later than 30 days after the completion of the engineering and design upgrades required by Paragraph 153.a.i and 153.b.i, Murphy shall submit a copy of the engineering and design plans to EPA and LDEQ.

154. Murphy is responsible for the satisfactory completion of the SEP as provided in this Consent Decree. Upon completion of the SEP, Murphy shall submit to EPA and LDEQ a cost report (documenting SEP expenditures and including copies of invoices, receipts, purchase orders, etc.) and certified as accurate under penalty of perjury by a responsible corporate official.

a. If Murphy does not expend the entire amount specified in Paragraph 152, Murphy shall pay a stipulated penalty equal to the difference between the amount expended as demonstrated in the certified cost report and the amount specified in Paragraph 152. The stipulated penalty shall be paid as provided in Part X (Stipulated Penalties) of this Consent Decree.

b. As an alternative to payment of such stipulated penalty, Murphy may request approval from EPA and LDEQ to use unexpended SEP funds for an alternative SEP.

155. By signing this Consent Decree, Murphy certifies that it is not required, and has no liability under any federal, state, regional or local law or regulation or pursuant to any agreements or orders of any court, to perform or develop the project

identified in this Section VII.A. Murphy further certifies that it has not applied for or received, and will not in the future apply for or receive: (1) credit as a SEP or other penalty offset in any other enforcement action for the project set forth in this Section VII.A; (2) credit for any emissions reductions resulting from the project set forth in this Section VII.A in any federal, state, regional or local emissions trading or early reduction program; or (3) a deduction from any federal, state, regional, or local tax based on its participation in, performance of, or incurrence of costs related to the project set forth in this Section VII.A.

156. Murphy shall include in each report required by Paragraph 157 of Part VIII (Reporting and Recordkeeping) a description of its progress toward implementing the SEP required by Paragraph 152. In addition, the report required by Paragraph 157 for the period in which the SEP is completed will contain the following information with respect to such project(s):

- a. A detailed description of the project as implemented;
- b. A brief description of any significant operating problems encountered, including any that had an impact on the environment, and the solutions for each problem;
- c. A certification that the project has been fully implemented pursuant to the provisions of this Consent Decree; and
- d. A description of the environmental and public health benefits resulting from implementation of each project (including quantification of the benefits and pollutant reductions, if feasible).
- e. Murphy agrees that it must clearly indicate that the project is being or has been undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act and corollary state statutes in any public statements regarding the project.

B. ADDITIONAL INJUNCTIVE RELIEF

156A. Meraux Coking Unit – BACT Determination. As of the Date of Lodging, Murphy does not have a fluid coking unit (a process unit in which petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system

reactors) or a delayed coking unit (a process unit in which petroleum derivatives are thermally cracked and petroleum coke is continuously produced in a fluidized bed system) at the Meraux Refinery, nor has Murphy prepared or submitted a current application to LDEQ to construct a coking unit. In the event that Murphy seeks to construct and operate a coking unit at the Meraux Refinery, Murphy shall submit a major or minor PSD permit application to LDEQ. BACT (or LAER) for VOC, PM, H₂S and TRS shall be determined through the LDEQ PSD permit process; however, any such coking unit shall at a minimum be subject to the following requirements to control VOC and PM emissions:

a. Coker Venting Standard. To control VOC emissions, Murphy shall depressure the coking unit to no more than 2.0 lb. per square inch gauge (psig) prior to venting, and shall vent the exhaust gases to the fuel gas system for combustion in a fuel gas combustion device. The coke drum cycle time shall be sufficient to ensure that the coke has cooled adequately to ensure that the coking process is completed prior to venting and prior to opening the top and bottom heads of the coking unit for removal of the coke from the coke drum. In addition, the permitting authority shall consider the impact on VOC and other emissions during venting as a consequence of feeding or disposing into the coke drum any oily sludge, oily wastewater, biosolids, or any other wastes or streams.

b. Enclosed Conveyance System. To control PM emissions, Murphy shall enclose or otherwise minimize fugitive emissions from the coke conveyance system, to include the following, as applicable: a four-sided coke pit; installation and operation of a water spray system at the coke pit to suppress fugitive PM; construction and use of a coke barn, with a particulate filter or baghouse, for storage of coke prior to its conveyance; installation and operation of an enclosed, wetted conveyance system, with a particulate filter or baghouse at coke conveyor transfer points; construction and maintenance of a shrouded or covered loading operation controlled by a particulate filter or baghouse; and a vehicle wash-off area.

c. Coker Quench Water. To control VOC emissions from the coker quench water, the following shall be required:

- i. Coker Quench Water. Murphy shall use only fresh water as coker quench water or quench make-up water, or water that has been stripped in a sour water stripper and contains no VOCs, TRS, or H₂S.
- ii. Coker Quench Water System. Murphy shall install, operate and maintain a closed-vent system that routes all vapors from all components and equipment within the coker quench water system to a control device that achieves at least 98 percent control efficiency (*e.g.*, enclosed combustion device, dual carbon canisters, or recovery to fuel gas system). The coker quench water system is the system used to receive, manage, treat, or convey coker quench water commencing from the point of discharge from the coke drum pit to the quench water tank, including all drains, junction boxes, sewer lines, sumps, pits (excluding the coke pit), clarifiers, and/or tanks, but does not include the coker quench water tank.
- iii. Coker Quench Water Tank. Murphy shall install, operate, and maintain a cover and closed-vent system on the coker quench water tank that will route all vapors to a control device with at least 98 percent control efficiency (*e.g.*, enclosed combustion device, dual carbon canisters, or recovery to fuel gas system).

Murphy hereby relinquishes its right to appeal in any resultant LDEQ permit proceeding the inclusion in a permit issued by LDEQ of the control requirements set forth in Subparagraphs 156A.a, 156A.b and 156A.c. above. Consistent with Paragraph 270 of this Consent Decree, such permit may include other provisions regarding the Meraux Coking Unit and/or include more stringent standards.

156B. Prohibition on Atmospheric Venting. Nothing in this Consent Decree shall be construed to authorize, and Murphy shall be prohibited from, directly venting emissions from any refinery process unit or equipment to the atmosphere, except as specifically provided by this Consent Decree, or by state or federal statute, permit or regulation.

156C. Enhanced Community Information and Outreach. Murphy shall implement the following actions for purposes of enhancing community outreach and information at the Meraux Refinery:

a. Community Air Monitoring Station. By no later than 180 days after the Date of Entry, Murphy shall construct, operate and maintain a Community Air Monitoring Station, to be located on Ventura Drive, Chalmette, St. Bernard Parish, Louisiana, at least 500 feet and no more than 800 feet north of the northeast corner of the intersection of Ventura Drive and East Judge Perez Drive in an open area between Lena Drive and Despaux Drive, consistent with 40 C.F.R. Part 58, Appendix E. The Community Air Monitoring Station shall include installation and operation of the following monitoring and other related equipment:

i. Meteorological Equipment. A retractable meteorological tower and meteorological equipment including a wind-speed and direction sensor, temperature sensor, humidity sensor, and barometric pressure sensor;

ii. Monitoring and Sampling Equipment. Equipment for monitoring and sampling ambient levels of H₂S and SO₂, VOCs and PM, including all necessary ambient air monitoring port(s) and cylinder rack(s), as follows:

A. *H₂S/SO₂ Monitoring.* An ambient air analyzer for sampling of H₂S (using a ThermoScientific Model 450, or Teledyne API Model 101E, or equivalent) and SO₂ (using a Federal Reference Method (FRM) or Federal Equivalent Method (FEM) analyzer consistent with the specifications of 40 C.F.R. Parts 50 and 53, and other equipment associated with the FRM/FEM which may include installation of a multi-gas calibrator, a zero air generator, and necessary cylinders and regulators for calibration gases);

B. *VOC Monitoring.* A SUMMA canister system designed to collect VOC in ambient air. The SUMMA canister system shall include a bank of canisters to collect one 24-hour integrated sample every sixth day, consistent with the EPA National Air Toxics Trends Stations/Urban Air Toxics Monitoring

Program. The sample shall be analyzed using EPA Method TO-15, as described in the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition (EPA/625/R-96-010b) by a qualified, certified laboratory. VOC monitoring data collected pursuant to this subparagraph shall be considered available for purposes of Paragraphs 156C.b.iii and 156D.b upon Murphy's receipt of the laboratory report for a canister;

C. *PM Monitoring.* A continuous PM monitor sufficient to sample and analyze ambient levels of PM10, using a FRM or FEM analyzer consistent with 40 C.F.R. Parts 50 and 53.

iii. Additional Equipment. A heating and air-conditioning system sufficient to maintain the monitoring room temperature within the necessary operating range for proper and accurate operation of the meteorological, sampling and monitoring equipment maintained in the Community Air Monitoring Station; and any necessary tables, chairs, filing cabinets, working tables, and equipment racks needed for the meteorological, sampling and monitoring equipment maintained in the Community Air Monitoring Station.

iv. Operations and Maintenance. Murphy shall operate and maintain the Community Air Monitoring Station and all associated monitoring, sampling and monitoring equipment in good working order, including regular calibration and testing of monitors. The Community Air Monitoring Station shall be operated to collect samples on a continuous basis (*i.e.*, 7 days a week, 365 days a year), as provided in this Paragraph, for a period of not less than nine (9) years from the date Community Air Monitoring Station commences operations pursuant to Paragraph 156C.a.

A. Monitoring interruptions due to equipment malfunction shall be replaced or repaired by Murphy as soon as practicable, but no later than two business days after discovering such malfunction, except for reasons of *force majeure* or where

additional time is necessary for the purchase, acquisition and/or installation of replacement parts or equipment. In such instances, Murphy shall use best efforts to expedite such repairs or replacement, and shall take such other measures as necessary to prevent or minimize monitoring interruptions.

B. Murphy shall maintain records of all monitoring equipment installed pursuant to this Paragraph. Such records shall include an updated inventory of all equipment, and records of all maintenance done on the equipment. Murphy shall also maintain a record of monitoring and analysis procedures. Murphy shall use best efforts to make such records available for review to members of the public as soon as practicable, but no later than two business days of receipt of request.

b. Public Availability of Emissions Monitoring Data. Murphy shall make publicly available meteorological and ambient monitoring data from the Community Air Monitoring Station (“CAM Station Data”), and emissions reports submitted to LDEQ and/or EPA pursuant to the Meraux Refinery’s Title V permit for all refinery units that are monitored by CEMS as required under this Consent Decree (“Refinery Emissions Data”), as follows:

i. By no later than 180 days of the Date of Entry, Murphy shall provide the public with access to all available CAM Station Data collected and Refinery Emissions Data submitted since the Date Of Lodging through the Internet through a dedicated website or through Murphy’s Internet homepage (“Monitoring Data Website”), in a manner that shall be readily accessible, clearly labeled, and clearly presented to the public. Questions, suggestions or concerns about the accessibility or clarity of the presentation of data on the Monitoring Data Website shall be addressed through the Public Meetings required to be held by Murphy pursuant to Subparagraph c. of this Paragraph.

ii. By no later than 180 days of the Date of Entry, to provide for on-line community access to the Murphy Monitoring Data Website,

Murphy shall donate computers and provide for Internet availability through the St. Bernard Parish Library System, or at an independent location in the vicinity of the Meraux Refinery.

iii. Murphy shall post CAM Station Data on the Murphy Monitoring Data Website as soon as practicable after those data are collected and available, and in no event later than 24 hours after data collection and availability (*i.e.*, in “real time”). Murphy shall clearly label all CAM Station Data to include: the date, time, and location of the data collected.

iv. Murphy shall post Refinery Emissions Data on the Monitoring Data Website at least on a quarterly basis.

C. SPECIAL STATE PROJECTS

156D. Public Meetings. Beginning no later than 90 days from the Date of Entry, Murphy shall sponsor and provide for meetings to be held on a monthly basis (and at least ten months in each calendar year) at a location and time that is convenient for members of the Concerned Citizens Around Murphy (“CCAM”), a Louisiana non-profit organization, and any other residents living nearby the Meraux Refinery (within a 3-mile radius). Such meetings are intended to provide a mutually beneficial forum for discussion of matters of concern to those living nearby the Meraux Refinery, and shall be in addition to, and not in lieu of, any Community Advisory Panel (“CAP”) that may be sponsored or held by Murphy; however, upon the mutual written agreement by Murphy and CCAM, such meetings as required by this Paragraph may be merged with the CAP. Not less than five (5) working days prior to each meeting, Murphy shall provide general notice of the meeting’s time and location, and shall additionally notify one or more members of CCAM who are designated by CCAM to receive notice. At each meeting, Murphy shall provide copies of any preliminary Refinery Emissions Data for the immediately preceding 30 or 60-day period (*i.e.*, the period of time since the immediately preceding meeting) to CCAM members, and any other nearby residents, attending the meeting. Murphy may, at Murphy’s

option, post on the Monitoring Data Website additional data, report(s), or other information as would facilitate communications between Murphy and members of the public at the meeting. If a CCAM member notifies Murphy of difficulty accessing the data, report(s) or other information, Murphy shall provide the data, report(s) or other information to the CCAM member by electronic mail upon receiving notice of the request. Such meetings shall include, at a minimum, the following:

a. An oral report by a knowledgeable Murphy official of progress in implementing the provisions of this Consent Decree, and of any problems encountered or anticipated by Murphy with respect to meeting the requirements of the Consent Decree, during the immediately preceding 30 or 60-day period, as applicable;

b. A presentation of the CAM Station Data collected, preliminary Refinery Emissions Data, refinery CEMS data, and flow data to the North and South refinery flares covering the immediately preceding 30 or 60-day period, as applicable. Refinery CEMS data and flow data to the North and South refinery flares for the immediately preceding 30 or 60-day period may be presented by Murphy in chart form or similar summary fashion; and

c. Any other issues identified by either Murphy or CCAM for discussion at that month's meeting. In the notice provided by Murphy of the meeting's time and location pursuant to this Paragraph, Murphy shall provide a means for CCAM or any other residents to identify topics for discussion at that meeting. Such meetings shall include sufficient time for discussion of questions or issues to be raised by members of the public.

d. By no later than 45 days from the Date of Entry, Murphy shall host an evening community town hall meeting to explain this Consent Decree as it relates to the Meraux Refinery to any interested residents.

