IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF WYOMING

UNITED STATES OF AMERICA, Plaintiff, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY and STATE OF WYOMING, Plaintiff-Intervenors, v. HOLLY REFINING AND MARKETING TULSA LLC, HEP TULSA, LLC, SINCLAIR WYOMING REFINING COMPANY, and SINCLAIR CASPER REFINING COMPANY, Defendants.	Civil Action No. 2:08-cv-0020

SEVENTH AMENDMENT TO CONSENT DECREE

WHEREAS, the United States of America on behalf of the United States Environmental Protection Agency ("EPA"), the State of Wyoming ("Wyoming"), and Sinclair Wyoming Refining Company ("SWRC") are parties, along with the State of Oklahoma, and the Sinclair Casper Refining Company, to a Consent Decree filed with this Court on May 8, 2008 (ECF 20), as amended ("Consent Decree");

WHEREAS, the United States, Wyoming, SWRC (the "Parties"), and the other parties to the litigation have amended the Consent Decree previously for several reasons, including the transfer of the Tulsa Refinery from the Sinclair Tulsa Refining Company to another owner, and modification of aspects of the injunctive relief as agreed to by the parties;

WHEREAS, only the Sixth Amendment (ECF 38) pertained to the refinery owned by SWRC and located in Sinclair, Wyoming ("Sinclair Wyoming Refinery") and the Flaring Devices that are the subject of this Seventh Amendment, and none of the other amendments pertained to the SWRC matters involved in this Seventh Amendment;

WHEREAS, the Parties now wish to amend the Consent Decree to address reported exceedances of flare and sulfur recovery plant emission limits and reported downtime of certain Continuous Emissions Monitoring Systems ("CEMS") at the Sinclair Wyoming Refinery, in alleged violation of the Consent Decree, which the Parties have agreed to resolve through revisions to certain Paragraphs in the Consent Decree dealing with Hydrocarbon Flaring Devices and the Sulfur Recovery Plant ("SRP"), including Tail Gas Units ("TGUs"), at the Sinclair Wyoming Refinery, as well as other related provisions, and payment of a monetary penalty for past exceedances and CEMS downtime;

WHEREAS, the Parties desire to amend the Consent Decree to make clear that the Flaring Devices and Sulfur Recovery Units at the Sinclair Wyoming Refinery that were put into service after entry of the May 2008 Consent Decree are subject to the Consent Decree;

WHEREAS, the Hydrocarbon Flaring Devices were, along with other equipment at the Sinclair Wyoming Refinery, the subject of modifications to Paragraphs 14 and 75 in the Sixth Amendment which allowed SWRC additional time until March 31, 2013, to install additional flare gas recovery system ("FGRS") equipment, known as the Hijet Hijector, to comply with the terms of the Consent Decree and the emissions limit in 40 C.F.R. § 60.104(a)(1);

WHEREAS, concurrently with the Sixth Amendment, SWRC, Wyoming, and the United States also agreed on a payment of stipulated penalties by SWRC, which included stipulated penalties for any emission limit exceedances at the Flaring Devices (ECF 36-8);

WHEREAS, on April 10, 2013, EPA Region 8 issued to SWRC a Request for Information under Clean Air Act Section 114(a)(1), 42 U.S.C. § 7414(a)(1) (April 10, 2013, Section 114 Letter), which required among other things that SWRC: certify the CEMS on the North Flare (Coker Flare) and the South Flare (Alky Flare) in accordance with 40 C.F.R. Part 60, Appendix B; properly operate and maintain the CEMS at those flares; monitor, test, report and record data at those flares as required by 40 C.F.R. Part 60; and submit monthly reports of H_2S concentrations and other data. The requirements of the April 10, 2013, Section 114 Letter are still in effect but shall terminate upon the Date of Entry as provided in Paragraph 9, which amends and adds a new Paragraph 199.b(6);

WHEREAS, SWRC installed the Hijet Hijector in July 2013;

WHEREAS, around the time of the Hijet Hijector installation in July 2013, SWRC completed construction of the North Flare and subsequently its Flaring Devices (*i.e.*, the North

Flare, South Flare (identified in the Consent Decree as the Vertical Flare), and Horizontal Flare) became a cascaded flare system as defined in 40 C.F.R. § 60.101a;

WHEREAS, since entry/filing of the Consent Decree in May 2008, SWRC has put into operation two new sulfur recovery units and tail gas units, SRUs #3 and #4 and TGUs #3 and #4, at the SRP at the Sinclair Wyoming Refinery and removed from operation SRU #1 that was operating at the time the 2008 Consent Decree was entered;

WHEREAS, for purposes including to address excess emissions from the SRP, SWRC also constructed and placed into operation in May 2017 a Central Amine Facility used for processing rich and lean amine at the refinery;

