Appendix to Compendium of Next Generation Compliance Examples In Clear Air Act Programs

U.S. Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Air and Radiation
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APPENDIX

Compendium of Next Generation Compliance Examples In Clean Air Act Programs

This Appendix is a supplement to the "Compendium of Next Generation Compliance Examples in Clean Air Act Programs." It provides additional details for rule writers, permit writers, or other implementers. It contains the relevant language from legislation, permits, consent decrees and other documents cited in the main text. For rules that are too long to restate in full, it provides the citation to both to the regulatory text and to the Federal Register notice.

Contents **(click on links to see appendix entries)**

1. Ashtabula Tire Partners Permit to Install and Operate (Synthetic Minor Permit)

Implementing Agency: Ohio Environmental Protection Agency

Next Gen Principle Demonstrated: Advanced Monitoring (Baghouse Leak Detection System)

Relevant language (with web links where applicable)

The permit is available at http://wwwapp.epa.ohio.gov/dapc/permits_issued/1174959.pdf

The portion of the permit relating to the baghouse leak detection system is as follows:

3. Jet mill process application equipped with a baghouse for pelletizing carbon black
…
d) Monitoring and/or Recordkeeping Requirements
(1) The permittee shall install, calibrate, maintain, and continuously operate a fabric filter bag leak detection system, in accordance with the system manufacturer's instructions, to monitor the baghouse performance. For this purpose, the term "fabric filter bag leak detection system" means a system that is capable of continuously monitoring relative particulate emissions (dust) loadings in the exhaust of a baghouse in order to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate emissions loadings. The fabric filter bag leak detection system shall meet the following requirements:
a. The fabric filter bag leak detection system must be certified by the manufacturer to be capable of detecting particulate emissions.
b. The fabric filter bag leak detection system sensor must provide output of relative particulate emissions loading, and the permittee shall continuously monitor and record the output signal from the sensor.
c. The fabric filter bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate emissions loading is detected over a preset level, and the alarm must be located such that it can be heard by the appropriate plant personnel.
d. The initial adjustment of the fabric filter bag leak detection system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm setpoints and the alarm delay time. Following the initial adjustment, the permittee shall not adjust the range, averaging period, alarm setpoints, or alarm delay time except as detailed in the operations, maintenance, and monitoring plan. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official certifies, by a written report, that the baghouse has been inspected and found to be in good operating condition.
e. For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter. Where multiple bag leak detection systems are required, the system instrumentation and alarm may be shared among the monitors.
(2) If the fabric filter bag leak detection system alarms, the permittee shall initiate investigation of the baghouse and/or emissions unit(s) within one (1) hour of the first discovery of the alarming incident for possible corrective action. If corrective action is required, the permittee shall proceed to implement such corrective action, in accordance with a written corrective action plan, as

soon as practicable in order to minimize possible exceedances of the emission limitations established in (b)(1). The corrective action plan shall include, at a minimum, the following provisions:
a. inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions;
b. sealing off defective bags or filter media;
c. replacing defective bags or filter media, or otherwise repairing the control device;
d. sealing off a defective baghouse compartment;
e. cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; and
f. shutting down the operations.
The permittee shall maintain records of each bag leak detection system alarm, including the date and time of the alarm, the amount of time taken for corrective action to be initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected.
(3) The permittee shall conduct monthly QA checks and annual instrument set ups of the fabric filter bag leak detection system consistent with the guidance provided in EPA-454/R-98-015: U.S. EPA Fabric Filter Bag Leak Detection Guidance.
(4) The permittee shall maintain records of all inspections and maintenance performed on the fabric filter bag leak detection system. Records shall include the date and time of each inspection or maintenance activity; the activities performed; and the results of any drift checks and response tests.
(5) At all times, the permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
(6) The permittee shall maintain a supply of bags, or any other parts necessary to ensure that the collection/control system will operate properly. Any worn, clogged, or broken equipment should be replaced, or fixed within a reasonable timeframe.
(7) At least once per month, the permittee shall perform a check of the bag cleaning mechanisms for proper function through visual inspection or equivalent means.
(8) If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the fabric filter bag leak detection system monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator range or designated conditions, the permittee shall promptly notify the permitting authority and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
(9) The permittee shall maintain a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the emissions unit is in operation.
(10) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
a. the color of the emissions;
b. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. the total duration of any visible emissions incident; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended.
The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit).
With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

2. BP Exploration Consent Decree

Implementing Agency: EPA Region X

Next Gen Principle Demonstrated: Electronic Reporting

Source: https://www.epa.gov/sites/production/files/documents/bpnorthslope-cd.pdf

Relevant provisions:

VI. REPORTING, RECORDKEEPING, AND ELECTRONIC PORTAL REQUIREMENTS

Electronic Portal. Within sixty (60) Days of the Effective Date, BPXA shall provide the United States access via an Electronic Portal (Portal) to assist the United States in monitoring compliance with this Decree. All documents, certifications, plans, reports, updates, notices, procedures or other information (Materials) that are required pursuant to this Decree shall be made available to the United States and the IMC via a secure, web-based Portal. The Portal shall: be easily navigable, include links to all Materials in electronic format, allow users to save and print Materials, be clearly organized and indexed according to the Sections and Paragraphs of this Decree, and accessible 24 hours per day. The Portal shall also provide access to BPXA's GIS, including all data overlay functions and defect locations. All Materials shall remain available through the Portal until termination of this Decree in accordance with Section XVII (Termination). Defendant may assert that information made available to the United States via the portal is protected as Confidential Business Information (CBI) as set out in Paragraph 81 below.

3. BP Whiting Consent Decree

Implementing Agency: EPA Region V

Next Gen Principles Demonstrated: Transparency (monitoring data posted on public website), Advanced Monitoring (fenceline monitoring for fugitive emissions)

Source: https://www.epa.gov/sites/production/files/documents/whiting-cd.pdf

Relevant provisions:

VII. A. Supplemental Environmental Project

88. BPP shall implement as a Supplemental Environmental Project ("SEP") a project to install monitors at the fenceline or perimeter of the Whiting Refinery to monitor certain emissions and make the data publicly available ("Fenceline Monitoring SEP"), as provided in Appendix E of this Consent Decree. BPP shall spend not less than $2 million to implement the Fenceline Monitoring SEP, the installation and commencement of operation of which shall be completed by no later than 18 months after the Date of Entry.

89. BPP is responsible for the satisfactory completion of the Fenceline Monitoring SEP as provided in this Consent Decree. BPP may use contractors or consultants in planning and implementing the SEP. If BPP does not expend the entire amount specified in Paragraph 88, BPP shall pay a stipulated penalty equal to the difference between the amount expended as demonstrated in the certified cost report and the amount specified in Paragraph 88. The stipulated penalty shall be paid as provided in Part X ("Stipulated Penalties") of this Consent Decree. As an alternative to payment of such stipulated penalty, BPP may request approval from EPA to use unexpended SEP funds for an alternative SEP.

90. With regard to the Fenceline Monitoring SEP, BPP certifies the truth and accuracy of each of the following:
    a. that all cost information provided to EPA in connection with the Fenceline Monitoring SEP is complete and accurate;
    b. that, as of the date of executing this Consent Decree, BPP is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;
    c. that the SEP is not a project that BPP was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Consent Decree;
    d. that BPP has not received and will not receive credit for the SEP in any other enforcement action;
    e. that BPP will not receive any reimbursement for any portion of the SEP from any other person;
    f. that BPP is not a party to any Open Federal Financial Assistance Transaction that is or could be used to fund the same activity as the SEP described in Appendix E; and
    g. that based upon a reasonable inquiry:
        i. the activity covered by this SEP has not been described in an unsuccessful Federal Financial Assistance Transaction proposal submitted by BPP to EPA within two years of the date of executing this Consent Decree (unless the project was barred from funding as statutorily ineligible); and

ii. BPP is not aware of any open Federal Financial Assistance Transaction that is funding or could fund the same activity as the SEP described in Appendix E.

91. BPP shall include in each report required by Paragraph 98.c of Part VIII ("Reporting and Recordkeeping") a description of its progress toward implementing the SEP required by this Section. In addition, the report required by Paragraph 98.c. for the period in which the SEP is completed shall contain the following information with respect to the SEP ("SEP Completion Report"):

a. a detailed description of the SEP as implemented;

b. a description of any problems encountered in completing the SEP and the solutions thereto;

c. an itemized list of all eligible SEP costs expended;

d. certification that the SEP has been fully implemented pursuant to the provisions of this Decree; and

e. a description of the environmental and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, if feasible).

EPA may require information in addition to that described in this Paragraph, in order to evaluate BPP's SEP Completion Report.

1. Disputes concerning the satisfactory performance of this SEP and the amount of eligible SEP costs may be resolved under Part XIV of this Decree ("Dispute Resolution"). No other disputes arising under this Section shall be subject to Dispute Resolution.
2. BPP agrees that it must clearly indicate that the Fenceline Monitoring SEP is being or has been undertaken as part of the settlement of an action to enforce the Clean Air Act and corollary state statutes in any public statements regarding the project.
3. For federal income tax purposes, BPP agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the SEP.

APPENDIX E

FENCE LINE MONITORING SYSTEM SUPPLEMENTAL ENVIRONMENTAL PROJECT

BPP will install, operate and maintain a fence line monitoring system and make the data collected available to the public pursuant to the requirements of Section VII.A of the Consent Decree, and in accordance with the specifications and criteria identified in this Appendix.