156E. Community Enhancements. Murphy shall undertake the following projects or measures for the benefit of the residential community near the Meraux Refinery:

a. By no later than 270 days from the Date of Lodging, Murphy shall secure the services of a qualified independent third-party contractor to conduct a noise survey along the 2000, 2100, 2200, and 2300 blocks of Jacob Drive or Despaux Drive (between St. Bernard Highway and Ohio Street) in Chalmette, Louisiana, for a minimum of seven (7) consecutive days during normal refining operations (*e.g.*, not during refinery turnaround periods, or during periods of a curtailment of operations due to weather or for other reasons). The independent contractor shall identify whether any noise levels are in excess of 65 dB (as provided in Chap. 11, Art. I, Sec. 11-4(b) (“Loud Machinery”) of the St. Bernard Parish, Louisiana). Based on the results of the survey, Murphy shall identify and implement reasonable measures to mitigate any such excess noise levels to comply with Chap. 11, Art. I, Sec. 11-4(b). The noise survey results shall be made publicly available by Murphy pursuant to the provisions of Paragraph 156D, and Murphy shall further include a discussion of the results and proposed mitigating measures (if any) during the Public Meeting(s) required by Paragraph 156D.

b. By no later than 90 days from the Date of Lodging, Murphy shall erect a fence to protect and preserve the Villere Plantation ruins. By no later than 180 days from the Date of Lodging, Murphy shall create a conservation servitude for the Villere Plantation ruins in accordance with La. Rev. Stat. §§ 9:1271 *et seq.*

c. At the Public Meetings held pursuant to Paragraph 156D, Murphy shall report on its efforts to suppress the creation of dust caused by the aggregate surface, vehicular traffic or wind in the parking lot area located at the refinery’s western boundary pipeline easement.

D. NSPS SUBPART QQQ AUDITS

156F. Murphy may elect to perform an audit of compliance with the regulatory obligations promulgated at 40 C.F.R. Part 60, Subpart QQQ (“Subpart QQQ Audit”) at each Refinery. Murphy shall notify EPA and WDNR or LDEQ, as applicable, in writing within one hundred eighty (180) days from the Date of Entry if it has elected to perform any Subpart QQQ Audit pursuant to this Section.

156G. A Subpart QQQ Audit may cover all potential obligations from the effective date of Subpart QQQ through the date of the QQQ Audit, including, but not limited to: (1) potential failures to make required applicability determinations; (2) potential failures to install proper control or monitoring equipment; (3) potential failures to undertake work practices; and (4) potential failures to submit accurate and/or timely reports.

156H. The Subpart QQQ Audit may be performed by either a qualified outside contractor or qualified internal staff.

156I. The Subpart QQQ Audit must be completed within one (1) year of notification under Paragraph 156F. Murphy shall submit a final written report of the Subpart QQQ Audit (the “Subpart QQQ Audit Report”) to EPA and WDNR or LDEQ, as applicable, within thirty (30) days of the Subpart QQQ Audit’s completion.

156L. The Subpart QQQ Audit Report shall: describe the processes, procedures, and methodology used to conduct the audit; clearly identify any violations or potential violations of 40 C.F.R. Part 60, Subpart QQQ discovered; describe any and all measures taken or to be taken to correct the disclosed violations; and provide details concerning the costs associated with such corrective action(s) and economic benefit(s) obtained by Murphy.

156M. The Subpart QQQ Audit Report shall be signed by the appropriate corporate official of Murphy making the following certification:

“To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

156N. Violations and potential violations reported in the Subpart QQQ Audit Report, and corrected by the date of the Subpart QQQ Audit Report or such other reasonable additional time as EPA allows, shall be deemed to satisfy the requirements of EPA’s Audit Policy. If EPA determines that the Subpart QQQ Audit was consistent with the requirements of this Section, EPA shall so notify Murphy in writing, and Murphy shall thereupon be released from liability for any claims for civil and administrative

penalties with respect to all violations or potential violations disclosed and corrected in accordance with this Section, and contained in EPA's notification.

156O. At the time it elects to undertake a Subpart QQQ Audit for a Refinery, Murphy shall pay, pursuant to the Stipulated Penalty payment provisions of Part X, a stipulated penalty of \$50,000, covering any and all disclosed violations at that Refinery. If EPA determines that Murphy's economic benefit of non-compliance at that Refinery exceeds \$25,000, Murphy shall pay an additional stipulated penalty for that Refinery equal to the difference between such economic benefit and \$25,000, within 30 days of receipt of EPA's written notification of its determination.

VIII. REPORTING AND RECORDKEEPING

157. Within thirty (30) calendar days after the end of the first semi-annual period after the Date of Entry of the Consent Decree, and semi-annually on each subsequent January 31 and July 31 thereafter, Murphy shall submit to EPA, LDEQ and WDNR a semi-annual report as provided in this Part. Each semi-annual report shall contain the following information for the previous six month period (*e.g.*, July to December) for each Refinery:

- a. For the period covered by the report, a summary of the emissions data for each Refinery that is specifically required by the reporting requirements of the Consent Decree;
- b. A description of any problems anticipated with respect to meeting the requirements of this Consent Decree at each Refinery;
- c. A description of the Supplemental Environmental Project and implementation activity in accordance with this Consent Decree;
- d. Any additional matters as Murphy believes should be brought to the attention of EPA, LDEQ and WDNR; and
- e. Any additional items required by any other Paragraph of this Consent Decree to be submitted with a semi-annual report.

158. Emissions Data. In the semi-annual report required by Paragraph 157 to be submitted after the second quarter of each year, Murphy shall provide a summary of annual emissions data for each Refinery for the prior calendar year, to include:

- a. NO_x emissions in tons per year for each heater and boiler greater than 40 mmBTU/hr maximum fired duty;
- b. NO_x emissions in tons per year as a sum for all heaters and boilers less than 40 mmBTU/hr maximum fired duty;
- c. SO₂, CO and PM emissions in tons per year as a sum for all heaters and boilers;
- d. SO₂ emissions from all Sulfur Recovery Plants in tons per year;
- e. SO₂ emissions from all Acid Gas Flaring and Tail Gas Incidents by flare in tons per year;
- f. NO_x, SO₂, PM and CO emissions in tons per year as a sum at each Refinery for all other emissions units for which emissions information is required to be included in the facilities' annual emissions summaries and that are not identified above; and
- g. SO₂, NO_x, CO and PM emissions in tons per year for each FCCU.

For each of the estimates or calculations in Subparagraphs 158.a through 158.g above, the basis for the emissions estimate or calculation (*i.e.*, stack tests, CEMS, emission factor, etc.). To the extent that the required emissions summary data is available in other reports generated by Murphy, such other reports can be attached or the appropriate information can be extracted from such other reports and attached to the semi-annual report to satisfy the requirement.

159. Exceedances of Emissions Limits. In each semi-annual report required under Paragraph 157 for each Refinery, Murphy shall provide a summary of all exceedances of emission limits required or established by this Consent Decree, which shall include:

- a. For operating units emissions limits that are required by this Consent Decree and monitored with CEMS, for each CEMS:
 - i. Total period where the emissions limit was exceeded, if applicable, expressed as a percentage of operating time for each Calendar Quarter;
 - ii. Where the operating unit has exceeded the emissions limit more than 1% of the total time of the Calendar Quarter, identification of

each averaging period that exceeded the limit by time and date, the actual emissions of that averaging period (in the units of the limit), and any identified cause for the exceedance (including Startup, Shutdown, maintenance or Malfunction), and, if it was a Malfunction, an explanation and any corrective actions taken;

iii. Total downtime of the CEMS, if applicable, expressed as a percentage of operating time for the Calendar Quarter;

iv. Where the CEMS downtime is greater than 5% of the total time in a Calendar Quarter for a unit, identify the periods of downtime by time and date, and any identified cause of the downtime (including maintenance or Malfunction), and, if it was a Malfunction, an explanation and any corrective action taken; and

v. If a report filed pursuant to another applicable legal requirement contains all of the information required by this paragraph in a similar or same format, the requirements of this paragraph may be satisfied by attaching a copy of such report.

b. For any exceedance of an emissions limit required by this Consent Decree from an operating unit monitored through stack testing:

i. A summary of the results of the stack test in which the exceedance occurred; and

ii. A copy of the full stack test report in which the exceedance occurred.

iii. To the extent that a Refinery has already submitted the stack test results to the EPA and LDEQ or WDNR, as applicable, Murphy need not resubmit them, but may instead reference the submission in the report (*e.g.*, date, addressee, reason for submission).

160. Certification. Each semi-annual report shall be certified by either the person responsible for environmental management and compliance, or by a person responsible for overseeing implementation of this Consent Decree. The certification shall state:

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Murphy shall retain all records required to be maintained in accordance with this Consent Decree for a period of no less than five (5) years or until Termination, whichever is longer, unless applicable regulations require the record to be maintained longer, in which case Murphy shall comply with those regulations.

IX. CIVIL PENALTY

161. In satisfaction of the claims asserted by the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin in the complaint(s) filed in this matter, within thirty (30) days of the Date of Entry of the Consent Decree, Murphy shall pay a civil penalty of \$1.25 million as follows: (1) \$625,000 to the United States; (2) \$395,312.50 to the Louisiana Department of Environmental Quality; and (3) \$229,687.50 to the State of Wisconsin.

162. Payment of the civil penalty to the United States shall be made by Electronic Funds Transfer (“EFT”) to the United States Department of Justice, in accordance with current EFT procedures, referencing DOJ Case Number 90-5-2-1-09186, and the civil action case name and case number of this action in the Western District of Wisconsin. The costs of such EFT shall be the responsibility of Murphy. Payment shall be made in accordance with instructions provided to the Company by the Financial Litigation Unit of the U.S. Attorney's Office for the Western District of Wisconsin. Any funds received after 11:00 a.m. (EST) shall be credited on the next business day. Murphy shall provide notice of payment, referencing DOJ Case Number 90-5-2-1-09186, and the civil action case name and case number to the Department of Justice and to EPA, as provided in Paragraph 280 (Notice).

163. Payment of the civil penalty to the Louisiana Department of Environmental Quality shall be made by certified check made payable to the Louisiana Department of Environmental Quality and delivered to:

Fiscal Director
Office of Management and Finance, LDEQ
P.O. Box 4303
Baton Rouge, LA 70821-4303

164. Payment of the civil penalty owed to the State of Wisconsin shall be made by certified check payable to the State of Wisconsin Department of Justice and delivered to:

Assistant Attorney General Thomas J. Dawson
Wisconsin Department of Justice
17 West Main Street
Madison, WI 53707-7857

165. The civil penalty set forth herein is a penalty within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f). Murphy shall not treat these penalty payments as tax deductible for purposes of federal, state, or local law.

166. Upon the Date of Entry of the Consent Decree, the Consent Decree shall constitute an enforceable judgment for purposes of post-judgment collection in accordance with Federal Rule of Civil Procedure 69, the Federal Debt Collection Procedure Act, 28 U.S.C. §§ 3001-3308, and other applicable federal authority. The United States and the Louisiana Department of Environmental Quality and the State of Wisconsin shall be deemed judgment creditors for purposes of collecting any unpaid amounts of the civil and stipulated penalties and interest.

X. STIPULATED PENALTIES

167. Stipulated penalties shall be paid to the United States and to the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) for each failure by Murphy to comply with the terms of this Consent Decree as provided herein. In no event shall any stipulated penalty assessed exceed \$32,500 per day for any individual violation of this Consent Decree. Stipulated penalties shall be calculated in the amounts specified in this Part X. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the economic benefit of delayed compliance is available, the decision of which alternative to seek shall rest exclusively within the

discretion of the United States or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable).