WHEREAS, the Consent Decree specifies that the Court retains continuing jurisdiction for the purpose of enforcing and modifying the Consent Decree;

WHEREAS, Paragraph 345 of the Consent Decree, as amended, provides that any material modifications to the Consent Decree shall be in writing, signed by EPA, the Applicable Co-Plaintiff, and the owners of the relevant Refineries, and shall be effective upon approval by the Court;

WHEREAS, the proposed revisions herein address SWRC only and do not change the obligations under the Consent Decree that are applicable to SCRC or to the Tulsa Refinery, currently owned and operated by Holly Refining & Marketing – Tulsa LLC, and HEP Tulsa, LLC; and

WHEREAS, the United States, Wyoming, and SWRC have each reviewed and hereby consent to this Seventh Amendment.

NOW THEREFORE the United States, Wyoming, and SWRC hereby agree that the Consent Decree, as previously modified by the First through Sixth Amendments, shall

remain in full force and effect in accordance with its terms, except as set forth in this Seventh Amendment, which shall become effective upon entry by this Court ("Date of Entry").

AMENDED CONSENT DECREE PROVISIONS

This Seventh Amendment amends Paragraphs 66.b, 67.b, 68.a, and 69 pertaining to the SWRC Sulfur Recovery Plant, and Paragraph 75 pertaining to SWRC Flaring Devices and NSPS Applicability; and adds a new Paragraph 198A pertaining to SWRC CEMS. It also updates Appendix A (List of Flaring Devices) and adds new Appendices O (List of Flaring Reduction Projects) and P (SWRC Covered CEMS Operation and Maintenance Program); and makes conforming changes to Sections IV (Definitions), IX (Reporting), XI (Stipulated Penalties) and XVI (Effect of Settlement). SWRC also is obligated to pay a civil penalty.

Amendments to the Definitions.

1. The following definitions are added to Section IV, Paragraph 10, to be inserted in alphabetical order:

   "Flare Gas Recovery System" or "FGRS" shall mean a system of one or more compressors, piping, and associated water seal, rupture disk, or similar devices used to divert gas from a Flaring Device and direct the gas to a fuel gas system, to a combustion device other than the Flare, or to a product, co-product, by product, or raw material recovery system.

   "SWRC Flares" shall mean the North Flare (a/k/a the Coker Flare) and the South Flare (a/k/a the Alky Flare), both of which are subject to 40 C.F.R. Part 60 Subpart Ja as a cascaded flare system. These two flares also are listed in Appendix A. Note the original South Flare and Horizontal Flare have been retired.

Amendments Related to the SWRC Sulfur Recovery Plant.

2. Description of the Sulfur Recovery Plant (SRP). Paragraph 66.b is amended and superseded to read as follows:

66.b. SWRC SRP: The SRP at the Sinclair Wyoming Refinery (SWRC SRP) consists of the following:

- SRU No. 2 is a 3-stage Claus train, followed by a caustic scrubber tail gas treater (TGU), and a TGU by-pass incinerator which shall be used in the event the caustic scrubber is out of service and the No. 2 Claus Unit is in operation, and includes a sulfur pit;
- SRU No. 3 and SRU No. 4 are both 3-stage Claus units, each followed by amine-based TGU (also called SCOT units), then followed by incineration, and each includes a sulfur pit.

The SRUs are designed to process acid gas streams from the amine regenerators at the refinery. SRU No. 3 and SRU No. 4 receive sour gas from the amine regenerators serviced by the Central Amine Facility. SRU No. 1 has been retired.

3. Applicability. Paragraph 67.b is amended to read as follows:

67.b. SWRC SRP. SWRC is accepting applicability of 40 C.F.R. Part 60, Subparts A and Ja to SRUs Nos. 2, 3 and 4, and shall be in compliance with those regulations by the Date of Entry of this Consent Decree. By no later than sixty days after the Date of Entry, SWRC shall submit a permit application to the WDEQ/AQD requesting to amend NSR modification permit P0022835 requiring SRU No. 2 to comply with all applicable requirements of 40 C.F.R. 60, Subparts A and Ja.

