IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF KANSAS

UNITED STATES OF AMERICA,	)	
	)	
And	)	
	)	
STATE OF KANSAS, ex rel KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT,	)	
	)	
	)	
Plaintiffs	)	
	)	
v.	)	**Civ. No. 04-CV-1064-MLB**
	)	
COFFEYVILLE RESOURCES REFINING & MARKETING, LLC	)	
	)	
	)	
Defendant.	)	
	)	

SECOND CONSENT DECREE

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Defendant.	)	

SECOND CONSENT DECREE

WHEREAS Plaintiffs 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"), and the State of Kansas ("State") by and through the Kansas Department of Health and the Environment ("KDHE"), filed a Complaint in this action against defendant Coffeyville Resources Refining & Marketing, LLC ("CRRM") for alleged environmental violations at its petroleum refinery located at 401 North Linden Street, Coffeyville, Kansas ("the Refinery").

WHEREAS CRRM and Coffeyville Resources Terminal, LLC ("CRT") entered into a Consent Decree with the United States and KDHE in 2004 ("2004 Consent Decree") at the time

of CRRM and CRT's acquisition of the refinery and terminal (respectively), to address certain Clean Air Act and Resource Conservation and Recovery Act ("RCRA") corrective action obligations at the refinery and terminal related to the prior ownership and operation of the refinery by Farmland Industries, Inc.

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

WHEREAS the Parties intend to terminate all of the Clean Air Act requirements in the 2004 CD and replace them with the Clean Air Act requirements and other provisions of this Second Consent Decree in furtherance of the National Petroleum Refining Initiative.

WHEREAS this Second Consent Decree includes additional requirements under the Clean Air Act and includes other claims relating to reporting of certain air releases including the following:

a. Prevention of Significant Deterioration ("PSD") requirements found at Part C of Subchapter I of the Clean Air Act (the "Act"), 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD Rules"); and the regulations promulgated thereunder at 40 C.F.R. § 51.165(a) and (b), 40 C.F.R. Part 51, Appendix S, and 40 C.F.R. § 52.24 (the "NSR Regulations") (collectively the "PSD/NSR Regulations"), for fuel gas combustion devices for NOx, SO_2, CO, and PM and fluid catalytic cracking unit catalyst regenerators; and K.A.R. 28-19-350;

b. New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts A and J ("Refinery NSPS Regulations"), promulgated under Section 111 of the Act,

42 U.S.C. § 7411, for fluid catalytic cracking unit catalyst regenerators, sulfur recovery plants, and fuel gas combustion devices; and K.A.R. 28-19-720;

c. 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, Subpart 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 K.A.R. 28-19-720, 735, 750;

d. National Emission Standards for Hazardous Air Pollutants ("NESHAP" for Benzene Waste Operations promulgated pursuant to Section 112(e) of the Clean Air Act, found at 40 C.F.R. Part 61, Subpart FF (National Emission Standard for Benzene Waste Operations") and K.A.R. 28-19-735.

e. The Kansas state implementation plan ("SIP"), approved by EPA pursuant to Section 110 of the Act, 42 U.S.C. § 7410, to the extent that such plan implements, adopts, or incorporates the above-described federal requirements.

f. Section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(a), and Section 304(b) and (c) and Section 313 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11004(b) and (c), and 11023 and the regulations promulgated thereunder;

WHEREAS CRRM denies that it has violated and/or continues to violate the foregoing federal statutory and regulatory provisions, or the foregoing SIP provisions incorporating and implementing the federal requirements, and maintains that it has been and remains in compliance with all applicable statutes, regulations, and permits and is not liable for civil penalties and injunctive relief.

WHEREAS with respect to the provisions of Section V.K. ("Control of Acid Gas Flaring and Tail Gas Incidents") of this Consent Decree, EPA maintains that "[i]t is the intent of the proposed standard [subsequently codified in part at 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, Office of Air Quality Planning and Standards, U.S. EPA, Background 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), 28 (1973).

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

WHEREAS EPA recognizes that "Malfunctions," as defined in Section IV (Definitions) of this Consent Decree and 40 C.F.R. § 60.2, of "Claus 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 CRRM agrees to undertake at the Refinery the installation of pollution control equipment and the enhancements to its air pollution management practices set forth in

this Consent Decree to reduce air emissions through participation in the Global Settlement Strategy.

WHEREAS CRRM estimates that, when the affirmative relief and environmental projects identified in Sections V (Affirmative Relief) and VII (Supplemental Environmental Project) of this Consent Decree are fully implemented, annual emissions from the Refinery will be reduced by the following amounts: 1) nitrogen oxide by approximately 200 tons; 2) sulfur dioxide by approximately 110 tons.

WHEREAS CRRM has waived any applicable federal or state requirements of statutory notice of the alleged violations.

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

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

NOW THEREFORE before the taking of any testimony, without adjudication of any issue of fact or law, and upon the consent and agreement of the Parties to the Consent Decree, it is hereby ORDERED, ADJUDGED and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action and over the Parties pursuant to 28 U.S.C. §§ 1331, 1345, 1355 and 1367(a). In addition, this Court has jurisdiction over the subject matter of this action pursuant to Sections 113(b) and 167 of the Clean Air Act, 42 U.S.C. §§ 7413(b) and 7477 and Section 109(c) of CERCLA, 42 U.S.C.

§ 9609(c), and Section 325(b)(3) of EPCRA, 42 U.S.C. § 11045(b) (3). The Complaint states a claim upon which relief may be granted for injunctive relief and civil penalties against CRRM under the Clean Air Act, CERCLA and EPCRA. Authority to bring this suit is vested in the United States Department of Justice. See, e.g., 28 U.S.C. §§ 516 and 519, and Section 305 of the Clean Air Act, 42 U.S.C. § 7605.

2. Venue is proper in the District of Kansas pursuant to Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), Section 113(b) of CERCLA, 42 U.S.C. § 9613(b), Section 325(b)(3) of EPCRA, 42 U.S.C. § 11045(b)(3) and 28 U.S.C.§§ 1391(b) and (c), and 1395(a). CRRM consents to the personal jurisdiction of this Court and waives any objections to venue in this District.

3. Notice of the commencement of this action has been given to the State of Kansas in accordance with Section 113(a)(1) of the Clean Air Act, 42 U.S.C. § 7413(a)(1), as required by Section 113(b) of the Clean Air Act, 42 U.S.C. 7413(b).

II. APPLICABILITY AND BINDING EFFECT

4. The Provisions of the Consent Decree shall be binding upon the United States, the State of Kansas, and Coffeyville Resources Refining & Marketing, LLC and its successors, assigns, and other entities or persons bound by law.

5. Except as provided by Paragraphs 7-11 below, CRRM is responsible for complying with all of the requirements of this Consent Decree at the Refinery and the payment of the Civil Penalties required by Section IX.

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

7. CRRM shall give written notice of, and shall provide a copy of, the Consent Decree to any successors in interest at least sixty (60) days prior to the transfer of ownership or operation of any portion of the Refinery and shall provide a copy of the Consent Decree to any successor in interest. CRRM shall notify the United States and KDHE, in accordance with the notice provisions set forth in Section XV (General Provisions and Notices), of any successor in interest at least thirty (30) days prior to any such transfer of ownership or operation of the Refinery.

8. CRRM may request that the United States and State agree to a transferee's assumption of any or all of the obligations of the Consent Decree. CRRM shall condition any transfer, in whole or in part, of ownership of, operation of, or other interest (exclusive of any non-controlling, non-operational shareholder interest) in the Refinery upon the transferee's written agreement to execute a modification to the Consent Decree that shall make the terms and conditions of the Consent Decree applicable to the transferee.

9. As soon as possible prior to the transfer:

a. CRRM shall notify the United States and KDHE of the proposed transfer and of the specific Consent Decree provisions that CRRM proposes the transferee assume;

b. CRRM shall certify that the transferee is contractually bound to assume the obligations and liabilities of this Consent Decree; and

c. the transferee shall submit to the United States and KDHE a certification and supporting documentation showing that the transferee has the financial and technical ability to assume the obligations and liabilities of this Consent Decree and a certification that the transferee is contractually bound to assume the obligations and liabilities of this Consent Decree.

10. By no later than sixty (60) days after the submission to the Plaintiffs of the notice and certification required by the previous Paragraph:

a. the Plaintiffs shall notify CRRM that they do not agree to modify the Consent Decree to make the transferee responsible for complying with the terms and conditions of the Consent Decree; or

b. the Plaintiffs shall notify CRRM that they agree to modify the Consent Decree to make the transferee responsible for complying with the terms and conditions of the Consent Decree and the United States, KDHE, CRRM, and the transferee shall file with the Court a joint motion requesting the Court to approve a modification substituting the transferee for CRRM as the Defendant responsible for complying with the terms and conditions of the Consent Decree.

11. If CRRM does not secure the agreement of the United States and KDHE to a joint motion to transfer the Consent Decree obligations to the third party within sixty (60) days after submitting its request, then CRRM may file, without the agreement of the United States and KDHE, a motion requesting the Court to approve a modification substituting the transferee for the CRRM as the Defendant responsible for complying with some or all of the terms and conditions of the Consent Decree. The United States and KDHE may file an opposition to the motion. Such a motion shall be granted if CRRM and the transferee:

a. demonstrate that the transferee has the financial and technical ability to assume the obligations and liabilities of the Consent Decree; and

b. demonstrate that the modification language effectively transfers the obligations and liabilities to the transferee.

12. Except as provided in Paragraphs 7-11, above, and Section XII (Force Majeure), below, CRRM shall be responsible for ensuring that performance of the work contemplated under this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and any attachments hereto. No later than the execution of any contract with a consulting or contracting firm that is retained to perform work required by this Consent Decree, CRRM shall provide a copy of this Consent Decree to the consulting or contracting firm that is retained. No later than thirty (30) days after the Date of Lodging of the Consent Decree, CRRM also shall provide a copy of this Consent Decree to each consulting or contracting firm that CRRM already has retained to perform the work required by this Consent Decree. Copies of the Consent Decree do not need to be supplied to firms who are retained to supply materials or equipment to satisfy requirements of this Consent Decree.

III. OBJECTIVES

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

IV. DEFINITIONS

14. Unless otherwise defined herein, terms used in the 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, for purposes of the Consent Decree and the reports and documents submitted pursuant hereto, as follows:

a. "Acid Gas" or "AG" shall mean any gas that contains hydrogen sulfide and is generated at the Refinery by the regeneration of an amine scrubber solution, but does not mean Tail Gas.

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

c. "Acid Gas Flaring Device" or "AG Flaring Device" shall mean any device used to combust Acid Gas and/or Sour Water Stripper Gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid. The only Acid Gas Flaring Device currently in service at the Refinery is the flare at the coker unit (the "Coker Flare"). To the extent that, during the duration of the Consent Decree, the Refinery utilizes any devices other than the Coker Flare to combust Acid Gas and/or Sour Water Stripper Gas, those devices shall be Acid Gas Flaring Devices and shall be subject to the requirements of this Consent Decree.

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

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

f. "CO" shall mean carbon monoxide.

g. "Combustion Unit" shall mean any stationary emissions unit that burns a fossil fuel.

h. "Consent Decree" or "Decree" shall mean this Consent Decree, including the following appendices attached to the Consent Decree.

Appendix A: Stack Test Protocol

Appendix B: Initial Inventory of Covered Heaters and Boilers

Appendix C: Predictive Emissions Monitoring Systems

Appendix D: Stipulated Penalties Flow Chart for Acid Gas Flaring Events

Appendix E: EOL Sampling Plan

Appendix F: Commercial Unavailability Standards

Appendix G: Supplemental Environmental Project

i. "Covered Heaters and Boilers" shall mean all heaters and boilers at the Refinery for which heat input capacity is greater than 40 mmBTU/hr at HHV regardless of any applicable firing rate permit limitations.

j. "CRRM" shall mean Coffeyville Resources Refining & Marketing, LLC and its successors and assigns.

k. "Date of Lodging" or "Date of Lodging of the Consent Decree" shall mean the date the Consent Decree is lodged with the Clerk of the Court for the United States District Court for the District of Kansas.

l. "Day" or "Days" (whether or not capitalized) shall mean a calendar day or days, unless "business days" are expressly specified. In computing any period of time in which a

report or deliverable is due under this Consent Decree (but not as to calculation of rolling average emissions), where the last day would fall on a Saturday, Sunday or federal holiday, the period shall run until the close of business the next business day.

m. "Entry Date" or "Date of Entry" shall mean the date the Consent Decree is entered as a final judgment by the United States District Court for the District of Kansas.

n. "EPA" shall mean the Environmental Protection Agency of the United States and any successor departments or agencies.

o. "FCCU" shall mean the fluidized catalytic cracking unit at the Refinery, its regenerator, and any associated fired waste heat boiler (also known as the CO boiler).

p. "Flaring Device" shall mean an Acid Gas Flaring Device and/or an HC Flaring Device.

q. "Flaring Incident" shall mean an Acid Gas Flaring Incident, a Tail Gas Incident, and/or a Hydrocarbon Flaring Incident.

r. "Fuel Gas Combustion Device" shall have the meaning set forth in 40 C.F.R. § 60.101(g).

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

t. "Heaters and Boilers" or "Heaters or Boilers" shall be defined to include any stationary combustion unit used for the purpose of burning fossil fuel for the purpose of: (i) producing power, steam or heat by heat transfer, or (ii) heating a material for initiating or promoting a process or chemical reaction in which the material participates as a reactant or catalyst, but expressly excluding any FCCU regenerator, turbine, internal combustion engine, duct burner, CO boiler, incinerator or incinerator waste heat boiler.

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u. "Heater and Boiler NOx Emission Limit" shall mean the lower of the following: (i) the NOx emission limit, in pounds per mmBTU ("lb/mmBTU") at HHV (as a 365-day rolling average if based on CEMS, or as a 3-hour average if based on stack tests) in a federally enforceable, non-Title V (permanent) permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), of the Covered Heater or Boiler, or (ii) the NOx emission limit, in pounds per mmBTU at HHV, reflected in any permit application for a federally enforceable, non-Title V (permanent) permit, including a consolidated permit where such limit would also be permanent, submitted by CRRM for such Covered Heater or Boiler prior to the date of submittal of the compliance report required by Paragraph 39 herein.

v. "HHV" shall mean the theoretical total quantity of heat liberated by the complete combustion of a unit volume or weight of a fuel initially at 25 degrees C, assuming that the produced water is not vaporized, and all combustion products remain at, or are returned to, 25 degrees C.

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

x. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean any device 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 Refinery are the Cold Pond Flare and the Alky Flare. To the extent that, during the duration of the Consent Decree, the Refinery utilizes devices other than those listed in the preceding sentence to combust any excess volume of a refinery-generated gas

other than Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, those devices shall be HC Flaring Devices and shall be subject to the requirements of this Consent Decree.

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

z. "Interest" shall mean interest at the rate specified in 28 U.S.C. § 1961.

aa. "KDHE" shall mean the Kansas Department of Health and the Environment and any successor agency or department.

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

cc. "Malfunction," as specified by 40 C.F.R. § 60.2, shall mean: "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."

dd. "Natural Gas Curtailment" shall mean a restriction imposed by a natural gas supplier or public utility which limits CRRM's ability to obtain natural gas.

ee. "NOx" shall mean nitrogen oxides.

ff. "Paragraph" shall mean a portion of this Consent Decree identified by an Arabic numeral.

gg. "Parties" shall mean the United States, the State of Kansas, and CRRM.

hh. "Plaintiffs" shall mean the United States and the State of Kansas.

ii. "PM" shall mean particulate matter.

jj. "ppmvd" shall mean parts per million by volume (dry basis).

kk. "Refinery" shall mean the refinery presently owned by CRRM at 400 North Linden Street, Coffeyville, Kansas.

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

mm. "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 NOx with ammonia to nitrogen and water.

nn. "Shutdown" shall mean the cessation of operation of equipment for any purpose.

oo. "SO_2" shall mean sulfur dioxide.

pp. "SO_2 Reducing Catalyst Additive" shall mean Grace Davision Super De-SOx, Intercat Super SOXGETTER, or other EPA pre-approved additive.

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

rr. "Startup" shall mean the setting in operation of equipment for any purpose.

ss. State of Kansas or State shall mean the State of Kansas through the KDHE.

tt. "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. The SRP at the Refinery consists of three sulfur recovery units designated as No. 1, No. 2. and No. 3 that process feed from the same acid gas header.

uu. "Tail Gas" shall mean exhaust gas from a Claus train of an SRP and/or from a Tail Gas Unit section of an SRP.

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

ww. "Tail Gas Incident" shall mean combustion of Tail Gas that either is:

(1) combusted in a flare and results in 500 pounds or more of SO_2 emissions in any 24-hour period; or

(2) combusted in a thermal incinerator and results in emissions of 500 pounds or more of SO_2 in any 24-hour period. Only those time periods which are in excess of a SO_2 concentration of 250 ppm (rolling 12-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator.

CRRM shall use good engineering judgment and other monitoring data to estimate emissions during periods in which the SO_2 CEMS has exceeded the range of the instrument or is out of service.

xx. "Torch Oil" shall mean the FCCU feedstock or light cycle oil that is combusted in the FCCU regenerator.

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

zz. "United States" shall mean the United States of America including all of its departments and agencies.

V. AFFIRMATIVE RELIEF

A. NSPS APPLICABILITY FOR THE FCCU

15. By no later than the Entry Date, the FCCU 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 SO_2, PM and CO. Entry of this Consent Decree and compliance with the applicable monitoring requirements of this Consent Decree for the FCCU 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.

B. NOX EMISSIONS FROM THE FCCU

1. Interim NOx Emissions Limit for the FCCU

16. Beginning on the Entry Date, CRRM shall meet the following NOx Emissions Limit for the FCCU:

136 ppmvd @ 0% O2 on a 365-day rolling average basis (long-term limit), and

223 ppmvd @ 0% O2 on a seven (7) day rolling average basis (short-term limit).

NOx emissions during periods of Startup, Shutdown, or Malfunction of the FCCU or Malfunction of the NOx control device shall not be used in determining compliance with the short-term limit set forth above, provided that during such periods, CRRM implements good air pollution control practices to minimize NOx emissions.

2. Final NOx Emissions Limit for the FCCU

17. By no later than December 31, 2014, CRRM shall install Selective Catalytic Reduction ("SCR"), LoTOx or another alternative technology approved in writing by EPA and KDHE on the FCCU to comply with the following NOx emissions limits on the FCCU exhaust stream:

20 ppmvd @ 0% O2 on a 365-day rolling average basis (long-term limit), and

40 ppmvd @ 0% O2 on a seven (7) day rolling average basis (short-term limit).

NOx emissions during periods of Start-up, Shutdown, or Malfunction of the FCCU or Malfunction of the NOx control device, shall not be used in determining compliance with the

short-term limit set forth above, provided that during such periods CRRM implements good air pollution control practices to minimize NOx emissions.

18. By no later than December 1, 2012, CRRM shall submit a project schedule to EPA and KDHE for the installation of the NOx air pollution control technology selected to be installed on the FCCU to comply with the NOx emission limits in Paragraph 17. The project schedule will be enforceable under this Consent Decree and shall include dates for the following milestone events:

a. Date for final selection of NOx control technology to be installed on FCCU,

b. Start date for the procurement of the NOx air pollution controls,

c. Start of construction date,

d. Initial start-up date,

e. Date of compliance with NOx emission limits.

C. SO2 EMISSIONS FROM THE FCCU

1. Interim SO_2 Emission Limit for the FCCU

19. Beginning on January 1, 2011, and continuing until a Final SO_2 Emission Limit becomes effective pursuant to Paragraph 20 below, CRRM shall:

a. comply with the following SO_2 emissions limits on the FCCU exhaust stream: 37 ppmvd @ 0% O2 on a 365-day rolling average basis (hereinafter "Interim SO_2 Limit") excluding periods of Startup, Shutdown or Malfunction of the FCCU or Malfunction of the SO_2 control device provided that during such periods CRRM implements good air pollution control practices to minimize SO_2 emissions; and

b. add at least an average of 718 pounds per day of SO_2 Reducing Catalyst Additive; and

c. achieve the lowest achievable SO_2 emissions rate while adding SO_2 Reducing Catalyst Additive without interfering with FCCU conversion or processing rate, provided, however, that the "lowest achievable SO_2 emissions rate" does not require CRRM to add more than 718 pounds per day of SO_2 Reducing Catalyst Additive.

2. Final SO_2 Emissions Limit for the FCCU

20. Election of Final SO_2 Emissions Limit for the FCCU. CRRM shall select one of the following Final SO_2 Emission Limits for the FCCU:

a. 15 ppmvd @ 0% O2 on a 365-day rolling average basis and 30 ppmvd @ 0% O2 on a seven (7) day rolling average basis (hereinafter "15/30 Final SO_2 Emissions Limit"). SO_2 emissions during periods of Malfunction of the FCCU or SO_2 control device shall not be used in determining compliance with the 30 ppmvd seven day rolling average limit provided that during such periods CRRM implements good air pollution control practices to minimize SO_2 emissions; or

b. 10 ppmvd @ 0% O2 on a 365-day rolling average basis and 18 ppmvd @ 0% O2 on a seven (7) day rolling average (hereinafter "10/18 Final SO_2 Emissions Limit"). SO_2 emissions during periods of Malfunction of the FCCU or SO_2 control device shall not be used in determining compliance with the 18 ppmvd seven day rolling average limit, provided that during such periods CRRM implements good air pollution control practices to minimize SO_2 emissions.

21. CRRM shall notify EPA and KDHE in writing no later than December 31, 2011, as to which of the Final SO_2 Emission Limits for the FCCU set forth in subparagraphs 20.a. and

b. it selects. If CRRM fails to so notify EPA and KDHE, then the 10/18 Final SO_2 Emissions Limit under subparagraph 20.b. above shall be deemed to have been selected by CRRM.

22. If CRRM selects the 10/18 Final SO_2 Emissions Limit, it shall notify EPA and KDHE no later than January 31, 2012, of the lowest achievable SO_2 emissions rate while adding SO_2 Reducing Catalyst Additive with a reasonable certainty of compliance without interfering with FCCU conversion or processing rate as specified in subparagraph 19.c. above in the time period before the 10/18 Final SO_2 Emissions Limit becomes effective. In this notice it shall provide EPA with all information necessary to review its determination. CRRM shall supply EPA with any additional information that EPA requests in order to verify CRRM's determination.

23. Effective Date for Elected Final SO_2 Emissions Limit.

a. If CRRM selects the 15/30 Final SO_2 Emissions Limit pursuant to subparagraph 20.a. above, CRRM shall comply with the 15/30 Final SO_2 Emissions Limit beginning on March 15, 2012.

b. If CRRM elects the 10/18 Final SO_2 Emissions Limit pursuant to subparagraph 20.b. above, CRRM shall comply with the 10/18 Final SO_2 Emissions Limit beginning on January 1, 2017.

24. Means of Complying with applicable Final SO_2 Emissions Limit for the FCCU.

a. If CRRM selects the 15/30 Final SO_2 Emissions Limit pursuant to subparagraph 20.a. above, it shall comply with that limit by any means including but not limited to the use of SO_2 Reducing Catalyst Additives or control technology such as a wet gas scrubber.

b. If CRRM selects 10/18 Final SO_2 Emissions Limit pursuant to subparagraph 20.b., it shall comply with that limit by installing a wet gas scrubber or other technology pre-approved by EPA.

D. PM EMISSIONS FROM THE FCCU

25. By no later than the Entry Date, CRRM shall comply with an FCCU emission limit of 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis through the operation of an electrostatic precipitator ("ESP") or other means. Emissions during periods of Startup, Shutdown, or Malfunction of the FCCU and Malfunction of the PM Control Device shall not be used in determining compliance with the emission limit of 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis, provided that during such periods CRRM implements good air pollution control practices to minimize PM emissions.

26. CRRM shall conduct two stack tests at the FCCU to demonstrate compliance with the PM emission limit within one and three years after the Entry Date in accordance with the protocol attached hereto as Appendix A. Stack test results shall be submitted to EPA and KDHE sixty (60) days after completion of the test.

E. CO EMISSIONS REDUCTIONS FROM THE FCCU

27. CO Emission Limit. Consistent with the NSPS regulations at 40 C.F.R. Part 60, Subpart J, CRRM shall comply with a CO emission limit at the FCCU of 500 ppmvd CO at 0% O_2 on a 1-hour block average basis for the Refinery FCCU by no later than the Entry Date.

28. NSR Emissions Limit for CO. At any time during the term of the Consent Decree, in addition to the limit set forth in Paragraph 27 above, CRRM may accept the following "365 day CO Limit" for the Refinery FCCU:

100 ppmvd CO on a 365-day rolling-average basis at 0% O_2.

29. CO emissions caused by or attributable to the Startup, Shutdown or Malfunction of the FCCU shall not be used in determining compliance with the short-term (1 hour) CO emissions limit set forth in Paragraph 27 provided that during such periods CRRM implements good air pollution control practices to minimize CO emissions.

F. FCCU CEMS

30. By no later than the Entry Date, CRRM shall use NOx, SO_2, CO and O_2 CEMs to monitor emissions from the FCCU and to determine and report compliance with the FCCU emission limits established pursuant to Section V. B. C. and E.

G. NOx EMISSIONS REDUCTIONS FROM HEATERS AND BOILERS

31. CRRM has and shall continue to implement various NOx emission reduction measures and techniques to achieve a Refinery-wide NOx emission level for certain identified Heaters and Boilers at the Refinery. CRRM shall implement these NOx reduction measures and techniques to achieve a Refinery-wide NOx emission level for certain identified Heaters and Boilers at the Refinery as follows.

1. Initial Inventory and Updates

32. Appendix B (the "Initial Inventory of Covered Heaters and Boilers" or "Initial Inventory") provides an initial list of all Covered Heaters and Boilers at the Refinery.

33. The Initial Inventory identifies previously constructed Heaters and Boilers at the Refinery that make up the initial list of Covered Heaters and Boilers. The Initial Inventory also provides the following information concerning the Covered Heaters and Boilers:

a. CRRM's designations for each of the Covered Heaters and Boilers;

b. Identification of heat input capacity, and the source of such identification, for each of the Covered Heaters and Boilers. For purposes of this subparagraph, heat input

capacity for each Covered Heater or Boiler shall equal the lesser of any applicable permit limit or CRRM's best then-current estimate of its maximum heat input capacity (hereinafter "Heat Input Capacity");

c. Identification of the current Heater and Boiler NOx Emission Limit in pounds per million Btu, for each of the Covered Heaters and Boilers; and

d. Identification of those Covered Heaters and Boilers with a continuous emission monitoring system ("CEMS") for NOx that has been installed, or the date that a CEMs shall be installed, or the date of the most recent stack test, or the date that a stack test shall be conducted for each Covered Heater or Boiler.

34. CRRM shall submit to EPA an update to the Initial Inventory ("Initial Inventory Update") with every other Semi-Annual Report submitted after the Entry Date pursuant to Section VIII of this Decree, beginning with the Semi-Annual Report due February 28, 2013, provided, however, that CRRM shall not be obligated to submit an Initial Inventory Update after satisfying the provisions of Paragraphs 36-42 of this Section.

35. In the Initial Inventory Updates submitted pursuant to Paragraph 34 above, CRRM shall revise the information in subparagraphs 33.a.-d. above included in the Initial Inventory or most recent Initial Inventory Update as necessary based upon the construction of a new Covered Heater or Boiler or any change during the prior year to any of the previously existing Covered Heaters and Boilers, including the date of installation of any CEMS.

2. Interim System-Wide Weighted Average NOx Emissions for Covered Heaters and Boilers

36. By no later than January 1, 2011, CRRM shall install NOx control technologies on, or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the Refinery-wide weighted average of all Heater and Boiler NOx Emission Limits for Covered

Heaters and Boilers, as determined in accordance with Paragraph 39, for NOx emissions from the Covered Heaters and Boilers is no greater than 0.047 lbs./mmBTU (hereinafter the "Interim HB NOx Emissions Requirement").

