northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 14, 1988
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 241a

Project Summary: Construction and operation of an internal floating roof storage tank.

Approved Emission Unit:

- One 4,400-barrel internal floating roof storage tank (Tank 70), originally reviewed for emulsion breaking service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 241 issued January 14, 1988.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. No objectionable odors as determined by NWCAA staff shall be emitted from this storage tank.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirement. Included 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 22, 1989
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 262a

Project Summary: Conversion of a fixed roof to an external floating roof tank. The storage tank was originally constructed in 1958.

Approved Emission Unit:

- One 7,295,000-gallon storage tank (Tank 15) modified with an external floating roof, originally reviewed for crude oil service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 262 issued November 22, 1989.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Notification shall be provided to the NWCAA when construction of the external floating roof is complete along with the date when operation is expected to begin.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirement. Included 40 CFR 63 Subpart CC applicability in introduction. Included explicit initial notification requirement.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 16, 1990
Revision a: September 10, 1991
Revision b: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 286b

Project Summary: Construction and operation of two heaters (7C-F4 and 7C-F5) at the No. 1 Hydrotreater (HTU1).

Approved Emission Units:

- Two HTU1 heaters – Heater 7C-F4 and Heater 7C-F5 (240 MMBtu/hr combined) – firing natural gas or refinery fuel gas

Owner/Operator	Facility Name and Location
Equilon Enterprises DBA: Shell Oil Products P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 286 issued July 16, 1990 and OAC 286a issued September 10, 1991.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Nitrogen oxide emissions shall be limited to 0.07 lbs NO_x/MMBtu on a one-hour average.

2. Ongoing compliance with the nitrogen oxide emission limitation in Condition 1 of this Order shall be demonstrated by conducting an initial source test within 180 days of the issuance of this Order (i.e., OAC 286b) and conducting subsequent source tests once every five years, between 3 months before and after the anniversary month of the initial source test as required in this Order term. For the lb/MMBtu limit in Condition 1, compliance shall be determined using 40 CFR 60 Appendix A Methods 7E and 19. The Method 19 analysis to determine the F-factor shall be performed using fuel gas composition data from the day of the test. Testing shall be performed at representative operating conditions. Development and submittal of the source test plan and test report along with the testing itself shall be in accordance with NWCAA Appendix A or as approved in writing in advance by the NWCAA.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Modified to reflect updated requirements and monitoring options in NSPS Subpart J.

Revision b: Merged the requirements of OAC 286 and 286a. Updated to reflect current OAC format. Moved NSPS Subpart J to introduction as independent requirement. Included MACT Subpart DDDDD applicability in introduction. Added an ongoing compliance requirement of source testing every five years.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: October 15, 1990
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 295a

Project Summary: Construction and operation of an external floating roof storage tank.

Approved Emission Unit:

- One 6,426,000-gallon external floating roof storage tank equipped with a metallic shoe primary seal and a rim-mounted secondary seal (Tank 38), originally reviewed for gasoline service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 295 issued October 15, 1990.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. PSR shall notify NWCAA prior to placing the tank in service so that a compliance inspection by NWCAA staff can be arranged.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirement. Included 40 CFR 63 Subpart CC applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 20, 1990
Revision a: April 12, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 296a

Project Summary: Construction and operation of nonene production, storage, and transfer facilities.

Approved Emission Units:

- Two 126,000-gallon external floating roof storage tanks equipped with metallic shoe primary seals and rim-mounted secondary seals (Tanks 80 and 81), originally reviewed for nonene service
- One 1,008,000-gallon external floating roof storage tank equipped with a metallic shoe primary seal and rim-mounted secondary seal (Tank 82), originally reviewed for nonene service
- Fugitive components
- Truck rack and railcar loading
- Oily water sewer drains

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 296 issued November 20, 1990.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Railcars shall be filled through a submerged fill line.

2. True vapor pressure of the liquid stored in Tanks 80, 81, and 82 shall not exceed 0.75 psi. Maintain records demonstrating that the liquid stored in the tanks has a vapor pressure of 0.75 psi or less.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart VV to introduction as independent requirement. Included 40 CFR 60 Subpart QQQ applicability in introduction. Added compliance demonstration requirements.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: October 17, 1990
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 297a

Project Summary: Construction and operation of an external floating roof storage tank.