4. Emission Limits. Paragraph 68.a is amended to read:

68. Sulfur Recovery Plants and NSPS Compliance. As of the Date of Entry, the Tulsa and Casper SRPs shall comply with all applicable provisions of NSPS set forth at 40 C.F.R. Part 60, Subparts A and J, and the SWRC SRP shall comply with 40 C.F.R. Part 60, Subpart Ja, including, but not limited to, the following:

a. Emission limit. The STRC and SCRC shall, for all periods of operation of the SRPs, comply with 40 C.F.R. § 60.104(a)(2) at each SRP except during periods of Startup, Shutdown or Malfunction of the respective SRP, or during a Malfunction of a TGU serving as a control device for the SRP. The SWRC shall, for all periods of operation of the SRP, comply with 40 C.F.R. § 60.102a(f)(1) except during periods of Startup, Shutdown or Malfunction of the respective SRP, or during a Malfunction of a TGU serving as a control device for the SRP. For the purpose of determining compliance with the SRP emission limits of 40 C.F.R. § 60.104(a)(2) or 40 C.F.R. § 60.102a(f)(1), the "Startup/Shutdown" provisions set forth in NSPS Subpart A shall apply to each SRP and not to the independent start-up or shutdown of a TGU serving as a control device for the SRP. However, the Malfunction exemption set forth in NSPS Subpart A shall apply to each SRP and to the TGU serving as the control device for the SRP.

5. Paragraph 69 is amended to read:

69. Sulfur Pit Emissions. The SCRC and the SWRC shall continue to route all sulfur pit emissions at the Casper and Sinclair Refineries, respectively, so that they are eliminated, controlled, or included and monitored as part of the SRP's emissions, with SCRC emissions subject to the NSPS Subpart J limit for SO_2, 40 C.F.R. § 60.104(a)(2), and SWRC emissions

subject to NSPS Subpart Ja limits for SO_2, 40 C.F.R. § 60.102a(f)(1). By no later than six months after the Date of Entry, the STRC shall route all sulfur pit emissions at the Tulsa Refinery so that they are eliminated, controlled, or included and monitored as part of the SRP's emissions subject to the NSPS Subpart J limit for SO_2, 40 C.F.R. § 60.104(a)(2).

Paragraphs 71, 72 and 73 continue to be reserved.

Amendments Related to SWRC Flaring Devices.

6. Paragraph 75 shall be amended to require compliance with 40 C.F.R. Part 60, Subpart Ja, as follows:

75. Flaring Devices and NSPS Applicability.

The Sinclair Refineries own and operate the Flaring Devices identified in Appendix A. By no later than the Date of Entry, each such Flaring Device shall be an "affected facility" (as that term is used in NSPS, 40 C.F.R. Part 60) and shall comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and Ja.

7. Paragraph ¶ 75 shall be amended by re-lettering Subparagraphs 75.e and 75.f as 75.g and 75.h, respectively, and by amending Subparagraph 75.c, and adding Subparagraphs 75.e and 75.f, to read as follows:

75. Flaring Devices and NSPS Applicability.

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75.c. SWRC shall operate and maintain a flare gas recovery system at the Sinclair Wyoming Refinery, with the flare gas recovery system adequately sized to control continuous or routine combustion in the Flaring Devices such that any fuel gas combusted in the Flaring Devices will meet the emission limit in 40 C.F.R. § 60.103a(h). On or before December 31, 2018, SWRC will install a replacement Hijector and demonstrate that total actual flare gas recovery capacity is at least 3,000 MSCFD.

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75.e. Projects in Refinery Units to Reduce Flow to FGRS. In addition to replacement of the Hijet Hijector, SWRC shall undertake certain projects set forth in Appendix O which it believes will reduce process unit upsets and the amount of gases combusted in the Flaring Devices.

75.f. FGRS Emissions Compliance Program. Upon entry of this Seventh Amendment, SWRC shall attain and sustain compliance with the emissions limit in 40 C.F.R. § 60.103a(h). As set forth therein, the combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from

that emissions limit. The Flaring Devices at Sinclair Wyoming Refinery are subject to 40 C.F.R. Part 60, Subpart Ja, and shall not be subject to Paragraph 76.

Amendments Related to Sinclair Wyoming Refinery CEMS

8. Section VIII of the Consent Decree, formerly reserved, is amended to add a title "**CEMS OPERATION AND MAINTENANCE**" and to add provisions related to proper operation and maintenance of SWRC's CEMS, in order to reduce downtime. A new Paragraph 198A is added to read as follows:

198A. CEMS Programs and Requirements for SWRC. SWRC has installed CEMS (which, for purposes of this Paragraph and Appendix P, includes COMS, CEMS, and O_2 analyzers as well as certain flow monitors) to monitor various emission parameters or flow values at Sinclair Wyoming Refinery processes and components. A list of these CEMS is included in Appendix P to this Seventh Amendment. As identified specifically below, certain of the obligations in this Paragraph apply to all listed CEMS while other obligations apply only to Covered CEMS. For purposes of this Seventh Amendment, "Covered CEMS" are defined to include only the following CEMS:

Source	**Emission Parameter**
North Flare Header (Coker Flare)	H_2S
North Flare Header (Coker Flare)	Flow rate sensor ("flow")
South Flare Header (Alky Flare)	H_2S
South Flare Header (Alky Flare)	Flow
TGTU #1	SO_2
TGTU #1	O_2
TGTU #1	Flow
TGTU #3	SO_2
TGTU #3	O_2
TGTU #3	Flow
TGTU #4	SO_2

TGTU #4	O_2
TGTU #4	Flow
TGTU Bypass at TGTU #1	SO_2
TGTU Bypass at TGTU #1	O_2

a. Obligations Applicable to All Listed CEMS.

i. CEMS Operations and Maintenance Training. SWRC shall provide annual training to all SWRC employees involved in CEMS operations and maintenance in order to ensure and maintain necessary levels of competence in maintaining and operating CEMS. All newly-hired SWRC employees involved in CEMS operations and maintenance shall receive CEMS training, which shall include a review of any applicable SWRC CEMS O&M Plans, including the Covered CEMS O&M Plan, prior to undertaking any CEMS-related responsibilities. All individuals involved in CEMS operations and maintenance shall have access to and be familiar with any applicable SWRC CEMS O&M Plans, including the Covered CEMS O&M Plan. SWRC shall ensure that any contractor hired to perform any CEMS operation and maintenance activity has training equal to or greater than that provided to SWRC employees and has been provided a copy of, and is familiar with, the applicable CEMS O&M Plan(s).

ii. CEMS Replacement. When a CEMS is replaced, SWRC shall certify the CEMS as soon as practicable but no later than within 30 calendar days after installation and startup of the replacement CEMS, in accordance with the applicable regulatory requirements, including any applicable performance specification listed in Appendix B of 40 C.F.R. Part 60, to minimize monitor downtime reported on quarterly or semi-annual CEMS reports.

iii. CEMS Downtime. All data collected from the initial startup of a new or replaced CEMS at SWRC, until the demonstration is made that the CEMS has been certified under the applicable certification procedures in the Consent Decree, SWRC's Wyoming permit, and 40 C.F.R. Part 60 Subpart Ja, shall be reported to the EPA and WDEQ as uncertified data and listed as monitor downtime on any Quarterly CEMS report, and in the Semi-Annual Report required pursuant to Section IX (Reporting and Recordkeeping). If the new or replaced CEMS passes the initial performance specification test standards, all data generated by such CEMS after installation shall be considered credible evidence

and SWRC shall not be subject to stipulated penalties based on the reporting of that data as monitor downtime.

b. Obligations Applicable to Covered CEMS Only.

i. Covered CEMS Operation and Maintenance Plan. Within 15 days from the Date of Entry, SWRC shall submit to EPA and Wyoming a comprehensive CEMS Operation and Maintenance Plan ("Covered CEMS O&M Plan" or "Plan") for the Covered CEMS at the Sinclair Wyoming Refinery to enhance the performance of such CEMS, improve CEMS accuracy and stability, and minimize periods of CEMS downtime. The Covered CEMS O&M Plan shall include the elements enumerated in Appendix P to this Consent Decree and shall be submitted to EPA and Wyoming for their review and approval. Upon approval by Plaintiffs, SWRC shall implement and comply with the terms of its Covered CEMS O&M Plan.

ii. Covered CEMS Testing and Calibration. SWRC shall certify, calibrate, maintain, and operate all Covered CEMS, including but not limited to new and replacement Covered CEMS, in accordance with good engineering practices and all applicable regulatory requirements, including but not limited to the applicable CEMS provisions of 40 C.F.R. Part 60, Subparts A and Ja, 40 C.F.R. §§ 60.13 and 60.7(f) (excluding those provisions applicable only to Continuous Opacity Monitoring Systems), Part 60, Appendices A and F, and the applicable performance specifications of 40 C.F.R. Part 60, Appendix B, or as specified by an approved Alternative Monitoring Plan, in order to eliminate or minimize downtime of the CEMS and to ensure accurate monitoring of its emissions at both the Flaring Devices and TGUs. Nothing in the Consent Decree shall relieve SWRC of its obligation to comply with existing requirements applicable to any CEMS at the Sinclair Wyoming Refinery.

iii. Review and Update of Covered CEMS Programs. SWRC shall review and update, as needed, its Covered CEMS O&M Plan, including its Covered CEMS Routine Preventive Maintenance Program, its Covered CEMS QA/QC Program, and its Covered CEMS Repair Program, at least one time per 12-month period. In this review, SWRC shall incorporate necessary or appropriate modifications based on operating experience, including Project Improvement Team (PIT) analysis, with each CEMS.

c. Stipulated penalties shall not be assessed for noncompliance of any flow monitoring devices with the provisions in Paragraph 198A, including the flow monitoring devices listed as Covered CEMS in Paragraph 198A and the flow monitoring devices listed in Appendix P, Paragraph 2; provided, however, that

stipulated penalties may be assessed for any flow monitoring device required by any provision of this Consent Decree pertinent to specific CEMS or PEMS other than Paragraph 198A, for stipulated penalties relevant to such other provision.

