

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION**

UNITED STATES OF AMERICA,)
)
 Plaintiff,)
)
 v.)
)
 HERITAGE THERMAL SERVICES, INC.)
)
 Defendant.)

Civil No. 4:18-cv-2419

CONSENT DECREE

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WHEREAS Plaintiff United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), has filed a complaint in this action concurrently with the lodging of this Consent Decree;

WHEREAS Defendant, Heritage Thermal Services, Inc. (“Defendant” or “HTS”) owns and operates a hazardous waste incinerator located at 1250 St. George Street, East Liverpool, Ohio (the “Facility”) that receives inorganic and organic liquid and solid hazardous and non-hazardous waste from, among other sources, chemical manufacturing plants, coke by-product plants, and petroleum refineries, and stores, processes, and treats that waste by thermal oxidation in a rotary-kiln based incineration system;

WHEREAS Defendant is subject to the Federal Clean Air Act (“CAA”) and the following CAA permits issued by the Ohio Environmental Protection Agency (“Ohio EPA”): (i) Title V permit P0115099, issued as a draft on June 28, 2017, which will become effective when finalized; (ii) Title V permit P0108372, issued July 5, 2011, currently in effect. Both above-listed Title V permits incorporate CAA Permits To Install that were previously issued by Ohio EPA;

WHEREAS the Complaint alleges that Defendant violated, and continues to violate, various provisions of the National Emission Standards for Hazardous Air Pollutants for Hazardous Waste Combustors, also known as Maximum Achievable Control Technology standards (referred to herein as the “HWC MACT”), promulgated pursuant to the CAA, 42 U.S.C. § 7412, and codified at 40 C.F.R. Part 63, Subpart EEE, at the Facility;

WHEREAS the alleged violations include non-compliance with: the total hydrocarbon (“THC”) emission standard set forth in the HWC MACT; operating parameter limits (“OPLs”) necessary to comply with the destruction and removal efficiency and emission standards set forth

in the HWC MACT; and the requirement to duct emissions to air pollution control equipment in the HWC MACT;

WHEREAS Defendant has conducted a study of the Secondary Combustion Chamber at its East Liverpool, Ohio facility to identify potential refractory technologies and work practice options that could be applied to reduce slag and ash buildup within the Secondary Combustion Chamber;

WHEREAS Defendant does not admit any allegation regarding noncompliance with the Clean Air Act and does not admit any liability to the United States arising out of the transactions or occurrences alleged in the Complaint; and

WHEREAS the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I (Jurisdiction and Venue), and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and 1395(a) because the violations alleged have occurred in, and Defendant conducts business in, this judicial district. For purposes of this Consent

Decree, or any action to enforce this Consent Decree, Defendant consents to the Court's jurisdiction over this Decree and over Defendant, and consents to venue in this judicial district.

2. For purposes of this Consent Decree, Defendant agrees that the Complaint states claims upon which relief may be granted pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b).

II. APPLICABILITY

3. The obligations of this Consent Decree apply to and are binding upon the United States, and upon Defendant and any successors, assigns, or other entities or persons otherwise bound by law.

4. No transfer of ownership or operation of the Facility, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Defendant of its obligation to ensure that the terms of the Decree are implemented. At least 30 Days prior to such transfer, Defendant shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to EPA Region 5, the United States Attorney for the Northern District of Ohio, and the United States Department of Justice, in accordance with Section XVII (Notices). Any attempt to transfer ownership or operation of the Facility without complying with this Paragraph constitutes a violation of this Decree.

5. Defendant shall provide a summary of the relevant parts of this Consent Decree to and make a copy of the entire Consent Decree available to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Decree, as well as to any contractor retained to perform work required under this Consent Decree. Defendant shall

condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

6. In any action to enforce this Consent Decree, Defendant shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. DEFINITIONS

7. Terms used in this Consent Decree that are defined in the CAA or in regulations promulgated pursuant to the CAA shall have the meanings assigned to them in the CAA or such regulations, unless otherwise provided in this Consent Decree.

8. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

“Business Day” shall mean every Day except Saturday and Sunday and federal holidays.

“Clinker Fall Event” shall mean an event where material from the kiln or hardened combustion remains that have built up within the Secondary Combustion Chamber (“Clinker”) dislodge and fall into the quench tank at the bottom of the Secondary Combustion Chamber resulting in a MACT Exceedance.

“Complaint” shall mean the complaint filed by the United States in this action.

“Continuous Emissions Monitor” or “CEM” shall mean, with respect to THC emissions, the total equipment that is required to meet the data acquisition and availability requirements of the HWC MACT and this Consent Decree, used to sample, analyze, and provide a record of emissions.

“Consent Decree” or “Decree” shall mean this Consent Decree and all appendices attached hereto (listed in Section XXVI), but in the event of any conflict between the text of this Consent Decree and any Appendix, the text of this Consent Decree shall control.

“Date of Lodging” shall mean the date on which the United States files a “Notice of Lodging” of this Consent Decree with the Court for the purpose of providing notice and the opportunity to comment to the public in accordance with 28 C.F.R. § 50.7.

“Day” shall mean a calendar day unless expressly stated to be a Business Day. In computing any period of time under this Consent Decree, where the last day would fall

on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next Business Day.

“Defendant” or “HTS” shall mean Heritage Thermal Services, Inc.

“Effective Date” shall have the definition provided in Section XVIII.

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

“Exception Reporting Data” shall mean the data collected pursuant to Paragraph 90 of this Consent Decree for the parameters set forth in Appendix 1.

“Facility” shall mean the hazardous waste incineration facility owned and/or operated by the Defendant as of the Date of Lodging that is located at 1250 St. George Street in East Liverpool, Ohio.

“HWC MACT” shall mean the National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors, currently codified at 40 C.F.R. Part 63, Subpart EEE, 40 C.F.R. §§ 63.1200-1221, including any revisions and modifications thereto, and any successor provisions that replace the current HWC MACT.

“Interest” shall mean the interest rate specified by 28 U.S.C. § 1961.

“MACT Exceedance” with respect to the Facility, occurs in either or both of the following situations: (i) the total hydrocarbon measured at the stack by the CEM is greater than 10 parts per millions (“ppm”), by volume, over an hourly average, dry basis, corrected to 7 percent oxygen, and reported as propane; (ii) a parameter required to be continuously measured and recorded by 40 C.F.R. § 63.1209 of the HWC MACT is above the maximum limit or below the minimum limit established for that OPL during a compliant performance test and identified in the Notification of Compliance submitted to Ohio EPA pursuant to 40 C.F.R. §§ 63.1207(j) and 63.1210(d) that was in effect at the time of the exceedance/deviation.

“Month” or “monthly” shall mean calendar month.

“Ohio EPA” shall mean the Ohio Environmental Protection Agency and any of its successor departments or agencies.

“OPL(s)” shall mean the operating parameter limit(s) at the Facility that Defendant, EPA, or Ohio EPA has established or will establish pursuant to the HWC MACT.

“Paragraph” shall mean a portion of this Decree identified by an Arabic numeral and all Subparagraphs thereunder.

“Parties” shall mean the United States and Defendant.

“RCRA” shall mean the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.

“Revised MACT Investigation” or “RMI” shall mean the investigation required by Paragraphs 14 - 22 of this Consent Decree that Defendant conducts to determine: (i) the root cause of any MACT Exceedance, and (ii) corrective measures to implement to minimize the frequency, duration and severity of MACT Exceedances.

“Secondary Combustion Chamber” or “SCC” is part of the hazardous waste incinerator identified as emission unit N001 at the Facility in the Title V Permit. The incinerator consists of a rotary kiln and is followed by other equipment including the SCC. The SCC increases the combustion residence time and operates at a minimum required temperature so that liquid, solid, and gaseous wastes fed to the kiln continue to be treated.

“SCC Pressure Exceedance” occurs when the pressure in the SCC at the Facility exceeds: (i) zero inches of water column for more than 10 seconds; (ii) the pressure in the inlet or outlet end shroud at any time; or (iii) the ambient pressure for more than 2 seconds during operating time when the pressurizing equipment for either shroud has failed.

“Section” shall mean a portion of this Decree identified by a Roman numeral and all Paragraphs and Subparagraphs thereunder.

“State” shall mean the State of Ohio.

“Subparagraph” shall mean a portion of a Paragraph of this Consent Decree that is identified by a lower case letter standing alone or in parentheses, Arabic number or lower case Roman numeral in parentheses and all Subparagraphs thereunder.

A “THC Exceedance” occurs at the Facility when the total hydrocarbon measured at the stack by the CEM reported as propane is greater than 10 ppm, by volume, over an hourly average, dry basis, corrected to 7 percent oxygen.

“Title V Permit” shall mean the permit issued to Defendant by Ohio EPA pursuant to Subchapter V of the CAA, 42 U.S.C. §§ 7661-7661e, including any revisions and modifications thereto, and any newly issued permits that replace prior Title V permits.

“Waste Analysis Plan” or “WAP” shall mean the written waste analysis plan Defendant develops and submits to Ohio EPA for approval describing the procedures it will carry out to comply with the RCRA treatment standards under 40 C.F.R. § 264.13 and Ohio Administrative Code (OAC) 3745-54-13.

“Waste Feed Database” means the Facility’s computerized data of the wastes fed to the incineration system. The information includes the types of wastes, their characteristics, amounts processed, processing methods, and dates and times of processing.

“United States” shall mean the United States of America, acting on behalf of EPA.

IV. CIVIL PENALTY

9. No later than 30 Days after the Effective Date, Defendant shall pay the sum of Two Hundred and Eighty-Eight Thousand Dollars (\$288,000) as a civil penalty, together with Interest accruing from the Date of Lodging at the rate specified in 28 U.S.C. § 1961 as of the Date of Lodging.

10. Defendant shall pay the civil penalty due by FedWire Electronic Funds Transfer (“EFT”) to the U.S. Department of Justice account, in accordance with instructions provided to Defendant by the Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the Northern District of Ohio after the Effective Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection System (“CDCS”) number, which Defendant shall use to identify all payments required to be made in accordance with this Consent Decree.

The FLU will provide the payment instructions to:

Christopher T. Pherson, President
Heritage Thermal Services
1250 St. George Street
East Liverpool, Ohio 43920
Tel: 330-386-2173
Email: cpherson@heritage-thermal.com

on behalf of Defendant. Defendant may change the individual to receive payment instructions on its behalf by providing written notice of such change to the United States and EPA in accordance with Section XVII (Notices).

11. At the time of payment, Defendant shall send notice that payment has been made: (i) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268; (ii) to the United States via email or regular mail in accordance with Section XVII (Notices); and (iii) to EPA in accordance with Section XVII (Notices). Such notice shall state that the payment is for the civil

penalty owed pursuant to the Consent Decree in United States of America v. Heritage Thermal Services, Inc. and shall reference the civil action number, CDCS Number and DOJ case number 90-5-2-1-11449.

12. Defendant shall not deduct any penalties paid under this Decree pursuant to this Section or Section XI (Stipulated Penalties) in calculating its federal income tax.

V. COMPLIANCE REQUIREMENTS

A. Compliance with Applicable Law and Permits

13. Defendant shall comply with the HWC MACT at the Facility.

B. Revised MACT Investigations

14. Defendant shall revise its MACT investigation procedures in accordance with Paragraphs 15-23 below.

15. Beginning with the first MACT Exceedance after the Effective Date of the Consent Decree, and for every MACT Exceedance occurring thereafter until termination of the Consent Decree, Defendant shall complete a Revised MACT Investigation (“RMI”) into the root cause of the MACT Exceedance in accordance with Paragraphs 16-23 below.

16. RMI Deadlines.

a. Defendant shall commence the RMI within 5 Business Days of the occurrence of each MACT Exceedance.

b. Defendant shall complete the RMI in accordance with Paragraphs 14-18 within 15 Business Days of the occurrence of each MACT Exceedance, unless EPA approves an extension of time to do so pursuant to Subparagraph 16.c below.

c. If Defendant cannot complete the RMI within 15 Business Days despite Defendant's best efforts to do so, Defendant shall follow the procedures set forth in Subparagraph 16.c(1)-(5) below.

(1) As soon as Defendant knows or should with reasonable diligence know that it cannot complete the RMI within 15 Business Days of the MACT Exceedance, Defendant shall submit to EPA for approval a written request for an extension of time (RMI extension request) for those portions of the RMI that cannot be completed within 15 Business Days. In such request, Defendant shall describe the portions of the RMI that cannot be completed within 15 Business Days of the MACT Exceedance, the reason(s) Defendant cannot complete those portions of the RMI within 15 Business Days of the MACT Exceedance, and the date by which Defendant proposes to complete those portions of the RMI.

(2) If EPA approves an RMI extension request in whole, Defendant shall complete the RMI by the completion date it proposed in the RMI extension request.

(3) If EPA disapproves an RMI extension request in whole, or approves an RMI extension request in part but requires that Defendant complete some or all portions of the RMI for which Defendants requested an extension of time earlier than that proposed by Defendant, Defendant shall complete the RMI within 5 Business Days of receiving notice of EPA's disapproval, or by a later date approved by EPA.

(4) Defendant may invoke dispute resolution pursuant to Section XIII where EPA disapproves an RMI extension request in whole or part. In dispute resolution proceedings, the standard of review shall be whether Defendant established that it was impracticable to complete one or more portions of the RMI within 15 Business Days due to causes beyond the control of Defendant, of any entity controlled by Defendant, or of Defendant's

contractors, and despite Defendant's best efforts to complete those portions of the RMI within 15 Business Days and whether Defendant followed the procedures set forth in this Subparagraph 16.c.