A. Equipment: The monitoring system shall consist of four monitoring stations, each of which shall be equipped with the following equipment:

1. Instruments capable of measuring and recording the concentrations of the following compounds in air at a minimum detection level of 0.5 parts per billion by volume (ppbV) for benzene and toluene, and 1.0 ppbV for the following gaseous analytes:

   Pentane
   Hexane
   Sulfur dioxide
   Hydrogen sulfide
   Reduced sulfur compounds (defined as all compounds containing reduced sulfur measured as an aggregate sum)

The monitoring equipment shall be capable of measuring the gases at the above-referenced concentrations and the data recording system shall reduce those measurements to hourly averages.

Within 60 days of the Date of Entry of this Consent Decree, BPP shall provide EPA with a Fence Line Monitoring Plan to include, at a minimum, identifying the locations of the meteorological station and each of the monitoring stations and how those sites meet the requirements of this Appendix; a Quality Assurance Project Plan (QAPP) that describes the Quality Assurance/Quality Control procedures, specifications, and other technical activities to be implemented to ensure that the results of the Fenceline Monitoring SEP meets project specifications; and implementation of the data availability requirements of this Appendix.

a. SO2, Reduced Sulfur Compounds and H2S. Ambient concentrations of sulfur dioxide (SO2) will be continuously measured using Teledyne-API Model T100 or equivalent in accordance with 40 C.F.R. Part 53, Subparts A and C. The SO2 monitor shall be operated and maintained in accordance with all corresponding EPA equivalent method requirements. The SO2 monitors will be operated in the 0 to 0.50 ppm full scale measurement range with temperature and pressure compensation features activated. For Hydrogen Sulfide (H2S) and reduced sulfur compounds, the Teledyne API Model T101 or equivalent will be operated in switching mode to provide alternate 5-minute data for H2S, then reduced sulfur compounds. The monitors shall be operated and maintained in accordance with the manufacturer's recommendations and shall be capable of measuring reduced sulfur compounds and H2S, with a lower detection level of 1.0 ppb.

b. Benzene, Toluene, Pentane, and Hexane. The continuous measurement of benzene, toluene, pentane, and hexane shall be accomplished using an SRI Model 8610 auto-GC or equivalent. The automated GC monitors shall be operated and maintained in accordance with the manufacturer's recommendations and shall have a calibration range of 1.0 to 500 ppbV for all gases. The GC monitors shall operate with a one hour cycle time with ambient air samples collected over an approximate 40 minute period during each hourly cycle.

Nothing in this Appendix E shall preclude the use of any other, additional fenceline monitoring equipment and/or monitoring of any other, additional pollutants at the fenceline of the Whiting Refinery.

2. Instruments for Measuring and Recording Wind Speed, Wind Direction, Ambient Temperature, Humidity and Barometric Pressure. Specific meteorological parameters will be continuously monitored to obtain data representative of prevailing meteorological conditions for the Whiting refinery area. The data set produced shall be adequate to correlate prevailing conditions with pollutant measurements and transport.

a. Continuously measured meteorological parameters shall include hourly-averaged (scalar or vector) measurements of horizontal wind speed and wind direction, the standard deviation of the horizontal wind direction (sigma theta), air temperature and

relative humidity. Wind speed and direction shall be measured at a height of approximately 10 meters. Temperature, relative humidity, and barometric pressure shall be measured at a height of 2 to 3 meters.

b. Wind direction and sigma theta measurement data shall be compiled and reported as hourly block averages in degrees (^{o}), rounded to the nearest whole degree. Wind speed data measurement data shall be compiled and reported as hourly block averages in miles per hour (mph), rounded to the nearest tenth of a mph.

c. Air temperature measurement data will be compiled and reported as hourly block averages in degrees Fahrenheit (^{o}F) or Celsius (^{o}C), rounded to the nearest tenth of a degree.

d. Relative humidity measurement data will be compiled and reported as hourly block averages in percent, rounded to the nearest whole percent.

3. Monitoring Station. Monitoring equipment (except meteorological monitors and their support towers) shall be installed and operated inside a temperature-controlled equipment shelter. The temperature within each shelter shall be continuously monitored and recorded using a calibrated RTD and microprocessor-or PC-based data acquisition system (DAS or data logger). The climate control system for each monitoring shelter will be capable of maintaining a stable temperature within the range of 20° C to 30° C.

Typically, the monitoring shelters will measure 8 feet wide by 12 feet long by 8 feet high. Each shelter will be anchored and secured to a concrete pad for safety. A padlocked exterior compartment attached to an outer wall of the shelter will safely house all compressed support gases. Shelters walls and roof will have a minimum insulation rating of R11. Each shelter will be equipped with electrical service panels, interior electrical distribution circuits, lighting, workbench and sufficient space for housing, operating and maintaining the monitoring instruments. All electrical wiring and appurtenances will conform to the National Electric Code (NEC). Each shelter electrical service and the shelter building itself will be grounded to earth in conformance with NEC and local code requirements. Monitoring shelters located within the refinery shall maintain a slight (*e.g.,* 0.013 to 0.026 Bar) internal positive air pressure with respect to atmospheric air pressure.

B. Locations – The four monitoring stations shall be located on Whiting Refinery property near the Refinery fence line at up- and down-wind locations to be determined by BPP in consultations with EPA and interested members of Whiting's Community Advisory Committee (CAC), and in consideration of the following siting criteria:

a. The up- and down-wind locations should be determined by the last 5 years of NOAA data from the most appropriate National Weather Service (NWS) or from the Indiana Department of Environment Management (IDEM) Gary, Indiana monitoring station. The meteorological data (resultant wind direction and wind speed hourly averages) will be used to construct wind roses for the site.

b. Availability of land, accessibility to site, availability of utility services, and security of monitors and operating personnel.

c. Geographic spacing of sites relative to the refinery for monitoring upwind and downwind concentrations.

d. Probe or sampler inlet should be 2 to 5 meters above ground and have unrestricted airflow 270 degrees around the sample inlet probe or 180 degrees if the probe is on the side of a building.

e. Probe or sampler inlet should be >20 meters from the dripline of any tree(s).

f. SO2, TRS, and VOC probes should be >1 meter away from supporting structures, walls and parapets.

g. The distance from a sampler probe to an obstacle, such as a building, should be at least twice the height the obstacle protrudes above the sampler, probe, or monitoring path.

h. All probes and samplers should be away from minor sources, such as incineration flues, to avoid undue influences from minor sources. The separation distance is dependent on the height of the minor source's emission point (such as a flue), the type of fuel or waste burned, and the quality of the fuel.

C. **Operation** – BPP shall operate and maintain the monitors and equipment described herein in accordance with manufacturers' recommendations for a period of no less than: (a) two years after installation and startup of the four monitoring stations, or (b) for a longer period, if necessary to meet the requirements of Paragraph 88 of the Consent Decree with respect to the total amount of money required to be expended.

D. **Quality Assurance/Quality Control (QA/QC)** – BPP shall ensure that all data collected by the Fence Line Monitoring System is subjected to appropriate QA/QC procedures on a monthly basis. The QA/QC procedures for a given month's data shall be completed by no later than the end of the month following the month within which the data were collected.

E. **Data Availability** – On a weekly basis, BPP shall post the Fence Line Monitoring System data on a dedicated website or through BPP Whiting's internet homepage ("Monitoring Data Website"), in a manner that shall be readily accessible, clearly labeled, and clearly presented to the public. BPP shall additionally post on the Monitoring Data Website, on a quarterly basis, CEMS emissions reports submitted to IDEM and/or USEPA pursuant to the Title V permit for all refinery units that are monitored by CEMS. BPP shall maintain data collected through the Fence Line Monitoring System on the Monitoring Data Website for at least five years from the date of its collection, and shall review the Fence Line Monitoring Data with the CAC members as they may request.

F. General Provisions –As required by Paragraph 88, BPP shall expend not less than $2 million in costs or expenditures to perform this SEP. For purposes of this SEP, "costs or expenditures" shall mean the costs or expenditures required to purchase, install, operate and maintain the monitoring equipment required by this SEP for a 2 year period, and at a cost of not less than $2 million.

4. Mann Distribution, LLC Admin. Consent Order

Implementing Agency: EPA Region I

Next Gen Principle Demonstrated: Third-party verification

Source:
https://yosemite.epa.gov/oa/rhc/epaadmin.nsf/CAFOs%20and%20ESAs/B2D06F9F9027BF6485257F6D00213DAD/$File/FIFRA-01-2016-0017%20CAFO.pdf