A. Non-Compliance with Requirements for NOx Emissions Reductions from FCCUs

168. For failure to comply with any requirement of Paragraph 11 to minimize NOx, use of a combustion promoter, installation of NOx emission control technology(s) and/or implementation of operational or other measures to control NOx emissions, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1000
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

169. For failure to meet any emissions limit for NOx set forth in Paragraphs 11-14, per day, per unit: \$750 for each calendar day in a Calendar Quarter on which the short-term rolling average exceeds the applicable limit; and \$2500 for each calendar day in a Calendar Quarter on which the specified 365-day rolling average exceeds the applicable limit.

170. For failure to prepare and/or submit written deliverables required by Section V.A., per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$1000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

171. For failure to install, certify, calibrate, maintain, and/or operate a NOx CEMS as required by Paragraph 15, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

B. Non-Compliance with Requirements for SO₂ Emissions Reductions from FCCUs

172. For each failure to meet any SO₂ emission limit set forth in Paragraphs 16-17, per unit, per day: \$750 for each calendar day in a Calendar Quarter on which the specified 7-day rolling average exceeds the applicable limit; \$2,500 for each calendar day in a Calendar Quarter on which the specified 365-day rolling average exceeds the applicable limit.

173. For failure to install, certify, calibrate, maintain, and/or operate a SO₂ CEMS as required by Paragraph 18, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

174. For failure to prepare and/or submit a written Hydrotreater Outage Plan required by Paragraph 19, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

C. Non-Compliance with Requirements for PM Emissions Reductions from FCCUs

175. For each failure to meet applicable PM emission limits for FCCUs as set forth in Paragraphs 20-21, per day, per unit: \$750 for each calendar day in a Calendar Quarter on which the emission limit is exceeded. For failure to conduct a stack test as set forth in Paragraph 22, \$500 per day per test.

D. Non-Compliance with Requirements for CO Emissions Reductions from FCCUs

176. For each failure to meet the applicable CO emission limits for FCCUs as set forth in Paragraphs 24-25: \$500 for each calendar day in a Calendar Quarter on which the specified 1-hour rolling average exceeds the applicable limit; and \$2,500 for each calendar day in a Calendar Quarter on which the specified 365-day rolling average exceeds the applicable limit.

177. For failure to install, certify, calibrate, maintain, and/or operate a CO and O2 CEMS as required by Paragraph 27, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

E. Non-Compliance with Requirements for NSPS Applicability on the FCCU Regenerators

178. For failure to comply with any NSPS requirements applicable to any FCCU regenerator as required by Paragraph 28, per pollutant, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1000
31 st through 60 th day after deadline	\$2000
Beyond 60 th day after deadline	\$3000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

179. For failure to certify, calibrate, maintain, and/or operate a COMS as required by Paragraph 29, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

F. Non-Compliance with Requirements for NOx Emissions Reductions from Heaters and Boilers

180. For failure to install Qualifying Controls on heaters and boilers and/or to submit permit applications sufficient to comply with the requirements of Paragraph 31, 34 and/or 35, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$2500
31 st through 60 th day after deadline	\$5000

Beyond 60 th day after deadline	\$7500 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater
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181. For failure to comply with the applicable monitoring requirements as set forth in Paragraphs 36 and 37, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

182. For each failure to meet NOx emission limits proposed by Murphy pursuant to Paragraph 31, per day, per unit: \$500 for each calendar day in a Calendar Quarter on which the emissions exceed the applicable limit.

183. For failure to submit any written deliverable or report required by Section V.F., per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$1000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

G. Non-Compliance with Requirements for SO₂ Emission Reductions from and NSPS Applicability to Combustion Units

184. For burning any fuel gas that contains H₂S in excess of the applicable requirements of any NSPS requirements in one or more heaters, boilers or other specified

equipment (“Combustion Units”) listed in Appendix B after the date set forth in this Consent Decree on which the respective unit becomes an “affected facility,” as defined in 40 C.F.R. § 60.2 subject to NSPS Subpart A and J (or Ja), per event, per day in a Calendar Quarter:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$2500
Beyond 30 th day after deadline	\$3750 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

185. For failure to comply with the monitoring requirements of NSPS Subparts A and J (or Ja), as required by Paragraph 41:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

186. For burning Fuel Oil in a manner inconsistent with the requirements of Paragraph 42, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1750
Beyond 30 th day after deadline	\$5000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

H. Non-Compliance with Requirements for Sulfur Recovery Plants

187. For failure to comply with SRP and Caustic Scrubber requirements of Paragraph 44, as follows:

a. For failure to comply with the NSPS Subpart Ja emission limits at the Meraux SRP and the NSPS Subpart Ja and PSD emission limits at the Superior SRP as required by Paragraph 44, per unit, per day in a Calendar Quarter:

i. Meraux SRP:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day	\$1000
31 st through 60 th day	\$2000
Over 60 days	\$3000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

ii. Superior SRP:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 10 th day	\$2500 (NSPS)/\$3500 (PSD)
11 th through 20 th day	\$3750 (NSPS)/\$5000 (PSD)
Beyond 20 th day	\$5000 (NSPS)/\$7500 (PSD) or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

If no exceedance of the Superior SRP's emission limits occurs for a rolling 12-month period, then the stipulated penalty provisions applicable to the Meraux SRP shall apply to the Superior SRP. EPA, in consultation with WDNR, may elect to reinstate the Paragraph 187.b stipulated penalty provision to the Superior SRP if there is one or more exceedances thereafter. EPA's decision shall not be subject to dispute resolution.

b. For failure to install and operate the caustic scrubber at the Superior Refinery by the deadline specified in Paragraph 44.c: \$300,000.

188. For failure to comply with the monitoring requirements of Paragraph 44.a, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

189. For failure to route all sulfur pit emissions in accordance with the requirements of Paragraph 45, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 10 th day after deadline	\$2000
11 th through 20 th day after deadline	\$3500
Beyond 20 th day after deadline	\$5000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

190. For failure to develop and comply with the Preventive Maintenance and Operation Plan as specified in Paragraph 46, per refinery, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

I. Non-Compliance with Requirements for NSPS Applicability of Flaring Devices

191. For failure to comply with the NSPS Subpart J emission limits at a Flaring Device, when and as required by Paragraphs 49 and 50, per day in a Calendar Quarter:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

192. For failure to comply with the compliance method as provided in Paragraph 49 for a Flaring Device listed on Appendix D after the dates set forth in Appendix D:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$2000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

J. Non-Compliance with Requirements for Benzene Waste NESHAP Program Enhancements

193. For failure to comply with the requirements of Paragraph 69, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1000
31 st through 60 th day after deadline	\$2000

Beyond 60 th day after deadline	\$3000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater
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194. For failure to complete the BWON Compliance Review and Verification Reports as required by Paragraph 70-71, and if necessary, Paragraphs 72-73: \$5,000 per month, per refinery.

195. For failure to submit a plan that provides for actions necessary to correct non-compliance as required by Paragraphs 74-75, or for failure to implement the actions necessary to correct non-compliance and to certify compliance as required by Paragraph 76, per refinery:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1250
31 st through 60 th day after deadline	\$3000
Beyond 60 th day after deadline	\$5000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

196. For failure to comply with the requirements set forth in Paragraphs 77-87 for use, monitoring and replacement of carbon canisters: \$1,000 per incident of non-compliance, per day.

197. For failure to submit or maintain any records or materials required by Paragraph 88: \$2,000 per record or submission.

198. For failure to establish an annual review program to identify new benzene waste streams as required by Paragraph 89: \$2,500 per month, per refinery.

199. For failure to perform laboratory audits as required by Paragraph 90: \$5,000 per month, per audit.

200. For failure to implement the training requirements as set forth in Paragraphs 92-94: \$10,000 per quarter, per refinery.

201. For failure to install controls on waste management units handling non-exempt, non-aqueous wastes as required by Paragraph 96: \$10,000 per month per waste management unit.

202. For failure to submit any plan, report or other deliverable required by Paragraphs 98-101 or 105, or for failure to comply with the requirements of Paragraph 106: \$5,000 per month, per refinery.

203. For failure to conduct sampling in accordance with the sampling plans required by Paragraphs 99-102: \$250 per week, per waste stream or \$15,000 per quarter, per stream, whichever is greater, but not to exceed \$75,000 per quarter, per refinery.

204. For failure to conduct monthly visual inspections of all Subpart FF water traps as required by Paragraph 107.a: \$500 per drain not inspected.

205. For failure to identify/mark segregated storm water drains as required in Paragraph 107.b: \$1,000 per week, per drain.

206. For failure to monitor Subpart FF conservation vents as required by Paragraph 107.c: \$500 per vent not monitored.

207. For failure to submit the written report or deliverables required by Paragraphs 108-109: \$1,000 per week, per report or deliverable.

208. If it is determined through federal, state, or local investigation that any Murphy Refinery has failed to include all benzene waste streams in its TAB calculation submitted pursuant to Section V.L., Murphy shall pay the following, per waste stream:

<u>Waste Stream</u>	<u>Penalty</u>
For waste streams < 0.03 Mg/yr	\$250
For waste streams between 0.03 and 0.1 Mg/yr	\$1000
For waste streams between 0.1 and 0.5 Mg/yr	\$5000
For waste streams > 0.5 Mg/yr	\$10,000

K. Non-Compliance with Requirements for Leak Detection and Repair Program Enhancements

209. For failure to develop an LDAR Program as required by Paragraph 114: \$3,500 per week, per refinery.

210. For failure to implement the training programs specified in Paragraph 116: \$10,000 per month, per program, per refinery.

211. For failure to conduct any of the audits required by Paragraph 117-121: \$5,000 per month, per audit.

212. For failure to implement any actions necessary to correct non-compliance as required by Paragraph 122:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$1250
31 st through 60 th day after deadline	\$3000
Beyond 60 th day after deadline	\$5000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

213. For failure to perform monitoring utilizing the lower internal leak rate definitions as specified in Paragraph 123-125: \$100 per component, but not greater than \$10,000 per month, per process unit.

214. For failure to repair and re-monitor leaks, as required by Paragraph 127, in excess of the lower leak definitions specified in Paragraph 123-125: \$500 per component, but not greater than \$10,000 per month, per refinery.

215. For failure to implement the “initial attempt” repair program in Paragraph 128: \$100 per valve, but not greater than \$10,000 per month, per refinery.

216. For failure to implement and comply with the LDAR monitoring program as required by Paragraphs 129-130: \$100 per component, but not greater than \$10,000 per month, per unit.

217. For failure to use dataloggers or maintain electronic data as required by Paragraphs 132 and 133: \$5,000 per month.

218. For failure to implement the QA/QC procedures described in Paragraph 134: \$10,000 per month.

219. For failure to designate and/or maintain an individual as accountable for LDAR performance as required in Paragraph 135 or for failure to implement the maintenance tracking program in Paragraph 136: \$3,750 per week.

220. For failure to conduct the calibration drift assessments or remonitor valves and pumps based on calibration drift assessments in Paragraphs 137-138: \$100 per missed event.

221. For failure to comply with the requirements for repair set forth at Paragraphs 139-140: \$5,000 per valve or pump, per incident of non-compliance.

222. For failure to comply with the requirement for chronic leakers set forth in Paragraph 141: \$5,000 per valve.

223. For failure to submit any written report or deliverable required by Paragraphs 142-143: \$1,000 per week, per report.

224. If it is determined through a federal, state, regional, or local investigation that a Murphy Refinery has failed to include any valves or pumps in its LDAR program, Murphy will pay \$175 per component that it failed to include.

L. Failure To Incorporate Consent Decree Requirements Into Permits

225. For each failure to submit an application to incorporate Consent Decree requirements into relevant local, state and/or federal permits as required by Paragraphs 144-147:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$3000

M. Failure To Implement Supplemental Environmental and other Projects and Additional Injunctive Relief

226. For failure to comply with any requirement of Paragraphs 152-156E:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1500
Beyond 60 th day after deadline	\$3000

N. Non-Compliance with Requirements for Reporting and Record Keeping

227. For each failure to submit reports as required by Section VIII, per report, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$300
31 st through 60 th day after deadline	\$1000
Beyond 60 th day after deadline	\$2000

228. For each failure to submit a written report or deliverable (unless a more specific stipulated penalty applies), per day per deliverable:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$1000

O. Non-Compliance with Requirements for Payment of Civil Penalties

229. For the failure to pay the civil penalties as specified in Part IX of this Consent Decree, Murphy will be liable for \$15,000 per day plus interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

P. General Provisions Related to Stipulated Penalties

230. Demand for Stipulated Penalties. Murphy will pay stipulated penalties upon written demand by the United States and/or the Louisiana Department of

Environmental Quality or the State of Wisconsin (as applicable) by no later than sixty (60) days after Murphy receives such demand. Demand from one agency will be deemed a demand from all applicable agencies, but the agencies will consult with each other prior to making a demand. A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount that EPA or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) is demanding for each violation (as can be best estimated), the calculation method underlying the demand, and the grounds upon which the demand is based. After consultation with each other, the United States or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) may, in their unreviewable discretion, waive payment of any portion of stipulated penalties that may accrue under this Consent Decree.