(5) Notwithstanding any RMI extension Defendant shall complete those portions of an RMI not subject to the RMI extension request within 15 Business Days of the MACT Exceedance. During EPA review of an RMI extension request, Defendant shall use its best efforts to continue to complete all portions of the RMI to the extent practicable.

d. Stipulated Penalties Applicable to RMIs For Which Defendant Requests an Extension. No stipulated penalties for late completion of an RMI shall accrue during the time between Defendant's submission of an RMI extension request to EPA and the later of 5 Business Days following Defendant's receipt of EPA's disapproval of the RMI extension request or the date EPA approves for completion of the RMI except that stipulated penalties shall accrue for failure to complete an RMI beginning 15 Business Days after the MACT occurrence in the following circumstances:

(1) Defendant does not comply with the requirements and procedures set forth in this Subparagraph 16.c; or

(2) EPA finds that Defendant's RMI extension request was frivolous or contained material factual misstatements or omissions.

17. RMI Analyses. For each MACT Exceedance Defendant shall conduct an RMI that, at a minimum, contains the following components.

a. Root Cause Analysis. Defendants shall investigate the root cause(s) of each MACT Exceedance, by evaluating, at a minimum, the following information and items:

- (1) the Exception Reporting Data for the 24 hours preceding the MACT Exceedance,
- (2) the information from the Waste Feed Database for the 24 hours preceding the MACT Exceedance; and
- (3) the relationship, if any, between system variables based on the time lag calculations and the system recordings required by Paragraph 90 below.

b. Corrective Measure Evaluation. Defendant shall use available information including the information and data it is required to collect under Paragraph 90 below and evaluate under Subparagraph 17.a above to identify and evaluate the measures that could be implemented to minimize the frequency, duration, and severity of future MACT Exceedances (“Corrective Measures”).

c. RMI Report. For each RMI Defendant shall prepare an RMI Report in accordance with Paragraph 20 below.

18. Revised MACT Investigation of Clinker Fall Events. When a Clinker Fall Event occurs, Defendant shall comply with all of the following requirements.

- a. Implement the RMI procedures and requirements set forth in Paragraphs 14-17 above to determine the root cause of the Clinker Fall Event;
- b. Undertake the following additional actions:
 - (1) retain a representative sample of the clinker, when possible;
 - (2) conduct a visual analysis of the clinker and record observations, when possible;
 - (3) take photographs of the clinker, when possible; and
 - (4) submit the clinker for X-ray fluorescence, when possible; and

c. Include the information set forth in Subparagraph 18.b above in the RMI Report it prepares pursuant to Paragraph 20 below for each Clinker Fall Event. To the extent that Defendant is not able to undertake an action required by Subparagraph 18.b above, the RMI Report shall identify and explain the reason(s) for its inability to do so.

19. Implementation of Corrective Measures.

a. Corrective Measures Required to be Implemented.

(1) For MACT Exceedances, Defendant shall implement all Corrective Measures that are reasonable under the circumstances.

(2) The following factors shall be weighed to determine whether a Corrective Measure is reasonable under the circumstances:

(a) the likely effectiveness of the Corrective Measure in reducing the frequency, duration, and severity of future MACT Exceedances;

(b) the public health and/or environmental benefits from reduced occurrence, duration, and severity of future MACT Exceedances that the Corrective Measure is likely to achieve;

(c) the cost of the Corrective Measure;

(d) the extent to which the Corrective Measure will have adverse operational impacts;

(e) the extent to which the Corrective Measure can be safely implemented; and

(f) other considerations that bear on the reasonableness of the Corrective Measure under the circumstances.

b. Deadlines for Implementation of Corrective Measures. Defendant shall implement each Corrective Measure that is reasonable under the circumstances within 15 Business Days of completion of the RMI except in any of the following circumstances.

(1) EPA and Defendant agree to a different time frame for implementation of a Corrective Measure, in which case Defendant shall implement the Corrective Measure consistent with the agreed-upon time frame; or

(2) The Corrective Measure (a) requires a capital outlay of more than \$50,000 for additional equipment or controls, and/or (b) requires Defendant to apply for a permit modification to either the CAA Title V and/or RCRA permits for the Facility, and/or (c) requires a substantive revision of waste acceptance procedures at the Facility for a particular waste, in which case Defendant shall implement the Corrective Measure no later than 90 Days after completion of the RMI; or

(3) It is not practicable to implement the Corrective Measure within 15 Business Days after the completion of the RMI in which case Defendant shall implement the Corrective Measure as soon as practicable but no later than 90 Days after completion of the RMI; or

(4) EPA comments require Defendant to implement a Corrective Measure it did not propose implementing, in which case Defendant shall implement the Corrective Measure 60 Days after receiving EPA's comments unless the circumstances in either Subparagraph 19.b(1), (2), or (3) above apply in which case Defendant shall implement the Corrective Measure 120 Days after receiving EPA's comments; or

(5) EPA comments require Defendant to implement a Corrective Measure by a date different than that Defendant proposes, in which case Defendant shall implement the Corrective Measure by the date set forth in the EPA Comments; or

(6) Defendant invokes dispute resolution pursuant to Section XIII and Paragraph 22.c(2) below concerning EPA comments on a Corrective Measure(s) in which case, if EPA prevails in dispute resolution, Defendant shall implement EPA comments pursuant to the timeframe provided in Subparagraph 19.b(1)-(5) above.

c. Nothing in this Consent Decree shall be construed as precluding Defendant from taking any other measures it deems necessary to avert or minimize an emergency, catastrophe, or other incident that could cause harm to human health or the environment.

20. RMI Reports and Related Data.

a. For each RMI, Defendant shall prepare an RMI Report that shall document the information accumulated in the course of the RMI. Defendant shall use the checklist attached hereto as Appendix 2 to track contents of the RMI Report. At a minimum the RMI Report shall:

(1) provide the date and time of the MACT Exceedance triggering the RMI;

(2) provide the emissions and/or OPL data associated with the MACT Exceedance triggering the RMI;

(3) summarize the Exception Reporting Data, and the raw data from the Waste Feed Database for the 24-hour period preceding the MACT Exceedance triggering the RMI;

- (4) describe the results of the evaluations conducted pursuant to Paragraph 17 above;
- (5) identify the root cause, if determined, of the MACT Exceedance triggering the RMI
- (6) identify whether the MACT Exceedance was due to start-up, shutdown, or a malfunction and the basis for that determination; and
- (7) list and describe each Corrective Measures identified or considered in the RMI and indicate which Corrective Measures have been, will, and will not be implemented.

(a) For Corrective Measures that have been or will be implemented, the RMI Report shall confirm that such Corrective Measures were implemented within 15 Business Days of the completion of the RMI or shall explain why the Corrective Measure meets the criteria for later implementation set forth in Subparagraph 19.b above and set forth the date by which the Corrective Measure will be implemented.

(b) For Corrective Measures that will not be implemented, the RMI Report shall explain the basis of Defendant's determination that such Corrective Measures are not reasonable under the circumstances in light of the factors set forth in Subparagraph 19.a above.

b. Submission of RMI Reports and Data to EPA.

(1) Within 35 Business Days of the first THC Exceedance after the Date of Lodging, and within 35 Business Days of the first Clinker Fall Event after the Date of Lodging, Defendant shall submit to EPA the following reports and information:

(a) the RMI Report for the Clinker Fall Event and/or THC Exceedance; and

(b) the Exception Reporting Data for the 24-hour period preceding the Clinker Fall Event and/or THC Exceedance.

(2) Except as set forth in Subparagraph 20.b(1) above regarding the first Clinker Fall Event and first THC Exceedance, for every other RMI after the Effective Date, Defendant shall submit each RMI Report for the time period in which the RMI occurred to EPA for comment by the 30th Day of the following months: April (for the time period January 1-March 31), July (for the time period April 1-June 30), October (for the time period July 1-September 30), and January (for the time period of October 1-December 31 of the prior calendar year). Nothing in this Subparagraph precludes EPA from commenting on the RMI Reports or affects Defendant's obligations concerning EPA's comments pursuant to Paragraph 22.

c. Defendant shall include in its submission of RMI Reports to EPA the Exception Reporting Data it examined in the RMI and the raw data from the Waste Feed Database for the 24-hour period prior to the MACT Exceedance that triggered the RMI which shall be submitted to EPA electronically in either CSV or Excel format.

d. If Defendant makes any change regarding a Corrective Measure identified in an RMI Report, it shall amend the RMI Report to reflect such change, and, if the RMI Report has already been submitted to EPA, shall submit the amended RMI Report to EPA as soon as practicable.

21. Retention of RMI Reports and Related Data and Submission to EPA Upon Request.

a. Defendant shall retain all RMI Reports, and the Exception Reporting Data and raw data from the Waste Feed Database examined in each RMI, and for Clinker Fall Event RMIs the information required by Subparagraph 18.b(1)-(4) above, in accordance with Section XIV (Information Collection and Retention) of this Decree.

b. At any time, EPA may request information from Defendant regarding an RMI or MACT Exceedance for which the RMI was conducted including the RMI Report, Exception Reporting Data, Waste Feed Database data, other data, and information relating to potential Corrective Measures. Defendant shall provide the information EPA requests within 15 Business Days of the request.

22. EPA Comment on RMI Reports and Corrective Measures.

a. EPA may provide comments on an RMI Report including:

- (1) requiring Defendant to evaluate additional data or Corrective Measures not identified in the RMI Report;
- (2) requiring Defendant to implement Corrective Measures not identified in the RMI Report or Corrective Measures identified in the RMI Report that Defendant has determined are not reasonable under the circumstances to implement; and
- (3) requiring Defendant to implement Corrective Measures that were not implemented within 15 Business Days of the RMI completion or on a schedule different from that proposed in the RMI Report.

b. For 30 Days after EPA provides comments on an RMI Report pursuant to Subparagraph 22.a above that require Defendant to implement Corrective Measures not

identified in the RMI or that Defendant determined not to implement, or requiring a change in schedule for a Corrective Action, the Parties shall discuss the EPA comments in good faith to attempt to reach agreement on the Corrective Measures to be implemented and/or the schedule for implementation.

c. If no agreement is reached under Subparagraph 22.b above regarding comments submitted by EPA, Defendant shall either:

(1) implement such Corrective Measures in accordance with EPA's comments and the applicable deadline set forth in Subparagraph 19.b above; or

(2) invoke dispute resolution within 45 Days of receiving EPA comments (or by such other date as approved by EPA) pursuant to Section XIII below (Dispute Resolution) regarding EPA comments on the RMI. In such dispute resolution, it shall be Defendant's burden to establish either:

(a) that implementation of such Corrective Measure is not reasonable under the circumstances considering the factors set forth in Subparagraph 19.a(2) above; or

(b) that EPA comments were submitted more than 60 Days after EPA's receipt of the RMI Report and implementation of the Corrective Measure would be unduly burdensome given the degree to which Defendant has proceeded in implementing that or a different Corrective Measure; or

(c) where EPA has requested implementation of a Corrective Measure on a schedule different from that proposed by Defendant, that the schedule required by EPA for implementation is not practicable.

23. Nothing in this Consent Decree shall excuse Defendant from complying with any applicable investigation, corrective action and reporting provisions of the HWC MACT. The parties acknowledge, however, that Defendant's compliance with the RMI requirements set forth in Paragraphs 14-22 above may in many circumstances also satisfy the investigation and recordkeeping requirements in the HWC MACT, 40 C.F.R. §1206(c)(2)(v)(A)(3)(i) and 63.1206(c)(3)(v).

C. Waste Stream Acceptance Procedures.

24. Defendant is subject to its most current Waste Analysis Plan ("WAP") for the Facility required by Ohio Administrative Code 3745-54-13(B) as a means to screen for and reject inappropriate wastes including those that could cause energetic ash events. As of the Date of Lodging, this most current approved WAP is Revision 43, dated October 23, 2017. Pursuant to Section C-2a(3) of the current WAP, Defendant shall ensure that all refinery waste streams having the potential to contain FCC catalyst will be analyzed for concentration of a known FCC catalyst indicator. Defendant has used Lanthanum as the recognized indicator for the presence of FCC catalyst. Beginning March 1, 2014, Defendant stopped incinerating refinery waste streams having the potential to contain FCC catalyst with more than 0.124% Lanthanum.

25. Defendant shall continue to either reject any refinery waste streams having the potential to contain FCC catalyst with more than 0.124% Lanthanum or that otherwise do not meet the acceptability criteria in its most current WAP or send such wastes to another processing facility.

26. For the duration of this Consent Decree, if Defendant amends its WAP to propose changes to its refinery waste acceptance criteria, Defendant shall provide a copy of these proposed changes to EPA at the same time it submits the WAP amendment to Ohio EPA.

VI. INVESTIGATIONS

27. Feed Balancing Protocol.

a. Defendant shall implement the Feed Balancing Protocol (the “FBP”) attached as Appendix 3 to this Decree as described below.

b. Implementation Schedule.

(1) No later than 90 Days after the Effective Date, Defendant shall undertake all actions necessary to facilitate implementation of the FBP including:

(a) Modifying operating systems to allow for gathering analytical data for iron, sodium, potassium and lithium in bulk high ash solids, and sample liquid bulk and drummed materials injected into the kiln through lances; and

(b) Updating control room software to track iron, sodium, lithium and potassium; and

(c) Using information from historical feed rates and new data gathered from the analytical efforts, developing a strategy to balance the feeds of the fluxing elements and to alternate fluoride and high silicon feeds (“Feed Balancing Strategy or FBS”).