Relevant provisions:

d. Third-Party Inspection Program: Because EPA has found repeat violations of the General Duty Clause at the Facility, Respondents have agreed to institute a third-party inspection program at the Facility to improve and confirm compliance. As more specifically described below, the program will require (a) hiring a qualified third-party auditor; (b) conducting four thjrd party inspections over the course of at least one year, three of which will be unannounced; (c) documenting the inspections through photographs, film, and written reports; and (d) providing the inspection documentation to the local fire department and EPA.
1. Within 15 days of the effective date of this Order, Respondents shall engage a third-party inspection team ("Team") and submit the Team members' resumes and qualifications to EPA. The Team shall have at least one person with chemistry expertise acceptable to EPA, one expert in environmental compliance auditing, and one expert in chemical process safety management. One Team member may fulfill more than one of these expertise requirements, but the Team shall have at least two people for inspection safety reasons.
2. To ensure the Team's independence from Respondents and promote thorough inspections:
i. No member of the Team may have previously performed work for Respondents or for any of Respondents' officers, although Team members who previously bid on projects but did not receive work from Respondents may participate;
ii. No member of the Team shall be allowed to work for Respondents or for any of Respondents ' officers for five years after the inspections are completed;
iii. Once the Team has given Respondents notice of the first upcoming inspection, no communication shall occur between Respondents and the Team without EPA
simultaneously being copied on the communication (except such communications that occur on-site while the inspections are being conducted). Accordingly, all
such communication must be by e-mail or letter so that EPA may be copied.
iv. Respondents shall have no control over the timing of the second, third and fourth inspections.
v. Before conducting the first inspection, each member of the Team shall have:
1. Read this Order; the 2009 and 2011 Orders; the hazard analysis conducted pursuant the 2009 Order; the Respondents ' *Hazardous Material Storage Plan;* Appendix 1 of the September 30, 2011 Notice of Violation and Administrative
Order; the Center for Chemical Process Safety's *Guidelines for Sqfe Warehousing of Chemicals;EPA's Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(J) (May 2000);* the Material Safety Data Sheets for the chemicals at the Facility; and the NFPA 1, 30, and 400 chapters cited in this Order; and

2. Become familiar with *CAMEO Chemicals* in particular the function used to predict chemical reactivity. *Also,* before providing notice of the first inspection, it is permissible for the Team to visit the Facility for purposes of bidding on Third-Party Inspection Program work.
vi. Respondents shall provide the Team with unimpeded access to the whole Facility on any day that Respondents are operating. Respondents shall also permit the Team to take photographs and film its inspections.
vii. Respondents shall not have an opportunity to review or comment on inspection reports or drafts thereof before the Team sends them to EPA and Respondents.

3. *Inspections:*
i. The Team shall conduct four inspections within 11 months of the effective date of this Order.
ii. The purpose of the first inspection is to give all parties the opportunity to assess how Respondents manage their extremely hazardous substances when Respondents are operating with the highest level of care. Accordingly, the Team shall give Respondents and EPA at least 14 days of days of notice before the first inspection. This first inspection must occur by 90 days after the effective date of this Order, at the very latest.
iii. The next three inspections shall be unannounced, with no notice to Respondents but with three days of notice to EPA.
iv. EPA and/or the Warwick Fire Department shall have the right to accompany the Team on any inspection.
v. The Team shall inspect the whole Facility, indoors and outdoors, for compliance with Clean Air Act Section 112(r), including but not limited to determining whether the following
dangerous conditions found in 2009, 2011, and/or 2013 are occurring:
1. Failure to identify hazards which may result from accidental releases of extremely hazardous substances (for example, failing to identify new hazards that have arisen
since Respondents completed their last hazard analysis);
2. Failure to chock wheels of any present rail car containing chemicals;
3. Failure to prevent leaks and run-off from outdoor containers and dilution operations;
4. Failure to separate incompatible chemicals;
5. Failure to maintain adequate aisle space;
6. Failure to have, maintain, and test fire suppression, detection, and alarm systems;
7. Failure to store flammable chemicals at an appropriate distance from building;
8. Failure to have and maintain secondary containment for extremely hazardous substances stored outside in tanks and containers;
9. Failure to have chemical containers closed, properly labeled, and with labels situated such that they can be read by staff, emergency responders and inspectors;
10. Failure to have proper procedures to notify emergency responders in the event of a release.
In addition, the Team shall review inventory records created since the last EPA or Team inspection (whichever is later) to ensure that Respondents have not triggered the requirements of 40 C.F.R. Part 68 by storing chemicals listed in 40 C.F.R. §68.103 above regulatory thresholds.

4. *Documentation of the inspections:*
i. Within 60 days of the effective date of the Order, the Team shall submit to Respondents and EPA a draft inspection report format that it wishes to use (the "Draft Report Format"), which EPA shall endeavor to review before the first inspection. A checklist format is allowable, provided that the report is broken down by room and outdoor area visited and provides detailed information about any deficiencies found.

ii. The Team shall, within 15 days after each inspection, simultaneously submit to EPA and Respondents an inspection report, photographs, and a digital video of the inspection ("Inspection Report"). Respondents' shall not have the opportunity to review any draft or final Inspection Report before such submittal.
iii. EPA may require prospective changes to the format and content of the inspection documentation at any point during the duration of the third-party inspection program.

5. *Respondent's response to the Inspection Report:*
Respondents shall have an opportunity to respond to each Inspection Report if so desired by submitting its comments on the Inspection Report to EPA and the
Team within five business days of receiving the Inspection Report.

6. Correction of violations:
Within 20 days of receiving the Inspection Report, Respondents shall correct any violations found by the Team and send a letter to EPA confirming that the violations have been corrected unless the parties agree that another deadline is appropriate.

7. *Preservation of inspection documentation:*
The Team and Respondents shall keep copies of all Inspection Reports, photographs and digital films for three years.

8. Discovery of environmental violations other than CAA Section 112(r):
The Team shall notify Respondents if it finds any non-CAA Section 112(r) ~related violations of EPA-administered statutes (for example, violations of RCRA, Clean Water Act, FIFRA, or TSCA), and Respondents shall correct those violations within 20 days of receiving the Inspection Report. However, such violations need not be included in the inspection report unless the Team believes that the violation could present an imminent and substantial endangerment to human health or the environment.

9. Notification of imminent and substantial endangerments:
Respondents shall notify EPA immediately by telephone and e-mail if the Team
discovers any condition at the Facility that could pose an imminent and substantial endangerment to human health or the environment.

10. *Third-Party Inspection Program Assessment:*
Within one year of the effective date of this Order, Respondents shall submit to EPA a brief one-page or summary assessment of the Third-Party Inspection
Program, containing the following:
i. Total cost of the program, excluding costs to address any violations found by the Team;
ii. Summary of the benefits of the program, including feedback from Respondents and the Team;
iii. Criticisms of the program, including feedback from Respondents and the Team;
iv. Any suggestions for future improvements to a Third-Party
Inspection Program.

5. Methane NSPS – Final Rule

Implementing Office or Agency: EPA Office of Air and Radiation

Next Gen Principles Demonstrated: Advanced Monitoring (IR cameras)

Source: The final rule was published at 81 Fed. Reg. 35823 (June 3, 2106). Available at: https://www3.epa.gov/airquality/oilandgas/actions.html

6. Minnesota sand processing sites permits

Implementing Agency: Minnesota Pollution Control Agency

Next Gen Principles Demonstrated: Advanced Monitoring (fenceline monitors); transparency (public reporting of monitoring results)

Source: See Great Plains Sands permit, available at https://www.pca.state.mn.us/sites/default/files/greatplains_Draft_Permit.pdf; Jordan Sands permit, available at https://www.pca.state.mn.us/sites/default/files/Jordan_Draft_Permit.pdf; Titan Lansing Transload permit, available at https://www.pca.state.mn.us/sites/default/files/Titan_PN.pdf

Relevant provisions:

Representative language, taken from the Jordan Sands permit, is as follows:

Meteorological and surface roughness data from the three closest meteorological stations were evaluated in order to determine the most representative meteorological station. Meteorological data from this station aids in determining the best locations to place Jordan Sands' two ambient air monitors. The three sites that were analyzed include: Fairmont, Minnesota (FRM), Redwood Falls, Minnesota (RWF), and Jackson, Minnesota (MJQ). These stations are located 45, 59, and 63 miles from the project site, respectively.

The surface roughness is typically the most sensitive surface characteristic in determining meteorological characteristics that will affect ambient air concentration. Land cover data was compared at the three meteorological stations with land cover data from areas in the vicinity of the proposed Jordan Sands facility. All three locations were located in fairly remote areas of flat terrain. Jordan Sands is located south of a rural residential area and fairly close to the Minnesota River Valley. Out of the three stations analyzed, none could be eliminated by surface roughness alone; therefore, the closest of the three stations was chosen to be most representative. The closest station was located in Fairmont, Minnesota, and used for the meteorological analysis to determine the placement of the ambient air monitors. Wind data from the FRM station was analyzed in order to determine the direction of the prevailing winds which indicates where the monitors should be located to get the highest number of readings with an upwind and downwind concentration. An upwind and downwind location has the ability to determine a background concentration in addition to the impact from operations at Jordan Sands. The meteorological data for FRM from 2006 through 2010 was previously processed by the MPCA using AERMET version 11059. In addition, the FRM data was analyzed using Lake Environmental WRPlot Version 7.0.

The overall strategy for assessing ambient impacts from operations at Jordan Sands is to sample ambient air between the site and nearby properties. Monitoring stations will be placed at two locations. One ambient air monitoring station will be placed on the south-southeastern side of the proposed dry plant facility and the large outdoor sand storage pile near the Jordan Sands property line. Placing monitors near the facility property line will give the earliest possible indication of any airborne contaminant migration moving off property that may cause adverse impacts to human health. The second monitoring station will be placed on the far northern side of the current mine site along the

property boundary near the intersection of County Road 5 and Deerhaven Drive. Each ambient air monitor station will consist of a monitor for TSP, PM_{10}, $PM_{2.5}$, and PM_4 silica.

Jordan Sands will also install a weather station (met station) on-site to continuously collect hourly wind speeds and wind direction. The proposed monitoring locations in conjunction with the paired meteorological data will determine when the monitors are located in both an upwind and a downwind location, therefore allowing Jordan Sands to determine a background concentration as well as individual impacts from operations at the facility. A separate plan will be developed and submitted to the MPCA for operation of the met station.