Amendments Related to Section IX Reporting.

9. Section IX (Reporting and Recordkeeping), Paragraph 199.b, is amended to add a requirement to report certain emissions data, some of which SWRC currently reports under the Section 114 Letter but not under the Consent Decree, in future semi-annual reports required under this Section, as follows:

199.b(6) For each Flaring Device, in electronic excel spreadsheet format: (i) hourly and 3-hour rolling average H_2S concentrations in ppmv; (ii) hourly average Total Reduced Sulfur in percent (%); and (iii) hourly flow in MSCFD.

In consideration for this additional reporting obligation, the Section 114 Letter shall terminate upon the Date of Entry of the Consent Decree.

Amendments Related to Section X Civil Penalty.

10. Following Paragraph 200 of Section X (Civil Penalty), a new Paragraph 200A will be added as follows:

200A. In satisfaction of the civil claims of the United States and Wyoming as set forth in new Paragraph 321A below, within 30 days of the Date of Entry of this Seventh Amendment, SWRC shall pay a civil penalty of **ONE MILLION SIX HUNDRED THOUSAND dollars ($1,600,000).** Fifty percent (50%) shall be paid to the United States on behalf of EPA and fifty percent (50%) shall be paid to the State of Wyoming pursuant to the instructions in Section X. However, for payment to the United States, SWRC shall reference DOJ Case Number 90-5-2-1-07793/1. In the event there are exceedances of the emissions limits at the SWRC Flares and TGUs or SWRC CEMS violations that occur before the Date of Entry but are not resolved under Paragraph 321A below, such violations shall be subject to stipulated penalties after the Date of Entry under Section XI as amended.

Amendments Related to Section XI Stipulated Penalties.

11. Following Paragraph 219 of Section XI (Stipulated Penalties), a new Paragraph 219A will be added as follows:

219A. For failure to comply with the NSPS Subpart Ja emission limits at a Sinclair Wyoming Refinery SRP, when and as required by Paragraphs 68 and 69:

On a per TGU basis, hours (on a twelve-hour rolling average basis) per calendar quarter in noncompliance	Penalty per hour per TGU
Hours 1-50.0	$300
Hours 51-100.0	$650
Hours over 100.0	$1200

For purposes of calculating the number of hours of noncompliance with the Subpart Ja emission limit for a specific TGU, all one-hour periods of violation shall be added together to determine the total. The averaging period for this standard is a twelve-hour rolling average.

12. Following Paragraph 220 of Section XI (Stipulated Penalties), a new Paragraph 220A will be added as follows:

220A. TGU CEMS

a. For failure to install, certify, calibrate, maintain, and/or operate SO_2 and O_2 CEMS at the Sinclair Wyoming Refinery SRP in accordance with all applicable regulatory requirements including as required pursuant to 40 C.F.R. § 60.106a and Section VIII (CEMS Operation and Maintenance) and Appendix P to this Consent Decree:

On a per Covered CEMS basis, hours per calendar quarter of monitor downtime	Penalty per hour per Covered CEMS
Hours 1-50.0	$125
Hours 51-100.0	$275
Hours over 100.0	$600

b. For purposes of calculating hours under this provision, downtime excluded from stipulated penalties under Paragraph 198A.a.iii shall not be included in nor subject to stipulated penalties under this Paragraph, nor shall noncompliance at the flow monitors excluded under Paragraph 198A.c.

13. Following Paragraph 222 of Section XI (Stipulated Penalties), a new Paragraph 222A will be added as follows:

222A. For failure to comply with the NSPS Subpart Ja emission limits at a Sinclair Wyoming Refinery Flaring Device, when and as required by Paragraph 75:

On a per Flaring Device basis, hours (on a three-hour rolling average basis) per calendar quarter in noncompliance	Penalty per hour per Flaring Device
Hours 1-50.0	$300
Hours 51-100.0	$650
Hours over 100.0	$1200

For purposes of calculating the number of hours of noncompliance with the Subpart Ja emission limit for a specific Flaring device, all one-hour periods of violation shall be added together to determine the total. The averaging period for this standard is a three-hour rolling average.

