



Tesoro Refining &  
Marketing Company LLC  
P. O. Box 700  
Anacortes, Washington 98221

January 24, 2014

RECEIVED

Ms. Toby Mahar, Air Quality Engineer  
Northwest Clean Air Agency  
1600 South Second Street  
Mount Vernon, WA 98273-5202

JAN 24 2014

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CLEAN AIR AGENCY

**RE: Title V Air Operating Permit #013 Renewal  
NWCAA ID Number: 006-V-S  
EPA AFS Number: 53-057-0005**

Dear Ms. Mahar:

Please find enclosed three (3) copies of the Application for renewal of the Title V Air Operating Permit for the Tesoro Refining & Marketing Company LLC refinery. An electronic copy has also been submitted.

Feel free to contact me at 360-293-1675 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Johnston".

Paul Johnston  
Environmental Engineer



1600 South Second Street  
Mount Vernon, WA 98273-5202  
ph 360.428.1617  
tel 800.622.4627  
fax 360.428.1620  
[www.nwcleanair.org](http://www.nwcleanair.org)

## Title V Air Operating Permit Renewal Application

Please provide the information requested in this application. Please submit to the Northwest Clean Air Agency three paper copies and one electronic copy of the completed application. The certification at the end of this document applies to the entire submittal. If additional room to reply is required, please attach pages to this request.

In some cases, a prior submittal to the NWCAA (e.g., the annual emissions inventory) may include information requested below. If you would like to refer the NWCAA to that information rather than provide the information here, please note this in your response. Any submittal to which the NWCAA is referred will become part of your renewal application. It is also acceptable to attach relevant portions of your current Air Operating Permit if the information therein provides an adequate response to a question below.

### Part 1: General Information

- 1) *Company name and address [or plant name and address if different from the company name]*

Tesoro Refining & Marketing Company LLC  
Anacortes Refinery  
10200 West March's Point Road  
P.O. Box 700  
Anacortes, WA 98221

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- 2) *Current Air Operating Permit number and expiration date*

JAN 24 2014

AOP No. 013 R1  
NWCAA Number 006-V-S  
November 25, 2007

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- 3) *Owner's name and agent*

Name: Tesoro Corporation  
300 Concord Plaza  
San Antonio, TX 78216  
Agent: N/A

- 4) *Responsible Official name and address*

Danial S. Cameron, Vice President Anacortes Refinery  
Tesoro Refining and Marketing Company  
10200 West March's Point Road  
Anacortes, WA 98221

- 5) *Telephone number and name of plant site manager/contact*

Telephone No.: 360-293-1688  
Site Manager: Danial S. Cameron

- 6) *Were there any changes to the facility impacting air emissions since receiving the current Air Operating Permit? [if yes, please describe changes]*
- Completed construction of the Benzene Saturation (BenSat) Unit for the conversion of benzene to cyclohexane. Unit start-up occurred on September 30, 2011.
  - Installed new burner tips on the F-101 heater for flame stability.
  - Decommissioned the J-753 and J-755 natural gas engine driven compressors.

## **Part 2: Process and Emissions Information**

- 7) *Will there be any changes to the operating scenario(s) identified in the current AOP?*  
There are no changes anticipated in the operation of the refinery.
- 8) *Provide a description of process and products by Standard Industrial Classification (SIC) Code. Please list the applicable SIC Code. Please repeat the list of processes and products for each alternative operating scenario.*

SIC Code 2911 - Petroleum Refining

Processes Utilized: Crude Oil Distillation, Vacuum Flashing, Solvent De-Asphalting (ROSE Unit), Naphtha Hydrotreating, Catalytic Reforming, Gasoline Hydrotreating, Distillate Hydrotreating, Catalytic Cracking, Alkylation, Butane Isomerization, Jet Treating, Gas Treating, Diesel Drying, Benzene Saturation, and Steam Generation

Products Produced: Propane, Butane, Isobutane, Gasolines, Jet Fuel, Diesel Fuel Oils, Residual Fuel Oils, Asphalt Binder, blending stocks and intermediate streams.

- 9) *Please list any and all pollutants that would cause the facility to be classified as a "major source" as defined in WAC 173-401.*

Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>), Volatile Organic Compounds (VOCs), Particulate Matter (PM), Carbon Monoxide (CO), Greenhouse Gases (GHGs), and Hazardous Air Pollutants (HAPs)

- 10) *Please identify and describe all points of emissions at the facility except those that qualify as insignificant emission units or activities as defined in WAC 173-401-530. Are these emissions units correctly identified and defined in the current AOP? If not, please note the requested changes below.*

All points of emission are identified and defined in the current AOP except for the following:

- Deleted natural gas engine driven compressors J-753 and J-755 (Source ID 50). The units have been decommissioned and removed from service.
- Added emergency fire water pumps ENG-811 and ENG-812.
- Added radio tower emergency generator ENG-764.
- Added administration building emergency generator ENG-754.

Note that construction of the crude railcar offloading facility (CROF) was completed and the facility began operating under refinery ownership in September 2012. Ownership of the facility was subsequently transferred to Tesoro Logistic Operations LLC (TLO) and on September 3, 2013 TLO applied for an operating permit for the CROF.

- 11) *Please list and quantify all emissions of regulated air pollutants from the emission points identified in item 10 above. Please include calculations. If the most recent annual emissions inventory accurately describes these emissions, it is not necessary to repeat the same information here. Please refer the NWCAA to the most recent annual emissions inventory.*

The RY 2012 Annual Emissions Inventory (WEDS) Report submitted on April 12, 2013 accurately describes current emission rates with the following exceptions:

- Natural gas engine driven compressors J-753 and J-755 (Source ID 50) have been removed from service.

**12) List the fuels used and their respective usage rates at design capacity for the emission points identified in item 10 above.**

The fuels used and usage rates for the emission points presented in Section 1 of AOP 013 R1 are unchanged, except as noted below:

- Crude heater F-101 uses only refinery fuel gas and cannot be fired on fuel oil.
- Natural gas engine driven compressors J-753 and J-755 (Source ID 50) have been removed from service.

**13) List the raw materials used and their respective usage rates at design capacity for the emission points identified in item 10 above.**

The nominal crude oil capacity of the refinery remains 120,000 bpd. There have been no modifications that would increase the overall refining capacity or the capacity of individual process units.

**14) List the production rate at design capacity for the emission points identified in item 10 above.**

The production rate of all products remains unchanged and within ranges required to respond to market demands.

**15) Identify the facility operating schedule (anticipated operating hours per day, days per week, weeks per year)**

24 hours per day, 7 days per week, 52 weeks per year

**16) Please identify all air pollution control equipment at the facility. Is this air pollution control equipment correctly identified and defined in the current AOP? If not, please provide information necessary to correct.**

The control equipment listed below is correctly identified and defined in the current AOP.

- Low NOx burners on process heaters F-101, F-104, F-201, F-301, F-753, and F-6602
- Two CO Boilers on the Cat Cracker
- Flue Gas Scrubber on the Cat Cracker operations
- Baghouse filters on the E-Cat, Additive, fresh catalyst, and spent catalyst hoppers
- External floating roof storage tanks with primary and secondary roof seal systems on
- Internal floating roof storage tanks
- Controls (seals, covers, panels, and closed vent systems with water scrubbing and carbon adsorption) on those portions refinery effluent system subject to Benzene Waste Operations NESHAP and NSPS Subpart QQQ.

**17) Please identify and describe all compliance monitoring devices or activities at the facility.**

- Continuous Emission Monitoring Systems (CEMS)
  - ✓ Ambient air monitoring station – SO<sub>2</sub>
  - ✓ Refinery fuel gas (V-213 blend drum) – H<sub>2</sub>S
  - ✓ Boiler F-753 – NO<sub>x</sub> and O<sub>2</sub>
  - ✓ Amine Treater C-501 – H<sub>2</sub>S
  - ✓ CCU Flue Gas Scrubber – SO<sub>2</sub> and O<sub>2</sub>
  - ✓ F-6602 BenSat heater – NO<sub>x</sub> and O<sub>2</sub>

- Parametric Monitoring
  - ✓ CCU FGS – Ratio of FGS gas flow rate to scrubbing liquid flow rate
  - ✓ CRU Caustic & Water Wash Column – Ratio of pH analyzer
- Compliance Monitoring Activities
  - ✓ Leak detection and repair program meeting the requirements of 40 CFR 60 Subparts VV or VVa.
  - ✓ Waste and wastewater monitoring programs to meet the requirements of 40 CFR 60 Subpart QQQ and 40 CFR 61 Subpart FF.
  - ✓ Annual stack test of the CCU for NO<sub>x</sub> and CO emissions
  - ✓ Monitoring of the temperature of the CCU Diversion stack for regen flue gas leakage
  - ✓ Tracking of CCU regen gas bypass valve openings
  - ✓ Monitoring of CCU baghouse vents for visible emissions during transfer operations
  - ✓ Logging catalyst transfers to the CCU E-cat and Additive hoppers
  - ✓ Annual stack test of heater F-6602 for CO emissions
  - ✓ Analysis of sulfur in refinery fuel oil burned in heaters and boilers
  - ✓ True vapor pressure (TVP) measurement of the material in storage tanks.
  - ✓ Logging of sulfur curtailments at General Chemical
  - ✓ Tracking changes of service of tanks
  - ✓ Annual checks of tank roof seals
  - ✓ Visual inspections of tank roof components
  - ✓ Logging of hours of emergency RICE use
  - ✓ Daily scan of all refinery stacks for visible emissions
  - ✓ Continuous monitoring of the flare and flare pilot for the presence of a flame
  - ✓ Tracking of NHT HPS vent for bypass of the C-501

18) Identify any limitations on source operation that affect emissions of a regulated pollutant. Similarly, list any work practice standards that affect emissions of a regulated pollutant at this facility.

- Limitations
  - ✓ Heat release at heater F-104 is limited to 46 MMBtu/hr. [Low Sulfur Gasoline NOC]
  - ✓ Operation of emergency stationary RICE for maintenance checks and readiness testing is limited to 100 hours/year, including up to 50 hours/year for non-emergency operation. Must minimize the time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR 60.4211, 40 CFR 63.6640]
- Work Practice Standards
  - ✓ Operation of the Cat Cracker in accordance with an approved operation, maintenance and monitoring plan (OMMP) during any bypass of the FGS to the diversion stack

### **Part 3: Applicable Requirements**

**19) Cite and describe all applicable requirements. An updated copy of the applicable requirements in the current AOP for the facility may be sufficient.**

A draft copy of the updated AOP is attached. All of the applicable requirements noted in current AOP remain valid with the following additions:

- 40 CFR 60 Subpart Ja - Standards of Performance for Petroleum Refineries For Which Construction, Reconstruction or Modification Commenced After May 14, 2007
- 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR 63 Subpart CC §63.654 – Heat exchange systems
- 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
- BART Order 7388

**20) Please list any applicable test method(s) for determining compliance with each applicable requirement listed in item 19 above. An updated copy of the current AOP for the facility may be sufficient.**

A draft copy of the updated AOP is attached. All of the applicable test methods noted in current AOP remain valid with the following additions:

- 40 CFR 60 Subpart Ja – Monitor NO<sub>x</sub> emissions from F-101 using CEMS; Monitor flow and H<sub>2</sub>S concentration in the flare gas using CEMS
- 40 CFR 60 Subpart IIII – Maintain records of manufacturer's certification and operating instructions. Maintain records of fuel specifications. Operate a non-resettable hour meter.
- 40 CFR 63 Subpart CC §63.654 – Conduct monthly monitoring of the heat exchange systems using the Modified El Paso Method to determine levels of strippable VOC.
- 40 CFR 63 Subpart ZZZZ – Maintain records of maintenance activities and schedule.
- 40 CFR 63 Subpart DDDDD – As required, conduct performance tests per the methods specified in Table 5 to Subpart DDDDD; collect and analyze liquid fuel samples by the methods specified in Table 6; monitor fuel type and mixture, and/or operating load of heater/boiler per Table 4; conduct a tune-up; perform a one-time energy assessment.
- BART Order 7388 – Monitor emissions on BART sources using CEMS or emission factors.

**21) Does the applicant propose any exemptions from an otherwise applicable requirement? If so, please explain.**

No

**22) Does the CAM rule (40 CFR part 64) apply to any of the emissions units?**

Yes, the following CAM Plans are specified in the current AOP and no changes are proposed:

- Cat Cracker Fresh Catalyst Hopper (V-307) Baghouse for control of PM
- Cat Cracker Spent Catalyst Hopper (V-308) Baghouse for control of PM
- Cat Cracker Equilibrium Catalyst Hopper (V-353) Baghouse for control of PM
- Cat Cracker Additive Hopper (V-356) Baghouse for control of PM
- Cat Cracker Flue Gas Scrubber for control of Sulfur Dioxide

- 23) Does the accidental release prevention regulation (40 CFR part 68) apply to the facility?  
Yes
- 24) Do the federal Acid Rain rules (40 CFR parts 72-78) apply to any of the emissions units?  
No
- 25) Are there any requested changes to any condition in the current Air Operating Permit? [if yes, identify the condition, the requested change, and the reason]  
Yes, all requested changes are provided in the attached draft copy of the updated AOP.
- 26) If the applicant would like to request that the permit shield be extended to cover certain requirements that the applicant believes are inapplicable, please list those requirements, below. Please include a brief narrative description of each requirement and the basis for the belief that each is inapplicable.

The regulations cited in Section 8 of the current AOP do not apply to the facility with the exception of 40 CFR Part 63 Subpart ZZZZ.

#### **Part 4: Compliance Status and Certification**

- 27) Describe the compliance status of the facility with regard to all applicable requirements. Compliance status for each applicable requirement shall be described as "continuous" or "intermittent". Please include the method used for determining compliance. If an annual compliance certification has been recently submitted to the NWCAA, the applicant may reference this report. However, if the applicable requirements or compliance status have changed since that submittal, an updated submittal is required.
- See Compliance Status Report submitted February 21, 2013.
- 28) Provide the following:
- For applicable requirements with which the source is in compliance, provide a statement that the source will continue to comply with such requirements;  
Tesoro shall continue to comply with all applicable requirements.
  - For applicable requirements that become effective during the permit term, provide a statement that the source will meet such requirements on a timely basis;  
Tesoro shall comply with all requirements that become effective during the term of the AOP.
  - For applicable requirements with which the source is not in compliance at the time of permit issuance, provide a narrative description and provide a schedule of compliance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based;

In accordance with Consent Order 09, process heater F-101 is an affected facility subject to the requirements of 40 CFR 60 Subpart Ja. The heater does not

currently comply with the emission standard and continuous emission monitoring requirements of Subpart Ja. The schedule to achieve compliance is as follows.

- By September 30, 2014, file an NOC application with NWCAA to install new burners on Heater F-101.
- By September 30, 2015, commence initial startup of Heater F-101 having completed installation of the new burners and a continuous emissions monitoring system on Heater F-101.
- Within 180 days after the installation of the new burners and achieving the maximum production rate at which Heater F-101 will be operated, conduct a performance test to measure NOX emissions from Heater F-101 as required by 40 CFR 60.8.

- d. *For sources required to have a schedule of compliance to remedy a violation, provide a schedule for submission of certified progress reports every six months or at a more frequent period if specified in an applicable requirement; and*

Tesoro will provide reports in accordance Consent Order 09.

**Statement of Certification:** *Based on information and belief formed after reasonable inquiry, the statements and information in this document and any attachments are true, accurate and complete.*

Danial S. Cameron

Name of designated responsible official

Vice President, Anacortes Refinery

Title of responsible official

  
Danial S. Cameron

Signature of responsible official

1/23/14

Date

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# Air Operating Permit –DRAFT Plus updates

**Tesoro Refining and Marketing Company**

Anacortes, Washington

November 29, 2010 January 19, 2012



Serving Island, Skagit & Whatcom Counties

## PERMIT INFORMATION

**Tesoro Refining and Marketing Company  
10200 West March Point Road, Anacortes, WA 98221**

**SIC:** 2911  
**EPA AFS:** 53-0573-00005

**NAICS 324110**  
**NWCAA ID:** 006-V-S

**Responsible Corporate Official**

Den J. Sorensen  
Daniel S. Cameron  
Refinery Manager Vice President, Anacortes  
Refinery  
(360) 293-9122

**Corporate Inspection Contact**

Rebecca Spurling  
Environmental Superintendent Lead Engineer  
(360) 293-1664

**Northwest Clean Air Agency**

1600 South Second Street  
Mount Vernon, Washington 98273-5202  
(360) 428-1617

**Prepared by**

Theresa B. Mahar, P.E.  
Engineer  
(360) 428-1617 x 209

<b>Air Operating Permit Number:</b>	<b>Issuance Date:</b>
013-R1	January 26, 2010
<b>Permit Modifications</b>	<b>Modification Date:</b>
N/A	DRAFT January 23, 2012
<b>Supersedes Permit Number:</b>	<b>Expiration Date:</b>
013-R1	January 26, 2015
<b>Application Date:</b>	<b>Renewal Application Due:</b>
May 18, 2007	January 26, 2014

Tesoro Refinery, AOP #013R1M1  
November 29, 2010 DRAFT January 19, 2012

**ATTEST**

This permit is issued in accordance with the provisions of Section 322 of the Regulation of the Northwest Clean Air Agency and the provisions of Chapter 173-401 Washington Administrative Code.

Pursuant to Section 322 of the Regulation of the Northwest Clean Air Agency and Chapter 173-401 Washington Administrative Code, Tesoro Refining and Marketing is authorized to operate subject to the terms and conditions of this permit.

**Northwest Clean Air Agency Approval:**

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Date:

| Theresa AllenMahar, P.E.  
Permitting Engineer

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Date:

Mark Buford, P.E.  
Assistant Director

## SECTION 1 EMISSIONS UNIT DESCRIPTIONS

Emission units and activities at the Tesoro Refining and Marketing Company are listed in the following tables. The Tesoro Refining and Marketing Company petroleum refinery is located in Anacortes, Washington, here in after referred to as Tesoro, the facility, or the permittee. The information presented in Section 1 is included for reference purposes only and is not directly enforceable. The emission unit tables have been organized into logical groupings of the processes, support, or treatment areas. The tables also include emission unit identification numbers corresponding to the emissions inventory references, equipment installation and modification (noted as "mod") dates, federal regulatory applicability, and pertinent permit references.

<u>Table Number</u>	<u>Processing Unit</u>
1.1	Primary Crude Oil Processing
1.2	Hydroprocessing
1.3	Benzene Saturation
1.34	Catalytic Cracking, Product Fractionation, and Treating
1.54	Alkylation
1.65	Butane Isomerization
1.76	Storage, Blending and Transfer Operations
1.87	Boiler/Utilities Plant
1.98	Flares
1.109	Effluent Treatment Plant
1.110	Fire Training
1.12	Rail Unloading

### 1.1 Primary Crude Oil Process Area Emission Units

**Table 1.1: Primary Crude Oil Process Area Emission Units**

ID	Type & Description	Year Installed	Comments
34	Crude oil distillation, vacuum flasher, fuel oil, asphalt blenders, and jet fuel treater equipment components (including compressors J-205 and J-206) in VOC/HAP service	1955, except: Asphalt blender - 1998 JFT - 1999 J-205, 1985 J-206, 1986	40 CFR Part 63 Subpart CC - existing equipment LDAR (60 Subpart VV)
34	Residuum Oil Supercritical Extraction (ROSE) equipment components in VOC/HAP service	2001	40 CFR Part 63 Subpart CC - existing equipment LDAR (60 Subpart VV) OAC 744a requires enhanced LDAR for new equipment
	Crude unit miscellaneous process vents: 1-1273-003		Vent to fuel gas/flare system 40 CFR Part 63 Subpart CC group 1
	Crude unit miscellaneous process vents: 1-272-004, 1-1290-006		Vent to fuel gas/flare system 40 CFR Part 63 Subpart CC group 2
	Vacuum flasher unit miscellaneous process vents: 2-632-005, 2-647-007, and 2-683-002		Vent to fuel gas/flare system 40 CFR Part 63 Subpart CC group 1
	Vacuum flasher miscellaneous process vent 2-645-013		Normally recovered to process. Vented to Boilers F-751 or F-752 when CCU and Gas Plant is down - 40 CFR Part 63 Subpart CC group 1
01	Crude heater F-101	1955	120 MMbtu/hr; low-NO <sub>x</sub> burners; fuel-oil and refinery fuel gas. Individual stack; Regulatory Order 26, 40 CFR 63 Subpart DDDDD
02	Crude heater F-102	1955	120 MMbtu/hr; fuel oil and refinery fuel gas. Individual stack. 40 CFR 63 Subpart DDDDD

**Comment [A1]:** The Draft AOP audit consistently recommends listing emission units, control devices, size/capacity/rating fuel, and year installed in the permit. I think that regulatory requirements could be left out of this table since they are included in Section 5 and discussed in the SOB. I know this is a change from Tesoro's original format.

**Comment [TM2]:** I'm leaving them in as a good "at a glance" roadmap for what regulatory requirement applies to any given equipment. I have found this list very useful and challenging to create from Section 5. Tesoro has commented that they like it as well. I think it should be added to other AOPs.

**Table 1.1: Primary Crude Oil Process Area Emission Units**

ID	Type & Description	Year Installed	Comments
03	Crude heater F-103	1963	132 MMBtu/hr; fuel oil and refinery fuel gas. Individual stack. BART Order 7838; 40 CFR 63 Subpart DDDDD
05	Vacuum flasher heater F-201	1955	96 MMBtu/hr; low-NO <sub>x</sub> burners; refinery fuel gas. Individual stack. 40 CFR 63 Subpart DDDDD
31	ROSE unit individual drain systems	2001	40 CFR Part 60 Subpart QQQ
	Jet fuel treater (JFT) individual drain systems	1999 - mod	40 CFR Part 60 Subpart QQQ

## 1.2 Hydroprocessing Emission Units

**Table 1.2: Hydroprocessing Emission Units**

ID	Type & Description	Year Installed	Comments
34	Cat gas splitter (CGS), Clean fuels hydrotreater (CFH) / distillate hydrotreater (DHT) equipment components in VOC/HAP service	CGS 1972 - mod 2006 CFH/DHT 1961 - mod 2006	40 CFR Part 63 Subpart CC - existing equipment (60 Subpart WV) OAC 896a requires enhanced LDAR
34	Catalytic reformer (CR) & Naphtha hydrotreater (NHT) equipment components in VOC/HAP service	1972	40 CFR Part 63 Subpart CC - existing equipment (60 Subpart WV) OAC 827b requires enhanced LDAR for new equipment
	Selective Hydrogenation Unit (SHU) equipment components in VOC/HAP service	2007	40 CFR Part 63 Subpart CC - existing equipment (60 Subpart WV) OAC 989a requires enhanced LDAR
	CR caustic and water wash column vent	1972	40 CFR Part 63 Subpart UUU
04	CGS Column C-113 reboiler F-104	1972 2007 - burners	60 MMBtu/hr; ultra-low-NO <sub>x</sub> burners; refinery fuel gas. Individual stack. OAC 827b, BART Order 7838; 40 CFR 63 Subpart DDDDD

**Table 1.2: Hydroprocessing Emission Units**

ID	Type & Description	Year Installed	Comments
11	CFH feed heater F-654	1964‡	15 MMBtu/hr; refinery fuel gas. Individual stack. BART Order 7838; 40 CFR 63 Subpart DDDDD
10	DHT feed heater F-652	1961	67 MMBtu/hr; refinery fuel gas. Individual stack. 40 CFR 63 Subpart DDDDD
15	NHT feed heater F-6600	1972	65 MMBtu/hr; refinery fuel gas. Individual stack. OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD
16	NHT column C-6600 reboiler F-6601	1972	68 MMBtu/hr; refinery fuel gas. Individual stack. OAC 827b. BART Order 7838
18	CR feed heater F-6650	1972	143 MMBtu/hr; refinery fuel gas. Shares stack with F-6651‡; OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD
19	CR inter-reactor heater 1, F-6651	1972	143 MMBtu/hr; refinery fuel gas. Shares stack with F-6650‡; OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD
20	CR inter-reactor heater 2, F-6652	1972	67 MMBtu/hr; refinery fuel gas. Shares stack with F-6653‡; OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD
21	CR inter-reactor heater 3, F-6653	1972	38 MMBtu/hr; refinery fuel gas. Shares stack with F-6652‡; OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD
22	CR column C-6650 heater F-6654	1972	32 MMBtu/hr; refinery fuel gas. Individual stack. OAC 827b. BART Order 7838; 40 CFR 63 Subpart DDDDD

**Table 1.2: Hydrotreating Emission Units**

ID	Type & Description	Year Installed	Comments
23	CR regeneration heater F-6655	1972	27 MMBtu/hr; refinery fuel gas. Individual stack. BART Order 7838; 40 CFR 63 Subpart DDDDD
	DHT compressor vents J-650, J-651, J-652	2006 1971	Vent normally to flare
31	DHT individual drain systems	1961 - mod 2006	40 CFR Part 60 Subpart QQQ
	SHU individual drain systems	2007	40 CFR Part 60 Subpart QQQ

### 1.3 Benzene Saturation Unit

**Table 1.3: Benzene Saturation Unit**

ID	Type & Description	Year Installed	Comments
	Benzene saturation (BenSat) unit equipment components in VOC/HAP service	not yet constructed 2010	40 CFR Part 60 Subpart GGGa (60 Subpart VVa) Part 63 Subpart CC; OAC 1037
	Benzene saturation unit equipment in benzene service	not yet constructed 20110	40 CFR Part 61 Subpart J
	Benzene saturation unit individual drain systems	not yet constructed 20110	40 CFR Part 60 Subpart QQQ
17	BenSat column C-6601 reboiler F-6602	1972 - mod 2011	73.5 MMBtu/hr; refinery fuel gas <50 ppmv H <sub>2</sub> S-natural gas. Individual stack; NO <sub>x</sub> CEMS; OAC 1037. BART Order 7838; 40 CFR 63 Subpart DDDDD

Comment [a3]: RAS: OAC 1037 permitted both RFG and Natural Gas, but final design only incorporated natural gas. Let's discuss how we want to reflect the term going forward.