(2) No later than 120 Days after the Effective Date, and continuing for no fewer than 180 Days thereafter, Defendant shall implement the Feed Balancing Strategy as developed under the FBP.

c. Evaluation of the Effect of the Feed Balancing Strategy. No later than 330 Days after the Effective Date, Defendant shall submit to EPA an FBS Evaluation Report. The FBS Evaluation Report shall at a minimum contain the following information:

(1) A calculation of the number of total SCC Pressure Exceedances resulting from Clinker Fall Events during the 180 Days of implementing the Feed Balancing Strategy (“Feed Balancing Time Period”); and

(2) A comparison of the number of total SCC Pressure Exceedances resulting from Clinker Fall Events during the Feed Balancing Time Period to the six-month average number of SCC Pressure Exceedances resulting from Clinker Fall Events derived from data for the time period of January 1, 2013, through December 31, 2017.

d. If the FBS Evaluation Report shows that, during the Feed Balancing Time Period, the number of SCC Pressure Exceedances resulting from Clinker Fall Events is equal to or less than 80% of the six-month average number of SCC Pressure Exceedances resulting from Clinker Fall Events for the time period of January 1, 2013, through December 31, 2017, Defendant shall submit permit applications to include the Feed Balancing Strategy in its Title V Permit pursuant to Paragraphs 50-54 below. Defendant shall not be required to continue operating under the Feed Balancing Strategy if the metrics set forth above are not met.

28. Supplemental Waste Analysis Protocol.

a. Defendant shall implement the Supplemental Waste Analysis Protocol (the “SWAP”) attached as Appendix 4 to this Decree as described below.

b. Implementation Schedule.

(1) No later than 90 Days after the Effective Date Defendant shall undertake all actions necessary to facilitate implementation of the SWAP including:

(a) updating the operating systems at the Facility to accommodate necessary changes in labels, track individual container analytical data in the

Laboratory Information Management System by composite, and implement processing instruction changes at the individual container level in addition to the profile level;

(b) maintaining a waste analysis staff sufficient to implement the protocol;

(c) procuring and maintaining additional lab equipment and label printers in amounts necessary to implement the SWAP; and

(d) establishing training protocols for its current and future waste analysis staff on the SWAP.

(2) No later than 180 Days after the Effective Date, Defendant shall fully implement the SWAP. Defendant shall implement the SWAP thereafter for a minimum of six months. Defendant shall not be required to continue operating under the SWAP unless the provisions of Subparagraph 28.d below are triggered.

c. Evaluation of the Effect of the SWAP. No later than 395 Days after the Effective Date, Defendant shall submit to EPA a SWAP Evaluation Report. The SWAP Evaluation Report shall at a minimum contain the following information:

(1) A calculation of the number of total THC Exceedances in each month at the Facility during the six months of implementing the SWAP (“SWAP Time Period”); and

(2) A comparison of the average number of total THC Exceedances per month during the SWAP Time Period to the average number of THC Exceedances per month derived from data for the time period of January 1, 2013, through December 31, 2017.

d. If the SWAP Evaluation Report shows that the average number of monthly THC Exceedances is equal to or less than 5.2 during the SWAP Time Period, Defendant

shall submit permit applications to include continued SWAP implementation in its Title V Permit pursuant to Paragraph 50 below.

29. Temperature Study. If the information contained in the SWAP Evaluation Report shows that the average number of monthly THC Exceedances is greater than 5.2 during the SWAP Time Period, then no later than 60 Days after submission of the SWAP Evaluation Report, Defendant shall conduct a study of the relationship between THC Exceedances and SCC temperature (the “Temperature Study”), that meets the requirements set forth in Subparagraphs 29.a-d.

a. The Temperature Study shall:

(1) Use the Exception Reporting Data for SCC Temperature and THC 500 on Appendix 1 collected pursuant Paragraph 90 below.

(2) Compare THC data to SCC temperature data for the SWAP Time Period.

(3) Analyze individual THC Exceedances in relation to the above-listed parameters at the interval listed on Appendix 1.

(4) Analyze temperature values and/or ranges at which the number of THC Exceedances could be reduced.

b. No later than 15 Business Days after completion of the Temperature Study, Defendant shall submit a report of the Temperature Study (“Temperature Study Report”) to EPA for comment pursuant to Section VIII (Submissions and EPA Review of Deliverables), which shall provide the data and analyses set forth in Subparagraph 29.a above and explain whether the Temperature Study showed a statistically significant correlation between SCC temperature and THC Exceedances.

30. Automation Proposal.

a. If the Temperature Study conducted pursuant to Paragraph 29 above shows a statistically significant correlation between SCC temperature and THC Exceedances, no later than 60 Days after submitting the Temperature Study Report to EPA, Defendant shall submit to EPA for approval pursuant to Section VIII (Submissions and EPA Review of Deliverables), an automation proposal (“Automation Proposal”) that evaluates the effect of the waste feeds and fuel flow rates on the SCC temperature and determines whether a second loop controller(s) that would automatically adjust the waste feed and fuel flow rate determinations (overriding the operator determinations) if the SCC temperature reading rises above or falls below certain levels or ranges identified in the proposal would reduce THC Exceedances.

b. If the Automation Proposal concludes that a second loop controller(s) that would automatically adjust the waste and fuel flow rate determinations (overriding the operator determinations) if the SCC temperature reading rises above or falls below certain levels or ranges identified in the proposal would reduce THC Exceedances, HTS shall install a second loop controller within 90 Days of EPA’s approval of the Automation Proposal.

VII. SUPPLEMENTAL ENVIRONMENTAL PROJECT

31. Defendant shall implement a lead hazard abatement supplemental environmental project (“SEP”) to protect people from lead-based paint and other lead hazards in accordance with all provisions of Paragraphs 32-40 below and the SEP Work Plan attached hereto as Appendix 5. The SEP shall provide for performance of lead hazard abatement activities for residential, commercial and/or industrial properties identified in the East Liverpool, Ohio area. The SEP is designed to reduce exposure to lead at properties where owners are unable to afford

lead hazard abatement work, with priority given to properties presenting the highest potential risk of childhood lead exposure.

32. Defendant shall complete the SEP no later than two years from the Effective Date.

33. Defendant is responsible for the satisfactory completion of the SEP in accordance with the requirements of this Decree and Appendix 5. Defendant may use contractors or consultants in planning and implementing the SEP.

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

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

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

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

d. that Defendant will not receive any reimbursement for any portion of the SEP from any other person; and

e. that Defendant is not a party to any open federal financial assistance transaction that is funding or could fund the same activity as the SEP. For purposes of these certifications, 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.

35. SEP Completion Report.

a. No later than 60 Days after completion of the SEP, Defendant shall submit a SEP completion report to EPA pursuant Section XVII (Notices). The SEP completion report shall contain the following information:

- (1) a detailed description of the SEP as implemented;
- (2) a description of any problems encountered in completing the SEP and the solutions thereto;
- (3) an itemized list of all Eligible Costs expended;
- (4) certification that the SEP has been fully implemented pursuant to the provisions of this Decree, including verification that each building and area has passed a lead detection wipe test, where applicable;
- (5) description of the environmental and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, to the extent possible);
- (6) certify that Defendant has inquired whether each SEP recipient is a party to an open federal financial assistance transaction that is funding or could fund the same activity as the SEP and has been informed by each recipient that it is not a party to such a transaction; and
- (7) certify that neither Defendant's contractors nor SEP recipients or any other third parties are required to perform or develop the SEP by any federal, state or local law or regulation, or by agreement, grant, or as injunctive relief in any other action in any forum.

b. EPA may, in its sole discretion, require information in addition to that described in the preceding Subparagraphs 35.a(1)-(5), in order to evaluate the SEP completion report.

c. After receiving the SEP Report, the United States shall notify Defendant whether or not it has satisfactorily completed the SEP. If Defendant has not completed the SEP in accordance with this Consent Decree, stipulated penalties may be assessed under Section XI (Stipulated Penalties) of this Consent Decree.

36. Disputes concerning the satisfactory performance of the SEP and the amount of eligible SEP costs may be resolved under Section XIII (Dispute Resolution). No other disputes arising under this Section shall be subject to Dispute Resolution.

37. Each submission required under this Section VII shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 47.

38. Any public statement, oral or written, in print, film, or other media, made by Defendant making reference to the SEP under this Decree shall include the following language: “This project was undertaken in connection with the settlement of an enforcement action, United States v. Heritage Thermal Services, taken on behalf of the U.S. Environmental Protection Agency under the Clean Air Act.”

39. For federal income tax purposes, Defendant agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditure incurred in performing the SEP.

40. [Reserved].

VIII. SUBMISSIONS AND EPA REVIEW OF DELIVERABLES

41. Unless otherwise provided herein, and except with respect to RMIs addressed in Paragraphs 14-22 above, where any provision of this Consent Decree requires or provides that Defendant submit any plan, report, procedure, protocol, or other deliverable (hereinafter each referred to as a “submission”) to EPA or where any provision of this Consent Decree specifically references this Section VIII, the submission shall be subject to the provisions of this Section.

42. For each submission, Defendant shall electronically submit to each EPA addressee listed in Section XVII (Notices) the submission with all relevant data in a widely-recognized electronic data format (such as .pdf or Microsoft® Excel).

43. Approval of Deliverables/Submissions Subject to EPA Approval. The following provisions shall apply to all submissions that are subject to EPA approval except for Defendant requests for extension of time to complete an RMI which are instead subject to the provision of Paragraph 16 above.

a. After review of any submission, EPA shall in writing:

- (1) approve the submission;
- (2) approve the submission upon specified conditions;
- (3) approve part of the submission and disapprove the remainder; or
- (4) disapprove the submission.

b. If the submission is disapproved in whole or in part, Defendant shall, within 45 Days of receiving EPA’s disapproval, either correct all deficiencies and resubmit the submission for approval or provide a written explanation of why Defendant does not agree to alter the submission consistent with EPA’s written requests as provided. If the parties cannot

agree within 15 Business Days regarding the submission, Defendant may invoke dispute resolution pursuant to Section XIII below.

c. Defendant may proceed to implement the submission or parts thereof before receiving EPA approval but may have to reverse the implementation if it is later disapproved.

44. Submissions Subject to EPA Comment. Unless otherwise provided herein, and except as provided in Paragraphs 14-22 regarding submissions related to RMIs, for submissions under any provision of this Consent Decree that are subject to EPA comment the following provisions shall apply.

a. EPA may provide written comments on the submission, in whole or in part, or may decline to comment.

b. If EPA provides written comments within 60 Days of receiving a submission, Defendant shall within 45 Days of receiving EPA comments either: (i) alter the submission consistent with EPA's written comments and resubmit the submission to EPA for comment in accordance with the procedures in this Paragraph 44; or (ii) provide a written explanation of why Defendant does not agree to alter the submission consistent with EPA's written comments. If the Parties cannot agree regarding the submission within 15 Business Days after EPA's receipt of Defendant's written explanation, Defendant may submit the matter for Dispute Resolution under Section XIII below.

c. If EPA comments on a submission subject to EPA comment more than 60 Days after receipt of the submission, Defendant shall within 45 Days of receiving such comments either: (i) alter the submission consistent with EPA's written comments; or (ii) where implementation of EPA comments would be unduly burdensome given the degree to which

Defendant has proceeded in implementing measures in the submission, invoke dispute resolution under Section XIII of this Decree.

45. Implementation of Submissions Subject to EPA Comment or Approval. Unless otherwise provided for herein, and except with respect to RMIs and RMI Reports pursuant to Paragraphs 14-22, Defendant shall implement the measures reflected in all submissions that have been approved or commented on by EPA as follows.

a. For submissions approved in whole or part by EPA, or commented on by EPA within 60 Days of receipt, Defendant shall implement the measures therein, or approved portion thereof, in accordance with the requirements therein as modified by EPA comments (if any) by the latter of: (i) the date(s) set forth in the submission; or (ii) 45 Days after receipt of EPA approval of or comments on the submission; or (iii) 45 Days after conclusion of any dispute resolution process regarding the submission.

b. For submissions where EPA submits comments more than 60 Days after receipt of the submission, Defendant shall implement the measures in the submission as follows.

(1) Defendant shall implement the measures in the submission as modified by EPA's comments unless it establishes that such implementation would be unduly burdensome given the degree to which Defendant has already proceeded to implement measures in the submission. In such case, Defendant shall invoke dispute resolution within 45 Days of receipt of EPA's comments and shall implement the measures in the submission within 45 Days of conclusion of the dispute resolution process that requires implementation of any measures in the submissions in accordance with EPA comments in whole or part.

(2) Unless Defendant invokes dispute resolution pursuant to Subparagraphs 43.b or 44.b above, Defendant shall implement measures in a submission in

accordance with the requirements therein as modified by EPA comments by the later of: (i) the date(s) set forth in the submission as modified by EPA comments; or (ii) 45 Days after receipt of EPA comments on the submission.

46. Stipulated Penalties as Applied to Submissions. Any stipulated penalties applicable to an original submission, as provided in Section XI, shall accrue during the applicable EPA review period, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of Defendant's obligations under this Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

47. Certifications of Submissions.

a. Wherever this Consent Decree requires that Defendant "certify" a notification, report, plan, statement, or other submission, such submission shall be signed by an official of Defendant and include the following certification:

I certify under penalty of law that this document and all attachments were 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 inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete as of the date of this signature. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

b. This certification requirement does not apply to emergency or similar notifications where compliance would be impractical. However, in such cases, Defendant shall certify the submission as soon as practicable.