3. Final System-Wide Weighted Average NOx Emissions for Covered Heaters and Boilers

37. By no later than December 31, 2016, CRRM shall install NOx control technologies on or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average of all Heater and Boiler NOx Emission Limits for Covered Heaters and Boilers, as determined in accordance with Paragraph 41, for NOx emissions from the Covered Heaters and Boilers is no greater than 0.041 lbs./mmBTU (hereinafter the "Final HB NOx Emissions Requirement").

38. In the event that before a Heater and Boiler NOx Emission Limit becomes effective, CRRM permanently ceases operation of any Covered Heater or Boiler, the emissions of any such shutdown unit shall be equal to 0.000 lbs/mmBTU NOx, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown provided that CRRM notified KDHE that such unit is no longer operational and requests the withdrawal or invalidation of any permit provisions authorizing operation of such unit.

4. Compliance Demonstration

39. Within 180 days after the Entry Date, CRRM shall submit to EPA and KDHE a report demonstrating compliance with the Interim HB NOx Emissions Requirement set forth in Paragraph 36 above. The compliance report submitted pursuant to this Paragraph shall include the following information, as applicable to CRRM's compliance demonstration:

a. The Heater and Boiler NOx Emission Limit. In the event that CRRM identifies a NOx emission limit, in pounds per mmBTU at HHV, for a Covered Heater or Boiler

pursuant to this paragraph based on a NOx emission limit then reflected in a pending permit application, CRRM shall not withdraw such application nor may they seek to modify that application to increase the NOx emission limit reflected in such application without prior EPA approval.

b. Heat Input Capacity, in mmBTU per hour ("mmBTU/hr") at HHV, for each Covered Heater and Boiler at the Refinery, including an explanation of any change relative to that reported in the most recent Annual Update.

c. A demonstration of compliance with Paragraph 36 of this Section performed in accordance with the following inequality:

$$0.047 \geq \sum_{i=1}^{n}\left[\left(EL_i x HIR_i\right)\right] / \sum_{i=1}^{n}\left(HIR_i\right)$$

EL_i = The Heater and Boiler NOx Emission Limit for each Covered Heater or Boiler "i", in pounds per million Btu (HHV), as reported pursuant to Paragraph 33.c. of this Section;

HIR_i = Heat Input Capacity of each Covered Heater or Boiler "i", in million Btu (HHV) per hour, as reported pursuant to Paragraph 33.b. of this Section;

n = The total number of Covered Heaters and Boilers at the Refinery.

40. By March 31, 2017, CRRM shall submit to EPA and KDHE a report demonstrating compliance with the Final HB NOx Emissions Requirement set forth in

Paragraph 37 above. The compliance report submitted pursuant to this Paragraph shall include the information set forth in Paragraph 39.a.-c. above.

41. CRRM shall demonstrate compliance with the HB Final NOx Emissions Requirement in Paragraph 37 of this Section by the following inequality:

$$0.041 \geq \sum_{i=1}^{n}\left[\left(EL_i x HIR_i\right)\right] / \sum_{i=1}^{n}\left(HIR_i\right)$$

EL_i = The Heater and Boiler NOx Emission Limit for each Covered Heater or Boiler "i", in pounds per million BTU (HHV), as reported pursuant to Paragraph 33.c. of this Section;

HIR_i = Heat Input Capacity of each Covered Heater or Boiler "i", in million BTU (HHV) per hour, as reported pursuant to Paragraph 33.b. of this Section;

n = The total number of Covered Heaters and Boilers at the Refinery.

5. <u>Monitoring Requirements</u>

42. For purposes of the Interim HB NOx Emissions Requirement applicable on the Entry Date, CRRM will monitor emissions as specified in Appendix B and in accordance with the CEMs installation and stack test schedule set forth therein. For purposes of the Final HB NOx Emissions Requirement for Covered Heaters and Boilers with a Heater and Boiler NOx Emission Limit of less than 0.060 lb/mmBTU; and for Covered Heaters and Boilers to which controls are added for purposes of meeting the Final HB NOx Emissions Requirement, beginning no later than 180 days after controls are installed or the Heater and Boiler NOx Emission Limit is established, CRRM shall monitor and demonstrate compliance by the following:

a. with a CEMs for any unit with a heat input capacity that is greater than 150 mmBTU/hr;

b. install or continue to operate a NOx CEMS, or monitor NOx emissions with a Predictive Emissions Monitoring System developed and operated pursuant to the requirements of Appendix C to this Consent Decree ("Predictive Emissions Monitoring Systems"); and

c. with a stack test for any unit with a heat input capacity of less than 100 mmBTU/hr but greater than 40 mmBTU/hr. CRRM shall report the results of the stack test to EPA and KDHE. CRRM shall use Method 7E or an EPA-approved alternative test method to conduct the stack test for NOx emissions required by this subparagraph.

43. Nothing in this Consent Decree shall preclude CRRM from converting a three (3) hour rolling average limit to the same limit expressed as a three hundred and sixty-five (365) day rolling average limit if such demonstration of compliance is based upon CEMS or PEMS.

6. Demonstration of Flameless Technology

44. On or before December 31, 2012, CRRM shall install a new heater or modify an existing heater, with a rated capacity of at least 9.5 mmBTU/hr, which is (or is modified to be) capable of operating in Flameless Firing mode (hereinafter "the Demonstration Heater"). The Demonstration Heater will be designed as follows:

a. capable of operating in the following three modes: 100% Flameless Firing mode, combined flameless and Conventional Mode, and 100% Conventional Mode;

b. capable of NOx emissions of <0.01 lbs/mmBTU (HHV) per hour at 3% O2 (dry) when operating in Flameless Firing mode (without SCR);

c. available to operate 95% of the time;

d. "90% efficient on a lower heating value basis ("LHV") when operating in Flameless Firing mode.

45. CRRM shall operate the Demonstrator Heater from January 1, 2013 through December 31, 2013 (hereinafter "the Demonstration Period").

46. On or before March 31, 2013, CRRM will install and operate a CEMs on the Demonstration Heater for the remainder of the Demonstration Period.

47. By no later than March 1, 2014, and based on one year of operating data during the Demonstration Period for the Demonstration Heater, CRRM shall submit a report to EPA and KDHE indicating whether the Demonstration Heater performs in accordance with the design specifications in Paragraph 44 above and, in either event, proposing an emission limit for NOx emissions in lbs per mmBTU on a 365-day rolling average basis. The emission limit will be based on the Demonstration Period data and will be low enough to ensure proper operation of the NOx control technology, but high enough to provide a reasonable certainty of compliance. CRRM is not required to establish an emission limit that is more stringent than 0.04 lbs/mmBTU on a 365-day rolling average basis for the Demonstration Heater.

48. During the Demonstration Period, CRRM shall continue to comply with the existing permit limit for the Demonstration Heater if the Demonstration Heater is an existing refinery heater or a limit of 0.04 lbs/mmBTU on a 365-day rolling average basis if the Demonstration Heater is a new refinery heater; provided however, that if the Demonstration Heater exceeds the applicable emission limit during the Demonstration Period due to the demonstration of the Flameless Firing capability, EPA and KDHE will exercise enforcement discretion and not seek to recover penalties for exceedances attributable to the Flameless Firing capability demonstration.

49. If the Demonstration Heater performed in accordance with the design specifications in Paragraph 44 then on or before December 31, 2016, CRRM shall install a new heater or modify an existing heater ("Second Demonstration Heater"), with a firing rate of at least 40 mmBTU/hr, which is (or is modified to be) capable of operating in Flameless Firing mode. The Second Demonstration Heater will be designed to the same specifications as the Demonstration Heater.

50. By March 31, 2017, CRRM will propose an emissions limit for the Second Demonstration Heater in accordance with the specifications in Paragraph 44 above.

51. If CRRM installs or modifies a Second Demonstration Heater pursuant to Paragraph 49 above, it may move the CEMs from the Demonstration Heater to the Second Demonstration Heater. If CRRM does not install a Second Demonstration Heater pursuant to Paragraph 49 above, then after the Demonstration Period it may disconnect the CEMs from the Demonstration Heater.

H. SO_2 EMISSIONS REDUCTIONS FROM COMBUSTION UNITS AND FUEL GAS COMBUSTION DEVICES, AND NSPS APPLICABILITY TO, FUEL GAS COMBUSTION DEVICES (OTHER THAN FLARING DEVICES)

52. NSPS Applicability to Fuel Gas Combustion Devices (Other than Flaring Devices).

a. Each Fuel Gas Combustion Device (other than Flaring Devices which are addressed in Subsections V. J., K., and L below) that is used to combust refinery fuel gas at the Refinery has been and is an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and J and shall comply with the requirements of NSPS Subparts A and J for Fuel Gas Combustion Devices.

b. If prior to the termination of this Consent Decree, any Fuel Gas Combustion 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 Subpart Ja, in lieu of NSPS Subpart J, for that regulated pollutant to which a standard applies as a result of the modification. The compliance deadline shall be the earlier of the compliance deadline in this Consent Decree or that required by Subpart Ja.

c. If prior to the termination of this Consent Decree, any Fuel Gas Combustion 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. The compliance deadline shall be the earlier of the compliance deadline in this Consent Decree or that required by Subpart Ja.

53. Elimination/Reduction of Fuel Oil Burning. Effective on the Entry Date, CRRM shall not burn Fuel Oil in any Combustion Unit at the Refinery except during periods of Natural Gas Curtailment or operator training. Nothing herein is intended to limit, or shall be interpreted as limiting, the use of Torch Oil in an FCCU regenerator to assist in starting, restarting, maintaining hot standby, or maintaining regenerator heat balance.

54. Elimination of Coal Burning. CRRM has ceased burning coal and coal byproducts and shall not resume burning coal or coal byproducts in any Heater, Boiler or Combustion Unit at the Refinery even after Termination of this Consent Decree unless air pollution control equipment controlling emissions from the Heater, Boiler or Combustion Unit either (i) has an SO_2 control efficiency of 90% or greater; or (ii) achieves an SO_2 concentration of 20 ppm at 0% O_2 or less on a three-hour rolling average basis. Nothing in this Paragraph

exempts CRRM from securing all necessary permits before constructing a new Combustion Unit at the Refinery.

I. SULFUR RECOVERY PLANT OPERATIONS

55. Sulfur Recovery Plant NSPS Applicability and Compliance. CRRM's Sulfur Recovery Plant ("SRP") has been and is an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and J. On and after the Entry Date, the Sulfur Recovery Plant shall continue to be subject to and shall comply with the requirements of NSPS Subparts A and J.

56. NSPS Emission Limit. CRRM shall, for all periods of operation of the SRP, comply with 40 C.F.R. § 60.104(a)(2) except during periods of Startup, Shutdown or Malfunction of the 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. § 60.104(a)(2), the "Startup/Shutdown" provisions set forth in NSPS Subpart A shall apply to the SRP. The Malfunction exemption set forth in NSPS Subpart A shall apply to each SRP and to the TGU.

a. NSPS Operation and Maintenance Requirements. At all times on and after the Entry Date, including periods of Startup, Shutdown, and Malfunction, CRRM shall, to the extent practicable, operate and maintain the SRP and associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions as required by 40 C.F.R. § 60.11(d).

b. Monitoring. CRRM shall monitor all TGU emissions points to the atmosphere (*e.g.*, stacks and incinerators) for tail gas emissions and shall monitor and report excess emissions from the SRP as required by 40 C.F.R. §§ 60.7(c), 60.13, and 60.105(a)(5), (6) or (7). During the life of this Consent Decree, CRRM shall conduct emissions monitoring from

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the SRP with CEMS at all of the emission points, unless an SO_2 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 SRP. This Paragraph does not apply to the sulfur pit gases until three years from the Entry Date pursuant to Paragraph 57 below.

c. Other Requirements. By no later than the Entry Date, CRRM shall ensure that the SRP complies with all other applicable provisions of NSPS set forth at 40 C.F.R. Part 60, Subparts A and J, including but not limited to all applicable recordkeeping and reporting requirements.

57. Sulfur Pit Gases. By no later than three (3) years after the Entry Date, CRRM shall re-route all sulfur pit gases at the Sulfur Recovery Plant so that sulfur pit gases are eliminated as a direct source of emissions and all sulfur pit gases shall be included and monitored as part of the SRP's emissions subject to the NSPS Subpart J limit, 40 C.F.R. § 60.104(a)(2).

58. Good Operation and Maintenance and PMO Plans.

a. By no later than 180 days after the Entry Date, CRRM shall submit to EPA and KDHE a summary of the plans, implemented or to be implemented, at the Refinery for enhanced maintenance and operation of the SRP (including their control devices), any sulfuric acid plants and their control devices, and Upstream Process Units. Those plans shall be termed the Preventative Maintenance and Operations Plan ("PMO Plan"). The PMO Plan shall be a compilation of CRRM's approaches for exercising good air pollution control practices and for minimizing SO_2 emissions from sulfur processing and Upstream Process Units at the Refinery. The PMO Plan shall have as its goals the elimination of Acid Gas Flaring and operation of the

SRP between scheduled maintenance turnarounds with minimization of emissions. The PMO Plan shall include, but shall not be limited to, sulfur shedding procedures, Startup and Shutdown procedures of the SRP, 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. Through and after termination of this Consent Decree, CRRM shall implement the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction, consistent with the requirements imposed by 40 C.F.R. § 60.11(d). Changes to the PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions shall be summarized and reported by CRRM to EPA and KDHE in the Semi-Annual Report required under Section VIII.

b. EPA and KDHE do not, by their review of the PMO Plan and/or by their failure to comment on the PMO Plan, warrant or aver in any manner that any of the actions that CRRM may take pursuant to such PMO Plan will result in compliance with the provisions of the Clean Air Act or any other applicable federal, state, or local law or regulation. Notwithstanding review of the PMO Plan by EPA and/or the State, CRRM shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

J. FLARING DEVICES

59. NSPS Subpart J Applicability. On and after the date that each flaring device is subject to NSPS, Subpart J as set forth in Paragraph 60 below, CRRM shall at all times and to the extent practicable, including during periods of Startup, Shutdown, upset and/or Malfunction, implement good air pollution control practices to minimize emissions from its Flaring Devices, in a manner consistent with the requirements imposed by 40 C.F.R. § 60.11(d).

60. NSPS Applicability to Flaring Devices. CRRM currently operates the following Flaring Devices at the Refinery: (1) the Cold Pond Flare; (2) the Coker Flare; and (3) the Alky Flare. The Cold Pond Flare and the Coker Flare are "affected facilities" subject to the requirements of the NSPS, 40 C.F.R. Part 60, Subparts A and J for Fuel Gas Combustion Devices, and CRRM shall comply with those provisions. Within two (2) years of the Entry Date, the Alky Flare shall be an affected facility subject to, and CRRM shall comply with the requirements of 40 C.F.R. Part 60, Subparts A and J for Fuel Gas Combustion Devices.

61. NSPS Ja Applicability to Flaring Devices.

a. If, prior to the termination of this Consent Decree, a Flaring Device becomes subject to NSPS Subpart Ja for a regulated 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 Subpart Ja, in lieu of NSPS Subpart J, for that regulated pollutant to which a standard applies as a result of the modification. The compliance date shall be the earlier of the compliance date in this Consent Decree or that required by Subpart Ja.

b. 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 regulated pollutants in lieu of Subpart J. The compliance deadline shall be the earlier of the compliance deadline in this Consent Decree or that required by Subpart Ja.

K. CONTROL OF ACID GAS FLARING AND TAIL GAS INCIDENTS

62. Past Acid Gas Flaring Incidents Analysis and Corrective Measures. By no later than sixty (60) days after the Entry Date, CRRM shall submit to EPA and KDHE a look back analysis that identifies and describes each Acid Gas Flaring Incident that occurred at the

Refinery for the five years prior to the Entry Date. The look back analysis shall state the date and time that each Acid Gas Flaring Incident started and ended, each incident's Root Cause or Causes, its estimated SO_2 emissions and the calculations used to determine the quantity of emissions.

63. By no later than six (6) months after the Entry Date, CRRM shall submit to EPA and KDHE a corrective action report on the Acid Gas Flaring Incidents described in the look back analysis submitted pursuant to Paragraph 62 above. This corrective action report shall identify such interim and/or long-term corrective actions that have been or will be implemented to address the Root Cause or Causes of the past Acid Gas Flaring Incidents, and a schedule for implementation, to minimize the likelihood of a recurrence of the Root Cause and the number and duration of future Acid Gas Flaring Incidents.

64. Future Acid Gas Flaring Incidents and Tail Gas Incidents. CRRM shall investigate the causes of Acid Gas Flaring Incidents and Tail Gas Incidents that occur after the Date of Lodging, take reasonable steps to correct the conditions that have caused or contributed to such Acid Gas Flaring Incidents and Tail Gas Incidents, and minimize Acid Gas Flaring Incidents and Tail Gas Incidents at the Refinery. CRRM shall continue to follow the Acid Gas Flaring Incident investigation and corrective action procedures of this Subsection K. after termination of the Consent Decree, but the reporting and stipulated penalty provisions of this Subsection shall not apply after termination.

65. Investigation and Reporting. No later than forty-five (45) days following the end of an Acid Gas Flaring Incident occurring after the Entry Date, CRRM shall conduct an investigation into the Root Cause or Causes of the incident and record the findings of the investigation in a report for each incident ("Acid Gas Flaring Incident Report"). Each Acid Gas

Flaring Incident Report shall be submitted to EPA and KDHE as part of the Semi-Annual Report for the time period in which the Acid Gas Flaring Incident occurred as required by Section VIII of this Decree. Each Acid Gas Flaring Incident Report shall include, at a minimum, the following information about the incident that is the subject of the report:

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, CRRM shall set forth the starting and ending dates and times of each release;

b. An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

c. The steps, if any, that CRRM took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

d. A detailed analysis that sets forth the Root Cause or Causes and all 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 Causes or contributing causes in the future. The analysis shall discuss the alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation, and maintenance changes shall be evaluated. If CRRM concludes that corrective action(s) is (are) required under Paragraph 66, the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed completion

dates. If CRRM concludes that corrective action is not required under Paragraph 66, the report shall explain the basis for that conclusion;

f. A statement that:

i. specifically identifies each of the grounds for stipulated penalties in Paragraphs 67, 68 and 69 of this Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds (provided, however, that CRRM 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 CRRM's potential defenses);

ii. if an Acid Gas Flaring Incident falls under Paragraph 69 of this Decree, identifies which subparagraph (69.a. or 69.b.) applies and why; and

iii. if an Acid Gas Flaring Incident falls under either Paragraph 68 or 69.b. states whether or not CRRM 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 at the time completion of the Acid Gas Flaring Incident Report is required (forty-five days after the end of the Acid Gas Flaring Incident), a statement of the anticipated date by which the root cause and/or corrective action analysis in accordance with subparagraphs d. and e. of this Paragraph 65 shall be completed, provided, however, that if CRRM has not completed a report or series of reports containing the information required in this Paragraph within forty-five days following the end of an Acid Gas Flaring Incident (or such additional time as EPA may allow), the stipulated penalty provisions of Section X of this Decree

shall apply. Nothing in this Paragraph shall be deemed to excuse CRRM from its investigation, reporting, and corrective action obligations under this Section for any Acid Gas Flaring Incident that occurs after an Acid Gas Flaring Incident for which CRRM has requested an extension of time under this subparagraph 65.g.

h. To the extent that corrective action(s) related to an Acid Gas Flaring Incident are not complete at the time of the completion of the Acid Gas Flaring Incident Report required under this Paragraph, then, CRRM shall include in the next Semi-Annual Report submitted pursuant to Section VIII of this Decree a supplemental report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

66. Corrective Action.

a. In response to any Acid Gas Flaring Incident occurring after the Entry Date, or for which a corrective action has not been completed by the Entry Date, CRRM 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 or Causes and all contributing causes of that Acid Gas Flaring Incident.

b. EPA and KDHE do not, by their agreement to the entry of this Decree, or by their failure to object to any corrective action that CRRM may take in the future, warrant or aver in any manner that any corrective actions in the future will result in compliance with the provisions of the Clean Air Act or any other applicable federal, state, or local law or regulation. Notwithstanding EPA's or KDHE's review of any plans, reports, corrective actions or procedures under this Subsection K, CRRM shall remain solely responsible for complying with the Clean Air Act and its implementing regulations. Nothing in this Subsection K shall be construed as a

limit or waiver of EPA's or the State's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations except as set forth in Paragraph 205.

c. After review of any report required by Paragraph 65, EPA, after consultation with KDHE, will notify CRRM in writing of (i) any deficiencies in the corrective actions identified in the report and/or (ii) any objections to the schedules for corrective actions. EPA will also explain the basis for its objection(s) to the corrective actions and/or schedule(s). CRRM shall 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 been completed by the time of EPA's notification, CRRM shall not be obligated to implement the corrective action as specified by EPA for that incident. CRRM shall be on notice, however, that EPA has determined that the corrective action is deficient and not acceptable for remedying the same or similar Root Cause or Causes of later incidents. If EPA and CRRM cannot agree on the appropriate corrective action(s) to be taken in response to a particular Acid Gas Flaring Incident, either Party may invoke the Dispute Resolution provisions of Section XIII of the Consent Decree.

d. Nothing in this Subsection K shall be construed to limit the right of CRRM 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.

67. Stipulated Penalties for Acid Gas Flaring Incidents. As is indicated in Appendix D (Stipulated Penalties Flow Chart), the stipulated penalty provisions of Paragraph 190 shall apply to any 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 the Sulfur Recovery Plant, TGU, or Upstream Process Units;

b. Failure to follow written procedures; or

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

68. As is indicated in Appendix D (Stipulated Penalties Flow Chart), if the Acid Gas Flaring Incident is not a result of one of the Root Causes identified in Paragraph 67 then the stipulated penalty provisions of Paragraph 190 shall apply if the Acid Gas Flaring Incident:

a. Results in emissions of sulfur dioxide at a rate greater than twenty 20.0 pounds per hour continuously for three (3) consecutive hours or more and CRRM 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 SO_2 emissions associated with such incident; or

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

69. As is indicated in Appendix D (Stipulated Penalties Flow Chart), with respect to any Acid Gas Flaring Incident not identified in Paragraphs 67 and 68, 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 after the Entry Date, 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;

ii. If the Root Cause of the Acid Gas Flaring Incident was sudden and infrequent, but reasonably preventable through the exercise of good engineering practice, then CRRM shall implement corrective action(s) pursuant to Paragraph 66, and the stipulated penalty provisions of Paragraph 190 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 Entry Date, then CRRM shall be liable for stipulated penalties under Paragraph 190 unless:

i. the Acid Gas Flaring Incident resulted from a Malfunction; or

ii. the Root Cause previously was designated as an agreed-upon Malfunction under subparagraph 69.a.i.; or

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

70. Defenses. As is indicated in Appendix D (Stipulated Penalties Flow Chart), CRRM may raise the following affirmative defenses in response to a demand by the Plaintiffs for stipulated penalties:

a. Force majeure.

b. As to Paragraphs 67 and 68: the Acid Gas Flaring Incident does not meet the identified criteria.

c. As to subparagraphs 69.a.i. or 69.b.i or ii: Malfunction.

71. In the event a dispute under Paragraphs 67-70 is brought to the Court pursuant to the Dispute Resolution provisions of this Consent Decree, CRRM may also assert a Startup, Shutdown and/or Malfunction defense, but the United States shall be entitled to assert that such defenses are not available. If CRRM 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), CRRM 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, CRRM shall be liable for such stipulated penalties.

72. Other than for a Malfunction or force majeure, if no Acid Gas Flaring Incident occurs at the Refinery for a rolling 36-month period commencing after the Entry Date, then the stipulated penalty provisions of Paragraph 190 shall no longer apply. EPA may elect to reinstate the stipulated penalty provision if the Refinery has an Acid Gas Flaring Incident that would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall continue for the remaining term of this Consent Decree.

73. Emission Calculations.

a. Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from Acid Gas Flaring. For purposes of this Consent Decree, the quantity of SO_2 emissions resulting from an Acid Gas Flaring Incident shall be calculated by the following formula:

$$\text{Tons of } SO_2 = [FR][TD][Conc H_2S][8.44 \times 10^{-5}].$$

The quantity of SO_2 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 SO_2 emitted shall be

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rounded to 10.1 tons.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an Acid Gas Flaring Incident that is comprised of intermittent Acid Gas Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

b. Calculation of the Rate of SO_2 Emissions During Acid Gas Flaring. For purposes of this Consent Decree, the rate of SO_2 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:

$$ER = [FR][Conc_{H_2S}][0.169].$$

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 SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 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 73:

ER =	Emission Rate in pounds of SO_2 per hour.
FR =	Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour.
TD =	Total Duration of Flaring Incident in hours.
$Conc_{H_2S}$ =	Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)
8.44×10^{-5} =	[lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

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0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the Acid Gas Flaring Device(s) ("FR") shall be measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") 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 (or other colorimeteric) tube analysis or by any other method approved by EPA. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment. The report required under Paragraph 65 shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

74. Tail Gas Incidents.

a. Investigation, Reporting, Corrective Action, and Stipulated Penalties. For Tail Gas Incidents, CRRM shall follow the same investigative, reporting, corrective action, and assessment-of-stipulated-penalty procedures and schedules as those set forth in Paragraphs 64-72 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 unscheduled Shutdowns of CRRM's SRP. CRRM shall continue to follow the Tail Gas Incident investigation and corrective action procedures after termination of the Consent Decree, but the reporting and stipulated penalty shall not apply after termination.

b. Calculation of the SO_2 Emissions Resulting from a Tail Gas Incident. For the purposes of this Consent Decree, the SO_2 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 a flare, the SO_2 emissions are calculated using the methods outlined in Paragraph 73; or

ii. If Tail Gas exceeding the 250 ppmvd NSPS J limit is emitted from a monitored SRP incinerator, then the following formula applies:

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

Where:

ER_{TGI} = Emissions from Tail Gas Unit at the SRP incinerator, pounds of SO_2 over a 24-hour period

TD_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd SO_2 on a rolling twelve hour average, corrected to 0% O_2, in each 24-hour period of the Incident

i = Each hour within TD_{TGI}

$FR_{Inc.}$ = 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. SO_2 = The average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

% O_2 = O_2 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 SO_2 / 379 scf SO_2] [64 lbs SO_2 / lb mole SO_2] [1 x 10^{-6}]

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

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for $FR_{Inc.}$ does not exist or is inoperable, then CRRM shall estimate emissions based on best engineering judgment.

75. Semi-Annual Reporting. As part of the Semi-Annual Reports required by Section VIII of this Decree (Recordkeeping and Reporting), CRRM shall include all reports on Acid Gas Flaring Incidents and Tail Gas Incidents that CRRM was required to prepare pursuant

to this Subsection K, during the six-month period covered by the Semi-Annual Report that is due. In addition, each Semi-Annual Report shall include a summary of any such incidents during the six-month period, including, at a minimum, the following information regarding each incident:

a. Date;

b. Summary of the Root Cause or Causes;

c. Duration;

d. Amount of sulfur dioxide releases;

e. Any stipulated penalties due or demanded as a result of the incident;

f. Any corrective actions completed; and

g. A list of all incidents for which corrective actions are outstanding.

Semi-Annual Reports shall also include a summary analysis of any trends identified by CRRM in the number, Root Causes, types of corrective actions, and other relevant information regarding Acid Gas Flaring Incidents and Tail Gas Incidents during the six-month period covered by the report.