**1.4 Catalytic Cracking, Product Fractionation, and Treating Emission Units**

<b>Table 1.4: Catalytic Cracking, Product Fractionation, and Treating Emission Units</b>			
<b>ID</b>	<b>Type &amp; Description</b>	<b>Year Installed</b>	<b>Comments</b>
34	Catalytic cracking unit (CCU) and Amine 2 unit equipment components in VOC/HAP service	1955 – mod 2002	40 CFR Part 63 Subpart CC - existing equipment (60 Subpart VV)
34	Amine 2 unit equipment components in VOC/HAP service	2007	OAC 952b requires enhanced LDAR
	CCU Miscellaneous process vents 3-655-009, 3-655-011, 65-667-004		40 CFR Part 63 Subpart CC group 2 Vented to F-304
24	CCU Carbon Monoxide Boilers (COBs) F-302 and F-304	1955 – CCU & F-302 1964 – F-304 2005 – FGS	40 CFR Part 63 Subpart UUU OAC 946ab, F-304 BART Order 7838 Flue Gas Scrubber (FGS)/Diversion Stack for upset or emergency
25	Flue Gas Diversion Stack		
	CCU CO Boilers	F-302, 1955 F-304, 1964	Fuels: CCU regenerator vent gas, refinery fuel gas, caustic regenerator vent gas, and SWS tops– 40 CFR 63 Subpart DDDDD
06	CCU Feed heater F-301	1955	128 MMBtu/hr; low-NO <sub>x</sub> burners; refinery fuel gas. Individual stack. 40 CFR 63 Subpart DDDDD
09	Startup air preheater F-303	1955	69 MMBtu/hr; natural gas. Shares a stack with F-302. Discharges to the CCU regenerator. 40 CFR 63 Subpart DDDDD
			Formatted: Highlight
43	Fresh catalyst hopper V-307	1955; 1983 & 1984, 2007 upgrades	OAC 947; Baghouse PM control
44	Spent catalyst hopper V-308	1955; 1983 & 1984, 2007 upgrades	OAC 947; Baghouse PM control
45	Equilibrium catalyst hopper V-353	1997	OAC 633a; Baghouse PM control
46	Catalyst additive hopper V-356	2001	OAC 946ab; Baghouse PM control
	Amine Treating Unit (ATU) 2 and ancillary equipment; acid gas line to General Chemical, absorber tower (C-1110), regenerator (C-1120), and small amine tank (Tk-1140)		OAC 952b

**Table 1.4: Catalytic Cracking, Product Fractionation, and Treating Emission Units**

ID	Type & Description	Year Installed	Comments
ATU 2	Individual drain systems	2007	40 CFR Part 60 Subpart QQQ

### 1.5 Alkylation Process Area Emission Units

**Table 1.5: Alkylation Process Area Emission Units**

ID	Type & Description	Year Installed	Comments
34	Alkylation Area Equipment Components in HAP Service	1957	40 CFR Part 63 Subpart CC (Part 60 Subpart VV)
34	Alkylation Area Equipment Components and Compressors J-901 and J-902 in VOC Service	1957	NWCAA 580.8 (Part 60 Subparts GGG & VV)

### 1.6 Butane Isomerization (BI) Process Area Emission Units

**Table 1.6: Butane Isomerization (BI) Process Area Emission Units**

ID	Type & Description	Construction / Modification Year	Comments
	Butane isomerization optimization project	2009	OAC 1031 – fuel oil consumption limit
	Butane Isomerization miscellaneous process vent 95-648-022	1963 – mod 1995	Vented to flare/fuel gas recovery
			40 CFR Part 63 Subpart CC group 1
34	Butane Isomerization Unit Equipment Components in VOC Service	1963; Reaction Section replaced 1995	40 CFR Part 60 Subpart GGG (Subpart VV)
31	Butane Isomerization Unit Individual Drain Systems in VOC Service	1963 – mod 1995	40 CFR Part 60 Subpart QQQ

### **1.7 Storage, Blending, and Transfer Operations Process Area Emission Unit**

External Floating Roof (EFR) storage tanks

**Table 1.7a: Storage, Blending, and Transfer Operations Process Area Emission Units with External Floating Roofs**

ID	Type & Description	Year Installed	Comments
35	Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, and 32, 60, 88, 90, and 92, 134, 136	1954 1958 1957 1964	External floating roof storage vessels NWCAA 560, 580.3, 580.9, 40 CFR Part 63 Subpart CC group 1
35	Tank Group 5 Tanks 6, 7 89 and 91 113 135	1954 1957 1960 1963	40 CFR Part 63 Subpart CC group 2

Fixed roof storage tanks (some also have internal floating roofs)

**Table 1.7b: Storage, Blending, and Transfer Operations Process Area Emission Units with Fixed Roofs**

ID	Type & Description	Year Installed	Comments
32	Tank Group 4 Tank 232	1994	Internal floating roof storage vessel NWCAA 560; 40 CFR Part 63 Subpart CC group 2

**Table 1.7b: Storage, Blending, and Transfer Operations Process Area Emission Units with Fixed Roofs**

ID	Type & Description	Year Installed	Comments
32	Tank Group 5 Tanks 8, 9, 10, 11, 12, 23, 25, 26, 33, 34, 35, and 36	1954 1964 1961 1964 1965 1968 1968 1981	40 CFR Part 63 Subpart CC group 2 Fixed roofs
32	Tanks 39, 40, 161	Tanks 39 & 40, 1954 Tank 161, 1972	Internal Floating Roof (wastewater) - OAC 362b, NWCA 560, 580.3, and 40 CFR Part 63 Subpart CC group 1
32	Tanks 41 and 42	Tanks 41 & 42, 1954.	Cone Roof Storage Vessels; 40 CFR Part 63 Subpart CC group 2
32	Tanks 43 and 87	Tank 43, 1954 Tank 87, 1955	40 CFR Part 63 Subpart CC group 2
32	Tank 44 & 57	Tanks 44 & 57 1954	Wastewater - OAC 362b, 40 CFR Part 63 Subpart CC group 2
	Tank 57	1954	Spent Caustic, 40 CFR Part 63 Subpart CC group 2
32	Tank 62	1954	Utilized only in the event of a crude oil diversion emergency Out of service June 2010
32	Tanks 96 and 97	1957	Fixed roof 40 CFR Part 63 Subpart CC group 2

**Comment [TM4]:** Tk 39 is only covered when service change as backup to tk 40 (stop oil tanks). Tk 40 accepts pre-processed slugs, Tk 39 is post break tank treatment.

**Comment [TM5]:** Break Tanks

NSPS-applicable storage tanks

**Table 1.7c: Storage, Blending, and Transfer Operations Process Area Emission Units with NSPS requirements**

ID	Type & Description	Year Installed	Comments
37	Tanks 165, 166	1978	External floating roof - NWCAA 560, 580.3, 580.9, (OACs 187 and 214) 40 CFR Part 60 Subpart K, Part 63 Subpart CC group 1
37	Tank group 2 Tanks 202 and 203	1993	External floating roof - NWCAA 560, 580.3, and 580.9; OAC 358a; 40 CFR Part 60 Subpart Kb, Part 63 Subpart CC group 1
37	Tank Group 3 Tank 231	1994	External floating roof - NWCAA 560, 580.3, 580.9; 40 CFR Part 60 Subpart Kb, 63 Subpart CC group 1
37	Tank Group 6 Tanks 247 and 248 (including loading & unloading)	1998	Asphalt - OAC 649b; 40 CFR Part 60 Subpart UU, and Part 63 Subpart CC group 2

Ammonia storage tanks

**Table 1.7d: Ammonia storage tanks**

ID	Type & Description	Year Installed	Comments
38	Tank 129	2001 - Retired in Place in 2009	Ammonia storage tank

Tank Farm Equipment other than Tanks

**Table 1.7e: Storage, Blending, and Transfer Operations Process Area Tank Farm Equipment other than Tanks**

ID	Type & Description	Year Installed	Comments
34	Tank farm equipment components in VOC/HAP service		40 CFR Part 63 Subpart CC (Part 60 Subpart WV)

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**Table 1.7e: Storage, Blending, and Transfer Operations Process Area Tank Farm Equipment other than Tanks**

ID	Type & Description	Year Installed	Comments
31	Tanks 202, 203, 231 and logistics area wharf hose individual drain systems	1993 – Tanks 202/203 1994 – Tank 231 <del>1998 – Tanks 247/248</del> 1993 – Logistics	40 CFR Part 60 Subpart QQQ
34	LPG loading equipment components in VOC/HAP service	1955	NWCAA 580 (40 CFR Part 60 Subpart GGG – Subpart VV)

#### 1.8 Utilities Plant Emission Units

**Table 1.8: Utilities Plant Emission Units**

ID	Type & Description	Year Installed	Comments
12	Boiler F-751	1954	268 MMBtu/hr; fuel oil and refinery fuel gas, vacuum flasher tail gas, SWS tops; 40 CFR 63 Subpart DDDDD
13	Boiler F-752	1954	268 MMBtu/hr; fuel oil and refinery fuel gas, vacuum flasher tail gas, SWS tops; 40 CFR 63 Subpart DDDDD
14	Boiler F-753	1994	220 MMBtu/hr; natural gas and propane. Individual stack. OAC 390e; NO <sub>x</sub> and O <sub>2</sub> CEMS; 40 CFR Part 60 Subparts Db and J; 40 CFR 63 Subpart DDDDD
48	Diesel-Fired_Plant_Emergency Generator_GEN-763	2001	465 hp; diesel; OAC 768_spark ignition compression ignition (CI) 4-stroke-fuel burn (4SRB); 40 CFR Part 63 Subpart ZZZZ
50	Engine-driven plant compressors J-753 & J-755	J-753-1995 J-755-before 2006	440-hp each – natural gas and propane; 4SRB; 40 CFR Part 63 Subpart ZZZZ

**Table 1.8: Utilities Plant Emission Units**

ID	Type & Description	Year Installed	Comments
51	Engine-driven portable compressor J-750	Before 2006 Removed from service 2009	420 hp - diesel 2-stroke compression ignition (CI); 40 CFR Part 63 Subpart ZZZZ Removed from service
32	Cooling water towers (CWT)	CWT 1, 1955 CWT 2, 1971 CWT 2a, 1963 CWT 2b, 1991	40 CFR Part 63 Subpart CC CWT 2 and 2a BART Order 7838
	Emergency Fire Water Pumps ENG-811 and ENG-812	2009	190 hp each, diesel 4S 40 CFR Part 63 Subpart ZZZZ
	Radio Tower Emergency Generator ENG-764	1990	75 hp, diesel 4S 40 CFR Part 63 Subpart ZZZZ
	Administration Building Emergency Generator ENG-754	2010	200 hp, diesel 4S 40 CFR Part 63 Subpart ZZZZ

### 1.9 Flare Area Emission Units

**Table 1.9: Flare Area Emission Units**

ID	Type & Description	Year Installed	Comments
	Flare Gas Recovery Compressor J-887	2000	OAC 725b; 40 CFR Part 63 Subpart CC (Part 60 Subpart VV) Barrier Fluid System
30	Flares X-813 (Refinery Flare), and X-814 (Catalytic Cracking Unit Flare), and X-819 (Multi-Jet Flare)	X-813 & X-814: 1955 X-819: 1972	40 CFR 60 Subpart Ja, 40 CFR Part 63 Subpart A
30	X-819 (Multi-Jet Flare)	1972	40 CFR 60 Subpart Ja, 40 CFR Part 63 Subpart A BART Order 7838

**Table 1.9: Flare Area Emission Units**

ID	Type & Description	Year Installed	Comments
34	Flare area equipment components in VOC/HAP service		40 CFR Part 63 Subpart CC (Part 60 Subpart VV)

**1.10 Oily Wastewater Collection and Treatment Emission Units**

**Table 1.10: Effluent Treatment Plant Emission Units**

ID	Type & Description	Year Installed	Comments
31	Facility-wide process individual drain systems and treatment systems	1955	40 CFR Part 61 Subpart FF & 63 Subpart CC 2 Mg option
31	API Separator (X-701), Sludge Thickener (X-715), Primary Clarifiers (X-702 and X-703), Clarifier Sludge Reservoir (X-708)	1955 mod 1992	40 CFR Part 61 Subpart FF & 63 Subpart CC OAC 362b; covered – vapors to with water spray tower, carbon absorption canisters, and water seals.

**1.11 Fire Training**

**Table 1.11: Fire Training**

ID	Type & Description	Year Installed	Comments
55	Fire Training Grounds	1955	Permitted Annually with an Outdoor Fire Permit

**Rail-Untoading**

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**Table 1.12: Rail Unloading**

ID	Description	Year Installed	Comments
	Rail unloading equipment in VOC/HAP service	2012 Not yet constructed	40 CFR Part 60 Subpart GG & 49 CFR Part 63 Subpart GG OAC-H01
	Rail unloading individual drain systems and wastewater tanks	Not yet constructed	40 CFR Part 60 Subpart OOO OAC-H01

Comment [a7]: Revise to BACT requirements per 9/18/12 conversation.

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## SECTION 2 GENERALLY APPLICABLE REQUIREMENTS

The cited requirements in the "Citation" column and incorporated herein by reference are applicable plantwide at the source, including insignificant emission units. These requirements are federally enforceable unless identified as "state only". A requirement designated "state only" is enforceable only by the state or the NWCAA, and not by the EPA or through citizen suits. The "Description" column is a brief description of the applicable requirements for informational purposes only and is not enforceable. Periodic or continuous monitoring requirements (including testing) are specified in the "Monitoring, Recordkeeping and Reporting" column, which identifies monitoring, recordkeeping and reporting (MR&R) obligations the source must perform as required by WAC 173-401-605(1) and 615(1) and (2) or the underlying requirement. MR&R obligations do not apply to insignificant emission units.

The requirements in the MR&R column labeled "Directly enforceable" are legally enforceable requirements added under the NWCAA's "gap-filling" authority [WAC 173-401-615(1)(b) & (c), (10/17/02)]. Other requirements not labeled "directly enforceable" are brief descriptions of the regulatory requirements for information purposes, and are not enforceable. Unless the text of the MR&R column is specifically identified to be directly enforceable, the language of the cited regulation takes precedence over a paraphrased requirement.

The provisions of federally approved NWCAA 365, 366 and the "Guidelines for Industrial Monitoring Equipment and Data Handling" have been replaced in this section by NWCAA 367 and Appendix A - "Ambient Monitoring, Emission Testing and Continuous Emission and Opacity Monitoring". NWCAA 367 and Appendix A were adopted on July 14, 2005 with a provision that applicable sources would be allowed one year from the date of adoption to achieve compliance with Appendix A. The new regulations are "State Only" until incorporated into the State Implementation Plan. NWCAA 367 and Appendix A are not materially different from the previous rule and guideline, but have been updated to include current monitoring technology and methods.

Comment [A8]: The "Guidelines" are no longer cited in updated permits so this paragraph is not necessary. Ditto for the Intro to Section 5.

Comment [TM9]: However, they are in the old regulations cited as federally enforceable – until the SIP is updated, they are something that needs to be addressed somewhere.

**Table 4 - Generally Applicable Requirements**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
4.1 General	NWCAA 342.1 (7/14/05) State Only	Operation and Maintenance Sources are required to keep any process and/or air pollution control equipment in good operating condition and repair.	<i>Directly enforceable</i> Operate in accordance with the terms of the permit.
4.2 General	NWCAA 342.2 (7/14/05) same as 9/8/93 version	Operating Instructions/Maintenance Schedules Make operating instructions and maintenance schedules available to operators.	
4.3 VOC	NWCAA 580.25 (2/8/96)	Equipment for the reduction, collection or disposal of VOC shall be maintained and operated in a manner commensurate with accepted industrial practices.	

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Tesoro Refinery, AOP #013R1M1  
November 29, 2011 DRAFT January 19, 2012

Term	Citation	Description	Monitoring / Recordkeeping & Reporting
4.4 Opacity	NWCAA 451.1 (10/13/94) NWCAA 451.1 (11/8/07 State only) WAC 173-400- 040(1) (9/20/93) [WAC] 173-400- 040(12) (2/10/05/11/11 (State only)	Emission of Air Contaminant - Visual Standard. Visible emissions shall not exceed 20% opacity for any period aggregating more than 3 minutes in any one hour.  Excess emissions as a result of soot blowing or grate cleaning shall not occur for more than 1.5 minutes in any 8 hour period, or another approved schedule.	<p><b>Directly enforceable</b></p> <p>For combustion units burning oil, visually observe stacks on a daily basis to qualitatively assess whether emissions are visible. The frequency may be reduced to weekly if no visible emissions are observed for thirty consecutive days. The permittee shall revert to daily observations of individual stacks if any visible emissions are noted during the observation. For combustion units burning gaseous fuels, visually observe stacks monthly to qualitatively assess whether emissions are visible. The frequency may be reduced to quarterly if no visible emissions are observed for six consecutive months. The permittee shall revert to monthly observations of individual stacks if any visible emissions are noted during the observation.</p> <p>If visible emissions are observed, reduce emissions to zero as soon as possible. If emissions cannot be reduced to zero, the permittee may monitor by Ecology Method 9A no later than 24 hours after detection and daily thereafter until opacity is shown to be less than 20%. Otherwise the visual emissions shall be considered in excess of the standard.</p> <p>Record observation results for stacks with visible emissions and any related equipment or operational failure, the occurrence dates and times, actions taken, and the type of fuel burned. Record that an observation was performed, with date, time, background conditions, and identification of the observer. Keep records of all observations available for inspection.<sup>1</sup></p> <p>Combustion units with specifically applicable permit terms in Section 5 for opacity and particulate matter should be monitored as per Section 5 requirements only.</p> <p>State of Washington Department of Ecology Source Test Method 9A - Visual Determination of Opacity for a three Minute Standard (Revised July 12, 1990).</p>

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**Comment [A10]:** There is a new version of WAC 173-400-040 dated 4/1/11. This requirement is in -040(2).

Term	Citation	Description	Monitoring/Recordkeeping & Reporting
4.5 PM	NWCAA 455.1 (4/14/93)  NWCAA 455.1 <sup>2</sup> (4/18/95/11/95 State only)	Emission of Particulate Matter Emissions shall not exceed <ul style="list-style-type: none"> <li>• <b>0.10 grain/dscf PM</b> (corrected to 7% oxygen, except from all gaseous and distillate fuel burning equipment (the definition of fuel burning equipment does not include internal combustion engines))</li> </ul> Emissions from fuel burning equipment shall not exceed <ul style="list-style-type: none"> <li>• <b>0.05 grain PM/dscf</b> (0.11 g/m<sup>3</sup>) corrected to 7% oxygen</li> </ul> For catalytic cracking units, emissions shall not exceed <ul style="list-style-type: none"> <li>• <b>0.20 grain PM/dscf</b> (corrected to 7% oxygen)</li> </ul>	<b>Directly enforceable</b> For combustion units burning oil, visually observe stacks on a daily basis to qualitatively assess whether emissions are visible. The frequency may be reduced to weekly if no visible emissions are observed for thirty consecutive days. The permittee shall revert to daily observations of individual stacks if any visible emissions are noted during the observation. For combustion units burning gaseous fuels, visually observe stacks monthly to qualitatively assess whether emissions are visible. The frequency may be reduced to quarterly if no visible emissions are observed for six consecutive months. The permittee shall revert to monthly observations of individual stacks if any visible emissions are noted during the observation.  If visible emissions are observed, reduce emissions to zero as soon as possible. If emissions cannot be reduced to zero, the permittee may monitor by Ecology Method 9A no later than 24 hours after detection and daily thereafter until opacity is shown to be less than 20% or the permittee will conduct a Method 5 assessment within 30 days. Record observation results for stacks with visible emissions and any related equipment or operational failure, the occurrence dates and times, actions taken, and the type of fuel burned. Record that an observation was performed, with date, time, background
4.6 PM	WAC 173-400-060 (3/22/91)  WAC 173-400-060 <sup>3</sup> (2/10/05 State only)	Emission Standards for General Process Units Emissions greater than <ul style="list-style-type: none"> <li>• <b>0.1 grain PM/dscf</b></li> </ul> Are prohibited	

**Comment [A11]:** The most recent version of 455.1 in the current NWCAA rules on the website is 5/11/95. Should the footnote mark go with this citation? BART is tricky to fit in, isn't it?

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<sup>2</sup> BART Order 7838 Conditions 1.2 (F-104, F-654, F-6600, F-6601, F-6602, F-6650, F-6651, F-6652, F-6653, F-6654, F-6655, and X-819); 1.3 & 1.5.2 (F-103); 1.5.3, 1.5.4 & 1.5.5 (F-103, F-104, F-654, F-6601, F-6602, F-6650, F-6651, F-6652, F-6653, F-6654, F-6655, and X-819); and X-819) and 1.5.6 (F-103, F-104, F-654, F-6600, F-6601, F-6602, F-6650, F-6651, F-6652, F-6653, F-6654, and F-6655).

<sup>3</sup> BART Order 7838 Condition 1.4 (CWT2 and 2a)

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
4.7 PM	WAC 173-400-050(1) & (3) (3/22/91) WAC 173-400-050(1) & (3) (3/29/95-4/1/11 State only)	Emission Standards for Combustion and Incineration Units Emissions from combustion units greater than <b>0.1 grain PM/dscf</b> • Are prohibited Measured concentrations for combustion and incineration units shall be adjusted for volumes corrected to seven percent oxygen, except when ecology or the authority determines that an alternate oxygen correction factor is more representative of normal operations.	conditions, and identification of the observer. Keep records of all observations available for inspection. Combustion units with specifically applicable permit terms in Section 5 for opacity and particulate matter should be monitored as per Section 5 requirements only. Title 40 CFR Part 60 Appendix A Method 5
4.8 SO <sub>2</sub>	NWCAA 410 (4/14/93)	Sulfur Oxide Standards Unlawful for any person to cause or permit sulfur oxides to be emitted into the ambient air, measured at an ambient air monitoring station to exceed: • <b>0.800 ppmv SO<sub>2</sub></b> for any 5 minute average, not to be exceeded more than once per year • <b>0.400 ppmv SO<sub>2</sub></b> for any hour average, not to be exceeded more than once per year • <b>0.250 ppmv SO<sub>2</sub></b> for any one hour average, not to be exceeded more than twice in any 7 consecutive days • <b>0.100 ppmv SO<sub>2</sub></b> for any one day (24 hours), not to be exceeded more than once per year. • <b>0.020 ppmv SO<sub>2</sub></b> for any one year (annual arithmetic mean).	Directly enforceable Maintain and operate an ambient air monitor in accordance with NWCAA Regulation 367 and Appendix A.