48. Notwithstanding the review or approval by any agency of the United States of any plans, reports, policies or procedures formulated pursuant to the Consent Decree, Defendant will

remain solely responsible for compliance with those terms of the Consent Decree that apply to or require action or omissions by Defendant, all applicable permits, and all applicable federal, state, regional, and local laws and regulations.

49. Permits. Where any requirement under this Section requires Defendant to obtain a federal, state, or local permit or approval, Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. Defendant may seek relief under the provisions of Section XII (Force Majeure) for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if Defendant has submitted timely and complete applications and has taken all other actions necessary to obtain all such permits or approvals.

IX. SURVIVAL OF CONSENT DECREE REQUIREMENTS

50. No later than 60 Days after submittal of the SWAP Evaluation Report required by Paragraph 28.c, Defendant shall submit an application to amend any applicable Title V Permit application(s), or apply for an amendment of its Title V Permit, to include the following Consent Decree provisions.

- a. The synchronization requirements set forth in Paragraph 91 below;
- b. Continued implementation of the SWAP set forth in Paragraph 28 above and Appendix 4 if the SWAP Evaluation Report submitted pursuant to Subparagraph 28.c above shows that the average number of monthly THC Exceedances is equal to or less than 5.2 during the SWAP Time Period;
- c. The Feed Balancing Strategy developed under the FBP pursuant to Paragraph 27, if the FBS Evaluation Report shows that, during the Feed Balancing Time Period,

the number of SCC Pressure Exceedances resulting from Clinker Fall Events is equal to or less than 80% of the six-month average number of SCC Pressure Exceedances resulting from Clinker Fall Events for the time period of January 1, 2013, through December 31, 2017.

51. Defendant shall not include the Force Majeure and Dispute Resolution Sections of this Consent Decree (Sections XII and XIII) in any application for a Title V or other federally enforceable permit or request for a site-specific amendment to the Ohio SIP. For any requirement in this Consent Decree that provides for EPA approval of or comment on a submission, plan, or variance, the permit application shall propose that after termination of the Consent Decree, the Ohio EPA shall be substituted for EPA as the approving authority.

52. For the duration of this Consent Decree, Defendant shall provide the United States with a copy of each application for a Title V Permit amendment, or for amendment to a Title V Permit application, and any other federally enforceable permit or Ohio SIP amendment application required by Paragraph 50 above, as well as a copy of any permit proposed as a result of any such application to amend any requirement set forth in a Title V Permit that is based upon this Consent Decree.

53. Where any compliance obligation under this Section requires Defendant to obtain a federal, state, or local permit or approval, Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals including diligently pursuing a completeness determination pursuant to Ohio Administrative Code Chapter 3745-77-05. Any failure to obtain a required permit is not a violation of this Decree although as provided by Paragraph 112.c below, termination of this Consent Decree cannot occur until the required permits have been issued that contain the requirements and provisions listed in Paragraph 50 above.

54. Obligations that Shall Survive Consent Decree Termination. The requirements set forth in Paragraph 50 above survive termination of this Consent Decree.

X. REPORTING REQUIREMENTS

55. In addition to satisfying any reporting and submission requirements under its Title V Permit and the HWC MACT, Defendant shall submit to EPA a duplicate copy of each quarterly, semi-annual and annual report required by its Title V permit and a duplicate copy of each semi-annual Startup, Shutdown and Malfunction Report and Semi-Annual Excess Emissions and CMS Report required by the HWC MACT. Defendant shall provide a copy of the reports by email to the EPA Region 5 Air Enforcement Tracking Database at r5airenforcement@epa.gov with a copy to Linda Rosen at rosen.linda@epa.gov within 7 Business Days of submitting the reports to the Ohio EPA.

56. No later than the Date of Lodging, Defendant shall submit a statement to EPA certifying that it implemented the following Consent Decree requirements on or before the dates indicated below and has continued to meet these requirements through the certification:

a. that Defendant implemented Data Recording Modifications on or before March 30, 2018 in accordance with the requirements of Paragraph 90.

b. that Defendant implemented synchronization on or before June 30, 2017 in accordance with the requirements of Paragraph 91; and

c. that Defendant stopped incinerating refinery waste streams having the potential to contain FCC catalyst with more than 0.124% Lanthanum beginning on or before March 1, 2014,

57. In addition to the other reports or submissions required by this Consent Decree, Defendant shall submit the following periodic reports to EPA.

a. No later than July 31st and January 31st of each year after the Date of Lodging and continuing until termination of this Decree pursuant to Section XXI, Defendant shall submit by electronic mail a semi-annual report for the preceding six months that shall include a discussion of progress towards or completion of compliance milestones; problems encountered or anticipated, together with implemented or proposed solutions; status of permit applications (if applicable during the reporting period); and a discussion of Defendant's progress in satisfying its obligations in connection with the Lead Hazard Abatement SEP under Section VII including, at a minimum, a narrative description of activities undertaken; status of any construction or compliance measures, including the completion of any milestones set forth in the SEP Work Plan Appendix 5, and a summary of costs incurred in implementing the SEP since the previous report. The report shall also include a description of any deviation from the requirements of this Consent Decree and an explanation of the deviation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such deviation.

b. If Defendant deviates from, or has reason to believe that it may deviate from, any requirement of this Consent Decree, Defendant shall notify the United States of such deviation and its likely duration, in writing, within 10 Business Days of the Day Defendant first becomes aware of the deviation, with an explanation of the deviation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such deviation. If the cause of a deviation cannot be fully explained at the time the report is due, Defendant shall so state in the report. Defendant shall investigate the cause of the deviation and shall then submit an amendment to the report, including a full explanation of the cause of the deviation, within 30 Days of the Day Defendant becomes aware of the cause of the deviation. Nothing in this

Paragraph or the following Paragraph relieves Defendant of its obligation to provide the notice required by Section XII (Force Majeure).

58. Whenever any violation of this Consent Decree or of any applicable permits or any other event affecting Defendant's performance under this Decree, or the performance of its Facility, may pose an immediate threat to the public health or welfare or the environment, Defendant shall notify EPA orally or by electronic or facsimile transmission as soon as possible, but no later than 24 hours after Defendant first knew of the violation or event. This procedure is in addition to the requirements set forth in the preceding Paragraph.

59. All reports shall be submitted to the persons designated in Section XVII (Notices). Each report submitted by Defendant under this Section shall be certified by an official of Defendant pursuant to Paragraph 47 above.

60. The reporting requirements of this Consent Decree do not relieve Defendant of any reporting obligations required by the CAA or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

61. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

XI. STIPULATED PENALTIES

62. Defendant shall be liable for stipulated penalties to the United States for violations of this Consent Decree as specified below, unless excused under Section XII (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Decree, including any work plan or schedule approved under this Decree, according to all applicable requirements of this Decree and within the specified time schedules established by or

approved under this Decree. Unless otherwise provided, stipulated penalties accrue per violation per Day of non-compliance or delayed compliance.

63. Late Payment of Civil Penalty. If Defendant fails to pay any portion of the civil penalty required to be paid under Section IV (Civil Penalty) when due, Defendant shall pay a stipulated penalty of \$10,000 per Day for each Day that the payment is late.

64. Violations of Consent Decree Compliance and Investigation Requirements.

a. Beginning on the Effective Date, Defendant shall be liable for the penalties in the amounts set forth below for the following violations of the HWC MACT.

(1) THC Exceedances in violation of 40 C.F.R. §§ 1206 and 1219(a)(5) and SCC Pressure Exceedances in violation of 40 C.F.R. §§ 1206 and 1209(p):

Stipulated Penalty Amount Per Exceedance	No. of Exceedance in Six Month Period (Jan 1 through June 30 and July 1 through December 31 of each Calendar Year)
\$1000	1-10
\$1500	11-20
\$3000	21 and above

(2) Violation of OPLs in 40 C.F.R. §§ 1206 and 1209, except for SCC Pressure or THC Exceedances that are subject to stipulated penalties under Subparagraph 64.a(1) above:

Stipulated Penalty Amount Per Exceedance	No. of Exceedance in Six Month Period (Jan 1 through June 30 and July 1 through December 31 of each Calendar Year)
\$500	1-10
\$1000	11-20
\$2000	21 and above

b. RMI Requirements. Defendant shall be liable for stipulated penalties in the amounts set forth below for violations of the following Consent Decree requirements related to RMIs.

(1) Failure to conduct an RMI in accordance with the requirements of Paragraphs 14-18 of this Consent Decree:

Stipulated Penalty Amount Per RMI Per Day	Period of Delay or Non-Compliance
\$500	Days 1-14
\$1000	Days 15-30
\$2000	Days 31 and Beyond

(2) Failure to submit an RMI Report in accordance with the requirements of Paragraph 20 of this Consent Decree:

Stipulated Penalty Amount Per RMI Report Per Day	Period of Delay or Non-Compliance
\$300	Days 1-14
\$750	Days 15-30
\$1000	Days 31 and Beyond

(3) Failure to implement RMI corrective measure in accordance with the requirements of Paragraph 19 of this Consent Decree:

Stipulated Penalty Amount Per Corrective Measure Per Day	Period of Delay or Non-Compliance
\$750	Days 1-14
\$1500	Days 15-30
\$7500	Days 31 and Beyond

c. Defendant shall be liable for the following stipulated penalties for incineration of refinery waste streams having the potential to contain FCC catalyst with more than 0.124% Lanthanum or that otherwise do not meet the acceptability criteria in the most current WAP in violation of Paragraph 25 of this Consent Decree.

Stipulated Penalty Amount Per Shipment	No. of Shipments
\$1000	1-5
\$2000	5-10
\$10,000 or 1.5 times the economic benefit or profit gained from incineration (United States' Option)	10 and beyond

d. Feed Balancing Protocol and Strategy Requirements. Defendant shall be liable for stipulated penalties in the amounts set forth below for violation of the following Consent Decree requirements related to the Feed Balancing Protocol and Feed Balancing Strategy.

(1) Failure to implement the Feed Balancing Protocol or the Feed Balancing Strategy in accordance with the requirements of Paragraph 27 and Appendix 3, of this Consent Decree:

Stipulated Penalty Amount Per Violation Per Day	Period of Delay or Non-Compliance
\$500	Days 1-14
\$1000	Days 15-30
\$2000	Days 31 and Beyond

(2) Failure to submit the FBS Evaluation Report in accordance the requirements of Subparagraph 27.c of this Consent Decree:

Stipulated Penalty Amount Per Day	Period of Delay or Non-Compliance
\$300	Days 1-14
\$750	Days 15-30
\$1000	Days 31 and Beyond

e. Supplemental Waste Sampling Analysis Requirements. Defendant shall be liable for stipulated penalties in the amounts set forth below for violation of the following

Consent Decree requirements related to the Supplemental Waste Sampling Analysis Requirements, Temperature Study and Automation Study Requirements.

(1) Failure to implement the Supplemental Waste Analysis Protocol in accordance with the requirements of Paragraph 28 and Appendix 4 of this Consent Decree:

Stipulated Penalty Amount Per Violation Per Day	Period of Delay or Non-Compliance
\$500	Days 1-14
\$1000	Days 15-30
\$2000	Days 31 and Beyond

(2) Failure to submit the SWAP Evaluation Report in accordance with the requirements of Subparagraph 28.c of this Consent Decree:

Stipulated Penalty Amount Per Day	Period of Delay or Non-Compliance
\$300	Days 1-14
\$750	Days 15-30
\$1000	Days 31 and Beyond

(3) Failure to conduct the Temperature Study (if required by Paragraph 29) and/or Automation Study (if required by Paragraphs 29 and 30) in accordance with the requirements of by Paragraphs 29 and 30, as applicable, of this Consent Decree:

Stipulated Penalty Amount Per Study Per Day	Period of Delay or Non-Compliance
\$500	Days 1-14
\$1000	Days 15-30
\$2000	Days 31 and Beyond

(4) Failure to timely submit the Temperature Study Report and/or Automation Study proposal (if required by Paragraphs 29 and/or 30) in accordance with the requirements of Paragraphs 29 and/or 30 of this Consent Decree:

Stipulated Penalty Amount Per Report Per Day	Period of Delay or Non-Compliance
\$300	Days 1-14
\$750	Days 15-30
\$1000	Days 31 and Beyond

65. Violation of Information Collection, Retention and Reporting Requirements.

Defendant shall be liable for stipulated penalties in the amounts set forth below for violation of the following Consent Decree requirements related to the Information Collection, Retention, and Reporting.

a. Failure to measure, record, or retain exception reporting data in accordance with the requirements of Paragraph 90 and Appendix 1 of this Consent Decree:

\$300 per Day per data parameter listed on Appendix 1.

b. Failure to synchronize measurement and recording systems in accordance with the requirements of Paragraph 91 of this Consent Decree:

\$500 per Day not synchronized.

c. Failure to comply with any other information retention or reporting requirement under this Consent Decree that is not subject to stipulated penalties in Paragraphs 64 or 65.a-b above.