231. Payment of Stipulated Penalties. Any stipulated penalty demand will identify to which government agency or agencies payment must be made. In the event both the United States and the applicable State co-plaintiff make a written demand for stipulated penalties for the same violation of the Consent Decree, then the stipulated penalties shall be apportioned between the United States and the applicable State co-plaintiff, 50% to each. Stipulated penalties owing to the United States of under \$10,000 will be paid by check and made payable to “U.S. Department of Justice,” referencing DOJ Number 90-3-2-1-09186, and delivered to the U.S. Attorney’s Office in the Western District of Wisconsin. Stipulated penalties owing to the United States of \$10,000 or more and stipulated penalties owing to the State of Louisiana or Wisconsin will be paid in the manner set forth in Part X (Civil Penalty).

232. Stipulated Penalties Dispute. Stipulated penalties will begin to accrue on the day after performance is due or the day a violation occurs, whichever is applicable, and will continue to accrue until performance is satisfactorily completed or until the violation ceases. However, in the event of a dispute over stipulated penalties, stipulated penalties will not accrue commencing upon the date Murphy files a petition with the Court under Section XIV (Retention of Jurisdiction/Dispute Resolution) if Murphy has placed the disputed amount demanded in a commercial escrow account with interest. If the dispute thereafter is resolved in Murphy’s favor, the escrowed amount plus accrued

interest will be returned to Murphy; otherwise, EPA and the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) will be entitled to the amount that was determined to be due by the Court, plus the interest that has accrued in the escrow account on such amount.

233. The United States and the Louisiana Department of Environmental Quality or the State of Wisconsin reserve the right to pursue any other nonmonetary remedies to which they are legally entitled, including but not limited to, injunctive relief, for Murphy's violations of this Consent Decree. Where a violation of this Consent Decree is also a violation of the Clean Air Act, its regulations, or a federally-enforceable state law, regulation, or permit, the United States will not seek civil penalties where it already has demanded and secured stipulated penalties from Murphy for the same violations nor will the United States demand stipulated penalties from Murphy for a Consent Decree violation if the United States has commenced litigation under the Clean Air Act for the same violations. Where a violation of this Consent Decree is also a violation of state law, regulation or a permit, the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) will not seek civil penalties where it already has demanded and/or secured stipulated penalties from Murphy for the same violations, nor will the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) demand stipulated penalties from Murphy for a Consent Decree violation if the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) has commenced litigation under the Clean Air Act for the same violations.

XI. INTEREST

234. Murphy will be liable for interest on the unpaid balance of the civil penalty specified in Part IX, and for interest on any unpaid balance of stipulated penalties to be paid in accordance with Part X. All such interest will accrue at the rate established pursuant to 28 U.S.C. § 1961(a) – *i.e.*, a rate equal to the coupon issue yield equivalent (as determined by the Secretary of Treasury) of the average accepted auction price for the last auction of 52-week U.S. Treasury bills settled prior to the Date of Lodging of the Consent Decree. Interest will be computed daily and compounded annually. Interest will

be calculated from the date payment is due under the Consent Decree through the date of actual payment. For purposes of this Paragraph 234, interest pursuant to this Paragraph will cease to accrue on the amount of any stipulated penalty payment made into an interest bearing escrow account as contemplated by Paragraph 232 of the Consent Decree. Monies timely paid into escrow will not be considered to be an unpaid balance under this Part.

XII. RIGHT OF ENTRY

235. Any authorized representative of EPA or the State of Louisiana or Wisconsin (as applicable), upon presentation of credentials, will have a right of entry upon the premises of the facilities of the Murphy Refineries at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including inspecting plant equipment and systems, and inspecting all records maintained by the Murphy Refineries required by this Consent Decree or deemed necessary by EPA or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) to verify compliance with this Consent Decree. Except where other time periods specifically are noted, the Murphy Refineries will retain such records for the period of the Consent Decree. Nothing in this Consent Decree will limit the authority of EPA or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) to conduct tests, inspections, or other activities under any statutory or regulatory provision.

XIII. FORCE MAJEURE

236. “*Force majeure*,” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Murphy, of any entity controlled by Murphy, or of Murphy’s contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Murphy’s best efforts to fulfill the obligation. The requirement that Murphy exercise “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential *force majeure* event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. “*Force*

Majeure” does not include Murphy’s financial inability to perform any obligation under this Consent Decree.

237. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a *force majeure* event, Murphy shall provide notice orally or by electronic or facsimile transmission to EPA and the applicable Co-Plaintiff within seven days of when Murphy first knew that the event might cause a delay. Within fourteen days of the seven-day notice required above, Murphy shall provide in writing to EPA and the applicable Co-Plaintiff an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Murphy’s rationale for attributing such delay to a *force majeure* event if it intends to assert such a claim; and a statement as to whether, in the opinion of Murphy, such event may cause or contribute to an endangerment to public health, welfare or the environment. Murphy shall include with any notice all available documentation supporting the claim that the delay was attributable to a *force majeure*. Failure to comply with the above requirements shall preclude Murphy from asserting any claim of *force majeure* for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Murphy shall be deemed to know of any circumstance of which Murphy, any entity controlled by Murphy, or Murphy’s contractors knew or should have known.

238. With respect to any compliance obligation under this Consent Decree that requires Murphy to obtain a federal, state, or local permit or approval, a delay in the performance of such obligation by Murphy resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, may form the basis for a claim of *force majeure*, provided that Murphy has submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

239. If EPA, after consultation with the applicable Co-Plaintiff, agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Consent Decree that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those

obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. Within 45 days of receipt of the written *force majeure* notice and the receipt of any additional information (if necessary) regarding the notice of a *force majeure* event, EPA will notify Murphy in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

240. If EPA, after consultation with the applicable Co-Plaintiff, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify Murphy in writing of its decision within 45 days of receipt of the written force majeure notice.

241. If Murphy elects to invoke the dispute resolution procedures set forth in Section XIV (Retention of Jurisdiction/Dispute Resolution), it shall do so no later than 14 days after receipt of EPA's notice. In any such proceeding, Murphy shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a *force majeure* event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Murphy complied with the requirements of Paragraphs 236 and 237. If Murphy carries this burden, the delay at issue shall be deemed not to be a violation by Murphy of the affected obligation of this Consent Decree identified to EPA and the Court.

XIV. RETENTION OF JURISDICTION/DISPUTE RESOLUTION

242. This Court will retain jurisdiction of this matter for the purposes of implementing and enforcing the terms and conditions of the Consent Decree and for the purpose of adjudicating all disputes of the Consent Decree between the United States and the Co-Plaintiffs, and Murphy that may arise under the provisions of the Consent Decree, until the Consent Decree terminates in accordance with Part XVII of this Consent Decree.

243. The dispute resolution procedure set forth in this Part XIV will be available to resolve any and all disputes arising under this Consent Decree, provided that the Party making such application has made a good faith attempt to resolve the matter with the other Party.

244. The dispute resolution procedure required herein will be invoked upon the giving of written notice by one of the Parties to this Consent Decree to another advising the other appropriate Party(ies) of a dispute pursuant to this Part XIV. The notice will describe the nature of the dispute, and will state the noticing Party's position with regard to such dispute. The Party or Parties receiving such notice will acknowledge receipt of the notice and the Parties will expeditiously schedule a meeting to discuss the dispute informally.

245. Disputes submitted to dispute resolution will, in the first instance, be the subject of informal negotiations between the Parties. Such period of informal negotiations will not extend beyond ninety (90) calendar days from the date of the first meeting between representatives of the Parties, unless the Parties agree in writing that this period should be extended. Failure by the parties to extend the informal negotiation period in writing will not terminate the informal negotiation period provided that the parties are continuing to negotiate in good faith.

246. Informal negotiations will cease upon either:

- a. Murphy's submission of a request to the United States and the applicable Co-Plaintiff of a written summary of its/their position regarding the dispute; or
- b. the United States' and/or the applicable Co-Plaintiff's submission to Murphy of a written summary of its/their position.

247. Under the circumstances of Paragraph 246.a, if the United States and/or the applicable Co-Plaintiff responds to Murphy's request within sixty (60) days of receipt, then the position advanced by the United States and/or the applicable Co-Plaintiff will be considered binding unless, within sixty (60) calendar days of Murphy's receipt of the written summary, Murphy files with the Court a petition which describes the nature of the dispute. The United States or the applicable Co-Plaintiff will respond to the petition within sixty (60) days of filing. In resolving a dispute between the Parties under these circumstances, the position of the United States and the applicable Co-Plaintiff will be upheld if supported by substantial evidence in the administrative record, which may be supplemented for good cause shown.

248. Under the circumstances of Paragraph 246.a, if the United States and/or the applicable Co-Plaintiff do not respond to Murphy's request for a written summary within sixty (60) days of receipt, then Murphy will file with the Court a petition which describes the nature of the dispute within one-hundred five (105) days after submitting the initial request to the United States and the applicable Co-Plaintiff. Applicable principles of law will govern the resolution of the dispute.

249. Under the circumstances of Paragraph 246.b, the position advanced by the United States and/or the applicable Co-Plaintiff will be considered binding unless, within sixty (60) calendar days of Murphy's receipt of the written summary, Murphy files with the Court a petition which describes the nature of the dispute. The United States or the applicable Co-Plaintiff will respond to the petition within sixty (60) days of filing. In resolving a dispute between the Parties under these circumstances, the position of the United States and the applicable Co-Plaintiff will be upheld if supported by substantial evidence in the administrative record, which may be supplemented for good cause shown.

250. In the event that the United States and the applicable Co-Plaintiff make differing determinations or take differing actions that affect Murphy's rights or obligations under this Consent Decree, the final decisions of the United States will take precedence.

251. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set forth in this Part XIV may be shortened upon motion of one of the Parties to the dispute.

252. The Parties do not intend that the invocation of this Part XIV by a Party cause the Court to draw any inferences nor establish any presumptions adverse to either Party as a result of invocation of this Part.

253. As part of the resolution of any dispute submitted to dispute resolution, the Parties, by agreement, or this Court, by order, may, in appropriate circumstances, extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of dispute resolution. Murphy will be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XV. EFFECT OF SETTLEMENT

254. Definitions. For purposes of Part XV, the following definitions apply:

a. “Applicable NSR/PSD Requirements” shall mean: PSD requirements at Part C of Subchapter I of the Act, 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. § 52.21; “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); Title 40, Part 51, Appendix S; and 40 C.F.R. § 52.24; any applicable, federally-enforceable state, regional, or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above; Any applicable state, regional, or local regulations enforceable by the States of Louisiana and Wisconsin that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

b. “Applicable NSPS Subparts A and J Requirements” or “Applicable NSPS Subparts A and Ja Requirements” shall mean the standards, monitoring, testing, reporting and recordkeeping requirements found at 40 C.F.R. §§ 60.100 through 60.109 (Subpart J) or 40 C.F.R. §§ 60.100a through 60.109a (Subpart Ja), relating to a particular pollutant and a particular affected facility, and the corollary general requirements found at 40 C.F.R. §§ 60.1 through 60.19 (Subpart A) that are applicable to any affected facility covered by Subpart J or Subpart Ja.

c. “Post-Lodging Compliance Dates” shall mean any dates in this Part XV after the Date of Lodging. Post-Lodging Compliance Dates include dates certain (*e.g.*, “December 31, 2010”), dates after Lodging represented in terms of “months after Lodging” (*e.g.*, “Twelve Months after the Date of Lodging”), and dates after Lodging represented by actions taken (*e.g.*, “Date of Certification”). The Post-Lodging Compliance Dates represent the dates by which work is required to be completed or an emission limit is required to be met under the applicable provisions of this Consent Decree.

255. Liability Resolution Regarding the Applicable NSR/PSD Requirements.

With respect to emissions of the following pollutants from the following units, entry of this Consent Decree shall resolve all civil liability of the Murphy Refineries to the United

States and the Louisiana Department of Environmental Quality and the State of Wisconsin: (1) for violations of the Applicable NSR/PSD Requirements, resulting from construction or modification of the following units that occurred prior to the Date of Lodging of the Consent Decree, that commenced and ceased prior to the Date of Lodging of the Consent Decree; and (2) for any violations of the Applicable NSR/PSD Requirements, resulting from pre-Lodging construction or modification of the following units, that commenced prior to the Date of Lodging and continued up to the following dates:

<u>Refinery/Unit</u>	<u>Pollutant</u>	<u>Date</u>
Meraux FCCU	NOx	<i>Either</i> March 31, 2013 or the Date specified by EPA pursuant to Paragraph 12.b (if Final NOx Limit is established pursuant to Paragraph 12.c.ii); <i>or</i> December 31, 2016 (if Final NOx limit is established pursuant to Paragraph 12.c.i)
	SO ₂	Date of Entry
Superior FCCU	NOx	Date that Final NOx limit is established pursuant to Paragraph 14
	SO ₂	Date of Entry
<u>All Facilities</u>		
All Heaters and Boilers (Combustion Units) Listed in Appendix B	NOx	Later of Date of Entry or Date of Installation of Qualifying Controls
	SO ₂	Date of Entry

256. Liability Resolution for PM Under the Applicable NSR/PSD Requirements. If and when the Superior Refinery and/or the Meraux Refinery accept an emission limit of 0.5 pounds PM per 1000 pounds of coke burned on a 3-hour average basis and demonstrate compliance by conducting a 3-hour performance test

representative of normal operating conditions for PM emissions at the Superior and/or Meraux FCCUs, then all civil liability of the relevant refinery accepting the limitation to the United States and the Louisiana Department of Environmental Quality and/or the State of Wisconsin (as applicable) shall be resolved for violations of the Applicable NSR/PSD Requirements relating to PM emissions at the relevant refinery resulting from construction or modification of the FCCU for that refinery that occurred prior to the Date of Lodging of the Consent Decree that either ceased prior to the Date of Lodging of the Consent Decree or continued up to the date on which the relevant refinery demonstrates compliance with such PM emission limit for that refinery.