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Comment [A12]: There's a 4/1/11 update of 400-050

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
4.9 $\text{SO}_2$	NWCAA 367 (date State only) NWCAA 460 (8/9/78) [NWCAA] 460 (2/8/96//14/05 State only)	Weight/Heat Rate Standard - Emission of Sulfur Compounds Sulfur compound emissions, shall not exceed • 1.5 lb $\text{SO}_2/\text{MMBtu}$ of heat input per hour, on a monthly average basis For the facility	<p><i>Directly enforceable</i></p> <p>From the monthly average sulfur content of combusted fuel oil, calculate the <math>\text{SO}_2</math> emissions from burning fuel oil.</p> <p>Calculate <math>\text{SO}_2</math> emissions from refinery process heaters and boilers combustng refinery fuel gas using <math>\text{H}_2\text{S}</math> fuel gas drum (V-213) monitoring results as required in Section 5.</p> <p>For purposes of this report, calculate <math>\text{SO}_2</math> emissions from flares using process information, or other information available; include emissions from upset or breakdown conditions.</p> <p>Generate the "base input heat capacity" in accordance with the NWCAA Regulation 367 and Appendix A from fuel records and calculate the monthly average weight/heat ratio for the facility.</p> <p>Report results monthly to the NWCAA by the end of month subsequent to the reporting period.</p>
4.10 $\text{SO}_2$	NWCAA 462 (1/8/14/87-4/14/92) [NWCAA] 462 (1/1/8/0-7/3/13/97 State only)	Emission of Sulfur Compounds Emissions greater than: • 1,000 ppm sulfur compounds (corrected to 7% $\text{O}_2$ ) averaged for a sixty-consecutive minute period from any equipment is prohibited. This requirement is not violated if reasonable evidence is presented that concentrations will not exceed ambient standards and the permittee shows that no practical method of reducing concentration exists.	<p><i>Directly enforceable</i></p> <p>Continuously monitor and record the concentration of hydrogen sulfide in refinery fuel gas. Operate and maintain the analyzer in conformance with the NWCAA Regulation 367 and Appendix A and 40 CFR Part 60 Appendices B and F.</p> <p>When combusting refinery fuel oil, sample the oil daily or with each batch and analyze for sulfur content as per ASTM D-4294. Retain records of the analysis on-site for five years. The test results shall be traceable to each batch of fuel combusted, the dates the fuel is combusted, and the date of each analysis.</p> <p>During process upsets, the concentration of sulfur in gases from the flares will be calculated based on the processes contributing to the flare feed stream.</p>
4.11 $\text{SO}_2$	WAC 173-400-040(6) (9/20/93)-The second paragraph of this citation is WAC 173-400-040(7) (4/1/11 State Only)	Sulfur Dioxide Sulfur compounds emissions calculated as • 1,000 ppmv $\text{SO}_2$ (corrected to 7% $\text{O}_2$ ) emitted greater than average for a sixty-consecutive minute period is prohibited.	<p><b>Comment [A14]:</b> Wouldn't the SIP-approved version be 4/14/92?</p> <p><b>Comment [A15]:</b> According to the NWCAA website, the most recent NWCAA 462 is 3/13/97.</p> <p><b>Comment [A16]:</b> There's a new version of this rule numbered WAC 173-400-040(7) dated 4/1/11.</p>

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
4.12	NWCAA 520 (4/14/93)	Sulfur Compounds in Fuel Prohibited to burn, sell, or make available for sale for burning in fuel burning equipment within the jurisdiction of the NWCAA, fuel containing sulfur in excess of the following. # 1 distillate- 0.3 wt%; # 2 distillate-0.5 wt%; other fuel oils-2.0 wt%; solid fuels-2.0 wt% for a time period not to exceed 30 days in a 12-month period.	<p><b>Directly enforceable</b></p> <p>Retain fuel specifications and purchase records verifying that fuel sold or combusted in the NWCAA's jurisdiction has a sulfur content of no more than the allowable limits.</p>
4.13	NWCAA 520 (5/9/96 State Only)	Sulfur Compounds in Fuel Prohibited to burn fuel containing sulfur in excess of the following: # 1 distillate- 0.3%; # 2 distillate-0.5%; other fuel oils-2.0%; solid fuels-2.0%. This version exempts ocean-going vessels.	
4.14	40 CFR Part 61 Subpart FF	The facility shall implement Subpart FF tracking, managing, and treating benzene-containing wastes as required in Table 3.10. The general requirements of 40 CFR Part 61 Subpart A apply to the affected facilities (Section 3.2).	<p>Comply with MR&amp;R terms in Table 3.10 applicable to subject waste streams and equipment.</p> <p>The following waste is exempt from subpart FF: (1) Waste in the form of gases or vapors that is emitted from process fluids; (2) Waste that is contained in a segregated storm water sewer system.</p> <p>Any gaseous stream from a waste management unit, treatment process, or wastewater treatment system routed to a fuel gas system, as defined in §61.341, is exempt from this subpart. No testing, monitoring, recordkeeping, or reporting is required under this subpart for any gaseous stream from a waste management unit, treatment process, or wastewater treatment unit routed to a fuel gas system.</p>

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Term	Citation	Description	Monitoring & Recordkeeping & Reporting
4.15	40 CFR Part 63 Subpart GGGGG §§63.7881(c) & §§63.7884 (b) (11/29/06)	<p>Site remediation activities must follow only the recordkeeping requirements provided that the facility-wide total quantity of the HAP (listed in Table 1 to this subpart) contained in the remediation material excavated, extracted, pumped, or otherwise removed during all of the site remediations conducted at the facility must be</p> <ul style="list-style-type: none"> <li>• <b>less than 1 megagram (Mg) annually</b></li> </ul>	<p>For the 1 Mg exemption: Prepare and maintain at the facility written documentation to support determinations that the total HAP quantity in remediation materials for the year is less than 1 Mg. The documentation must include a description of methodology and data used for determining the total HAP content of the remediation material.</p> <p>For the 30-day activity exemption: If the remediation material is shipped or otherwise transferred off-site, you must include in the applicable shipping documentation, in addition to any notifications and certifications required under §63.7936, a statement that the shipped material was generated by a site remediation activity subject to the conditions of this exemption. The statement must include the date on which you initiated the site remediation activity generating the shipped remediation materials, as specified in paragraph (b)(1)(i) of this section, and the date 30 calendar days following your initiation date. You must prepare and maintain at your facility written documentation describing the exempted site remediation, and listing the initiation and completion dates for the site remediation.</p>
4.16	NWCAA 530 (3/09/00 State Only)	<p>General Nuisance No person shall discharge from any source quantities of air contaminants, with the exception of odors, in sufficient amounts and of such characteristics and duration as is likely to be injurious or cause damage to human health, plant or animal life, or property; or which unreasonably interferes with enjoyment of life and property.</p>	<p>An air contaminant is defined as "dust, fumes, mist, smoke, other particulate matter, vapor gas, odorous substance, or any combination thereof."</p> <p><i>Directly enforceable</i></p> <p>A written air contaminant response plan will be maintained at the facility. Upon receiving an air contaminant complaint from the NWCAA or the public, all possible sources of the nuisance emissions at the facility shall be checked for proper operation. Problems identified shall be repaired or corrected as soon as possible. If the problems identified cannot be repaired or corrected within four hours, action shall be taken to minimize emissions until repairs can be made and the NWCAA shall be notified within 12 hours with a description of the complaint and action being taken to resolve the problem.</p> <p>The results of the investigation, identification of any malfunctioning equipment or aberrant operation, and the date and time of repair or mitigation shall be recorded. A log of these records shall be maintained for inspection.</p> <p>Receipt of a nuisance complaint in itself shall not necessarily be a violation.</p>

Term	Citation	Description	Monitoring/Recordkeeping & Reporting
4.17 Odor	WAC 173-400-040(4) (2/10/05 State Only)	Odors Off-site nuisance odors prohibited.	<i>Directly enforceable</i> A written air contaminant response plan will be maintained at the facility. Upon receiving a nuisance odor complaint from the NWCAA or the public, all possible sources of the nuisance emissions at the facility shall be checked for proper operation. Problems identified shall be repaired or corrected as soon as possible. If the problems identified cannot be repaired or corrected within four hours, action shall be taken to minimize emissions until repairs can be made, and the NWCAA shall be notified within 12 hours with a description of the complaint and action being taken to resolve the problem.
4.18 Nuisance	WAC 173-400-040(5) (9/20/93)	Emission Detrimental to Persons or Property prohibited.	<i>Comment [A17]: New WAC 173-400-040(5) dated 4/1/11 which deals with odors. "Emissions detrimental" is in -400-040(6).</i>
4.19 Odor	WAC 173-400-040(56) (2/14/05) 4/1/11 State Only	NWCAA 535.1 Appropriate practices and control equipment shall be installed and operated to reduce odor-bearing gases emitted into the atmosphere to a reasonable minimum. Best Available Control Technology required to abate odorous emissions. No person shall cause or permit the emission of any odorous air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.	The results of the investigation, identification of any malfunctioning equipment or aberrant operation, and the date and time of repair or mitigation shall be recorded. A log of these records shall be maintained for inspection. Receipt of a nuisance complaint in itself shall not necessarily be a violation.
4.20 PM	NWCAA 550 (4/14/93) NWCAA 550 (1/18/07) 4/1/05 State Only	Preventing Particulate Matter from Becoming Airborne Best Available Control Technology to prevent the release of fugitive matter to the ambient air required. Nuisance particulate fallout prohibited.	Comply with MRR terms 4.17 - 4.19 <i>Comment [A18]: The most recent version of NWCAA 550 is 7/14/05</i>
4.21 PM	WAC 173-400-040(2) (9/20/93)	Fallout Nuisance particulate fallout prohibited.	<i>Comment [A19]: -040(2) is now visible emissions. "Fallout" is -040(3). Date is 4/1/11</i>

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
4.22 PM	WAC 173-400-040(3)(a) (9/20/93) WAC 173-400-[040(3)(e-4)] (2/10/05-4/1/11 State Only)	Emissions for Attainment Area Take reasonable precautions to prevent release of air contaminants required.	<b>Comment [A20]:</b> Fugitive emissions is now 040(4)
4.23 Dust	WAC 173-400-040(8)(a) (9/20/93) WAC 173-400-[040(8)(e-2)] (2/10/054/1/11 State Only)	Fugitive Dust Sources Reasonable precautions to prevent release of fugitive dust required. Maintain and operate source to minimize emissions.	<b>Comment [A21]:</b> Fugitive dust is now 040(9)
4.24 Reports	WAC 173-401-615(3) (9/16/02 State Only)	Required Monitoring Report. Submit reports of any required monitoring to the NWCAA at least once every six months. All instances of deviations from permit requirements must be clearly identified in such reports.	<i>Directly enforceable</i> Unless specifically required otherwise by a permit term, monthly reports shall cover a calendar month, quarterly reports shall cover a calendar quarter, six-month reports shall cover January through June and July through December, and annual reports shall cover a calendar year. The first period shall cover the time from permit issuance until the first month, quarter, six-month period, or year following permit issuance. Reports shall be submitted by the end of the month following the close of the period that the reports cover.
4.25 General	NWCAA 580.24 (2/8/96)	Process Turnarounds Process units shall be depressurized to less than 5 psig (gauge) before venting to the atmosphere. During depressurization, VOCs shall be routed through a closed vent system to a flare or other appropriate disposal device.	Keep records of each process unit turnaround listing the date the unit was shut down. Report emissions from turnarounds in the annual emissions inventory. A specific record shall be kept for any turnaround during which a vessel containing VOC was vented to the atmosphere at a pressure at or above 5 psig.

### SECTION 3 SPECIFICALLY APPLICABLE REQUIREMENTS

The cited requirements in the "Citation" column of these tables incorporated herein by reference are applicable to the sources identified in the term description or preceding header. The citations include the root applicability which appears in normal text, with referenced requirements noted in *italicized* text. Referenced citations are enforceable through the root applicability citation. These requirements are federally enforceable unless identified as "state only". A requirement designated "state only" is enforceable only by the state, and not by the EPA or through citizen suits. The "Description" column of Table 5 is a brief description of the applicable requirements for informational purposes only and is not enforceable. Periodic or continuous monitoring requirements (including testing) are specified in the "Monitoring/Recordkeeping/Reporting" column, which identifies monitoring, record keeping and reporting (MR&R) obligations the source must perform as required by WAC 173-401-605(1) and 615(1) and (2) or the underlying requirements.

The requirements in the MR&R column labeled "Directly enforceable" are legally enforceable requirements added under the NWCAA's "gap-filling" authority [WAC 173-401-615(1)(b) & (c), 10/17/02]. MR&R requirements noted as "CAM" are part of the Compliance Assurance Monitoring Plan for the specified unit(s) as required by 40 CFR §64.6(c) (10/22/97). The CAM plans submitted by the facility per 40 CFR §64.4 are included in the Statement of Basis document accompanying this permit. Other requirements not labeled "Directly enforceable" or "CAM" are brief descriptions of the regulatory requirements for information purposes and are not enforceable, unless they are identical to the cited requirement. Unless the text of the MR&R column is specifically identified to be directly enforceable or pursuant to CAM, the language of the cited regulation takes precedence over a paraphrased requirement.

[The provisions of federally approved NWCAA 365, 366 and the "Guidelines for Industrial Monitoring Equipment and Data Handling" have been replaced in this section by NWCAA 367 and Appendix A - "Ambient Monitoring, Emission Testing and Continuous Emission and Opacity Monitoring". NWCAA 367 and Appendix A were adopted on July 14, 2005 with a provision that applicable sources would be allowed one year from the date of adoption to achieve compliance with Appendix A. The new-regulations are "State Only" until incorporated into the State Implementation Plan. NWCAA 367 and Appendix A are not materially different from the previous rule and guideline, but have been updated to include current monitoring technology and methods.]

Comment [A22]: See Note about  
"Guidelines" in Sec. 4 intro

### 3.1 Primary Crude Oil Processing Area

**Table 5.1 Primary Crude Oil Processing Area**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
40 CFR Parts 60 and 63 Subpart A	Applies to the Crude, Vacuum flasher, and ROSE units – See section 3		
5.1.1 40 CFR Part 63 Subpart CC §63.648 (8/18/98)	Primary Crude Oil Processing Area (Crude, Vacuum flasher, and ROSE units) equipment components: Implement the leak detection and repair program as listed in Table <b>Error! Reference source not found.</b>	Comply with Table <b>Error! Reference source not found.</b> LDAR requirements.  <b>Directly Enforceable:</b> VOC-service components shall be included in the unit LDAR program.	
5.1.2 OAC 744a Condition 1 (3/3/09)	ROSE Unit Equipment Components in VOC/HAP Service: Equipment in light liquid and gaseous service shall follow the requirements of 60 Subpart VV in Table <b>Error! Reference source not found.</b> using the following <b>leak definitions:</b> • Vapor or light liquid valves = 1,000 ppm • Light liquid pumps = 2,000 ppm	Comply with Table <b>Error! Reference source not found.</b> LDAR requirements.  Monitoring instrument must meet the performance criteria of 40 CFR Part 60 Appendix A Method 21.	

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.1.3	40 CFR Part 63 Subpart CC §63.643(a)(1) & (b) (8/18/95)	Primary Crude Oil Processing Area Miscellaneous Group 1 Process Vents	Comply with flare monitoring requirements in Table 3.9 (flare area).
	§63.644(a)(2) &(3) (8/18/9810/28/02)	Reduce emissions of organic HAP's using a flare that meets the requirements of §63.11(b) or reduce emissions of organic HAP's using a control device, by 98% (wt), or to a concentration of 20 ppmv , on a dry basis, 3% O <sub>2</sub> , whichever is less stringent.	Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from monitoring.
5.1.4	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	ROSE Unit Individual Drain Systems	Comply with Table Error! Reference source not found.
		Comply with 40 CFR Part 60 Subpart QQQ – Table Error! Reference source not found. – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	Comply with Table Error! Reference source not found.

**Table 5.1 Primary Crude Oil Processing Area**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.1.5	Regulatory Order No. 26 (8/22/00)	<p>Crude unit heater F-101: Emissions from combusting gaseous fuels shall not exceed • <b>21.6 tons NO<sub>x</sub> per year (12-month rolling average) basis.</b></p> <p>Emissions from combusting fuel oil shall not exceed • <b>35 tons NO<sub>x</sub> per year (12-month rolling average)</b></p>	<p>Submit a monthly report summarizing the NO<sub>x</sub> emissions from combusting gaseous and liquid fuels. The report shall be submitted prior to the end of the month following the monthly reporting period.</p> <p><i>Directly Enforceable</i></p> <p>Conduct a NO<sub>x</sub> and CO performance test within 6 months of issuance of this permit and at least once every 5 years thereafter in accordance with 40 CFR Part 60 Appendix A Method 7E and Method 19, and NWCAA Regulations Section 367 and Appendix A.</p> <p>Periodic testing for NO<sub>x</sub> and CO emissions shall be completed once every 5 years, within three months of the preceding test anniversary, in accordance with 40 CFR Part 60 Appendix A Method 7E and Method 19, and NWCAA Regulation 367 and Appendix A.</p> <p>Source shall submit a test plan at least 30 days in advance of any test date and notify the NWCAA at least 2 weeks in advance of the scheduled test date.</p>
5.1.6	40 CFR 63 Subpart DDDDD	Crude unit heater F-101: Comply with 40 CFR 63 Subpart DDDDD	TBD
5.1.7	40 CFR 60 Subpart 1a	Crude unit heater F-101: Comply with 40 CFR Subpart 1a in accordance with Consent Order 09.	TBD
5.1-65.1.8	NWCAA 580.221 (2/8/96)	Non-condensable VOC shall be piped to an appropriate firebox, incinerator or to a closed refinery system.	<p><i>Directly Enforceable</i></p> <p>Record operation and maintenance activities associated controlling VOC emissions in close vent systems routed to flares or other appropriate control device.</p>

**Table 5.1 Primary Crude Oil Processing Area**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.1-75.1.9	NWCAA 580.222 (2/8/96)	Hot wells associated with contact condensers shall be tightly covered and the collected VOC introduced into a closed refinery system.	<i>Directly Enforceable</i> Record operation and maintenance activities associated with hot wells with contact condensers.
5.1.10	BART Order 7838 (7/7/10) Conditions 3.1, 3.4.1, 8.1.1, & 8.3	Crude unit heater F-103: shall be fired on refinery fuel gas containing no greater than 0.10% by volume H <sub>2</sub> S, 365-day rolling average, or natural gas. <i>Except under the following circumstances:</i>	<p>Comply with M&amp;R in term 5.4.24.                      Record all hours of operation using fuel oil. The record shall record the day and time of the start of use of fuel oil - the day and time fuel oil use ends, and the reason fuel oil is used.</p> <ul style="list-style-type: none"> <li>• Curtailment of natural gas supply, or</li> <li>• Periods with limited refinery fuel gas availability such as start up and shutdown of major refinery process units, while major refinery process units are not operating and producing refinery gas, and emergency conditions as necessary to maintain safe operations or equipment shutdown, or</li> <li>• Test firing on fuel oil is allowed for up to 24 hours per calendar year</li> </ul>

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**Table 5.1 Primary Crude Oil Processing Area**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.1.11	BART Order 7838 (7/7/10) Conditions 2.1, 6, 9.1, 9.3, 2, 9.3.3, 10, 11, 12, 14	<p>Crude unit heater F-103: On or before 9/30/2015 or otherwise as approved by Ecology, operation of ultra-low NO<sub>x</sub> controls/burners shall commence to meet the following standards:</p> <p><b>59.1<sup>4</sup> tons NO<sub>x</sub> per year / 365-day total calculated daily)</b></p> <p>Beginning 265 days after installation of NO<sub>x</sub> controls on F-103, emissions shall net exceed compliance with the 365-day rolling average emission limit begins on the 365th day after the date the emission controls start operation unless the criteria of BART Order 7838 Condition 14 are invoked.</p> <ul style="list-style-type: none"> <li>• <b>59.1<sup>5</sup> tons NO<sub>x</sub> per year / 365-day total calculated daily)</b></li> </ul>	<p>Compliance will be determined by use of a CEMS, or a source-specific emission factor in accordance with the requirement<sup>6</sup>. In Section 8 of this AOP, documentation of completion of each milestone will be provided by certified mail to Ecology and to NWCAA within 30 days of completion.</p> <p>Emissions testing according to 40 CFR Appendix A Method 7E will be performed within 180 days of the start of operation of the NO<sub>x</sub> control system. The test report shall be submitted to Ecology and NWCAA within 45 days of completion.</p> <p>Calculate and record daily, static calendar day's average NO<sub>x</sub> emissions. The rolling annual total nitrogen oxides emissions shall be recalculated and recorded daily.</p>
5.1.12	40 CFR 63 Subpart DDDDD	Crude unit heater F-103: Comply with 40 CFR 63 Subpart DDDDD	<p>TBD</p> <p>Formatted: Font: Bold, Highlight</p> <p>Formatted: None, Bulleted + Level: 1 + Aligned at: 0° + Indent at: 0.25", Don't keep with next, Don't keep lines together</p> <p>Formatted [3]</p>

<sup>4</sup> BART Order 7838 Condition 14

<sup>5</sup> BART Order 7838 Condition 14

<sup>6</sup> BART Order 7838 Conditions 9.3.1, 9.4, 9.5

### 3.2 Hydroprocessing Area

Table 5.2 Hydroprocessing Area			Formatted Table
Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>Reporting</u>
40 CFR Parts 60 & 63 Subpart A	applies to the Catalytic Reformer (CR), Naphtha Hydrotreater (NHT), Cat Gas Splitter (CGS), Distillate Hydrotreater (DHT), Clean Fuels Hydrotreater (CFH), Jet Fuel Treater (JFT) and Selective Hydrogenation (SHU) Units – See section 3		
5.2.1	40 CFR Part 63 Subpart CC §63.648 (8/18/98)	<p><b>Hydroprocessing Area (CR, NHT, CGS/DHT, JFT, CFH, &amp; SHU)</b></p> <p><b>Equipment Components:</b> Implement a leak detection and repair program as listed in Table <b>Error! Reference source not found.</b></p>	<p>Comply with Table <b>Error! Reference source not found.</b> LDAR requirements.</p> <p><b>Directly Enforceable</b> VOC-service components shall be included in the unit LDAR program.</p>
5.2.2	OAC 827b Condition 2 (6/2/09) OAC 89ea Conditions 1 & 2 (3/3/09) OAC 901a Conditions 1 & 2 (3/3/09)	<p><b>CFH, DHT, NHT, CR, &amp; CGS Equipment leaks:</b> Implement the LDAR program on a unit basis in Table 6.2 following the provisions of 40 CFR Part 60 Subpart W as cited by Subpart CC and using the following leak definitions:</p> <ul style="list-style-type: none"> <li>• Vapor or light liquid valve leak definition = <b>1,000 ppm</b></li> <li>• Light liquid pump leak definition = <b>2,000 ppm</b></li> </ul> <p>J-600M shall meet 40 CFR Part 60.482-3a</p>	<p>Comply with Table <b>Error! Reference source not found.</b> LDAR requirements.</p> <p>Monitoring instrument must meet the performance criteria of 40 CFR Part 60 Appendix A Method 21.</p>

**Table 5.2 Hydroprocessing Area**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
5.2.3	OAC 989a Condition 1 (3/3/09)	SHU Equipment leaks: Implement the LDAR program in Table <b>Error!</b> <b>Reference source not found.</b> following the provisions of 40 CFR Part 60 Subpart VV as cited by Subpart CC and using the following leak definitions: <ul style="list-style-type: none"><li>• Vapor or light liquid valve leak definition = <b>500 ppm</b></li><li>• Light liquid pump leak definition = <b>2,000 ppm</b></li></ul>	Comply with Table <b>Error!</b> <b>Reference source not found.</b> LDAR requirements. Monitoring instrument must meet the performance criteria of 40 CFR Part 60 Appendix A Method 21.
5.2.4	<u>THIS CONDITION # IS RESERVED TO AVOID RE-NUMBERING OF AOP TERM DURING AOP UPDATING.</u>		Formatted: Not Superscript/ Subscript Highlight
5.2.4	40 CFR Part 60 Subpart GGGa	Benzene Saturation-unit equipment leaks: Implement the LDAR-program-in Table 6-3	Formatted Table
5.2.5	40 CFR Part 60 Subpart QQQ 560.690 (11/23/88)	DHT, CFH, & SHU Individual Drain Systems	Comply with Table <b>Error!</b> <b>Reference source not found.</b>
5.2.6	40 CFR Part 60 Subpart QQQ 560.690 (11/23/88)	Comply with 40 CFR Part 60 Subpart QQQ – Table <b>Error!</b> <b>Reference source not found.</b> – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)]. JET Individual Drain Systems	Comply with Table <b>Error!</b> <b>Reference source not found.</b>
		Comply with 40 CFR Part 60 Subpart QQQ – Table <b>Error!</b> <b>Reference source not found.</b> – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	Comply with Table <b>Error!</b> <b>Reference source not found.</b>

**Table 5.2 Hydroprocessing Area**

Term	Citation	Description	Monitoring/Recordkeeping/Reporting
5.2.7	40 CFR Part 63 Subpart UUU §63.1566 (2/9/05)	<p>CR Reactor Vent Organic HAP Emissions: During initial catalyst depressuring and purging operations, except when reactor vent pressure is 5 psig or less; Vent to a flare that meets the requirements for control devices in §63.11(b). The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.</p> <p>Visible emissions from the flare shall not exceed 5 min in any consecutive 2 hours.</p> <p>Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.</p>	<p>Install and operate a flare with a monitoring device such as a thermocouple, an ultraviolet beam sensor, or infrared sensor to continuously detect the presence of the flare pilot flame in a manner consistent with the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment will monitor accurately.</p> <p>The monitoring system must have valid data from at least 75 percent of the hours during which the process operated.</p> <p>Demonstrate continuous compliance with the work practice standards by maintaining records to document conformance with the procedures in the operation, maintenance, and monitoring plan.</p>
5.2.8	40 CFR Part 63 Subpart UUU §63.1567 (2/9/05)	<p>CR Reactor Vent Inorganic HAP Emissions:</p> <p>Reduce uncontrolled emissions to a concentration of</p> <ul style="list-style-type: none"> <li>• <b>10 ppmv HCl (dry basis), 3% O<sub>2</sub></b></li> </ul> <p>Prepare an operation, maintenance, and monitoring plan and operate at all times according to the procedures in the plan.</p>	<p>The daily average pH or alkalinity of the scrubbing liquid exiting the scrubber must not fall below the limit established during the performance test; and the daily average liquid-to-gas ratio must not fall below the limit established during the performance test. These operating limits apply during coke burn-off and catalyst rejuvenation.</p> <p>Follow the Alternative Monitoring Plan in Section 7.2.</p> <p>Demonstrate continuous compliance with the work practice standards by maintaining records to document conformance with the procedures in the operation, maintenance, and monitoring plan.</p>

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**Table 5.2 Hydroprocessing Area**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
5.2.9	40 CFR Part 63 Subpart UUU §63.1569 (2/9/05)	CR Reactor Vent Bypass line;	Visually inspect the blind at least once a month.
		Seal the bypass line located in the CR unit by installing a solid blind between piping flanges.	Record whether the blind is maintained in the correct position such that the vent stream cannot be diverted through the bypass line.
5.2.10	40 CFR Part 63 Subpart UUU §63.1574(f) (2/9/05) & §63.1576 (2/9/05)	CR Reactor Vent: Prepare an operation, maintenance, and monitoring plan (OMMP) and operate at all times according to the procedures in the plan. Submit any OMMP changes to NWCAA for review and approval and comply with the plan until the change is approved.	The OMMP must contain: process and control device parameters to be monitored, along with established operating limits. Follow the Alternative Monitoring Plan in Section 7.2. Maintain records to demonstrate compliance with the OMMP.