L. HYDROCARBON FLARING INCIDENTS

76. Future HC Flaring Incidents. For HC Flaring Incidents occurring after the Entry Date, CRRM shall follow the same investigative, reporting, and corrective action procedures as set forth in Subsection K for Acid Gas Flaring Incidents. However:

a. For each Flaring Device, CRRM may prepare and submit a single Root Cause Analysis for one or more Root Causes found by that analysis to routinely recur. CRRM shall inform EPA and KDHE that it is electing to report only once on that Root Cause(s). Unless

EPA objects within thirty (30) days of receipt of the Root Cause Analysis, such election shall be effective.

b. If CRRM installs a flare gas recovery system to comply with Subpart J, for the six (6) month period after the installation of the flare gas recovery system (that is, during the time in which the flare gas recovery system is being commissioned), CRRM shall not be required to undertake HC Flaring Incident investigations if the Root Cause of the HC Flaring Incident is directly related to the commissioning of the flare gas recovery system.

c. In lieu of analyzing possible corrective actions under Paragraph 65.e. and taking interim and/or long-term corrective action under Paragraph 66 for a HC Flaring Incident attributable to the Startup or Shutdown of a process unit that CRRM has previously analyzed under this Paragraph, CRRM may identify such prior analysis when submitting the report required under this Paragraph.

d. To the extent that a HC Flaring Incident at the Refinery has as its Root Cause the bypass of a flare gas recovery system for safety or maintenance reasons as set forth in subparagraph 76.b., CRRM shall be required to describe only the HC Flaring Incident and to list the date, time, and duration of such Incident in the Semi-Annual Reports due under Section VIII.

e. Stipulated penalties under Paragraph 190 shall not apply to HC Flaring Incident(s) but rather the stipulated penalties in Paragraph 191 shall apply.

77. CRRM shall continue to follow the HC Flaring Incident investigation and corrective action procedures of this Subsection L. after termination of the Consent Decree, but the reporting provisions of this Subsection shall not apply after termination. The formulas at Paragraph 73, used for calculating the quantity and rate of SO_2 emissions during Acid Gas

Flaring Incidents, shall be used to calculate the quantity and rate of SO_2 emissions during HC Flaring Incidents.

M. CONTINUOUS EMISSIONS MONITORS AND GENERAL PROVISIONS

78. CRRM shall certify, calibrate, maintain, and operate all CEMs required by this Consent Decree in accordance with the requirements of 40 C.F.R.§ 60.13 and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. However, unless Appendix F is required by the NSPS, state law or regulation, or a permit or approval, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4, CRRM may conduct: (1) either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every three (3) years; and (2) a Cylinder Gas Audit ("CGA") each calendar quarter in which a RAA or RATA is not performed. If a CEMS must be moved because of the installation of control equipment, CRRM shall promptly reinstall, re-calibrate, and re-certify the CEMS.

79. CRRM shall make all CEMs and process data available to EPA and KDHE upon request.

80. Nothing in this Paragraph shall be construed to relieve CRRM of any obligation under any federal, state, or local law, regulation, or permit to report emissions during periods of Startup, Shutdown, or Malfunction, to comply with emissions limits applicable during periods of Startup, Shutdown, or Malfunction, or to document the occurrence and/or cause of a Startup, Shutdown, or Malfunction event. Emissions during any such period of Startup, Shutdown, or Malfunction shall be monitored with CEMS.

N. BENZENE WASTE OPERATIONS NESHAP

81. Benzene Waste NESHAP Program Enhancements. In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), CRRM agrees to undertake at the Refinery, the measures set forth in this Subsection N below to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

82. Current Compliance Status. As of the Date of Lodging, CRRM believes that the Refinery has a Total Annual Benzene ("TAB") of less than 10 Mg/yr. CRRM will review the TAB at the Refinery consistent with the requirements set forth in Paragraphs 84-85 below.

83. Refinery Compliance Status Changes. If at any time from the Date of Lodging of the Consent Decree until its termination, the Refinery's TAB is equal to or greater than 10 Mg/yr, CRRM shall comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (hereinafter referred to as the "6 BQ compliance option").

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

84. By no later than 210 days after the Entry Date, CRRM will complete a review and verification that its Total Annual Benzene "TAB" is less than 10 Mg/yr ("Phase One"). CRRM will submit the "BWON Compliance Review and Verification Report" sixty (60) days after completing the Phase One review and verification process. CRRM's Phase One review and verification process will include, but is not limited to:

a. 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;

b. a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste streams;

c. 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; and

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

85. One-Time Review and Verification of Refinery's TAB: Phase Two of the Review and Verification Process. Based on EPA's review of the BWON Compliance Review and Verification Report, EPA may select up to twenty (20) additional waste streams at the Refinery for sampling for benzene concentration ("Phase Two"). CRRM will conduct the required sampling and submit the results to EPA within sixty (60) days of receipt of EPA's request. CRRM 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 CRRM to sample a waste stream as part of the Phase Two review that CRRM sampled and included as part of its Phase One review, CRRM may average the results of such sampling. CRRM will submit an amended BWON Compliance Review and Verification Report to EPA (with a copy to KDHE) 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, CRRM 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 CRRM 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. As described in this Paragraph, the amended, supplemental, or original BWON Compliance Review and Verification Report, as applicable, will become the Final BWON Compliance Review and Verification Report at the conclusion of the Phase Two Review and Verification process described herein.

86. Amended TAB Reports. If the results of the Final BWON Compliance Review and Verification Report indicate that CRRM's most recently-filed TAB reports do not satisfy the requirements of Subpart FF, CRRM will submit, by no later than one-hundred twenty (120) days after submittal of the Final BWON Compliance Review and Verification Report, an amended TAB report to EPA (with a copy to KDHE). If an amended TAB is provided as part of CRRM's Final BWON Compliance Review and Verification Report, this will be deemed the amended TAB report for purposes of Subpart FF reporting to EPA.

2. Implementation of Actions Necessary to Correct Non-Compliance

87. If the results of the Final BWON Compliance Review and Verification Report indicate that the Refinery has a TAB of over 10 Mg/yr, then by no later than one-hundred eighty

(180) days after submission of the Final BWON Compliance Review and Verification Report, CRRM will submit a compliance plan to EPA for approval (with a copy to KDHE) which:

a. identifies with specificity the actions it will take to ensure that the Refinery's TAB remains below 10 Mg/yr for 2013 and each calendar year thereafter; or

b. if CRRM cannot ensure a consistent TAB below 10 Mg/yr, and no new controls are required to be installed at the Refinery to comply with the 6 BQ compliance option, shall identify with specificity, a compliance strategy and schedule that CRRM will implement to ensure that it complies with the 6 BQ compliance option as soon as practicable, but by no later than 180 days of the date of submittal of the compliance plan; or

c. if CRRM cannot ensure a consistent TAB below 10 Mg/yr and new controls are required to be installed at the refinery to comply with the 6 BQ compliance option, shall identify with specificity, a compliance strategy and schedule that CRRM will implement to ensure that it complies with the 6 BQ compliance option as soon as practicable, but by no later than two years from the date of submittal of the compliance plan.

88. Implementation of Actions Necessary to Correct Non-compliance: Review and Approval of Plans. Any plans submitted pursuant to Paragraph 87 will be subject to EPA approval. Within sixty (60) days after receiving any notification of disapproval or request for modification of the compliance plan from EPA, CRRM will submit to EPA (with a copy to KDHE) a revised compliance plan that responds to all identified deficiencies. Unless EPA responds to CRRM's revised plan within sixty (60) days, CRRM will implement the revised plan, subject to its right to invoke dispute resolution.

89. Certification of Compliance. By no later than thirty (30) days after completion of the implementation of the compliance plan, if any, required pursuant to Paragraphs 87 and 88,

CRRM will submit a certification and a report to EPA (with a copy to KDHE) demonstrating that it complies with its compliance option under the Benzene Waste Operations NESHAP.

90. Carbon Canisters. Once the Refinery's TAB is equal to or greater than 10Mg/year, CRRM will comply with the requirements of Paragraphs 91-101 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 KDHE rule, regulation, or permit contains more stringent definitions, standards, limitations, or work practices than those set forth in Paragraphs 91-101, then those definitions, standards, limitations or work practices will apply instead.

91. Installation of Dual Carbon Canisters Operated in Series. By no later than 180 Days after the Refinery's TAB is equal to or greater than 10Mg/yr, CRRM will replace all single carbon canisters or dual carbon canisters operated in parallel with dual carbon canisters operated in series.

92. Report Certifying Installation. By no later than 240 Days after the Refinery's TAB is equal to or greater than 10 Mg/yr, CRRM will submit a report to EPA (with a copy to KDHE) certifying the completion of the installations required by Paragraph 91.. The report shall include a list of all locations at the Refinery where dual carbon canister systems were installed, the installation date of each dual carbon canister system, the date that each dual carbon canister system was put into operation, whether CRRM is monitoring for breakthrough for volatile organic compounds ("VOC") or benzene, and the concentration of the monitored parameter that CRRM uses as its definition of "breakthrough" as described in Paragraph 94 below. CRRM must provide written notification to EPA (with a copy to KDHE) at least thirty (30) days prior to

changing either the parameter that it is monitoring and/or the concentration that it defines as "breakthrough".

93. Prohibition of Use of Single Carbon Canisters. Except as expressly provided in Paragraph 98, CRRM will not use single carbon canisters for any new waste management units or installations that require vapor control pursuant to the Benzene Waste Operations NESHAP.

94. Definition of "Breakthrough" in Dual Carbon Canister Systems. For dual carbon canister systems operated in series and depending upon the parameter that CRRM decides to monitor, a "breakthrough" between the primary and secondary carbon canister is defined as any reading equal to or greater than either 50 ppm VOC or 1 ppm benzene. At its option, CRRM may utilize a concentration for "breakthrough" that is lower than 50 ppm VOC or 1 ppm benzene.

95. Monitoring for Breakthrough in Dual Carbon Canister Systems. Beginning no later than 180 Days after the TAB is equal to or greater than 10 Mg/yr, or seven (7) days after the installation of any new dual carbon canister system, whichever is later, CRRM will start to monitor for breakthrough between the primary and secondary carbon canisters at times when there is actual flow to the dual carbon canister, in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and will monitor the outlet of the secondary carbon canister on a monthly basis or at the design replacement interval of the secondary carbon canister (whichever is less) to verify the proper functioning of the system. In the event there is no flow to the dual carbon canister during the monitoring event, CRRM shall document the lack of flow and re-monitor at the next monitoring period.

96. Replacing Canisters in Dual Carbon Canister Systems. CRRM will replace the original primary carbon canister (or route the flow to an appropriate alternative control device) immediately when breakthrough is detected. The original secondary carbon canister will become the new primary carbon canister and a fresh carbon canister will become the secondary canister unless both the primary and secondary carbon canisters 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 CRRM chooses to define breakthrough for primary carbon canister replacement at 5 ppm or lower VOC, CRRM 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.

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

98. Limited Use of Single Carbon Canisters. CRRM may utilize properly-sized single carbon canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For single carbon 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 Day the Refinery's TAB is equal to or greater than 10 Mg/yr, CRRM will monitor for breakthrough from single carbon canister each day there is actual flow to the carbon canister.

99. Replacing Canisters in Single Carbon Canister Systems. CRRM will replace the single 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 twenty four (24) hours for single carbon canisters of 55 gallons or less and forty eight (48) hours for single carbon 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 carbon 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.

100. Maintaining Canister Supplies. CRRM will maintain a supply of fresh carbon or carbon canisters at the Refinery at all times.

101. Records relating to Canisters. Records for the requirements of Paragraphs 91-100 will be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

102. Annual Review. By no later than 180 days after the Entry Date, CRRM will modify existing management of change procedures or develop a new program to annually review process and project information for the Refinery, including but not limited to construction projects, to ensure that all new benzene waste streams are included in the Refinery's waste stream inventory during the life of the Consent Decree.

103. Laboratory Audits.

a. CRRM will conduct audits of all laboratories that perform analyses of CRRM's 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 Entry Date, CRRM will complete audits of all of the laboratories they use to perform analyses of benzene waste NESHAP samples. Beginning one year after the Entry Date, CRRM 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, CRRM will conduct subsequent laboratory audits, such that each laboratory is audited every two (2) years.

d. CRRM 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 CRRM complies with this Consent Decree and Subpart FF rest solely with CRRM.

e. In lieu of conducting laboratory audits as required by this Paragraph, CRRM 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, CRRM may use a NELAP accredited laboratory in lieu of performing its own audit pursuant to this Paragraph).

104. Benzene Spills. For each spill at the Refinery after Entry Date, CRRM 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, CRRM:

a. shall include benzene waste generated by the spill in the Refinery's TAB, as required by 40 C.F.R. § 61.342; and

b. shall account for such benzene waste in accordance with the 6 BQ compliance option calculations, as appropriate under Subpart FF, unless the benzene waste is properly managed in controlled waste management units at the Refinery as required by 40 C.F.R. § 61.342(e).

3. Training

105. Beginning on the Entry Date, CRRM shall continue conducting annual (i.e., once each calendar year) training for all employees asked to draw benzene waste samples.

106. Additional Training. If and when the Refinery's TAB is determined to be equal to or greater than 10Mg/yr, then within 180 days CRRM will complete the development of standard operating procedures and a training program for all control equipment used to comply with the Benzene Waste Operations NESHAP. Initial training on these procedures will be provided to all operators within one year after the Refinery's TAB is determined to be equal to or greater than 10 Mg/yr. Training shall be provided to any persons who subsequently become operators, prior to their assumption of this duty. "Refresher" training shall be performed, at a minimum, on a three (3) year cycle.

107. Training: Contractors. As part of CRRM's training programs, CRRM must ensure that the employees of any contractors hired to perform requirements of this Subsection N are properly trained pursuant to Paragraphs 105-106 above.

4. Waste/Slop Off-Spec Oil Management

108. Benzene-Containing Waste Management: Schematics. CRRM will include in the BWON Compliance Review and Verification Report required to be submitted to EPA pursuant to Paragraph 84 schematics for the 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.

CRRM will include with the schematics a quantification of all uncontrolled waste, slop, or off-spec oil movements at the Refinery. If requested by EPA, CRRM will submit to EPA (with a copy to KDHE) 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.

109. Waste/Slop/Off-Spec Oil Management: Non-Aqueous Benzene Waste Streams. If and when the Refinery's TAB is equal to or greater than 10 Mg/year and a compliance plan is approved pursuant to Paragraphs 87 (or 88) or 122, 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 in accordance with the compliance schedule set forth in the compliance plan.

110. Waste/Slop/Off-Spec Oil Management: Aqueous Benzene Waste Streams. For purposes of calculating the Refinery's TAB pursuant to the requirements of 40 C.F.R.

§ 61.342(a), CRRM 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. If and when the Refinery's TAB is equal to or greater than 10 Mg/yr, then for purposes of complying with the 6 BQ compliance option, all waste management units handling aqueous benzene waste streams will have their uncontrolled benzene quantity count toward the applicable 6 megagram limit.

5. End of Line Sampling

111. EOL Sampling When The TAB is equal to or greater than 1 Mg/yr, but less than 10 Mg/yr. CRRM shall continue to implement the EOL sampling plan attached at Appendix E (until and unless it is modified in accordance with Paragraph 118). Any modification to this plan shall contain the requirements of Paragraph 112.

112. BWON Sampling Plan: Content Requirements When the TAB is equal to or greater than 1 Mg/yr, but less than 10 Mg/yr. If CRRM's TAB is less than 10 Mg/yr, the sampling plan shall identify:

a. annually, each waste stream that has contributed 0.05 Mg/yr or more at the point of generation to the previous year's TAB calculations; and

b. quarterly, the proposed End-of-Line ("EOL") sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 119.

113. BWON Sampling Plans: Analysis When the TAB is equal to or greater than 1 Mg/yr, but less than 10 Mg/yr. The sampling plan shall commit CRRM to analyze, in each calendar quarter at least three representative samples from all waste streams and all locations identified in Paragraph 112.

114. EOL Sampling If the Refinery is Found to have a TAB of 10 Mg/yr or greater. The provisions of this Paragraph shall apply after the Refinery's TAB is equal to or greater than 10 Mg/yr and shall continue to apply until termination of the Consent Decree. By no later than ninety (90) days after the TAB is equal to or greater than 10 Mg/yr, CRRM shall submit a sampling plan to EPA (with a copy to KDHE) for approval for an EOL determination of the benzene quantity in uncontrolled waste streams. The sampling plan will include:

a. 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;

b. the proposed EOL sampling locations and methods for flow calculations to be used in calculating projected quarterly and calendar year annual uncontrolled benzene quantity calculations under the terms of Paragraph 119; and

c. the proposed sampling locations on the schematic developed pursuant to Paragraph 108.

115. BWON Sampling Plan: Analysis When the TAB is 10 Mg/yr or greater. The sampling plan shall commit CRRM to analyze, in each calendar quarter at least three representative samples from all waste streams and all locations identified in Paragraph 114.

116. Benzene Waste Operations Sampling Plans: Timing for Implementation. CRRM shall implement the sampling required under the sampling plan described in Paragraph 114 during the first full calendar quarter after CRRM submits the plan. CRRM shall continue to implement the sampling plan unless and until EPA disapproves the plan in accordance with Paragraph 118.

117. Sampling During Implementation of Compliance Plan under Paragraph 89. If CRRM must implement a compliance plan under Paragraph 87 (i.e. the TAB > 10 Mg/yr), CRRM may submit a proposed sampling plan under Paragraph 114 to eliminate sampling points in locations that are subject to changes proposed in the compliance plan to the extent that CRRM believes that such sampling will not be effective until completion of the implementation of the compliance plan. By no later than sixty (60) days prior to the due date for the submission of the sampling plan under Paragraph 114, CRRM may request EPA approval to postpone submission of a sampling plan and sampling until the compliance plan is completed. Unless EPA disapproves the request within thirty (30) days, then CRRM may postpone submission of the sampling plan and sampling until the proposed submission date contained in the request.

118. Benzene Waste Operations Sampling Plans: Modifications.

a. Changes in Processes, Operations or Other Factors. If changes in processes, operations or other factors lead CRRM to conclude that a proposed or approved sampling plan no longer provides an accurate basis for estimating the Refinery's quarterly or calendar year annual TABs or benzene quantities under Paragraph 119, then by no later than sixty (60) days after CRRM determines that the plan no longer provides an accurate measure,

CRRM will submit to EPA (with a copy to KDHE) a revised plan for EPA approval. In the first full calendar quarter after submitting the revised plan, CRRM will implement the revised plan. CRRM will continue to implement the revised plan unless and until EPA disapproves the revised plan.

b. Requests for Modifications. After two (2) years of implementing a sampling plan, for any reason other than those specified in subparagraph a. above, CRRM may submit a request to EPA for approval (with a copy to KDHE), to revise its sampling plan, including sampling frequency. CRRM will not implement any proposed revisions under this subparagraph until EPA provides its approval.

119. 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, CRRM will calculate a quarterly and projected annual:

a. TAB if CRRM's TAB is less than 10 Mg/yr; and

b. uncontrolled benzene quantity if CRRM's TAB is equal to or greater than 10 Mg/yr.

In making these calculations, CRRM 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 120, CRRM will submit these calculations in the reports due under Section VIII of this Decree.

120. Corrective Measures: Basis. Except as set forth in Paragraph 121, CRRM shall implement corrective measures specified in Paragraph 122 if:

a. the Refinery's TAB is less than 10 Mg/yr, the quarterly TAB equals or exceeds 2.5 Mg, or the projected annual TAB equals or is greater than 10 Mg for the then-current compliance year;

b. the Refinery's TAB is greater than or equal to 10 Mg/yr and the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year.

121. Exception to Implementing Corrective Measures. If CRRM 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 120 and states that it does not expect such reason or reasons to recur, then CRRM 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 120, CRRM will not be required to implement corrective measures under Paragraph 122, and CRRM may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 123. If CRRM proceeds under this Paragraph, CRRM shall describe how it satisfied the conditions in this Paragraph in the reports due under Section VIII of this Consent Decree.

122. Compliance Assurance Plan - Corrective Measures. If CRRM meets one or more conditions in Paragraph 120 (except as provided under Paragraph 121), 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, CRRM shall submit a compliance assurance plan to EPA for approval (with a copy to

KDHE). In that compliance assurance plan, CRRM shall identify the quantity and cause(s) of the potentially-elevated benzene quantities, all corrective actions that the Refinery has taken or plans to take to ensure that the cause(s) will not recur, and the schedule of actions that CRRM shall take to ensure that it complies with the Benzene Waste Operations NESHAP for the calendar compliance year. CRRM will implement the plan unless and until EPA disapproves it.

123. Third -Party Assistance. If at least one of the conditions in Paragraph 120 exists at the Refinery in two consecutive quarters, and the provisions of Paragraph 121 do not apply, then CRRM will retain a third-party contractor during the following quarter to undertake and complete a TAB study and compliance review at the Refinery within 90 days (*i.e.*, by the end of the following calendar quarter). By no later than ninety (90) days after CRRM receives the results of the third-party TAB study and compliance review, CRRM will submit such results and a plan and schedule for remedying any deficiencies identified in the third-party study and compliance review to EPA (with a copy to KDHE). CRRM will implement the proposed plan unless and until EPA disapproves the plan.

124. Miscellaneous Measures. If and when the TAB is equal to or greater than 10 Mg/yr (if prior to the termination of the Consent Decree), by no later than the date CRRM submits a compliance plan pursuant to Paragraph 87, then CRRM shall comply with the following measures until termination of the Consent Decree:

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

b. 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, CRRM may submit a request to the applicable EPA Region to modify the frequency of the inspections. Nothing in subparagraph c. below requires CRRM to monitor conservation vents on fixed roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has occurred, CRRM may elect to visually inspect such indicators on a monthly basis and, if flow is then detected, CRRM 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, CRRM will install a dual carbon canister system on that vent until appropriate corrective action(s) can be implemented to prevent such flow; and

c. Manage and treat all groundwater remediation wastes in accordance with 40 C.F.R. § 61.342(e).

125. Recordkeeping and Reporting Requirements for this Subsection N: Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Section VIII of this Consent Decree (Recordkeeping and Reporting). At the times specified in the applicable provisions of this Subsection N, CRRM will submit, and to the extent required, the following reports to EPA (with copies to KDHE):

a. BWON Compliance Review and Verification Report (¶¶ 84), as amended, if necessary (¶ 85);

b. Amended TAB Report, if necessary (¶ 86);

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c. Compliance plan for CRRM to come into compliance with the 6 BQ option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (¶ 87), or through sampling (¶ 122);

d. Compliance certification, if necessary (¶ 89);

e. Report certifying the completion of the installation of dual carbon canister systems (¶ 92);

f. Schematics of waste/slop/off-spec oil movements (¶108), as revised, if necessary;

g. Sampling plans (¶¶ 112 and 114), and revised sampling plans, if necessary (¶ 118) and

h. Plan to ensure that uncontrolled benzene does not equal or exceed 6 Mg/yr. (¶ 122).

126. Recordkeeping and Reporting Requirements for this Section V.N As Part of Either the Reports Required under 40 C.F.R. § 61.357 or the Progress Report Procedures of Section VIII of this Consent Decree (Recordkeeping and Reporting). CRRM 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 Section VIII of this Decree:

a. Sampling Results under Paragraphs 111 and 114. The report will include a list of all waste streams sampled in accordance with Paragraphs 111 and 114, the results of the benzene analysis for each sample, and the computation of the quarterly and projected calendar year TAB if CRRM's TAB is less than 10 Mg/yr, and the quantity and projected calendar year uncontrolled benzene quantity if CRRM's TAB is greater than or equal to 10 Mg/yr;

b. Training. A description of any initial and/or subsequent training conducted in accordance with Paragraphs 105 - 107;

c. Laboratory Audits. An identification of initial and subsequent audits conducted pursuant to Paragraph 103, including in each semi-annual 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 CRRM 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; and

d. TAB estimates (Paragraph 119).

127. At any time after two years of reporting pursuant to the requirements of Paragraph 126, CRRM may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Paragraph 126. 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. CRRM will not change the due dates for its reports under Paragraphs 126 unless and until EPA approves CRRM's request.

128. Certifications Required in this Subsection N. Certifications required under this Subsection N will be made in accordance with the provisions of Section VIII of this Decree.

O. Leak Detection and Repair Requirements ("LDAR")

129. In order to minimize or eliminate fugitive emissions of VOC, benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from equipment in light liquid and/or in gas/vapor service, CRRM shall comply with the leak detection and repair ("LDAR") requirements of this Subsection O at the Refinery. The terms "equipment," "in light liquid service" and "in gas/vapor service" shall have the definitions set forth in the applicable provisions of 40 C.F.R. Part 60, Subpart GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC; and KDHE LDAR regulations.

130. Except as identified in this Paragraph, by the Entry Date, the group of all equipment within each existing process unit (as "equipment" and "process unit" are defined at 40 C.F.R. § 60.591) and each compressor shall become affected facilities under 40 C.F.R. Part 60, Subpart GGG. Except as identified in this Paragraph, each existing process unit shall comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of this Subsection O by the Entry Date, provided that any such equipment or compressors that are subject to 40 C.F.R. Part 63, Subparts CC, F, or H shall comply with those Subparts, as applicable, not Subpart GGG. By no later than two years after the Entry Date, the No. 2 Vacuum Unit 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 Subsection O.

131. Written Refinery-Wide LDAR Program Description. By no later than 180 days after the Entry Date, CRRM shall develop and maintain a written LDAR Program Description for a program for compliance with all applicable federal, state, LDAR regulations applicable to equipment in light liquid or gas/vapor service. CRRM shall update the LDAR Program

Description as may be necessary to ensure continuing compliance. The LDAR Program Description shall include, at a minimum:

a. A set of leak rate goals for the Refinery that shall be a target for achievement on a process-unit-by-process-unit basis;

b. An identification of all equipment in light liquid and/or in gas/vapor service that is subject to periodic monitoring requirements via Method 21 under any applicable federal, state, or local LDAR regulation and that has the potential to leak VOC, HAPs, VHAPs, and benzene within the Refinery's process units;

c. Procedures for identifying leaking equipment within the Refinery's process units;

d. Procedures for repairing and keeping track of leaking equipment;

e. Procedures for identifying and including new equipment to be added to the LDAR program;

f. A process for evaluating new and replacement equipment to promote consideration and installation of equipment that will minimize leaks and/or eliminate chronic leakers; and

g. A description of the Refinery's LDAR monitoring organization, a listing of personnel assigned LDAR responsibilities, and a designation of the person or position responsible for LDAR management who (or that) has the authority to implement LDAR improvements at the Refinery, as required by Paragraph 134.

132. By no later than 180 days after the Entry Date, CRRM shall submit a copy of the Refinery's LDAR Program Description to EPA and KDHE. EPA shall review and may comment on the written program after an opportunity for consultation with KDHE. CRRM shall

address EPA's comments (if any). Updates to the LDAR Program Description shall be maintained on-site during the term of the Consent Decree but need not be submitted to the agencies.

133. Training. By no later than 60 days after the submission of the LDAR Program Description, CRRM shall begin to implement a training program at the Refinery that includes the following features:

a. For personnel newly assigned LDAR responsibilities, CRRM shall require LDAR training prior to each employee beginning such work;

b. For all personnel assigned LDAR responsibilities, such as monitoring technicians, database users with permissions or rights to modify LDAR data, QA/QC personnel, and the LDAR coordinator, CRRM shall provide and require completion of annual LDAR refresher training (or require its LDAR contractor to provide such training);

c. For all other Refinery operations and maintenance personnel (including contract personnel) who have duties relevant to LDAR, such as operators and mechanics performing valve packing and designated unit supervisors reviewing for delay of repair work, CRRM 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 (initial LDAR training for all such personnel shall be completed no later than one year after the Entry Date) and "refresher" training in LDAR shall be performed on a cycle of no longer than three years; and

d. If contract employees are performing LDAR services, CRRM shall maintain copies of all training records required under this Paragraph, for contract employees, and provide them to EPA or KDHE upon request.

134. LDAR Personnel. By no later than 120 days after the Entry Date, CRRM shall establish a program that holds each person assigned LDAR responsibilities accountable for LDAR performance and shall establish and maintain a person or position at the Refinery with responsibility for LDAR management and authority to implement LDAR improvements.