Approved Emission Unit:

- One 190,000-barrel external floating roof storage tank equipped with a metallic shoe primary seal (Tank 45), originally reviewed for diesel/aviation fuel service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 297 issued October 17, 1990.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Maximum true vapor pressure of organic liquids stored shall not exceed 0.75 psi. Maintain records demonstrating that the liquid stored in the tank has a vapor pressure of 0.75 psi or less.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Deleted one-time completed conditions. Removed NSPS Subpart Kb as inapplicable due to diesel vapor pressure. Included MACT Subpart CC applicability in introduction. Added monitoring, recordkeeping, and reporting under vapor pressure term.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: May 18, 1990
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 316a

Project Summary: Construction and operation of an internal floating roof storage tank.

Approved Emission Unit:

- One 504,000-gallon internal floating roof storage tank equipped with a metallic shoe primary seal and a rim mounted secondary seal (Tank 71), originally reviewed for API separator skimmings service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 316 issued May 18, 1990.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Notify NWCAA prior to placing the tank in service so that a compliance inspection by NWCAA staff can be arranged.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirements. Included 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: August 29, 1991
Revision a: April 12, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 337a

Project Summary: Construction and operation of an internal floating roof storage tank.

Approved Emission Unit:

- One 6,426,000-gallon internal floating roof storage tank equipped with a geodesic dome roof (Tank 39), originally reviewed for oxygenate gasoline additive service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 337 issued August 29, 1991.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. True vapor pressure of the liquid stored in Tank 39 shall not exceed 11.1 psi. Maintain records demonstrating that the liquid stored in the tank has a vapor pressure of 11.1 psi or less.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirement. Included and 40 CFR 63 Subpart CC applicability in introduction. Removed inapplicable citation to NWCAA 580.9. Added recordkeeping and reporting to condition limiting vapor pressure.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: September 12, 1991
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 341a

Project Summary: Conversion of a fixed roof to an internal floating roof tank. The storage tank was originally constructed in 1958.

Approved Emission Unit:

- One 1,124,000-gallon storage tank (Tank 60) modified with an internal floating roof equipped with primary and secondary seals, originally reviewed for ballast water service

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 341 issued September 12, 1991.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. The true vapor pressure of the liquid stored in Tank 60 shall not exceed 11.1 psi. Maintain records demonstrating that the liquid stored in the tank has a vapor pressure of 11.1 psi or less.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb to introduction as independent requirement. Included 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC applicability to introduction. Added compliance demonstration to condition limiting vapor pressure.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 1, 1991
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 345a

Project Summary: Construction and operation of three tanks, sump tanks, and pump stations as part of the wastewater treatment plant.

Approved Emission Units:

- Two surge tanks, 3,500,000 gallon capacity each, equipped with an external floating roof, primary and secondary seals (Tanks 72 and 73)
- One equalization tank, 1,000,000 gallon capacity, equipped with fixed roof and activated carbon (Tank 74)
- Two sump tanks
- Pump stations

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 345 issued November 1, 1991.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Notification shall be provided to the NWCAA when construction of the project is complete along with the date when operation is expected to begin.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Moved 40 CFR 60 Subpart Kb and 40 CFR 61 Subparts FF to introduction as independent requirements. Included 40 CFR 63 Subpart CC applicability in introduction. Included explicit initial notification requirement.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: April 6, 1993
Revision a: April 30, 1993
Revision b: July 15, 2008
Revision c: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 380c

Project Summary: Construction and operation of a gasoline truck terminal with submerged loading and a John Zink "ZTOF Vapor Combustion Unit" to control hydrocarbon vapors.

Approved Emission Units:

- Gasoline/Diesel Loading Rack
- Vapor Combustion Device

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 380 issued April 6, 1993 and NWCAA OAC 380b issued July 15, 2008.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart XX - Standards of Performance for Bulk Gasoline Terminals

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Visual emissions as measured by EPA Method 9 shall not exceed ten percent opacity from the vapor combustion unit stack.