257. Liability Resolution for CO Under the Applicable NSR/PSD Requirements. If and when the Superior Refinery and/or Meraux Refinery accepts an emission limit of 100 ppmvd of CO at 0% O₂ on a 365-day rolling average basis and demonstrates compliance using CEMS at the relevant refinery, then all civil liability of the relevant refinery to the United States and the Louisiana Department of Environmental Quality and/or the State of Wisconsin (as applicable) shall be resolved for violations of the Applicable NSR/PSD Requirements relating to CO emissions at the relevant refinery resulting from construction or modification of the FCCU for the relevant refinery that occurred prior to the Date of Lodging of the Consent Decree and that either ceased prior to the Date of Lodging or continued up to the date on which the relevant refinery demonstrates compliance with such CO emission limit for that refinery.

258. Reservation of Rights: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Notwithstanding Paragraph 255, the release of liability by the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin to Murphy for violations of the Applicable NSR/PSD Requirements during the period between the Date of Lodging of the Consent Decree and the Post-Lodging Compliance Dates shall be rendered void with respect to any Murphy Refinery that materially fails to comply with the obligations and requirements of Paragraphs 11-14 and 16-17; provided however, that the release identified above shall not be rendered void if the Murphy Refinery remedies such material failure and pays any stipulated penalties due as a result of such material failure. The voidance of the release of liability with

respect to one Murphy Refinery shall not affect the release of liability with respect to the other Murphy Refinery.

259. Exclusions from Release Coverage: Construction and/or Modification Not Covered. Notwithstanding Paragraphs 255-257, nothing in this Consent Decree precludes the United States and/or the Louisiana Department of Environmental Quality or the State of Wisconsin (as applicable) from seeking from Murphy injunctive relief, penalties or other appropriate relief for violations by Murphy of the Applicable NSR/PSD Requirements resulting from construction or modification that: (i) commenced prior to the Date of Lodging of the Consent Decree for pollutants or units not covered by the Consent Decree; or (ii) commences after the Date of Lodging of the Consent Decree.

260. Evaluation of Applicable PSD/NSR Requirements Must Occur. Increases in emissions from units covered by this Consent Decree, where the increases result from the Post-Lodging construction or modification of any units within the Murphy Refineries, are beyond the scope of the release in Paragraphs 255-257, and Murphy must evaluate any such increases in accordance with the Applicable PSD/NSR Requirements.

261. New Source Performance Standards Subparts A and J or Ja Resolution of Liability. Entry of this Consent Decree shall resolve all civil liability of Murphy to the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin for violations of the Applicable NSPS Subparts A and J or Ja Requirements, arising from emissions of the following pollutants from the following units, from the date that the claims of the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin (as applicable) accrued through the following dates:

<u>Refinery/Unit</u>	<u>NSPS Subpart</u>	<u>Pollutant</u>	<u>Date</u>
Meraux FCCU	Subparts A, J	SO ₂	Date of Entry
		CO	Date of Entry
		PM (opacity)	Date of Entry
Superior FCCU	Subparts A, J	SO ₂	Date of Entry
		CO	Date of Entry
		PM (opacity)	Date of Entry

<u>All Facilities</u>			
All Heaters and Boilers (Combustion Units) Listed in Appendix B	Subparts A, J	SO ₂	Date of Entry or Date Listed in Appendix B
All SRPs	Subparts A, J & Ja	SO ₂	Date of Entry
All Flaring Devices and Fuel Gas Combustion Devices	Subparts A, J	SO ₂	Date Listed in Appendix D

262. Reservation of Rights: Release for NSPS Violations Occurring After the Date of Lodging Can be Rendered Void. Notwithstanding the resolution of liability in Paragraph 261, the release of liability by the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin to Murphy for violations of any Applicable NSPS Subparts A and J or Ja Requirements that occurred between the Date of Lodging and the Post-Lodging Compliance Dates shall be rendered void with respect to any Murphy Refinery that materially fails to comply with the obligations and requirements of Section V.E., V.G., V.H. and/or V.I.; provided however, that the release in Paragraph 261 shall not be rendered void if Murphy remedies such material failure and pays any stipulated penalties due as a result of such material failure. The voidance of the release of liability with respect to one Murphy Refinery shall not affect the release of liability with respect to the other Murphy Refinery.

263. Prior NSPS Applicability Determinations. Nothing in this Consent Decree shall affect the status of any FCCU, fuel gas combustion device, or sulfur recovery plant currently subject to NSPS as previously determined by any federal or state or any applicable permit.

264. LDAR and Benzene Waste NESHAP Resolution of Liability. Entry of this Consent Decree shall resolve all civil liability of Murphy to the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin for violations of the following statutory and regulatory requirements that (1) commenced and ceased prior to the Date of Entry of the Consent Decree; and (2) commenced prior to the Date of Entry of the Consent Decree and continued past the Date of Entry, provided that the events giving rise to such violations are identified and addressed by Murphy as

required under Paragraphs 70-74 for Benzene Waste NESHAP requirements and under Paragraphs 118 and 122 for LDAR requirements:

- a. LDAR. For all equipment in light liquid service and gas and/or vapor service, the LDAR requirements promulgated pursuant to Sections 111 and 112 of the Clean Air Act, and codified at 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC;
- b. Benzene Waste NESHAP. The National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF, promulgated pursuant to Section 112(e) of the Act, 42 U.S.C. § 7412(e);
- c. Any applicable, federally-enforceable state regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in this Paragraph; and
- d. Any applicable state regulations enforceable by the Louisiana Department of Environmental Quality and the State of Wisconsin that implement, adopt, or incorporate the specific federal regulatory requirements identified in this Paragraph.

265. Reservation of Rights. Notwithstanding the resolution of liability in Paragraph 264, nothing in this Consent Decree precludes the United States and/or the Louisiana Department of Environmental Quality or the State of Wisconsin from seeking from Murphy injunctive and/or other equitable relief or civil penalties for violations by Murphy of Benzene Waste NESHAP and/or LDAR requirements that (A) commenced prior to the Date of Entry and continued after the Date of Entry if Murphy fails to identify and address such violations as required by Paragraphs 70-74, and Paragraphs 118 and 122; or (B) commenced after the Date of Entry.

266. Liability Resolution for Certain Other Matters:

- a. Louisiana Department of Environmental Quality: Entry of this Consent Decree shall resolve all civil penalty liability of Murphy to the Louisiana Department of Environmental Quality for the violations identified in the following Compliance Orders & Notices of Potential Penalty: CO/NOPP MM-CN-02-0015, Sections III.A-D; VIII; IX; XIV.A-H, J, M-Q, S, and U-X; and

XV.A-C (April 9, 2006); AE-CN-08-0122, AE-CN-08-0122A and AE-CN-08-0122B (issued August 29, 2008 and amended on December 22, 2008 and August 4, 2010); and AE-CN-08-0294, Sections II.C, E-Z, and AA-NN (January 9, 2009).

b. State of Wisconsin: Entry of this Consent Decree shall resolve all civil penalty liability of Murphy to the State of Wisconsin for the violations identified in the Notice of Violation letter dated October 3, 2008 (Casetrack # 2008-NOEE-042), and Items 1 and 4 in the Notice of Violation letter dated September 7, 2007 (Casetrack # 2007-NOEE-036).

267. Audit Policy. Nothing in this Consent Decree is intended to limit or disqualify Murphy, on the grounds that information was not discovered and supplied voluntarily, from seeking to apply EPA's Audit Policy or any state audit policy to any violations or non-compliance that Murphy discovers during the course of any investigation, audit, or enhanced monitoring Murphy is required to undertake pursuant to this Consent Decree.

268. Claim/Issue Preclusion. In any subsequent administrative or judicial proceeding initiated by the United States or the Louisiana Department of Environmental Quality or the State of Wisconsin for injunctive relief, penalties, or other appropriate relief relating to the Murphy Refineries for violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements, not identified in Section XV (Effect of Settlement) of the Consent Decree and/or the Complaint:

a. Murphy shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, or claim-splitting. Nor may Murphy assert, or maintain, any other defenses based upon any contention that the claims raised by the United States or the Louisiana Department of Environmental Quality or the State of Wisconsin in the subsequent proceeding were or should have been brought in the instant case. Nothing in the preceding sentences is intended to affect the ability of Murphy to assert that the claims are deemed resolved by virtue of this Part of the Consent Decree.

b. Except as set forth in Paragraph 268.a., above, the United States and the Louisiana Department of Environmental Quality and the State of

Wisconsin may not assert or maintain that this Consent Decree constitutes a waiver or determination of, or otherwise obviates, any claim or defense whatsoever, or that this Consent Decree constitutes acceptance by Murphy of any interpretation or guidance issued by EPA related to the matters addressed in this Consent Decree.

269. Imminent and Substantial Endangerment. Nothing in this Consent Decree shall be construed to limit the authority of the United States and the Louisiana Department of Environmental Quality and the State of Wisconsin to undertake any action against any person to abate or correct conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

XVI. GENERAL PROVISIONS

270. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree will relieve Murphy of its obligation to comply with all applicable federal, state, regional and local laws and regulations, including but not limited to more stringent standards. In addition, nothing in this Consent Decree will be construed to prohibit or prevent the United States or the Co-Plaintiffs from developing, implementing, and enforcing more stringent standards subsequent to the Date of Lodging of this Consent Decree through rulemaking, the permit process, or as otherwise authorized or required under federal, state, regional, or local laws and regulations. Subject to Part XV (Effect of Settlement), Part X (Stipulated Penalties), and Paragraph 272 (Permit Violations) of this Consent Decree, nothing contained in this Consent Decree will be construed to prevent or limit the rights of the United States or the Co-Plaintiffs to seek or obtain other remedies or sanctions available under other federal, state, regional or local statutes or regulations, by virtue of Murphy's violation of the Consent Decree or of the statutes and regulations upon which the Consent Decree is based, or for Murphy's violations of any applicable provision of law. This will include the right of the United States or the Co-Plaintiffs to invoke the authority of the Court to Murphy's compliance with this Consent Decree in a subsequent contempt action. The requirements of this Consent Decree do not exempt Murphy from complying with any and all new or modified federal, state, regional and/or local statutory or regulatory requirements that

may require technology, equipment, monitoring, or other upgrades after the Date of Lodging of this Consent Decree.

271. Startup, Shutdown, and Malfunction. Notwithstanding the provisions of this Consent Decree regarding Startup, Shutdown, and Malfunction, this Consent Decree does not exempt Murphy from the requirements of state laws and regulations or from the requirements of any permits or plan approvals issued to Murphy, as these laws, regulations, permits, and/or plan approvals may apply to Startups, Shutdowns, and Malfunctions.

272. Permit Violations. Nothing in this Consent Decree will be construed to prevent or limit the right of the United States or the Co-Plaintiffs to seek injunctive or monetary relief for violations of permits; provided, however, that with respect to monetary relief, the United States and the applicable Co-Plaintiff(s) must elect between filing a new action for such monetary relief or seeking stipulated penalties under this Consent Decree, if stipulated penalties also are available for the alleged violation(s).

273. Failure of Compliance. The United States and the Co-Plaintiffs do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Murphy's complete compliance with the Consent Decree will result in compliance with the provisions of the CAA or the corollary state and local statutes. Notwithstanding the review or approval by EPA or the Co-Plaintiffs of any plans, reports, policies or procedures formulated pursuant to the Consent Decree, Murphy will remain solely responsible for compliance with the terms of the Consent Decree, all applicable permits, and all applicable federal, state, regional, and local laws and regulations, except as provided in Part XIII (Force Majeure).

274. Alternative Monitoring Plans. Except as otherwise specifically provided in Paragraph 41, wherever this Consent Decree requires or permits Murphy to submit an AMP to EPA for approval, Murphy will submit a complete AMP application. If an AMP is not approved, then within ninety (90) days of Murphy's receipt of disapproval, Murphy will submit to EPA for approval, with a copy to the applicable Co-Plaintiff, a plan and schedule that provides for compliance with the applicable monitoring requirements as soon as practicable. Such plan may include physical or operational changes to the equipment, or additional or different monitoring.

275. Service of Process. Murphy hereby agrees to accept service of process by mail with respect to all matters arising under or relating to the Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including but not limited to, service of a summons. The persons identified by Murphy at Paragraph 280 (Notice) are authorized to accept service of process with respect to all matters arising under or relating to the Consent Decree.