The approximate locations of the proposed ambient air monitors are shown in Figure 6. The Proposed Monitor Location #1 will be installed at the northern property line of Parcel D. The Proposed Monitor Location #2 will be placed along the property boundary south of the processing facility. The purpose of this monitor is to measure concentrations in the area near the largest particulate emitters – the dryer, material handling baghouse, rail loadout, storage piles, and vehicle traffic. The monitors are ambient air monitors and will be used for ambient air monitoring purposes, even if monitors are installed within the property boundary.

In determining the specific location for each monitor, Jordan Sands will follow obstruction distance guidelines specified in the U.S EPA Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), May 1987. These guidelines are listed below:

- Height of Air Intake
- Approximately 2-15 meters above the ground.
- Distance from Obstructions and Heights of Obstructions
- Sampler will be greater than 20 meters away from the dripline and more than 10 meters away from the dripline when trees act as the obstruction.
- The sample intake will have unrestricted air flow in a 270 degree arc around the sampler.
- Distance from the sample intake to obstacles, such as buildings, will be at least twice the height of the obstacle protrudes above the sample intake.
- Sampler intake must be at least 2 meters above ground level.

7. NSPS / NESHAP Electronic Reporting Rule (Proposed)

Implementing Agency: EPA Office of Air and Radiation

Next Gen Principle Demonstrated: Electronic Reporting

Source: The rule adopting electronic reporting for certain NSPS was proposed at 80 Fed. Reg. 15100 (May 20, 2015). Proposed regulatory provisions can be found at 80 Fed. Reg. 15117-46.

8. Noble Energy Consent Decree

Implementing Agency: EPA Region VIII

Next Gen Principles Demonstrated: Transparency (share results of technical research); advanced monitoring (advanced devices for ensuring tank pressure is low, to minimize leaks)

Source: https://www.epa.gov/sites/production/files/2015-04/documents/noble-cd.pdf

Relevant provisions:

III. Definitions

o. "IR Camera Inspection" shall mean an inspection of a Vapor Control System using an optical gas imaging infrared camera designed for and capable of detecting hydrocarbon and VOC emissions, conducted by trained personnel who maintain proficiency through regular use of the optical gas imaging infrared camera.

IV. Injunctive Relief.

12. Vapor Control System Verification. No later than 30 days after the applicable Engineering Evaluation Deadline for a Tank System Group, Noble shall complete the following for (i) all Tank Systems in that group and (ii) any Tank Systems for which associated Well Production Operations had been temporarily shut-in and which were resumed by the deadline for that group and not previously completed and submitted:

a. Conduct an IR Camera Inspection of each Tank System during Normal Operations and during and immediately after a dump event to confirm the Vapor Control System is adequately designed and sized and not emitting VOCs. This inspection must be conducted pursuant to a written standard operating procedure prepared by Noble and approved by EPA and CDPHE. A video record of each IR Camera Inspection done to comply with this Paragraph shall be recorded and kept on file;

b. Comply with the requirements of Paragraph 18 (Reliable Information, Investigation, and Corrective Action) in the event that VOC emissions from a Tank System are observed during the IR Camera Inspection; and

c. Complete and submit to EPA and CDPHE a "certification of completion report" that documents in a spreadsheet or database format: (i) the design capacity of each Vapor Control System in standard cubic feet per hour; (ii) the Engineering Design Standard (which could be for an individual Tank System) that was used for each Vapor Control System, including identification of site-specific operational parameters or practices relied upon for use of the Engineering Design Standard (*e.g.*, measures to preclude simultaneous dump events, minimum available headspace in Condensate tanks, practices to address liquids accumulation in vent lines); (iii) the calculated Potential Peak Instantaneous Vapor Flow Rate in standard cubic feet per hour; (iv) the maximum operating pressure to which the Engineering Design Standard is certified; and (v) the date an IR Camera Inspection was completed and the results of such inspection.

17. Periodic Inspections and Monitoring. Noble shall undertake a program for inspection and monitoring of Tank Systems in accordance with the requirements of this Paragraph.

a.Tank Systems shall be inspected using an Approved Instrument Monitoring Method ("AIMM"). AIMM includes optical gas imaging infrared cameras or other inspection methods meeting EPA Method 21 standards. Alternative methods may be used subject to the approval of both EPA and CDPHE, which approval shall not be unreasonably withheld.

21. Third-Party Verification. Noble's completion of the Engineering Evaluations and any necessary modifications shall be subject to verification by a third party as follows:

a. Noble shall retain one or more qualified third-party consultants, not owned by Noble or any of its subsidiary or affiliated companies (hereinafter "Auditor"), to conduct an audit in calendar year 2016 of Tank Systems that are included in "certification of completion" reports submitted as of December 31, 2015 and a second audit in calendar year 2018 of all previously unaudited Tank Systems. In each audit, the Auditor shall independently verify that the Engineering Evaluations and any necessary modifications were completed in accordance with the requirements of this Consent Decree.

b. No later than November 1, 2015 for the first audit and no later than November 1, 2017 for the second audit, Noble shall notify EPA and CDPHE in writing of Noble's recommended consultant(s), provide statements of qualification for the consultant(s), and provide the proposed audit work plan. After consultation with CDPHE, EPA shall either approve or disapprove the proposed consultant(s) and the proposed work plan. If EPA and CDPHE have not responded within 30 days, Noble's recommended consultant shall be deemed approved and Noble may proceed with its proposed work plan. In the event EPA disapproves the proposed consultant(s) and/or proposed work plan, EPA shall state the reasons for its disapproval of the consultant or proposed work plan in writing, and the process will be repeated with Noble having 30 days from the date of disapproval to propose alternate consultant(s), provide statements of qualification, and/or provide a revised work plan to EPA and CDPHE. In the event a consultant or work plan is not approved by January 31, 2016 for the first audit and January 31, 2018 for the second audit, all deadlines in this Paragraph shall be extended by an equivalent period to the time beyond January 31 that it takes for consultant and/or work plan approval.

c. Once selected by Noble and approved by EPA, Noble shall have the Auditor conduct a document review of each Tank System to be included in that audit to verify that Noble has applied the Modeling Guideline and the applicable Engineering Design Standard so that the Vapor Control Systems are adequately designed and sized to handle the Potential Peak Instantaneous Vapor Flow Rate.

d. In addition to the document review, Noble shall have the Auditor conduct an IR Camera Inspection at a subset of Tank Systems included in that audit as follows: (i) all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions of 50 TPY or more; (ii) 20% of all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions less than 50 TPY and equal to or greater than 12 TPY; and (iii) 5% of all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions less than 12 TPY. As of the conclusion of the second audit, Noble shall use its best efforts to ensure that the required percentages of IR Camera Inspections for Tank Systems in each grouping described above is also met for each of the Three Line Pressure Groupings. A video record of all IR Camera Inspections done to comply with this Paragraph shall be recorded and kept on file.

e. If 20% or more of the total number of Tank Systems with Vapor Control Systems using the same Engineering Design Standard and undergoing an IR Camera Inspection by an Auditor are found to be emitting VOCs, Noble shall complete within 90 days a VCS Root Cause Analysis and identify appropriate response actions to be taken to address the cause(s) and adequately design and size such Vapor Control Systems to handle the Potential Peak Instantaneous Vapor Flow Rate, along with a proposed schedule for the implementation of those response actions. In the next Semi-Annual Report, Noble shall submit the results of each VCS Root Cause Analysis, including the timeline for response actions if those are not already completed at the time of the submission of the VCS Root Cause Analysis.

f. The document review and IR Camera Inspections referred to in this Paragraph shall be completed no later than December 31, 2016 for the first audit and no later than December 31, 2018 for the second audit. Noble shall have the Auditor prepare a draft written report ("Draft Audit Report") marked as Confidential Business Information describing such work and conclusions reached within 90 days after completing the document review and IR Camera Inspections. This Draft Audit Report, and any drafts or other documentation prepared prior to such report, shall be shared by the Auditor with the Parties simultaneously in accordance with Section XVII (Notices). The Draft Audit Report for each audit will be subject to review and approval by EPA, after consultation with CDPHE; provided, however, that Noble shall have 30 days to review and address any EPA or CDPHE comments on the Draft Audit Report before issuance of a Final Audit Report. Once approved, Noble shall post all non-confidential portions of each Final Audit Report on its website.

21. Tank Pressure Monitoring. Noble shall install, calibrate (in accordance with manufacturer recommendations, if available), operate, and maintain pressure monitors linked to and continuously monitored (*i.e.*, one measurement every 15 seconds with a data transmission every hour) by a central monitoring location in accordance with the requirements of this Paragraph.

a. The deadlines for equipping Tank Systems with pressure monitors and the Tank Systems to be equipped with those monitors are:

(i) November 15, 2015 for all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions of 50 TPY or more;

(ii) December 31, 2016 for at least 10% of all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions less than 50 TPY and equal to or greater than 6 TPY; and

(iii) July 1, 2017 for at least 2% of all Tank Systems that had, as of September 2014, Actual Uncontrolled Annual VOC Emissions less than 6 TPY.