135. LDAR Audits. CRRM shall implement Refinery-wide LDAR Audits – including an Initial Third-Party LDAR Audit and Periodic LDAR Audits – as set forth in this Paragraph to ensure the Refinery complies with all applicable LDAR requirements. Each LDAR Audit shall include, but shall not be limited to: (i) performing comparative monitoring; (ii) reviewing records to ensure monitoring and repairs were completed in the required periods; (iii) performing field reviews to ensure all affected equipment has been included in the LDAR program; and (iv) observing LDAR technicians' calibration and monitoring techniques. During each LDAR Audit, leak rates shall be calculated for each process unit where comparative monitoring was performed.

a. Initial Third-Party LDAR Audit. CRRM shall retain a third-party contractor with expertise in the LDAR Program's requirements to complete an Initial Third-Party LDAR Audit for the Refinery no later than 270 days after the Entry Date. No later than 60 days after the completion of the Initial Third-Party LDAR Audit, CRRM shall submit the contractor's Report on the Initial Third-Party Audit to EPA and the State. The Report shall describe the results of the Initial Third-Party LDAR Audit and disclose all areas of identified non-compliance. The Report shall be accompanied by a Certification in which CRRM certifies compliance, except for any identified areas of non-compliance, and a schedule for correcting any identified deficiencies as soon as practicable. If the proposed compliance schedule extends greater than 60 days beyond the audit completion date, CRRM must seek approval of the

compliance schedule from EPA. CRRM shall implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA, after consultation with the State.

b. Periodic LDAR Audits.

i. Periodic Third-Party Audits. CRRM shall retain a contractor with expertise in the LDAR Program's requirements to perform a Periodic Third-Party LDAR Audit of the Refinery's LDAR program at least once every four (4) calendar years after the Initial LDAR Audit is completed under subparagraph 135.a (with approximately 48 months between the Audits).

ii. Periodic Internal Audits. Periodic Internal LDAR Audits of the Refinery's LDAR program shall be completed by CRRM personnel or by contractors with expertise in the LDAR Program's requirements. CRRM shall complete a Periodic Internal LDAR Audit by no later than two (2) years from the date of the completion of the Third-Party LDAR Audits required by subparagraphs 135.a. and 135.b.i. CRRM shall perform an internal audit of the Refinery's LDAR program at least once every four (4) calendar years (with approximately 48 months between the Audits).

iii. Timing. To ensure that an LDAR Audit occurs every two (2) years at the Refinery, once the Initial Third-Party Audit is completed, the remaining Periodic Third-Party Audits and Periodic Internal Audits shall be separated by not more than two (2) calendar years (with approximately 24 months between the Audits).

136. Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the LDAR Audits conducted pursuant to Paragraph 135 identify any areas of non-compliance, CRRM shall implement, as soon as practicable, all steps necessary to correct or otherwise address such area(s) of non-compliance and to prevent to the extent practicable, a

recurrence of the cause of such non-compliance. For purposes of this Paragraph, if a ratio of the process-unit-valve leak percentage established through a comparative monitoring audit conducted pursuant to Paragraph 135, and the average valve leak percentage reported for the process unit for the last four monitoring periods preceding the audit, is equal to or greater than 3.0, and provided the auditor identified at least three (3) leaking valves in the process unit, it shall be deemed a cause for corrective action. If the calculated ratio yields an infinite result, CRRM shall assume one leaking valve was found in the process unit through its routine monitoring during the 4-quarter period. After the completion of any LDAR Audit other than the Initial Audit, CRRM shall include the following information in the next Semi-Annual Report due under Section VIII of this Consent Decree: (i) a summary, including findings, of each such LDAR Audit; and (ii) a list of corrective actions taken during the reporting period, and any schedule for implementing future corrective actions, and (iii) a certification that the audit has been completed and that the Refinery is in compliance or on a compliance schedule. Until termination of this Consent Decree, CRRM shall retain the Initial Audit Report and all other LDAR Audit reports generated pursuant to Paragraph 135, and shall maintain a written record of all corrective actions that CRRM takes in response to deficiencies identified in any LDAR Audits.

137. Internal Leak Definition for Valves and Pumps. CRRM shall utilize the following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service, unless permits, regulations, or laws require the use of lower leak definitions.

a. Leak Definition for Valves. By no later than 150 days after the Entry Date, CRRM shall use an internal leak definition of 500 ppm VOC for valves in light liquid and/or gas/vapor service at the Refinery, excluding pressure relief devices.

b. Leak Definition for Pumps. By no later than 150 days after the Entry Date, CRRM shall use an internal leak definition of 2000 ppm VOC for pumps in light liquid and/or gas/vapor service at the Refinery.

138. LDAR Monitoring Frequency.

a. Pumps. Unless more frequent monitoring is required by applicable federal, state and/or local requirements, CRRM shall monitor pumps at the internal leak definition defined in Paragraph 137 on a monthly basis beginning 150 days after the Entry Date.

b. Valves. Unless more frequent monitoring is required by applicable federal, state and/or local requirements, CRRM shall monitor valves (other than difficult to monitor or unsafe to monitor valves) at the internal leak definition defined in Paragraph 137 on a quarterly basis, with no ability to skip periods on a process-unit-by-process-unit basis beginning 150 days after the Entry Date.

139. Reporting, Recording, Tracking, Repairing and Remonitoring Leaks of Valves and Pumps Based on the Internal Leak Definitions.

a. Reporting. For regulatory reporting purposes, CRRM may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the lower, internal leak definitions specified in Paragraph 137.

b. Recording, Tracking, Repairing and Remonitoring Leaks. Beginning 150 days after the Entry Date, CRRM shall record, track, repair, and re-monitor all leaks in excess of the internal leak definitions of Paragraph 137. Except as provided otherwise in this Subsection O, CRRM shall make a first attempt at repair and remonitor the component within five (5) calendar days after a leak is detected and either complete repairs and re-monitor leaks or place

such component on the Refinery's delay of repair list according to Paragraphs 144-45 within thirty (30) days after a leak is detected.

140. Initial Attempt at Repair on Certain Valves. Beginning no later than 150 days after the Entry Date, CRRM shall promptly make an "initial attempt" at repair after detecting a leak at a reading greater than 200 ppm of VOCs at any valve, excluding control valves. CRRM or its designated contractor shall re-monitor the valve in question within five (5) calendar days after identification. If the re-monitored leak reading is below the applicable leak definition, no further action will be necessary. If the re-monitored leak reading is greater than the applicable leak definition, CRRM shall repair the valve according to the requirements of subparagraph 139.b., except that no first repair attempt requirement shall apply.

141. Electronic Monitoring, Storing, and Reporting of LDAR Data.

a. Electronic Storing and Reporting of LDAR Data. CRRM shall maintain an electronic database for storing and reporting all LDAR data at the Refinery.

b. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter. By no later than the Entry Date, CRRM shall use data loggers and/or electronic data collection devices during all LDAR monitoring at the Refinery. CRRM, or its designated contractor, shall use its best efforts to transfer, by the end of the next business day, the electronic data from electronic data logging devices to the electronic database maintained pursuant to subparagraph 141.a. 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 identification of the instrument and operator. CRRM may only use paper logs where necessary or more feasible (e.g., small rounds, re-monitoring, or when data loggers are unavailable or broken), and shall record, at a minimum, the identity of the technician, the date, the monitoring starting and ending

times, all monitoring readings, and an identification of the monitoring equipment. CRRM shall use its best efforts to transfer any manually recorded monitoring data to the electronic database maintained pursuant to subparagraph 141.a within seven (7) days of the monitoring event. CRRM shall maintain the LDAR information required by this paragraph for at least five (5) years and shall provide such LDAR information in the original electronic format upon request by EPA or KDHE.

142. QA/QC of LDAR Data. By no later than 150 days after the Entry Date, CRRM (or a third-party contractor retained by CRRM) shall develop and implement procedures for quality assurance/quality control ("QA/QC") reviews of all data generated by LDAR monitoring technicians. CRRM shall ensure that monitoring data provided by monitoring technicians is reviewed daily for QA/QC. At least once per calendar quarter, CRRM shall perform a QA/QC review of each contractor's monitoring data which shall include, but not be limited to, a review of: (i) the number of components monitored per technician; (ii) the time between monitoring events; and (iii) abnormal data patterns.

143. Calibration Calibration/Calibration Drift Assessment.

a. Calibration. CRRM shall conduct all calibrations of LDAR monitoring equipment at the Refinery using methane as the calibration gas, and in accordance with 40 C.F.R. Part 60, Appendix A-7, Method 21.

b. Calibration Drift Assessment. Beginning no later than the Entry Date, CRRM shall conduct calibration drift assessment re-checks of the LDAR monitoring equipment at least twice during each monitoring shift, with one such re-check being at the end of the monitoring shift. CRRM 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, CRRM shall remonitor all valves that were monitored since the last calibration or calibration drift assessment that had a reading greater than 100 ppm and shall remonitor all pumps that were monitored since the last calibration or calibration drift assessment that had a reading greater than 500 ppm.

144. Delay of Repair. Beginning no later than the Entry Date, CRRM shall implement the following requirements for any components added to the "delay of repair" list that it is allowed to place on the "delay of 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 CRRM's 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, CRRM shall use "drill and tap" or similarly effective repair methods to repair such leaking valve, rather than placing the valve on the "delay of repair" list, unless CRRM can demonstrate that there is a safety, mechanical or major environmental concern posed by repairing the leak in this manner. CRRM 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 subparagraph 144.b., CRRM may place the leaking valve on its "delay of repair" list.

145. Limit on Delay of Repair. Beginning on the Entry Date, no more than 0.20% of all valves may be on the delay of repair list at any one time. Valves on the delay of repair list on the Entry Date will not be included in the count.

146. Any valve on the delay of repair list that will be replaced with a Certified Low-Emissions Valves or Certified Low-Emissions Packing at the next process unit turnaround 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.

147. 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.

148. Chronic Leakers. CRRM shall replace or repack or perform similarly effective repairs on all "chronic leaker" non-control valves using Certified Low-Emissions Valves or Certified Low-Emission Packing during the next refinery 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.

149. Requirement to Use Leakless Technology for New or Replaced Valves.

a. Definitions:

i. "Certified Low-Emissions Packing" or "Certified Low-E Packing" shall mean either of the following:

(a) A valve packing product, independent of any specific valve, for which the manufacturer has issued a written warranty that the packing will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the product; provided however, that no packing product shall qualify as "Low-E" by reason of written warranty unless the packing first was tested by the

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manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or

(b) A valve packing product, independent of any specific valve, that has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions, and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm.

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

(a) A valve (including its specific packing assembly) for which the manufacturer has issued a written warranty that it will not emit fugitives at greater than 100 ppm, and that, if it does so emit at any time in the first five years, the manufacturer will replace the valve; provided however, that no valve shall qualify as "Low-E" by reason of written warranty unless the valve (including its specific packing assembly) either: (i) first was tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and the results of the testing reasonably support the warranty; or (ii) is an extension of another valve that qualified as "Low-E" under subparagraph 149.a.(i);

(b) A valve (including its specific packing assembly) that: (i) has been tested by the manufacturer or a qualified testing firm pursuant to generally-accepted good engineering practices for testing fugitive emissions and that, during the test, at no time leaked at greater than 500 ppm, and on average, leaked at less than 100 ppm; or (ii) is an Extension of another valve that qualified as "Low-E" under subparagraph 149.a.(i).

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

c. Newly-Installed Valves. By no later than two years from the Entry Date, CRRM 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-Emissions Valve or Certified Low-Emissions Packing; and

ii. Modify its purchasing procedures to ensure that CRRM evaluates the availability of valves and valve packing that meets the requirements for a Certified Low-Emissions Valve or Certified Low-Emissions Packing at the time that the valves, valve packing and/or equipment is acquired for the Refinery.

d. Commercial Unavailability Exception. CRRM shall not be required to utilize a Certified Low-Emissions Valve or Certified Low-Emissions Packing to replace or repack a valve if a Certified Low-Emissions Valve or Certified Low-Emissions Packing is commercially unavailable, in accordance with the provisions of Appendix F. If CRRM exercises the commercial unavailability exception under this Paragraph for any valve, then CRRM 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-Emissions Valve or Certified Low-Emissions Packing; (2) all of the information and documentation specified in Appendix F 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-Emissions Valve or Certified Low-Emissions Packing.

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

e. Ongoing Assessment of Availability. CRRM may use a prior determination of commercial unavailability of a valve or valve packing pursuant to this Paragraph and Appendix F 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, CRRM must conduct a new assessment of the availability of a valve or valve packing meeting Certified Low-Emissions Valve or Certified Low-Emissions Packing requirements.

150. Recordkeeping and Reporting Requirements for this Section.

a. In the Semi-Annual Reports submitted by CRRM pursuant to Section VIII (Recordkeeping and Reporting), CRRM shall include the following information in the Report for the period in which the identified activity occurred or was required:

i. A copy of the Refinery's LDAR Program Description under Paragraph 131;

ii. A certification that the Refinery's training program has been implemented as required by Paragraph 133;

iii. An identification of the person or position at the Refinery responsible for LDAR performance as required by Paragraph 134;

iv. A certification that the lower leak definitions and increased monitoring frequencies have been implemented according to Paragraphs 137 and 138;

v. A certification of the implementation of the "initial attempt" to repair program under Paragraph 140;

vi. A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 142;

vii. A certification of the implementation of the calibration drift assessment procedures of Paragraph 143;

viii. A certification of the implementation of the "delay of repair" procedures of Paragraph 144;

ix. A certification of the development of a tracking program for new valves and pumps added during maintenance and construction as required by subparagraph 149.b.; and

x. A certification of the implementation of the "chronic leaker" program of Paragraph 148.

b. Special Requirement for Initial Semi-Annual Report Each Year. As part of the first Semi-Annual Report submitted each year pursuant to Section VIII (Recordkeeping and Reporting), CRRM shall identify each LDAR Audit that was conducted under Paragraph 135 in the previous calendar year, including an identification of the auditors, a summary of the audit results, and the actions that CRRM took or intends to take to correct identified deficiencies.

c. Reports Due Under 40 C.F.R. § 63.654. In each report due under 40 C.F.R. § 63.654, CRRM shall include the following information on LDAR monitoring:

i. a list of the process units monitored during the reporting period;

ii. the number of valves and pumps present in each process unit;

iii. the number of valves and pumps monitored in each process unit;

iv. an explanation for missed monitoring if the number of valves and pumps present exceeds the number of valves and pumps monitored during the quarter;

v. the number of valves and pumps found leaking for each process unit;

vi. the number of "difficult to monitor" pieces of equipment monitored;

vii. the projected month and year of the next monitoring event for that unit;

viii. a list of all equipment currently on the "delay of repair" list and the date each component was placed on the list;

ix. the number of repairs not attempted within five (5) days and not completed and remonitored or placed on delay of repair list within thirty (30) days pursuant to subparagraph 139.b.;

x. the number of initial attempts at repair not made promptly and remonitored within five (5) days pursuant to Paragraph 140;

xi. the number of repairs not completed at the next process unit turnaround pursuant to Paragraph 146;

xii. the number of repairs not completed within thirty (30) days under subparagraph 144.b; and

xiii. the number of chronic leakers that did not get repaired according to the requirements of Paragraph 148.

P. INCORPORATION OF CONSENT DECREE REQUIREMENTS INTO FEDERALLY ENFORCEABLE PERMITS AND SURVIVAL OF CONSENT DECREE OBLIGATIONS BEYOND TERMINATION

151. Surviving Consent Decree Obligations. The following Consent Decree limits, standards and requirements shall constitute Surviving Consent Decree Obligations:

a. FCCU NSPS Applicability (Paragraph 15)

b. Final FCCU Emission Limits for NOx, SO_2, and PM, and CO set forth in Paragraphs 17, 20, 25, 27, and 28 (if accepted);

c. FCCU CEMs (Paragraph 30)

d. Heater and Boiler NOx Emission Limits Taken to Satisfy the Final HB NOx Emission Requirement (Paragraph 37);

e. NSPS for Fuel Gas Combustion Devices (Paragraph 52);

f. Prohibitions Pertaining to Fuel Oil and Coal (Paragraphs 53-54)

g. NSPS applicability and emissions limits for the SRP (Paragraphs 55-56);

h. SRP PMO Plan (Paragraph 58);

i. NSPS for Flaring Devices (Paragraphs 59-60);

j. Root Cause Investigation and Corrective Action requirements for Acid Gas and Tail Gas flaring incidents (Paragraphs 64-66 as specified therein);

k. Root Cause Investigation and Corrective Action requirements for Hydrocarbon Flaring Incidents (Paragraphs 76-77 as specified therein);

l. Applicability of NSPS Subpart GGG to equipment and process units as specified in Paragraph 130; and

m. Emission Credit Generation (all of Section VI).

152. By no later than 180 days after the Entry Date, CRRM shall submit applications, amendments and/or supplements to the KDHE SIP-approved permitting program to incorporate the Surviving Consent Decree Obligations, that are effective as of the Entry Date into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. Following submission of the applications, amendments, or supplements, CRRM shall cooperate with KDHE by promptly submitting to KDHE all available information that KDHE seeks following its receipt of the permit materials. Promptly upon issuance of such permits or in conjunction with such permitting, CRRM shall file any applications necessary to incorporate the Surviving Consent Decree Obligations into the Title V permit for the Refinery.

153. Future Emission Limits and Standards. As soon as practicable, but in no event later than one hundred and eighty (180) days after the effective date of any Surviving Consent Decree Obligation that becomes effective after the Entry Date, CRRM shall submit applications, amendments and/or supplements to KDHE SIP-approved permitting program to incorporate those Surviving Consent Decree Obligations into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. Following submission of the applications, amendments, or supplements, CRRM shall cooperate with KDHE by promptly submitting to KDHE all available information that KDHE seeks following its receipt of the permit materials. Promptly upon issuance of such permits or in conjunction with such permitting, CRRM shall file any applications necessary to incorporate Surviving Consent Decree Obligations into the Title V permit for the Refinery.

154. The Surviving Consent Decree Obligations shall survive termination of the Consent Decree under Section XVI by virtue of being incorporated into federally enforceable permits.

155. The following Surviving Consent Decree Obligations shall survive termination of this Consent Decree under Section XVI regardless of State permitting actions purporting to change them unless such changes thereto are made in adherence with an analysis consistent with applicable EPA regulations and policies:

Final FCCU Emissions Limits for NOx, SO2, PM and CO (Paragraphs 17, 20, 25, 27-28 (if accepted) and 30);

Heater and Boiler NOx Emission Limits taken to satisfy the Final HB NOx Emissions Requirement in Paragraph 37; and

Prohibition on Burning Fuel Oil (Paragraph 53).

CRRM shall request that the State incorporate this paragraph into all State-issued permits including Title V Permits.

156. Mechanism for Title V Incorporation. The Parties agree that the incorporation of the requirements of this Consent Decree into Title V permits shall be in accordance with state Title V rules.

157. Obtaining Construction Permits. CRRM agrees to use its best efforts 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 affirmative relief and environmental projects set forth in Section V and in Section VII. To the extent that CRRM must submit permit applications for construction or installation to KDHE, CRRM shall cooperate with

KDHE by promptly submitting to KDHE all available information that KDHE seeks following its receipt of the permit application.

Q. CERCLA/EPCRA COMPLIANCE MEASURES

158. CERCLA/EPCRA Compliance Review. No later than 120 days after the Entry Date, CRRM shall conduct a CERCLA/EPCRA Compliance Review at the Refinery of the five (5) year period prior to the Entry Date to review and evaluate:

a. all episodic or continuous releases of CERCLA hazardous substances and/or EPCRA extremely hazardous substances that were required to be reported under CERCLA Section 103 (42 U.S.C. § 9603), and/or EPCRA Section 304 (42 U.S.C. § 11004), their implementing regulations, including 40 CFR Parts 302 and 355, or similar or corresponding state reporting regulations;

b. review all Material Safety Data Sheet ("MSDS"), inventories, purchase records, sales records, and release records to verify that the appropriate materials have been identified as potentially needing to be reported and that the appropriate calculation methodologies in accordance with the Form R instructions are used to determine whether thresholds are being met/exceeded and the amounts being reported as released are accurate in accordance with EPCRA Section 313 (42 U.S.C. § 11023), its implementing regulations, including 40 CFR Part 372, or similar or corresponding state reporting regulations.

c. review all procedures/processes used to gather the necessary information for reporting under the foregoing EPCRA/CERCLA release reporting and EPCRA Section 313 Toxic Release Inventory ("TRI") programs as well as how employees are trained to perform these tasks.

159. No later than 180 days after the Entry Date, CRRM shall:

a. submit a Compliance Review Report summarizing the findings of its audit and results of the compliance review described in the previous paragraph to EPA; including any corrected or updated reports described in the following subparagraphs b., c., d., and g. below; and certifying completion of the training requirement in subparagraphs e. and f. below;

b. submit or re-submit any EPCRA 304 or CERCLA 103 reports to the National Response Center ("NRC"), Kansas State Emergency Response Commission ("SERC"), and Local Emergency Planning Committee ("LEPC") that were not previously submitted or were submitted but contained incomplete or inaccurate information;

c. submit an updated and complete Continuous Release Report in accordance with the regulations at 40 C.F.R. 302.8, reflecting current operating conditions at the Refinery, including but not limited to, hydrogen sulfide, benzene, SO_2, NOx, and ammonia.

d. correct and/or update internal release reporting procedures to address any reporting deficiencies identified during the audit;

e. conduct training for environmental department personnel that have responsibilities related to release identification, calculations including flare efficiency and notification to instruct them on EPCRA/CERCLA release reporting requirements and any similar or corresponding state reporting regulations, including CRRM's updated reporting procedures;

f. conduct training for staff responsible for Section 313 of EPCRA reporting to instruct them on the toxic release inventory reporting required by EPCRA Section 313; and

g. update inaccurate Form R and Form A reports to EPA and the State of Kansas.

VI. EMISSION CREDIT GENERATION

160. Summary. This Section addresses the use of emissions reductions that will result from any projects undertaken or controls utilized to comply with this Consent Decree ("CD Emissions Reductions") for the purpose of emissions netting or emissions offsets.

161. General Prohibition. CRRM shall neither generate nor use any emissions reductions, or apply for and obtain any emission reduction credits, that result from any projects undertaken or controls utilized to comply with 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.

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

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

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

c. using CD Emission Reductions for the 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) that apply to the Refinery;

provided, however, that CRRM shall not be allowed to trade or sell any CD Emissions Reductions.

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), CRRM 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 CRRM 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, CRRM may not so utilize or generate emissions credits from the project or control required by this Consent Decree.

VII. SUPPLEMENTAL ENVIRONMENTAL PROJECT

163. In accordance with the requirements set forth in this Section VII and with the schedule set forth in Appendix G, CRRM shall implement the Supplemental Environmental Project ("SEP") described in Appendix G. Once fully implemented, CRRM shall operate the SEP for at least five years. CRRM may carry out its responsibilities for the SEP identified below directly or through contractors selected by it.

164. CRRM shall complete the SEP required under this Consent Decree in accordance with the deadlines for the specific project components set forth in Appendix G. Upon completion of the SEP, CRRM shall submit to EPA and KDHE a cost report certified as accurate under penalty of perjury by a responsible corporate official.

165. With regard to the SEP, Defendant certifies the truth and accuracy of each of the following:

a. that all cost information provided to EPA in connection with EPA's approval of the SEP is complete and accurate and that CRRM in good faith estimates that the cost to implement the SEP is $1,265,000;

b. that, as of the date of executing this Consent Decree, CRRM is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;

c. that the SEP is not a project that CRRM was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Consent Decree;

d. that CRRM has not received and will not receive credit for the SEP in any other enforcement action; and

e. that CRRM will not receive any reimbursement for any portion of the SEP from any other person.

166. CRRM shall not receive emissions reductions resulting from the project set forth in Appendix G in any federal, state, or local emissions trading or early reduction program; or a deduction from any federal, state, or local tax based on its participation in, performance of, or incurrence of costs related to the project set forth in Appendix G.

167. CRRM shall include in each Report required by Section VIII a progress report for the SEP being performed under this Section VII, including the following information with respect to such projects:

a. a detailed description of the project as implemented;

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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. when complete, 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 the project (including quantification of the benefits and pollutant reductions, if feasible).

168. In any public statements regarding the SEP, CRRM shall clearly indicate that these projects are being undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act.

169. CRRM certifies that it is not a party to any open federal financial assistance transaction that is funding or could be used to fund the same activity as the SEP. CRRM further certifies that, to the best of its knowledge and belief after reasonable inquiry, there is no such open federal financial transaction that is funding or could be used to fund the same activity as the SEP, nor has the same activity been described in an unsuccessful federal financial assistance transaction proposal submitted to EPA within two years of the date of this settlement (unless the project was barred from funding as statutorily ineligible). For the purposes of this certification, the term "open federal financial assistance transaction" refers to a grant, cooperative agreement, loan, federally-guaranteed loan guarantee or other mechanism for providing federal financial assistance whose performance period has not yet expired.

VIII. RECORDKEEPING AND REPORTING

170. CRRM shall retain all records required to be maintained in accordance with this Consent Decree for a period of five (5) years after their creation, or until Termination, whichever is longer, unless applicable regulations require the records to be maintained longer.

171. CRRM shall submit to EPA and KDHE Semi-Annual Reports no later than August 31 of each year (covering the period from January 1 to June 30) and February 28 (covering the period from July 1 to December 31). The first Semi-Annual Report shall be due on the first reporting date (August 31 or February 28) after the Entry Date, unless the Entry Date falls 90 days or less after the first reporting date, in which case the first Semi-Annual Report shall be due on the next reporting due date.

172. All of CRRM's Semi-Annual Reports shall contain, at a minimum, the following information:

a. all reports, plans and other deliverables required by other Paragraphs of this Consent Decree to be submitted with the Semi-Annual Report including but not limited to:

Paragraph 34: Initial Inventory Update.

Paragraph 58: Changes to the PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions.

Paragraphs 65, 75, 76: Acid Gas/Tail Gas/Hydrocarbon Flare Incident Reporting and supplemental reports if necessary.

Paragraphs 121 (if necessary) and 126: Benzene Reports;

Paragraphs136, 149.d. and 150: LDAR Requirement Reports.

b. a progress report on the implementation of the requirements of Section V (Affirmative Relief) at the Refinery;

c. a summary of the emissions data that is specifically required by the reporting requirements of Section V of this Consent Decree for the six (6) month period covered by the report;

d. a description of any problems anticipated with respect to meeting the requirements of Section V of this Consent Decree at the Refinery;

e. a progress report on the implementation of the requirements of Section VII (Supplemental Environmental Project); and

f. any such additional matters that CRRM believes should be brought to the attention of EPA and the KDHE.

173. Emissions Data. In the Semi-Annual Report required to be submitted on August 31 of each year, a summary of annual emissions data for the prior calendar year shall be provided, including:

a. NOx emissions in tons per year for each Covered Heater and Boiler;

b. NOx emissions in tons per year as a sum for all heaters and boilers less than 40 mmBTU/hr maximum fired duty;

c. SO_2, CO and PM emissions in tons per year as a sum for all Heaters and Boilers;

d. NOx, SO_2, CO, and PM emissions in tons per year for the FCCU;

e. SO_2 emissions from the Sulfur Recovery Plant in tons per year;

f. SO_2 emissions from all Acid Gas Flaring Incidents and Tail Gas Incidents by each flare in tons per year;

g. NOx, SO_2, PM, and CO emissions in tons per year as a sum for the Refinery for all emissions units not identified in a. through f., above, that are required to be

included in the Refinery's annual emissions summary required pursuant to K.A.R. 28-19-517; and

h. for each of the estimates in a.-g. above, the basis for the emissions estimate or calculation (i.e. stack tests, CEMS, emission factor, etc.).