Stipulated Penalty Amount Per Violation Per Day	Period of Delay or Non-Compliance
\$250	Days 1-14
\$500	Days 15-30
\$1000	Days 31 and Beyond

66. Violation of SEP Requirements. Defendant shall be liable for the stipulated penalties in the amounts set forth below for violation of the following Consent Decree requirements related to the SEP.

a. Failure to complete an intermediate SEP milestone in accordance with the requirements set forth in Appendix 5 (including the retention of contractors (Appendix 5 Paragraph 8) and the initial report of Qualifying Properties (Appendix 5 Paragraph 9)):

Stipulated Penalty Amount Per Milestone Per Day	Period of Delay or Non-Compliance
\$300	Days 1-14
\$750	Days 15-30
\$1000	Days 31 and Beyond

b. Failure to complete and implement a SEP by the final SEP implementation/completion deadline in accordance with and Appendix 5.

Stipulated Penalty Amount Per SEP per Day	Period of Delay or Non-Compliance
\$500	Days 1-14
\$1000	Days 15-30
\$2000	Days 31-360
\$300,000 (flat amount, not per Day which is in addition to the stipulated penalties assessed above for Days 1-360 above)	Day 361 and beyond.

c. Failure to submit the SEP Completion Report in accordance with the requirements of Paragraph 35 of this Consent Decree.

Stipulated Penalty Amount Per Report Per Day	Period of Delay or Non-Compliance
\$250	Days 1-14
\$500	Days 15-30
\$1000	Days 31 and Beyond

67. Other Violations of this Consent Decree. Defendant shall be liable for the stipulated penalties in the amounts set forth below for failure to comply with any other Consent

Decree term, condition, or requirement that does not have a specific stipulated penalty set forth in Paragraphs 64-66 above.

Stipulated Penalty Amount Per Violation Per Day	Period of Delay or Non-Compliance
\$150	Days 1-14
\$300	Days 15-30
\$500	Days 31 and Beyond

68. 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 the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

69. Except as set forth in Paragraph 72 below, Defendant shall pay any stipulated penalty within 30 Days of receiving the United States' written demand.

70. Defendant shall pay stipulated penalties owing to the United States in the manner set forth and with the confirmation notices required by Paragraphs 10-11 above, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid.

71. The United States may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it under this Consent Decree.

72. Stipulated penalties shall continue to accrue as provided in Paragraph 0 above, during any dispute resolution under Section XIII below, but need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of EPA that is not appealed to the Court, Defendant shall pay accrued penalties determined to be owing, together with Interest, to the United States within 30 Days of the effective date of the agreement or the receipt of EPA's decision or order.

b. If the dispute is appealed to the Court and the United States prevails in whole or in part, Defendant shall pay all accrued penalties determined by the Court to be owing, together with Interest, within 60 Days of receiving the Court's decision or order, except as provided in Subparagraph 72c, below.

c. If any Party appeals the District Court's decision, Defendant shall pay all accrued penalties determined to be owing, together with Interest, within 15 Days of receiving the final appellate court decision.

73. Obligations Prior to the Effective Date. Upon the Effective Date, the stipulated penalty provisions of this Decree shall be retroactively enforceable with regard to any and all violations that have occurred after the Date of Lodging, 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.

74. If Defendant fails to pay stipulated penalties according to the terms of this Consent Decree, Defendant shall be liable for Interest on such penalties, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States from seeking any remedy otherwise provided by law for Defendant's failure to pay any stipulated penalties.

75. The payment of penalties and Interest, if any, shall not alter in any way Defendant's obligation to complete the performance of the requirements of this Consent Decree.

76. Non-Exclusivity of Remedy. Stipulated penalties are not the United States' exclusive remedy for violations of this Consent Decree. Subject to the provisions of Section XV (Effect of Settlement/Reservation of Rights), the United States expressly reserves the right to seek any other relief it deems appropriate for Defendant's violation of this Decree or applicable

law, including but not limited to an action against Defendant for statutory penalties, additional injunctive relief, mitigation or offset measures, and/or contempt. However, the amount of any statutory penalty assessed for a violation of this Consent Decree shall be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree.

XII. FORCE MAJEURE

77. “Force majeure,” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Defendant, of any entity controlled by Defendant, or of Defendant’s contractors, that delays or prevents the performance of any obligation under this Consent Decree despite 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 potential force majeure event (i) as it is occurring and (ii) following the potential force majeure event, such that the delay and any adverse effects of the delay are minimized. “Force Majeure” does not include Defendant’s financial inability to perform any obligation under this Consent Decree. Where Defendant is required to obtain a permit from Ohio EPA in order to comply with a requirement of this Consent Decree, Defendant’s failure to obtain, or a delay in obtaining such permit is a force majeure event only where Defendant has timely and diligently applied for such permit, provided all required and requested information, and pursued a completeness determination pursuant to Ohio Code Chapter 3745-77-05.

78. 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, Defendant shall provide notice orally or by electronic or facsimile transmission to the United States, within 72 hours of when Defendant first knew that the event might cause a delay. Within 7 Days

thereafter, Defendant shall provide in writing to the United States 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; 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 Defendant, such event may cause or contribute to an endangerment to public health, welfare or the environment. Defendant shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude 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. Defendant shall be deemed to know of any circumstance of which Defendant, any entity controlled by Defendant, or Defendant's contractors knew or should have known.

79. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by the United States 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 will notify Defendant in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

80. If the United States does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, the United States will notify Defendant in writing of its decision.

81. If Defendant elects to invoke the dispute resolution procedures set forth in Section XIII (Dispute Resolution), it shall do so no later than 15 Days after receipt of the United States' notice. In any such proceeding, 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 Defendant complied with the requirements of Paragraphs 77-78. If Defendant carries this burden, the delay at issue shall be deemed not to be a violation by Defendant of the affected obligation of this Consent Decree identified to the United States and the Court.

XIII. DISPUTE RESOLUTION

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

83. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Defendant sends the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 30 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations,

then the position advanced by the United States shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, Defendant invokes formal dispute resolution procedures as set forth below.

84. Formal Dispute Resolution. Defendant shall invoke formal dispute resolution procedures, within the time period provided in the Paragraph 83 above, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Defendant's position and any supporting documentation relied upon by Defendant.

85. The United States shall serve its Statement of Position within 45 Days of receipt of Defendant's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States' Statement of Position shall be binding on Defendant, unless Defendant files a motion for judicial review of the dispute in accordance with the following Paragraph.

86. Defendant may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XVII (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 10 Days of receipt of the United States' Statement of Position. The motion shall contain a written statement of Defendant's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

87. The United States shall respond to Defendant's motion within the time period allowed by the Local Rules of this Court. Defendant may file a reply memorandum, to the extent permitted by the Local Rules.

88. Standard of Review.

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree and specifically except as provided in Paragraphs 19 and 22 above regarding corrective measures selected in an RMI, in any dispute brought under Paragraph 84 above pertaining to a matter that involves the United States' exercise of discretion under this Consent Decree, the Defendant shall have the burden of proof based on the administrative record (including the Parties' Statements of Position) and the applicable standard of review as set forth in the Administrative Procedure Act, 5 U.S.C. § 500 et seq. shall apply.

b. Disputes Concerning EPA Comments on Corrective Measures. Any dispute regarding Corrective Measures shall be decided based on the standards set forth in Paragraphs 19 and 22 above.

c. Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 84 above, the Defendant shall bear the burden of demonstrating that its position complies with this Consent Decree.

89. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Defendant under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of non-compliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 72 above. If

Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XI (Stipulated Penalties).

XIV. INFORMATION COLLECTION AND RETENTION

A. Modified Data Recording and Synchronization

90. Data Recording Modifications. In addition to the recording requirements in any of the Facility's permits and the HWC MACT, Defendant shall revise its data collection and retention system to include the monitoring, recording, and reporting of the data for the parameters listed in Appendix 1 to this Decree ("Exception Reporting Data") in accordance with Subparagraphs 90.a-d below.

a. Defendant shall measure and record Exception Reporting Data for each parameter listed in Appendix 1 to this Consent Decree as follows:

(1) for every change of 0.1% of span of an analog instrument, Defendant shall measure and record a data point for the parameters in Appendix 1 at the frequency set forth in Appendix 1; and

(2) Defendant shall also measure and record a data point for the parameters in Appendix 1 each time the instrument trips an alarm threshold or a set point is changed.

b. Implementation Schedule. Defendant shall implement the revised data collection system set forth in this Paragraph 90 as follows.

(1) No later than March 30, 2018, Defendant shall continuously monitor and record Exception Reporting Data at the 0.1% change rate for THC and all temperature variables.

(2) No later than April 30, 2018, Defendant shall continuously monitor and record Exception Reporting Data at the 0.1% change rate for the remaining parameters set forth in Appendix 1 to this Decree.

c. Data Retention Requirements.

(1) Exception Reporting Data. Defendant shall retain Exception Reporting Data as follows.

(a) Defendant shall retain all Exception Reporting data for the following parameters listed in Appendix 1 for use in reports described in Paragraphs 29 and 30 above, to the extent those reports are required. Defendant shall retain the following Exception Reporting Data until 90 Days after the latest submission triggered by the requirements in Paragraphs 29 and 30 above:

- Kiln Temperature
- FW Burner TC
- SCC T
- High BTU gas
- FW Burner Firing Rate
- High BTU Lance
- Organic Lance
- Aqueous Flow
- Sludge Flow rate
- Slurry Flowrate
- Sludge Lance 2
- Direct tanker Sbay
- Direct tanker Ebay
- Ambient air to PA
- Primary air
- SCC oxygen flow
- SCC oxygen percentage
- SCC Pressure
- THC 100
- THC 500
- Process Flow
- Stack Flow

(b) When a MACT Exceedance occurs, Defendant shall retain the Exception Reporting Data covering at least the 24-hour period preceding the MACT Exceedance and use that data in conducting the RMI in accordance with Paragraphs 14-18 above. In these instances, Defendant shall retain the Exception Reporting Data covering the 24-hour period preceding the MACT Exceedance in accordance with Paragraphs 94-96 below.

(2) Waste Feed Database Data. Where raw data from the Waste Feed Database is used in an RMI conducted in accordance with Paragraphs 14-18 above, Defendant shall retain the raw data from the Waste Feed Database covering the 24-hour period preceding the MACT Exceedance in accordance with Paragraphs 94-96.

(3) Defendant shall retain all data not subject to Subparagraphs 90.c(1) and (2) above for at least the time such data is required to be retained by any current or future permit or rule.

91. Synchronization.

a. On or before the Date of Lodging, Defendant shall:

(1) ensure that all of its measurement and recording systems at the Facility are synchronized to the same date and time;

(2) date and time stamp all of the Exception Reporting Data measured and recorded pursuant to Paragraph 90 above with the accurate date and time;

(3) calculate time lags between system measurements (e.g., temperatures in the SCC versus THC at the stack) due to the process or to system response times on at least an annual basis or more frequently if warranted by changes in the process or system response times; and

b. Defendant shall retain the information calculated pursuant to Subparagraph 91.a until Defendant calculates a subsequent system measurement time lag.

B. Other Information Collection and Retention Requirements.

92. The United States and its representatives, including attorneys, contractors, and consultants, shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States in accordance with the terms of this Consent Decree;
- c. obtain samples and, upon request, splits of any samples taken by Defendant or its representatives, contractors, or consultants;
- d. obtain documentary evidence, including photographs and similar data; and
- e. assess Defendant's compliance with this Consent Decree.

93. Upon request, Defendant shall provide EPA or its authorized representatives splits of any samples taken by Defendant. Upon request, EPA shall provide Defendant splits of any samples taken by EPA.

94. Unless provided otherwise by Subparagraph 90.c above, until five years after the termination of this Consent Decree pursuant to Section XXI, Defendant shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate to Defendant's performance of its obligations under this Consent Decree. This information-retention requirement shall apply regardless of any

contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States, Defendant shall provide copies of any documents, records, or other information required to be maintained under this Paragraph.

95. At the conclusion of the information-retention period provided in the preceding Paragraph, Defendant shall notify the United States at least 90 Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States within the 90-Day period, Defendant shall deliver any such documents, records, or other information to EPA. Defendant may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal law. If Defendant asserts such a privilege, it shall provide the following: (i) the title of the document, record, or information; (ii) the date of the document, record, or information; (iii) the name and title of each author of the document, record, or information; (iv) the name and title of each addressee and recipient; (v) a description of the subject of the document, record, or information; and (vi) the privilege asserted by Defendant. Defendant shall make no claim of privilege or protection (other than claims of Confidential Business Information) regarding documents, records, or other information generated or submitted pursuant to the requirements of this Consent Decree.

96. Defendant may also assert that information required to be provided under this Section is protected as Confidential Business Information (“CBI”) under 40 C.F.R. Part 2. As to any information that Defendant seeks to protect as CBI, Defendant shall follow the procedures set forth in 40 C.F.R. Part 2.

97. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States pursuant to applicable federal laws,

regulations, or permits, nor does it limit or affect any duty or obligation of Defendant to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

98. This Consent Decree resolves the civil claims of the United States for the violations alleged in the Complaint filed in this action through the Date of Lodging.

99. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree. This Consent Decree shall not be construed to limit the rights of the United States to obtain penalties or injunctive relief under the CAA or implementing regulations, or under other federal laws, regulations, or permit conditions. The United States further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, Defendant's Facility, whether related to the violations addressed in this Consent Decree or otherwise.

100. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, civil penalties, and other appropriate relief relating to the Facility or Defendant's violations, Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 98 above.

101. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. Defendant is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Defendant's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States does not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that Defendant's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CAA, 42 U.S.C. § 7401, et seq., or with any other provisions of federal, State, or local laws, regulations, or permits.

102. This Consent Decree does not limit or affect the rights of Defendant or of the United States against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Defendant, except as otherwise provided by law.

103. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XVI. COSTS

104. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by Defendant.

XVII. NOTICES

105. Unless otherwise specified in this Decree, whenever communications (including notices, submissions, reports) are required by this Consent Decree, they shall be made in writing

and sent via email to the recipients as set forth below (unless the communication is too large for electronic submission in which case they shall be sent by mail or overnight service). Where any provision of this Consent Decree provides that a communication be sent to the United States, it shall be sent to both the Department of Justice and EPA. Where any provision of this Consent Decree provides that a communication be sent to EPA, Defendant need not send the communication to the Department of Justice.

As to the United States Department of Justice by email:

eescdcopy.enrd@usdoj.gov
Re: DJ # 90-5-2-1-11449

With a copy to:
Elizabeth Loeb
Elizabeth.Loeb@usdoj.gov

As to the United States Department of Justice by mail:

EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-2-1-11449

As to EPA by email:

R5enforcement@epa.gov

With a copy to:
Linda Rosen
Rosen.linda@epa.gov

As to EPA by mail:

Attn: Compliance Tracker, AE-18J
Air Enforcement and Compliance Assurance
Branch
U.S. Environmental Protection Agency Region 5
77 W. Jackson Boulevard
Chicago, Illinois 60604

As to Defendant by email:

Christopher T. Pherson, President
Email: cpherson@heritage-thermal.com

With copy to:
Jim Spaanstra, Esq.
Olivia Lucas, Esq.
Email: jim.spaanstra@faegrebd.com
Olivia.lucas@faegrebd.com

As to Defendant by mail:

Christopher T. Pherson, President
Heritage Thermal Services
1250 St. George Street
East Liverpool, Ohio 43920

With copy to:
Jim Spaanstra, Esq.
Olivia Lucas, Esq.
Faegre Baker Daniels, LLP
1700 Lincoln Street, Suite 3200
Denver, CO 80203

106. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

107. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVIII. EFFECTIVE DATE

108. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket; provided, however, that Defendant hereby agrees that it shall be bound to perform duties scheduled to occur prior to the Effective Date. In the event the United States withdraws or withholds consent to this Consent Decree

before entry, or the Court declines to enter the Consent Decree, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

XIX. RETENTION OF JURISDICTION

109. The Court shall retain jurisdiction over this case for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, or effectuating or enforcing compliance with the terms of this Decree.

XX. MODIFICATION

110. The terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Decree, it shall be effective only upon approval by the Court.

111. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XIII (Dispute Resolution), provided, however, that, instead of the standard of proof provided by Paragraph 88, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XXI. TERMINATION

112. This Consent Decree may be terminated only when all of the following conditions have been satisfied:

a. Defendant has completed and maintained satisfactory compliance for a period of one year with the requirements of Section V (Compliance Requirements), Section VI (Investigations), Section VII (SEP), Section X (Reporting Requirements), and Section XIV (Information Collection and Retention), including applicable Appendices;

b. Defendant has paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree; and

c. Federally enforceable and Title V permits have been issued that contain all the provisions in this Consent Decree required by Section IX (Survival of Consent Decree Requirements) to be included in such federally-enforceable permits.

113. Termination Procedures.

a. Once the conditions set forth in Paragraph 112 above have been satisfied, Defendant may serve upon the United States a Request for Termination, stating that Defendant has satisfied those requirements, together with all necessary supporting documentation.

b. Following receipt by the United States of Defendant's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether Defendant has satisfactorily complied with the requirements for termination of this Consent Decree as set forth in Paragraph 112 above. If the United States agrees that the Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Decree.

c. If the United States does not agree that the Decree may be terminated or does not respond to Defendant's Request for Termination within 90 Days, Defendant may invoke dispute resolution under Section XIII. However, Defendant shall not seek dispute resolution of any dispute regarding termination until 90 Days after service of its Request for Termination.

XXII. PUBLIC PARTICIPATION

114. This Consent Decree shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent

Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Defendant consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified Defendant in writing that it no longer supports entry of the Decree.

XXIII. SIGNATORIES/SERVICE

115. Each undersigned representative of Defendant 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.

116. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. Defendant agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons. Defendant need not file an answer to the complaint in this action unless or until the Court expressly declines to enter this Consent Decree.

XXIV. INTEGRATION

117. 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, the Parties acknowledge that there are no representations,

agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

XXV. FINAL JUDGMENT

118. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States and Defendant. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Federal Rules of Civil Procedure 54 and 58.

XXVI. APPENDICES

119. The following Appendices are attached to and part of this Consent Decree:

“Appendix 1” is the Exception Reporting Data.

“Appendix 2” is the Revised MACT Investigation Template.

“Appendix 3” is the Feed Balancing Protocol.

“Appendix 4” is the Supplemental Waste Analysis Protocol.

“Appendix 5” is the Lead Hazard Abatement SEP Work Plan.

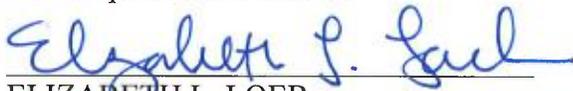
Dated and entered this __ day of _____, 20__

UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

Date: October 10, 2018

/s/ Bruce S. Gelber
BRUCE S. GELBER
Deputy Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

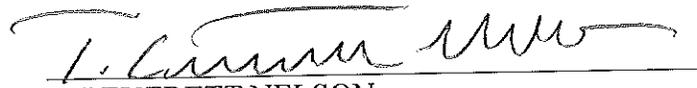

ELIZABETH L. LOEB
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JUSTIN E. HERDMAN
United States Attorney
Northern District of Ohio

/a/ Steven J. Paffilas
PAFFILAS, STEVEN J
Assistant United States Attorney
Northern District of Ohio

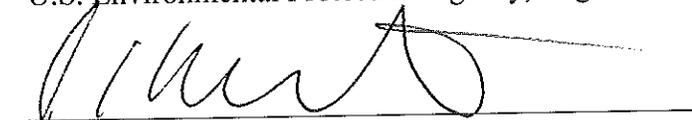
FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

Date: 10/12/2018



T. LEVERETT NELSON
Regional Counsel
U.S. Environmental Protection Agency, Region 5

10/5/2018



JOHN C. MATSON
Associate Regional Counsel
U.S. Environmental Protection Agency, Region 5
Office of Regional Counsel

FOR HERITAGE THERMAL SERVICES, INC:

Date: 9/20/18



CHRISTOPHER T. PHERON
President
Heritage Thermal Services
1250 St. George Street
East Liverpool, Ohio 43920
Tel: 330-386-2173
Email: cpherson@heritage-thermal.com

Appendix 1: Exception Reporting Data

Tag #	Type	Short Description 1	Short Description 2	Area	Sub Area	Long Description	PV Span	PV EU String	Analyzer Reporting Frequency (Seconds)
TI-4300	Anal og	KILN TEMP		Combusti on		Kiln Temperat ure	2850	DEG F	1
TI-3510	Anal og	FW BURNER TC		Combusti on	Gas Burne r	Gas Burner Temperat ure	2850	DEG F	1
TI-4503	Anal og	BOILER INLET	TEMP	Combusti on	SCC	Boiler Inlet Temperat ure	2168	DEG F	1
TI-4310 C	Anal og	SCC TEMPERAT URE		Combusti on	SCC	SCC Temperat ure	2850	DEG F	1
SI-4000	Anal og	KILN ROTATE	SPEED	Combusti on		Kiln Speed	0.5	RPM	1
WI-3105 B	Anal og	LAST CRANE FEED	WEIGH T	Combusti on			1000 0	LBS	60
FI-3500	Anal og	FW BURNER	FIRING RATE CNTL	Combusti on	Gas Burne r		67.4	MMBT UH	1
FI-4920	Anal og	HIGH BTU GAS	FLOW	Combusti on	Lance	Gas Flow - High BTU	60	MMBT UH	1
HS-3112	MSD D	HIGH BTU PURGE VLV		Combusti on	Lance		N/A		60
HS-3122	MSD D	ORGANIC PURGE VLV		Combusti on	Lance		N/A		60

Tag #	Type	Short Description 1	Short Description 2	Area	Sub Area	Long Description	PV Span	PV EU String	Analyzer Reporting Frequency (Seconds)
HS-3142	MSD D	FW AQ PURGE VLV		Combustion	Lance		N/A		60
HS-3132	MSD D	SLUDGE PURGE VLV		Combustion	Lance		N/A		60
HS-3152	MSD D	SLURRY PURGE VLV		Combustion	Lance		N/A		60
HS-3162	MSD D	SLUDGE LANCE 2	PURGE VLV	Combustion	Lance		N/A		60
HS-3129	MSD D	DIRECT FEED SLG	PURGE VLV	Combustion	Lance		N/A		60
HS-3157	DD	SLURRY DIRECT	DRUM PURGE VLV	Combustion	Lance		N/A		60
FI-3110	Anal og	HIGH BTU LNC	FEED	Combustion	Lance	Lance Flow - High BTU	10000	LBHR	1, 45
FI-3120	Anal og	ORGANIC	LANCE FLOW	Combustion	Lance	Lance Flow - Organic	8000	LBHR	1
FI-3140 B	Anal og	AQUEOUS FLOW		Combustion	Lance	Lance Flow - Aqueous	8000	LBHR	1, 30, 45
FI-3130	Anal og	SLUDGE FLOW RATE		Combustion	Lance	Lance Flow - Sludge	15000	LBHR	1, 30, 45
FI-3150 B	Anal og	SLURRY FLOW RATE		Combustion	Lance	Lance Flow - Slurry	15000	LBHR	1, 30, 45
FI-3160	Anal og	SLUDGE LANCE 2	FLOW RATE	Combustion	Lance	Lance Flow - Sludge 2	15000	LBHR	30, 45

Tag #	Type	Short Description 1	Short Description 2	Area	Sub Area	Long Description	PV Span	PV EU String	Analyzer Reporting Frequency (Seconds)
FI-3900	Anal og	DIRECT TNKR (SBAY)	FLOW	Combusti on	Lance	Lance Flow - Direct Tanker	8000	LBHR	45
FI-4000	Anal og	DIRECT TNKR (EBAY)	FLOW	Combusti on	Lance	Lance Flow - Direct Tanker	8000	LBHR	45
ZI-8667 A	Anal og	AMBIENT AIR TO PA	FAN POSITI ON	Combusti on	Prima ry Air		100	%	1
FI-3410 A	Anal og	PRIMARY AIR	FLOW TOTAL	Combusti on	Prima ry Air	Primary Air	2000 0	SCFM	1
FI-1530	Anal og	SCC OXYGEN FLOW		Combusti on	SCC		1000	SCFM	1
AI-1510	Anal og	SCC OXYGEN %		Combusti on	SCC		20.9	%	1
PI-4500 A	Anal og	SCC STEAM NOZZLE	EAST	Combusti on	SCC		400	PSI	1
PI-4500 B	Anal og	SCC STEAM NOZZLE	WEST	Combusti on	SCC		400	PSI	1
PI-4300	Anal og	SCC PRESSURE		Combusti on	SCC		6	IN H2O	1
AI-7850	Anal og	Stack THC - 100		CEM			100	PPM	1
AI-7851	Anal og	Stack THC - 500		CEM			500	PPM	1

Tag #	Type	Short Description 1	Short Description 2	Area	Sub Area	Long Description	PV Span	PV EU String	Analyzer Reporting Frequency (Seconds)
AI-6652	Anal og	Carbon Monoxide - CO		CEM			750	PPM	10
AI-7815	Anal og	Stack Opacity		CEM			100	%	6-8
AI-7840	Anal og	Stack NOx		CEM			250	PPM	1
AI-7860	Anal og	Stack Dry O2	Selecte d	CEM			25	%	1
AI-7865	Anal og	Stack Wet O2	Selecte d	CEM			25	%	1
AI-7880	Anal og	Stack SO2		CEM			100	PPM	5
FI-7510	Anal og	Process Flow	Selecte d	CEM			1000 00	SCFM	30
FI-7710	Anal og	Reheat Flow	Meter	CEM			5000 0	SCFM	30
FI-7805	Anal og	Stack Flow	Meter	CEM			1000 00	SCFM	30

Appendix 2: RMI Checklist



Date & Time of MACT Event: _____ / _____ AM/PM Date of Initial Investigation: _____
 Malfunction Operator Error (Must occur within 5 Days of MACT Event)