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**Table 5.2 Hydroprocessing Area**

Term	Citation	Description	Monitoring/ Recordkeeping /& Reporting
5.2.11	40 CFR Part 63 Subpart UUU §63.1575 (4/11/02)	<p>CR: Submit the semiannual compliance report in Table 43 of 40 CFR Part 63 Subpart UUU, covering the reporting period from January 1 through June 30 or July 1 through December 31 postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.</p> <p>Include performance tests and any requested changes in compliance reports.</p> <p>Tesoro may submit reports required by other regulations in place of or as part of the compliance report if they contain the required information (subject to prior approval by the NWCRAA).</p> <p>Maintain records of performance tests and performance evaluations, as required in §63.10(b)(2)(vii).</p>	<p>The report shall contain: (1) Company name and address; (2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.</p> <p>(3) Date of report and beginning and ending dates of the reporting period. <i>If there were no deviations from any applicable emission limitation or work practice standard</i>, a statement that there were no deviations from the standards during the reporting period and that no continuous opacity monitoring system or continuous emission monitoring system was inoperative, inactive, out-of-control, repaired, or adjusted;</p> <p>For each deviation from an emission limitation and for each deviation from the requirements for work practice standards that occurs at a source where you are not using a continuous emission monitoring system to comply with the emission limitation or work practice standard in this subpart, the compliance report must contain: (1) The total operating time of each affected source during the reporting period. (2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.</p> <p>(3) Information on the number, duration, and cause for <u>non</u> startup, shutdown, malfunction plan, Tesoro must report these events and the response taken in the semiannual compliance report.</p> <p><i>When actions taken to respond are not consistent with the startup, shutdown, malfunction plan, Tesoro must report these events and the response taken in the semiannual compliance report.</i></p> <p><i>Include a copy of any performance test done during the reporting period on any affected unit in the semiannual compliance report. A complete test report contains a process description; simplified flow diagram, control equipment, and sampling locations; sampling site data; sampling and analysis procedures and any modifications to standard procedures; quality assurance procedures; record of operating conditions during the test; record of preparation of standards; record of calibrations; raw data sheets for field sampling; raw data sheets for field and laboratory analyses; documentation of calculations; and any other information required by the test method.</i></p> <p><i>Any requested change in the applicability of an emission standard.</i></p>

**Table 5.2 Hydroprocessing Area**

Term	Citation	Description	Monitoring/ Recordkeeping/ Reporting	Formatted Table
5.2.12	40 CFR Part 63 Subpart UUU §63.1575(h) (4/11/02) & §63.1576 (2/9/05)	CR: For startups, shutdowns, and malfunctions: Develop, maintain, and implement a startup, shutdown, malfunction plan.	<p>Maintain records as specified in §63.6(e)(3) in Section 3.</p> <p>(1) When actions taken to respond are consistent with the plan, Tesoro is not required to report these events in the semiannual compliance report.</p> <p>(2) When actions taken to respond are not consistent with the plan, Tesoro must report these events and the response taken in the semiannual compliance report.</p>	Formatted Table
5.2.13	OAC 827b (6/2/09); Condition 3	CGS heater F-104 emissions shall not exceed	<ul style="list-style-type: none"> <li>• <b>0.035 lb NO<sub>x</sub>/MMBtu</b> (higher heating value)</li> </ul>	<p>Periodic testing for NO<sub>x</sub> emissions shall be completed once every 5 years, within three months of the preceding test anniversary, in accordance with 40 CFR Part 60 Appendix A Method 7E and NWCAA Regulation 367 and Appendix A. Source shall submit a test plan at least 30 days in advance of any test date and notify the NWCAA at least 2 weeks in advance of the scheduled test date.</p>
5.2.14	40 CFR 63 Subpart DDDDD	Crude unit heater F-104: Comply with 40 CFR 63 Subpart DDDDD	TBD	Formatted Table
5.2.14.5.2.15	OAC 827b <sup>7</sup> (6/2/09); Conditions 1 & 4	F-104 shall combust only natural gas or fuel gas and emissions shall not exceed:	<ul style="list-style-type: none"> <li>• <b>186 tons SO<sub>2</sub></b> (rolling 12-month average)<sup>8</sup>.</li> </ul>	<p>Continuously monitor H<sub>2</sub>S content of refinery fuel gas.</p> <p>Compute total sulfur oxides (as SO<sub>2</sub>) based upon refinery fuel gas H<sub>2</sub>S content and measured gas flow to F-104.</p> <p>Report quarterly:</p> <p>a) Calendar month average concentration of H<sub>2</sub>S in refinery fuel gas combusted by F-104</p> <p>b) the rolling 12-month average total of sulfur oxides emitted</p>

<sup>7</sup> BART Order 7838 Condition 3.3.1  
<sup>8</sup> Note: OAC 952b (3/3/09) establishes a 365-day average limit of 0.10% vol. H<sub>2</sub>S for the refinery fuel gas system.

### 3.3 Benzene Saturation (BenSat) Unit

**Table 5.3 Benzene Saturation (BenSat) Unit**

Term	Citation	Description	Monitoring/Recordkeeping/Reporting
<b>40 CFR Parts 60 &amp; 63 Subpart A applies to the BenSat Unit - See section 3</b>			
5.3.1	40 CFR 60 Subpart GGGa (11/16/07) OAC 1037 Condition 1 (6/19/09)	BenSat Unit Equipment in VOC/HAP Service: Implement the LDAR program in Table 6.3 following the provisions of 40 CFR Part 60 Subpart VVa as cited by Subpart GGGa.	Comply with Table 6.3 LDAR requirements. Monitoring instrument must meet the performance criteria of 40 CFR Part 60 Appendix A Method 21.
5.3.2	40 CFR 61 Subpart J §61.110(a), 61.112(a), (12/14/00) As referenced; Subpart V §61.242-9 (12/14/00) 40 CFR Part 61 Subpart A §61.09(b) (11/7/85) OAC 1037 Condition 6 (6/19/09)	Surge control vessels & bottoms receivers (vessels V-6606 & V-6705) in benzene service: Shall comply with 40 CFR Part 61 Subpart V. Each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 1 or table 2 of this subpart shall be equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel back to the process or to a control device as described in §61.242-11, except as provided in §61.242-1(c); or comply with the requirements of 40 CFR 63.119(b) or (c).	Submit an initial written notification to the NWGCAA as follows: (1) A notification of the anticipated date of initial startup of the source—not more than 60 days nor less than 30 days before that date; (2) A notification of the actual date of initial startup of the source within 15 days after that date. Comply with the applicable MR&R of Subpart V. <i>Directly Enforceable below:</i> The initial notification shall include a list of equipment subject to the provisions of Subpart J and the method of compliance for that equipment with the associated applicable regulatory citations. Comment [PK023]: Vessels V-6606 and V-6705 shall comply with 40 CFR Part 61 Subparts J and V by meeting the requirements of 40 CFR Part 60 Subpart VVa for closed vent systems and control devices (Table 6.3)

**Table 5.3 Benzene Saturation (BenSat) Unit**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.3.3	OAC 1037 <sup>a</sup> Conditions 2 & 3 (6/19/09)	Heater F-6602: shall combust only purchased natural gas or refinery fuel gas. Fuel gas shall not contain greater than 50 ppm H <sub>2</sub> S (24-hour average). A continuous emissions monitoring system (CEMS) for hydrogen sulfide concentration shall be installed, calibrated, maintained, and operated measuring the inlet stream to F-6602. Alternatively, compliance may be demonstrated by a monitoring device located on the outlet stream of the fuel gas blend drum, subsequent to all unmonitored incoming sources of sulfur compounds to the system.	<p>No M&amp;R if the H<sub>2</sub>S monitor shall be certified in accordance with 40 CFR Part 60 Appendix B and operated in accordance with 40 CFR Part 60 Appendix F and the NWCAA Regulation §367 and Appendix A.</p> <p>Monthly, within 30-days of the end of each calendar month, submit a CEMS summary report including the following: - Date, times, and causes of all periods that the CEMS did not function or operating parameters varied outside of established ranges during the preceding month, H<sub>2</sub>S average concentrations, and any periods of excess emissions.</p> <p>Comply with Section 21-102.1102.1-10.</p>

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**Table 5.3 Benzene Saturation (BenSat) Unit**

Term	Citation	Description	Monitoring / Recordkeeping / & Reporting
5.3.4	OAC 1037 Condition 4 (6/19/09)	<p>Heater F-6602: emissions shall not exceed <b>4.4 lb NO<sub>x</sub> per hour</b> (1-hour average) at any time</p> <ul style="list-style-type: none"> <li>• <b>53 ppm NO<sub>x</sub></b> (3-hour average) – except during period of startup or shutdown.</li> </ul> <p>A continuous emissions monitoring system (CEMS) for NO<sub>x</sub> shall be installed, calibrated, maintained, and operated measuring the stack emissions of F-6602.</p>	<p>The NO<sub>x</sub> monitor shall be certified in accordance with 40 CFR Part 60 Appendix B and operated in accordance with 40 CFR Part 60 Appendix F and the NWCAA Regulation §367 and Appendix A.</p> <p>Monthly, within 30 days of the end-of-each-calendar-month, submit a CEMS summary report including the following: Date, Comment [P024]; Include 0% O<sub>2</sub> times, and causes of all periods that the CEMS did not function or operating parameters varied outside of established ranges during the preceding month, maximum hourly average NO<sub>x</sub> emissions, maximum 3-hour average NO<sub>x</sub> concentrations, and any periods of excess emissions.</p> <p>The report shall be submitted prior to the end of the month following the monthly reporting period.</p>
5.3.5	OAC 1037 Condition 5 (6/19/09)	Heater F-6602: emissions shall not exceed <b>0.040 lb CO per MMBtu</b> (net heat input, 1-hour average)	Comply with Section <b>Error! Reference source not found..</b>
5.3.6	40 CFR 63 Subpart DDDDD	Heater F-6602: Comply with 40 CFR 63 Subpart DDDDD	Annually, conduct stack testing to demonstrate compliance with the CO limit in accordance with 40 CFR Part 60 Appendix A Method 10. Stack testing shall also be conducted in accordance with the NWCAA Regulation §367 and Appendix A.

### 3.4 Catalytic Cracking, Product Fractionation, and Treating Areas

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
40 CFR Parts 60 & 63 Subpart A applies to the CCU – See section 3			Comply with Table <b>Error! Reference source not found.</b> LDAR requirements. <i>Directly Enforceable</i> VOC-service components shall be included in the unit LDAR program.
5.4.1	40 CFR Part 63 Subpart CC §63.648 (8/18/98)	CCU (including Gas Recovery and Amine 1 & 2 units) Equipment Components: Implement the leak detection and repair program as listed in Table <b>Error! Reference source not found.</b>	Comply with Table <b>Error! Reference source not found.</b> LDAR requirements. <i>Directly Enforceable</i> VOC-service components shall be included in the unit LDAR program.
5.4.2	OAC 952b Condition 4 (3/3/09)	Amine Unit 2 Equipment in VOC/HAP Service: Implement the LDAR program in Table <b>Error! Reference source not found.</b> following the provisions of 40 CFR Part 60 Subpart VV as cited by Subpart CC and using the following leak definitions:	Comply with Table <b>Error! Reference source not found.</b> LDAR requirements. Monitoring instrument must meet the performance criteria of, 40 CFR Part 60 Appendix A Method 21.
		<ul style="list-style-type: none"> <li>• Vapor or light liquid valve leak definition = <b>500 ppm</b></li> <li>• Light liquid pump leak definition = <b>2,000 ppm</b></li> </ul>	
5.4.3	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	Amine Unit 2 Individual Drain Systems	Comply with Table <b>Error! Reference source not found.</b> Comply with 40 CFR Part 60 Subpart QQQ – Table <b>Error! Reference source not found.</b> – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.4.4	40 CFR Part 63 Subpart CC §63.643(a)(1) & (b) (8/18/95)	CCU Gas Recovery Area Miscellaneous Group 1 Process Vents	Comply with flare monitoring requirements in Table 3.9 (flare area).
	§63.644(a)(2) &(3) (9/4/98/10/28/09)	Reduce emissions of organic HAP's using a flare that meets the requirements of §63.11(b) or reduce emissions of organic HAP's using a control device, by 98% (wt), or to a concentration of 20 ppmv , on a dry basis, 3% O <sub>2</sub> , whichever is less stringent.	

<p><b>5.4.5</b></p> <p>40 CFR Part 63 Subpart UUU §63.1564(a)(1) &amp;(2) &amp; (b), §63.1572 &amp; §63.1576 (2/9/05)</p>	<p><u>CCU Regenerator Vent Metal HAPs:</u> Comply with the <u>option 2</u> PM emission limit in Table 1: Emissions must not exceed</p> <ul style="list-style-type: none"> <li>• <b>1.0 lb PM / 1,000 lbs of coke burn-off in the catalyst regenerator</b></li> </ul> <p>Comply with the <u>option 2</u> operating limit for a non-venturi jet-ejector design scrubber in Table 2: Maintain the daily average liquid-to-gas ratio above the limit established in the performance test.</p> <p>Install, operate, and maintain continuous parameter monitoring systems for the gas flow rate exiting the scrubber and total scrubbing liquid flow rate according to manufacturer's specifications and other documentation. Implement and maintain the CCU OMP according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.</p>	<p>Daily compute PM emission rate-(lb/1,000 lbs coke burn-off) as follows:</p> $R_E = K_1 Q_1 (\%CO_2 + \%CO) + K_2 Q_2 \left[ (\%CO_2) + \%CO_2 + \%O_2 \right] + K_3 Q_3 (\%O_2)$ <p>Where:</p> <p><math>R_E</math> = Coke burn-off rate, kg/hr (lb/hr).</p> <p><math>\Delta</math> = Volumetric flow rate of exhaust gas from catalyst regenerator before adding air or gas streams. Example: You must measure upstream of either monoxide boiler, dscf/min. You may use the alternative in either §63.1573(a)(1) or (a)(2), as applicable, to calculate <math>Q_1</math>.</p> <p><math>\Delta</math> = Volumetric flow rate of air to catalytic cracking unit catalyst regenerator as determined from instruments in the catalytic cracking unit control room, dscm/min (dscf/min).</p> <p><math>\%CO</math> = Carbon dioxide concentration in regenerator exhaust, percent by volume (dry basis).</p> <p><math>\%CO_2</math> = Carbon monoxide concentration in regenerator exhaust, percent by volume (dry basis).</p> <p><math>\%O_2</math> = Oxygen concentration in regenerator exhaust, percent by volume (dry basis).</p> <p><math>K_1</math> = Material balance and conversion factor, 0.2982 (kg-min)/(hr-dscm-%).</p> <p><math>K_2</math> = Material balance and conversion factor, 2.088 (kg-min)/(hr-dscm)(0.0186 (lb-min)/(hr-dscf)).</p> <p><math>K_3</math> = Material balance and conversion factor, 0.0994 (kg-min)/(hr-dscm-%)(0.0062 (lb-min)/(hr-dscf-%)).</p> <p><math>Q_1</math> = Volumetric flow rate of oxygen-enriched air stream to regenerator, dscm/min (dscf/min); and</p> <p><math>\%O_2</math> = Oxygen concentration in oxygen-enriched air stream, percent by volume (dry basis).</p> <p><math>B = K \times C_1 \times Q_1</math></p> <p>Where:</p> <p><math>E</math> = Emission rate of PM, kg/1,000 hr (lb/1,000 hr) of coke burn-off.</p> <p><math>C_1</math> = Concentration of PM, g/dscm (lb/dscf).</p> <p><math>\Delta</math> = Volumetric flow rate of the catalyst cracking unit catalyst regeneration air gas as measured by Method 2 in appendix A to part 60 of this chapter, dscm/min (dscf/min).</p> <p><math>R_E</math> = Coke burn-off rate (kg-coke/hr) (1,000 lb-coke/hr) and</p> <p><math>K</math> = Conversion factor 1.0 (<math>(\text{lb}^2/\text{ft}^3)/(\text{g}/\text{ft}^3)</math>) (<math>1,000 \text{ lb}/(1,000 \text{ kg})</math>) (<math>1,000 \text{ ft}^3/(1,000 \text{ m}^3)</math>)</p> <p>* Monitor and record the daily average flue gas and total scrubbing liquid flow rate.</p>
		<p>[7]</p> <p>[8]</p> <p>[9]</p> <p>[10]</p> <p>[11]</p> <p>[12]</p> <p>[13]</p> <p>[14]</p> <p>[15]</p> <p>[16]</p> <p>[17]</p> <p>[18]</p> <p>[19]</p> <p>[20]</p> <p>[21]</p> <p>[22]</p> <p>[23]</p> <p>[24]</p> <p>[25]</p> <p>[26]</p> <p>[27]</p>



**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> & Reporting
5.4.5 continued	40 CFR Part 63 Subpart UUU §63.1564(c) & §63.1576 (2/9/05)	CCU FGS Metal HAPS continued..	<p>(2) The continuous parameter monitoring systems must complete a minimum of one cycle of operation for each successive 15-minute period. A minimum of four successive cycles of operation are required to have a valid hour of data (or at least two if a calibration check is performed during that hour or if the continuous parameter monitoring system is out-of-control).</p> <p>(3) Each continuous parameter monitoring system must have valid hourly average data from at least 75 percent of the hours during which the process operated.</p> <p>(4) Each continuous parameter monitoring system must determine and record the hourly average of all recorded readings and the daily average of all recorded readings for each operating day. The daily average must cover a 24-hour period.</p> <p>(5) Each continuous parameter monitoring system must record the results of each inspection, calibration, and validation check. Determine and record each day the average coke burn-off rate (thousands of pounds per hour) and the hours of operation for the catalyst regenerator. Collect the hourly average gas flow rate and water (or scrubbing liquid) flow rate monitoring data; determine and record the hourly average liquid-to-gas ratio; determine and record the daily average liquid-to-gas ratio; and maintain the daily average liquid-to-gas ratio above the limit established during the performance test.</p> <p>Demonstrate continuous compliance with the work practice standard by maintaining records to document conformance with the procedures in the OMMP.</p>
5.4.6	OAC 946ba Condition 3 <sup>11</sup> (4/06/061/26/11)	CCU FGS: Particulate matter (PM) emissions (as PM-10) from the FGS stack shall not exceed	<p>Demonstration of continued compliance with this PM limit shall be ongoing compliance with the CCU 1.0 lb/1000 lb coke burn standard according to appropriate continuous parameter monitoring system limits and work practice standards in 40 CFR Part 63 Subpart UUU.</p> <ul style="list-style-type: none"> <li>• 0.11 grains PM-10/dscf, corrected to 7% oxygen.</li> </ul>

<sup>11</sup> BART Order 7838 Conditions 1.1.1.1.5.1.1 (F-304)

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.4.7	40 CFR Part 63 Subpart UUU §63.1565 & §63.1576 (2/9/05)	CCU Organic HAPs: Emissions from the catalyst regenerator vent shall not exceed <b>500 ppmv CO</b> (dry basis) (Table 8)  Implement and maintain the CCU OMMR according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.	Demonstrate continuous compliance with the work practice standard by maintaining records to document conformance with the procedures in the OMMR.  •
5.4.8	OAC 946ba Condition 10 (4/06/06/1/26/11)	CCU FGS: A CEMS shall be installed, calibrated, maintained, and operated to measure carbon monoxide (CO) from the FGS stack within 180 days of FGS startup <i>unless</i> : the facility demonstrates that the hourly average CO emissions are less than 50 ppm (dry basis) and files a written request for exemption to the NWCAA <sup>12</sup> .  Tesoro shall measure CO concentration and mass emissions annually.	The CEMS shall meet the performance specifications of 40 CFR Part 60 Appendices B and F and NWCAA Regulation §367 and Appendix A.  The exemption demonstration shall consist of continuously monitoring CO emissions for 30 days using an instrument that meets the requirements of 40 CFR Part 60 Appendix B Performance Specification 4 and equivalent methods to Appendix A Method 10. The span value shall be 100 ppm CO instead of 1,000 ppm, and the relative accuracy limit shall be 10 percent of the average CO emissions or 5 ppm CO, whichever is greater.  If the CO CEMS is not installed on the FGS stack, annually, the facility shall conduct a source test at the FGS stack to measure CO concentration and mass emissions.  Annual CO testing shall be conducted according to 40 CFR Part 60 Appendix A Methods 1-4 and 10 and §§ <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b> Process data collected and listed in the test report shall include: regenerator coke burn rate, quantity of auxiliary fuel burned in the CO boilers, fresh and recycle feed rates, oxygen addition rate and purity, and bed air blower rotor rotation rate.

<sup>12</sup> Tesoro requested and was granted the discontinuance of the requirement to monitor CO emissions with a CEMS in 2006. The discontinuance letter states that Tesoro may be required to resume monitoring continuously for CO in the event that unit operations, stack testing, or other emissions data indicate that CO emissions have increased significantly from the CCU.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> & Reporting
5.4.9	OAC 946ab <sup>13</sup> Condition 2 (4/06/061/26/11)	CCU FGS: Upon request by NWCAA, the facility shall perform visible emissions monitoring of the FGS exhaust by Washington Department of Ecology Method 9A once per calendar month with not less than 15 days between observations.  Upon demonstration of no visible emissions for 12 consecutive months from the FGS stack Tesoro may file a written request to discontinue the visual monitoring required by this permit condition <sup>14</sup> .	Visible emissions monitoring shall be conducted in accordance with Ecology Method 9A. Records documenting the monitoring shall be kept at the facility for at least 5 years and made available to the NWCAA upon inspection. In the event that visible emissions are observed (VE greater than 0%) during the monthly readings, the NWCAA shall be notified within 7 days.
5.4.10	OAC 946ab Condition 4 (4/06/061/26/11)	CCU FGS: Sulfuric acid mist emissions from the FGS stack shall be measured annually by source testing according to NCAST Method 8A and NWCAA Regulation §367 and Appendix A. Tesoro may file a written request to discontinue the annual portion of sulfuric acid mist source testing <sup>15</sup> .	No M&R

<sup>13</sup> BART Order 7838 Condition 7.1.4

<sup>14</sup> Tesoro requested discontinuance of visual monitoring as per this condition on 2/05/07. NWCAA granted the request, with the following provisions in a 2/14/07 letter to Tesoro (paraphrased from the NWCAA letter): Tesoro may utilize the exemption from the monthly monitoring provided in the OAC. Notification and recordkeeping requirements remain in effect. NWCAA may require the facility to resume VE observations on the unit in the future.

Observe the plume regularly for visible emissions. Take corrective action if visible emissions are observed. If emissions cannot be corrected, resume monthly VE monitoring using Ecology Method 9A.

<sup>15</sup> Tesoro conducted the initial performance test (40 CFR Part 60 Appendix A Method 8) on March 28, 2006 and requested discontinuance of the requirement to test H<sub>2</sub>SO<sub>4</sub> emissions annually. The NWCAA allowed discontinuance of annual testing for H<sub>2</sub>SO<sub>4</sub> with the provision that Tesoro may be required to test for H<sub>2</sub>SO<sub>4</sub> periodically to confirm the measurements of 2006.