174. To the extent that the required emissions summary data is available in other reports generated by the Company, such other reports can be attached, or the appropriate information can be extracted from such other reports and attached to this Semi-Annual Report to satisfy this requirement.

175. Exceedances of Emissions Limits. In all Semi-Annual Reports, CRRM shall identify each exceedance of an emission limit required or established by this Consent Decree that occurred during the previous semi-annual period. The report shall, at a minimum, include the following information:

a. for emissions units monitored with 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, an 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, an identification of the periods of downtime by time and date, and any cause or causes of the downtime (including maintenance or malfunction), and if downtime was caused by a malfunction, an explanation of any corrective actions taken; and

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

b. for emissions limits monitored by stack testing:

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

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

iii. If the stack test results already have been submitted, CRRM need not resubmit them, but may instead reference the prior submission in the Semi-Annual Report (e.g., date, sender, addressee, reason for submission).

176. Each Semi-Annual Report shall be certified by: (i) the person responsible for environmental management and compliance for the Refinery; or (ii) a person responsible for overseeing implementation of this Decree for CRRM, as follows:

> I certify under penalty of law that this information related to the Refinery 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.

IX. CIVIL PENALTIES

177. Clean Air Act Civil Penalty. Within thirty (30) days of the Entry Date, CRRM shall pay a total civil penalty of $723,125 to the United States and State as follows:

a. Clean Air Act Civil Penalty Payments to the United States. CRRM shall pay a civil penalty of $361,562.50 to the United States for alleged violations of the Clean Air Act. Payment of this 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 90-5-1-07459/1 and the civil action case name and case number of this action in the District of Kansas. The costs of such EFT shall be the responsibility of CRRM. Payment shall be made in accordance with instructions provided to CRRM by the Financial Litigation Unit of the U.S. Attorney's Office for the District of Kansas. Any funds received after 11:00 a.m. (EST) shall be credited on the next business day. CRRM shall provide notice of payment, referencing DOJ Case Number 90-5-1-07459/1 and the civil action case name and case number to the Department of Justice and to EPA, as provided in Section XVIII (General Provisions and Notices). After the date on which payment of this civil penalty is due, CRRM shall be liable for Interest on the unpaid balance of the civil penalty calculated from the date payment is due under the Consent Decree through the date of actual payment. Interest shall be computed daily and compounded annually. Interest is in addition to stipulated penalties for late payment as set forth in Paragraph 200.

b. Clean Air Act Civil Penalty Payments to the State. CRRM shall pay the civil penalty due to the State of Kansas by certified check made payable to the Kansas Department of Health and Environment. At the time of payment, CRRM shall send a transmittal letter, which shall state that the payment is for the civil penalty owed pursuant to the Consent

Decree in United States and Kansas v. Coffeyville Resources Refining & Marketing, LLC, and shall reference the civil action number, to the following address:

Mrs. Shelia Pendleton Office of Legal Services
Kansas Department of Health and Environment
1000 SW Jackson, Suite 560
Topeka, KS 66612-1371

178. CRRM shall pay a civil penalty of $250,000 together with Interest accruing from the Date of Lodging to the United States for alleged violations of CERCLA and EPCRA. Payment of this 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 90-5-1-07459/3 and the civil action case name and case number of this action in the District of Kansas. The costs of such EFT shall be the responsibility of CRRM. Payment shall be made in accordance with instructions provided to CRRM by the Financial Litigation Unit of the U.S. Attorney's Office for the District of Kansas. Any funds received after 11:00 a.m. (EST) shall be credited on the next business day. CRRM shall provide notice of payment, referencing DOJ Case Number 90-5-1-07459/3 and the civil action case name and case number to the Department of Justice and to EPA, as provided in Section XVIII (General Provisions and Notices). In the event that payment of this civil penalty is not made by the date due, CRRM shall be liable for Interest on the unpaid balance of the civil penalty calculated from the Date of Lodging until payment is made. Interest shall be computed daily and compounded annually. Interest is in addition to stipulated penalties for late payment as set forth in Paragraph 200 below. CRRM shall not deduct any penalties paid under this Decree pursuant to this Section or Section X (Stipulated Penalties) in calculating its federal, State or local income tax.

179. Upon the Entry Date, 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.

X. STIPULATED PENALTIES

180. General Provisions Regarding Stipulated Penalties.

a. CRRM shall pay stipulated penalties to the United States and State for each failure to comply with the terms of this Consent Decree as provided herein. Stipulated penalties shall be calculated in the amounts specified in this Section X.

b. All penalties paid shall be split evenly between the United States and the State.

c. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the economic benefit of non-compliance is available, the decision as to which alternative will be sought rests exclusively within the discretion of the United States after consultation with the State. In no event shall any penalty assessed against CRRM exceed the maximum civil penalty that may be assessed under the Clean Air Act (42 U.S.C. § 7413) for any violation of this Consent Decree.

d. Where CRRM's violation of a particular Consent Decree requirement triggers more than one stipulated penalties provision in this Consent Decree, CRRM shall be liable for stipulated penalties calculated under only one stipulated penalty provision as determined by EPA in consultation with KDHE.

e. Upon the Effective Date of this Decree, the stipulated penalty provisions shall be retroactively enforceable with regard to any and all violations of the Consent Decree that

have occurred prior to the Effective Date of the Consent Decree, provided that stipulated penalties that may have accrued prior to the Effective Date may not be collected unless and until this Consent Decree is entered by the Court.

181. Section V.A. Related to NSPS Applicability to FCCU Regenerator.

a. For failure to comply with any NSPS requirements applicable to the Refinery FCCU's catalyst regenerator (other than monitoring), as specified by Paragraph 15 per pollutant, per day:

Period of Non-Compliance	Penalty per day
1st[t] through 30th day	$1,000
31st through 60th day	$2,000
Beyond the 60th day	$3,000 or an amount equal to 1.2 times the economic benefit of non-compliance, which ever is greater.

b. Failure to comply with the monitoring requirements for the FCCU as set forth in NSPS Subpart J.

Period of Non-Compliance	Penalty per pollutant per day
1st through 30th day	$500
31st through 60th day	$1,000
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance whichever is greater.

182. Section V.B. Requirements for NOx Emission Reductions from FCCU.

a. For each failure to meet the interim or final FCCU emissions limit for NOx, $750 for each calendar day in a calendar quarter on which the 7-day rolling average exceeds the applicable short-term limit under Paragraph 16 or 17, and $2500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable long-term limit under Paragraph 16-17.

b. For failure to meet a deadline in the project schedule submitted pursuant to Paragraph 18 other than the deadline for operation of control equipment or achievement of applicable limit.

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$320
31st through 60th day after deadline	$640
Beyond 60th day	$1,250

183. Section V.C. Requirements for SO2 Emission Reductions from FCCU.

a. For each failure to meet any interim or final SO_2 emission limit set forth in Paragraphs 19-20, 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.

b. For failure to install a wet gas scrubber at the Refinery by December 31, 2016 if required under Paragraph 24.

Period of Delay	Penalty per day
1st through 30th day after deadline	$940
31st through 60th day after deadline	$2,250
Beyond the 60th day after deadline	$3,750, or an amount equal to 1.2 times the economic benefit of the delayed compliance whichever is greater

c. For failure to use SO2 Reducing Catalyst Additives per day as required by subparagraph 19.b.:

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$750
Beyond the 60th day	$2,000 or, for either, an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

d. Unless a stipulated penalty has been assessed under subparagraph 183.a. above, for failure to meet lowest achievable emissions rate as required by subparagraph 19.c.

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$750
Beyond the 60th day	$2,000 or, for either, an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

184. Section V.D. Requirements for PM Reductions from the FCCU.

a. For failure to meet the PM emission limit: For each failure to meet the applicable PM emissions limit for the FCCU as set forth in Paragraphs 25, per day, per unit: $750 for each calendar day in a calendar quarter on which the emission limit is exceeded.

b. For failure to conduct stack test as required by Paragraph 26, per test, per day: $500.

185. Section V.E. Requirements for CO Emissions Reductions from the FCCU. For each failure to meet the applicable CO emission limits for the FCCU as set forth in Paragraphs 27-28: $500 for each calendar day in a calendar quarter on which the specified 1-hour block 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.

186. Requirements Related to Section V.G: NOx Emission Reductions from Heaters and Boilers.

a. Failure to Meet Heater and Boiler Emissions Limits. For each failure to meet a Heater and Boiler NOx Emission Limit per day, per unit: $500 for each calendar day in a calendar quarter on which the emissions exceed the applicable limit.

b. Failure to adhere to Interim HB NOx Requirement: $20,000 per calendar quarter.

c. Failure to adhere to Final HB NOx Requirement: $50,000 per calendar quarter.

d. For failure to comply with the compliance demonstration requirements set forth in Paragraphs 39-41, per unit, per day.

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,000
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

e. For failure to submit any written deliverable or report or update the Initial Inventory as required by Section V.G., per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$200
31st through 60th day	$500
Beyond the 60th day	$1,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

f. Failure to install and operate the Demonstration Heater as required by Paragraphs 44-45, and the Second Demonstration Heater (if applicable) as required by Paragraph 49, per heater per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$1,500
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

187. Section V.H Requirements pertaining to SO_2 Emissions Reductions from, and NSPS Applicability to Heaters and Boilers, Combustion Units, and other Fuel Gas Combustion Devices (Other than Flaring Devices).

a. Requirements for SO_2 Emission Reductions from Fuel Gas Combustion Devices. For burning any refinery fuel gas that contains H_2S in excess of the applicable NSPS requirements in any Fuel Gas Combustion Device after the date on which the respective unit becomes an "affected facility" subject to NSPS Subpart A and J (or Ja) per event, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$2,500
Beyond the 30th day	$3,750 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

b. Failure to comply with the monitoring requirements for Heaters and Boilers, Combustion Units, and other Fuel Gas combustion Devices (other than Flaring Devices).

Period of Non-Compliance	Penalty per pollutant per day
1st through 30th day	$500
31st through 60th day	$1,000
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance whichever is greater.

c. Prohibition on Burning Fuel Oil. For burning Fuel Oil in a manner inconsistent with the requirements of Paragraph 53 per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,750
Beyond 30th day	$5,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater

d. Prohibition on Burning Coal or Coal Byproducts. For each ton of coal or coal byproducts that CRRM burns in violation of Paragraph 54 of this Consent Decree:

Tons of Coal Burned	Penalty per ton of Coal Burned
Tons 1-2000	$250
Tons 2001-5,000	$400
Over 5000 tons	$600

188. Section V.I., Requirements Related to the Sulfur Recovery Plant.

a. For failure to comply with NSPS Subparts A and J (or Ja if CRRM becomes subject to Ja during the term of this Consent Decree) emission limits at the CRRM Sulfur Recovery Plant, as specified in Paragraph 56, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Beyond the 60th day	$3,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

b. Failure to re-route Sulfur Pit Gases. For failure to re-route sulfur pit gases in accordance with the requirements of Paragraph 57, per day:

Period of Non-Compliance	Penalty per day
1st through 10th day	$2,000
11th through 20th day	$3,500
Beyond the 20th day	$5,000 or an amount equal to 1.2 times the economic benefit of non-compliance whichever is greater.

c. Failure to comply with the monitoring requirements of Subparagraph 56.b., NSPS Subparts A and J (or Ja if CRRM becomes subject to Ja during the term of this Consent Decree) at the Sulfur Recovery Plant, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,000
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance whichever is greater.

d. Failure to Develop and Implement PMO Plans. For failure to develop and implement a Preventive Maintenance and Operations Plan as specified in Paragraph 58, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,500
Beyond the 60th day	$2,000

189. Section V.J.: NSPS for Flaring Devices. For failure to comply with applicable NSPS Subparts A and J (or Ja if CRRM becomes subject to Ja during the term of this Consent Decree) requirements for flaring devices, including emission limits, per Flaring Device:

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,500
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

190. Section V.K.: Requirements for Control of Acid Gas Flaring Incidents and Tail Gas Incidents.

a. For Acid Gas Flaring Incidents and/or Tail Gas Incidents for which CRRM is liable under Subsection V. K.:

Tons Emitted in Flaring Incident or Tail Gas Incident:	Length of Time from Commencement of Flaring within the Flaring Incident to Termination of Flaring within the Flaring Incident is 3 hours or less; Length of Time of the Tail Gas Incident is 3 hours or less	Length of Time from Commencement of Flaring Incident to Termination of Flaring Incident is greater than 3 hours but less than or equal to 24 hours; Length of Time of the Tail Gas Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time of Flaring Incident is greater than 24 hours; Length of Time of the Tail Gas Incident is greater than 24 hours
5 tons or less	$500 per ton	$750 per ton	$1,000 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 per calendar day for each calendar day which the AG Flaring Incident or TG Incident lasts

For purposes of calculating stipulated penalties pursuant to this Paragraph, only one cell within the matrix shall apply. Thus, for example, for an Acid Gas Flaring Incident in which the flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of sulfur dioxide 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)]. For purposes of determining which column in the table set forth in this Paragraph applies under circumstances in which flaring occurs intermittently during an Acid Gas Flaring Incident, the flaring shall be deemed to commence at the time that the 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 flaring within the Acid Gas Flaring Incident. Thus, for example, for 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) for which no further Flaring occurs within the Flaring Incident, the flaring within the Acid Gas Flaring Incident shall be deemed to last 12.5 hours -- not 1.5 hours -- and the column for flaring of "greater than 3 hours but less than or equal to 24 hours" shall apply.

b. Failure to Submit Reports. For failure to timely submit any report required by Subsection V.K., or for submitting any report that does not substantially conform to the applicable requirements:

Period of Non-Compliance	Penalty per day
1st through 30th day	$750
31st through 60th day	$1,500
60th day and beyond	$3,000

c. For those corrective action(s) which CRRM: (i) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 66 or (ii) is required to undertake following dispute resolution, then, from the date of EPA's receipt of CRRM's report under Paragraph 65 of this Consent Decree until the date that either: (i) a final agreement is reached between EPA and CRRM regarding the corrective action; or (ii) a court order regarding the corrective action is entered, CRRM shall be liable for stipulated penalties as follows:

i.

Period of Non-Compliance	Penalty per day
Days 1-120	$50
Days 121-180	$100
Days 181 - 365	$300
Over 365 Days	$3,000

or

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

d. For failure to complete any corrective action under Paragraph 66 of this Decree in accordance with the schedule for such corrective action agreed to by CRRM or

imposed on CRRM pursuant to the dispute resolution provisions of this Decree (with any such extensions thereto as to which EPA and CRRM may agree in writing):

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Beyond the 60th day	$5,000

191. Section V.L: Requirements for Control of Hydrocarbon Flaring Incidents. For each failure to perform a Root Cause analysis or submit a written report, for submitting a report that does not substantially conform to the requirements of HC Flaring Incident Report or to perform corrective action(s) for an HC Flaring Incident, as required by Paragraphs 76-77:

Period of Non-Compliance	Penalty per day per Incident
1st through 30th day	$500
31st through 60th day	$1,500
Beyond the 60th day	$3,000

192. Section V.N.: Requirements relating to Benzene Waste Operations NESHAP.

a. For failure to comply with the requirements of Paragraph 83 per day:

Period of Delay or Non-Compliance	Penalty Per Day
1st through 30th day	$1000
31st through 60th day	$2000
Beyond the 60th day	$3000

b. For failure to complete the BWON Compliance Review and Verification Reports as required by Paragraphs 84, 85 and 86, and 108 (if necessary): $5,000 per month.

c. For failure to submit a plan that provides for actions necessary to correct non-compliance as required by Paragraphs 87, or for failure to implement the actions necessary to correct non-compliance and to certify compliance as required by Paragraphs 88-89:

Period of Delay or Non-Compliance	Penalty Per Day
1st through 30th day	$1250
31st through 60th day	$3000
Beyond the 60th day	$5000 or an amount equal to or 1.2 times the economic benefit of delayed compliance, whichever is greater.

d. For failure to comply with the requirements set forth in Paragraphs 90-100 for use, monitoring and replacement of carbon canisters: $1,000 per incident of non-compliance, per day.

e. For failure to submit or maintain any records or materials required by Paragraph 101: $2,000 per record or submission.

f. For failure to establish an annual review program to identify new benzene waste streams as required by Paragraph 102: $2,500 per month.

g. For failure to perform laboratory audits as required by Paragraph 103: $5,000 per month, per audit.

h. For failure to implement the training requirements as set forth in Paragraphs 105-107: $10,000 per quarter.

i. For failure to install controls on waste management units handling non-exempt, non-aqueous wastes as required by Paragraph 109: $10,000 per month per waste management unit.

j. For failure to submit any other plan, report or other deliverable required by Paragraphs 112-122, or for failure to comply with the requirements of Paragraph 123: $5,000 per month.

k. For failure to conduct sampling in accordance with the sampling plans

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required by Paragraphs 111-119: $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.

l. For failure to conduct monthly visual inspections of all Subpart FF water traps as required by subparagraph 124.a: $500 per drain not inspected.

m. For failure to monitor Subpart FF conservation vents as required by subparagraph 124.b.: $500 per vent not monitored.

n. For failure to submit the written report or deliverables required by Paragraphs 125-26: $1,000 per week, per report or deliverable.

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

Waste Stream	Penalty
For waste streams < 0.03 Mg/yr	$250
For waste streams between 0.03 and 0.1 Mg/Yr	$1,000
For waste streams between 0.1 and 0.5 Mg/yr	$5,000
For waste streams > 0.5 Mg/yr	$10,000

193. Section V.O.: Requirements for Leak Detection and Repair Program Enhancements.

a. For failure to develop and submit an LDAR Program Description as required by Paragraphs 131-132: $3,500 per week.

b. For failure to implement the training program specified in Paragraph 133: $10,000 per month.

c. For failure to conduct any of the LDAR Audits described in Paragraph 135: $5,000 per month, per audit.

d. For failure to implement any actions necessary to correct non-compliance as required in Paragraph 136:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day	$1,250
31st through 60th day	$3,000
Beyond the 60th day	$5,000, or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

e. For failure to perform monitoring utilizing the lower internal leak rate definitions as specified in Paragraph 137: $100 per component, but not greater than $10,000 per month, per process unit.

f. For failure to repair or re-monitor leaks, as required by Paragraph 139 in excess of the lower leak definitions specified in Paragraph 137: $500 per component, but not greater than $10,000 per month.

g. For failure to implement the "initial attempt" repair program set forth in Paragraph 140: $100 per component, but not to exceed $10,000 per month for the Refinery.

h. For failure to implement and comply with the LDAR monitoring program as required by Paragraph 138: $100 per component, but not greater than $10,000 per month per unit.

i. For failure to use dataloggers or maintain electronic data as required by Paragraph 141: $5,000 per month.

j. For failure to implement the QA/QC procedures described in Paragraph 142: $1,000 per incident, but not greater than $10,000 per month for the Refinery.

k. For failure to install Certified Low-Emissions Valve or Certified Low-Emissions Valve Packing for newly installed valves as required by Paragraph 149: $100 per component, but not greater than $10,000 per month per unit.

l. For failure to designate a person or position responsible for LDAR management as required by Paragraph 134, or for failure to implement the maintenance tracking program required by subparagraph 149.b.: $3,500 per week.

m. For failure to conduct and record the calibrations and the calibration drift assessments or re-monitor valves and pumps based on calibration drift assessments in Paragraph 143: $100 per missed event.

n. For failure to comply with the requirements for delay of repair set forth at Paragraph 144: $5,000 per valve or pump, per incident of non-compliance.

o. For failure to submit a written submission to EPA as required by Subsection V.O. (except where a more specific stipulated penalty provision applies to a submission): $500 per week per submission.

p. If it is determined through a federal, state, or local investigation that CRRM has failed to include any valves or pumps in its LDAR program, CRRM shall pay $175 per component that it failed to include.

q. For failure to comply with the requirements for chronic leakers set forth at Paragraph 148: $5,000 per valve.

194. Section V.P.: Requirements to Incorporate Consent Decree Requirements into Federally-Enforceable Permits. For each failure to submit an application as required by Paragraphs 151-53:

Period of delay or Non-Compliance	Penalty per day
1th through 30th day	$500
31st through 60th day	$1,500
Beyond the 60th day	$3,000

195. Requirements related to CEMs.

a. For failure to install, certify, maintain, calibrate and/or operate CEMS for NOx, SO_2, CO, O_2, and H_2S as required by Paragraph 78, and conduct the applicable monitoring required by Paragraphs 30 and 42 per pollutant, per day:

Period of Non-Compliance	Penalty per day
1th through 30th day	$500
31st through 60th day	$1,000
Beyond the 60th day	$2,000 or an amount equal to 1.2 times the economic benefit of non-compliance, which ever is greater.

b. For failure to conduct RAA or RATA on each CEMs.

Period of Non-Compliance	Penalty per day
1st through 30th day	$190
31st through 60th day	$375
Beyond the 60th day	$750

c. For failure to conduct CGA on each CEMs, per unit:

Period of Non-Compliance	Penalty per day
1st through 30th day	$50
31st through 60th day	$100
Beyond the 60th day	$200 or, for either, an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

196. Requirements for Recordkeeping and Reporting.

a. For failure to comply with NSPS Subparts A and J (or Ja) recordkeeping, or reporting requirements regarding a Sulfur Recovery Plant, as specified in subparagraph 56.c. per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$500
31th through 60th day	$1,500
Beyond the 60th day	$2,000

b. Unless covered by a more specific stipulated penalty, for failure to submit reports as required by Sections V (Affirmative Relief) or VIII (Recordkeeping and Reporting) of this Consent Decree, per report, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$300
31st through 60th day after deadline	$1,000
Beyond the 60th day	$2,000

c. For failure to submit any other written deliverable (unless a more specific stipulated penalty applies), per day per deliverable:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond the 60th day	$1,000

197. Requirements for Supplemental Environmental Project and Civil Penalties.

a. SEP Delay Stipulated Penalties. If CRRM fails to comply with a deadline for a project component set forth in Appendix G of this Consent Decree, CRRM shall pay stipulated penalties for each failure to meet an applicable deadline, as follows:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$3,000, or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater.

b. SEP Termination Penalty. If CRRM has not satisfactorily completed the SEP by ninety (90) days after December 31, 2016, and is not making a good faith effort to satisfactorily complete the SEP, or has ceased operating a project component of the SEP during the time it is required to operate it, the United States may terminate the SEP. The United States shall provide sixty (60) days written notice to CRRM that it intends to terminate the SEP. Subject to the dispute resolution provisions, if the United States terminates the SEP, CRRM shall be liable for a lump sum stipulated penalty of $723,125, less any amount that it has paid under subparagraph 197.a above. If CRRM pays the termination penalty under this Paragraph, it shall not be liable for stipulated penalties under subparagraph 197.a.

198. Requirements Relating to CERCLA/EPCRA.

a. For failure to timely and adequately Conduct CERCLA/EPCRA Compliance Review and submit the Compliance Review Reports or other reports as required by Paragraphs 158-59:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$250
31st through 60th day after deadline	$1,000
Beyond the 60th day after deadline	$2,000

b. For failure to timely and adequately report releases discovered through the Compliance or Continuous Release Reviews as required by Paragraphs 91-92:

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Period of Delay or Non-Compliance	Penalty per day:
1st through 30th day	$250
31st through 60th day	$1,000
Beyond the 60th day	$2,000

c. For failure to correct reporting procedures and conduct training as required by Paragraph 158-59:

Period of Non-Compliance	Penalty per day late:
1th through 30th day	$400
31st through 60th day	$1,500
Beyond the 60th day	$2.500

199. Non-Compliance with any Consent Decree Requirement Not Specifically Identified in this Section. CRRM shall pay a stipulated penalty for each violation of any term, condition, or requirement of this Consent Decree for which a specific stipulated penalty is not provided in this Section of $200 per day per violation.

200. Requirements to Pay Civil Penalties. For failure to make any civil penalty payment required by Paragraph 177 of this Consent Decree, CRRM shall be liable for $10,000 per day, plus Interest on the amount overdue.

201. Requirement to Pay Stipulated Penalties. CRRM shall be liable for $2,500 per day, plus Interest on the amount overdue, for failure to do either of the following within sixty (60) days after receipt of a written demand as described in Paragraph 202 below: (i) pay stipulated penalties as required by this Consent Decree in the manner specified in Paragraph 202 below; or (ii) place the amount of stipulated penalties demanded in escrow pursuant to Paragraph 203 below.

202. Payment of Stipulated Penalties. Stipulated penalties under this Section shall begin to accrue on the day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until

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the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree. CRRM shall pay stipulated penalties upon written demand by the United States or State no later than sixty (60) days after CRRM receives such demand. Stipulated penalties shall be paid to the United States in the manner set forth in Paragraph 177, Section IX (Civil Penalty) of this Consent Decree. Stipulated penalties shall be paid to the State in the manner set forth in Paragraph 177 of this Consent Decree. A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount the Plaintiffs have demanded for each violation (as can be best estimated), the calculation method underlying the demand, and the grounds upon which the demand is based. The United States, after consultation with the State, may, in its unreviewable discretion, waive payment of any portion of stipulated penalties that may accrue under this Consent Decree.

203. Stipulated Penalties Dispute. Should CRRM dispute the United States' or State's demand for all or part of a stipulated penalty, it may avoid the imposition of a stipulated penalty for failure to pay a stipulated penalty by placing the disputed amount demanded in a commercial escrow account pending resolution of the matter and by invoking the dispute resolution provisions of Section XIII within the time provided in Paragraph 202 for payment of stipulated penalties. If the dispute is thereafter resolved in CRRM's favor, the escrowed amount plus accrued interest shall be returned to CRRM; otherwise, the United States shall 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. The United States and State reserve the right to pursue any other non-monetary remedies to which they are legally entitled, including but not limited to, injunctive relief for CRRM's violations of this Consent Decree.

204. Excess Emissions from Consent Decree Violations. To the extent that a violation of this Consent Decree results in excess emissions, nothing in this Consent Decree prevents the United States or KDHE from seeking to obtain compensatory emissions reductions on or offsite in addition to other injunctive relief or stipulated penalties.

205. Subject to the provisions of Section XIV of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States or State for CRRM's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of the Clean Air Act, CRRM shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation. The United States and State will not demand stipulated penalties for a Consent Decree violation if they have commenced litigation seeking penalties under the Clean Air Act for such violation. Notwithstanding the foregoing, the United States reserves all its rights to pursue, under the Consent Decree and/or outside of it, any other non-monetary remedies to which it is legally entitled, including but not limited to injunctive relief for violations of the Consent Decree.

XI. RECORD KEEPING / RIGHT OF ENTRY

206. Any authorized representative of EPA or the State, including independent contractors, upon presentation of credentials, shall have a right of entry upon the premises of the facilities of the Refinery at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including inspecting plant equipment, and inspecting and copying all records maintained by CRRM pursuant to the requirements of this Consent Decree or in the ordinary course of Defendant's business that are deemed necessary by EPA or the State to verify compliance with this Consent Decree.

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207. CRRM may assert that certain documents, records, or other information otherwise subject to this Section XI are privileged under the attorney-client privilege or any other privilege recognized by federal law. If a Defendant asserts such a privilege, it shall provide the following information about the documents withheld upon request of EPA or KDHE: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by the Defendant. However, no documents, records, data, or other information required to be created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

208. Unless otherwise specified in this Consent Decree, CRRM shall retain all records required to be maintained in accordance with this Consent Decree until Termination, unless applicable regulations require the records to be maintained longer.

209. Nothing in this Consent Decree shall limit the authority of EPA or the State to conduct tests, inspections, or other activities under any statutory or regulatory provision.

XII. FORCE MAJEURE

210. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of a Defendant, of any entity controlled by a Defendant, or of Defendant's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite the Defendant's best efforts to fulfill the obligation. The requirement that Defendant 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 a Defendant's financial inability to perform any obligation under this Consent Decree.