Noble shall use its best efforts to equally distribute pressure monitors for Tank Systems in each of the groupings described above among the Three Line Pressure Groupings. Where a Tank System has multiple Condensate tanks in series, Noble shall only be required to install a pressure monitor on one of the Condensate tanks.

b. For the first six months after the first deadline for installation of pressure monitors, Noble shall have a performance optimization period to evaluate calibration and optimize pressure monitor performance and reliability. This period will allow Noble, and its contractors or pressure monitor vendors as appropriate, an opportunity to ensure that the pressure monitors, to the greatest extent practicable, are producing quality data that may be used to identify the potential for over-pressurization of Tank Systems (*e.g.*, optimization of pressure monitor location on a Tank System, determination of pressure measurements and frequency indicative of potential for over-pressurization).

c. Following the performance optimization period, if there are two or more measurements within a 48-hour period that exceed the "trigger point" for a Tank System, Noble shall conduct a site investigation. The investigation shall include a site visit to test the pressure monitor and the operating parameters of the associated Tank System. During the site visit, Noble shall either conduct an IR Camera Inspection or an Audio, Visual, Olfactory ("AVO") inspection of the Tank System. The investigation shall be completed no later than the end of the Calendar Day following the second measurement. For purposes of this Paragraph, "trigger point" means the lowest set point of any device designed to relieve pressure from a Condensate tank minus two ounces. Set point refers to the pressure (in ounces) at which a device is designed to relieve pressure. For example, if a Condensate tank is equipped with a PRV and a thief hatch and the set point of the PRV is 14 ounces and the set point of the thief hatch is 16 ounces, the "trigger point" would be 12 ounces (*i.e.*, the lowest set point of any device on the tank minus two ounces). In the event a Tank System requires three site investigations in a consecutive 30 Calendar Day period, Noble shall conduct a VCS Root Cause Analysis.

d. The central monitoring location shall maintain records of the following and this information shall be provided in a spreadsheet with each Semi-Annual Report: (i) the date, time, location, and numerical value of all pressure readings in excess of the trigger point, and (ii) the date and results of all corresponding site investigations and all corresponding VCS Root Cause Analyses.

e. At any time, Noble may submit to EPA and CDPHE a request for alternative criteria (*e.g.*, pressure measurements and number of measurements in a given time period) triggering a site investigation and/or VCS Root Cause Analysis. EPA may, after consultation with CDPHE, grant or deny Noble's request in whole or in part.

f. After at least 18 months of operation of the pressure monitors, including the six-month performance optimization period, if Noble demonstrates and EPA in consultation with CDPHE determines that it is infeasible or overly burdensome in relation to the benefits to continue operating one or more of the pressure monitors, Noble may discontinue operation of and remove
the pressure monitor(s). As part of Noble's demonstration, Noble shall submit to EPA and CDPHE an analysis of operation and maintenance of such monitors to date, including a summary of all measurements triggering site investigations or VCS Root Cause Analyses, the results of those site investigations or analyses, and corrective actions taken. If EPA, after consultation with CDPHE, rejects Noble's demonstration, such conclusions are subject to Section XIII (Dispute Resolution). Operation of a pressure monitor shall be considered infeasible if (i) the monitor cannot be kept in proper condition (including calibration) for sufficient periods of time to produce reliable, adequate, or useful measurements; or (ii) recurring, chronic, or unusual equipment adjustment, servicing, or replacement needs cannot be resolved through reasonable expenditures.

VIII. Supplemental Environmental Projects

37. Pressurized Liquids Sampling and Analysis Study SEP.

Noble shall provide funding of no less than $1 million to retain a qualified research laboratory, consulting firm, or university with expertise in upstream oil and gas operations (hereinafter "Laboratory") to complete a scientific evaluation of the reliability of various Pressurized Liquids sampling and analytical methods consistent with the guidelines set forth in Appendix D.

a. The purpose of the study is to isolate individual variables of the sampling and analytical methods typically used to obtain information regarding the flash potential and makeup of pressurized hydrocarbon liquids and to identify protocols for determining how these samples can be reliably obtained, handled, and analyzed to produce accurate analytical results for practical application in modeling flashing losses.

b. Noble will provide recommendations to the Laboratory about locations to be sampled as part of the study, and cooperate fully with the Laboratory in the collection of Pressurized Liquids samples, natural gas samples, direct flash gas measurements, and related data.

c. Noble shall have the Laboratory prepare a report of its findings and conclusions. The report will be subject to review and comment by EPA and CDPHE. Following EPA and CDPHE comments, if any, Noble shall promptly post the final report and associated data on its website. The Parties shall use their best efforts to complete the report by June 30, 2017.

9. PES Consent Decree

Implementing Agency: EPA Region III

Next Gen Principles Demonstrated: Advanced monitoring (fenceline monitors and meteorological station); Transparency (hourly measurements made available on data site, post continuous emission monitor reports, and maintain fenceline monitoring data)

Source: https://www.epa.gov/sites/production/files/documents/fourthamendedsunoco-cd.pdf

Relevant provisions:

113A. **Fenceline Monitoring at the Philadelphia Refinery**. PES R&M LLC shall implement a project to install monitors at the fenceline or perimeter of the Philadelphia Refinery to monitor certain emissions and make the data publicly available, as provided in Appendix J of this Consent Decree ("Fenceline Monitoring System at the Philadelphia Refinery"). The installation and commencement of operation of the fenceline monitoring system shall be completed by no later than 30 months after the Date of Entry of the Fourth Amendment to Consent Decree.
9. New Appendix J shall be added to the Consent Decree and shall read as follows:
APPENDIX J FENCELINE MONITORING SYSTEM AT THE PHILADELPHIA REFINERY
PES R&M LLC will install, operate and maintain a fenceline monitoring system and make the data collected available to the public in accordance with the specifications and criteria identified in this Appendix.

A. Equipment: The monitoring system shall consist of two monitoring stations, which shall be equipped with the following equipment:

1. Instruments capable of measuring and recording the concentrations of the following compounds in air at minimum detection levels for the following

Analyte	Level of Detection
$PM_{2.5}$ and PM_{lo}	0.1 micrograms per m^3
CO	40.0 ppbV
VOCs	1.0ppbV
Sulfur dioxide	40.0 ppbV
NOx	1.0 ppbV
Hydrogen sulfide	1.0 ppbV
Reduced sulfur compounds (defined as all compounds containing reduced sulfur measured as an aggregate sum)	1.0 ppbV

The monitoring equipment shall be capable of measuring the analytes at the above-referenced concentrations and the data recording system shall reduce those measurements to hourly averages.

Within 360 days of the Date of Entry of the Fourth Amendment to the Consent Decree, PES R&M LLC shall provide EPA and AMS with a Fenceline Monitoring Plan to include, at a minimum, identifying the location of the meteorological station and demonstrating how that site meets the

requirements of this Appendix; a Quality Assurance Project Plan (QAPP) that describes the Quality Assurance/Quality Control procedures, specifications, and other technical activities to be implemented to ensure that the results of the fenceline monitoring system meets project specifications; and implementation of the data availability requirements in Paragraph E of this Appendix.

a. SO_2, Reduced Sulfur Compounds and H2S. Ambient concentrations of sulfur dioxide ($S0_2$) will be continuously measured using Teledyne-API Model T100 or equivalent in accordance with 40 C.F.R. Part 53, Subparts A and C. The S02 monitor shall be operated and maintained in accordance with all corresponding EPA equivalent method requirements. The S02 monitors will be operated in the 0 to 0.50 ppm full scale measurement range with temperature and pressure compensation features activated. For Hydrogen Sulfide (H2S) and reduced sulfur compounds, the Teledyne API Model T101 or equivalent will be operated in switching mode to provide alternate 5-minute data for H2S, then reduced sulfur compounds. The monitors shall be operated and maintained in accordance with the manufacturer's recommendations and shall be capable of measuring reduced sulfur compounds and HZS, with a lower detection level of 1.0 ppb.

Nothing in this Appendix J shall preclude the use of any other, additional fenceline monitoring equipment and/or monitoring of any other, additional pollutants at the fenceline of the Philadelphia Refinery.

2. Instruments for Measuring and Recording Wind Speed, Wind Direction, Ambient Temperature, Humidity and Barometric Pressure. PES R&M LCC will utilize existing equipment to monitor specific meteorological parameters to obtain data representative of prevailing meteorological conditions for the Philadelphia Refinery area. The data set produced shall be adequate to correlate prevailing conditions with pollutant measurements and transport.

a. Continuously measured meteorological parameters shall include hourly-averaged (scalar or vector) measurements of horizontal wind speed and wind direction, the standard deviation of the horizontal wind direction (sigma theta), air temperature and relative humidity. Wind speed and direction shall be measured at a height of approximately 10 meters. Temperature, relative humidity, and barometric pressure shall be measured at a height of 2 to 3 meters.
b. Wind direction and sigma theta measurement data shall be compiled and reported as hourly block averages in degrees (°), rounded to the nearest whole degree. Wind speed measurement data shall be compiled and reported as hourly block averages in miles per hour (mph), rounded to the nearest tenth of a mph.
c. Air temperature measurement data will be compiled and reported as hourly block averages in degrees Fahrenheit (° F) or Celsius (° C), rounded to the nearest tenth of a degree.
d. Relative humidity measurement data will be compiled and reported as hourly block averages in percent, rounded to the nearest whole percent.

3. Monitoring Station. Monitoring equipment (except meteorological monitors and their support towers) shall be installed and operated inside a temperature-controlled equipment shelter. The

temperature within each shelter shall be continuously monitored and recorded using a calibrated RTD and microprocessor-or PC-based data acquisition system (DAS or data logger). The climate control system for each monitoring shelter will be capable of maintaining a stable temperature within the range of 20° C to 30° C.