2. PSR shall inspect the truck rack vapor combustion unit louvers semi-annually for proper operation and mechanical integrity and document the results of the inspection. The truck rack vapor combustion unit louvers referenced in these requirements include both the louvers that control the excess air and those that control operating temperature.

3. Any necessary maintenance, repairs, or modifications shall be made and documented as soon as practicable to ensure proper louver operation, no later than within 21 days of discovery. PSR is not relieved of complying with any applicable emission standards or operating requirements during this period.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Change control equipment from carbon absorption unit to John Zink ZTOF unit. Updated requirements to reflect new type of control device.

Revision b: Incorporate maintenance requirements pursuant to the Assurance of Discontinuance issued May 22, 2007. Reflected MACT CC applicability and emission limits rather than NSPS XX. Removed initial stack test requirements as one-time tasks that have been completed. Updated format to current permit format.

Revision c: Removed emission limits and work practice requirements that duplicate other state and federal rules. Deleted permit history as permit condition. Included NSPS Subpart XX applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance: October 26, 1990
Revision a: March 17, 1994
Revision b: June 6, 1996
Revision c: October 14, 1996
Revision d: November 2, 1998
Revision e: May 20, 1999
Revision f: January 8, 2001
Revision g: October 17, 2001
Revision h: April 12, 2012
Revision i: June 13, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 475i

Project Summary: Construction and operation of two 40 MW (nominal) stationary gas turbines each with heat recovery steam generators and associated duct burner (i.e., Cogens 1 and 2). The turbines can burn natural gas, treated refinery fuel gas, butane or propane.

Approved Emission Units:

- Cogens 1 and 2 each include a turbine with a heat recovery steam generator (HRSG) which generates 245,000 lb/hr of 600 psig steam and a 163 MMBtu/hr duct burner. The turbines are equipped with steam injection and selective catalytic reduction with ammonia injection for NOx control.

Owner/Operator	Facility Name and Location
Equilon Enterprises PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env. Engineer	Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 475h issued April 12, 2012.

Note that in addition to other applicable rules and regulations, the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart YYYY - National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Emissions from the turbine stacks shall not exceed the following limitations:

(A) Nitrogen Oxides
- When firing all fuel combinations except 100% natural gas: 13 ppmvd corrected to 15% O_2 for each stack on a calendar day average
- When firing 100% natural gas: 9 ppmvd corrected to 15% O_2 for each stack on a calendar day average
- When firing all fuel combinations: 45 lb/hr for each stack on a calendar month average
- When firing all fuel combinations: 132 tons/12-month rolling period from each stack

(B) Carbon Monoxide
- 37 ppmvd corrected to 15% O_2 for each stack on an hourly average except for startup periods not to exceed three hours
- 55 lb/hr for each stack on a calendar month average
- 96 lb/hr from both stacks combined on a calendar month average
- 304 tons/12-month rolling period from both stacks combined

(C) Sulfur Dioxide
- When firing all fuel combinations: 18 ppmvd corrected to 15% O_2 from each stack on a 3-hour rolling average
- When firing all fuel combinations: 5.2 lb/hr from each stack on a calendar month average
- When firing all fuel combinations: 38 tons/12-month rolling period from both stacks combined

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

(D) Opacity
Not to exceed five (5%) percent for more than six minutes in any one hour period as determined by EPA Method 9

(E) Ammonia
- 10 ppmvd corrected to 15% O_2 from each stack on a calendar day average
- 8.5 lb/hr from each stack on a calendar month average
- 37 tons/12-month rolling period from each stack

All pollutant emission limits shall not apply during startup and shutdown periods. Startups and shutdowns shall be done in accordance with good air pollution control practices.