276. Post-Lodging/Pre-Entry Obligations. Obligations of Murphy under this Consent Decree to perform duties scheduled to occur after the Date of Lodging of the Consent Decree, but prior to the Date of Entry of the Consent Decree, will be legally enforceable only on and after the Date of Entry of the Consent Decree. Liability for stipulated penalties, if applicable, will accrue for violation of such obligations and payment of such stipulated penalties may be demanded by the United States or the applicable Co-Plaintiff as provided in this Consent Decree, provided that the stipulated penalties that may have accrued between the Date of Lodging of the Consent Decree and the Date of Entry of the Consent Decree may not be collected unless and until this Consent Decree is entered by the Court.

277. Costs. Each Party to this action will bear its own costs and attorneys' fees.

278. Public Documents. All information and documents submitted by Murphy to EPA and the Co-Plaintiffs pursuant to this Consent Decree will be subject to public inspection in accordance with the respective statutes and regulations that are applicable to EPA and the Co-Plaintiffs, unless subject to legal privileges or protection or identified and supported as trade secrets or business confidential in accordance with the respective state or federal statutes or regulations.

279. Public Notice and Comment. The Parties agree to the Consent Decree and agree that the Consent Decree may be entered upon compliance with the public notice procedures set forth at 28 C.F.R. § 50.7, and upon notice to this Court from the United States Department of Justice requesting entry of the Consent Decree. Further, the Parties agree and acknowledge that final approval by Co-Plaintiff the Louisiana Department of Environmental Quality and entry of this Consent Decree is subject to the requirements of La. R.S. 30:2050.7, which provides for public notice of this Consent Decree in

newspapers of general circulation and the official journals of the parish in which Murphy's Meraux Refinery is located, an opportunity for public comment, consideration of any comments, and concurrence by the State Attorney General. The United States and the Co-Plaintiffs reserve the right to withdraw or withhold their consent to the Consent Decree if public comments disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate.

280. Notice. Unless otherwise provided herein, notifications to or communications between the Parties will be deemed submitted on the date they are postmarked and sent by U.S. Mail, postage pre-paid, except for notices under Part XIII and Part XIV which will be sent either by overnight mail or by certified or registered mail, return receipt requested. Each report, study, notification or other communication of Murphy will be submitted as specified in this Consent Decree, with copies to EPA Headquarters, the applicable EPA Region, and the applicable Co-Plaintiff. If the date for submission of a report, study, notification or other communication falls on a Saturday, Sunday or legal holiday, the report, study, notification or other communication will be deemed timely if it is submitted the next business day. Where an e-mail address is provided below, Murphy may submit any reports, notifications, certifications, or other communications required by this Consent Decree electronically (other than submission of a permit application required by this Consent Decree, payment of penalties under Part IX or Part X, and notices under Part XIII and Part XIV) in lieu of submission by U.S. Mail. Electronic submissions will be deemed submitted on the date they are transmitted electronically. Any report, notification, certification, or other communication that cannot be submitted electronically shall be submitted in hard-copy as provided in this Paragraph. Except as otherwise provided herein, all reports, notifications, certifications, or other communications required or allowed under this Consent Decree to be submitted or delivered to the United States, EPA, the Co-Plaintiffs, and Murphy will be addressed as follows:

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station

Washington, DC 20044-7611

and

Chief, Civil Division
U.S. Attorney's Office
P.O. Box 1585
Madison, WI 53701-1585

As to EPA Headquarters:

Hard-copy and electronic submissions shall be addressed to:

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

and submitted electronically to:
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Submissions not delivered electronically shall be sent to the address above and to:

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

As to EPA Regions:

Region 5:

Hard-copy and electronic submissions shall be addressed to:

Air and Radiation Division
U.S. EPA, Region 5
77 West Jackson Blvd. (AE-17J)
Chicago, IL 60604
Attn: Compliance Tracker

and

Office of Regional Counsel
U.S. EPA, Region 5

77 West Jackson Blvd. (C-14J)
Chicago, IL 60604

and submitted electronically to:
csullivan@matrixnewworld.com

Submissions not delivered electronically shall be sent to the addresses above.

Region 6:

Hard-copy and electronic submissions shall be addressed to:

Chief Air, Toxics, and Inspections Coordination Branch
Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

and submitted electronically to:
csullivan@matrixnewworld.com

Submissions not delivered electronically shall be sent to the address above.

As to the State of Louisiana:

Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P. O. Box 4312
Baton Rouge, LA 70821-4312

As to the State of Wisconsin:

Hard-copy and electronic submissions shall be addressed to:

Air Management Program
Wisconsin Department of Natural Resources
1701 North 4th Street
Superior, WI 54880

and submitted electronically to:
Rhonda.OLeary@Wisconsin.gov

Submissions not delivered electronically shall be sent to the address above and to:

Air Management Bureau Director
Wisconsin Department of Natural Resources
P.O. Box 7921

Madison, WI 53707-7921

As to the Murphy Refineries:

Murphy Superior

Refinery Manager
2407 Stinson Avenue
Superior, WI 54880

Murphy Meraux

Refinery Manager
P.O. Box 100
Meraux, LA 70075

and electronic copies to:
harry_lewis@murphyoilcorp.com
jdomike@wallaceking.com

Any Party may change either the notice recipient or the address for providing notices to it by serving all other parties with a notice setting forth such new notice recipient or address. In addition, the nature and frequency of reports required by the Consent Decree may be modified by mutual consent of the Parties. The consent of the United States to such modification must be in the form of a written notification from EPA, but need not be filed with the Court to be effective.

281. Approvals. All EPA approvals will be made in writing. All Co-Plaintiff approvals will be sent from the offices identified in Paragraph 280.

282. Opportunity for Comment by States of Louisiana and Wisconsin (as applicable). For all provisions of Part V where EPA approval is required, the applicable Co-Plaintiff is entitled to provide comments to EPA and to consult with EPA regarding the issue in question.

283. Paperwork Reduction Act. The information required to be maintained or submitted pursuant to this Consent Decree is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 *et seq.*

284. Modification. This Consent Decree contains the entire agreement of the Parties and will not be modified by any prior oral or written agreement, representation or understanding. Prior drafts of the Consent Decree will not be used in any action

involving the interpretation or enforcement of the Consent Decree. Non-material modifications to this Consent Decree will be effective when signed in writing by the United States, Murphy and the applicable Co-Plaintiff. The United States will file non-material modifications with the Court on a periodic basis. For purposes of this Paragraph, non-material modifications include but are not limited to modifications to the frequency of reporting obligations and modifications to schedules that do not extend the date for compliance with emissions limitations following the installation of control equipment or the completion of a catalyst additive program, provided that such changes are agreed upon in writing between EPA and Murphy. Material modifications to this Consent Decree will be in writing, signed by the United States, the applicable Co-Plaintiff, and Murphy, and will be effective upon approval by the Court.

285. Effect of Shutdown. Except as provided in Section V.F., the permanent shutdown of a unit and the surrender of all permits for that unit will be deemed to satisfy all requirements of this Consent Decree applicable to that unit on and after the later of: (i) the date of the shutdown of the unit; or (ii) the date of the surrender of all permits. The permanent shutdown of a Refinery and the surrender of all air permits for that Refinery will be deemed to satisfy all requirements of this Consent Decree applicable to that Refinery on and after the later of: (i) the date of the shutdown of the Refinery; or (ii) the date of the surrender of all permits

XVII. TERMINATION

286. Certification of Completion: Applicable Sections. Prior to moving for termination under Paragraph 291, Murphy may seek to certify completion of one or more of the following Sections/Parts of the Consent Decree applicable to that Refinery:

- a. Section V.A. – Fluid Catalytic Cracking Units (including operation of the unit for one year after completion in compliance with the emission limits established pursuant to the Consent Decree);
- b. Sections V.B. through V.E. – Fluid Catalytic Cracking Units (including operation of the unit for one year after completion in compliance with the emission limits established pursuant to this Consent Decree);

- c. Sections V.F. and V.G. – Combustion Units (including operation of the relevant units for one year after completion in compliance with the emission limit set pursuant to the Consent Decree);
- d. Sections V.H. through V.K. – SRPs and Flares;
- e. Sections V.M. and V.N. – Benzene and LDAR; and
- f. Part VII – Supplemental Environmental and Other Projects and Additional Injunctive Relief.

287. Certification of Completion: Murphy Actions. If Murphy concludes that any of the Sections of the Consent Decree identified in Paragraph 286 have been completed, Murphy may submit a written report to EPA and the Co-Plaintiffs describing the activities undertaken and certifying that the applicable Section(s) have been completed in full satisfaction of the requirements of this Consent Decree, and that Murphy is in substantial and material compliance with all of the other requirements of the Consent Decree. The report will contain the following statement, signed by a responsible corporate official of Murphy:

To the best of my knowledge, after appropriate investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

288. Certification of Completion: EPA Actions. Upon receipt of Murphy's certification and after opportunity for comment by the Co-Plaintiffs, EPA will notify Murphy whether the requirements set forth in the applicable Section have been completed in accordance with this Consent Decree:

- a. If EPA concludes that the requirements have not been fully complied with, EPA will notify Murphy as to the activities that must be undertaken to complete the applicable Section of the Consent Decree. Murphy will perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Part XIV (Dispute Resolution); and/or
- b. If EPA concludes that the requirements of the applicable Section or Part have been completed in accordance with this Consent Decree, EPA will so

certify in writing to Murphy. This certification will constitute the certification of completion of the applicable Section or Part for purposes of this Consent Decree. The Parties recognize that ongoing obligations under such Sections remain and necessarily continue (*e.g.*, reporting, recordkeeping, training, auditing requirements), and that Murphy's certification is that it is in current compliance with all such obligations.

289. Certification of Completion: No Impediment to Stipulated Penalty Demand. Nothing in Paragraphs 287 and 288 will preclude the United States or the Co-Plaintiffs from seeking stipulated penalties for a violation of any of the requirements of the Consent Decree regardless of whether a Certification of Completion has been issued under Paragraph 288.b of the Consent Decree. In addition, nothing in this Paragraph 289 will permit Murphy to fail to implement any ongoing obligations under the Consent decree regardless of whether a Certification of Completion has been issued

290. Termination: Conditions Precedent. This Consent Decree will be subject to termination upon motion by the Parties or upon motion by Murphy acting alone under the conditions identified in this Paragraph. Prior to seeking termination, Murphy must have completed and satisfied all of the following requirements of this Consent Decree:

- a. Installation of control technology systems as specified in this Consent Decree;
- b. Compliance with all provisions contained in this Consent Decree, such compliance may be established for specific parts of the Consent Decree in accordance with Paragraphs 286-289;
- c. Payment of all penalties and other monetary obligations due under the terms of the Consent Decree; unless all penalties and/or other monetary obligations owed to the United States or the States of Louisiana and Wisconsin are fully paid as of the time of the Motion;
- d. Completion of the Supplemental Environmental and Other Projects and Additional Injunctive Relief under Part VII;
- e. Application for and receipt of permits incorporating the emission limits and standards established under this Consent Decree; and
- f. Operation for at least one year of each unit in compliance with the emission limits established herein and certification of such compliance for each

unit within the first progress report following the conclusion of the compliance period.

291. Termination: Procedure. At such time as Murphy believes that it has satisfied the requirements for termination set forth in Paragraph 290, Murphy will certify such compliance and completion to the United States and the Co-Plaintiffs in accordance with the certification language of Paragraph 287. Unless the United States or the Co-Plaintiffs object in writing with specific reasons within one-hundred twenty (120) days of receipt of Murphy's certification under this Paragraph, the Court may upon motion by Murphy order that this Consent Decree be terminated. If the United States or the Co-Plaintiffs object to the certification by Murphy, then the matter will be submitted to the Court for resolution under Part XIV (Retention of Jurisdiction/Dispute Resolution). In such case, Murphy will bear the burden of proving that this Consent Decree should be terminated

XVIII. SIGNATORIES

292. Each of the undersigned representatives certifies that they are fully authorized to enter into the Consent Decree on behalf of such Parties, and to execute and to bind such Parties to the Consent Decree.


Dated and entered this _____ day of _____, 2010.

UNITED STATES DISTRICT JUDGE


THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

9/19/10
DATE


IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice
Washington, D.C.