<p><b>5.4.11</b>      OAC 946ba Condition 5, 6, &amp; 7 (1/26/114/06/06);<sup>16</sup> CAM</p> <ul style="list-style-type: none"> <li>CCU FGS: Sulfur dioxide (SO<sub>2</sub>) emissions from the FGS shall not exceed             <ul style="list-style-type: none"> <li>• <b>25 ppmv SO<sub>2</sub></b> (dry basis, 0% O<sub>2</sub>, 365-day rolling average) or</li> <li>• <b>50 ppmv SO<sub>2</sub></b> (dry basis, 0% O<sub>2</sub>, 7-day rolling average)</li> </ul> </li> </ul> <p>as demonstrated by a continuous emissions monitor (CEMS).</p> <p>CAM Plan: An SO<sub>2</sub> concentration of 50 ppm (@ 0% O<sub>2</sub>) or greater over a 7-day average shall constitute an "excursion." Tesoro will develop and implement a Quality Improvement Plan in accordance with 40 CFR 64.8 if two or more excursions occur within any consecutive 12-month period.</p>	<p>A CEMS shall be installed, calibrated, maintained, and operated to measure oxygen and SO<sub>2</sub> concentrations from the FGS stack. The monitor shall meet the appropriate specifications of 40 CFR Part 60 Appendices B and F and the NWCAA Regulation §367 and Appendix A. Comply with Section 2.1.10.</p> <p>Sulfur dioxide emissions data from the CEM shall be maintained as hourly averages for at least 60 days, and 7-day rolling, and 365-day rolling averages for at least 5 years, and made available to the NWCAA upon request.</p> <p>Reporting of SO<sub>2</sub> emissions shall be semiannual and due within 31 days of the end of the January through June and July through December periods. The reporting shall include daily average SO<sub>2</sub> concentration (midnight-to-midnight basis), 7-day rolling average, and 365-day rolling average. This report may be submitted electronically.</p> <p>Quality control testing results (CGA-and-RATA)-shall-be provided to-the-NWCAA-within-45-days-of-test-completion-</p> <p>The SO<sub>2</sub> mass emission rate in pounds per hour (lb/hr) under normal operating conditions shall be demonstrated within 180 days of startup by methods approved by the NWCAA. The demonstration plan shall be submitted to the NWCAA for approval at least 30 days prior to the demonstration date.</p> <p>Mass emissions of SO<sub>2</sub> shall be determined monthly and reported semiannually.</p> <p>CAM Plan:</p> <p>SO<sub>2</sub> will be continuously monitored by a CEMS operated in accordance with 40 CFR Part 60 Appendices B and F and NWCAA 367 and Appendix A. Measurement levels exceeding 50 ppmvd shall constitute an early indication of loss of control. In response to such a reading corrective action will be initiated, including checks of water circulation rate and pH in accordance with facility operating procedures.</p>
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**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.4.12	OAC 946ab Condition 11 (4/06/061/26/11)	<p>CCU FGS: Nitrogen oxide (as NO<sub>2</sub>) emissions from the combined CO boiler stacks shall not exceed</p> <ul style="list-style-type: none"> <li>• <b>1,770 tons NO<sub>x</sub> per any twelve rolling month period.</b></li> </ul>	<p>Annually, the facility shall conduct a source test at the FGS stack to measure NO<sub>x</sub> (as NO<sub>2</sub>) according to 40 CFR Part 60 Appendix A Method 7E and §§ Error! Reference source not found. and Error! Reference source not found.. The source-test shall include measurements with the sour water stripper (SWS) individually. Process data collected and listed in the test report shall include: regenerator coke burn rate, the position of the sour water stripper tops butterfly valve (indicating stream flow to each boiler), quantity of auxiliary fuel burned in the CO boilers, fresh and recycle feed rates, oxygen addition rate and purity, and bed air blower rotor rotation rate.</p> <p>In the event that NO<sub>x</sub> (as NO<sub>2</sub>) emissions are shown to be above 90% of the emission limit either, the permittee shall submit a plan to the NWCAA within 45 days to either (1) install a NO<sub>x</sub> CEMS on the FGS stack for the CO-boilers, or (2) propose a method to permanently reduce NO<sub>x</sub> emissions from the CCU/CO Boiler System. If the second option is chosen, the plan must include testing to determine compliance with the limit.</p> <p>The facility shall determine and report monthly NO<sub>x</sub> (as NO<sub>2</sub>) emissions with an update of the rolling 12-month NO<sub>x</sub> total. The monthly report shall include information on SWS vent position.</p>

<sup>16</sup> BART Order 7838 Conditions 3.2.1.1. 3.2.1.2. 3.2.1.3. 8.2

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>Reporting</u>
5.4.13	40 CFR Part 63 Subpart UUU §63.1569 & §63.1572 (2/9/05)	CCU Bypass Line/Diversion Stack: Monitor the bypass around the CCU Flue Gas Scrubber via the temperature indicator on the CCU Diversion Stack: Install, operate, and maintain the temperature monitoring system in a manner consistent with the manufacturer's specifications.	Continuously monitor temperature in the CCU Diversion stack to detect flow in the bypass line: The temperature monitoring system must complete a minimum of one cycle of operation for each successive 15-minute period. As a minimum of four successive cycles of operation are required to have a valid hour of data (or at least two if a calibration check is performed during that hour or if the monitoring system is out-of-control). The temperature monitoring system must have valid hourly data from at least 75 percent of the hours during which the process operated.  Determine and record the hourly average of all recorded readings and for each operating day.  Record the results of each inspection, calibration, and validation check.
5.4.14	OAC 946ba Condition 8 <sup>17</sup> (4-06/06/26/11)	CCU FGS Diversion Stack: Sulfur dioxide emissions during bypass of the FGS shall not exceed <ul style="list-style-type: none"> <li>• 1,000 ppmv SO<sub>2</sub> (dry basis, 7% O<sub>2</sub>) averaged for a sixty (60) consecutive minute period as demonstrated by a mass balance calculation or continuous emissions monitor.</li> </ul>	If monitoring is chosen as the method to demonstrate compliance, comply with section <b>Error! Reference source not found.</b> If mass-balance calculations are chosen as the method to demonstrate compliance, mass balance calculations must assume all incoming sulfur is oxidized to sulfur dioxide and released to the stack unless demonstrated otherwise by process data and/or analytical methods at representative operating conditions.
5.4.15	OAC 946ab Condition 9 <sup>18</sup> (4-06/06/26/11)	CCU FGS Diversion Stack: Sulfur dioxide emissions during bypass of the FGS shall be minimized to the extent reasonably practicable by CCU feed rate reduction, CCU feed sulfur content consideration, catalyst utilization, and/or other actions.	Procedures regarding minimization of SO <sub>2</sub> emissions during bypass shall be incorporated into CCU operations and maintenance procedures. Compliance with this provision shall be demonstrated by records of bypass event beginning and end times and specific actions taken during each bypass event, and may take the form of a checklist.

<sup>17</sup> BART Order 7838 Condition 3.2.1.4.2

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.4.16	40 CFR Part 63 Subpart UUU §63.1574(f) (2/9/05) & §63.1576 (2/9/05)	CCU: Prepare an operation, maintenance, and monitoring plan (OMMP) and operate at all times according to the procedures in the plan. Submit any OMMP changes to NWCAA for review and approval and comply with the plan until the change is approved.	The OMMP must contain: process and control device parameters to be monitored, along with established operating limits, procedures for monitoring emissions and process and control device operating parameters for the CCU. Monitoring schedule, including when you will monitor and when you will not monitor. Maintenance schedule for each monitoring system and control device for each affected source that is generally consistent with the manufacturer's instructions for routine and long-term maintenance. Maintain records of any changes that affect emission control system performance. Maintain records to demonstrate compliance with the OMMP.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/Recordkeeping/ & Reporting
5.4.17	40 CFR Part 63 Subpart UUU §63.1575 (4/11/02)	<p>CCU: Submit the semiannual compliance report in Table 43 of Subpart UUU this subpart, covering the reporting period from January 1 through June 30 or July 1 through December 31 postmarked or delivered no later than July 31 or January 31, following the end of the semiannual reporting period.</p> <p>Include performance tests and any requested changes in compliance reports.</p> <p>Tesoro may submit reports required by other regulations in place of or as part of the compliance report if they contain the required information (subject to prior approval by the NWCAA).</p> <p>Maintain records of performance tests and performance evaluations, as required in §63.10(b)(2)(viii).</p>	<p>The report shall contain: (1) Company name and address. (2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.</p> <p>(3) Date of report and beginning and end dates of the reporting period. If there were no deviations from any applicable emission limitation or work practice standard, a statement that there were no deviations from the standards during the reporting period and that no continuous opacity monitoring system or continuous emission monitoring system was inoperative, inactive, out-of-control, repaired, or adjusted.</p> <p>For each deviation from an emission limitation and for each deviation from the requirements for work practice standard that occurs at a source where you are not using a continuous emission monitoring system to comply with the emission limitation or work practice standard in this subpart, the compliance report must contain: (1) The total operating time of each affected source during the reporting period. (2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applied and the corrective action taken.</p> <p>(3) Information on the number, duration, and cause for monitor downtime, incident (including unknown cause, if applicable, other than downtime associated with zero span and other daily calibration checks).</p> <p>When actions taken to respond are not consistent with the startup, shutdown, malfunction plan, Tesoro must report these events and the response taken in the <b>semiannual compliance report</b>.</p> <p>Include a copy of any performance test done during the reporting period on any affected unit in the semiannual compliance report. A complete test report contains a process description; simplified flow diagram, control equipment, and sampling locations;</p>

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
5.4.18	40 CFR Part 63 Subpart UUU §63.1575(h) (4/11/02) & §63.1576 (2/9/05)	CCU: For startups, shutdowns, and malfunctions: Develop, maintain, and implement a startup, shutdown, malfunction plan.	Maintain records as specified in §63.6(e)(3). (1) When actions taken to respond are consistent with the plan, Tesoro is not required to report these events in the semianual compliance report. (2) When actions taken to respond are not consistent with the plan, Tesoro must report these events and the response taken in the semianual compliance report.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.4.19	OAC 947 Condition 1 (12/19/05) NWCAA 455.1 (4/14/93) NWCAA 455.1 (5/11/95 State only) CAM	<p>V-307 and V-308 exhaust shall be controlled by baghouses with maximum visible emissions not to exceed <b>5% opacity</b> for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A. Particulate matter emissions from V-307 and V-308 catalyst hopper vents shall not exceed <b>0.10 grain PM/dscf</b>.</p> <p>CAM Plan: A period of visible emissions lasting more than three minutes is an "excursion." Take corrective action if an excursion is observed. Develop and implement a Quality Improvement Plan in accordance with 40 CFR 64.8 if six or more excursions occur within any consecutive 12-month period for any of the catalyst hoppers.</p>	<p>A differential pressure gauge shall be installed on each baghouse. Acceptable differential pressure ranges shall be established by the manufacturer or through good engineering judgment and posted on or near the gauges.</p> <p>CAM Plan: Continuous compliance shall be demonstrated by qualitative visible emissions monitoring of the baghouse exhaust during catalyst transfers to V-307 or V-308. A log of catalyst transfer time and date and visible emission observations shall be kept by the facility, and available to the NWCAA upon request. Excess emissions from the V-307 and V-308 exhaust shall be reported to the NWCAA if any opacity is observed. Actions shall be taken to identify and correct the cause of excess emissions immediately.</p> <p>A written operation and maintenance (O/M) manual shall be developed for the baghouses and kept up-to-date. The O/M manual shall be consistent with the manufacturer's recommendations and shall include internal inspection schedules, maintenance requirements and operating procedures. The O/M manual shall be kept on-site and readily available for inspection by the NWCAA.</p> <p>The facility shall keep a (written or electronic) log of all maintenance and repair work performed on the baghouses. The log shall include, at minimum, any differential pressure gauge measurements, all external and internal inspections, any fabric filtration failures, repairs or replacements, the time and date that each activity was performed, and the name of the person performing the work.</p>

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Item	Citation	Description	Monitoring/Recordkeeping/ & Reporting
5.4.20	OAC 633a Condition 1 (3/6/06) NWCAA 455.1 (4/14/93) NWCAA 455.1 (5/11/95 State only) CAM	V-353 exhaust shall be controlled by a baghouse with maximum visible emissions not to exceed <b>5% opacity</b> for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A. Particulate matter emissions from V-353 catalyst hopper vents shall not exceed <b>0.10 grain PM/dscf</b> . <b>CAM Plan:</b> A period of visible emissions lasting more than three minutes is an "excursion." Take corrective action if an excursion is observed. Develop and implement a Quality Improvement Plan in accordance with 40 CFR 64.8 if six or more excursions occur within any consecutive 12-month period for any of the catalyst hoppers.	A differential pressure gauge shall be installed on each baghouse. Acceptable differential pressure ranges shall be established by the manufacturer or through good engineering judgment and posted on or near the gauges. <b>CAM Plan:</b> Continuous compliance shall be demonstrated by qualitative visible emissions monitoring of the baghouse exhaust during catalyst transfers to V-353. A log of catalyst transfer time and date and visible emission observations shall be kept by the facility, and available to the NWCAA upon request. Excess emissions from the V-353 exhaust shall be reported to the NWCAA if any opacity is observed. Actions shall be taken to identify and correct the cause of excess emissions immediately. A written operation and maintenance (O/M) manual shall be developed for the baghouses and kept up-to-date. The O/M manual shall be consistent with the manufacturer's recommendations and shall include internal inspection schedules, maintenance requirements and operating procedures. The O/M manual shall be kept on-site and readily available for inspection by the NWCAA. The facility shall keep a (written or electronic) log of all maintenance and repair work performed on the baghouses. The log shall include, at minimum, any differential pressure gauge measurements, all external and internal inspections, any fabric filtration failures, repairs or replacements, the time and date that each activity was performed, and the name of the person performing the work.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
5.4.21	OAC 946ba Condition 1 (406/061/26/11) CAM	V-356 exhaust shall be controlled by a baghouse. Particulate matter emissions shall not exceed <b>0.02 grains PM/dscf nor 5% opacity</b> (or more than 3 minutes in any consecutive sixty-minute period as measured by Washington State Department of Ecology Method 9A). <b>CAM Plan:</b> A period of visible emissions lasting more than three minutes is an "excursion." Take corrective action if an excursion is observed. Develop and implement a Quality Improvement Plan in accordance with 40 CFR 64.8 if six or more excursions occur within any consecutive 12-month period for any of the catalyst hoppers.	A differential pressure gauge shall be installed on each baghouse. Acceptable differential pressure ranges shall be established by the manufacturer or through good engineering judgment and posted on or near the gauges. <b>CAM Plan:</b> Continuous compliance shall be demonstrated by qualitative visible emissions monitoring of the baghouse exhaust during catalyst transfers to V-356. A log of catalyst transfer time and date and visible emission observations shall be kept by the facility, and available to the NWCAA upon request. Excess emissions from the V-356 exhaust shall be reported to the NWCAA if any opacity is observed. Actions shall be taken to identify and correct the cause of excess emissions immediately. A written operation and maintenance (O/M) manual shall be developed for the baghouses and kept up-to-date. The O/M manual shall be consistent with the manufacturer's recommendations and shall include internal inspection schedules, maintenance requirements and operating procedures. The O/M manual shall be kept on-site and readily available for inspection by the NWCAA. The facility shall keep a (written or electronic) log of all maintenance and repair work performed on the baghouses. The log shall include, at minimum, any differential pressure gauge measurements, all external and internal inspections, any fabric filtration failures, repairs or replacements, the time and date that each activity was performed, and the name of the person performing the work.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring, Recordkeeping & Reporting
5.4.22	OAC 308a Conditions 1 & 2 (10/14/09)	Amine Treatment Units - Sulfur Curtailment Plan: The facility shall submit and maintain current, a NWCAA-approved sulfur curtailment plan. <sup>19</sup> The plan shall delineate mitigating actions to be followed minimizing emissions of sulfur dioxide (SO <sub>2</sub> ) and maintaining compliance with NWCAA emission standards during curtailment periods. When General Chemical curtails sulfur acceptance, the facility shall immediately implement the approved sulfur curtailment plan.	<i>Directly enforceable</i> Report all sulfur curtailment events to the NWCAA in the monthly report in term 5.4.24 for refinery fuel gas CEMS data. For events potentially resulting in excess emissions, report to the NWCAA as promptly as possible, and in no event later than 12 hours. Report the steps taken to implement the H <sub>2</sub> S Curtailment Plan.

<sup>19</sup> The current plan was submitted on January 16, 2008 and approved by NWCAA on June 10, 2008.

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.4.23	OAC 827b Conditions 5, 6, 7, & 8 (6/2/09)	<p>Amine Contactor C-501 outlet fuel gas shall not exceed</p> <ul style="list-style-type: none"> <li>• <b>162 ppmvd H<sub>2</sub>S</b>, 24-hour average <i>Alternate demonstration of compliance with this limit shall be that refinery fuel gas from V-213 shall not exceed</i></li> <li>• <b>400 ppmvd H<sub>2</sub>S</b> on a rolling 24-hour average.</li> </ul> <p>When NHT high-pressure separator (HPS) vent gas is fully or partially diverted away from C-501, (to C-1110 or C-524), then the refinery fuel gas H<sub>2</sub>S from V-213 shall not exceed 400 ppmvd on a rolling 24-hour average basis or the refinery fuel gas stream exiting the contactor(s) in use shall not exceed 162 ppmvd H<sub>2</sub>S on a rolling 24-hour average basis (as measured by CEMS or by draeger tube sampling and analysis every 4 hours).</p>	<p>Continuous emission monitor system(s) (CEMS) for H<sub>2</sub>S concentration shall be installed, calibrated, maintained, and operated in the refinery fuel gas stream vented from the C-501 (and may be installed on C-524 and C-1110) amine contactor(s). The monitor(s) shall be maintained and certified in accordance with Performance Specification 7 (40 CFR 60 Appendix B) and operated in accordance with 40 CFR 60 Appendix F and NWCAA Regulation 367 and Appendix A.</p> <p>Alternately, H<sub>2</sub>S concentration may be demonstrated using Draeger tube analysis at the outlet of the amine contactors, conducted every 4 hours for periods when monitoring is required and the CEMS are not available.</p> <p>V-213 outlet H<sub>2</sub>S shall be monitored by CEMS in accordance with Term 5.3.24.</p> <p>After a period of time, if the results of the continuous emissions monitoring system establish that the amine contactor(s) consistently operate(s) well below the standards with minimal variability, the permittee may propose an alternative means for continuous assessment of H<sub>2</sub>S emissions. The alternative method shall be submitted to the NWCAA for review and approval before implementation.</p> <p>Report to the NWCAA by the end of the month immediately following the end of the period indicated:</p> <p>Quarterly: The C-501 amine contactor maximum 24-hour concentration of H<sub>2</sub>S or the corresponding refinery fuel gas (V-213) maximum 24-hour concentration of H<sub>2</sub>S. If NHT HPS vent gas is being partially or fully diverted to C-1110 or C-524, then for those corresponding time periods, also report the refinery fuel gas (V-213) maximum 24-hour concentration of H<sub>2</sub>S or the amine contactor outlet maximum 24-hour concentration of H<sub>2</sub>S.</p> <p>Monthly: Any period during which any standard in this term is exceeded including the duration of the event, quantified excess emissions, cause of the event, and any corrective actions taken.</p>

**Table 5.4 Catalytic Cracking Unit (CCU), Product Fractionation, and Treating Process Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
5.4.24	OAC 952b <sup>20</sup> Conditions 1, 2, & 6 (3/3/09)	Fuel Gas Blend Drum Y-213: Fuel gas shall not contain greater than <b>0.10% by volume H<sub>2</sub>S</b> , 365-day rolling average. A continuous emissions monitoring system (CEMS) for hydrogen sulfide concentration shall be installed, calibrated, maintained, and operated measuring the outlet stream of the fuel gas blend drum subsequent to all unmonitored incoming sources of sulfur compounds to the system and prior to any fuel gas combustion device.	The monitor shall be certified in accordance with 40 CFR Part 60 Appendix B and operated in accordance with 40 CFR Part 60 Appendix F and the NWCAA Regulation §367 and Appendix A. Monthly, within 30 days of the end of each calendar month, submit a CEMS summary report including the following: Dates, times, and causes of all periods that the CEMS did not function or operating parameters varied outside of established ranges during the preceding month, monthly H <sub>2</sub> S and 365-day rolling H <sub>2</sub> S average concentrations and monthly reporting requirements of 5.4.22. The report shall be submitted prior to the end of the month following the monthly reporting period.
5.4.25	OAC 952b <sup>21</sup> Condition 3 (3/3/09)	PCS265A Acid Gas Bypass: Bypass of acid gas from the amine regenerator C-1120 system away from the normal processing flow to General Chemical shall be recorded and reported the NWCAA (i.e., any period that PCS265A is opened). A root-cause analysis shall be conducted and recorded for any bypass event.	Comply with Section <b>Error! Reference source not found.</b> Record any period that PCS265A is opened, and conduct and record root-cause analysis as per Section <b>Error! Reference source not found.</b> Report events as per Section <b>Error! Reference source not found.</b>

### 3.5 Alkylation Area

**Table 5.5 Alkylation Area**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
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<sup>20</sup> BART Order 7838 Conditions 3.4.1 and 8.3

<sup>21</sup> BART Order 7838 Condition 3.4.2

Table 5.5 Alkylation Area			
Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
<b>Note:</b> The Title 40 CFR Part 63 General Provisions included in Section 3 apply to this affected source.			
5.5.1	40 CFR Part 63 Subpart CC §63.648 (8/18/98)	Alkylation Equipment Components: Implement the leak detection and repair program as listed in Table <b>Error!</b> <b>Reference source not found..</b>	Comply with Table <b>Error!</b> <b>Reference source not found.</b> LDAR requirements. <i>Directly Enforceable</i> VOC-service components shall be included in the unit LDAR program.

### 3.6 Butane Isomerization Area

Table 5.6 Butane Isomerization Process Area			
Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
<b>Note:</b> The Title 40 CFR Part 60 General Provisions included in Section 3 apply to this affected source.			
5.6.1	40 CFR Part 60 Subpart GGG §60.590 (6/2/08)	BI Equipment Components in VOC Service: Implement the leak detection and repair program as listed in Table <b>Error!</b> <b>Reference source not found..</b>	Comply with Table <b>Error!</b> <b>Reference source not found.</b> test method and MRR requirements.
5.6.2	40 CFR Part 63 Subpart CC §63.643(a)(1) & (b) (8/15/95) §63.644(a)(2) &(3) (8/18/9810/28/09)	BI Unit Miscellaneous Group 1 Process Vent area. Reduce emissions of organic HAP's using a flare that meets the requirements of §63.11(b) or reduce emissions of organic HAP's using a control device, by 98% (wt), or to a concentration of 20 ppmv , on a dry basis, 3% O <sub>2</sub> , whichever is less stringent.	Comply with flare monitoring requirements in Table 3.9 (flare area). Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from monitoring.
		If a boiler or process heater is used to comply with the percentage of reduction requirement or concentration limit, then the vent stream shall be introduced into the flame zone of such a device, or in a location such that the required percent reduction or concentration is achieved.	