211. 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, CRRM shall provide notice orally or by electronic or facsimile transmission to the United States and KDHE within seven (7) days of when the Defendant first knew that the event might cause a delay. Within fourteen (14) days thereafter, the Defendant shall provide in writing to the United States and KDHE 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; the Defendant'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 the Defendant, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Defendant shall include with any force majeure notice all documentation then available supporting the claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude the Defendant 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. A Defendant shall be deemed to know of any circumstance of which the Defendant, any entity controlled by that Defendant or Defendant's contractors knew or should have known.

212. With respect to any compliance obligation under this Consent Decree that requires a Defendant to obtain a federal, state, or local permit or approval, a delay in the performance of such obligation by a Defendant 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 the Defendant has submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

213. If the United States and KDHE agree 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 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. The United States and KDHE will notify the Defendant in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event within sixty (60) days of the receipt of the written force majeure notice or the receipt of any additional information (if requested pursuant to Paragraph 214 below) regarding the notice of the force majeure event.

214. If the United States and KDHE do not agree that the delay or anticipated delay has been or will be caused by a force majeure event, or needs further information from Defendant regarding the asserted force majeure event to make a decision, they will notify the Defendant or request further information in writing within sixty (60) days of receipt of the written force majeure notice.

215. If CRRM elects to invoke the dispute resolution procedures set forth in Section XIII (Retention of Jurisdiction/Dispute Resolution), it shall do so no later than 20 days after receipt of the United States' and KDHE's notice. In any such proceeding, the Defendant 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 the Defendant complied with the requirements of Paragraphs 210-211, above. If the Defendant carries this burden, the delay at issue shall be deemed not to be a violation by the Defendant of the affected obligation of this Consent Decree identified to the Plaintiffs and the Court.

XIII. RETENTION OF JURISDICTION / DISPUTE RESOLUTION

216. This Court shall 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 – including, but not limited to, determinations under Section V (Affirmative Relief) of the Consent Decree – among the Parties that may arise under the provisions of the Consent Decree, until the Consent Decree terminates in accordance with Section XVI (Termination).

217. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree, except only as otherwise provided in Section XII regarding force majeure. A Defendant's failure to seek resolution of a dispute under this Section shall preclude that Party from raising any such issue as a defense to an action by the United States or KDHE to enforce any obligation of Defendant arising under this Decree.

218. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of a Defendant under this Consent Decree, unless the Court or the final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, until Defendant files a petition with the Court in accordance with Paragraph 221 and shall

continued to be stayed until the Court issues a decision on the dispute in favor of the United States or KDHE. Payment shall be stayed pending resolution of the dispute as provided in Paragraph 221. If Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section X (Stipulated Penalties).

219. Dispute resolution shall be commenced by a Defendant under the Consent Decree by giving written notice to another Party advising of a dispute pursuant to this Section XIII. The notice shall describe the nature of the dispute, and shall state the noticing Party's position with regard to such dispute. The Party receiving such a notice shall acknowledge receipt of the notice and the Parties shall expeditiously schedule a meeting to discuss the dispute informally not later than fourteen (14) days after the receipt of such notice.

220. Disputes submitted to dispute resolution shall, in the first instance, be the subject of informal negotiations between the Parties. Such period of informal negotiations shall extend for at least thirty (30) calendar days from the date of the notice of dispute. At any time following thirty (30) calendar days after the receipt of the notice of dispute, any Party may cease informal negotiations by giving written notice to the other Party.

221. Within thirty (30) days of the date that informal negotiations cease pursuant to Paragraph 220 above, the United States and KDHE shall provide CRRM with a written summary of their position(s) regarding the dispute. The position advanced by the United States and State shall be considered binding unless, within sixty days of a Defendant's receipt of the written summary of the United States' position, that Defendant files with the Court a petition which describes the nature of the dispute. The United States shall respond to the petition within forty-five (45) calendar days of filing. In the event that the United States and KDHE make differing

determinations or take differing actions that affect a Defendant's rights or obligations under this Consent Decree, the final decision of the United States will take precedence.

222. 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 Section XIII may be shortened upon motion of one of the Parties to the dispute.

223. The Parties do not intend that the invocation of this Section XIII by a Party shall cause the Court to draw any inferences or establish any presumptions adverse to either Party as a result of invocation of this Section or their inability to reach agreement.

224. 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 the time it took for the issue to be resolved under dispute resolution. CRRM shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XIV. EFFECT OF SETTLEMENT ON PRIOR CONSENT DECREE OBLIGATIONS AND POTENTIAL FUTURE ACTIONS

225. Effective upon the Entry Date, the entry of this Consent Decree by the Court terminates all of CRRM's Clean Air Act obligations under the 2004 Consent Decree and all material and non material modifications to the 2004 Consent Decree other than Sections XII and XIII (RCRA obligations) and obligations that derive solely and expressly from Sections XII and XIII, which includes but is not limited to the Resolution of Matters In Dispute dated September 2010. The termination of CRRM's Clean Air Act obligations under the 2004 Consent Decree

does not render void or inapplicable any release from liability under the "Effect of Settlement" provisions of the 2004 Consent Decree and its modifications.

226. Definitions. For purposes of this Section XIV, the following definitions apply:

a. "Applicable NSR/PSD Requirements" shall mean:

i. 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 and 51.166, as amended from time to time;

ii. "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); 40 C.F.R. Part 51, Appendix S; and 40 C.F.R. § 52.24, as amended from time to time;

iii. Any Title V regulations or permit provisions that implement, adopt, or incorporate the specific regulatory requirements identified above, as amended from time to time; and

iv. any applicable federally–enforceable state, regional, or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above and any applicable state, regional or local regulations enforceable by the State of Kansas that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

b. "Applicable NSPS Subparts A and J Requirements" shall mean the standards, monitoring, testing, recordkeeping and reporting requirements, found at 40 C.F.R. §§ 60.100 through 60.109 (Subpart J), 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; and any applicable federally-enforceable state, regional, or local regulations that implement adopt, or incorporate the specific federal regulatory requirements identified above and any applicable state, regional or

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local regulations enforceable by the State of Kansas that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

c. "LDAR" Requirements" shall mean all the requirements relating to equipment in light liquid service and gas and/or vapor service promulgated pursuant to Sections 111 and 112 of the Clean Air Act, and set forth at 40 C.F.R. Part 60, Subpart GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC; and any applicable federally-enforceable state, regional, or local regulations that implement adopt, or incorporate the specific federal regulatory requirements identified above and any applicable state, regional or local regulations enforceable by the State of Kansas that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

d. "BWON Requirements" shall mean the National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF, promulgated pursuant to Section 112(e) of the Clean Air Act, 42 U.S.C. § 7412(e); and any applicable federally-enforceable state, regional, or local regulations that implement adopt, or incorporate the specific federal regulatory requirements identified above and any applicable state, regional or local regulations enforceable by the State of Kansas that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

e. "EPCRA/CERCLA Requirements" shall mean the requirements under Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Sections 304(a) and 313 of EPCRA, 42 U.S.C. §§ 11004(a), 11023; 40 C.F.R. §§ 302, 355, and 372.

f. "Pre-Lodging" shall mean the dates prior to the Date of Lodging of this Consent Decree.

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g. "Post-Lodging Compliance Dates" shall mean any dates in this Section XIV after the Date of Lodging (and/or after the Entry Date). Post-Lodging Compliance Dates include dates certain (e.g., "December 31, 2005"), dates after Lodging represented in terms of time after the Date of Lodging or the Entry Date (e.g., "180 days after the Date of Lodging" or "180 days after the Entry Date"), 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.

h. "Civil Liability" means liability for injunctive relief and civil penalties and any other civil remedy legally available.

227. Liability Resolution Regarding Applicable NSR/PSD Requirements.

a. With respect to emissions of the following pollutants from the following units, Entry of this Consent Decree shall resolve all civil liability of CRRM to the United States and State for violations of the Applicable NSR/PSD Requirements resulting from Pre-Lodging construction or modification up through the following dates:

Unit	Pollutants	Date
FCCU	NOx	December 31, 2014
FCCU	SO_2	March 15, 2012 if CRRM accepts the 15/30 Final SO_2 Emission Limit or January 1, 2017 if CRRM accepts 10/18 Final SO_2 Emission Limit.
FCCU	PM	December 31, 2010
Covered Heaters and Boilers	NOx and SO_2	December 31, 2016

Fuel Gas Combustion Devices that are Not Covered Heaters Or Boilers	NOx and SO_2	Entry Date

b. Conditional Resolution of Liability for CO Emissions Under the Applicable NSR/PSD Requirements. With respect to emissions of CO from the Refinery FCCU, if and when CRRM accepts an emission limit at the Refinery FCCU of 100 ppmvd CO on a 365-day rolling-average basis at 0% O_2 pursuant to Paragraph 28, then all civil liability of CRRM to the United States and State shall be resolved for alleged violations of the Applicable NSR/PSD Requirements relating to CO emissions at the Refinery FCCU resulting from pre-Lodging construction or modification of the Refinery FCCU through the date of compliance with Paragraph 28.

c. Reservation of Rights regarding Applicable NSR/PSD Requirements: Release for Violations Continuing After the Date of Lodging Can be Rendered Void. Notwithstanding the resolution of liability in subparagraphs 227.a. and b. above, the release of liability by the United States and State to CRRM for alleged 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 for a particular emissions unit if CRRM materially fails to comply with the obligations and requirements of Subsections V.A – M. for that unit; provided, however, that the release in subparagraphs 227.a. and b. shall not be rendered void if CRRM remedies such material failure and pays any stipulated penalties due as a result of such material failure.

d. Exclusions from Release Coverage Regarding Applicable NSR/PSD Requirements: Construction and/or Modification Not Covered by Paragraph 227. Notwithstanding the resolution of liability in subparagraphs 227.a. and b., nothing in this

Consent Decree precludes the United States or State from seeking from CRRM injunctive relief, penalties, or other appropriate relief for violations by CRRM of the Applicable NSR/PSD Requirements resulting from construction or modification that: (i) commenced prior to or commences after 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 for pollutants and units covered by this Consent Decree.

e. 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 Refinery, are beyond the scope of the release in subparagraphs 227.a. and b. and CRRM must evaluate any such increases in accordance with the Applicable PSD/NSR Requirements.

f. Resolution of Liability Regarding Applicable NSPS Subparts A and J Requirements. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree shall resolve all civil liability of CRRM to the United States and State for Pre-Lodging violations of the Applicable NSPS Subparts A and J Requirements from the date that the claims of the United States and State resulting from Pre-Lodging construction or modification (including reconstruction) accrued up to the following Post-Lodging Compliance Dates:

Unit	Pollutant	Date
FCCU	SO_2 PM CO	Entry Date
Fuel Gas Combustion Devices: (other than flaring devices)	SO_2	Entry Date
The SRP (other than the sulfur pit)	SO_2	Entry Date

SRP Sulfur Pit	SO_2	Three years after the Entry Date
Coker Flare and Cold Pond Flare (as Fuel Gas Combustion Devices)	SO_2	Entry Date
Alky Flare (as Fuel Gas Combustion Devices)	SO_2	Two years after the Entry Date

g. Reservation of Rights Regarding Applicable NSPS Subparts A and J Requirements: Release for NSPS Violations Occurring After the Date of Lodging Can be Rendered Void. Notwithstanding the resolution of liability in subparagraph 227.f. above, the release of liability by the United States and State to CRRM for alleged violations of any Applicable NSPS Subparts A and J Requirements that occurred between the Date of Lodging and the Post-Lodging Compliance Dates shall be rendered void for an affected facility if CRRM materially fails to comply with the obligations and requirements of Subsections V. A. - M. for that affected facility; provided, however, that the release in subparagraph 227.f. shall not be rendered void if CRRM remedies such material failure and pays any stipulated penalties due as a result of such material failure.

h. 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, state, or local authority or any applicable permit.

228. Resolution of Liability Regarding BWON Requirements.

a. Entry of this Consent Decree shall resolve all civil liability of CRRM to the United States and State for violations of the BWON Requirements that (1) commenced and ceased prior to the Entry Date; and (2) commenced prior to the Entry Date and continued past the

Entry Date, provided that the events giving rise to such post-Entry violations are identified by CRRM in its BWON Compliance Review and Verification Report(s) submitted pursuant to Paragraphs 84-86 and corrected as required under Paragraphs 87-88.

b. The release of liability in subparagraph 228.a. shall be rendered void if CRRM materially fails to comply with the corresponding obligations and requirements of Subsection V. N. of this Consent Decree; provided, however, that the release in subparagraph 228.a. shall not be rendered void if CRRM remedies such material failure and pays any stipulated penalties due as a result of such material failure.

229. Resolution of Liability Regarding LDAR Requirements.

a. Entry of this Consent Decree shall resolve all civil liability of CRRM to the United States and KDHE for violations of the LDAR Requirements that commenced and ceased prior to the Entry Date, or that commenced prior to the Entry Date and continued past the Entry Date, provided that the events giving rise to such post-Entry violations are identified by CRRM, as appropriate, in its Report on the Initial Third Party Audit submitted pursuant to Paragraph 135 and corrected as required under Paragraph 136.

b. The release of liability in subparagraph 229.a. shall be rendered void if CRRM materially fails to comply with the corresponding obligations and requirements of Subsection V. O. of this Consent Decree; provided, however, that the release in Paragraph 229.a. shall not be rendered void if CRRM remedies such material failure and pays any stipulated penalties due as a result of such material failure.

c. Notwithstanding the resolution of liability in subparagraph 229.a., nothing in this Consent Decree precludes the United States or State from seeking from CRRM civil penalties and/or injunctive relief and/or other equitable relief for violations by CRRM for a

violation of LDAR Requirements that either continued or commenced after the Entry Date if CRRM fails to identify any such violation of LDAR Requirements in its Report on the Initial Third Party Audit required under Paragraph 135 and correct such violation as required by Paragraph 136.

230. Resolution of Liability under CERCLA/EPCRA.

a. Entry of this Consent Decree and compliance with Paragraphs 158-159 shall resolve the civil liability of CRRM to the United States for alleged violations of EPCRA/CERCLA Requirements at the Refinery for releases that occurred prior to the Date of Lodging and are included in the Compliance Review Report submitted to EPA and properly reported to the NRC, LEPC, and SERC as required by Paragraph 159.

b. Notwithstanding the resolution of liability in subparagraph 230.a. above, the release of liability by the United States to CRRM for alleged violations of Section 103 of CERCLA, 42 U.S.C. § 9603, and Sections 304 and 313 of EPCRA, 42 U.S.C. §§ 11004, 11023, shall be rendered void if CRRM materially fails to comply with the obligations and requirements of Subsections V. Q.; provided, however, that the release in subparagraph 230.a. shall not be rendered void if CRRM remedies such material failure and pays any stipulated penalties due as a result of such material failure.

c. Notwithstanding the resolution of liability in subparagraph 230.a. above, nothing in this Consent Decree precludes the United States from seeking from CRRM injunctive relief, penalties, or other appropriate relief for violations by CRRM of Section 103 of CERCLA, 42 U.S.C. § 9603, and Sections 304 and 313 of EPCRA, 42 U.S.C. §§ 11004, 11023, at the Refinery that first occurred after the Date of Lodging of the Consent Decree.

d. Nothing in this Consent Decree is intended to limit or disqualify CRRM, 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 CRRM discovers during the course of any investigation, audit, or enhanced monitoring that CRRM is required to undertake pursuant to this Consent Decree.

231. Claim/Issue Preclusion. In any subsequent administrative or judicial proceeding initiated by the United States or State for injunctive relief, penalties, or other appropriate relief relating to CRRM for alleged violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements, not identified in this Section XIV of the Consent Decree:

a. CRRM 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 CRRM assert, or maintain, any other defenses based upon any contention that the claims raised by the United States or State 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 CRRM to assert that the claims are deemed resolved by virtue of this Section XIV of the Consent Decree.

b. The United States and State 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 CRRM of any interpretation or guidance issued by EPA related to the matters addressed in this Consent Decree and/or the Complaint.

232. Imminent and Substantial Endangerment. Nothing in this Consent Decree shall be construed to limit the authority of the United States or State to undertake any action against

any person, including CRRM, to abate or correct conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

XV. GENERAL PROVISIONS AND NOTICES

233. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve CRRM of its obligations to comply with all applicable federal, state and local laws and regulations. Except as expressly provided in Section XIV (Effect of Settlement on Prior Consent Decree Obligations and Potential Future Actions), nothing contained in this Consent Decree shall be construed to prevent or limit the rights of the United States or State to seek or obtain other remedies or sanctions available under other federal, state or local statutes or regulations resulting from CRRM's violation of the Consent Decree or violations of the statutes and regulations upon which the Consent Decree is based, or for CRRM's violations of any applicable provision of law, other than the specific matters resolved herein. This shall include the right of the United States or State to invoke the authority of the Court to order CRRM's compliance with this Consent Decree in a subsequent contempt action.

234. Post-Permit Violations. Nothing in this Consent Decree shall be construed to prevent or limit the right of the United States or State to seek injunctive, monetary or other relief for violations of Surviving Consent Decree Obligations that have been incorporated into permits pursuant to this Consent Decree, provided, however, that the United States and KDHE may recover stipulated penalties under the Consent Decree or other forms of monetary relief outside of the Consent Decree but not both.

235. Alternative Monitoring Plans. Where this Consent Decree permits or requires CRRM to submit an alternative monitoring plan ("AMP") to EPA for approval, CRRM shall submit a complete application and shall comply with the proposed AMP pending EPA's

approval or disapproval of the application. If EPA disapproves a proposed alternative monitoring plan, CRRM shall, according to EPA's direction, either monitor in accordance with the applicable monitoring requirements, or submit a revised AMP to EPA for approval within ninety (90) days of receiving notice of EPA's disapproval. Such revised plan may include a revised alternative monitoring plan application, physical or operational changes to the equipment, or additional or different monitoring. If the revised monitoring plan is not approved by EPA, the monitoring in question shall be conducted in accordance with the applicable monitoring requirements.

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

237. Failure of Compliance. The United States and State do not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that CRRM's complete compliance with the Consent Decree will result in future compliance with the provisions of the Clean Air Act or any other applicable federal, state, or local law or regulation. Notwithstanding the review or approval by the United States and/or state agencies of any plans, reports, policies or procedures formulated pursuant to the Consent Decree, CRRM shall remain responsible for compliance with the terms of the Consent Decree, all applicable permits, and all applicable federal, state and local laws and regulations, except as provided in Section XII (Force Majeure).

238. Service of Process. CRRM 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 CRRM at Section XV (General Provisions and Notices) are authorized to accept service of process with respect to all matters arising under or relating to the Consent Decree. The Parties agree that CRRM need not file an answer to the Complaint in this action unless or until this Court expressly declines to enter this Consent Decree.

239. Pre-Entry Obligations. Obligations of CRRM under this Consent Decree to perform duties scheduled to occur prior to the Entry Date, shall be legally enforceable on and after the Entry Date. Liability for stipulated penalties, if applicable, shall accrue for violation of such obligations and payment of such stipulated penalties may be demanded by the United States or State as provided in this Consent Decree, provided that stipulated penalties that may have accrued prior to the Entry Date may not be collected unless and until this Consent Decree is entered by the Court.

240. Costs. Each Party to this action shall bear its own costs and attorneys' fees.

241. Public Documents. All information and documents submitted by CRRM to EPA or the State pursuant to this Consent Decree shall be subject to public inspection in accordance with the respective statutes and regulations that are applicable, unless subject to legal privileges or protection or identified and supported as business confidential in accordance with the respective state or federal statutes or regulations.

242. Public Notice and Comment. The Parties 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. The United States reserves the right to withdraw or withhold its consent to the

Consent Decree if public comments disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate.

243. Each report, study, notification or other communication of CRRM shall be submitted as specified in this Consent Decree. Unless otherwise provided herein, notifications to or communications between the Parties shall be deemed submitted on the date they are postmarked. Notifications and communications shall be sent by U.S. Mail, postage pre-paid, or private courier service, except for notices under Section XII (Force Majeure) and Section XIII (Retention of Jurisdiction/Dispute Resolution) which shall be sent by overnight mail or by certified or registered mail, return receipt requested. If the date on which a notification or other communication is due falls on a Saturday, Sunday or legal holiday, the deadline for such submission shall be enlarged to the next business day. Where an addressee listed below has provided an e-mail address, CRRM may submit to that person 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 Section IX or Section X, and notices under Section XII and Section XIII) 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. Where this Consent Decree requires that notices and submissions are to be made to the United States they shall be made to the United States Department of Justice and all of the designated EPA offices set forth below. Where this Consent Decree requires that notices and submissions shall be made to EPA, they need only be sent to the designated EPA offices set forth below. Except as otherwise provided herein, all reports, notifications, certifications, or other

communications required under this Consent Decree to be submitted or sent to the United States, EPA, and/or CRRM shall be addressed as follows:

As to the United States:

U.S. Department of Justice
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
Reference Case No. 90-5-2-1-07459/1

U.S. Environmental Protection Agency Air Enforcement Division

Director, Air Enforcement Division
U.S. Environmental Protection Agency
Office of Civil Enforcement
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
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As to the State:

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As to CRRM:

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LeAnn Johnson Koch, Esquire
Perkins Coie, LLP
700 13th Street N.W.
Washington, D.C. 20005
leannjohnson@perkinscoie.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 this 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.

244. Approvals. All EPA and State approvals or comments required under this Consent Decree shall be made in writing.

245. 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.

246. Integration. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersedes all prior agreements and understandings, whether oral or written,

concerning the settlement embodied herein. Other than deliverables that are subsequently submitted and approved pursuant to this Decree, no other document, and no other representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree.

247. Consent Decree Modifications. Non-material modifications to this Consent Decree shall be in writing and shall be effective when signed by all Parties. The United States or State will file non-material modifications with the Court on a periodic basis. For the purpose of this Paragraph, non-material modifications include, but are not limited to: (i) any modifications to the frequency of reporting obligations; and (ii) any modifications to schedules that do not extend the date for compliance with emissions limitations. Material modifications to this Consent Decree shall be in writing, signed by the Parties and shall be effective upon approval by the Court.

248. Effect of Shutdown. Except as provided in Section V.G (NOx Emissions Reductions from Heaters and Boilers), 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 the Refinery and the surrender of all air permits for the Refinery will be deemed to satisfy all requirements of this Consent Decree other than the requirements of Section VII (Supplemental Environmental Project) 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.

XVI. TERMINATION

249. Prerequisites to Termination. This Consent Decree shall be subject to termination upon motion by CRRM under the procedure set forth in Paragraphs 250-51 below. Prior to

seeking termination, CRRM shall have completed and satisfied all of the following requirements under this Consent Decree:

a. installation of controls as specified in this Consent Decree;

b. operation for at least one year of each unit in substantial and material compliance with the Surviving Consent Decree Obligations and certification that each unit is in substantial and material compliance within the first six (6) month period progress report following the conclusion of the compliance period.

c. substantial and material compliance with all other provisions contained in this Consent Decree, which compliance may be established for specific parts of the Consent Decree in accordance with Paragraph 250 below;

d. payment of all penalties and other monetary obligations due under the terms of the Consent Decree; no penalties or other monetary obligations due hereunder can be outstanding or owed to the United States;

e. completion of the SEP required by Section VII.

f. application for and receipt of permits incorporating the Surviving Consent Decree Obligations established under Section V.P; and

250. Certification of Completion.

a. Prior to moving for termination, CRRM may certify completion of one or more of the following Subsections of the Consent Decree, provided that all of the related requirements have been satisfied:

i. Sections V.A. through V. F. Fluid Catalytic Cracking Unit (including operation of the unit for one year after completion in compliance with the emission limits established pursuant to the Consent Decree);

ii. Sections V.G. and V.H. Fuel Gas Combustion Devices

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);

iii. Sections V.I. through V.L. SRP and Flaring Devices;

iv. Sections V.N. and V.O. Benzene and LDAR;

v. Section V.Q. CERCLA/EPCRA.

vi. Section VII. Supplemental Environmental Project; and

b. After CRRM concludes that any of the parts of the Consent Decree identified in this Paragraph 250 have been completed, CRRM may submit a written report to the Parties listed in Section XV (General Provisions and Notices) describing the activities undertaken and certifying that the applicable Sections have been completed in full satisfaction of the requirements of this Consent Decree, and that CRRM is in substantial and material compliance with all of the other requirements of the Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of CRRM to the requirement:

> 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.

c. Upon receipt of CRRM's certification, EPA, after consultation with the State, shall notify CRRM whether the requirements set forth in the applicable Paragraphs have been completed in accordance with this Consent Decree. The parties recognize that ongoing obligations under such Paragraphs remain and necessarily continue (e.g., reporting, record keeping, training, auditing requirements), and that CRRM's certification is that it is in current

compliance with all such obligations. If EPA concludes that the requirements of the applicable Paragraphs have been completed in accordance with this Consent Decree, EPA will so certify in writing to CRRM and that certification by EPA shall constitute the certification of completion of the applicable Paragraphs for purposes of this Consent Decree. However, such certification shall not effectuate termination of the Consent Decree or any part of the Consent Decree, until all conditions for termination for all Consent Decree requirements listed in Paragraph 249 above have been satisfied. If EPA concludes that such requirements have not been fully complied with, EPA shall notify CRRM as to the activities that must be undertaken to complete the applicable Paragraph(s) of the Consent Decree, and CRRM shall perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Section XIII (Retention of Jurisdiction/Dispute Resolution).

d. Nothing in this Paragraph 250 shall preclude the United States or State from seeking stipulated penalties for a violation of the Consent Decree regardless of whether a Certification of Completion has been issued under subparagraph 250.c. In addition, nothing in subparagraph 250.c shall permit a Defendant to fail to implement any ongoing obligations under the Consent Decree regardless of whether a Certification of Completion has been issued.

251. Termination Procedure. At such time as CRRM believes it has satisfied the requirements for termination set forth in Paragraph 249, they shall certify such compliance and completion to the United States and State in writing as provided in Section XV (General Provisions and Notices). Unless, within 120 days of receipt of Defendant's certification under this Paragraph, the United States or State objects in writing with specific reasons, CRRM may move this Court for an order that this Consent Decree be terminated. If the United States or State objects to the certification by CRRM under this Paragraph, then the matter shall be

resolved in accordance with the dispute resolution provisions under Section XIII (Retention of Jurisdiction/Dispute Resolution) of this Consent Decree. In such case, CRRM shall bear the burden of proving that this Consent Decree should be terminated.

XVII. SIGNATORIES

252. Each undersigned representative of CRRM, the State and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

253. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis.

254. CRRM agrees not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree prior to Entry, unless the United States has notified CRRM in writing that it no longer supports entry of the Decree.

Dated and entered this _____ day of _____, 2012

_____

UNITED STATES DISTRICT JUDGE

SR

WE HEREBY CONSENT to the entry of this Consent Decree subject to the public notice and comment provisions of 28 C.F.R. § 50.7:

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Date: 2/25/12

IGNACIA S. MORENO
Assistant Attorney General
United States Department of Justice
Environment and Natural Resources Division

Date: 2/27/12

ELIZABETH L. LOEB
Trial Attorney
Environment and Natural Resources Division
Environmental Enforcement Section
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044
(202) 616-8916
Elizabeth.Loeb@usdoj.gov
Member of the New York Bar.