14. Following Paragraph 223 of Section XI (Stipulated Penalties), a new Paragraph 223A will be added as follows:

223A. Flaring Device CEMS

a. For failure to install, certify, calibrate, maintain, and/or operate H_2S CEMS and total reduced sulfur monitors at the Sinclair Wyoming Refinery Flaring Devices in accordance with all applicable regulatory requirements, including as required pursuant to 40 C.F.R. § 60.107a and Section VIII (CEMS Operation and Maintenance) and Appendix P to this Consent Decree:

On a per Flaring Device CEMS basis, hours per calendar quarter of monitor downtime	Penalty per hour per Flaring Device CEMS
Hours 1-50.0	$125
Hours 51-100.0	$275
Hours over 100.0	$600

b. For purposes of calculating hours under this provision, downtime excluded from stipulated penalties under Paragraph 198A.a.iii shall not be included in nor subject to stipulated penalties under this Paragraph, nor shall noncompliance at the flow monitors excluded under Paragraph 198A.c.

15. Following Paragraph 321 of Section XVI (Effect of Settlement), a new Paragraph 321A will be added as follows:

321A. Resolution of Liability for Violations Addressed in Seventh Amendment. Entry of this Seventh Amendment shall resolve all civil liability for the following categories of violations, including but not limited to all civil liability under Paragraphs 208, 219, 222, and 223 of the Consent Decree, of Defendant SWRC to the United States and Wyoming: (a) violations of emissions standards under NSPS Subparts J and Ja at the Flaring Devices and at the TGUs at the Sinclair Wyoming Refinery through December 31, 2018; and (b) violations of CEMS regulations and requirements at the Sinclair Wyoming Refinery through December 31, 2018. Violations of the emissions standards at the Flaring Devices and at the TGUs occurring after December 31, 2018, and violations of the CEMS regulations and requirements occurring after December 31, 2018, and prior to the Date of Entry of this Seventh Amendment shall be subject to the modified stipulated penalties in Section XI (Stipulated Penalties), to be paid after the Date of Entry.

ORDER

Before the taking of any testimony, without adjudication of any issue of fact or law, and upon the consent and agreement of the United States, the State of Wyoming, and SWRC, it is hereby ADJUDGED, ORDERED and DECREED that this Seventh Amendment is hereby approved and entered as a final order of this Court.

Date: , 2019

CHIEF JUDGE SCOTT W. SKAVDAHL

SIGNATORIES

Each of the undersigned representatives certifies that he or she is fully authorized to enter into the Seventh Amendment to the Consent Decree on behalf of such Parties, and to execute and to bind such Parties to this Seventh Amendment. This Seventh Amendment may be signed in counterparts.

WE HEREBY CONSENT to the entry of the Seventh Amendment, including the attached revised or new appendices, to the Consent Decree entered in the matter of *United States, et al. v. Sinclair Wyoming Refining Co. et al.,* Civil No. 2:08-cv-00020-WFD, subject to public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF UNITED STATES OF AMERICA:

JEFFREY BOSSSERT CLARK
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FOR PLAINTIFF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

WE HEREBY CONSENT to the entry of the Seventh Amendment, including the attached revised or new appendices, to the Consent Decree entered in the matter of *United States, et al. v. Sinclair Wyoming Refining Co. et al.*, Civil No. 2:08-cv-00020-WFD, subject to public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF-INTERVENOR STATE OF WYOMING:

Date: 4/4/19

TODD PARFITT
Director
Wyoming Department of Environmental Quality

Date: 4-1-19

NANCY VEHR
Administrator, Air Quality Division
Wyoming Department of Environmental Quality

Approved as to form:

Date: 4-1-19

JAMES KASTE
Deputy Attorney General
Wyoming Attorney General's Office

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FOR DEFENDANT SINCLAIR WYOMING REFINING COMPANY:

ROSS MATTHEWS
President, Sinclair Wyoming Refining Company

Date: 3/26/19

APPENDIX A

List of Flaring Devices

Holly (Tulsa) Refinery:

Flare 1

Flare 2

Sinclair Refinery:

North Flare (a/k/a Coker flare)

South Flare (a/k/a Alky flare)

Casper Refinery:

Vertical Flare

APPENDIX O

(List of Flaring Reduction Projects)

As specified in Paragraph 75.e, SWRC shall perform the following projects for the purposes of reducing the amount of gases conveyed to and combusted in the Flaring Devices and reducing upsets in process units that SWRC believes have contributed to exceedances at the Flaring Devices historically, reducing the potential that the capacity of the FGRS is exceeded, and mitigating or preventing future exceedances.