APPENDIX 2: REVISED MACT INVESTIGATION DATA COLLECTION CHECKLIST

<p>EMISSION OR OPL EXCEEDED:</p>	<p><input type="checkbox"/> Total Hydrocarbons <input type="checkbox"/> Min. Lance Atomiz. pressure <input type="checkbox"/> Max. SCC Pressure (seals) <input type="checkbox"/> Min. Kiln Temp (TI-4300A/B) <input type="checkbox"/> Min. SCC Temp (TI-4310A/B) <input type="checkbox"/> Max. Temp at ESP Inlet (TI-6002A/B) <input type="checkbox"/> Max. Process Gas Flowrate (FI7510A/B) <input type="checkbox"/> S.D. Carbon Feedrate <input type="checkbox"/> S.D. Carbon Feed Pressure <input type="checkbox"/> Quench Carbon Feedrate</p>	<p><input type="checkbox"/> Quench Carbon Feed Pressure <input type="checkbox"/> Min. Ring Jet Pressure Drop (DPI-7401) <input type="checkbox"/> Min. Scrubber Liq. Flowrate (FQI-7201) <input type="checkbox"/> Min. Ring Jet Liq. Flowrate (FI-7404A/B) <input type="checkbox"/> Min. Ring Jet Blowdown (FI-7403) <input type="checkbox"/> Min. Ring Jet Tank Level (LIC-7401) <input type="checkbox"/> Min. Scrubber Feed Pressure <input type="checkbox"/> Min. Scrubber Pressure Drop <input type="checkbox"/> Min. Scrubber (3rd Stage) pH (AI-7307A/B)</p>	<p><input type="checkbox"/> Max. Pumpable Waste Feedrate <input type="checkbox"/> Max. Total Waste Feedrate <input type="checkbox"/> Max. Ash Feedrate <input type="checkbox"/> Max. Total Chlorine Feedrate <input type="checkbox"/> Max. Total Ssemivolatile Metals Feedrate <input type="checkbox"/> Max. Total Low Volatile Metals Feedrate <input type="checkbox"/> Max. Total Pmpable L.V. Metals Feedrate <input type="checkbox"/> Max. Total Mercury Feedrate</p>
<p>EXCEPTION DATA: (24 hrs preceding event)</p>	<p><input type="checkbox"/> Primary Air Flow <input type="checkbox"/> Ambient Air to PA <input type="checkbox"/> SCC Pressure <input type="checkbox"/> Sludge Lance 2 Flow <input type="checkbox"/> High BTU Lance Flow <input type="checkbox"/> Organic Lance Flow <input type="checkbox"/> Aqueous Lance Flow</p>	<p><input type="checkbox"/> Sludge Lance Flow <input type="checkbox"/> Slurry Lance Flow <input type="checkbox"/> HI BTU Gas <input type="checkbox"/> FW Burner Firing Rate <input type="checkbox"/> FW Burner TC <input type="checkbox"/> Weights from E Bay <input type="checkbox"/> Weights from South Bay</p>	<p><input type="checkbox"/> Kiln Temperature <input type="checkbox"/> SCC Temperature <input type="checkbox"/> SCC Oxygen Flow <input type="checkbox"/> SCC Oxygen % <input type="checkbox"/> THC100 <input type="checkbox"/> THC500 <input type="checkbox"/> Process Flow <input type="checkbox"/> Stack Flow</p>
<p>SUMMARIES:</p>	<p><input type="checkbox"/> Exception Data</p>	<p><input type="checkbox"/> Waste Feed</p>	<p><input type="checkbox"/> Root Cause</p>

1 – Requires capital of more than \$50k for ADDITIONAL equipment; requires permit modification to either Title V or RCRA; and/or a substantial revision to waste acceptance for a particular waste.



Date & Time of MACT Event: _____ / _____ AM/PM Date of Initial Investigation: _____
 Malfunction Operator Error (Must occur within 5 Days of MACT Event)

APPENDIX 2: REVISED MACT INVESTIGATION DATA COLLECTION CHECKLIST

OTHERS:	<input type="checkbox"/> HTS MACT Report	<input type="checkbox"/> Raw Data attached <input type="checkbox"/> Exception Data <input type="checkbox"/> Waste Feed Data	
CORRECTIVE MEASURES IMPLEMENTED:	<input type="checkbox"/> No Corrective Action Identified	<input type="checkbox"/> Corrective Action Taken Within 15 Days of completion of RMI <input type="checkbox"/> Other deadline approved by EPA <input type="checkbox"/> Corrective Measure implemented in 90 days ¹	<input type="checkbox"/> Other Approved deadline <input type="checkbox"/> 60 day <input type="checkbox"/> 90 day <input type="checkbox"/> 120 day <input type="checkbox"/> Other _____
SCC PRESSURE OPL EXCEEDANCE:	<input type="checkbox"/> Result of Clinker Fall	<input type="checkbox"/> Sample has been retained <input type="checkbox"/> Visual analysis <input type="checkbox"/> Photographs <input type="checkbox"/> XRF analysis	<input type="checkbox"/> Not the result of Clinker Fall
EXTENSION REQUESTED:	<input type="checkbox"/> Yes <input type="checkbox"/> Approved in whole <input type="checkbox"/> Approved in Part <input type="checkbox"/> Disapproved	<input type="checkbox"/> No	<input type="checkbox"/> Sections Extension Requested

1 – Requires capital of more than \$50k for ADDITIONAL equipment; requires permit modification to either Title V or RCRA; and/or a substantial revision to waste acceptance for a particular waste.

Appendix 3: Feed Balancing Protocol

This Appendix sets forth the Waste Analysis and Feed Balancing Procedures that HTS shall implement under Paragraph 27 of the Consent Decree.

I. Background: SCC Study and Recommendations

An engineering study was completed by a refractory expert to better understand factors that could lead to exceedances of the Secondary Combustion Chamber (SCC) pressure operating parameter limit (OPL). HTS transmitted the SCC Study to EPA on February 12, 2018. As part of the SCC Study, a review of the thermochemical characteristics of slag collected from the kiln and SCC discharges was completed based on historical data.

Through this review of slag thermochemistry, the Study identified silicon as the predominant glass forming element in the slag. As a result, the review centered on silicon-based glass-forming thermochemistry. The Study also identified elements that would increase the structural integrity of slag including calcium, aluminum, and magnesium.

The Study identified fluxes as elements that would affect the melting point of slag by lowering it. Fluxes in this case include the elements potassium, lithium, sodium and iron (the “elements of interest”). The study also indicated that fluoride can strip silicon containing waste buildup.

A lower slag melting point could potentially create a more fluid slag and less slag buildup, which could potentially help reduce SCC pressure OPL exceedances. However, fluxes delivered to the unit at increased concentrations could allow slag to slough from the SCC walls at a progressively unpredictable rate. Therefore, the Study recommended that a feed balancing strategy might help the steady sloughing of slag from the SCC walls. The Study also identified existing data gaps that relate to the elements of interest that would need to be addressed in order to establish a feed balancing strategy. The Study also recommended alternating silicon based liquid wastes and fluoride containing liquid waste into the incinerator to help remove slag.

Based on review and discussions around the SCC Study, some general observations were made that would support the Feed Balancing Strategy developed pursuant to this Protocol. First, solid particulate from high ash bulk feeds were the most likely contributors of particulate that could impact by sticking on the walls of the SCC. Second, elements that were introduced through a liquid waste stream that was atomized into the combustion chamber might also be expected to affect the thermochemical characteristics of the slag materials on the walls of the SCC. These observations support further analysis of the amount of elements of interest contained in high ash bulk feeds and liquid wastes fed through the lances.

HTS does not currently perform on-site waste analysis for the elements of interest. HTS will have to begin conducting on-site waste analysis for the elements of interest to establish an elemental feeding protocol. Actively managing the elements of interest will require expanded analysis of samples of high ash bulk solids and of all bulk liquids, as well as additional break downs of packaged liquid wastes that are pumped directly into the combustion unit.

Once the dataset of wastes including the elements of interest is established, it can be reviewed on an ongoing basis in order to spread out the elemental loading of these materials by way of the bulk solids and liquid injection lances. In order to manage this, the results of the analysis of the waste will be reviewed to determine a feed strategy for material on hand that spreads the loading of these elements. The objective will be to manage inputs so that the waste on hand is fed such that large quantities of fluxes are not fed in a slug fashion. The closer tracking of these elements and careful consideration of system response (SCC pressure events and review of the resulting slag/ash), will inform what levels of the elements of interest can be fed successfully.

II. Feed Balancing Protocol (Protocol) To Be Implemented Under the Consent Decree

Pursuant to Paragraph 27 of the Consent Decree, HTS will implement the following Feed Balancing Protocol.

A. Modifications of the Operating System to Enable Extended Sample Analysis

1. HTS will analyze 100% of the deliveries of soil and other high ash (>75% solids by weight) bulk solid wastes for elemental iron, potassium, sodium and lithium content (the “elements of interest”). HTS will analyze all containers, with exceptions for safety (i.e., sampleable containers).
2. HTS will also analyze 100% of the sampleable bulk and drummed liquid materials that will be introduced to the rotary kiln through a lance. These samples will be analyzed for the elements of interest.
3. Templates requiring the supplemental waste analysis necessary to implement this Protocol will be added to the HTS laboratory information system (LIMS) to provide data regarding the contents of the elements of interest on a load by load and container by container level so that feed balancing can be developed using the on-hand inventory data.

These steps are anticipated to take place over 90 Days.

B. Expansion of Internal System Planning Tools

1. Kiln Scheduler Modifications

Waste is normally scheduled for delivery into the kiln via the waste scheduler program. In order to institutionalize the planning thresholds determined by the Feed Balancing Strategy as developed in Section D, below, and expand existing tracking and planning tools to support the leveling of the elements of interest, HTS will modify the kiln

scheduler. The kiln scheduler program is currently updated daily with the day's available waste inventory.

The existing scheduler programming for the kiln will be modified to include the elements of interest. The elements of interest will be added to this tool so that production planning personnel will have visibility into relative quantities planned from waste inventory.

2. Control Room Tracking Tools

HTS will add totalizing tools that support feed balancing within the best operable range for each of the elements of interest to the existing visuals in the control room. This will provide operators with additional inputs to manage wastes that contain these elements developed under the Feed Balancing Strategy discussed in Section D, below. The MACT monitoring system that is currently in place in the control room is used to track and manage specific materials fed to the kiln. This system will be modified to include additional metals tracking. While these elements are not MACT specified, this is the best tool available for HTS to establish a balancing protocol and track feed progress on a timed basis. These tools are understood by the operators and their managers so introduction and training will not be complicated.

These activities will take place over 90 Days.

C. Historical Feed Data Review

The conclusions from the SCC Study were based on a partial dataset for feeds, including data from November of 2017 as well as other periods where the flux feeds appeared to be concentrated over a timeframe and occurrences of SCC events. This partial dataset provides some insight as to levels of some of the elements that have been successfully processed through the SCC without pressure events. The data obtained from this review will serve as an acceptable minimum base load case for certain elements as the protocol is developed.

However, HTS will continue to build the dataset of feed content of the elements of interest, based on inventory available, via the extended sampling discussed above. HTS will gather data for 90 Days to supplement the dataset from the SCC Study and will use that dataset to establish the initial Feed Balancing Strategy, as discussed below.

D. Development of Feed Balancing Strategy

HTS personnel will execute the following steps to develop a strategy for balancing feeds, based on available inventory, to try to manage feed inputs to the system so that the waste on hand is fed in a manner that would avoid large quantities of fluxes being fed in a slug fashion:

1. Continued dataset development.

HTS will institutionalize the sample, analysis and data accumulation process for data on the elements of interest in its inventory tracking and management system, as discussed in Section A, above. As this data is produced, it will be reviewed by facility Materials Management and Production Control personnel on an ongoing basis to assess the relative quantities of the respective elements of interest on site at any point in time.

2. Feed Balancing Strategy Development.

Based on the historical feed data review, discussed in Section C, as an initial starting point, and as further informed by the inventory data available for the facility as developed on a continuing basis during the continued dataset development described in Step 1 of this Section D, an initial Feed Balancing Strategy will be developed to spread the available elements out over a one week planning timeframe. HTS will begin to implement the Initial Feed Balancing Strategy after completion of the dataset development discussed in Section C.

The Feed Balancing Strategy will be dynamic. As new wastes are received at the plant and analyzed, they will be incorporated into the planning process with the objective being a balanced feed of these elements as available.

Appendix 4: Supplemental Waste Analysis Protocol

This Appendix sets forth the Supplemental Waste Analysis Protocol that HTS shall implement under Paragraph 28 of the Consent Decree.

I. Background: HTS Current Sampling and Waste Analysis Procedures

Under HTS' Waste Analysis Plan (WAP) developed and implemented pursuant to Ohio Administrative Code 3745-54-13(B), HTS and the waste generator communicate about the nature of the waste prior to the waste being sent to HTS. As part of these pre-acceptance procedures, the generator completes a Waste Profile Sheet that describes the physical and chemical characteristics of the waste, among other descriptors. If required, generators also provide samples of the subject waste to HTS, and HTS performs profile testing on the waste before the waste is shipped. Once the waste is profiled via these pre-acceptance procedures, HTS develops processing instructions for the waste. (HTS may also reject waste at this pre-acceptance stage.) HTS develops the processing instructions to ensure that the waste is handled safely and is fed into the incineration process in a manner that will be compliant with the facility's air permit.

Once HTS receives the profiled waste at its facility, HTS performs on-site waste analysis per its WAP. HTS' post-acceptance/on-site waste analysis consists of two important aspects:

1. Inspection - opening the containers and verifying the physical contents of the waste; and
2. Sampling - pulling a sample of that waste and running laboratory tests to verify the chemical contents of the waste.

The WAP requires that HTS visually inspect and sample 10% of received non-bulk waste containers ("10% Individual Sampling") and 100% of bulk waste containers, with exceptions for safety.¹ HTS enters the physical characteristics of the contents of the received waste into the operations system for each container sampled (for example, liquid, solid, sludge) (the **inspection code**). HTS then uses the chemical analysis from the sample of the received waste (the **fingerprint**), together with the physical characteristics from the inspection code for the received waste to determine processing methods for each container received. In an ideal situation, the profile tests and physical state provided by the generator match the fingerprint tests and shipment physical state analyses performed by HTS upon receipt of the waste. If this is the case, then HTS uses the processing instructions developed at the time of the pre-acceptance profile to process those containers.