Typically, a monitoring shelter will measure 8 feet wide by 12 feet long by 8 feet high. The shelter will be anchored and secured to a concrete pad for safety. A padlocked exterior compartment attached to an outer wall of the shelter will safely house all compressed support gases. Shelter walls and roof will have a minimum insulation rating of R11. The shelter will be equipped with electrical service panels, interior electrical distribution circuits, lighting, workbench and sufficient space for housing, operating and maintaining the monitoring instruments. All electrical wiring and appurtenances will conform to the National Electric Code (NEC). Each shelter electrical service and the shelter building itself will be grounded to earth in conformance with NEC and local code requirements.

The monitoring shelter, if located within the refinery, shall maintain a slight (e.g., 0.013 to 0.026 Bar) internal positive air pressure with respect to atmospheric air pressure.

B. Location —The monitoring stations shall be located on Philadelphia Refinery property near the Refinery fenceline at up- and down-wind locations to be determined by PES R&M LLC, in consultations with EPA and interested members of the Philadelphia Refinery's Community Advisory Panel (CAP), and in consideration of the following siting criteria:

a. The up- and down-wind locations should be determined by the last 5 years of NOAA data from the most appropriate National Weather Service (NWS) or from the [local] monitoring station. The meteorological data (resultant wind direction and wind speed hourly averages) will be used to construct wind roses for the site.

b. Availability of land, accessibility to site, availability of utility services, and security of monitors and operating personnel.

c. Geographic spacing of sites relative to the refinery for monitoring upwind and downwind concentrations.

d. Probe or sampler inlet should be 2 to 5 meters above ground and have unrestricted airflow 270 degrees around the sample inlet probe or 180 degrees if the probe is on the side of a building.

e. Probe or sampler inlet should be >20 meters from the dripline of any tree(s).

f. S02, TRS, and VOC probes should be >1 meter away from supporting structures, walls and parapets.

g. The distance from a sampler probe to an obstacle, such as a building, should be at least twice the height the obstacle protrudes above the sampler, probe, or monitoring path.

h. All probes and samplers should be away from minor sources, such as incineration flues, to avoid undue influences from minor sources. The separation distance is dependent on the height of the minor source's emission point (such as a flue), the type of fuel or waste burned, and the quality of the fuel.

C. Operation — PES R&M LLC shall operate and maintain the monitors and equipment described herein in accordance with manufacturers' recommendations.

D. Quality Assurance/Quality Control (QA/QC) — PES R&M LLC shall ensure that all data collected by the Fenceline Monitoring System is subjected to appropriate QA/QC procedures on a monthly basis. The QA/QC procedures for a given month's data shall be completed by no later than the end of the month following the month within which the data were collected.

E. Data Availability — On a weekly basis, PES R&M LLC shall post the Fenceline Monitoring System data on a dedicated website ("Monitoring Data Website"), in a manner that shall be readily accessible, clearly labeled, and clearly presented to the public. PES R&M LLC shall additionally post on the Monitoring Data Website, on a quarterly basis, CEMS emissions reports submitted to AMS and/or USEPA pursuant to the Title V permit for all refinery units that are monitored by CEMS. PES R&M LLC shall maintain data collected through the Fence Line Monitoring System on the Monitoring Data Website for at least five years from the date of its collection, and shall review the Fence Line Monitoring Data with the CAP members as they may request.

10. Refinery NSPS and NESHAP (final rule)

Implementing Agency: EPA Office of Air and Radiation

Next Gen Principles Demonstrated: Advanced monitoring (fenceline monitoring), transparency

Source: The final NSPS and NESHAP for refineries was published at 80 Fed. Reg. 75178 (Dec. 1, 2015). Regulations governing fenceline monitoring requirements are codified at 40 CFR s. 63.658, and Appendix A to 40 CFR Part 63. Fenceline monitoring issues are discussed at 80 Fed. Reg. 75191-205.

11. Shell Deer Park Consent Decree

Implementing Agency: EPA Region VI

Next Gen Principles Demonstrated: Advanced monitoring, transparency

Source: https://www.epa.gov/sites/production/files/2014-07/documents/sdp-cd.pdf

Relevant Provisions:

VIII. SUPPLEMENTAL ENVIRONMENTAL PROJECTS

76. SDP shall implement as a Supplemental Environmental Project ("SEP") a project to install and operate an open path air monitor on the fenceline of the Covered Facilities ("Fence Line Open Path Monitoring SEP"), in accordance with this Paragraph and the criteria, terms, and procedures in Appendix 2.9 of this Consent Decree. SDP shall spend not less than $1 million to implement this SEP. SDP shall undertake the tasks required for implementing the Fence Line Open Path Monitoring SEP in accordance with the schedule required by Appendix 2.9.

APPENDIX 2.9 SCOPE OF WORK FOR THE SUPPLEMENTAL ENVIRONMENTAL PROJECT: FENCE LINE OPEN-PATH MONITORING ("AIR MONITORING SOW")

Objectives:

This Supplemental Environmental Project ("SEP") entails: (i) using an open-path ambient air monitor to measure and record benzene concentrations in the ambient air at the Covered Facilities' southeast fence line; (ii) using a Meteorological Station to record weather variables simultaneously with pollutant measurements; and (iii) responding with corrective actions to abate emissions.

Definitions:

2. The following terms shall be defined as follows for the purposes of this Air Monitoring SOW: "Air Monitoring System" or "AMS" shall mean a system consisting of one iJV DOAS Analyzer, one optical fiber multiplexer, two emitter telescopes, and two receiver telescopes on the Covered Facilities' southeast fence line, and a co-located Meteorological Station. These instruments shall be configured so that the emitter and receiver telescopes create two 300 meter paths in an east-west orientation; the Analyzer shall alternate measurements between the two paths on an hourly basis by means of an optical fiber multiplexer. "Data Acquisition System" or "DAS" shall mean acomputer-based data collection system that collects, organizes, and presents the data collected by the AMS. "Field Investigation" shall mean the investigatory process by which Shell Deer Park ("SDP") attempts to determine all potential causes) of a Screening Condition. "Infrared Camera" shall mean an organic gas-imaging camera. "Investigation Team" shall mean one or more SDP employees or contractors that conduct Field Investigations in response to a Screening Condition. SDP shall ensure that members of the Investigation Team, before conducting a Field Investigation, have received appropriate training necessary to enable the team members to tarty out their responsibilities on the Investigation Team. "Meteorological Station" shall mean a station that includes: (i) a 2-axis sonic anemometer for measuring wind speed and direction; and (ii) temperature and barometric pressure sensors for standardizing gas Page 1 of 7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 45 of 54 APPENDIX 2.9 concentration data to volumetric (ppbV) concentrations. The Meteorological Station shall be connected to the DAS. The data averaging for the

wind speed, wind direction, temperature, and barometric pressure shall be timed to be contemporaneous with the 5-minute average gas concentration measurements taken by the UV DOAS Analyzer. The Meteorological Station shall be located away from structures so that wind speed and direction measurements are representative of the measurement site. "Multiplexer" shall mean a device used to connect two optical paths to a single UV DOAS Analyzer and to switch the measurements between one path and the other. "Portable PIDs" shall mean portable photo-ionization detectors. For purposes of this SOW, Portable PIDs shall have a minimum sensitivity of 10 ppbV for organic gases measured as isobutylene. "ppbV" shall mean parts per billion by volume normalized to standard temperature and pressure. "Screening Condition" shall mean SDP Relevant Data that consists of either: (i) three or more 5-minute benzene concentration data points as measured by the AMS within any one-hour period that are each 15 ppbV or greater, provided that the five-minute average wind direction measurements, taken contemporaneously with the three benzene concentrations of 15 ppbV or greater within any one-hour period, are all within a range of no more than 40 degrees azimuth when concentration is plotted against the wind direction; or (ii) any one 5-minute benzene data point as measured by the AMS that is greater than 50 ppbV. "SDP Relevant Data" shall mean: (a) the 5-minute average benzene data. points collected during periods when the wind direction was from 270 to 360 degrees; and (b) all wind speed and direction data. "Toxic Vapor Analyzer" or "TVA" shall mean a portable flame-ionization detector suitable for use in performing EPA Method 21. "UV DOAS Analyzer" shall mean an open-path ultraviolet differential optical absorption spectrometer that uses the unique absorption by chemicals of specific wave lengths in the ultraviolet spectrum to identify and quantify individual chemicals in the ambient air. For the purposes of this SOW, the LTV DOAS Analyzer shall be capable of achieving a detection limit of 3 ppbV for benzene and shall generate a data point for average benzene concentration every 5-minutes. The 5-minute data point for benzene shall represent an average of discreet data points collected during the 5-minute averaging period. Page 2 of 7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 46 of 54 APPENDIX 2.9 Minimum Equipment Requirements

3. In order to implement this SEP, SDP shall maintain in good working, order at the Covered Facilities at least all of the following systems and equipment for the duration of this SEP: a. The A~VIS; b. The DAS; and c. Two Infrared Cameras, two Portable PIDs, and two TVAs. AMS Equipment Configuration and Data Collection Requirements

4. The UV DOAS Analyzer shall be installed such that the optical paths it measures have a generally east-west orientation as per the location identified in Exhibit 1 to this Appendix.

5. The UV DOAS Analyzer shall be connected to a DAS that shall integrate the gas concentration and meteorological data in order to show the gas-concentration/wind direction correlations during any hour in which a Screening Condition occurs.

6. The Meteorological Station shall be located near the optical paths measured by the AMS. The wind sensors (i) shall be located on a 10 meter mast unless adjustments are required due to obstructions from the overpass located next to the fence line, and (ii) shall, to the extent practicable, be positioned away from, or above, obstructions such as buildings and process units that may interfere with wind direction measurements.