LANNY D. WELCH
United States Attorney
District of Kansas

/s/ Emily Metzger
EMILY METZGER
Assistant United States Attorney
301 North Main Street
Wichita, Kansas 67212
(316) 269-6481
Emily.Metzger@usdoj.gov
Kansas Supreme Court Number 10750

Date: 2/1/12

CYNTHIA GILES
Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency

Date: 1/30/12

PAMELA J. MAZAKAS
Acting Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency

Date: 1/23/12

PHILLIP A. BROOKS
Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency

Date: 1/18/12

MELANIE SHEPHERDSON
Attorney, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

Date:

KARL BROOKS
Regional Administrator
U.S. Environmental Protection Agency
Region VII

DAVID COZAD
Regional Counsel
U.S. Environmental Protection Agency

Date:

SARAH T. LaBODA
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region VII

WE HEREBY CONSENT to the entry of this Consent Decree:

FOR PLAINTIFF KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT:

Date: 2/13/2012

ROBERT MOSER, M.D.
Secretary
Kansas Department of Health and Environment

Date: 2/10/12

TIMOTHY E. KECK
Deputy Chief Counsel and Special Assitant
Attorney General
Kansas Department of Health and Environment

Date: 02/09/2012

SHARI FEIST ALBRECHT
Associate Chief Counsel
Kansas Department of Health and
Environment
Charles Curtis State Office Building
1000 S.W. Jackson, Suite 560
Topeka, Kansas 66612
(785) 296-5334

WE HEREBY CONSENT to the entry of this Consent Decree:

FOR DEFENDANT COFFEYVILLE RESOURCES REFINING & MARKETING, LLC,

Date: 1/13/12

Stanley A. Riemann
Chief Operating Officer

LeAnn Johnson Koch
Perkins Coie, LLP
700 13th Street Street, NW
Washington, DC 20005
(202) 654-6209
Counsel to CRRM

Agent Authorized to Accept Service for Defendant:

_____

Appendix A

TEST PROTOCOL DOCUMENT

CVR ENERGY, COFFEYVILLE, KS

FCCU CATALYTIC REGENERATOR

PREPARED BY CVR ENERGY

400 NORTH LINDEN

COFFEYVILLE, KS 67337

JANUARY 22, 2010

TABLE OF CONTENT

SAMPLING PLAN
FOR
CVR ENERGY
COFFEYVILLE, KANSAS
FCCU CATALYTIC REGENERATOR VENT

Purpose of Test: The testing is being performed in support of a negotiated consent decree.

Pollutants to be measured and Sampling Procedures:

Sampling Points	EPA Method 1
Flow	EPA Method 2
Molecular Weight	EPA Method 3A
Moisture	EPA Method 4
Particulate Matter	EPA Method 5F

Stack to be Sampled: FCCU Catalytic Regenerator Vent (EU-13-002)
ESP Control Device (SV010)

Scope of Work:

Sampling Point Determination – EPA Method 1

The number and location of the traverse points in the stack will be determined according to the procedures outlined in EPA Method 1.

Flue Gas Velocity and Volumetric Flow Rate – EPA Method 2

The flue gas velocity and volumetric flow rate will be determined according to the procedures outlined in EPA Method 2. Velocity measurements will be made using a Type S pitot tube conforming to the geometric specifications detailed in EPA Method 2. Differential pressures will be measured with fluid manometers of the appropriate range. Effluent gas temperatures will be measured with a chromel-alumel thermocouple equipped with a digital temperature indicator.

Flue Gas Composition and Molecular Weight – EPA Method 3A

EPA Method 3A will be used to determine oxygen (O_2) and carbon dioxide (CO_2) concentrations in the flue gas stream. Analysis for carbon dioxide and oxygen will be conducted using the installed and certified CEMS. The dry molecular weight will be calculated from these analysis results.

Flue Gas Moisture Content – EPA Method 4

The flue gas moisture content will be determined according to the sampling and analytical procedures outlined in EPA Method 4. The impingers will be connected in series and will contain 100ml of DI H_2O in each of the first two impingers followed by a dry impinger and an impinger containing silica gel. The impingers will be contained in an ice bath in order to assure condensation of the moisture in the flue gas stream. Any moisture that is not condensed in the impingers will be captured in the silica gel; therefore, all moisture can be weighed and entered into moisture content calculations. Moisture determination will be performed in the back half of the Method 5 sampling train used for measurement of particulate matter emissions.

Non-Sulfate Particulate Matter – EPA Method 5F

Particulate matter will be withdrawn isokinetically from the source and collected on a filter maintained at a temperature in the range 160 ±14 °C (320 ±25 °F). The collected sample will be extracted with water. A portion of the extract will be analyzed for sulfate content by ion chromatography. The remainder will be neutralized with ammonium hydroxide (NH_4OH), dried, and weighed. The weight of sulfate in the sample will be calculated as ammonium sulfate ($(NH_4)_2SO_4$), and be subtracted from the total particulate weight; the result will be reported as non-sulfate particulate matter.

The sample train will be operated as detailed in the reference method and all required calibrations will be performed. In addition the sampling train will be leak-checked at the nozzle at 15 inches of mercury vacuum before each test and leak-checked at the nozzle after each test at the highest vacuum reading recorded during the test. Three runs will be conducted for a minimum of 60 minutes in duration. The presence of cyclonic flow will be checked at each traverse point and documented prior to starting the test.

Determination of Coke Burn-off Rates

The non-sulfate particulate emission rates will be calculated in terms of lbPM/1000lb coke burn-off. Coke burn-off will be calculated by refinery personnel using a carbon balance based on measured air blower rates and the carbon monoxide and carbon dioxide concentrations in the regenerator exhaust gas stream.

Sampling Schedule

Three sampling runs will be performed at a rate within the range of operating parameters defined in Attachment A to this protocol. A date will be selected depending upon the availability of an acceptable testing company. The mandatory 30 days notice of intent to test will be provided to the Agency.

Stack Geometry

The stack has an inside diameter of 88.5" and has 2 test ports at 90 degrees orientation. The test platform is approximately 125 above grade and the test ports are 35' 7" (4.84 diameters) downstream of a bend in the stack and 55' (7.48 diameters) upstream of the stack outlet. This geometry will require the selection of 24 test points.

-3-

Attachment A - FCCU Protocol Parameters

	-5%	Average	+5%
• FCCU Baseline (11/15/08-11/14/09) – 12 months			
o Average Coke Burn Rate = 20, 256 (lb/hr) daily average	19,243	20,256	21,269
o Average Main Air Blower (MAB) Discharge to Regenerator = 59,013 (scfm) daily average	56,062	59,013	61,964
o Average FCCU Charge = 31,169 (BPD)	29,611	31,169	32,727

Please note the following:
FCCU

- Primary and Secondary Voltage for ESP
  - This data is not kept in any electronic historian and data is not available historically.
- Secondary current on the ESP
  - This data is not kept in any electronic historian and data is not available historically.

Appendix B

APPENDIX B

Initial Inventory of Covered Heaters and Boilers

Source ID (designation)	Stack ID	Source of Identification of Heat Input Capacity	Source Description	Heat Input Capacity (mmBTU/hr)	Heater and Boiler NOx Emission Limit (lb/mmBTU)	Existing CEMs or Date of Last Stack Test	Schedule for Installation of NOx CEMs to Comply with Interim HB NOx Emissions Requirement	Schedule for Conducting a NOx Stack Test to Comply with Interim HB Nox Emissions Requirement
B-27	EU-39-FH0027	Permit Application for Refinery Expansion Permit Issued January 27, 2010	No. 1 Boiler	291.60	0.037	NA	No later than July 1, 2012	NA
B-28	EU-39-FH0028	Permit Application for Refinery Expansion Permit Issued January 27, 2010	No. 2 Boiler	256.20	0.037	Existing CEM	NA	NA
B-29	EU-39-FH0029	Permit Application for Refinery Expansion Permit Issued January 27, 2010	No. 3 Boiler	256.20	0.037	Existing CEM	NA	NA
H-51	IA-09-FH0051	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Hydrobon Debutanizer Reboiler	68.00	0.035	NA	NA	Stack Test No Later than July 1, 2012
H-13	IA-09-FH013	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Hydrobon Charge Heater	70.00	0.055	NA	NA	Stack Test No Later than July 1, 2012
H-6	EU-03-FH0006	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Crude OPF Heater	153.00	0.050	NA	No later than December 31, 2016	NA
H-5	EU-03-FH0005	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Radco Crude Unit Heater	155.00	0.065	2008 Stack test	NA	NA
H-35	IA-06-FH0035	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Crude Unit #2 Charge Heater	125.00	0.025	2008 Stack Test	No later than December 31, 2016	NA
H-21	IA-13-FH0021	Permit Application for Refinery Expansion Permit Issued January 27, 2010	FCCU Preheater	63.00	0.130	NA	NA	NA
H-24	EU-15-FH0024	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Alkylation Isostripper Reboiler	77.00	0.035	NA	NA	Stack Test No Later than July 1, 2012
H-10	IA-04-FH0010	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Vacuum #2 Charge Heater	56.00	0.098	NA	NA	NA
H-36	IA-05-FH0036	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Vacuum #3 Feed Heater	66.00	0.025	2008 Stack Test	NA	NA
H-3	EU-12-FH0003	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Coker DHR3	70.00	0.050	2008 Stack Test	NA	NA
H-38	IA-12-FH0038	Permit Application for Refinery Expansion Permit Issued January 27, 2010	Coker DHR 2A	44.00	0.105	NA	NA	NA
H-1	EU-56-FH0001	Permit Application for CCR Permit Issued July 12, 2006	CCR Heater #1	259.85	0.030	NA	No later than December 31, 2016	NA

Appendix C

APPENDIX C

PREDICTIVE EMISSIONS MONITORING SYSTEMS FOR HEATERS AND BOILERS WITH CAPACITIES BETWEEN 100 AND 150 MMBTU/HR

A Predictive Emissions Monitoring Systems ("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 BTU.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represents an ideal case. However, at a minimum, each PEMS shall include continuous monitoring for at least "Instrumentation" items 3-5, below. CRRM will identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available);

2. Fuel Density, Composition and/or specific gravity – Online 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. Percent excess oxygen;

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 and pressure, etc.

Computers & Software:

Relevant data will be collected and stored electronically, using computers and software. The hardware and software specifications will be specified in the source-specific PEMS.

Calibration and Setup:

1. For a period of 7 to 10 days, the data that will be used to construct the mathematical model will be collected. The data will be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;

2. A "Validation" analysis shall be conducted to make sure the system is collecting data properly;

3. Stack Testing will be conducted to develop the actual emissions data for comparison to the collected parameter data; and

4. The mathematical models will be developed and installed on the computer.

The elements of a monitoring protocol for a PEMS will include:

1. Applicability

   a. Identify source name, location, and emission unit number(s);

   b. 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).

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 O_2 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 (could be included in Source Description and Control Equipment Description, 2 and 3 above);

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 test 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 for the equipment's 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 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;

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;

JK

e. Demonstrate the ability to detect sensor failures that would cause the PEMs emissions determination to drift significantly from the original PEMS value;

f. The PEMS may use calculated sensor values based upon the mathematical relationships established with the other sensors used in the PEMS. 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., preventive 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 a quarterly electronic data accuracy assessment test of the PEMS;

i. Conduct semi-annual 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 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.

8. PEMS Tuning

a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed.

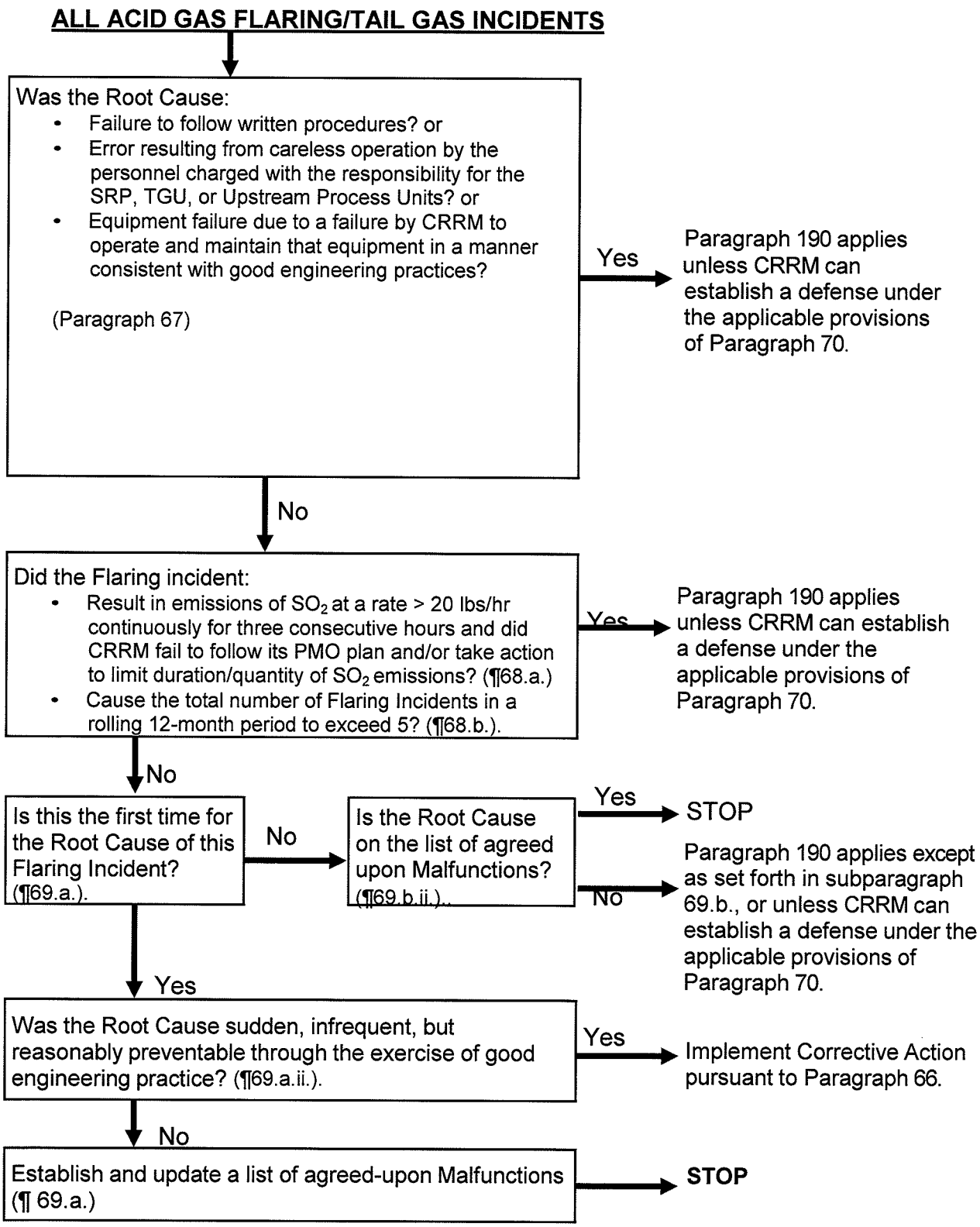
b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMs model are not changed.

Appendix D

APPENDIX D

Stipulated Penalties Flow Chart

Logic Diagram for Paragraphs 67-69



Appendix E

COFFEYVILLE RESOURCES™
REFINING & MARKETING
A CVR Energy, Inc. Company

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 29, 2011

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611
Civ. No. 04-CV-1064-MLB

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency
Mail Code 22452-A
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

Chief
Air Planning and Compliance Branch
U.S. Environmental Protection Agency,
Region 7
901 N. 5th Street
Kansas City, KS 66101

Chief
Bureau of Air and Radiation
Kansas Department of Health and Environment
1000 S.W. Jackson, Suite 310
Topeka, KS 66612-1366

RE: United States, et al. v. Coffeyville Resources Refining & Marketing, LLC (CRRM), et al. (Civ. No. 04 - CV - 1064 – MLB)

Dear Addressees:

Enclosed is CRRM's Benzene Waste Operations NESHAP End-Of-Line and Point of Waste Generation TAB Sampling Plan ("Plan"), revised in accordance with EPA's September 6, 2011 correspondence and informal comments.

Please contact me if you have any questions at 620.252.4599 or at jdditmore@cvrenergy.com.

Very truly yours,

John Ditmore

Enclosures

cc: Elizabeth Loeb, Esquire (via electronic mail)
Shari Feist Albrecht , Esquire (via electronic mail)

Coffeyville Resources Refining & Marketing, LLC - P O Box 1566 – 400 North Linden Street – Coffeyville, KS 67337
Ph: 620-251-4000 – Fax: 620-251-1456

COFFEYVILLE RESOURCES™
REFINING & MARKETING
A CVR Energy, Inc. Company

Edmund S. Gross, Esquire (via electronic mail)
Mr. Chris Swanberg (via electronic mail)
Mr. Mark Keim (via electronic mail)
LeAnn Johnson Koch, Esquire (via electronic mail)

COFFEYVILLE RESOURCES
REFINING & MARKETING
A CVR Energy, Inc. Company

Benzene Waste Operations NESHAP End-Of-Line and Point of Waste Generation TAB Sampling Plan

Coffeyville, KS

September 29, 2011

TABLE OF CONTENTS

INTRODUCTION

Coffeyville Resources Refining & Marketing, LLC. (CRRM) is a petroleum refinery subject to the requirements of 40 CFR 61 Subpart FF, Benzene Waste Operations NESHAP (BWON). In accordance with Paragraphs 51.B through 51.N of the BWON Enhancement Provisions of the Consent Decree, signed by CRRM, on February 6, 2004, the facility is required to develop an "End of Line" (EOL) Sampling Plan. The purpose of this plan is to describe the sampling of benzene waste streams that CRRM will undertake to estimate quarterly and annually total annual benzene (TAB) quantities.

In addition to the EOL sampling plan described above, Consent Decree Paragraph 51.Ji also requires sampling of all BWON waste streams that contributed 0.05 Mg/yr or more at the point of waste generation (POG) to the previous year's TAB calculations. Included in this plan is a descriptive overview of the CRRM wastewater collection and treatment system in Section 2, the EOL Sampling Plan in Section 3, and the POG Sampling Plan in Section 4.

Additionally, a waste/slop/off-spec oil management schematic that was previously prepared according to the requirements in Paragraph 51.H.i of the CRRM Consent Decree is included with this plan. This schematic shows the EOL sampling locations as well as the general wastewater movements for waste streams at the refinery. The schematic entitled "Waste/Slop/Off-Spec Oil Management Schematic" is provided as Appendix A.

OVERVIEW OF THE REFINERY WASTE SYSTEMS

The waste streams at CRRM are generally managed in the refinery drain system. The waste streams consist of the following the oil recovery/slop system, recovered oil tankage, and the Wastewater Treatment System (WWTS)

General Refinery Wastewater Collection System Description

Refinery waste water is gathered from process units through the combined sewer system, the segregated sewer system (QQQ), and various blind QQQ sumps throughout the refinery. The water flows through the sewers to the API separator in the refinery waste water treatment plant. The API separates the oil from the water and is vented to a tail gas thermal oxidizer.

The oil from the API separator is sent for reclamation to tanks 201 and 202. These tanks further separate the oil from the water and the remaining oil is sent to tanks 551 and 553 to be returned to the system as reclaimed oil as a process feed.

The water from the separator is sent to the refinery waste water treatment facility (WWTP). The WWTP is equipped with an aboveground equalization tank, storm water surge ponds, an API oil-water separator, primary dissolved air flotation units, mix activated sludge basins, clarifiers, and a final clarifier. The effluent from the WWTP is either released to the Verdigris River or sent, by piping, to two oxidation ponds.

The solids gathered from the bottom of the API are sent, as a feed, to the Coker Unit under the Coker exclusion.

END-OF-LINE SAMPLING PLAN

The End of Line (EOL) Sampling Plan will be used to qualitatively validate the total annual benzene quantity associated with BWON waste streams at CRRM. This sampling plan and EOL calculation methodology may also be used as an early detection system for identifying potential increases in the amount of benzene in refinery waste streams. For EOL purposes, waste samples will be collected and measured at common, co-mingled locations, downstream of refinery process units for the purpose of providing a broad view of upstream waste management practices. This section of the plan is to present the EOL sampling locations and methods of flow determination that will be used to calculate the quarterly and annual EOL benzene quantity for the refinery.

End-of-Line Sampling Locations

Most EOL waste streams at CRRM are part of the refinery oil recovery/slop system. The EOL locations are identified in Appendix A – Wastewater Treatment Facility Flow Diagram. The EOL locations include the following:

1. Outlet of API Separator
2. Outlet of Tank 201/202
3. Uncontrolled Wastes that do not Reach an EOL Sampling Location

Please note that in the event that other non-routine uncontrolled wastes are generated, those uncontrolled waste will be quantified and the associated benzene concentration will be determined to include in the EOL benzene quantity as appropriate in EOL Point 3. Due to the nature of the wastes accounted for in EOL Point 3, this location is not shown graphically on the schematic in Appendix A

Detailed Description of EOL Sampling Locations

EOL Point 1 – Outlet of API Separator

Wastewater and hydrocarbon streams for recovery are received by the API separator. Feeds to the API separator include the following:

- Refinery East Sewer
- Refinery West Sewer
- Refinery QQQ Sewer
- Refinery Vacuum Trucks

The East and West sewers are uncontrolled gravity sewers that are open to the atmosphere at numerous locations. The East sewer collects storm water from the east side of the refinery as well as oily wastewater from numerous east side tank water draws, continuous catalytic reformer unit, crude units, isomerazation unit, unifining unit, and the hydrobon unit. The West sewer gathers water from the vacuum units, alky, bundle pads, west side tanks, and the number one crude unit process drains. In addition to the process

units listed, the West sewer collects storm water from the entire west side of the refinery. The QQQ sewer is controlled to 40 CFR 60 subpart QQQ standards and comprises water sealed individual drain systems, enclosed junction boxes (sumps), and a forced main downstream of the junction boxes. The QQQ sewer collects wastewater from south alky feed treater, sour water stripper, north alky feed treater, number 3 vacuum unit, crude units desalter effluents, distillate hydrotreater, Ultra low sulfur fuels unit via the HDS sump, the sulfur recovery units and the amine units. Vacuum trucks are used to transport miscellaneous wastes from collection boxes throughout the refinery to the waste water treatment facility. The collection boxes, or blind sumps, are compliant with QQQ regulatory standards.

The East and West sewers combine at the API separator influent structure. Upstream from the structure, along the east sewer line is an underflow weir which allows excess influent from the East and West sewer lines to accumulate in the storm water surge pond. The QQQ sewer enters the waste water treatment facility immediately downstream from the API influent structure. The vacuum truck movements collected in the refinery are also added into the waste water treatment stream prior to the entrance to the API oil-water separator. This EOL location accounts for wastes routed to the API from the refinery water sewer system and a sample of the aqueous API outlet will be gathered according to the procedures described in §61.355(c)(3). The flow rate and corresponding benzene concentration will be used to calculate the EOL benzene quantity. Recovered hydrocarbon from the API will be calculated from the following downstream EOL points at Tank 201 and Tank 202.

EOL Point 2 – Outlet of Tank 201/202

The oil from the API separator is sent for reclamation to Tanks 201 and 202. This EOL location accounts for recovered hydrocarbon from the API routed to Tank 201 and Tank 202. Tank 201 and Tank 202 further separate the recovered oil from water and the remaining oil is sent to tanks 551 and 553 to be returned to the system as reclaimed oil as a process feed.

A sample of the recovered hydrocarbon will be gathered according to the procedures described in §61.355(c)(3). Sampling of this largely hydrocarbon stream may not allow the sample to be taken with the cooling coil. In such cases, the samples will be collected with as little vapor space as possible and will be placed on ice immediately in accordance with §61.355(c)(3)(iii). The flow rate and corresponding benzene concentration will be used to calculate the EOL benzene quantity.

If the operation of the hydrocarbon recovery system requires the outlet of Tank 201 and/or Tank 202 is temporarily routed back to the API separator this quantity will be excluded from the EOL Point 2 benzene quantity calculation as not to double count the EOL benzene quantity. When applicable, this quantity will be estimated from either flow meter measurements or engineering calculations including operator logs, mass balances, tank level measurements, and/or max pump rates and operating hours.

EOL Point 3 – Wastes that do not reach an EOL Sampling Location

The EOL Point 3 calculation includes the contribution of refinery wastes that do not reach an EOL sampling location. This EOL point includes wastes shipped off-site, spills, and refinery wastes that do not commingle to be sampled at another EOL location. Due to the unplanned, sporadic nature of these waste streams, they are not generally represented on the Waste/Slop/Off-Spec Oil Management Schematic provided as Appendix A.

Wastes generated by CRRM that are ultimately shipped off-site for treatment or disposal will be included as part of this EOL point. These waste quantities and benzene concentrations are tracked by the CRRM Environmental Department on a shipment-by-shipment basis. Benzene sampling of wastes shipped off-site will occur when previous characterization data is not available or deemed not representative.

Similarly, spills as applicable will be included in the EOL benzene quantity, as appropriate, and if not already captured by an existing EOL point. Spills are tracked by the CRRM Environmental Department and process knowledge or sampling will be used to determine the benzene concentration of the spilled material.

End-of-Line Benzene Quantity Calculation

The benzene quantity at an EOL location is the sum of the benzene quantity contained in both the water phase and the oil phase of the waste stream. Conceptually, the benzene mass balance or EOL benzene quantity will be calculated for each quarter as follows:

End-of-Line Benzene Quantity = $EOL_1 + EOL_2 + EOL_3$

$$EOL_i = \sum_{i=1}^{n} \left[\left(Q_{H2Oi} \times \rho_{H2O} \times C_{H2Oi} \right) + \left(Q_{OILi} \times \rho_{OILi} \times C_{OILi} \right) \right]$$

Where:

n = Number of EOL locations

Q_{H2Oi} = Aqueous phase flow rate for EOL Point "i"

ρ_{H2O} = Density of water (assumed to be 1 g/mL)

C_{H2Oi} = Benzene concentration in aqueous phase for EOL Point "i"

Q_{OILi} = Oil phase flow rate for EOL Point "i"

ρ_{OIL} = Density of the oil phase

C_{OILi} = Benzene concentration in oil phase for EOL Point "i"

Oil and aqueous phase flow rates will be determined by direct measurement procedures or engineering estimates, as appropriate. Flow from tanks 201 and 202 will be measured by tank strapping or tank gauging, and the API outlet will be measured by a handheld meter or engineering calculations including operator logs, mass balances, level measurements, and/or max pump rates and operating hours.

Flow-weighted average benzene concentrations will be used for multiple samples if flow is determined to be variable. The flow-weighted average will be calculated using the following method for the oil and water phases, respectively:

$$C = \Sigma(Q_i \times C_i) / \Sigma Q_i$$

Where:
C = Flow-weighted average benzene concentration
Q_i = Water flow or oil flow for Sample "i"
C_i = Benzene concentration of Sample "i"

Sampling Schedule/Methodology

At a minimum, EOL benzene waste sampling will be conducted on a quarterly basis. The sampling will follow the requirements of 40 CFR §61.355 to the extent possible. In certain situations, samples from open systems may not allow the sample to be taken with the cooling coil. In the case of samples taken without the cooling coil, the samples will be placed on ice immediately. At least 3 samples will be collected and analyzed during each quarter, unless waste generation is less frequent. The refinery may collect more samples as deemed appropriate to better characterize the benzene quantities at the sample locations (e.g., benzene concentration of the sample appears to be out of the typical historical range). Flow-weighted average benzene concentrations will be used for multiple samples if flow is determined to be variable (as shown above in the End-of-Line Benzene Quantity Calculations section).

Outlier Data

Any benzene result that is suspected to be in error will be immediately re-sampled. If based on review of QA/QC data or other laboratory documentation it is determined that a sample is known to have been in error, it will be excluded from the EOL calculation. Data that does not meet CRRM's QA/QC standards and requirements will be submitted and identified as erroneous data but will not be included in the EOL calculation.

EOL Sampling Plan Revisions

Per Paragraph 51.J of the CRRM Consent Decree, if it is determined by CRRM that the current EOL Sampling Plan no longer provides an accurate basis for estimating the Refinery's quarterly or annual TAB quantity due to changes in processes, operations, or other factors, CRRM will submit a revised EOL Sampling Plan to US EPA within 90 days of this determination. CRRM will implement the revised plan in the first full calendar quarter following submittal to US EPA. CRRM will continue to operate according to the revised plan unless and until US EPA disapproves of the revised plan.