(2) Continuous emission monitors for the following pollutants shall be installed and operated in each stack:

(A) O_2 in accordance with Performance Specification 3 (40 CFR 60, Appendix B)
(B) CO in accordance with Performance Specification 4 or 4A (40 CFR 60, Appendix B)
(C) SO_2 in accordance with Performance Specification 2 (40 CFR 60, Appendix B)
(D) NO_X in accordance with Performance Specification 2 (40 CFR 60, Appendix B)
(E) NH_3 or comparable system with quality assurance procedures approved by the Control Officer

In addition, the CEMS shall be installed, calibrated, maintained and operated in accordance with 40 CFR 60 Appendix F, and NWCAA Section 367 and NWCAA Appendix A. Continuous emission monitors shall be used for continuous compliance determinations.

(3) Report the following information to the NWCAA each calendar month:

(A) Number of hours that butane and propane were fired
(B) Standard cubic feet/hour to the turbine and the duct burner for each gaseous fuel
(C) Btu per hour contribution to the turbine and the duct burner
(D) Number of days duct burner used
(E) Mass emission rates in lbs/hr calendar month average for NO_X, CO, SO_2, and NH_3 for each stack
(F) The highest concentration in units of the standard for NO_X, CO, SO_2, and NH_3

All monthly reports shall be submitted to the NWCAA within thirty days after the end of the calendar month.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision a: March 17, 1994: New NO_X and SO_2 limits to reflect upgraded low NO_X technology and revised methods of calculating sulfur in natural gas and added emission limitations and monitoring requirements for ammonia.

Revision b: June 6, 1996: Added references to low sulfur distillate fuel and propane to allow more fuel burning flexibility without changing emission limits.

Revision c: October 14, 1996: Removed correction requirement to 59 degrees Fahrenheit for mass pollutant rates and added correction factor requirement for all pollutant concentrations to ISO standard conditions.

Revision d: November 2, 1998: Clarified the short-term mass emission rate limitation for nitrogen oxides is a calendar month average.

Revision e: May 20, 1999: Added exemption from emission limits during periods of startup and shutdown. Clarified that the NOx limit is 15 ppm when burning any liquid fuel.

Revision f: January 8, 2001: Added Condition 3c allowing a higher short-term mass emission rate for SO_2 when burning oil.

Revision g: October 15, 2001: Add a statement to Condition 3 specifying that distillate fuels are limited to 0.05% by weight sulfur.

Revision h: April 12, 2012: Changed owner name from March Point Cogeneration Company (MPCC) to Shell Puget Sound Refinery (PSR). Removed references to ISO standard conditions. Deleted completed conditions and obsolete requirements. Removed requirements that apply independently. Eliminated particulate and VOC emission limits. Updated language and format to reflect NWCAA's current OAC format.

Revision i: June 13, 2018: Removed distillate fuel firing requirements now that neither cogen burns distillate fuel.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance: August 7, 1991
Revision a: March 17, 1994
Revision b: June 6, 1996
Revision c: November 2, 1998
Revision d: May 20, 1999
Revision e: January 8, 2001
Revision f: October 17, 2001
Revision g: April 12, 2012
Revision h: June 13, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 476h

Project Summary: Construction and operation of one 40 MW (nominal) stationary gas turbine with a heat recovery steam generator and associated duct burner (i.e., Cogen 3). The turbine can burn natural gas, treated refinery fuel gas, butane, or propane.

Approved Emission Unit:

- Cogen 3 includes a turbine with a heat recovery steam generator (HRSG) which generates 245,000 lb/hr of 600 psi steam and a 163 MMBtu/hr duct burner. The turbine is equipped with steam injection and selective catalytic reduction with ammonia injection for NOx control.

Owner/Operator	Facility Name and Location
Equilon Enterprises PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env. Engineer	Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 476g issued April 12, 2012.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart YYYY - National Emission Standards for Hazardous Air Pollutants for Stationary Gas Turbines

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Pollutant emissions from the turbine stack shall not exceed the following limitations:

(A) Nitrogen Oxide
- When firing 100% natural gas: 7 ppmvd corrected to 15% O_2 on a calendar day average
- When firing 100% natural gas: 18 lb/hr on a calendar month average
- When firing all other gaseous fuel combinations except butane and/or propane mixes: 9 ppmvd corrected to 15% O_2 on a calendar day average
- When firing combinations of refinery fuel gas and natural gas: 28 lbs/hr on a calendar month average
- When firing butane and/or propane mixes: 11 ppmvd corrected to 15% O_2 on a calendar day average
- When firing butane and/or propane mixes: 30 lb/hr on a calendar month average
- When firing all fuel combinations: 74 tons/12-month rolling period

(B) Carbon Monoxide
- 22 ppmvd corrected to 15% O_2 on a one hour average
- 22 lb/hr on a calendar month average
- 95 tons/12-month rolling period

(C) Sulfur Dioxide
- When firing all fuel combinations: 18 ppmvd corrected to 15% O_2 on a three-hour rolling average
- When firing all fuel combinations: 4.7 lb/hr on a calendar month average
- When firing all fuel combinations: 55 tons/12-month rolling period

(D) Particulate Matter (PM_{10})
- 17 lb/hr
- 18 tons/12-month rolling period

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

(E) Opacity
Not to exceed five (5%) percent for more than six minutes in any one hour period as determined by EPA Method 9

(F) Ammonia
- 10 ppmvd corrected to 15% O_2 on a calendar day average
- 8.5 lb/hr on a calendar month average
- 37 ton/12-month rolling period

All pollutant emission limits shall not apply during startup and shutdown periods. Startups and shutdowns shall be done in accordance with good air pollution control practices.

(2) Continuous emission monitors for the following pollutants shall be installed and operated in each stack:

(A) O_2 in accordance with Performance Specifications 3 (40 CFR 60, Appendix B)
(B) CO in accordance with Performance Specification 4 or 4A (40 CFR 60, Appendix B)
(C) SO_2 in accordance with Performance Specification 2 (40 CFR 60, Appendix B)
(D) NO_x in accordance with Performance Specification 2 (40 CFR 60, Appendix B)
(E) NH_3 or comparable system with quality assurance procedures approved by the Control Officer

In addition, the CEMS shall be installed, calibrated, maintained and operated in accordance with 40 CFR 60 Appendix F, NWCAA Section 367, and NWCAA Appendix A. Continuous emission monitors shall be used for continuous compliance determinations.

(3) Report the following information to the NWCAA each calendar month:

(A) Total standard cubic feet burned in the turbine and the duct burner for each gaseous fuel
(B) Btu per hour contribution to the turbine and the duct burner
(C) Mass emission rates in lbs/hr calendar month average for NO_x, CO, SO_2, and NH_3
(D) The highest concentration in units of the standard for NO_x, CO, SO_2, and NH_3

All monthly reports shall be submitted to the NWCAA within thirty days after the end of the calendar month.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision a: March 17, 1994: New SO_2 limits to reflect revised methods of calculating sulfur in natural gas.

Revision b: June 6, 1996: Added references to low sulfur distillate fuel and propane to allow more fuel burning flexibility without changing emission limits.

Revision c: November 2, 1998: Clarified that the mass emission rate limitation for nitrogen oxides is a calendar month average.

Revision d: May 20, 1999: Added exemption from emission limits during periods of startup and shutdown. Reduced NOx concentration limit when burning liquid fuels to 25 ppm.

Revision e: January 8, 2001: Added Condition 3c allowing a higher short term mass emission rate for SO_2 when burning oil.

Revision f: October 17, 2001: Set 12-month rolling average limits for PM_{10} and SO_2 in conditions 2c, 2d, 3b and 3c to increase the ability of the source to burn distillate while maintaining emissions below PSD triggers. Require annual source testing for PM_{10} under condition 5. Add reporting requirement 6f. Add a statement in condition 3 to clarify that distillate fuels are limited to 0.05% by weight sulfur.

Revision g: April 12, 2012: Changed owner name from March Point Cogeneration Company (MPCC) to Shell Puget Sound Refinery (PSR). Removed references to ISO standard conditions. Deleted completed conditions and unburned hydrocarbon emission limits. Removed requirements that apply independently. Updated language and format to reflect NWCAA's current OAC format.