7. All numerical data collected for the duration of this SEP shall be stored and maintained in a format that can be used in common spreadsheet programs. Field Investigation — Minimum Requirements

8. Upon the occurrence of a Screening Condition, SDP shall begin a Field Investigation as soon as possible but no later than 24 hours after the Screening Condition. At a minimum, the Field Investigation

shall include a review of the data from the AMS and relevant operational data from the Facility to locate the potential sources) from which the emissions originated.

9. Upon identifying the general areas) from which the emissions originated, SDP shall deploy an Investigation Team to the area(s). The Investigation Team shall survey potential sources of the emissions by conducting a monitoring survey using Portable PIDs and Infrared Cameras. Infrared Cameras shall be used in high sensitivity mode Leve12. Method 21 monitoring will be conducted on leaks identified by the Portable PIDs and Infrared Cameras. Confirmed emissions Page 3 of 7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 47 of 54 APPENDIX 2.9 sources that exceed regulatory requirements shall be repaired as soon as practicable. First attempt at repair of the confirmed emissions sources shall occur no later than 5 days from the date of source identification by the Investigation Team. Assessment of tanks shall be consistent with the protocols for tank monitoring in Appendix 2.7 of this Consent Decree.

Compliance Status Determination and Corrective Action

10. By no later than 14 days after identifying, through a Field Investigation, a benzene-emitting sources) that caused or contributed to a Screening Condition, SDP shall determine whether the source is or was in violation of any applicable federal, state, or local regulations or permit requirements. SDP shall implement, as soon as practicable, corrective action to address any past or present noncompliance.

11. If the compliance status determination in Paragraph 10 reveals that an identified sources) of benzene is not in violation of any applicable regulation or permit requirement, SDP shall evaluate the feasibility of reducing the emissions of benzene from that source in order to minimize the potential recurrence of a future Screening Condition from that source. In the Semi-Annual Reports required pursuant to this SOW, SDP shall describe in detail the evaluation that it took and identify any reduction measures considered, taken, and/or rejected.

Plans, Reports, and Schedule

12. No later than 120 days after the entry of this Consent Decree, SDP shall submit in writing to EPA for review and approval an Air Monitoring Response Plan for the Facility. This Plan shall include, but not be limited to: a. A detailed description of the systems and equipment to be installed and operated to implement this SOW. The systems and equipment shall be consistent with the requirements set forth in Paragraphs 3 through 6 of this SOW. b. A QAPP that SDP shall implement to ensure the accuracy, validity, representativeness, and usability of the data obtained by all monitoring equipment, including the AMS, portable PIDs, TVAs, and Infrared Cameras. The QAPP shall comply with the guidelines available in the following publication: "EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5, March 2001." Detailed standard operating procedures to be used during Field Investigations. d. A schedule—with a start date contingent upon approval of the Air Monitoring Response Plan—for expeditiously purchasing, installing and Page 4 of 7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 48 of 54 APPENDIX 2.9 commencing operation of the AMS, the DAS, the two Infrared Cameras, the two Portable PIDs, and the two TVAs .

13. After EPA has completed its review and approval of the Air Monitoring Response Plan, EPA shall send notice of its approval by certified mail, return receipt requested, to the individuals listed for SDP in the Notice Section of this Consent Decree. The "date of approval" of SDP's Air Monitoring Response Plan shall be three days after the date of EPA's mailing.

14. SDP shall purchase or lease the equipment specified in the approved plan in accordance with the schedule in the approved plan.

15. SDP shall complete the installation of all equipment specified in the Air Monitoring Response Plan in accordance with the schedule in the approved plan. SDP shall promptly notify EPA when all of the specified equipment has been installed. SDP shall not move the AMS to a new location without prior written approval by EPA. Movement of AMS components for maintenance shall not be restricted by this paragraph.

16. SDP shall commence operation of all monitoring equipment specified in the Air Monitoring Response Plan in accordance with the schedule in the approved plan.

17. No later than 180 days after the AMS is operational, SDP shall begin conducting Field Investigations into all Screening Conditions.

18. SDP may seek EPA approval to modify the Air Monitoring Response Plan at any time during the effective period of this Consent Decree.

19. SDP shall submit Air Monitoring Semi-Annual Reports to EPA that contain the following information: a. In spreadsheet format, all data collected by the AMS. Data shall include time-synchronized concentration data and meteorological data which shall be presented in contiguous columns on the spreadsheet. The first two columns of each sheet shall be the date and time. b. A detailed summary of each Field Investigation including: i. The pertinent data collected during the Field Investigation, including but not limited to: (a) measurement data collected by the AMS, (b) recorded emissions imaged by the Infrared Cameras, (c) portable PID data.; (d) TVA data; and (e) process data related to the Investigation. Page 5 of 7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 49 of 54 APPENDIX 2.9 ii. A detailed description of any actions taken by SDP to bring sources into compliance and/or to reduce emissions in response to the findings of a Field Investigation. c. The calibration, maintenance, and other QA/QC results prepared pursuant to the QAPP for all monitoring equipment required under this SEP. d. In the period before the AMS is fully operational, SDP shall report on the progress toward implementing this SEP.

20. The Air Monitoring Semi-Annual Reports shall be submitted contemporaneously with the Semi-Annual Reports due under Paragraph 85 of the Decree with the first Air Monitoring Semi-Annual Report due on the first reporting date that occurs more than three months after the approved date for commencement of the operation of the AMS. The Air Monitoring Semi-Annual Report shall be certified in accordance with Paragraph 89 of the Consent Decree.

21. SDP shall post the Air Monitoring Semi-Annual Reports on the Internet, with any confidential information redacted, at that same time as submission to EPA.

22. On a calendar week basis, SDP shall post to a publicly available Internet site the SDP Relevant Data for the prior week. SDP shall post the SDP Relevant Data for each calendar week no later than the last day of the following calendar week. The data shall be presented in form that allows the benzene, wind speed, and wind direction data to be viewed concurrently, i.e., in a tabular format.

23. On a calendar week basis, SDP shall e-mail the AMS and Meteorological Station data that does not meet the definition "SDP Relevant Data" for that week to Cary Secrest of EPA HQ and Dorothy Crawford of EPA Region 6. SDP shall e-mail the data for a calendar week no later than the last day of the following calendar week. The data shall be presented in form that allows the benzene, wind speed, and wind direction data to be viewed concurrently, i.e., in a tabular format.

24. SDP shall be required to correct deficient performance with the terms of this SOW. Any disputes related to this SOW shall be resolved pursuant to the procedures set forth in Section XII of this Consent Decree.

25. SDP shall comply with all terms of this Air Monitoring SOW and terms of the Air Monitoring Response Plan for a period of two years starting with the date that Field Investigations are required pursuant to Paragraph 17 above.

26. SDP shall submit to EPA a completion report on this SEP ("SEP Completion Report") at the time specified in Paragraph 81 of the Consent Decree. In addition to the information required in Paragraph 81, the SEP Completion Report for this SEP shall include: (i) the same information required in an Air Monitoring Page6of7 Case 4:13-cv-02009 Document 2-3 Filed in TXSD on 07/10/13 Page 50 of 54 APPENDIX 2.9 Semi-Annual Report; (ii) a summary of violations identified in the process of implementing this SEP; and (iii) a summary of physical, process, and/or operational changes made as a result of implementing this SEP.

12. Total Petroleum Consent Decree

Implementing Agency: EPA Region VI

Next Gen Principles Demonstrated: Advanced monitoring (infrared imaging, continuous emissions monitoring system "CEMS"); Transparency;
E-reporting

Source: https://www.epa.gov/sites/production/files/documents/total-cd.pdf
https://www.epa.gov/sites/production/files/2013-10/documents/1stamendtotal-cd.pdf

Relevant provisions:

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

V. NEW SOURCE REVIEW/PREVENTION OF SIGNIFICANT DETERIORATION REQUIREMENTS ("NSR/PSD")

A. Control of NOx Emissions from FCCU
12. By no later than the Date of Entry, TOTAL shall use a NOx CEMS to monitor the performance of any FCCU and to report compliance with the terms and conditions of this Consent Decree. TOTAL shall make CEMS data available to EPA upon demand.
B. Control of SO2 Emissions from FCCU
14. By no later than the Date of Entry, TOTAL shall use an SO2 CEMS to monitor the performance of any FCCU and to report compliance with the terms and conditions of this Consent Decree. TOTAL shall make CEMS data available to EPA upon demand.
D. Control of CO Emissions from FCCU
18. By no later than the Date of Entry, TOTAL shall use a CO CEMS to monitor the performance of any FCCU and to report compliance with the terms and conditions of this Consent Decree. TOTAL shall make CEMS and process data available to EPA upon demand.

25. Subject to Paragraph 26, within 180 days after the Date of Entry of this Consent Decree, TOTAL shall monitor each Covered Heater or Boiler as follows:

(i) For a Covered Heater or Boiler with a Heat Input Capacity greater than 100 MMBTU/hr (HHV), TOTAL shall install or continue to operate a CEMS for NOx;

26. Notwithstanding Paragraph 25, TOTAL shall monitor the following Existing Covered Heaters and Boilers as follows:

(i) For the Existing Covered Heaters and Boilers designated in Appendix A as "ACU-2 Charge, H-201," "ACU-1 Charge, H-202A," "ACU-1 Charge, H-202B," and "Vacuum Charge, H-301," TOTAL shall conduct an initial performance test pursuant to Paragraph 25(ii) within 180 days of the Date of Entry and comply with the requirements of Paragraph 25(ii) thereafter, but by no later than December 31, 2011, TOTAL shall install a CEMS on each such unit pursuant to Paragraph 25(i) and comply with Paragraph 25(i), instead, thereafter; and

(ii) For the Existing Covered Heater designated in Appendix A as "Unibon Charge, 13H-1," TOTAL shall conduct an initial performance test pursuant to Paragraph 25(ii) within 180 days of the Date of Entry and comply with the requirements of Paragraph 25(ii) thereafter, but by no later than December 31, 2008, TOTAL shall install a CEMS on such unit pursuant to Paragraph 25(i) and comply with Paragraph 25(i), instead, thereafter.