A. Within one year of the Date of Entry, SWRC will complete the following Flaring Reduction Projects:

1. GRU Distillation Column High Pressure Reboiler Shutdowns: During major refinery upsets such as electrical supply interruption, some of the distillation columns in the Gas Recovery Unit are the largest contributors to the flare load. SWRC shall install instrumented safety systems which will shut off the heating steam to the Poly Depropanizer Reboiler, the De-Ethanizer Stripper Steam Reboiler, the GRU Stabilizer Reboiler, and the GRU Depropanizer Reboiler if the tower pressure rises to 90% of the set pressure of the safety valve. SWRC expects that this will reduce the frequency of the material from these towers being released to the flare collection header by a factor of approximately 10.
2. Hydrocracker Unit (HCU) compressor reliability upgrades: SWRC shall implement improvements to increase the reliability of the hydrogen recycle and makeup compressors and to reduce

malfunctions or shutdowns, to reduce the need to release sour gas to the flare during upset conditions. The improvements shall include: (1) Upgrading the motor to a brushless exciter design - historically, according to SWRC, issues related to the exciter brushes have been the largest cause of compressor shutdowns; (2) Changes to reduce the 3rd stage cylinder valve temperatures – SWRC has concluded that valve failures in this cylinder related to high temperatures is another source of compressor downtime and associated flaring. The piping in the compressor circuit will be modified so that the discharge from the 3rd cylinder will go into the recycle compressor cylinder instead of directly to the unit. This improvement is to reduce the compression ratio across the 3rd stage and therefore the heat of compression, limiting the temperature rise. In addition, a new cooler will be added to reduce the inlet temperature of the hydrogen entering the cylinder. This addition also is to reduce the cylinder temperature. (3) Add a knockout drum upstream of the 3rd cylinder to prevent any liquid from reaching the cylinder and damaging the valves.

3. HCU controls upgrade: SWRC shall upgrade the existing Koyo Direct Logic programmable logic controller (PLC) to an Allen Bradley Control Logic unit, which is certified for use in safety critical applications. In addition to upgrading the logic solver to a safer and more reliable unit, SWRC shall upgrade the reactor

shutdown logic to include the voting of multiple instruments for the reactor high temperature shutdown protective system. These changes are both to improve the safety of the unit and to reduce the likelihood of a spurious depressuring of the reactor to the flare collection header.

4. 581/583 cooling tower switchgear upgrade: SWRC shall install modern electrical switchgear for the cooling towers fans for the 581/583 cooling towers which SWRC believes will improve the reliability of the cooling towers and reduce the number of upsets at the process units serviced by the cooling towers. This includes the replacement of the switchgear itself, and the replacement of the motor control center, transformers, and some of the electrical wiring. The aging existing equipment is prone to failures. When cooling capacity is lost for the 581/583 Crude unit, it can result in pressure excursions or other upsets which can result in material being released to the flare collection header.

B. Within three years of the Date of Entry, SWRC shall complete the following Flaring Reduction Projects:

1. HCU cooling tower: SWRC shall install a new cooling tower at the HCU complex with a nominal design water circulation rate of 6,500 gpm. This tower will provide additional cooling to the HCU and the #1 Hydrogen plant. According to SWRC, these units are the furthest away from the existing cooling towers, so are impacted

most when cooling capacity is limited. In addition to improving the reliability of the cooling for the HCU and #1 hydrogen plant, the cooling requirements on the existing cooling towers will be reduced. SWRC expects that this reduction will lead to improved cooling and reduced upsets in the units which will continue to be serviced from the existing towers. Maintaining adequate cooling reduces the likelihood of temperature and pressure excursions which can lead to material being released to the flare collection header.

2. Additional high pressure boiler feedwater pump: SWRC shall install a 2nd electrically driven back-up high-pressure boiler feedwater pump. The current system has 2 steam driven pumps and a single electrically driven pump. At least two pumps are required to maintain adequate pumping capacity. Adding the 2nd electrical pump is expected to provide operating flexibility and additional reliability by being able to run the boiler house on either steam driven or electrically driven feed water pumps. SWRC states that adequate steam supply from the boiler house is crucial to maintain stable plant operation. Loss or reduction in boiler feed water, and therefore steam generating capacity, can cause multiple unit upsets and releases of material to the flare collection header.
3. 582 crude unit flare knock out drum: SWRC shall install a flare knock out drum at the 582 crude unit to improve the vapor/liquid

separation of the overhead gases vented to the FGRS collection header and to reduce the potential for hydrocarbon liquid carry over in the FGRS, improving its reliability. The knock out drum shall include the capability to pump collected liquids back to storage for reprocessing through the refinery.

4. 581 Crude Unit / 583 Vacuum Unit controls upgrade: SWRC shall upgrade the existing Foxboro 100 Series control system to the new 200 Series system. According to SWRC, the current system has suffered from failures on input cards and other component failures typical of end-of-life electronic equipment. The new system is to reduce the likelihood of upsets that can lead to releases of material to the flare collection system.