Revision h: June 13, 2018: Removed distillate fuel firing requirements now that cogen doesn't burn distillate fuel.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 11, 1994
Revision a: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 514a

Project Summary: Installation and operation of fixed covers and carbon adsorption system for two dissolved air floatation (DAF) units (DAF 1&2). Installation and operation of seals and carbon canisters on the oily water sewer system. Construction and operation of a third dissolved air floatation unit (DAF3).

Approved Emission Units:

- DAF 1&2 modified with fixed covers and carbon adsorption system (forebays and mainbays)
- Oily wastewater sewer system modified with seals and carbon canisters
- DAF 3

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 332 issued September 10, 1991, NWCAA OAC 416 issued January 12, 1993, NWCAA OAC 417 issued January 6, 1993, and NWCAA OAC 514 issued July 11, 1994.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Notification shall be provided to the NWCAA when installation of the fixed covers and carbon absorption system on DAF 1&2 is complete along with the expected date when operation is expected to begin.

2. Notification shall be provided to the NWCAA when installation of the fixed covers and carbon absorption unit on the forebays of DAF 1&2 is complete along with the expected date when operation is expected to begin.

3. Notification shall be provided to the NWCAA when installation of the seals and carbon canisters on the oily water sewer system is complete along with the expected date when operation is expected to begin.

4. Notification shall be provided to the NWCAA when construction of the DAF 3 is complete along with the expected date when operation is expected to begin.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Combined OAC 332, 416, 417, and 514. Updated to reflect current OAC format. Moved NESHAP Subpart FF to introduction as independent requirement. Included NSPS Subpart QQQ and MACT Subpart CC applicability in introduction. Included explicit initial notification requirements.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Original Issuance: February 23, 1998

Revision a: June 17, 1999
Revision b: July 8, 2003
Revision c: January 5, 2005
Revision d: April 8, 2010
Revision e: July 12, 2012
Revision f: January 30, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 623f

Project Summary: Modify the reactor section and related equipment at the Fluidized Catalytic Cracking Unit (FCCU) at the Puget Sound Plant. The proposal is referred to as the Vertical Riser Project.

Approved Emission Units:

- CO Boiler #1 (COB-1), CO Boiler #2 (COB-2) and FCCU Regenerator to a wet gas scrubber (WGS)
- Fugitive component emissions associated with the FCCU and POLY
- Oily wastewater associated with the FCCU
- FCCU fresh catalyst hopper baghouse

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct 623e issued July 12, 2012.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR Part 63 Subpart UUU – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

COB-1, COB-2, and FCCU Regenerator to WGS

1 PSR shall install, maintain, and operate a wet gas scrubber (WGS) to control particulate emissions from the CO Boilers and FCCU. PSR shall comply with each of the following:

(a) Fine particulate (PM_{10}) emissions from the WGS shall not exceed 0.02 grains per dry standard cubic foot corrected to 7% oxygen.

(b) PM_{10} mass emissions from the WGS shall not exceed 202 tons during any twelve consecutive month period.

2 Annual source tests shall be completed to determine the status of compliance with Condition 1(a) of this Order using 40 CFR 60 Appendix A Method 5. All measured particulate matter is to be counted as PM_{10} unless otherwise demonstrated and approved by the NWCAA. Unless otherwise allowed by the NWCAA, PSR shall conduct annual source tests no sooner than 10 months after the previous tests and no later than 13 months after the previous tests. Testing shall occur at an FCCU feed rate of greater than 55,000 barrels per day unless otherwise approved in advance by the NWCAA. During each test, PSR shall record and report the FCCU feed rate, the crude type being processed in the FCCU, and the coke burn-off rate. Development and submittal of the source test plan and test report along with the testing itself shall be in accordance with NWCAA 367 and NWCAA Appendix A.

3 PSR shall continuously assess the total exhaust flow rate from the WGS in dry standard cubic feet per minute corrected to 7% oxygen. Using these continuous values and the emission rate (grains per dry standard cubic foot corrected to 7%

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

oxygen) determined during the most recent source test required by Condition 2 of this Order, PSR shall continuously determine compliance status with respect to Condition 1(b) of this Order.