Date of Review or Revision	Comments
July 2011	New Plan

POINT OF WASTE GENERATION TAB SAMPLING PLAN

As previously discussed, the BWON compliance strategy at CRRM includes operation and verification that the total refinery benzene quantity is less than 10 Mg/yr benzene. In addition to the EOL sampling locations previously described, Consent Decree Paragraph 51.J.i also requires sampling of each uncontrolled Point of Generation (POG) that contributes 0.05 Mg/yr or greater to the previous year's TAB calculations. The POG TAB Sampling Plan identifies the waste streams that contributed 0.05 Mg/yr or greater to CRRM's Calendar Year 2010 TAB.

Waste Streams Greater Than 0.05 Mg/yr

A total of seven (7) unique waste streams that contributed 0.05 Mg/yr or greater to the CRRM Calendar Year 2010 TAB can be characterized as discrete points of waste generation. The streams that are to be sampled quarterly under this category include the following:

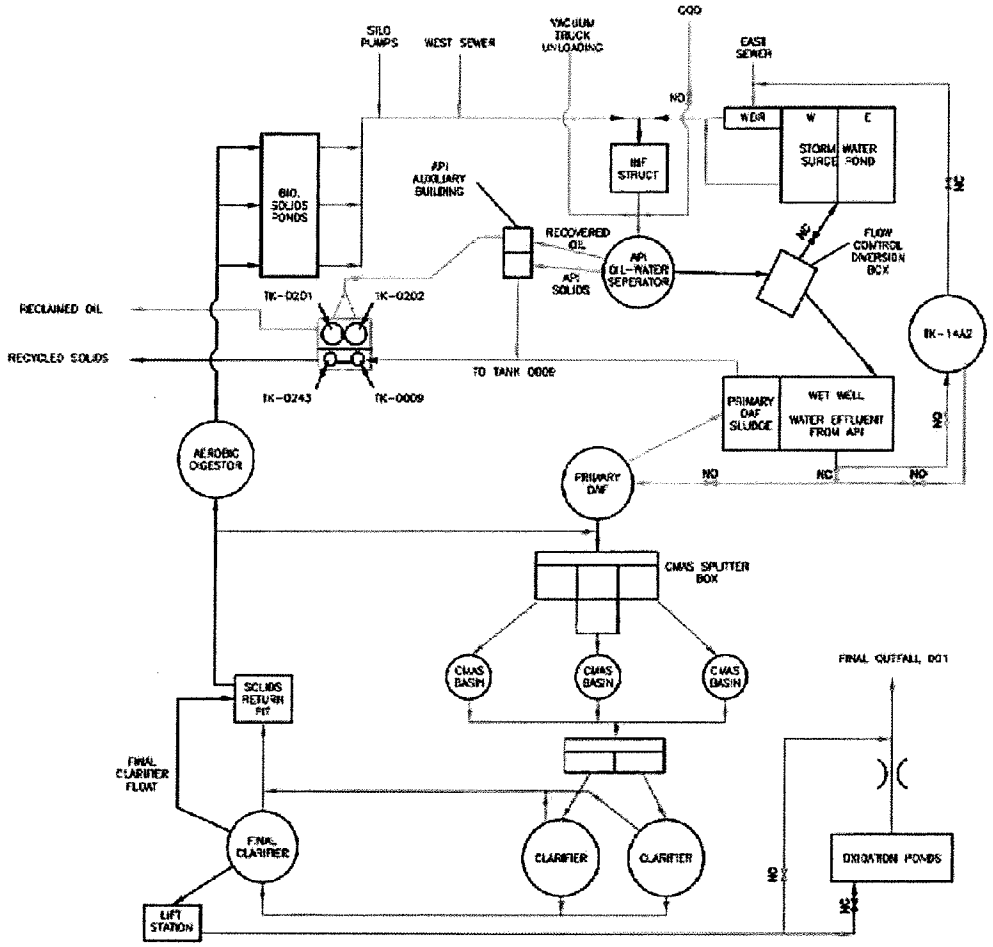
1. #1 Crude Desalter Effluent Water
2. #1 Crude Desalter Mud Blowdown
3. #2 Crude Desalter Effluent Water
4. #2 Crude Desalter Mud Blowdown
5. Coker Blow Down Drum
6. Benzene Solid Waste - D018 (If generated)
7. 8010 Crude Tank Water Draw

Sampling Schedule/Methodology

At a minimum, POG sampling will be conducted on an annual basis. However, more frequent samples may be collected to improve waste characterization. The sampling will follow §61.355(c)(3)(ii) procedures to the extent possible. In certain situations sampling locations may not allow the sample to be taken with the cooling coil (i.e., open systems such as sumps). In such cases, the samples will be collected with as little vapor space as possible and will be placed on ice immediately in accordance with §61.355(c)(3)(iii).

At least three samples will be collected and analyzed during each quarter, unless waste generation is less frequent. The refinery may collect more samples as deemed appropriate to better characterize the benzene quantities at the sample locations (e.g., benzene concentration of the sample appears to be out of the typical historical range). Flow-weighted average benzene concentrations will be used for multiple samples if flow is determined to be variable (as shown in the calculations section).

APPENDIX A
WASTE / SLOP / OFF-SPEC OIL MANAGEMENT SCHEMATIC



NOTES:
LOCATED IN UNIT 36 - WASTEWATER FOLDER

			COFFEYVILLE RESOURCES REFINING & MARKETING, LLC COFFEYVILLE, KANSAS
4			GENERAL REVISION
3			GENERAL REVISION
2			GENERAL REVISION
1			GENERAL REVISION
			PROPOSED WASTEWATER TREATMENT FACILITY FLOWDIAGRAM - STORM OPERATION

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APPENDIX B
EXCERPTS FROM COFFEYVILLE RESOURCES REFINING AND MARKETING, LLC. CONSENT DECREE

VIII. BENZENE WASTE NESHAP

51. Benzene Waste NESHAP Program Enhancements. In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), CRRM agrees to undertake, at the refinery, the measures set forth in Paragraphs 51.B through 51.N to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

A. Current Compliance Status. As of the Date of Lodging of this Consent Decree, CRRM believes that the refinery has a Total Annual Benzene ("TAB") of less than 10 Mg/yr. CRRM will review and verify the TAB at the refinery consistent with the requirements of Paragraph 51.C.

B. Refinery Compliance Status Changes. If at any time from the Date of Lodging of the Consent Decree until its termination, the refinery is determined to have a TAB equal to or greater than 10 Mg/yr, CRRM shall comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (hereinafter referred to as the "6 BQ compliance option")

C. One-Time Review and Verification of the Refinery's TAB.

i. Phase One of the Review and Verification Process. By no later than September 30, 2005, CRRM shall complete a review and verification of the TAB of the refinery. For the refinery, the review and verification process shall include, but is not limited to: (i) an identification of each waste stream that is required to be included in the refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes); (ii) a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream; (iii) an identification of the benzene concentration in each waste stream, including sampling for benzene concentration at no less than 10 waste streams consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3); provided however, that previous analytical data or documented knowledge of waste streams may be used, 40 C.F.R. § 61.355(c)(2), for streams not sampled; and (iv) an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF. By no later than sixty (60) days following the completion of Phase One of the review and verification process, CRRM shall submit a Benzene Waste NESHAP Compliance Review and Verification report ("BWN Compliance Review and Verification Report") that sets forth the results of Phase One, including but not limited to the items identified in (i) through (iv) of this Paragraph 51.C.i.

ii. Phase Two of the Review and Verification Process. Based on EPA's review of the BWN Compliance Review and Verification Report(s), EPA may select up to 20 additional waste streams at the refinery for sampling for benzene concentration. CRRM will conduct the required sampling and submit the results to EPA within ninety (90) days of receipt of EPA's request. CRRM will use the results of this additional sampling to recalculate the TAB and to amend the BWN Compliance Review and Verification Report, as needed. To the extent that EPA requires CRRM to re-sample a Phase One waste stream as part of this Phase Two review, CRRM may average the results of the two

sampling events. CRRM shall submit an amended BWN Compliance Review and Verification Report within ninety (90) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA.

D. Implementation of Actions Necessary to Correct Non-Compliance

i. Amended TAB Reports. If the results of the BWN Compliance Review and Verification Report(s) indicate(s) that the refinery has failed to file the reports required by 40 C.F.R. 61.357(c), or that the refinery's most recently-filed report is inaccurate and/or does not satisfy the requirements of Subpart FF, CRRM shall submit, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), an amended TAB report to the Applicable State Agency. CRRM's BWN Compliance Review and Verification Report(s) shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

ii. If the results of the BWN Compliance Review and Verification Report indicate that the refinery has a TAB of over 10 Mg/yr, CRRM shall submit to the Applicable Federal and State Agencies by no later than 180 days after completion of the BWN Compliance Review and Verification Report, a plan that identifies with specificity the compliance strategy and schedule that CRRM will implement to ensure that the refinery complies with the 6 BQ compliance option as soon as practicable.

iii. Review and Approval of Plans Submitted Pursuant to Paragraph 51.D.ii. Any plan submitted pursuant to Paragraph 51.D.ii shall be subject to the approval of, disapproval of, or modification by EPA, which shall act in consultation with the Applicable State Agency. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, CRRM shall submit to the Applicable Federal and State Agencies a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with conditions, CRRM shall implement the plan. Disputes arising under this Paragraph shall be resolved in accordance with the dispute resolution provisions of this Decree.

iv. Certification of Compliance with the 6 BQ Compliance Option. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraph 51.D.ii or pursuant to Paragraph 51.J.vi to come into compliance with the 6 BQ Compliance Option, CRRM shall submit a report to the Applicable Federal and State Agencies that, as to the refinery, the refinery complies with the Benzene Waste NESHAP.

E. Annual Program. CRRM shall establish an annual program of reviewing process information for the refinery, including but not limited to construction projects, to ensure that all new benzene waste streams are included in the refinery's waste steam inventory.

F. Benzene Spills. For each spill at the refinery, CRRM shall review such spills to determine if benzene waste was generated. CRRM shall include benzene generated by such spills in the TAB for the refinery.

G. Training.

i. If and when the refinery's TAB reaches 1 Mg/yr or more, then by no later than 180 days from the receipt of the information showing that the refinery's TAB has reached or exceeded 1 Mg/yr, CRRM shall develop and begin implementation of annual (i.e.,

once each calendar year) training for all employees asked to draw benzene waste samples.

ii. If and when the refinery's TAB reaches 10 Mg/yr or more, CRRM shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP. CRRM shall complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training shall be provided to any persons who subsequently become operators, prior to their assumption of this duty. "Refresher" training shall be performed on a periodic basis. CRRM shall propose a schedule for the initial and refresher training at the same time that CRRM proposes a plan, pursuant to either Paragraph 51.D.ii; or Paragraph 51.J.vi that identifies the compliance strategy and schedule that CRRM will implement to come into compliance with the 6 BQ compliance option.

iii. As part of CRRM's training program, CRRM must ensure that the employees of any contractors hired to perform the requirements of this Paragraph are properly trained to implement all provisions of this Paragraph at the refinery.

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

i. By no later than June 30, 2005, CRRM shall submit to the Applicable Federal and State Agencies, for the refinery, schematics that: (a) depict the waste management units (including sewers) that handle, store, and transfer waste/slop/off-spec oil streams; (b) identify the control status of each waste management unit; and (c) show how such oil is transferred within the refinery. Representatives from CRRM and EPA thereafter shall confer about the appropriate characterization of the refinery's waste/slop/off-spec oil steams for the waste management units handling such oil streams, for purposes of the refinery's TAB calculation. At a mutually-agreed upon time, CRRM shall submit, if necessary, revised schematics that reflect the agreements between EPA and CRRM regarding the characterization of these oil streams and the appropriate control standards.

ii.Organic Benzene Waste Streams. If and when the refinery's TAB reaches 10 Mg/yr and a compliance strategy is approved, all waste management units handling "organic" benzene wastes, as defined in Subpart FF, shall meet the applicable control standards of Subpart FF If, as a result of the discussions between the EPA and CRRM, pursuant to Paragraph 51.H.i, EPA and CRRM agree that controls not already in place are necessary on any waste management unit handling organic benzene wastes, the Parties shall agree, in writing, to a schedule, not to exceed two years; for the completion-of the installation of the necessary controls.

iii .Aqueous Benzene Waste Streams. For purposes of calculating the refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), CRRM shall include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). If and when the refinery's TAB reaches 10 Mg/yr, then, for purposes of complying with the 6BQ compliance option, all waste management units handling aqueous benzene waste streams shall either meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 6 megagram limit.

iv .Plan to Quantify Uncontrolled Waste/Slop/Off-Spec Oil Streams.
By no later than ninety (90) days after EPA has approved the schematics (revised if necessary) required under Paragraph 51.H.i., CRRM shall submit, for the refinery, a plan(s) to quantify waste/slop/off-spec oil movements for all benzene waste streams which are not controlled. EPA will review the plan and may recommend revisions consistent with Subpart FF. Upon plan approval, CRRM shall maintain records quantifying such movements.

v. Disputes under this Paragraph 51.H. shall be resolved in accordance with the dispute resolution provisions of this Consent Decree.

I. Omitted for space and not applicable to this report.

J. End of Line Sampling (TAB is equal to or greater than 1 Mg/yr but less than 10 Mg/yr). The provisions of this Paragraph 51.J shall apply from the date that the final BWN Compliance Review and Verification Report submitted for the refinery pursuant to Paragraph 51.C shows that the refinery's TAB is equal to or greater than 1 Mg/yr but less than 10 Mg/yr, through the earlier of: (1) the time that the refinery reaches a TAB of 10 Mg/yr or more (in which case, the provisions of Paragraph 51.I shall begin to apply); or (2) termination of the Consent Decree.

i.CRRM shall once per calendar year, conduct sampling, consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3), of all waste streams containing benzene that contributed 0.05 Mg/yr or more to the TAB set forth in the final BWN Compliance Review and Verification Report or in the previous year's TAB, whichever is later;

ii. By no later than ninety (90) days after the date of submitting the final BWN Compliance Review and Verification Report, representatives from EPA and the Applicable State Agency shall meet at the refinery with representatives from CRRM for the purpose of identifying an appropriate procedure for conducting EOL sampling and measuring EOL benzene quantities at the refinery. EPA, the Applicable State Agency, and CRRM shall confer about potential EOL sample locations and shall review process and flow information and oil movement transfers. By no later than sixty (60) days after EPA and the Applicable State Agency have met with CRRM at the refinery, CRRM shall submit a plan to EPA for approval that contains proposed sampling locations and methods for flow calculations to be used in the EOL determination of benzene quantity. A copy of this plan shall be submitted to the applicable State Agency. Any disputes regarding plan approval under this Paragraph 51.J shall be resolved in accordance with the dispute resolution provisions of this Consent Decree. If, during the life of this Consent Decree, changes in processes, operations, or other factors lead CRRM to conclude that either the approved sampling locations and/or the approved methods for determining flow calculations no longer provide an accurate measure of the refinery's EOL benzene quantity, CRRM shall submit a revised plan to EPA for approval. A copy of this revised plan also shall be submitted to the Applicable State Agency.

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

stream at the approved location. Based on the EOL quarterly sampling results and the approved flow calculations, CRRM shall calculate the quarterly EOL benzene quantity.

iv. If the quarterly EOL benzene quantity exceeds 2.5 Mg, CRRM shall submit to the Applicable Federal and State Agencies a plan that identifies with specificity the actions that CRRM shall take, and the schedule for such actions, to ensure that the TAB for the refinery does not exceed 10 Mg in the calendar year.

v. On a quarterly basis, CRRM shall also calculate a projected calendar year TAB, utilizing all EOL results for that calendar year and any other information (such as process turnarounds) to undertake the projection. If the projected calendar year calculation of the TAB at the refinery equals or exceeds 10 Mg, CRRM shall submit to the Applicable Federal and State Agencies a plan that identifies with specificity the actions that CRRM shall take, and the schedule for such actions, to ensure that the TAB for the refinery does not exceed 10 Mg in the calendar year. CRRM shall submit this plan within thirty (30) days after the end of the quarter which resulted in a projection of greater than 10 Mg.

vi. If it appears that appropriate actions cannot be taken to ensure that the refinery maintains a TAB of under 10 Mg/yr, then CRRM shall retain a third party contractor to undertake a comprehensive TAB study and compliance review ("Third-Party TAB Study and Compliance Review"). At a mutually agreed upon date, CRRM shall submit a proposal to the Applicable Federal and State Agencies that identifies the contractor, the contractor's scope of work, and the contractor's schedule for the Third-Party TAB Study and Compliance Review. Unless, within thirty (30) days after EPA receives this proposal, EPA disapproves or seeks modifications, CRRM, as applicable, shall authorize the contractor to commence work By no later than sixty (60) days after CRRM receives the results of the Third-Party TAB Study and Compliance Review, CRRM shall submit the results to the Applicable Federal and State Agencies. EPA, the Applicable State Agency, and CRRM subsequently shall discuss informally the results of the Third-Party TAB Study and Compliance Review. By no later than 120 days after CRRM receives the results of the Third-Party TAB Study and Compliance Review, or such other time as CRRM and EPA may agree, CRRM shall submit to EPA for approval a plan that identifies with specificity the compliance strategy and schedule that CRRM will implement to ensure that the refinery complies with the 6BQ compliance option as soon as practicable. A copy of this Plan shall be submitted to the Applicable State Agency. The review and approval of this Plan shall be done in accordance with Paragraph 51.D.iii of this Decree. Certification of Compliance shall be done in accordance with Paragraph 5 1.D.iv.

K. Miscellaneous Measures.

i. CRRM, as and to the extent applicable, shall comply with the Benzene Waste NESHAP provisions applicable to groundwater remediation conveyance systems if its refinery has such a system.

ii. The provisions of this Paragraph 51.K.ii shall apply after the refinery's TAB reaches or exceeds 10 Mg/yr (if prior to termination of the Consent Decree) and after the refinery has completed implementation of an approved compliance plan submitted

pursuant to either Paragraph 51.D.ii or Paragraph 51.J.vi. The provisions shall continue to apply until termination of the Consent Decree. CRRM shall:

a. conduct monthly visual inspections of all water traps within the refinery's individual drain systems; and

b. On a weekly basis, visually inspect all conservation vents or indicators on process sewers for detectable leaks; reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, CRRM may submit a request to the applicable EPA Region to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent. Nothing in this Paragraph 51.K.ii.b. shall require CRRM to monitor conservation vents on fixed roof tanks.

c. From the date that the final BWN Compliance Review and Verification Report submitted for the refinery pursuant to Paragraph 51.0 shows that the refinery's TAB is equal to or greater than 1 Mg/yr but less than 10 Mg/yr, and through termination of this Consent Decree, CRRM shall identify and mark all area drains that are segregated stormwater drains..

L. Projects/Investigations. Unless and until the TAB of the refinery reaches or exceeds 10 Mg/yr (or the Consent Decree is terminated), CRRM will not be required to undertake any projects or any investigations relating to the Benzene Waste NESHAP other than those required in Paragraphs 51.C. - 51.K. Within 60 days of receipt of information indicating that the TAB of the refinery has reached or exceeded 10 Mg/yr, EPA and CRRM shall meet and confer to discuss and establish an appropriate project or investigation relating to the Benzene Waste NESHAP.

M. Recordkeeping and Reporting Requirements for this Paragraph

i. Outside of the Reports Required under 40 C.F.R. 61.357 and under the Semi-Annual Progress Report Procedures of Section XIV (Recordkeeping and Reporting). At the times specified in the applicable provisions of this Paragraph, CRRM shall submit, as and to the extent required, the following reports to the Applicable Federal and State Agencies:

a. BWN Compliance Review and Verification Report (51.C.i.), as amended, if necessary (51.C. ii.);

b. Amended TAB Report, if necessary (51.D.i.);

c. Plan for the refinery to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWN Compliance Review and Verification Report (51.D.ii.), or the Third-Party TAB Study and Compliance Review that may result from EOL sampling (51.J.vi);

d. Compliance certification, if necessary (51.D.iv.);

e. Schematics of waste/slop/off-spec oil movements (51.H.i.), as revised, if necessary (51.H.i.);

f. Schedule to complete implementation of controls on waste management units handling organic benzene waste, if necessary (51.H.ii.);

g. Plan to quantify uncontrolled waste/slop/off-spec oil movements (51.H.iv.)

h. EOL Sampling Plans (5 1.I.i., 5 1.J.ii,), and revised EOL Sampling Plans, if necessary 51.J.ii.);

i.Plan, if necessary, to ensure that uncontrolled benzene does not equal or exceed, as applicable, 6 or 10 Mg/yr — or is minimized — based on projected calendar year uncontrolled benzene quantities as determined through EOL sampling (51.I.vii., 51.J.iv.-v.)

j. Proposal for a Third-Party TAB Study and Compliance Review, if necessary (51.I.viii., 51.J.vi.);

k. Third-Party TAB Study and Compliance Review, if necessary (51.I.viii.,51.J.vi.);

l. Plan to implement the results of the Third-Party TAB Study and Compliance Review, if necessary (51.I.viii., 51.J.vi.).

ii. As part of the Reports Required under the Semi-Annual progress report Procedures of Section XIV (Recordkeeping and Reporting).

a. TAB is equal to or greater than 1 Mg/yr but less than 10 Mg/yr. From the date that the final BWN Compliance Review and Verification Report submitted for the refinery pursuant to Paragraph 51.0 shows that the refinery's TAB is equal to or greater than 1 Mg/yr but less than 10 Mg/yr, until the earlier of (1) the time that the refinery reaches a TAB of 10 Mg/yr or more (in which case, the provisions of Paragraph 51.M.ii.b shall begin to apply); or (2) termination of the Consent Decree, CRRM shall submit the following information in Semi-Annual Progress Reports pursuant to the requirements of Section XIV of this Consent Decree:

(1) A description of the measures that it/they took to comply with the training provisions of Paragraph 51.G.;

(2) The annual, non-EOL sampling required at the refinery pursuant to the requirements of Paragraph 51.J.i (this information shall be submitted in the first quarterly progress report for the first calendar quarter of each year);

(3) The results of the quarterly EOL sampling undertaken pursuant to Paragraph 51.J.iii. for the calendar quarter. The report shall include, a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the respective quarter. The refinery shall identify whether the quarterly benzene quantity equals or exceeds 23 Mg and whether the projected calendar year benzene quantity equals or exceeds 10 Mg. If either condition is met, the refinery shall include in the quarterly report the plan required pursuant to Paragraph 51.J.iv and/or 51.J.v., and shall specifically seek EPA's concurrence in the plan.

b. TAB is 10 Mg/yr or More. The provisions of this Paragraph 51.M.ii.b shall apply after the refinery's TAB reaches or exceeds 10 Mg/yr (if this occurs prior to termination of the Consent Decree) and after the refinery has completed implementation of an approved compliance plan submitted pursuant to either Paragraph 51.D.ii, or Paragraph 51.J.vi. The provisions shall continue to apply until termination. CRRM shall submit the following information in

Quarterly Progress Reports pursuant to the requirements of Section IX of this Consent Decree:

(1) A description of the measures that it took to comply with the training provisions of Paragraph 51.G.;

(2) The results of the three months of monthly EOL sampling undertaken pursuant to Paragraph 51.I.iii. for the calendar quarter. The report shall include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the three months contained within the respective quarter;

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

N. Agencies to Receive Reports, Plans and Certifications Required in the Paragraph; Number of Copies. CRRM shall submit all reports, plans and certifications required to be submitted under this Paragraph to the Applicable Federal and State Agencies. For each submission, CRRM shall submit two, copies to EPA, to the applicable Region, and to the Applicable State Agency. By agreement between each of the offices that are to receive the materials in this Paragraph and CRRM the materials may be submitted electronically.

Appendix F

APPENDIX F
Process and Factors for "Commercial Unavailability" of Low-Emissions Valves or Packing

This Appendix outlines a process to be followed and factors to be taken into consideration to establish that a Certified Low-Emissions Valve or Certified Low-Emissions Packing is not "commercially available" pursuant to Paragraph 149 of the Consent Decree. Factors and procedures other than those identified in this Appendix may also be utilized to establish that a Certified Low-Emissions Valve or Certified Low-Emissions Packing 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 Emissions Valve or Certified Low Emissions Packing:

(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-Emissions Valve or Certified Low-Emissions Packing:

(1) CRRM 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-Emissions Valve or Certified Low-Emissions Packing 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) CRRM 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-Emissions Valve or Certified Low-Emissions Packing.

(3) CRRM 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 that comes closest to meeting the requirements for a Certified Low-Emissions Valve or Certified Low-Emissions Packing that is selected and installed by CRRM pursuant to Paragraph 149 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 is commercially unavailable, EPA shall notify CRRM 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 CRRM of EPA's notice, the following shall apply:

(1) CRRM 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 CRRM 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 CRRM disagrees with EPA's notification, CRRM and EPA may informally discuss the basis for the claim of commercial unavailability. EPA may thereafter revise its notification, if necessary.

(3) If CRRM 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, CRRM shall retrofit the valve or valve packing with the commercially available valve or valve packing at the next unit turnaround.

(4) Any disputes concerning EPA's notification to CRRM of the commercial availability of a valve or valve packing in a particular application pursuant to

Section III(3) of this Appendix shall be addressed under the Dispute Resolution provisions in Section XIII of this Consent Decree.

Appendix G

APPENDIX G
CRRM Supplemental Environmental Project ("SEP")

Project Description

Defendant CRRM will enhance its wastewater treatment system to reduce fugitive emissions of Volatile Organic Compounds (VOC) and H_2S by reducing hydrocarbon carryover into the wastewater treatment system. CRRM will also reduce hydrocarbon carryover into the sour water stripper (SWS) and the Sulfur Recovery Unit (SRU) which will help reduce the frequency of future acid gas flaring incidents. In addition, CRRM will also conserve water by increasing water re-use/recycling by rerouting streams to the SWS and creating additional, clean SWS effluent water, rather than using fresh water from the river. This project will have air and water (multi-media) benefits and includes the following four project components:

- Tank 3003 Service and Skimmer. CRRM will install an oil skimmer on Tank 3003 and will put the tank into service upstream of the SWS to remove oil from the streams feeding the unit. This will provide added reliability of the SWS's operations by improving the feed quality of the water. This in turn will reduce the hydrocarbon carry-over from the SWS into the SRU where it otherwise would be combusted and potentially upset the SRU, resulting in emissions of SO_2 and H_2S due to flaring. In addition, removing hydrocarbon carryover creates capacity in the SWS for the recycle streams described in the following bullets.

- Gathering of Water Streams. Presently, water streams with high hydrocarbon and H_2S levels at the coker/vaccum area are feeding into the wastewater system (process sewer). CRRM will gather the water streams and re-route them to Tank 3003, upstream of the SWS. By gathering the water streams and routing them to Tank 3003, the load on the API would be reduced and the re-routed streams will be re-used.

- Recycling of Stripped Sour Water. CRRM will install piping and pumps to route the effluent streams from the SWS to other refinery units for re-use. The effluent streams will be routed away from the API and to the crude tower, the desalter, the coker spray header or to other units. CRRM's recycling and reuse will allow the refinery to reduce its fresh water use by approximately 30 gallons/minute (approximately 15 million gallons/year).

- Agar Probe Installation. CRRM will install three "Agar probes" on each of its three desalters. Agar probes will enable CRRM to better delineate the interface between the water and hydrocarbon layers in the desalters to prevent hydrocarbon undercarry from the desalters into the wastewater system. This will help reduce the hydrocarbon load on the downstream wastewater treatment system which will increase its reliability and reduce fugitive emissions of VOC and H_2S.

Project Component Deadlines

CRRM will complete the SEP by December 31, 2016 and will implement each project component described above by the following deadlines:

- Tank 3003 Service and Skimmer - Completed by December 31, 2013
- Gather Water Streams at Coker - Completed by December 31, 2013
- Recycle of Stripped Sour Water - Completed by December 31, 2013
- Agar Probe Installation - Completed by December 31, 2016 (requires turnaround for the installation of ports on the desalter)

Once completed, CRRM will operate the SEP for at least five years.