**Table 5.6 Butane Isomerization Process Area**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
5.6.3	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	BI Unit Individual Drain Systems Comply with 40 CFR Part 60 Subpart QQQ - <b>Table Error! Reference source not found.</b> - except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	Comply with Table <b>Error! Reference source not found.</b>

### 3.7 Storage, Blending, and Transfer Operations

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
5.7.1	40 CFR Part 63 Subpart CC §63.648 (8/18/98)	Tank Farms 1 & 2 (including blending and transfer operations) Equipment Components: Implement the leak detection and repair program as listed in Table 6.2.	Comply with Table <b>Error!</b> Reference source not found. LDAR requirements. <i>Directly Enforceable</i>
5.7.2	NWCAA 580.8 (12/13/89)	LPG Storage and Loading Unit Equipment Components: Implement an LDAR program consistent with 40 CFR Part 60 Subpart GGG. Comply with Table 6.2.	Comply with Table <b>Error!</b> Reference source not found. test method and MRR requirements.
5.7.3	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	Wharf Hose Individual Drain System Comply with 40 CFR Part 60 Subpart QQ - Table <b>Error!</b> Reference source not found. – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	Comply with Table <b>Error!</b> Reference source not found.
<b>Tanks 6, 7, 8, 9, 10, 11, 12, 23, 25, 26, 33, 34, 35, 36, 41, 42, 43, 44, 56, 57, 87, 89, 91, 96, 97, 109, 113, 114, 115, 135, 138, 142, 148, 171, 247, 248, &amp; 232 (MACT Group 2)</b>			
5.7.4	40 CFR Part 63 Subpart CC §63.646 (2/23/97&10/10) §63.119 (a)(3) (1/17/97)	Group 2 storage tanks: Keep readily accessible records of the dimensions and capacities of each Group 2 storage vessel. Note: The 40 CFR Part 63 General Provisions in Section <b>Error!</b> Reference source not found. apply to these affected sources.	Maintain records at the facility with dimensions and capacities.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166 (MACT Group 1 – EFR)</b>			
<b>Note:</b> The 40 CFR Part 63 General Provisions included in Section 3 apply to affected sources.			
5.7.5	NWCAA 560 (4/14/93)	Storage tanks holding petroleum liquids ≥40,000 gallons, or other organic liquids or solvents ≥6,000 gallons having a True Vapor Pressure ≥1.5 psi and <11.1 psi under actual storage conditions: Design and equip the storage vessel with the following vapor loss control device, properly installed, in good working order and in operation: A floating roof, consisting of a pontoon type or double-deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a True Vapor Pressure of 11.1 pounds per square inch or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.	<b>Directly enforceable</b>  Maintain records demonstrating that the stored material has a maximum true vapor pressure (TVP) less than 11.1 pounds per square inch. Notify the NWCAA within 12 hours of discovering a maximum TVP in excess of 11.1 pounds per square inch.  Maximum TVP shall be determined using the calendar month maximum average local temperature for ambient tanks or the maximum average monthly storage temperature for heated tanks.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>	NWCAA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.112(b)(a)(2)(i) 10/8/97, §60.113(b)(1), (2), (4)(i) and (4)(ii) (8/11/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia). and <11.1 psia at calendar month average storage temperatures: Both the primary and secondary seals shall completely cover the annular space between the external floating roof and the storage vessel wall, except for when necessary repairs are being made or the vessel is empty, as provided in 60.113(b)(4). There should be no holes, tears, or other openings in the primary, mechanical shoe, the primary or secondary seal fabric, or the seal envelope.  For the primary seal, one end of the mechanical shoe should extend into the stored liquid and the other end should be at least 61 cm above the liquid surface.  For the primary seal, the accumulated area of gaps shall not exceed 212 cm <sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. For the secondary seal, the accumulated area of gaps shall not exceed 21.2 cm <sup>2</sup> per meter of tank diameter and the width of any portion of any gap shall not exceed 1.27 cm.	Measure gaps between the vessel wall and the primary seal initially and at least once every 5 years thereafter. Gap measurement between the vessel wall and the secondary seal shall be performed initially and at least once per year thereafter. Seal gaps shall be measured at one or more floating roof levels when the roof is floating off the roof leg supports. Measure around the entire tank circumference in each place where a 0.32-cm diameter uniform probe passes freely between the seal and the vessel wall. Measure the circumferential distance of each such location. The total surface area of each gap shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 50, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.7	40 CFR Part 63 Subpart CC §63.646 (24 CFR 6/30/10) §63.119(c)(1)(iii) (1/17/97) §63.120(b)(1), (b)(2), (b)(4), (b)(5), (b)(6), (b)(9) (1/17/97) §63.654-5 (h)(2)(ii) (9 CFR 6/30/10) §63.123(d) and (g) (1/17/97)	<p><b>Group 1 Tanks with External Floating Roof:</b>                      Except during inspections, both the primary and secondary seals shall completely cover the annular space between the external floating roof and the storage vessel wall. There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope of the primary seal, and no holes, tears, or other openings in the seal or seal fabric.</p> <p>For the primary seal, one end of the mechanical shoe should extend into the stored liquid and the other end should be at least 61 cm above the liquid surface.</p> <p>The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 21.2 cm<sup>2</sup> per meter of vessel diameter and the width of any gap shall not exceed 1.27 cm (0.5 inch). These seal gap requirements may be exceeded during the measurement of primary seal gaps.</p>	<p>Except when unsafe (as addressed in §63.120(b)(7)), measure for gaps between the vessel wall and the primary seal at least once every 5 years following the initial gap measurement.</p> <p>Except when unsafe, measure gaps between the vessel wall and the secondary seal at least once per year following the initial measurement.</p> <p>Seal gaps shall be measured at one or more floating roof levels when the roof is not resting on the leg supports. Measure around the entire circumference in each place where a 0.32-cm (1/8-inch) diameter uniform probe passes freely between the seal and the wall of the storage vessel. Measure the circumferential distance of each location. Measure the total surface area of each gap.</p> <p>Notify the NWCAA in writing at least 30 calendar days prior to gap testing.</p> <p>Keep records of the result of each seal gap measurement. Include the date of each measurement, the raw data obtained, and the calculations.</p> <p>Documentation of a decision to use an extension shall include a failure description, documentation that alternate storage capacity is unavailable, and an action schedule that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible.</p>

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.8	40 CFR Part 63 Subpart CC §63.646 (6/30/10/21/97) §63.120(b)(8) (1/17/97) §63.123(g) (12/23/04), §63.654(9)(3) (6/30/10/8/48/98) NWC/AA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.113(b)(4)(iii) (8/11/89) State only	Group 1 Tanks with External Floating Roof Repair conditions that do not meet the gap allowances no later than 45 calendar days after identification, or empty and remove the storage vessel from service no later than 45 calendar days after identification. If a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, 2 extensions of up to 30 additional days each can be utilized.	Documentation of a decision to use an extension shall include a failure description, documentation that alternate storage capacity is unavailable, and an action schedule that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as possible. <i>Directly enforceable</i> Submit in the Periodic Report documentation of each seal gap measurement made in which the seal and seal gap requirements of this part are not met. The documentation shall include: The date of the seal gap measurement, the raw data obtained in the seal gap measurement and the gap calculations described in §63.120(b)(3) and (b)(4) of subpart G of this part, a description of any seal condition specified in §63.120(b)(5) or (b)(6) of subpart G of this part that is not met. A description of the nature of and date the repair was made, or the date the storage vessel was emptied.
5.7.9	NWC/AA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.113(b)(6) (8/11/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia) and <11.1 psia at calendar-month average storage temperatures. If inspection shows that the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.	Visually inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the vessel is emptied and degassed.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.10	40 CFR Part 63 Subpart CC §63.646 (2/21/97/6/30/10) §63.120(b)(10)(i), (ii), and (iii) (1/17/97) §63.6545(g)(3)(iii) and §63.6545(h) (2) (8/18/98/6/30/10)	Group 1 Tanks with External Floating Roof Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. If inspection shows that the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or fabric; the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.	<p>Following an inspection after degassing, notify the NWCAA in writing at least 30 days prior to the filling or refilling of each storage vessel. If the inspection is unplanned and was not foreseen 30 days prior to refilling, notify the NWCAA at least 7 days prior to refilling. Notification may be made by telephone, followed by written documentation.</p> <p>Submit in the Periodic Report documentation of any failure identified during the visual inspection. Include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. Also describe the nature of and date the repair was made.</p>
5.7.11	40 CFR Part 63 Subpart CC §63.646 (2/21/97/6/30/10) §63.119(c)(3) (1/17/97) §63.646(f)(3) (2/21/97/6/30/10)	Group 1 Tanks with External Floating Roof The external floating roof shall be floating on the liquid surface at all times except when it must be supported by the leg supports during (i) the initial fill, (ii) after the vessel has been completely emptied and degassed, and (iii) when the vessel is completely emptied before being subsequently refilled. When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as possible. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.	<i>Directly enforceable</i> Keep records of periods when the tank roof is resting on the leg supports.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/. Recordkeeping/. & Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.12	NWCAA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.112b(a)(2)(iii) (10/8/97)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures. The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.	Directly enforceable Keep records of periods when the tank roof is resting on the leg supports.
5.7.13	NWCAA 580.33 (12/13/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures. All seals are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears, or other openings.	Directly enforceable Semiannually, visually inspect the secondary seal. If the secondary seal has holes, tears, or other openings in the seal or fabric, repair the items as necessary. Maintain records of the types of petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of any inspections performed for a period of two years after the date on which the record was made. Maximum TVP shall be determined using the calendar month maximum average local temperature for ambient tanks or the maximum average monthly storage temperature for heated tanks.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping/</u> & Reporting
5.7.14	NWCAA Sections 580.93, 580.94, and 580.99 (all 12/13/89)	<p>Tanks &gt; 40,000 gallons storing VOC with a true vapor pressure as stored &gt;1.5 pounds per square inch (psia) at calendar-month average storage temperatures. Tanks subject must have been fitted with a rim-mounted secondary seal.</p> <p>All of these seals or closure devices shall meet the following requirements:</p> <ul style="list-style-type: none"> <li>There must be no visible holes, tears, or other openings in the seal or seal fabric;</li> <li>The seal shall be intact and uniformly in place around the circumference of the floating roof between the roof and the tank wall.</li> </ul>	<p><i>Directly enforceable</i></p> <p>Semiannually, visually inspect the secondary seal. If the secondary seal has holes, tears, or other openings in the seal or fabric, repair the items as necessary.</p> <p>Maintain records of the types of petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of any inspections performed for a period of two years after the date on which the record was made.</p> <p>Maximum TVP shall be determined using the calendar month maximum average local temperature for ambient tanks or the maximum average monthly storage temperature for heated tanks.</p>
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.15	NWCAA 580.95 (12/13/89)	<p>Tanks &gt; 40,000 gallons storing VOC with a true vapor pressure as stored &gt;1.5 pounds per square inch (psia) at calendar-month average storage temperatures. All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves shall be equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and equipped with projections into the tank which remain below the liquid surface at all times.</p>	<p><i>Directly enforceable</i></p> <p>Visually inspect the vessel openings semiannually. If inspection shows that openings not related to safety are not sealed, close the opening.</p> <p>Document inspection results and any action taken to seal openings.</p>
5.7.16	40 CFR Part 63 Subpart CC §63.646(1)(1) (6/30/02/21/97)	Group 1 Tanks with External Floating Roof If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access.	

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/Recordkeeping/ & Reporting
5.7.17	NWCAA 580.34 (12/13/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures: All openings not related to safety are to be sealed with suitable closures.	Comply with MR&R in Term 5.7.15.
5.7.18	NWCAA 580.96 (12/13/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia) at calendar-month average storage temperatures: Keep automatic bleeder vents closed at all times except when the roof is floated off or landed on the roof leg supports.	

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.19	NWCAA 580.97 (12/13/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia) at calendar-month average storage temperatures: Rim vents shall be set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting.	<i>Directly enforceable</i> Visually inspect annually for damage and pressure setting.
5.7.20	40 CFR Part 63 Subpart CC §63.646(f)(2) (2/21/97/6/30/10)	Group 1 Tanks with External Floating Roof Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.	<i>Directly enforceable</i> Visually inspect the emergency roof drain's fabric covers annually. If inspection shows that the roof drain cover is damaged, fix or replace them.
5.7.21	NWCAA 580.98 (12/13/89)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia) at calendar-month average storage temperatures: Provide roof drains with slotted membrane fabric covers or equivalent, which cover at least ninety percent of the area of the opening.	

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping/</u> & Reporting
<b>Tanks 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 28, 29, 30, 31, 32, 60, 88, 90, 92, 134, 136, 165, 166</b>			
5.7.22	NWCAA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.112b(e)(2)(ii) (10/8/97)	Tanks > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures... Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.	<p>Directly enforceable</p> <p>Visually inspect the vessel openings and bleeder vents semiannually. If inspection shows that openings not related to safety are not sealed, close the opening.</p> <p>Document inspection results and any action taken to seal openings.</p> <p>Visually inspect the emergency roof drain's fabric covers annually.</p> <p>If inspection shows that the roof drain cover is damaged, fix or replace it.</p>

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
<b># 37 - Tanks 202, 203, &amp; 231 (NSPS-applicable External Floating Roof)</b>			
Note: The 40 CFR Part 60 General Provisions included in Section 3 apply to these affected facilities.			
5.7.23	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	Tanks 202, 203, & 231 Individual Drain Systems Comply with 40 CFR Part 60 Subpart QQQ – Table <b>Error! Reference source not found.</b> – except for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	Comply with Table 6.1
5.7.24	NWCAA 560 (4/14/93) OAC 358a Condition 1 (10/14/09)	Storage tanks holding petroleum liquids $\geq$ 40,000 gallons, or other organic liquids or solvents $>$ 6,000 gallons having a True Vapor Pressure $>$ 1.5 psi and $\leq$ 11.1 psi under actual storage conditions: Design and equip the storage vessel with the following vapor loss control device, properly installed, in good working order and in operation: A floating roof, consisting of a pontoon type or double-deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a True Vapor Pressure of 11.1 pounds per square inch or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.  The TVP of liquids stored in Tanks 202 and 203 shall not exceed 11.1 psia	<i>Directly enforceable</i> Perform MR&R required in the rest of this table for the subject vessels. Maintain records demonstrating that the stored material has a maximum true vapor pressure (TVP) less than 11.1 pounds per square inch. Maximum TVP shall be determined using the calendar month maximum average local temperature for ambient tanks or the maximum average monthly storage temperature for heated tanks.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.7.25	40 CFR Part 60 Subpart Kb §60.112(b)(a)(2)(i)	Tanks 202, 203, & 231 EFR Seal Coverage:	Measure gaps between the vessel wall and the primary seal initially and at least once every 5 years thereafter.
	(10/8/97)	Both the primary and secondary seals shall completely cover the annular space between the external floating roof and the storage vessel wall, except for when necessary repairs are being made or the vessel is empty, as provided in 60.113(b)(4).	Gap measurement between the vessel wall and the secondary seal shall be performed initially and at least once per year thereafter.
	§60.113(b)(b)(1), (2), (4)(i), (4)(ii), & (5) (8/11/89)	There should be no holes, tears, or other openings in the primary mechanical shoe, the primary or secondary seal fabric, or the seal envelope.	Seal gaps shall be measured at one or more floating roof levels when the roof is floating off the roof leg supports. Measure around the entire tank circumference in each place where a 0.32-cm diameter uniform probe passes freely between the seal and the vessel wall. Measure the circumferential distance of each such location. The total surface area of each gap shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.
	§60.115(b)(2) & (3) (4/8/87)	For the primary seal, one end of the mechanical shoe should extend into the stored liquid and the other end should be at least 61 cm above the liquid surface.	Notify the NWCAA in writing at least 30 calendar days prior to gap testing.
	NWCAA 580.32 (12/13/89)	For the primary seal, the accumulated area of gaps shall not exceed 212cm <sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81cm.	Within 60 days of performing seal gap measurements, submit a report to the NWCAA containing the date of measurement, the raw data obtained, and the calculations of gap width and accumulated area (if gaps were found).
		For the secondary seal, the accumulated area of gaps shall not exceed 21.2cm <sup>2</sup> per meter of tank diameter and the width of any portion of any gap shall not exceed 1.27 cm.	Keep records of the result of each seal gap measurement. Include the date of each measurement, the raw data obtained, and the calculations.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping/</u> & Reporting
5.7.26	40 CFR Part 60 Subpart Kb §60.112b(a)(2)(ii) NWCAA 580.32 (12/13/89)	Tanks 202, 203, & 231 EFR Openings:— Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.	<i>Directly enforceable</i> Visually inspect the vessel openings and bleeder vents semiannually. If inspection shows that openings not related to safety are not sealed, close the opening. Document inspection results and any action taken to seal openings.  Visually inspect the emergency roof drain's fabric covers annually. If inspection shows that the roof drain cover is damaged, fix or replace them.
5.7.27	NWCAA 580.98 (12/13/89)	Tanks 202, 203, & 231 EFR Emergency Drains Provide roof drains with slotted membrane fabric covers or equivalent, which cover at least ninety percent of the area of the opening.	<i>Directly enforceable</i> Keep records of periods when the tank roof is resting on the leg supports.
5.7.28	40 CFR Part 60 Subpart Kb §60.112b(a)(2)(iii) NWCAA 580.32 (12/13/89)	Tanks 202, 203, & 231 EFR The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.	<i>Directly enforceable</i> Keep records of periods when the tank roof is resting on the leg supports.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.7.29	40 CFR Part 60 Subpart Kb §60.113(b)(4)(iii) (8/11/89) §60.115(b)(4) (4/8/87) NWCAA 580.32 (12/13/89)	Tanks 202, 203, & 231 EFR Gap: Repair conditions not meeting the gap allowances, or empty the storage vessel within 45 days of identification of failures found in any inspection. If a failure is detected that cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested in the inspection report.	Report to the NWCAA within 30 days of the inspection if a gap was found exceeding the limitations. The report shall identify the vessel, the date of measurement, the raw data obtained, and the calculations of gap width and accumulation, as well as the date the vessel was emptied or the repairs made and date of repair.
5.7.30	40 CFR Part 60 Subpart Kb §60.113(b)(6)(i) and (ii) (8/11/89) NWCAA 580.32 (12/13/89)	Tanks 202, 203, & 231 EFR Inspection after Degassing If inspection shows that the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL	Following an inspection after degassing, notify the NWCAA in writing at least 30 days prior to the filling or refilling of each storage vessel. If the inspection is unplanned and was not foreseen 30 days prior to refilling, notify the NWCAA at least 7 days prior to refilling. Notification may be made by telephone, followed by written documentation.
5.7.31	40 CFR Part 60 Subpart Kb §60.116(b) (10/15/03)	Tanks 202, 203, & 231 Dimensions and Capacities: Keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.	No MRR
5.7.32	40 CFR Part 60 Subpart Kb §60.116(b)(c) and (e) (10/15/03)	Tanks 202, 203, & 231 Maximum True Vapor Pressure: Maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.	Calculate the maximum true vapor pressure using known Reid Vapor Pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product. Maintain records at the facility with this information.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.7.33	NWCAA 580.33 (12/13/89)	Tanks 202, 203, & 231 EFR: Seal Condition All seals are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears, or other openings.	<b>Directly enforceable</b> Semiannually, visually inspect the secondary seal. If the secondary seal has holes, tears, or other openings in the seal or fabric, repair the items as necessary. Maintain records of the types of petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of any inspections performed for a period of two years after the date on which the record was made.
5.7.34	NWCAA Sections 580.93, 580.94, and 580.99 (all 12/13/89)	Tanks 202, 203, & 231 EFR: Store volatile organic compounds in vessels subject to this section that have been fitted with a rim-mounted secondary seal. All of these seals or closure devices shall meet the following requirements: <ul style="list-style-type: none"><li>• There must be no visible holes, tears, or other openings in the seal or seal fabric;</li><li>• The seal shall be intact and uniformly in place around the circumference of the floating roof between the roof and the tank wall.</li></ul>	<b>Directly enforceable</b> Semiannually, visually inspect the secondary seal. If the secondary seal has holes, tears, or other openings in the seal or fabric, repair the items as necessary. Maintain records of the types of petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of any inspections performed for a period of two years after the date on which the record was made.
5.7.35	NWCAA 580.95 (12/13/89)	Tanks 202, 203, & 231 EFR: All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves shall be equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and equipped with projections into the tank which remain below the liquid surface at all times.	<b>Directly enforceable</b> Visually inspect the vessel openings and bleeder vents semiannually. If inspection shows that openings not related to safety are not sealed, close the opening. Document inspection results and any action taken to seal openings.
5.7.36	NWCAA 580.34 (12/13/89)	Tanks 202, 203, & 231 EFR: All openings not related to safety are to be sealed with suitable closures.	

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.7.37	NWCAA 580.96 (12/13/89)	Tanks 202, 203, & 231 EFR Automatic Bleeder Vents: Keep closed at all times except when the roof is floated off or landed on the roof leg supports.	<i>Directly enforceable</i> Visually inspect annually for damage and pressure setting.
5.7.38	NWCAA 580.97 (12/13/89)	Tanks 202, 203, & 231 EFR Rim Vents Shall be set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting.	
<b>Tanks 39, 40, and 161 (Internal floating roof - slop oil/oily wastewater tanks)</b>			
Note: The Title 40 CFR Part 61 and Part 63 General Provisions included in Section 3 apply to affected sources			
5.7.39	NWCAA 560 (4/14/93)	Storage tanks holding petroleum liquids ≥40,000 gallons, or other organic liquids or solvents >6,000 gallons having a True Vapor Pressure of >1.5 psi and ≤11.1 psi under actual storage conditions: Design and equip the storage vessel with the following vapor loss control device, properly installed, in good working order and in operation: A floating roof, consisting of a pontoon type or double-deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a True Vapor Pressure of 11.1 pounds per square inch or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.	<i>Directly enforceable</i> Maintain records demonstrating that the stored material has a maximum true vapor pressure (TVP) less than 11.1 pounds per square inch. Notify the NWCAA within 12 hours of discovering a maximum TVP in excess of 11.1 pounds per square inch. Maximum TVP shall be determined using the calendar month maximum average local temperature for ambient tanks or the maximum average monthly storage temperature for heated tanks.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
5.7.40	NWCAA 580.32 (12/13/89) 40 CFR Part 60 Subpart Kb §60.112b(a)(2)(ii) (10/8/97)	Tanks 39, 40, and 161 > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures. Tanks shall meet the internal floating roof equipment specifications and maintenance requirements of 40 CFR Part 60 Subpart Kb.	Comply with MR&R in term 5.7.43
5.7.41	NWCAA 580.33 (12/13/89)	Tanks 39, 40, and 161 > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures. All seals are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears, or other openings.	Comply with MR&R in term 5.7.43
5.7.42	40 CFR Part 61 Subpart FF §61.351 (9/10/90) 40 CFR Part 63 Subpart CC §63.647 (8/18/95) §63.654(a) (8/18/98/30/10)	Tanks 39, 40, and 161 receiving wastes in accordance with §61.342(c)(1)(ii). Alternative Standards: Tanks shall meet the internal floating roof requirements in 40 CFR Part 60 Subpart Kb §60.112b(a)(1).	Comply with MR&R in term 5.7.43

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.7.43	40 CFR Part 61 Subpart FF §61.351 (9/10/90) §61.356(k) (11/12/02)	Tanks 39, 40, and 161 - Group 1 tanks with Internal Floating Roof. The internal floating roof shall rest or float on the liquid surface at all times except when it must be supported by the leg supports during (i) the initial fill, (ii) after the vessel has been completely emptied, and (iii) when the vessel is completely emptied before being subsequently refilled. When the floating roof is resting on the leg supports, filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.	<p>Annually, conduct a visual inspection of the internal floating roof and seal system through manholes and roof hatches. The inspection shall document any conditions where:</p> <ul style="list-style-type: none"> <li>• the floating roof is not resting on the VOL surface</li> <li>• there is liquid accumulated on the floating roof</li> <li>• a seal is detached or there are holes or tears in the seal fabric</li> </ul> <p>Keep a record of each inspection that includes the tank number, date and any defects discovered.</p> <p>Submit in the Periodic Report the date and description of any defects found and corrective action taken. The report shall include any decision to use a delay of repair extension and documentation that alternate storage capacity was unavailable and that repair was completed as soon as possible.</p>

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.7.44	40 CFR Part 61 Subpart FF §61.351 (9/10/90) §61.356(k) (11/12/02) 40 CFR Part 60 Subpart Kb §60.112b(a)(1)(i) (10/8/97) §60.113b(a)(4) and (5) (8/11/89) §60.115b(a)(2) (4/8/87) 40 CFR Part 63 Subpart CC §63.647 (8/18/95) §63.654-5(a) (8/4/89/986/30/10)	Tanks 39, 40, and 161 - Group 1 tanks with Internal Floating Roof. If, during the inspection after degassing, the internal floating roof has defects, the primary seal or seal fabric has holes, tears, or other openings, the gaskets no longer closes off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10% open area, repair as necessary so that none of these conditions exist before refilling the storage vessel with VOC.  Keep a record of each inspection identifying the storage vessel, the inspection date, and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).  If the inspection after degassing finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects, a report shall be furnished to the NWCAA within 30 days of inspection. The report shall identify the storage vessel and the reason it did not meet the specifications, and list each repair made.	Visually inspect the internal floating roof, the primary seal, the gaskets, the slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed.  Notify the NWCAA in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required. If the inspection is unplanned, the notification may be made verbally at least 7 days prior to refilling followed immediately by written notification.
5.7.45	NWCAA 580.34 (12/13/89)	Tanks 39, 40, and 161 > 40,000 gallons storing VOC with a true vapor pressure as stored >1.5 pounds per square inch (psia), and <11.1 psia at calendar-month average storage temperatures: All openings not related to safety are to be sealed with suitable closures.	Each time the vessel is emptied and degassed, and at least once every 10 years, conduct an internal inspection of the vessel. If inspection shows that the floating roof has defects including, but not limited to, improper gasketing or unsealed openings, repair the defects prior to refilling.  Notify the NWCAA in writing at least 30 days prior to refilling. If

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.7.46	40 CFR Part 61 Subpart FF §61.351 (9/10/90) 40 CFR Part 60 Subpart Kb §60.112(b)(a)(1)(iv) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/185/95)	Tanks 39, 40, and 161 - Group 1 tanks with Internal Floating Roof. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.	the inspection is unplanned, the notification may be made verbally at least 7 days prior to refilling followed immediately by written notification.
5.7.47	40 CFR Part 61 Subpart FF §61.351 (9/10/90) 40 CFR Part 60 Subpart Kb §60.112(b)(a)(1)(v) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/185/95)	Tanks 39, 40, and 161 - Group 1 tanks with Internal Floating Roof. Equip automatic bleeder vents with a gasket and close at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.	<i>Directly enforceable</i> Keep records of periods when the internal roof is resting on the legs supports.
5.7.48	40 CFR Part 61 Subpart FF §61.351 (9/10/90) 40 CFR Part 60 Subpart Kb §60.112(b)(a)(1)(vi) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/185/95)	Tanks 39, 40, and 161 - Rim Space Vents Equip with a gasket and set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.	<i>Directly enforceable</i> Comply with MR&R in Terms 5.7.44

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping/</u> & Reporting
5.7.49	40 CFR Part 61 Subpart FF §61.351 (9/10/90) 40 CFR Part 60 Subpart Kb §60.112b(a)(1)(vii) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/158/95)	Tanks 39, 40, and 161 - Sampling Well Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.	<i>Directly enforceable</i> Comply with MR&R in Terms 5.7.44.
5.7.50	40 CFR Part 61 Subpart FF §61.351 (9/10/90). 40 CFR Part 60 Subpart Kb §60.112b(a)(1)(viii) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/158/95)	Tanks 39, 40, and 161 - Column Supporting Fixed Roof. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve or a gasketed sliding cover.	<i>Directly enforceable</i> Comply with MR&R in Terms 5.7.44.
5.7.51	40 CFR Part 61 Subpart FF §61.351 (9/10/90). 40 CFR Part 60 Subpart Kb §60.112b(a)(1)(ix) (10/8/97) 40 CFR Part 63 Subpart CC §63.647 (8/185/95)	Tanks 39, 40, and 161 - Gasketed Sliding Cover Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.	<i>Directly enforceable</i> Comply with MR&R in Terms 5.7.44.