APPENDIX P

SWRC COVERED CEMS OPERATON AND MAINTENANCE PROGRAM

1. Preventive Maintenance, Quality Assurance/Quality Control ("QA/QC"), and Repair. By no later than 15 days from the Date of Entry of the Seventh Consent Decree Amendment, SWRC shall develop and implement the programs for the Covered CEMS O&M set forth in Subparagraphs 1.a–1.c.

a. Covered CEMS Routine Preventive Maintenance Program. The Covered CEMS Routine Preventive Maintenance Program shall identify and require implementation of a regularly-scheduled set of activities designed to minimize problems that cause Covered CEMS downtime. Such activities and procedures may be based initially on the CEMS vendor's recommendations. Routine preventive maintenance procedures may include regular (*e.g.,* daily, weekly, monthly) internal (and, as needed, external) operation and maintenance ("O&M") checks designed to minimize CEMS downtime. Internal O&M checks may include CEMS inspections, routine cleaning of components, and any other routine maintenance. External O&M checks may include, but are not limited to, independent CEMS audits or other assessments to ensure continuous CEMS operation.

b. Covered CEMS QA/QC Program. The Covered CEMS QA/QC Program shall identify and require implementation of activities to assess and maintain the quality of continuous emissions monitoring data, including regular (e.g., daily, weekly monthly) internal (and, as needed, external) QA/QC and operation checks designed to maintain or improve data quality at Covered CEMS. Internal QA/QC and operation checks may include periodic calibrations, drift tests, relative accuracy tests, and any other sampling and analyses to assess the quality of CEMS data (i.e., accuracy and precision). External QA/QC and operation checks may

include independent third party CEMS audits, third party sampling and analysis for accuracy and precision, or other assessments to ensure accurate Covered CEMS operations.

c. Covered CEMS Repair Program. The Covered CEMS Repair Program shall identify and require the implementation of procedures designed to ensure the prompt repair of Covered CEMS to address both routine and non-routine maintenance and repair. As part of its Covered CEMS Repair Program, SWRC shall: (i) maintain a spare parts inventory adequate to support normal operating and Covered CEMS preventive maintenance requirements; and (ii) establish written procedures for the acquisition of parts on an emergency basis (*e.g.*, vendor availability on a next-day basis). SWRC shall ensure that an individual has been designated with the responsibility for maintaining the adequacy of the spare parts inventory. The on-site spare parts inventory may be based initially on CEMS vendor recommendations.

2. Table of Existing CEMS. This table contains a list of all CEMS that exist at SWRC at the Date of Lodging of this Seventh Consent Decree Amendment and are subject to the requirements of Paragraph 198Aa., and for Covered CEMS, the requirements of Paragraph 198A.a. and Paragraph 198Ab.

Source	Emission Parameter
North Flare Header (Coker Flare)	H_2S
North Flare Header	Flow
South Flare Header (Alky Flare)	H_2S
South Flare Header	Flow
20# Fuel Gas	H_2S
40# Fuel Gas	H_2S
TGTU #1	SO_2
TGTU #1	O_2
TGTU #1	Flow
TGTU #3	SO_2
TGTU #3	O_2
TGTU #3	Flow
TGTU #4	SO_2
TGTU #4	O_2
TGTU #4	Flow
TGTU Bypass at TGTU #1	SO_2
TGTU Bypass at TGTU #1	O_2
FCCU	SO_2
FCCU	NO_x
FCCU	CO
FCCU	Opacity
FCCU	O_2

FCCU	Flow
581 Crude Heater	NO_x
581 Crude Heater	O_2
583 Vacuum Heater	NO_x
583 Vacuum Heater	O_2
582 Crude Heater 102A	NO_x
582 Crude Heater 102A	O_2
582 Crude Heater 103	NO_x
582 Crude Heater 103	O_2
582 Crude Heater 104	NO_x
582 Crude Heater 104	O_2
#2 H_2 Plant	NO_x
#2 H_2 Plant	CO
#2 H_2 Plant	O_2
#2 H_2 Plant	Flow
781 #1 Reformer Heater H-101	NO_x
781 #1 Reformer Heater H-101	O_2
Naphtha Splitter Heater	NO_x
Naphtha Splitter Heater	O_2
Hydro Cracker Heater H5	NO_x
Hydro Cracker Heater H5	O_2
#7 Boiler	NO_x
#7 Boiler	O_2

#7 Boiler	Flow
#11 Boiler	NO_x
#11 Boiler	CO
#11 Boiler	O_2
#11 Boiler	Flow
#12 Boiler	NO_x
#12 Boiler	CO
#12 Boiler	O_2
#12 Boiler	Flow
#15 Boiler	NO_x
#15 Boiler	O_2
#15 Boiler	Flow