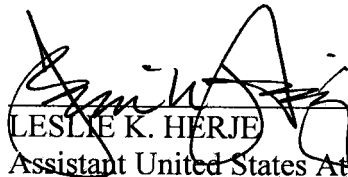
9.20.10
DATE


JOHN FOGARTY
Special Appointment as a Department of Justice
Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611

JOHN W. VAUDREUIL
United States Attorney
Western District of Wisconsin

By:

9/28/10
DATE

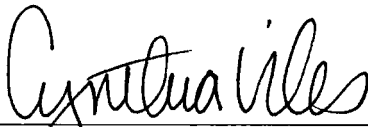

LESLIE K. HERJE
Assistant United States Attorney
660 W. Washington Ave., Suite 200
P.O. Box 1585
Madison, WI 53701-1585

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

9/13/10

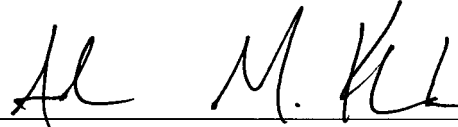
DATE



CYNTHIA GILES
Assistant Administrator
Office Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

9/7/10


DATE



ADAM M. KUSHNER
Director
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

8/31/10

DATE

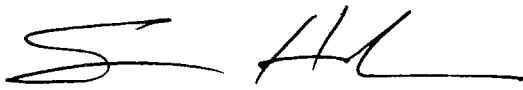


PHILLIP A. BROOKS
Director
Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

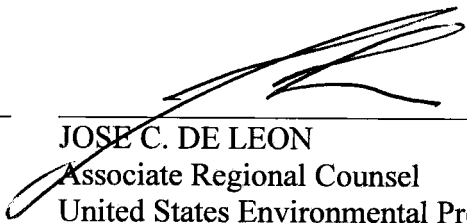
THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE U.S. ENVIRONMENTAL
PROTECTION AGENCY, REGION 5:

9-2-10
DATE


SUSAN HEDMAN
Regional Administrator
United States Environmental Protection Agency
Region 5
Chicago, Illinois

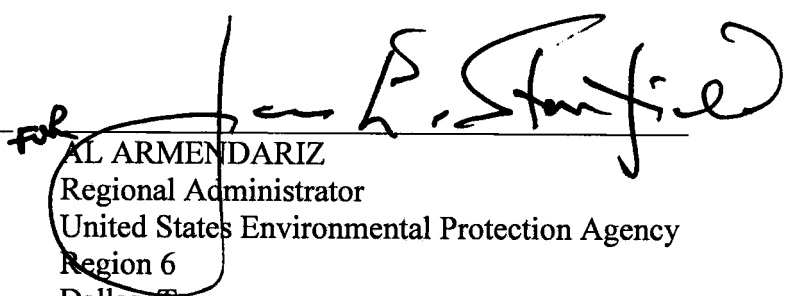
8/25/10
DATE


JOSE C. DE LEON
Associate Regional Counsel
United States Environmental Protection Agency
Region 5
Chicago, Illinois

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE U.S. ENVIRONMENTAL
PROTECTION AGENCY, REGION 6:

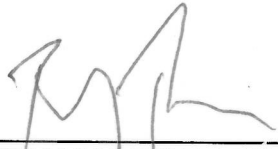
8/17/10
DATE

for 
AL ARMENDARIZ
Regional Administrator
United States Environmental Protection Agency
Region 6
Dallas, Texas

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, Docket No. 3:10-CV-563, subject to the public notice and comment requirements.


FINAL APPROVAL BY PLAINTIFF THE
LOUISIANA DEPARTMENT OF
ENVIRONMENTAL QUALITY:

1/19/11
DATE



BEAU JAMES BROCK
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality

1-18-11
DATE



DWANA C. KING (Bar Roll #20590)
Attorney
Office of the Secretary, Legal Affairs Division
Louisiana Department of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302
Telephone No. (225) 219-3985
Fax. No. (225) 219-4068



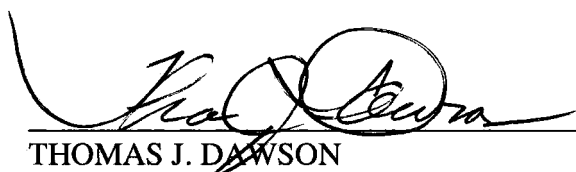
THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE STATE OF WISCONSIN:

J.B. VAN HOLLEN
Attorney General

By:

August 16, 2010
DATE

A handwritten signature in black ink, appearing to read "Thomas J. Dawson", is written over a horizontal line.

THOMAS J. DAWSON
Assistant Attorney General
Director – Environmental Protection Unit
Wisconsin Department of Justice
17 West Main Street
Madison, Wisconsin 53707-7857
Telephone (608) 266-8987
Fax No. (608) 266-2250

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States, et al. v. Murphy Oil USA, Inc.*, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR DEFENDANT MURPHY OIL USA, INC.:

13 AUGUST 2010

DATE

NAME





Title

Senior Vice President

Address

Murphy Oil USA, Inc.

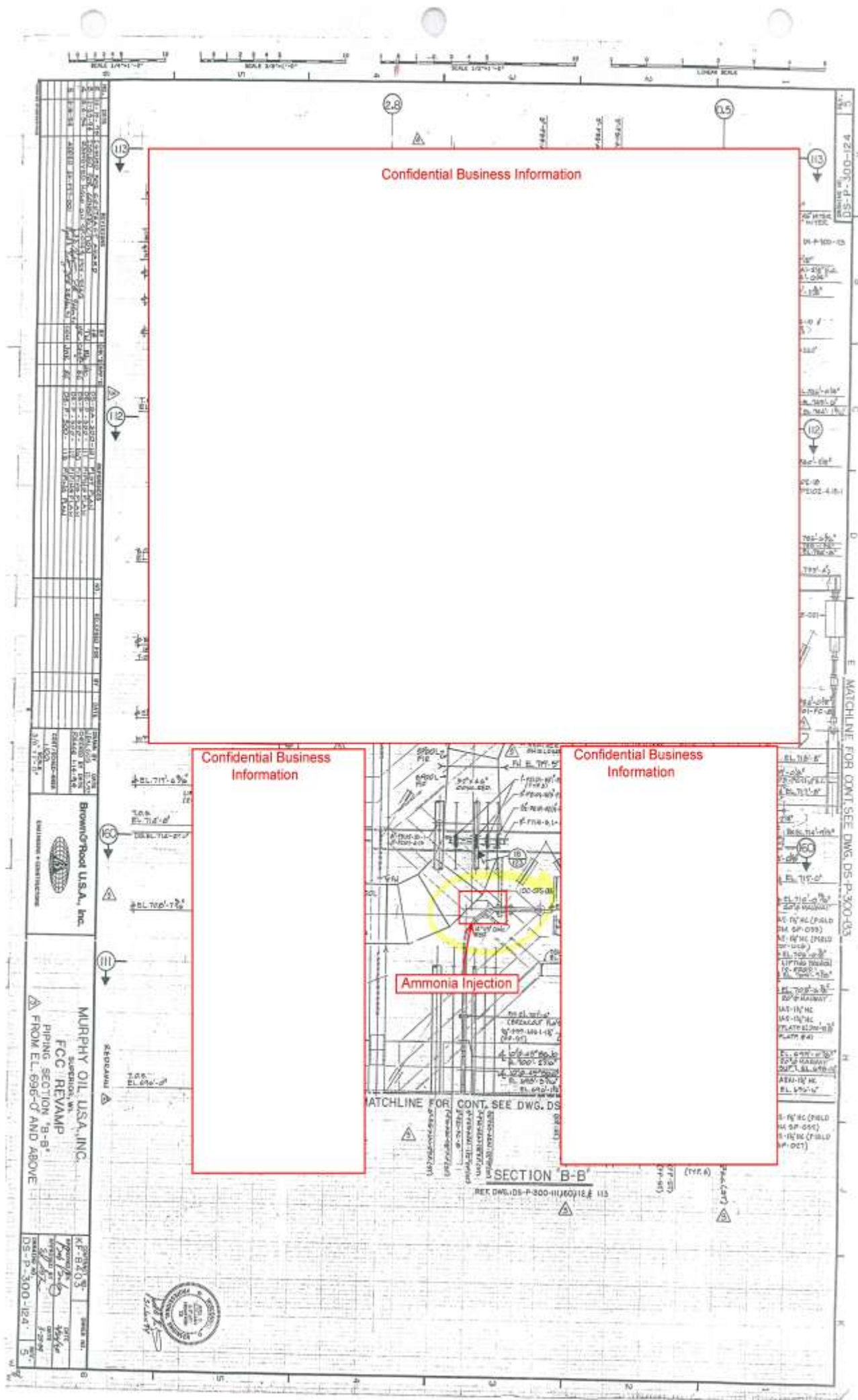
200 E. Peach St. (71730)

P.O. Box 7000

El Dorado, Arkansas 71731-7000

APPENDIX A

Schematic Showing Location for Ammonia Injection Into Regenerator Flue Duct: Superior Refinery



APPENDIX B

List of Heaters and Boilers (Combustion Units)

Unit Name	Permit EPN No. or Stack ID	Permit EQT No. or Process ID	TabWare No. or Equipment ID	Capacity (MMBtu/hr)	Average (MMBtu/hr)	lb/MMBtu	Tons per year	Type of Data Used for Emissions Estimate	Date of NSPS Compliance
Meraux Refinery									
Crude Charge Heaters	12-72A	EQT 0022	CR-H-001A CR-H-001B	436	289.5	0.106	134.4	Stack Test 4/22/2008	Date of Entry
Hydrobon Charge Heater	14-72	EQT 0023	H-H-001	52	29.9	0.185	24.2	Stack Test 4/28/2008	Date of Entry
Hydrobon Depentanizer Heater	16-72	EQT 0027	H-H-002	55	35.9	0.106	16.7	Stack Test 4/29/2008	Date of Entry
Platformer Charge Heater	17-72a, b, c	EQT 0028	P-H-001A P-H-00 1B P-H-00 1C P-H-001D	396	241.1	0.072	76.0	Stack Tests 10/25/2007 & 4/25/2008	Date of Entry
East & West Vacuum Charge Heater	1-76	EQT 0013	VU-H-001 VU-H-002	216	66.8	0.070	20.5	Stack Test 10/4/2006	Date of Entry
Alky Reboiler	1-77	EQT 0078	AL-H-001	181	44.6	0.141	27.5	Stack Test 10/3/2006	Dec. 31, 2012†
ROSE Charge Heater	1-80	EQT 0014	DA-H-001	149	76.1	0.046	15.3	Stack Test 8/16/2005	Date of Entry
MDH Product Fractionator & Charge Heater	2-92	EQT 0033	DS-H-001	221	177.9	0.059	46.0	Stack Test 3/13/2007	Date of Entry
Hydrocracker/ Hydrotreater/ Fractionator Charge Heaters	1-00	EQT 0009	HC-H-001 HC-H-002 HC-H-003	303	143.4	0.067	42.1	Stack Test 3/19/2008	Date of Entry
B-5Boiler	2-00	EQT 0030	B-B-05	275	85.0	0.056	20.9	CEMS	Date of Entry
B-6 Boiler	3-00	EQT 0048	B-B-06	275	90.7	0.061	24.2	CEMS	Date of Entry
TB-01 Boiler	1-06	EQT 0010	N/A	121	55.5	0.046	11.2	CEMS	Date of Entry

Unit Name	Permit EPN No. or Stack ID	Permit EQT No. or Process ID	TabWare No. or Equipment ID	Capacity (MMBtu/hr)	Average (MMBtu/hr)	lb/MMBtu	Tons per year	Type of Data Used for Emissions Estimate	Date of NSPS Compliance
DHT Compressors	1-88A/B	N/A	DH-C-001 DH-C-002	5	3.7	3.06	49.4	Stack Test 9/17/2009	Date of Entry
Emergency Plant Breathing Air Compressor	1-88F	EQT 0015	Y-C-101B	1	0.0	4.41	0.5	AP-42	Date of Entry
Plant Air Compressor	1-88H	EQT 0017	Y-C-203	3	0.2	4.41	3.4	AP-42	Date of Entry
Subtotal				2689.0			512.4		
Superior Refinery									
Crude Heater	S19	P19	4C-H3	122.1	106.1	0.057	26.5	Stack Test 10/29/2008	Dec. 31, 2013††
Boiler B7	S17	B27	9P-H7	47.3	30.6	0.198	26.5	Stack Test 11/11/2008	Dec. 31, 2011
Boiler B8	S17	B27	9P-H8	47.3	30.6	0.198	26.5	Stack Test on 9P-H7 11/11/2008	Dec. 31, 2011
Boiler B9	S17	B27	9P-H9	47.3	30.6	0.198	26.5	Stack Test on 9P-H7 11/11/2008	Dec. 31, 2011
Boiler B10	S17	B27	9P-H10	57.2	37.0	0.211	34.2	Stack Test 10/23/2008	Dec. 31, 2011
Platformer #1 Reactor Heater	S24	P24	24-H1	70.4	29.8	0.089	11.6	Stack Test 10/30/2008	Dec. 31, 2011
Platformer #2 Reactor Heater	S24	P24	24-H2	70.4	29.8	0.089	11.6	Stack Test 10/30/2008	
Subtotal				462.0			163.2		
TOTAL				3151.0			675.5		

† NSPS Monitoring Compliance Date: Date of Entry

†† NSPS Monitoring Compliance Date: Dec. 31, 2011

Small Heaters (including those to be re-rated to 39 MMBth/hr annual average)

Unit Name	Permit EPN No. or Stack ID	Permit EQT No. or Process ID	TabWare No. or Equipment ID	Capacity (MMBtu/hr)	Average (MMBtu/hr)	lb/MMBtu	Tons per year	Type of Data Used for Emissions Estimate	Date of NSPS Compliance
Meraux Refinery									
Hydrobon Debut Reboiler	15-72	EQT 0024	H-H-02	49	27.4	0.140	16.8	Stack Test early 1990's	Date of Entry
Platformer Debut Reboiler	19-72	EQT 0029	P-H-02	55	18.5	0.065	5.3	Stack Test 4/29/2008	Date of Entry
DHT Charge Heater	5-73	EQT 0058	DH-H-001	48	25.1	0.097	10.7	Stack Test early 1990's	Date of Entry
Superior Refinery									
Preflash Heater	S33	P33	4C-H04	48.4	20.5	0.169	15.2	Stack Test 11/12/2008	Dec. 31, 2011

Baselines:

Meraux: July 2006 through June 2008

Superior: January 2006 through December 2007

APPENDIX C

Predictive Emissions Monitoring Systems for Heaters and Boilers with Capacities Between 100 and 150 mmBTU/hr

Murphy shall continuously monitor NO_x emissions from heaters and boilers with capacities of less than 150 mmBTU/hr (HHV) but greater than 100 mmBTU/hr (HHV) in accordance with this Appendix to demonstrate compliance with the NO_x requirements established for Controlled Heaters and Boilers pursuant to Section V, Subsection F of the Consent Decree. Murphy shall continuously monitor by either:

- (1) installing and operating a NO_x CEMS; or
- (2) installing a Predictive Emission Monitoring System (PEMS) for NO_x.