If, however, there is a discrepancy in the physical state and/or sample fingerprint data as compared to the pre-acceptance profile, then a discrepancy is identified and HTS places the containers on hold in the operating system. This hold prevents the containers from being processed until the discrepancy is resolved. Resolution could involve a range of actions,

¹This sampling and inspection is performed after the waste is received and is in addition to pre-receipt characterization and sampling requirements. These pre-receipt requirements do not change under this Protocol.

including assigning a new profile, updating the processing instructions for those containers, or rejecting the containers back to the generator.

Based on waste matrices, it is possible that HTS can take the first step (inspection), but not the second (sampling). For example, there are waste types that are not amenable to chemical analysis or for which chemical analysis would not be beneficial.² HTS finds, however, that it is still beneficial to open those drums and verify that the physical contents match what was profiled for that waste stream in the pre-acceptance procedures. In these cases, the first step of visual inspection will occur but analytical testing will not.

II. Supplemental Waste Analysis Protocol To Be Implemented Under the Consent Decree

Pursuant to Paragraph 28 of the Consent Decree, HTS shall implement the following Supplemental Waste Analysis Protocol in tandem with the most current versions of the WAP and the Standard Operating Procedures (SOPs). Where any requirements of this Protocol conflict with the WAP or SOPs, this Protocol shall govern.

A. Visual Inspection and Sampling of Non-Bulk Wastes

1. HTS shall increase its visual inspection of non-bulk waste containers to 75% of all containers, with exceptions for safety. Visual inspection of each container's physical contents will be noted as an inspection code in operating systems and tied specifically to that container. HTS will compare these codes to the inspection code applied to the waste stream at the initial pre-acceptance profile stage. Inspection codes that do not match what was profiled will be flagged for hold by the operating system and reviewed by plant personnel for processing instructions and/or off-specification issues. HTS shall program its operating system to notify personnel which containers are to be evaluated.
2. Sampling - For those waste streams that are deemed sampleable, additional samples will be pulled from inspected container shipments of the same waste stream, excluding certain waste types already excluded from sampling due to safety and other considerations, such as noted in Footnote 2.
 - a. Individual Sampling. HTS will take samples from 10% of all non-bulk waste containers and from at least one container in each waste stream. These samples will be individually processed pursuant to Section C below (Individual Sampling).
 - b. Composite Sampling. HTS will take at least one sample from each container inspected pursuant to Paragraph 1 above with deviations based only on safety or sampleability. These samples will be composited with each other and subject to sampling (Composite Sampling) pursuant to

²For example, consumer products, debris-chunks of contaminated metal, concrete, glass, rags or other soft debris, Labpacks (i.e. waste generated by laboratories), and empty drums with chemical residual.

Section C below.

B. Container Receiving Procedures

HTS container receiving personnel will follow the following procedures sequentially in receiving container shipments:

1. Unload containers from van trailers.
2. Verify piece count and container type with the manifest.
3. Place each container on sampling conveyors and/or sampling areas.
4. Weigh each container.
5. Match generator's label information with approved waste stream and manifest.
6. Apply HTS label to each container.³
7. Open containers subject to visual inspection pursuant to Section A.1 above, except for those labeled "Do Not Open" and visually inspect contents.
8. Enter the physical appearance (inspection code) for the container in the operating system.
9. Pull samples from containers in accordance with the sampling requirements set forth in Section A.2 above, except for those labeled Do Not Open or Do Not Sample.
10. Place pulled samples in sample containers (one container for each sample pulled) that are labeled with the container's unique identification number and corresponding barcode.
11. Deliver samples to the lab for fingerprint testing, as set forth in Section C below.
12. Store the containers while testing pursuant to Section C below is performed (while in storage, the operating system puts the containers on hold).

C. Testing of Container Samples

HTS Laboratory personnel will comply with the following procedures in testing container samples:

³The operating system will generate labels for each container received in a shipment. Four different types of labels will be generated. One type is for the 10% Individual Sampling containers. These are randomly selected by the operating system. The second type will be for the additional samples. There will be an identifier on the labels so it is clear to the laboratory which samples subject to Individual Sampling and which can be composited prior to testing (Composite Sampling). The third type will be for waste streams that are to be opened and visually inspected but not sampled. The fourth type will be for waste streams that are unsafe to sample. These will not be opened.

1. Log receipt of container samples into the LIMS by scanning the unique barcode label affixed to each sample bottle. This ties the waste stream profile, unique container identification number and sample together in the information system.
2. Inspect the labels to determine which samples are subject to Individual Sampling and which are subject to Composite Sampling.
3. Those samples that are subject to Individual Sampling pursuant to Section A.2.a above will be tested and logged following the WAP. Each sample that is subject to Individual Sampling in the WAP will be tested individually.
4. Composite Sampling.
 - a. Samples subject to Composite Samplings pursuant to Section A.2.b above, will be visually inspected. Those samples from the same shipment that are of the same physical state and match the waste stream profile-identified physical state will be composited into one sample (composite sample). If different physical states are observed within the same shipment and waste stream, then those samples within the same waste stream that have the same non-conforming physical state will be composited and tested as described above.
 - b. The composite samples will be analyzed using the same tests as performed in the Individual Sampling (i.e., fingerprint samples).
5. HTS personnel will enter all sampling results into the Laboratory Information Management System (LIMS).
6. A chemist will review all sampling results. Where the sampling results do not conform to the waste stream profile, such wastes will be placed on hold in the operating system and will be followed up by the off-specification coordinator to resolve with the generator.
7. Release only those wastes for processing where the sample(s) conform(s) to the waste stream profile for the containers from which the sample(s) was/were taken.

D. Feed of Container Contents into Incineration Process.

Production personnel will feed the containers into the incineration process as follows:

1. HTS production personnel will use sampling results in the LIMS and visual inspection information to determine the most appropriate processing method by individual container.
2. Process conforming containers in accordance with the processing instructions that HTS developed for the waste stream. These types of instructions tell how to

achieve safe and compliant incineration. These types of instructions may include but are not limited to:

- Pumping liquids out of the container into a tank.
 - Pumping liquids out of the container directly into the kiln. In this case, pump feed rates may be identified based on constituents.
 - Pouring liquids into smaller containers for feeding these smaller containers and their contents directly into the kiln. In this case, weights and/or volumes will be specified for each container feed. In addition, instructions to solidify contents with specific solidification agent may also be specified.
 - Dumping solids out of the containers for feeding into the bulk solids pits prior to being fed into the kiln.
 - Pumping liquids out of the container into either a tank or directly into the kiln and feeding a solid heel left in the container into the kiln.
3. Process non-conforming containers once the off-specification coordinator has resolved the non-conformance with the generator. These containers may be released from hold only after the discrepancy has been addressed, for example by developing different processing instructions for those non-conforming containers based on the fingerprint results and/or physical appearance. Any new processing instructions will be entered into the operating system specific to that container or containers so that production personnel will have this information for processing.

Appendix 5

WORK PLAN FOR LEAD HAZARD ABATEMENT SEP

1. Pursuant to Section VII of the Consent Decree, and in accordance with this Appendix, Heritage Thermal Services (HTS) shall implement a lead hazard abatement SEP (“Lead Hazard Abatement SEP”).
2. The Lead Hazard Abatement SEP shall be performed at properties within 25 miles of East Liverpool, Ohio where the owners cannot afford to undertake lead abatement and/or replacement of lead service lines (“Lead Hazard Abatement Activities”), and undertaking Lead Hazard Abatement Activities otherwise would comply with applicable EPA regulations and guidance (“Qualifying Properties”). For purposes of this SEP, “Qualifying Properties” consist of residences, schools, and day care centers to be rehabilitated for occupied use regardless of whether such properties are in use at the time of rehabilitation; or other properties intended to be demolished in residential areas, or otherwise proximate to schools or day care centers, where Lead Hazard Abatement Activities will demonstrably minimize potential exposure of the children to lead. In choosing properties to be remediated for occupied use, HTS shall choose properties that will be inhabited after the Lead Hazard Abatement Activities have been completed. EPA hereby pre-approves performance of this SEP on Qualifying Properties.
3. HTS shall consult with city and/or county government entities, including the Ohio Department of Health, as well as community and/or nonprofit organizations to identify Qualifying Properties built prior to 1978 that are likely to contain lead paint or where the lateral water supply pipes (service lines) to the Qualifying Property contain lead. Structures with the highest potential risk of childhood lead exposure based on building age, last replacement of windows, and reported elevated blood levels in children (if available) or other criteria should be given priority for Lead Hazard Abatement Activities under this SEP. In the event HTS cannot identify a sufficient number of Qualifying Properties to complete this SEP, it shall submit a list of other proposed properties to EPA for approval pursuant to Section VIII of the Consent Decree that describes the efforts HTS has undertaken to find Qualifying Properties and includes the following information about each such property: (1) address; (2) nature (including age) of the property; (3) name of the property owner; and (4) facts indicating that the property is a lead hazard; and (5) possibilities for Lead Hazard Abatement Activities at the property. This SEP cannot include any Lead Hazard Abatement Activities at properties owned or being worked on through the Columbiana County Land Reutilization Corporation or any other person or entity receiving federal funding at the time the Lead Hazard Abatement Activities occur pursuant to this Lead Hazard Abatement SEP.
4. This Lead Hazard Abatement SEP includes, but is not limited to, the following Lead Hazard Abatement Activities: the removal of lead-based paint and dust; the permanent enclosure or encapsulation of lead-based paint (only removal and not enclosure or encapsulation to be performed for facilities being demolished); and the removal (and, if applicable replacement) of lead-based painted surfaces or fixtures (including but not

limited to windows with lead paint); and replacement of lead service lines with other material pipes.

5. For replacement of lead water service line activities under this SEP, the term “Service Line” shall mean all piping that runs directly to an occupied residence from the water utility’s water main supply pipe, and shall include both the portion of the pipe owned by the water utility that is located in the easement/public property (Public Owned Service Line) and the water supply pipe owned by the property owner that is located on the owner’s private property (Privately Owned Service Line).
 - a. Performance of lead water service lines replacement shall consist of the following activities: (1) replacement of all lead pipe in the Public Owned Service Line and the Privately Owned Service Line; and (2) replacement of all galvanized iron pipe downstream (i.e. closer to the residence) from a current or former lead section of pipe.
 - b. HTS shall ensure that it and/or its contractors comply with and follow American Water Works Association Standard C810-17 *Replacement and Flushing of Lead Service Lines* (effective November 1, 2017) (Standard C810-17) for the performance of all lead water service line replacement activities under this SEP.
 - c. Performing lead water service lines replacement activities can dislodge a large amount of scale and sediment containing very high amounts of lead which are then introduced into the home plumbing system where it can subsequently be released into the water for an indeterminate amount of time. To minimize this occurring, Standard C810-17 states that when HTS and/or its contractor begins performing water service lines replacement activities (including but not limited to concrete/asphalt cutting and soil excavation) on a property, HTS and/or its contractor shall ensure that water is not used in the residence, thus keeping dislodged scale/sediment inside the pipe being removed instead of drawing it into the water supply inside of the residence.
6. HTS will spend no less than \$302,500 in Eligible Costs for this Lead Hazard Abatement SEP. Eligible Costs, as used herein, shall include all costs of conducting the Lead Hazard Abatement Activities in compliance with the HUD Guidelines, such as lead inspections/risk assessments, and associated costs allowed by HUD Guidelines, as well as all costs of conducting water service lines replacement activities pursuant to Paragraph 5, above. No greater than ten percent of the total SEP costs shall be used for administrative support and outreach costs. HTS’s own personnel costs in overseeing the implementation of the SEP shall not be considered Eligible Costs.
7. Nothing shall prevent HTS from using nonprofit organizations, contractors, or consultants in planning and implementing this SEP. In implementing this SEP, HTS shall ensure that the individuals or entities performing the work have the required licenses, training, and experience to conduct the Lead Hazard Abatement Activities.

8. HTS shall utilize an Ohio-licensed lead risk assessor to conduct a risk assessment of the building(s) upon which HTS intends to perform lead abatement. Within 60 Days of the Effective Date, HTS will retain one or more contractors that are currently licensed by the State of Ohio or otherwise certified by the U.S. EPA and experienced to perform the Lead Hazard Abatement Activities, including but not limited to: conducting lead-based paint hazard reduction work, removal of windows and Service Lines containing lead, and proper disposal of waste from lead abatement work. In addition to the requirements in Paragraph 5, above, HTS shall conduct the SEP and require its contractors conduct the SEP in compliance with all relevant federal, state, and local work practice and notification requirements, including but not limited to, the United States Department of Housing and Urban Development's ("HUD's") Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing and any applicable state regulations or guidelines.
9. Within 180 Days of the Effective Date, HTS shall submit an initial report to EPA for approval, and to Ohio EPA for review, providing the addresses of the Qualifying Properties identified for this Lead Hazard Abatement SEP; describing HTS' basis for determining that the properties meet the criteria for Qualifying Properties set forth above, the risk assessment for the structures, if applicable; the scope of work for each project (including the area(s) where lead will be abated and how; number of windows removed or replaced; whether lead Service Lines will be removed/replaced, etc.); the estimated eligible costs for each project; and the approximate number and ages of occupants of the identified Qualifying Properties (if known). HTS will update this report every 180 Days until the SEP is completed.
10. Within 60 Days of exhaustion of the \$302,500 fund for the Lead Hazard Abatement SEP, HTS will develop and submit to EPA and Ohio EPA the SEP Completion report pursuant to Paragraph 35 of the Consent Decree.
11. HTS shall complete all Lead Hazard Abatement Activities in this SEP no later than two years after the Effective Date.