4 Opacity from the WGS stack shall not exceed twenty percent for more than six minutes in any one hour period as measured by EPA Method 9. Ongoing compliance with this term shall be demonstrated by monitoring pursuant to the Alternative Monitoring Plan approved by EPA on August 3, 2005 and the revision approved December 28, 2007.

5 Total emissions of NO_X from the Vertical Riser Project from the WGS stack shall not exceed 1,380 tons during any 12-calendar-month period. For compliance, recordkeeping and reporting purposes, the 12-month rolling NO_X values shall be summed from daily NO_X emission averages calculated using the following method:

NO_X from the Vertical Riser Project = A Tons NO_X - B Tons NO_X

Where: A = Tons of NO_X from CO Boiler stacks calculated from CEM data
B = (C MMBtu) x (0.07 lb NO_X /MMBtu) x (ton/2,000 lb) where C MMBtu/hr is the portion of fuel gas combusted above 65 MMBtu/hour limit for full combustion mode or 30.4 MMBtu/hour for partial combustion mode

Note: The goal of this emission calculation method is to exclude NO_X emissions from the combustion of fuel gas in the CO Boilers over the established firing rates for full and partial combustion mode in the FCCU regenerator. Full combustion mode is defined as excess oxygen greater than zero percent and carbon monoxide less than one percent in the regenerator flue gas. Any additional NO_X produced is assumed to be for the production of steam and is not considered an emissions increase associated with the 1999 FCCU Vertical Riser Project.

6 CO emissions from the WGS stack shall not exceed 95 tons during any twelve consecutive month period.

7 PSR shall install, maintain, and operate a WGS to control SO_2 emissions from the CO Boilers and FCCU. SO_2 emissions from the WGS shall not exceed any of the following:

(a) 25 ppmvd corrected to 0% oxygen on a 365-day rolling average basis

(b) 50 ppmvd corrected to 0% oxygen on a 7-day rolling average basis

(c) 1,000 ppmvd corrected to 7% oxygen on a 60-minute rolling average basis

(d) 214 tons during any twelve consecutive month period

8 To determine compliance with Conditions 5 through 7 of this Order, continuous emission monitors (CEMs) shall be installed, certified, calibrated, maintained, and operated in the WGS stack for the following:

(a) Oxygen

(b) Carbon monoxide

(c) Sulfur dioxide

(d) Nitrogen oxides

The monitors shall meet the appropriate requirements of 40 CFR 60.11, 60.13, Part 60 Appendices A, B and F, NWCAA 367, and NWCAA Appendix A. The NWCAA hereby approves the use of a "dual range" SO_2 CEM with a "low" range of 0-100 ppmvd corrected to 0% oxygen and a "high" range with a maximum not less than 1,200 ppmvd corrected to 7% oxygen.

9 Hydrogen sulfide shall not exceed 162 ppm (0.10 gr/dscf) three hour rolling average in the fuel gas. Compliance shall be demonstrated through continuous monitoring of hydrogen sulfide in the fuel gas combusted in the CO boilers in accordance with 40 CFR 60.105(a)(4).

10 The following information for the WGS shall be reported to the NWCAA in a monthly report.

(a) The cumulative total in tons emitted for the past twelve calendar months for SO_2, PM_{10} (as determined per Condition 3 of this Order), and CO from the WGS stack.

(b) The cumulative total NO_x emitted resulting from the Vertical Riser Project in tons for the past twelve calendar months as calculated in accordance with Condition 5 of this OAC.

FCCU Fresh Catalyst Hopper Baghouse

11 All particulate emissions from loading catalyst into the FCCU fresh catalyst hopper shall be collected and routed through the filter system of a baghouse mounted on the catalyst transfer truck trailer. The baghouse shall operate at all times during catalyst loading.

12 A pressure gauge shall be installed on the return line from the hopper to the baghouse inlet. The acceptable pressure range as established by the manufacturer or through engineering judgment shall be written on or near the gauge.