27. With respect to each CEMS required by Paragraph 25, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4, TOTAL must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three years. TOTAL must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

28. TOTAL shall install, certify, calibrate, maintain, and operate all CEMS required by this Consent Decree, including, but not limited to, the CEMS required by Paragraphs 12, 14, 18, and 25, in accordance with the requirements of 40 C.F.R. §§ 60.11, 60.13, and Part 60 Appendices A, B, and F. All CEMS required by this Consent Decree will be used to demonstrate compliance with emission limits, and shall be operated and data recorded pursuant to applicable law.

VIII. LEAK DETECTION AND REPAIR ("LDAR") PROGRAM

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

109. Electronic Storing and Reporting of LDAR Data. TOTAL will develop or continue to maintain an electronic database for storing and reporting LDAR data at the Refinery.

110. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter. Beginning on the Date of Entry of this Consent Decree, TOTAL shall make maximum possible use of dataloggers and/or other electronic data collection devices for all data collection during all LDAR monitoring. TOTAL shall ensure that the responsible TOTAL employees or contractor personnel shall transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database required by Paragraph 109. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include an accurate time and date stamp for each monitoring event, the monitoring reading, and identifying information on the operator and the instrument used in the monitored event. TOTAL may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken), and shall record, at a minimum, the identification of the technician undertaking the monitoring, the date, daily start and end times for the monitoring conducted, each monitoring reading, and the identification of the monitoring equipment. TOTAL shall transfer any manually recorded monitoring data to the electronic database required by Paragraph 109 within seven days of monitoring.

XII. SUPPLEMENTAL ENVIRONMENTAL PROJECT

135. TOTAL shall implement a "Passive, Infrared Imaging of Refinery Equipment and Components and Follow-Up Actions" project ("Infrared Imaging SEP"), in accordance with the provisions in Appendix D.

136. Part I of the Infrared Imaging SEP shall be completed within six months after the Date of Entry of this Consent Decree and will include the following:

(i) TOTAL shall conduct passive, infrared imaging of all Refinery components subject to the LDAR rules at 40 C.F.R. Part 60, Subpart GGG, Part 61, Subparts J and V, and Part 63, Subparts F, H, and CC. This requirement shall not apply to components that are difficult or unsafe to monitor with the infrared imaging equipment.

(ii) TOTAL shall monitor, in accordance with Method 21, at least 1,000 Refinery components imaged pursuant to subparagraph 136(i) concurrently with such imaging.
(iii) The 1,000 components subject to concurrent imaging and Method 21 monitoring, pursuant to subparagraph 136(ii), shall include any component imaged pursuant to subparagraph 136(i) from which the imaging detects emissions, up to a maximum of 500 such components. The remaining 1,000 components subject to concurrent imaging and Method 21 monitoring shall consist of components from which the imaging does not detect emissions, and the number of such components shall be the greater of (1) 500, or (2) the difference between 1,000 and the number of components imaged pursuant to subparagraph 136(i) from which the imaging detects emissions.
(iv) TOTAL shall repair, in accordance with the LDAR requirements, any component found to be leaking under the standards set by the LDAR regulations and Method 21.

137. Part II of the Infrared Imaging SEP shall be completed as soon as practical after the Date of Entry of this Consent Decree, consistent with Refinery operational needs, but in no event more than two years after the Date of Entry. Part II of the Infrared Imaging SEP will include the following:

(i) TOTAL shall conduct passive infrared imaging of all Refinery components and operations not so imaged pursuant to Part I of the Infrared Imaging SEP.
(ii) With respect to Refinery components and operations imaged pursuant to subparagraph 137(i), TOTAL shall comply with all requirements of this Consent Decree and the LDAR regulations applicable to such components and operations only for such components and operations found to be leaking under the standards set by the LDAR regulations and Method 21.

138. TOTAL is responsible for the satisfactory completion of the Infrared Imaging SEP in accordance with the requirements of this Consent Decree. “Satisfactory completion” means that TOTAL shall complete the work in accordance with all work plans and specifications for the project, regardless of cost. TOTAL may use contractors and/or consultants in planning and implementing the Infrared Imaging SEP.

139. TOTAL acknowledges that no part of the work conducted pursuant to the Infrared Imaging SEP is a substitute for, or may be offered in lieu of, compliance with any LDAR requirements, including, but not limited to, monitoring and repair.

140. With regard to the Infrared Imaging SEP, TOTAL certifies the truth and accuracy of each of the following:

(i) All cost information provided to EPA in connection with EPA’s approval of the Infrared Imaging SEP is complete and accurate, and represents a fair estimate of the costs necessary to implement Part I of the SEP.
(ii) As of the date it signed this Consent Decree, TOTAL was not required to perform or develop the Infrared Imaging SEP by any federal, state, or local law or regulation, nor was TOTAL required to perform or develop the Infrared Imaging SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum.
(iii) The Infrared Imaging SEP is not a project that TOTAL was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Consent Decree. TOTAL has not received, and will not receive, credit for the Infrared Imaging SEP in any other enforcement action.
(iv) TOTAL will not receive any reimbursement for any portion of the cost of the Infrared Imaging SEP from any other person or entity.

141. Infrared Imaging SEP Completion Report. Within 60 days after the date set for completion of Part II of the Infrared Imaging SEP, TOTAL shall submit a Infrared Imaging SEP Completion Report to the United States in accordance with Paragraph 264. The Infrared Imaging SEP Completion Report shall contain the following: (i) a detailed description of the Infrared Imaging SEP as implemented; (ii) a description of any problems encountered in completing the Infrared Imaging SEP and the solutions thereto; (iii) an itemized list of all eligible Infrared Imaging SEP costs; (iv) a certification that the Infrared Imaging SEP has been fully implemented pursuant to the provisions of this Consent Decree; and (v) a description of the environmental and public health benefits resulting from the implementation of the Infrared Imaging SEP, with a quantification of the benefits and pollutant reductions, if feasible.

142. EPA may, in its sole, unreviewable discretion, require information in addition to that described in the Paragraph 141 in order to determine the adequacy of the Infrared Imaging SEP.

143. After receiving the Infrared Imaging SEP Completion Report, the United States shall notify TOTAL whether or not TOTAL has completed the Infrared Imaging SEP satisfactorily. If TOTAL has not completed the Infrared Imaging SEP satisfactorily in accordance with all schedules, the United States may assess Stipulated Penalties pursuant to Part XV.

144. Disputes between the United States and TOTAL concerning the satisfactory performance of the Infrared Imaging SEP and the amount of eligible Infrared Imaging SEP costs are subject to dispute resolution pursuant to Part XIX. EPA's position with respect to all other disputes arising in connection with the Infrared Imaging SEP is final and unreviewable, and is not subject to dispute resolution.

145. Each submission required under this Part shall be signed by an official with knowledge of the Infrared Imaging SEP and contain the certification statement set forth in Paragraph 147.

146. Any public statement, oral or written, in print, film, or other media, made by TOTAL referring to the Infrared Imaging SEP shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action, *United States v. TOTAL Petrochemicals USA, Inc.* (E.D. Tex.), taken on behalf of the United States Environmental Protection Agency under the Clean Air Act."

13. Wisconsin Legislation on "Frac Sand" Mining

Implementing Agency: Wisconsin Department of Natural Resources

Next Gen Principle Demonstrated: Advanced monitoring (fenceline monitoring)

Source: Wisconsin Administrative Code, NR 415.075

Relevant provisions:

AMBIENT AIR MONITORING.

(a) Except as provided in par. (b), the owner or operator of any operation subject to the provisions of this section shall set up, operate and report the results obtained with a particulate matter ambient air monitoring system. The monitoring system shall comply with all of the following requirements:

1. A plan that describes the ambient air monitoring program shall be submitted to the department within 30 days of the date of issuance of a permit under ch. NR 406 or 407.

2. The department shall review the plan to determine whether it will provide accurate and reliable monitoring at the operation site. Department approval, conditional approval or disapproval of any ambient air monitoring plan shall be completed within 60 days of receipt of the plan.

3. Monitoring for particulate matter shall be conducted for a 24-hour period on the 6 day schedule established by the U.S. environmental protection agency, or more frequently if required by the department. The department shall specify the schedule in the approved plan.

4. Monitoring results shall be submitted to the department on a monthly basis. Results for each month shall be postmarked or received by the department no later than the last day of the following month.

5. The owner or operator shall start monitoring by 120 days from the date of permit issuance under ch. NR 407 or as specified in the ambient air monitoring plan for any source subject to the permit requirements of ch. NR 406.

(b) The owner or operator of a source may apply for, and the department may grant, a variance from the monitoring requirements of this subsection if the applicant demonstrates that the general public will not be exposed to significant levels of particulate matter from the source, and that the source's emissions units and processes are controlled to a level which meets all applicable requirements. The department may review any variance granted under this paragraph on a biennial basis. Following its review, the department may modify, extend or rescind the variance.