A CEMS directly measures the gas concentration of NO_x in a stack. A PEMS is a mathematical model that predicts the gas concentration of NO_x in the stack based on a set of operating data. Consistent with the CEMS data frequency requirements of 40 C.F.R. Part 60, the PEMS shall calculate a pound per million BTU value at least once every 15 minutes, and all of the data produced in a calendar hour shall be averaged to produce a calendar hourly average value in pounds per million BTU.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represent an ideal case. However, at a minimum, each PEMS shall include continuous monitoring for at least items 3 through 5 below. Murphy shall identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS predictive software.

Basis Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available);
2. Fuel Density, Composition and/or Specific Gravity-On line readings (it may be possible, if the fuel gas does not vary widely, that a grab sample and analysis may be substituted);
3. Fuel flow rate;
4. Firebox temperature;
5. Stack excess oxygen reading;
6. Airflow to the firebox (if known or possibly estimated);
7. Process variable data - steam flow rate, temperature and pressure - process stream flow rate, temperature & pressure, etc.

Computers & Software:

1. Windows NT computer or Honeywell Node - Windows NT is preferred so "PC Anywhere" software can be used to monitor the PEMS setup;
2. "Software CEM" to calculate the "predicted" NO_x emissions;
3. Data management software to write the compliance monitoring reports.

Calibration and Setup:

1. Data shall be collected for a period of 3 to 7 days for all the data that is to be used to construct the mathematical model. The data shall be collected over an operating range that represents 80% to 100% of typical heater/boiler operation;
2. Collect data for “End of Run” and “Start of Run,” if appropriate;
3. A “Sensor Validation” analysis shall be conducted to make sure the system is collecting data properly;
4. Stack Testing (by subcontractor) to develop the actual emissions data for comparison to the collected parameter data;
5. Development of the mathematical models and installation of the model into the computer.

The elements of a protocol for a PEMS shall include:

1. Applicability
 - a. Identify source name, location, and emission unit number(s);
 - b. Identify the type of industry;
 - c. Identify the process of interest;
 - d. Identify the regulations or other authorities that apply (*e.g.*, NSPS, NESHAP, SIP, and/or Consent Decree);
 - e. Identify the pollutant(s) subject to monitoring (information on major/area source determination);
 - f. Provide expected dates of monitor compliance demonstration testing.
2. Source Description
 - a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (*e.g.*, sampling ports in the stack);
 - b. Provide a discussion of process or equipment operations that are known to significantly affect emissions or monitoring procedures (*e.g.*, batch operations, plant schedules, product changes).
3. Control Equipment Description
 - a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (*e.g.*, sampling ports in the stack);
 - b. List monitored operating parameters and normal operating ranges;
 - c. Provide a discussion of operating procedures that are known to significantly affect emissions (*e.g.*, catalytic bed replacement schedules, ESP rapping cycles, fabric filter cleaning cycles).
4. Monitoring System Design
 - a. Install, calibrate, operate, and maintain a continuous PEMS;
 - b. Provide a general description of the software and hardware components of the PEMS including manufacturer, type of computer, name(s) of software product(s), monitoring technique (*e.g.*, method of emission correlation).

Manufacturer literature and other similar information shall also be submitted, as appropriate;

- c. List all elements used in the PEMS to be measured (*e.g.*, pollutant(s), other exhaust constituent(s) such as O₂ for correction purposes, process parameter(s), and/or emission control device parameter(s));
- d. List all measurement or sampling locations (*e.g.*, vent or stack location, process parameter measurement location, fuel sampling location, work stations);
- e. Provide a simplified block flow diagram of the monitoring system overlaying process or control device diagram (may be included in Source Description and Control Equipment Description);
- f. Provide a description of sensors and analytical devices (*e.g.*, thermocouple for temperature, pressure diaphragm for flow rate);
- g. Provide a description of the data acquisition and handling system operation including sample calculations (*e.g.*, parameters to be recorded, frequency of measurement data averaging time, reporting units, recording process);
- h. Provide checklists, data sheets, and report format as necessary for compliance determination (*e.g.*, forms for record keeping).

5. Support Testing and Data for Protocol Design

- a. Provide a description of field and/or laboratory testing conducted in developing the correlation (*e.g.*, measurement interference check, parameter/emission correlation test plan, instrument range calibrations);
- b. Provide graphs showing the correlation, and supporting data (*e.g.*, correlation results, predicted versus measured plots, sensitivity plots, computer modeling development data).

6. Initial Verification Test Procedures

- a. Perform an initial relative accuracy test (RA test) to verify the performance of the PEMS over the permitted operating range. The PEMS must meet the relative accuracy requirement of the applicable Performance Specification in 40 C.F.R. Part 60, Appendix B. The test shall utilize the test methods of 40 C.F.R. Part 60, Appendix A;
- b. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation, and typical of the anticipated range of operation, test the selected parameter for three RA test data sets at the low operating range, three at the normal operating range and three at the high operating range of that parameter, for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration;
- c. Maintain a log or sampling report for each required stack test listing the emission rate in accordance with the applicable emission limitations;
- d. Demonstrate the ability of the PEMS to detect excessive sensor failure modes that would adversely affect PEMS emission determination. These failure modes include gross sensor failure or sensor drift;

- e. The owner or operator shall demonstrate the ability to detect sensor failures that would cause the PEMS emissions determination to drift significantly from the original PEMS value;
- f. The owner or operator may use calculated sensor values based upon the mathematical relationships established with the other sensors used in the PEMS. The owner or operator shall establish and demonstrate the number and combination of calculated sensor values which would cause PEMS emission determination to drift significantly from the original PEMS value.

7. Quality Assurance Plan

- a. Provide a list of the input parameters to the PEMS (*e.g.*, transducers, sensors, gas chromatograph, periodic laboratory analysis), and a description of the sensor validation procedure (*e.g.*, manual or automatic check);
- b. Provide a description of routine control checks to be performed during operating periods (*e.g.*, preventative maintenance schedule, daily manual or automatic sensor drift determinations, periodic instrument calibrations);
- c. Provide minimum data availability requirements and procedures for supplying missing data (including specifications for equipment outages for QA/QC checks);
- d. List corrective action triggers (*e.g.*, response time deterioration limit on pressure sensor, use of statistical process control (SPC) determinations of problems, sensor validation alarms);
- e. List trouble-shooting procedures and potential corrective actions;
- f. Provide an inventory of replacement and repair supplies for the sensors;
- g. Specify, for each input parameter to the PEMS, the drift criteria for excessive error (*e.g.*, the drift limit of each input sensor that would cause the PEMS to exceed relative accuracy requirements);
- h. Conduct quarterly electronic data accuracy assessment tests of the PEMS;
- i. Conduct semiannual RA tests of the PEMS. Annual RA tests may be conducted if the most recent RA test result is less than or equal to 7.5%. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation and typical of the anticipated range of operation, test the selected parameter for three RA test data pairs at the low operating range, three at the normal operating range, and three at the high operating range of that parameter for a total of nine RA test data sets. Each RA test data set should be 60 minutes in duration.

8. PEMS Tuning

- a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed;
- b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMS model are not changed.

APPENDIX D

List of Flaring Devices at the Murphy Refineries

Refinery		<u>Monitoring Compliance Date</u>	<u>NSPS Compliance Date</u>
Meraux	North Flare (Emission Point No. 20-72/EQT0035)	March 31, 2011	December 31, 2016
	South Flare (Emission Point No. 3-77/EQT0049)	March 31, 2011	December 31, 2016
Superior	“Main” Refinery Flare (Emission Inventory No. I10- S12)	August 1, 2011	August 1, 2011
	“Backup” Refinery Flare (Emission Inventory No. I11- S11)	August 1, 2011	August 1, 2011

APPENDIX E
Process and Factors for “Commercial Unavailability” of
Low-Leaking Valve or Packing Technology

This Appendix outlines a process to be followed and factors to be taken into consideration to establish that a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology is not “commercially available” pursuant to Paragraph 136 of the Consent Decree. Factors and procedures other than those identified in this Appendix may also be utilized to establish that a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology is not commercially available.

I. Factors: The following factors shall be taken in to account for determining the availability of safe and suitable Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technologies:

- (1) Valve type;
- (2) Valve service and operating conditions;
- (3) Type of refinery process equipment in which the valve is used;
- (4) Seal performance;
- (5) Service life;
- (6) Packing friction;
- (7) Temperature and pressure limitations; and
- (8) Retrofit applications (*e.g.*, re-piping or space limitations).

The following factors may also be relevant for consideration, depending on the process unit or equipment in use at the refinery:

- (9) Valve or valve packing specifications identified by the licensor of the process unit or equipment in use at the refinery (including components that are part of a design package by a specialty-equipment provider as part of a larger process unit); or
- (10) Valve or valve packing vendor or manufacturer recommendations for the relevant refinery unit and/or process unit components.

II. Process: The following procedure shall be followed for determining the availability of a Certified Low-Leaking Valve or Certified Valve Packing Technology:

- (1) Murphy must contact a reasonable number of vendors of valves and valve packing technologies, taking into account the relevant factors identified above, prior to asserting a claim that Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology is not commercially available.
 - (a) For purposes of this Consent Decree, a reasonable number of vendors shall mean at least three vendors of valves and three vendors of valve packing technologies;
 - (b) If fewer than three vendors of valve or valve packing technologies are contacted, the determination of whether such fewer number is reasonable

for purposes of this Consent Decree shall be based on Factors (9) and/or (10) above, or on a demonstration that fewer than three vendors offer valves or valve packing technologies for the service and operating conditions of the valve to be replaced, in consideration of Factors (1) through (8) above, as applicable.

- (2) Murphy shall obtain a written representation from each vendor contacted or equivalent documentation that the valve or valve packing does not meet the specifications for a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology.
- (3) Murphy shall prepare a written report fully explaining the basis for each claim that a valve or valve packing is not commercially available, to include all relevant documentation and other information supporting the claim. Such report shall also identify the commercially-available valve or packing technology that comes closest to meeting the requirements for a Certified Low-Leaking Valve or Certified Low-Leaking Valve Packing Technology that is selected and installed by Murphy pursuant to Paragraph 136 of the Consent Decree. Such report shall be included in the Semi-Annual Report required by Section VIII of the Consent Decree, for the period in which the valve or valve packing is replaced.

III. EPA Review of Claim of Commercial Unavailability: Upon discretionary review by EPA of any claim of commercial unavailability, if EPA disagrees that a valve or valve-packing technology is commercially unavailable, EPA shall notify Murphy in writing, specifying the valve or valve packing EPA believes to be commercially available and the basis for its availability for the service and operating conditions of the valve. Following receipt by Murphy of EPA's notice, the following shall apply:

- (1) Murphy is not required to retrofit the valve or valve packing for which the unavailability claim was asserted (unless otherwise required to do so pursuant to some other provision of this Consent Decree).
- (2) EPA's notification shall serve as notice to Murphy of EPA's intent that a future claim of commercial unavailability will not be accepted for (a) the valve or valve packing that was the subject of the unavailability claim, or (b) for a valve or valve packing in the same or similar service, taking into account the factors identified in this Appendix. If Murphy disagrees with EPA's notification, Murphy and EPA may informally discuss the basis for the claim of commercial unavailability. EPA may thereafter revise its notification, if necessary.
- (3) If Murphy makes a subsequent commercial unavailability claim for the same valve or valve packing (or valve or valve packing in the same or similar service) that was the subject of a prior unavailability claim which was not accepted by EPA, and such subsequent claim is also denied by EPA on the same basis as provided in EPA's prior notification, Murphy shall retrofit the valve or valve packing with the commercially available valve or valve packing technology at the next unit turnaround.
- (4) Any disputes concerning EPA's notification to Murphy of the commercial availability of a valve or valve packing technology in a particular application

pursuant to Section III(3) of this Appendix shall be addressed under the Dispute Resolution provisions in Section XIV of this Consent Decree.