**Table 5.7 Storage, Blending, and Transfer Operations Areas**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> & Reporting
5.7.52	40 CFR Part 60 Subpart JJ §60.472(c) (10/17/00) and §60.474(c)(5) (10/17/00)	Opacity from Storage Tanks 247 & 248; Opacity from storage tank exhaust shall not exceed 0%, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being blown for clearing.	<i>Directly enforceable</i> Monitor semiannually by observing the vents qualitatively for any visible emissions with sun behind the observer during asphalt transfer. Observed opacity shall be quantified according to 40 CFR Part 60 Appendix A Method 9. Record results of inspections, periods of visible emissions monitored by facility personnel, any related equipment or operational failure, the occurrence dates and the action taken to resolve the problem(s). Retain records for NWWAA inspection.
5.7.53	OAC 649b Condition 2 (10/14/09)	Opacity from asphalt loading. Opacity from the truck and rail car racks and from the barge loading of asphalt will not exceed 20%, three-minute average, at any time.	<i>Directly enforceable</i> Comply with MR&R in term 5.7.52
5.7.54	40 CFR Part 60 Subpart QQQ §60.690 (11/23/88)	Tanks 247 & 248 Individual Drain Systems Comply with 40 CFR Part 60 Subpart QQQ – Table <b>Error! Reference source not found.</b> – exempt for individual drain systems regulated under Part 63 Subpart CC [63.640(o)].	MR&R in Table <b>Error! Reference source not found.</b>

### 3.8 Utilities Plant

Table 5.8 Utilities Plant			
Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.8.1	OAC 989a Condition 2 (3/3/09) OAC 1031 Condition 2 (1/20/09)	E-751, F-752, F-101, F-102, F-103, and E-201: Total fuel oil combustion facility-wide shall not exceed <b>432 barrels per day</b> (rolling 365-day average)	Record fuel oil use for all combustion devices: Daily total and 30-day rolling average fuel oil use for each unit Monthly, report facility fuel oil use and monthly average sulfur content
5.8.2	OAC 952b Condition 5 (3/3/09) OAC 989a Condition 2 (3/3/09)	Boilers E-751, F-752, and F-753: Quarterly emissions report to the NWCAA	Report quarterly: a) Monthly total and 12-month rolling total heat input and steam production, b) Monthly total and 12-month rolling total NO <sub>x</sub> emissions for F-751, F-752, and F-753
5.8.3	40 CFR Subpart Db §60.44b(a)(1) & 60.49b(d) (3/13/00)	E-753 annual capacity factor: NO <sub>x</sub> emissions shall not exceed <b>0.20 lb/MMBtu (30-day rolling average, high heat release basis)</b> . Determine the annual capacity factor is determined on a 12-month rolling average basis with a new factor calculated at the end of each calendar month.	Record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for each fuel for the reporting period. Semiannually, within 31 days of the end of the six-month reporting period, submit a report to the NWCAA summarizing all daily reports
5.8.4	40 CFR Subpart J §60.104(a)(1) (6/24/08)	E-753 fuel H <sub>2</sub> S limitation: fuel gas shall not exceed <b>230 mg H<sub>2</sub>S/dscm (0.10 gr H<sub>2</sub>S/dscf)</b> , 3-hour rolling average	Monitor, keep records, and report as per the Alternative Monitoring Plan included in Section 7.

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Comment [a25]: Why is this being changed? It's in conflict with 5.8.6.

**Table 5.8 Utilities Plant**

Term	Citation	Description	Monitoring/ <u>L</u> Recordkeeping/ <u>L</u> & Reporting
5.8.5	OAC 390e Condition 1 (12/19/07)	F-753 Visible Emissions shall not exceed	<p><i>Directly enforceable</i></p> <p>If visible emissions are observed, emissions shall be reduced to zero as soon as possible. The source may monitor by 40 CFR Part 60 Appendix A Method 9 no later than 24 hours after detection and daily thereafter until visible emission return to 5% or less, otherwise the visible emissions shall be considered in excess of the standard.</p> <p>Record observation results for observations with visible emissions and any related equipment or operational failure, the occurrence dates and times, actions taken, and the type of fuel burned.</p> <p>Record that an observation was performed, with date, time, background conditions and identification of the observer. Keep records of all observations available for inspection.</p> <p>EPA 40 CFR Part 60 Appendix A Method 9</p>

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Table 5.8 Utilities Plant			
Term	Citation	Description	Monitoring/ <u>Recordkeeping/</u> & Reporting
5.8.6	OAC 390e Conditions 2, 3, 4, 6, & 7 (12/19/07)	E-753 Nitrogen Oxide Limitation: NO <sub>x</sub> emissions shall not exceed • <b>0.06 lb NO<sub>x</sub>/MMBtu</b> (30-day average).	A continuous emissions monitor system (CEMS) shall be used to measure NO <sub>x</sub> emissions from the F-753 stack. The CEMS shall meet 40 CFR Part 60 Appendix B Performance Specification B and the quality control procedures in 40 CFR Part 60 Appendix F and NWCAA Regulation 367 and Appendix A. Comply with section 2.1.10.  Stack testing according to 40 CFR Part 60, Appendix A Method 7E may be required by NWCAA.  Continuous emission monitoring reports shall be submitted monthly to NWCAA, by the end of the following calendar month, and shall include the following information: The reason and duration of any monitor down time and corrective action planned or taken, results of any stack emission tests or quality assurance tests, and periods of excessive drift.  For each occurrence of monitored emissions in excess of the standard the report shall include the following: time of the occurrence, magnitude of the emission excess (concentration and mass), duration of the excess, probable cause, corrective actions taken or planned, and agencies notified.
5.8.7	OAC 390e Condition 5 (12/18/07)	E-753 shall combust only purchased natural gas or propane.	No MRR
5.8.8	40 CFR 63 Subpart DDDDD	Boilers F-751, F0752, E-753; Comply with 40 CFR 63 Subpart DDDDD	TBD

**Table 5.8 Utilities Plant**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.8-85.8	40 CFR Part 63 Subpart CC §63.654(c) & (e) (6/30/10) OAC 768 Condition 2 (5/15/01)	<p>Cooling water towers (CWT): Perform monthly monitoring to identify leaks of total strippable volatile organic compound (VOC) from each subject heat exchange system. <b>Utilities Emergency Generator:</b> shall not operate <math>\rightarrow</math> 200 hours per year, including test time.</p> <p>For a heat exchange system at an existing source, a leak is a total strippable VOC concentration (as methane) in the stripping gas of 6.2 ppmv or greater. For a heat exchange system at a new source, a leak is a total strippable VOC concentration (as methane) in the stripping gas of 3.1 ppmv or greater.</p> <p>If the owner or operator detects a leak when monitoring a cooling tower return line under paragraph (c)(1) of this section, the owner or operator may conduct additional monitoring to identify leaks of total strippable VOC emissions using Modified El Paso Method from each heat exchanger or group of heat exchangers in organic HAP service associated with the heat exchange system for which the leak was detected. If the additional monitoring shows that the total strippable VOC concentration in the stripped air at the heat exchanger exit line for each heat exchanger in organic HAP service is less than 6.2 ppmv for existing sources or less than 3.1 ppmv for new sources, the heat exchange system is excluded from repair requirements in paragraph (d) of this section.</p>	<p>Annual records of the number of operating hours shall be recorded and made available to the NWEA. Collect and analyze a sample from each cooling tower return line prior to exposure to air for each heat exchange system in organic HAP service or from each heat exchanger exit line for each heat exchanger or group of heat exchangers in organic HAP service within that heat exchange system to determine the total strippable VOC concentration (as methane) from the air stripping testing system using "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P, Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see §63.14). The owner or operator of a once-through heat exchange system may elect to also monitor monthly (in addition to monitoring each heat exchanger exit line) the fresh water feed line prior to any heat exchanger to determine the total strippable VOC concentration (as methane) prior to the heat exchange system using the Modified El Paso Method. <b>open request</b></p> <p><b>Comment [a26]: RAS: I propose waiting to insert any federal terms until after the effective date is reached. This is a bit awkward having a requirement in an AOP before it is required. Let's discuss.</b></p>

**Table 5.8 Utilities Plant**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.8-95.3	40 CFR Part 63 Subpart CC	CWT: If a leak is detected, the owner or operator must repair the leak to reduce the measured concentration to below the applicable action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraphs (e) and (f) of this section. Actions that can be taken to achieve repair include but are not limited to:	A fuel specification sheet from the fuel supplier shall be made available to NWCAA personnel upon request. Maintain records of actions taken to repair a detected leak.
5.8-95.3	§63.654(d) (6)(3)(10)O&E	(1) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;	
5.8-95.3	768-Condition 3 (545.01)	(2) Blocking the leaking tube within the heat exchanger;	
		(3) Changing the pressure so that water flows into the process fluid;	
		(4) Replacing the heat exchanger or heat exchanger bundle; or	
		(5) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired. Utilities Emergency Generator: shah burn only low sulfur diesel fuel	
		• 0.05 wt% maximum sulfur content	

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**Table 5.8 Utilities Plant**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.8-105	40 CFR Part 63 Subpart CC §63.654(f) & (g) 6/30/10 EAAC-768 Condition 1-(5/15/01)	CWT Delay of Repair: owner or operator may delay the repair of a leaking heat exchanger when: (1) If the repair is technically infeasible without a shutdown and the total strippable VOC concentration (as methane) is initially and remains less than 62 ppmv for all monthly monitoring periods during the delay of repair, the owner or operator may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monthly monitoring, the total strippable VOC concentration (as methane) is 62 ppmv or greater, the owner or operator must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded 62 ppmv total strippable VOC (as methane), except as provided in paragraph (f)(3) of this section. OR (2) If the necessary equipment, parts, or personnel are not available, and the total strippable VOC concentration (as methane) is initially and remains less than 62 ppmv for all monthly monitoring periods during the delay of repair, the owner or operator may delay the repair for a maximum of 120 calendar days. The owner or operator must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monthly monitoring, the total strippable VOC concentration (as methane) is 62 ppmv or greater, the owner or operator must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded 62 ppmv total strippable VOC (as methane). Utilities Energyex Generator: stripping >2,000:4 • 5% opacity for more than 6 minutes	<p>The owner or operator must determine, if a delay of repair is necessary as soon as practicable, but no later than 45 days, first identifying the leak. To delay the repair, the owner or operator must record the following information:</p> <ul style="list-style-type: none"> <li>(1) The reason(s) for delaying repair.</li> <li>(2) A schedule for completing the repair as soon as practicable.</li> <li>(3) The date and concentration of the leak as first identified, the results of all subsequent monthly monitoring events of the delay of repair.</li> <li>(4) An estimate of the potential emissions from the leaking heat exchange system or heat exchanger following the procedure paragraphs (g)(4)(i) and (g)(4)(ii) of this section.</li> </ul> <p>(i) Determine the total strippable VOC concentration in the cooling water, in parts per million by weight (ppmw), using equation 7-1 from "Air Stripping Method (Modified El Pascado Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003. Sampling Procedures Manual, Appendix B: Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see §63.14), based on the total strippable concentration in the stripped air, ppmv, from monitoring.</p> <p>(ii) Calculate the VOC emissions for the leaking heat exchanger by multiplying the VOC concentration in the cooling water, ppmw, by the flow rate of the cooling water, ppmw, by the flow rate of the cooling tower or heat exchanger and by the expected duration of the delay. Directly enforceable.</p> <p>Visually observe the stack-on-a-daily-basis (for days with operation) to quantitatively assess whether emissions are visible. The frequency may be reduced to weekly if no visible emissions are observed for thirty consecutive days of operation.—The permittee shall revert to daily observations (for days with operation) if any visible emissions are noted during the observation.</p> <p>If visible emissions are observed, emissions shall be reduced to zero-as-soon-as-possible. The source may monitor by 40 CFR Part 60, Appendix A Method 9 no later than 24 hours after detection and daily thereafter until visible emission return to 5% or less; otherwise the visible emissions shall be considered in excess of the standard.</p> <p>Record observation results for observations with visible-emissions and any related equipment or operational failure, the occurrence dates and times, actions taken, and the type of fuel burned.</p>

### 3.9 Flare Area

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>&amp; Reporting</u>
<b>Note:</b> The Title 40 CFR Part 60 and 63 General Provisions included in Section 3 will apply to this affected source.			
5.9.1	40 CFR Part 63 Subpart CC §63.648 (8/18/98) 40 CFR Part 60 Subpart VV §60.482-10 (f), (g), (h), (j) & (l) §60.486(c) & (d) (12/14/2000)	<p><b>Flare Area equipment components:</b></p> <ul style="list-style-type: none"> <li>• <b>Leak definition = 500 ppm</b></li> </ul> <p>Leaks shall be repaired as soon as practicable .</p> <p>A first attempt at repair shall be made no later than <b>5 calendar days</b> after the leak is detected.</p> <p>Repair shall be completed no later than <b>15 calendar days</b> after the leak is detected.</p> <p>Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.</p> <p>Vapor collection systems or closed vent systems operated under a vacuum, difficult or unsafe to inspect (no more than 3% of the total number of system components) are exempt from the inspection requirements.</p>	<p>If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall: <b>Con</b> <b>Comment [P0127]: Flare Area equipment components: Implement the leak detection and repair program as listed in Table 6.2.</b></p> <p>For each visual inspection during which no leaks are detected record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.</p> <p>If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall: <b>Conduct annual monitoring in accordance with and using an instrument meeting the performance criteria of 40 CFR Part 60 Appendix A Method 21.</b></p> <p>For each inspection during which a leak is detected record: (1) instrument and operator identification numbers and the equipment identification number (2) date the leak was detected and the dates of each attempt to repair the leak (3) Repair methods applied in each attempt to repair the leak (4) "Above 10,000" if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm (5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak (6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown (7) The expected date of successful repair of the leak if a leak is not repaired within 15 days (8) Dates of process unit shutdowns that occur while the equipment is unprepared. (9) The date of successful repair of the leak</p> <p>Identification of all parts of the closed vent system that are designated as difficult or unsafe to inspect, an explanation, and the plan for inspecting the equipment.</p>

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring & Recordkeeping, & Reporting
<b>Flare Gas Recovery Compressor J-887-M</b>			
5.9.2	40 CFR Part 63 Subpart CC §63.648 (8/18/98) OAC 725b Condition 1 (7/10/07) 40 CFR Subpart H §63.164(a), (b), (c), (d), (e)(1), (f), and (g) (4/26/99) §63.6545 (8/48/98/30/10), §63.181(b)(1) (4/26/99) §63.182(d) (1/17/97)	Compressor J-887-M: Equip with a seal system that includes a barrier fluid system that prevents leakage of process fluid. The barrier fluid pressure shall be greater than the compressor stuffing box pressure. The barrier fluid system shall not be in liquid service.  Equip the barrier fluid system with a sensor that will detect failure of the seal system, barrier fluid system, or both. Each sensor shall be observed daily or shall be equipped with an alarm.  When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, unless a delay of repair is required. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.	Monitor barrier fluid flow sensor daily. If the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected. Maintain records of sensor monitoring. Submit, semiannually, a report for the compressor if a leak was detected, and an indication if the leak was not repaired. The first periodic report shall cover the first 6 months after startup.
5.9.3	40 CFR Part 63 Subpart CC §63.648 (8/18/98) OAC 725b Condition 1 (7/10/07) 40 CFR Subpart H §63.162(c) (1/17/97) §63.181(b)(1)(i) (4/26/99).	Compressor J-887-M Equipment Identification Each piece of equipment to which Subpart H applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging.	Record the identification number for equipment subject to the requirements of this subpart.

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring/_Recordkeeping/_& Reporting
5.9.4	40 CFR Part 63 Subpart CC §63.648 (8/18/98), OAC 725b Condition 1 (7/10/07) 40 CFR Subpart H §63.162(f) (1/17/97)	Compressor 1-887-M Leak Identification When a leak is detected, a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.	Record the identification number for equipment marked as leaking.
5.9.5	40 CFR Part 63 Subpart CC §63.648 (8/18/98) OAC 725b Condition 1 (7/10/07) 40 CFR Subpart H §63.171 (12/14/00) §63.182(d) (1/17/97)	Compressor 1-887-M Delay of Repair Delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown. Delay of repair is also allowed if the equipment is isolated from the process and does not remain in organic HAP service.	Submit, semiannually, a report explaining why each delay of repair was required and, where appropriate, why a process unit shutdown was technically infeasible. The first periodic report shall cover the first 6 months after startup.
5.9.6	40 CFR Part 63 Subpart CC §63.6554 (8/19/98/6/30/10) 40 CFR Subpart H §63.181(a) (4/26/99)	Compressor 1-887-M All records and information shall be maintained in a manner than can be readily accessed at the plant site.	No M&R

**Flares X-819, X-813, and X-814**

Note: The Title 40 CFR Part 63 General Provisions included in Section 3 will apply to this affected source.

5.9.7	40 CFR 60 Subpart Ja	Flares X-819, X-813, and X-814	TBD
5.9.7-5.9.8	40 CFR Part 63 Subpart CC §63.644(a)(2) & (e) (8/18/98/10/28/09)	Flares X-819, X-813, and X-814: Flares shall be operated with a flame present at all times. Monitor flares to assure continuous presence of a pilot flame and that the flares are operated and maintained in conformance with their designs.	Monitor the flare with a device capable of continuously detecting the presence of a pilot flame (including, but not limited to a thermocouple, an ultraviolet beam sensor, or an infrared sensor).

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring/ <u>Recordkeeping</u> / <u>t.</u> & Reporting
5.9.85.9.9	40 CFR Part 63 Subpart CC §63.643(a)(1) (8/18/95) 40 CFR Part 63 Subpart A §63.11(b)(1), (3), & (5) (12/22/08)	Group 1 miscellaneous process vents shall be routed to a flare that meets the requirements of §63.11(b). Flares X-819, X-813, and X-814: Flares shall be operated at all times when emissions may be vented to them. Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.	Monitor the flare with a device capable of continuously detecting the presence of a pilot flame (including, but not limited to a thermocouple, an ultraviolet beam sensor, or an infrared sensor).
5.9.95.9.10	40 CFR Part 63 Subpart CC §63.643(a)(1) (8/15/95) 40 CFR Part 63 Subpart A §63.11(b)(4) (12/22/08)	Group 1 miscellaneous process vents routed to the flare system shall use a flare that meets the requirements of §63.11(b). Flares X-819, X-813, and X-814: shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.	40 CFR Part 60 Appendix A Method 22 – No specific periodic monitoring.
5.9.105.9.11	40 CFR Part 63 Subpart CC §63.648 (8/18/98) 40 CFR Part 60 Subpart VV §60.482-10(m) (12/14/00) & §60.485(g)(1) & (2) (11/16/07) 40 CFR Part 60 Subpart A §60.18(c), (e), and (f) (12/22/08)	Flares X-819, X-813, and X-814: shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Flares shall be operated at all times when emissions may be vented to them.	Monitor the flare pilot flame using a thermocouple or any equivalent device to detect the presence of a flame. 40 CFR Part 60 Appendix A Method 22 – No specific periodic monitoring.

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.9-145.9.12	40 CFR Part 63 Subpart CC §63.643(a)(1) (8/15/89/5), §63.648 (8/18/98)	Heating Value. The net heating value of the gas being combusted shall be 11.2 MJ/scm (300 Btu/scf) or greater for steam or air-assisted flares. For nonassisted flares, the net heating value shall be 7.45 MJ/scm (200 Btu/scf) or greater. The net heating value shall be calculated by the equation in 63.11(b)(6), which is identical to the equations in 60.18(f)(3) and 60.485(g)(4).	Maintain records of determinations.
5.9-125.9.13	40 CFR Part 63 Subpart CC §63.644(a)(2) (8/18/98/10/28/02)	Exit Velocity. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs 63.11(b)(7)(ii) and 63.11(b)(7)(iii). These paragraphs are identical to 60.18(c)(4)(ii), 60.18(c)(4)(iii) and 60.485(g)(7).	Maintain records of determinations.
5.9-135.9.14	40 CFR Part 63 Subpart CC §63.643(a)(1) (8/15/89/5), §63.648 (8/18/98)	Exit Velocity Exemption. Steam-assisted and nonassisted flares designed for and operated with an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the gas net heating value is greater than 37.3 MJ/scm (1,000 Btu/scf).	Maintain records of determinations.

**Table 5.9 Flare Area**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.9-145.9.15	40 CFR Part 63 Subpart CC §63.643(a)(1) (8/15/95), §63.648 (8/18/98)	Exit Velocity Exemption Steam-assisted and nonassisted flares designed for and operated with an exit velocity less than the velocity, $V_{max}$ , as determined by the method specified in 63.11(b)(7)(iii), but less than 122 m/sec (400 ft/sec) are allowed.	
5.9-145.9.16	40 CFR Part 63 Subpart CC §60.485(g)(7) (11/16/07) 40 CFR Part 60 Subpart A §60.18(c)(4)(iii) (12/22/08)	Monitoring Provisions for Flares Used as Combustion Devices for Miscellaneous Process Vent Control All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures.	Submit a Periodic Report no later than 60 days after the end of each 6-month period when a compliance exception occurs. The first 6-month period shall begin on the date the Notification of Compliance Status was due [January 15, 1999]. Record and report in a Periodic Report each occurrence when the flare does not meet the general control device requirements specified in 63.11(b) and shall include: Identification of the flare that does not meet the general requirements specified in 63.11(b), and reasons why the flare did not meet these requirements.
5.9-145.9.17	40 CFR Part 63 Subpart CC §63.644(e) (8/18/98/10/28/09) §63.6545(g)(6) (8/18/98/30/10)	Operation Operate a subject control device in a manner consistent with the minimum and/or maximum operating parameter value or procedure required to be monitored under paragraphs (a) and (b) of this section. Operation of the control device in a manner that constitutes a period of excess emissions, defined in §63.6524(g)(6)(b) as an operating day when all pilot flames of a flare are absent, or failure to perform procedures required by this section shall constitute a violation of the applicable emission standard of this subpart.	Periods that constitute a startup, shutdown, or malfunction, as those terms are defined in 63.641 and 63.2, are exempt from reporting. Note that the recording requirements are not exempted.



### 3.10 Oily Wastewater/Benzene Waste Collection and Treatment

**Table 5.10 Oily Wastewater/ Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring/- Recordkeeping/ & Reporting
5.10.1	40 CFR Part 61 Subpart FF §61.342(c)(1), (2), & (3)(ii), §61.357(d) (10/17/00) 40 CFR Part 63 Subpart CC §63.647 (8/18/95) §63.6545(a) (9/4/8/98/6/13/0/10)	For waste streams containing benzene, manage the waste stream in accordance with §61.343 through 347 and remove or destroy the benzene contained in the waste using a treatment process, or wastewater treatment system that complies with the standards of this subpart.  A waste stream may be exempted from the control requirements provided all the following conditions are met: the stream is not exempted as process wastewater with a flow rate less than 0.02 l/min or waste quantity < 10 Mg; the total annual benzene quantity in all waste streams chosen for exemption under §61.342(c)(3)(ii) shall not exceed <b>2.0 Mg/yr</b> as determined per §61.355(a); and all wastes are counted in the year the waste is generated.	Maintain records of measurements of benzene concentration, flow-weighted benzene concentrations, and annual flow rates for subject waste streams, including those chosen for exemption. A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in §61.355(c)(2) or §61.355c)(3) - US EPA Publication No. SW-846 Method 8260b.  A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates at least once per year that all of the following conditions are met: (A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section, (B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this section does not exceed 2.0 Mg/yr (2.2 ton/yr) as determined in the procedures in §61.355(i), and (C) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.10.2	40 CFR Part 61 Subpart FF §61.355, & §61.357(d) (10/17/00)  40 CFR Part 63 Subpart CC §63.647 (8/18/95) & §63.6545(a) (8/18/98/6/30/10)	<p><b>Total Annual Benzene Quantity:</b>                      Update the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream.</p> <p>Update for each waste stream the annual waste quantity and the flow-weighted annual average benzene concentration at the point of waste generation.</p>	<p>Select the highest annual quantity of waste managed from historical records representing the most recent five years of operation.</p> <p>Using either knowledge of the waste, as per §61.355(c)(2), or measurements of benzene concentration, as per §61.355(c)(3), determine the flow-weighted annual average benzene concentration representing the waste stream characteristics based on current configuration and operating conditions</p> <p>Submit annually to the NWCAA:</p> <ol style="list-style-type: none"> <li>(1) The total annual benzene quantity from facility waste determined in accordance with §61.355(a),</li> <li>(2) A table identifying each waste stream and whether or not the stream will be controlled for benzene emissions,</li> <li>(3) For each waste stream identified as not being controlled for benzene emissions, report whether or not the water content of the waste stream is greater than 10%; whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate; the annual waste quantity for the waste stream; the range of benzene concentrations for the waste stream; the annual average flow-weighted benzene concentration for the waste stream; and, the annual benzene quantity for the waste stream.</li> </ol> <p>If (1), (2), and (3) have not changed since the previous report, submit a statement to that effect. Also, identify the waste streams chosen for exemption under 61.342(c)(3)(ii), and the total annual benzene quantity in those streams.</p>

**Table 5.10 Oily Wastewater/ Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.10.3	40 CFR Part 61 Subpart FF §61.356(b) (11/12/02)	Benzene Waste Stream Identification	For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.
	40 CFR Part 63 Subpart CC §63.6545(a) (8/48/986/30/10)	Maintain records identifying each waste stream subject to Subparts FF and indicate whether the streams are controlled.	For each subject waste stream exempt as per 61.342(c)(3), the records shall include all measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams is less than 2.0 Mg/yr.
5.10.4	40 CFR Part 61 Subpart FF 61.355(b)(4) (10/17/00)	Process Unit Turnaround Waste	Maintain records including all test results, measurements, calculations, and other documentation used to determine the identification of each process unit that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with 61.355(g)(4), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with 61.355(a)(1)(iii) of this section.
	40 CFR Part 63 Subpart CC §63.647 (8/185/95) & §63.6545(a) (8/48/986/30/10)	For waste generated at two year or greater intervals and not exempted under 61.342(c)(3), determine the annual waste quantity by dividing the total quantity of waste generated during the most recent process unit turnaround by the time period between the turnaround resulting in generation of the waste and the most recent preceding process turnaround for the unit. Include the resulting annual waste quantity in the annual benzene waste quantity calculation for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process turnaround.	

**Table 5.10 Oily Wastewater/ Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.10.5	40 CFR Part 61 Subpart FF	<p>Individual Drain Systems in which waste is placed in accordance with §61.342(c)(1)(ii) – Install, operate, and maintain on each drain system opening (including Junction boxes, and sewer lines) covers and closed-vent system that routes all organic vapors from the drain system to a control device except during waste sampling or removal, equipment inspection, maintenance or repair. The cover and all openings shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background.</p> <p>Or each drain shall be equipped with water seal controls or a tightly sealed cap or plug.</p>	<p>Annually, monitor closed vent systems in accordance with 40 CFR part 60 Appendix A Method 21.</p> <p>Quarterly, perform a visual inspection of each cover seal, access hatch, and all other openings to ensure there are no cracks or gaps and openings are closed and gaskets installed properly.</p> <p>Submit quarterly to the NWCAA a certification that the required inspections have been carried out.</p> <p>Annually, report all inspections during which detectable emissions were measured or a problem (such as a broken seal, gap, or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken.</p> <p>Maintain records of engineering design documentation for the life of the control equipment and for each visual inspection that identifies a problem (such as a broken seal, gap, or other problem) that could result in benzene emissions.</p> <p>- Directly enforceable below -</p> <p>Inactive drains controlled by water seals shall be inspected weekly.</p> <p>Check each drain visually or physically monthly for indications of low water levels or other conditions that would reduce water seal control effectiveness.</p> <p>For each problem identified during inspection that could result in emissions (including water seal is dry or otherwise breached) record the location, date, and corrective action.</p> <p>If low water levels or other conditions that would reduce the effectiveness of the seal are identified, water shall be added, and/or other efforts to repair shall be made as soon as practical, but not later than 24 hours after detection.</p>

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring & Recordkeeping/ & Reporting
5.10.6	40 CFR Part 61 Subpart FF 61.347 (1/7/93)	Oil-Water Separators: API Separator (X-701). Sludge Thickener (X-715). Primary Clarifiers (X-702 and X-703). Clarifier Sludge Reservoir (X-708). Install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device. The cover and all openings shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background.	Annually, monitor in accordance with 40 CFR Part 60 Appendix A Method 21. Calibration gases shall be zero air (less than 10 ppm of hydrocarbon in air); and a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. Maintain records for each test of no detectable emissions.

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.10.7	40 CFR Part 61 Subpart FF	Closed Vent System Design the closed-vent system to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background.	Annually, monitor in accordance with 40 CFR Part 60 Appendix A Method 21. Maintain records for each test of no detectable emissions as per 61.356(h). Records shall be maintained in a readily accessible location on site for not less than two years.
	§61.354(f) (10/17/00)	All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.	Monthly, visually inspect bypass line valve(s), checking the position of the valve and the condition of the car-seal to ensure that the valve is maintained in the closed position. Maintain a record of the inspections.
	§61.355(h) (10/17/00)	Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration.	Quarterly, submit a certification to the NWCAA that the required inspections have been carried out.
	§61.356(a), (h) (11/12/02)		
	§61.357(d)(6) (10/17/00)		
	40 CFR Part 63 Subpart CC		
	§63.647 (8/185/95)		
	§63.6545(a) (8/18/986/30/10)		
		One or more devices which vent directly to the atmosphere may be used provided each device remains in a closed, sealed position during normal operations. Secure the closed position with a car-seal or a lock-and-key type configuration.	

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.10.8	40 CFR Part 61 Subpart FF 61.349(a)(2)(ii) and (c)(1) and (h) (10/17/00)	<p>Control Device. Design and operate control device to recover or control organic emissions vented to it with an efficiency of 95 wt % or greater, or recover or control the benzene emissions vented to it with an efficiency of 98 wt % or greater.</p> <p>Maintain a design analysis for the control device, including specifications, drawings, schematics, and piping and instrumentation diagrams. The analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature.</p> <p>The analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.</p>	<p>Monitor in accordance with 40 CFR Part 60 Appendix A Method 21 on a daily basis or at intervals no greater than 20% of the design carbon replacement interval, whichever is greater. Replace the carbon with fresh carbon when breakthrough (concentration of 500 ppm VOC or 10 ppm benzene above background) is indicated.</p> <p>Maintain documentation that includes the following information on control device operation:</p> <ol style="list-style-type: none"> <li>(1) Dates of startup and shutdown of the closed-vent system and control device.</li> </ol> <p>A description of the operating parameter to be monitored to ensure that the control device will be operated in conformance with the standards and the design specifications and an explanation of the criteria used for selection of that parameter.</p> <p>Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when any valve car-seal or closure mechanism is broken or the bypass line valve position has changed.</p> <p>Maintain records of dates and times of monitoring, when breakthrough is measured and the date and time when the existing carbon is replaced.</p>

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.10.9	40 CFR Part 63 Subpart CC §63.647 (8/158/95) §63.6545(a) (8/18/98/30/10)	<b>Closed-Vent System and Control Device</b> Operate the closed-vent system and control device at all times except during maintenance or repair of the waste management unit when the repair cannot be completed without a shutdown of the control device. Except where repair is technically impossible without a complete or partial facility or unit shutdown, if visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, make a first effort at repair as soon as practicable, but not later than 5 calendar days after identification.	Quarterly, perform a visual inspection including ductwork, piping, and connections to covers and control devices for evidence of visible defects such as holes and loose connections. Maintain records with a signed and dated statement certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit is or would be operating at the highest load or capacity expected to occur. Quarterly, submit a certification to the NWCAA that the required inspections have been carried out. Annually, submit a report summarizing all inspections required by 61.354 during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed. When repair is delayed for a shutdown, repair such equipment before the end of the next facility or unit shutdown.

**Table 5.10 Oily Wastewater / Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring & Recordkeeping & Reporting
5.10.10	40 CFR 61 Subpart FF 61.345(a), (b), and (c) (12/4/03)	Containers Install, operate, and maintain a cover on each container used to handle, transfer, or store waste. The cover and all openings shall be designed to operate with no detectable emissions as indicated by less than 500 ppm above background. Maintain each opening in a closed, sealed position (e.g. covered by a lid that is gasketed and latched) at all times when waste is in the container, except when loading, removing, sampling, or inspecting wastes. When waste is transferred by pumping, the fill pipe should be submerged. During loading, the cover shall remain in place and all openings shall be closed and sealed, except for those openings required for the submerged fill pipe, those openings required for venting to prevent physical damage or permanent deformation of the container or cover.	Annually, monitor in accordance with 40 CFR Part 60 Appendix A Method 21. Calibration gases shall be zero air (less than 10 ppm of hydrocarbon in air); and a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. Maintain records for each test of no detectable emissions.

**Table 5.10 Oily Wastewater/ Benzene Waste Collection and Treatment**

Term	Citation	Description	Monitoring/ Recordkeeping/ & Reporting
5.10.11	40 CFR Part 63 Subpart CC	Treatment Process or Waste Stream	Certify semiannually that the treatment process and subject waste streams are treated by a means or to a level that is in compliance with the facility's National Pollutant Discharge Emission Standard (NPDES) permit and Title 40 CFR Part 419.
	§63.647 (8/158/95)		Maintain records for the life of the unit certifying that the treatment process or wastewater treatment system unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content that is expected to occur.
	§63.65-54(a) (8/18/986/30/10)		Maintain the complete design analysis and any test information, as per 61.356(e).
	40 CFR Part 61 Subpart FF		Maintain documentation that includes the following information:
	§61.348(d) (10/17/00)		Dates of startup and shutdown of the unit.
	§61.356(a), (e), and (l) (11/12/02)		Periods when the unit is not operating as designed.

### 3.11 Fire Training

**Table 3.11—Fire-Training Area**

Term	Citation	Description	Monitoring./Recordkeeping./& Reporting
5.11.1	Fire Permit No. 1100702002 Condition 2-8-3 (11/11/01-11/11/01) and NWCAA 502	Permit Availability: A copy of this permit must be available at the site-of-the-fire.	Permit Availability: A copy of this permit must be available at the site-of-the-fire. None
5.11-25.11.1	Fire Permit No. 1100702002 Condition 35 (11/19/11-11/11/01) and NWCAA 502	Approval Conditions: Approval is granted only for the burning of materials listed above (gasoline, propane and diesel fuel) and during the dates specified (01/01/02 through 12/31/03). There shall be no burning during any stage of an air pollution episode or any day designated by the Control Officer of the Authority.	None
5.11-25.11.2	Fire Permit No. 1100702002 Condition 34 (11/19/11-11/11/01) and NWCAA 502	Materials Prohibited: The material to be burned shall not contain garbage, dead animals, asphalt, paints, rubber products, plastics, paper (except what is needed to start the fire), cardboard, treated wood, construction/demolition debris.	None

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Comment [PKJ 28]: Nothing listed above

**Table 5-11-Fire Training Area**

Term	Description	Description	Monitoring & Recordkeeping, & Reporting
5.11-45.11.3	Fire Permit No. 1100702002 Condition 15 (67394112/117/01) and NWCAA 502	Smoke and Fly Ash Smoke and/or fly ash (particulate matter) from the fire shall not be emitted in a manner which creates a nuisance and/or interferes with visibility on any public road.	Directly enforceable A written nuisance complaint response plan will be maintained at the facility. Upon receiving a nuisance or public road visibility complaint from the NWCAA or the public, the fire-training-area shall be checked for proper operation. Problems identified shall be repaired or corrected as soon as possible. If the problems identified cannot be repaired or corrected within four hours, action shall be taken to minimize emissions until repairs can be made. Notification shall be provided to the NWCAA. The results of the investigation, identification of any malfunctioning equipment or abnormal operation, and the date and time of repair or mitigation shall be recorded. A log of these records shall be maintained for inspection. Receipt of a nuisance/visibility complaint in itself shall not necessarily be a violation;

#### Railcar Unloading Facility

**Table 5-12-Railcar Unloading Facility**

Item	Description	Description	Monitoring & Recordkeeping, & Reporting
—	40 CFR 60 Subpart GGG2 (11/16/07)	Railcar Unloading Equipment in VOC/HAP Service. Implement the LEAR program in Table 6-3 following the provisions of 40 CFR Part 60 Subpart W as cited by Subpart GGG2.	Comply with Table 6-3 LEAR requirements. Monitoring instrument must meet the performance criteria of 40 CFR Part 60 Appendix A Method 21.
—	40 CFR Part 60 Subpart QQQ, §§60.620 (11/23/08)	Railcar Unloading Individual Drain Systems	MR&R in Table 6-1

**Table 5.12-Railcar Unloading Facility**

Item	Station	Description	Monitoring, Recordkeeping, & Reporting
		999 - Table 6.1 – except for individual drain systems regulated under Part 63 Subpart EC [63.640(o)].	

### 3.12 Reciprocating Internal Combustion Engines

**Table 5.12. Reciprocating Internal Combustion Engines**

Item	Station	Description	Monitoring, Recordkeeping, & Reporting
5.12.1	40 CFR Part 60 Subpart III §60.4205(b), §60.4211(c) (07/11/06). & 40 CFR Part 63 Subpart ZZZZ §63.6590(c) (08/20/10)	ENG-754 - Comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power as certified by the manufacturer.	Maintain a record of the manufacturer's certification.
5.12.2	40 CFR Part 60 Subpart III §60.4205(c), & §60.4211(c) (7/11/06). & 40 CFR Part 63 Subpart ZZZZ §63.6590(c) (08/20/10)	ENG-811 & ENG-812 - Comply with the emission standards in Table 4 to this subpart, for all pollutants as certified by the manufacturer.	Maintain a record of the manufacturer's certification.

Comment [A29]: I reviewed this table in detail. The Subpart ZZZZ RICE 2 summary was very helpful. Good job.

Comment [a30]: Rebecca: It is my opinion that it is too early to be adding RICE requirements to the AOP. Let's discuss.

Comment [A31]: It's true there are no requirements for M&R in Subpart III. This is essentially gap-filling. The manufacturer must label the units under 60.4210. Would maintaining records come under 63.4 of general provisions?

Comment [TM32]: There are no M&R requirements in the regulation.

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Comment [TM33]: Table 4 includes numbers with no units?

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.3	40 CFR Part 60 Subpart IIII §60.4206, §60.4207(b), §60.4209(a), §60.4211(a), (c), & (e) (7)(1)(06), & 40 CFR Part 63 Subpart ZZZZ §63.6590(c) (08/20/10)	ENG-754, ENG-811, & ENG-812 -	Maintain copies of the manufacturer's instructions or procedures and records of fuel specifications.

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.4	40 CFR Part 63 Subpart ZZZZ, §63.6602 (6/15/04)	<p>J-750, GEN-763, &amp; GEN-764; Table 2C</p> <ul style="list-style-type: none"> <li>• Change oil and filter every 500 hours of operation or annually, whichever comes first or utilize an oil analysis program in order to extend the specified oil change requirement.</li> <li>• Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;</li> <li>• Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.</li> </ul> <p>If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(q) for alternative work practices.</p>	<p>Report any failure to perform the work practice on the schedule required and the Federal, State, or local law under which the citation column.</p> <p><b>Comment [A34]: I would put Table 2c in the citation column.</b></p>

**Table 5.12 Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.5	40 CFR Part 63 Subpart ZZZZ §63.6625 (i) (8/20/10)	<p>Optional oil analysis J-750, GEN-763, &amp; GEN 764: If utilized, the optional oil analysis must be performed at the same frequency specified for changing the oil in Term 5.12.4. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:</p> <ul style="list-style-type: none"> <li>• Total Base Number is less than 30 percent of the Total Base Number of the oil when new;</li> <li>• viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new;</li> <li>• or percent water content (by volume) is greater than 0.5.</li> </ul> <p>If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later.</p>	<p>The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.</p>

**Table 5.12 Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.6	40 CFR Part 63 Subpart ZZZZ §63.6625(e) & (f)	(8/20/10), §63.6640 (a)	Keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE
	(8/20/10), § 663.6655(e), (f) (8/20/10)		Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.

**Table 5.12 Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.7	40 CFR Part 63 Subpart ZZZZ §63.6640 (f) (8/20/10)	<p>1-750, GEN-763, &amp; GEN 764: Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, is prohibited. If you do not operate the engine according to these requirements, the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines.</p> <p>(i) There is no time limit on the use of emergency stationary RICE in emergency situations.</p> <p>(ii) Maintenance checks and readiness testing of such units is limited to 100 hours per year.</p> <p>(iii) Up to 50 hours per year operation in non-emergency situations or 15 hours per year as part of a demand response program, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent.</p>	<p>The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year.</p> <p>The 50 hours per year for non-emergency situations cannot be used for peak shaving, or to generate income for a facility to supply power to an electric grid, or otherwise supply power as part of a financial arrangement with another entity, except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (f)(1)(iii), as long as the power provided by the financial arrangement is limited to emergency power.</p>

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.8	40 CFR Part 63 Subpart ZZZZ §§63.6602 (6/15/04) & §§63.6650 (a), (b), (c), (d), & (f) (3/3/10)	Limit concentration of formaldehyde in the stationary RICE exhaust to <u>10.3 ppm and at 15% O<sub>2</sub></u> .	<p>Comment [A35]: I don't see the annual requirement in 63.6650. There is a requirement of annual for "limited use"</p> <p>Comment [TM3]: Annual compliance certification is in section 2.4 as referenced in 6650.</p> <p>Otherwise it's limited use reporting annually... yes - but that is aside from section 2.4,</p> <p>Semiannually &amp; annually report in accordance with Section there are no deviations from any emission limitations or operating limitations that apply to you. a statement that there were no deviations from the emission limitations or operational limitations during the reporting period.</p> <p>Reports shall contain:</p> <p>Company name and address.</p> <p>Statement by a responsible official, with that official's name and signature, certifying the accuracy of the content of the report.</p>
5.12.9	40 CFR Part 63 Subpart ZZZZ §§63.6640(b) & (e) (8/20/10)	1-753, 1-755, 1-750, GEN-763, & GEN 764: Deviation reporting	<p>Date of report and beginning and ending dates of the reporting period.</p> <p>If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.6605(b), including actions taken to correct a malfunction.</p> <p>The total operating time of the stationary RICE at which the deviation occurred during the reporting period.</p> <p>Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.</p> <p>You must report each instance in which you did not meet each emission limitation or operating limitation or general requirements. These instances are deviations from the emission and operating limitations. These deviations must be reported according to the requirements in §63.6650 and Section 2.4.</p>

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.10	40 CFR Part 63 Subpart ZZZZ §63.6605 (3/3/10), §63.6625 (h) (8/20/10), & §63.6655(a) (8/20/10)	<p>1-753, J-755, J-750, GEN-763, &amp; GEN-764: You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times.</p> <p>Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.</p> <p>At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions, if levels required by this standard have been achieved.</p> <p>Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source</p>	<p>Keep the following records:</p> <p>A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xv).</p> <p>Records of the occurrence, and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment.</p> <p>Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).</p> <p>Records of all required maintenance performed on the air pollution control and monitoring equipment.</p> <p>Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p>

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.11	40 CFR Part 63 Subpart ZZZZ §63.6612(b)(20/10), §63.6620 (a), (b), (d), & (i)	<p>1-753 &amp; J-755: Conduct an initial performance test within 180 days of 10/19/13 in accordance with Table 4 (3) measuring formaldehyde at the exhaust. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again.</p> <p>Conduct three separate test runs for each performance test. Each test run must last at least 1 hour.</p>	<p>Use 40 CFR part 60, Appendix A Methods 1 or 1A, 3 or 3A or 3B, 4, and 320, or 323 or ASTM Method D6522-00 (2005) for O2 concentration, or ASTM-D 6348-03 for moisture content, or ASTM-D 6348-03, provided in ASTM D6348-03 Annex A (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130 for formaldehyde concentration.</p> <p>Submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1).</p> <p>Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to §63.9(n)(2)(ii) before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).</p> <p>The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site, rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc., are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.</p>

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.12	40 CFR Part 63 Subpart ZZZZ §63.6620 (f) & (g) (3/3/10)	J-753 & J-755: If you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by the Administrator.	<p>If you petition the Administrator for approval of operating limitations, your petition must include:</p> <ol style="list-style-type: none"> <li>(1) Identification of the specific parameters you propose to use as operating limitations;</li> <li>(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;</li> <li>(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;</li> <li>(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and</li> <li>(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.</li> </ol>

**Table 5.12. Reciprocating Internal Combustion Engines**

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.13	40 CFR Part 63 Subpart ZZZZ §63.6620(h) (3/3/10)	1-753 & J-755: If you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and are not using an oxidation catalyst or NSCR, you must petition the Administrator for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.	(h) If you petition the Administrator for approval of no operating limitations, your petition must include:
			(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally or unintentionally on a routine basis or over time;
			(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;
			(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;
			(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;
			(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;
			(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and
			(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.
5.12.14	40 CFR Part 63 Subpart ZZZZ §63.6595(a)(1) (8/20/10)		1-750, GEN-763, & GEN 764 requirements: Comply with the applicable requirements in this table no later than May 3, 2013.
5.12.15	40 CFR Part 63 Subpart ZZZZ §63.6595(a)(1) (8/20/10)		1-753 & J-755 requirements: Comply with the applicable requirements in this table no later than October 19, 2013.

### 3.13 BART Applicable Units

**Table 5.13 F-103, F-104, F-304, F-654, F-6600, F-6601, F-6602, F-6650, F-6651, F-6652, F-6653, F-6654, F-6655, F-6656** [Formatted Table]

Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.12.16	BART Order 7838 General Requirement and Conditions 12 & 15 (7/7/10) – State Only	Operate in accordance with the Order included in Section 8 of this AOP. Tesoro may request this compliance Order be rescinded after all BART units at the plant have continuously complied with the emissions limitations for a period of three years and emission limitations have been incorporated into enforceable orders or permits.	In accordance with the Order in Section 8 of the Order, monitoring data and/or emission facts shall be submitted to Ecology and to NWCAA on a basis January through June and July through December. A semiannual report shall be provided within 45 days of the reporting period. The submittal shall be electronically in a format acceptable to NWCAA. Reporting to Ecology will end when Tesoro has demonstrated compliance with the BART emission limits in this order applicable to a specific unit for a continuous 36-month period.
5.12.17	BART Order 7838 Condition 13 (7/7/10) – State Only	Continuous Emissions Monitors (CEMS) on BART units.	Data quality control testing shall be performed on a quarterly calendar quarter. A RATA shall be performed a year on every CEM system required by this Order. Tesoro shall notify Ecology and NWCAA when annual RATA testing is scheduled to occur, no later than 30 days prior to the testing date. Tesoro shall provide Ecology and NWCAA a copy of the RATA test results in an electronic format within 45 days of completion of the RATA test. Tesoro shall provide NWCAA the results of all quarterly cylinder gas audits performed with the next quarterly data assessment report submitted to NWCAA.

Table 5.14 40 CFR 63 Subpart DDDDD – Heater & Boiler Mact			
Term	Citation	Description	Monitoring, Recordkeeping, & Reporting
5.14.1	40 CFR 63 Subpart DDDDD	F-101, F-102, F-103, F-104, F-201, F-301, F-302, F-303, F-304, E-652, F-654, F-751, F-752, F-753, F-6600, F-6601, F-6602, F-6650, F-6651, F-6652, F-6653, F-6654, F-6655 – Comply with the requirements of 40 CFR 63 Subpart DDDDD no later than January 31, 2016.	TBD

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