13 Within 15 minutes after beginning catalyst loading, the pressure gauge reading shall be checked and recorded to ensure that the baghouse is operating within the established range. If the unit is not operating within the acceptable pressure range, the equipment shall be shut down immediately and operation shall not resume until the problem has been identified and corrected.

14 A log (written or electronic) of the catalyst transfer dates with beginning and end times, pressure gauge readings, and which truck trailer baghouse was utilized shall be maintained at the facility. The log shall be readily available for inspection by NWCAA staff.

15 Baghouse maintenance records shall be made available for inspection within 24 hours after request.

16 Visible emissions from the baghouse exhaust shall not exceed five percent (5%) opacity for more than 3 minutes in any consecutive sixty-minute period as determined by Department of Ecology Method 9A.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Incorporate new annual tonnage limits from FCCU/CO boiler stacks for NO_x, SO_2, and CO. Revise emissions to provide enforceable offsets for emissions from physically modified units and debottlenecked units associated with the Vertical Riser Project, new heater 1A-F8 (OAC 684), and the Sulfur Recovery Unit expansion (OAC 693). Add references to Compliance Assurance Monitoring. Remove applicability to Subpart QQQ.

Revision b: Add a fuel gas firing rate limit and prohibit burning liquid fuel and sour water stripper gas (SWSG). Remove SO_2 monitoring requirement at FCCU regenerator because SWSG combustion is no longer a source of SO_2 emissions.

Revision c: Modify OAC as necessary to reflect the fact that the boiler tube replacement project allowed under revision B has been postponed indefinitely. Authorize the installation of a wet gas scrubber (WGS) on the fluidized catalytic cracking unit (FCCU).

Revision d: Delete one-time tasks that have been completed. Assert that testing must comply with NWCAA Appendix A. Clarify the applicability of NSPS Subpart J. Correct opacity test method and state ongoing compliance demonstration method. Remove terms for which the refinery no longer has the capability. Update to reflect the current permit format.

Revision e: Incorporate changes required due to decisions by EPA regarding NO_x and CO limits on the FCCU WGS stack pursuant to Consent Decree United States et al v. Equilon Enterprises LLC, No. H-01-0978 (S.D. Texas) – Final FCCU NO_x limits for the Shell Puget Sound Refinery. Update to reflect consistent formatting and proper reference to NWCAA Appendix A. Make monthly report timing consistent with AOP requirements. Delete reference to bypass stack. Incorporate FCCU fresh catalyst hopper control device requirements, convert from the cyclone in OAC 300 to a baghouse.

Revision f: Clean up OAC for inclusion into AOP – remove duplicative requirements, roll NSPS Subpart J requirements not otherwise required into header. Extracted out the Equilon Consent Decree requirements for inclusion in a separate compliance order.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: September 30, 1997
Revision a: May 11, 1998
Revision b: May 4, 2009
Revision c: May 3, 2010
Revision d: April 10, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 628d

Project Summary: Modify burners in heater 15F-100 at the Delayed Coking Unit (DCU). Add new pump drains and junction boxes connecting to existing sewer system.

Approved Emission Units:

- Coker Charge Heater (15F-100) firing natural gas or refinery fuel gas modified with low NO_X burners rated at 124 MMBtu/hr
- Sewer system pump drains and junction boxes

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 628c issued May 3, 2010.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- Subpart A – General Provisions
- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

Coker Charge Heater (15F-100)

1. Visual emissions from the heater stack shall not exceed ten (10) percent opacity for more than three minutes in any one hour period as measured by Washington State Department of Ecology Method 9A.

2. The concentration of nitrogen oxide in the heater stack exhaust gases shall not exceed 50 ppmvd at 5 percent oxygen on a one-hour average. Nitrogen oxide emissions from the heater stack shall not exceed 0.07 lb/MMBtu on a one-hour average.

3. Emissions of nitrogen oxide shall not exceed 39.5 tons per any 12-month period. Mass emissions of nitrogen oxide from the heater stack shall be reported to the NWCAA monthly on a cumulative basis.

4. Ongoing compliance with the nitrogen oxide emission limitations in Conditions 2 and 3 of this Order shall be demonstrated by conducting an initial source test within 180 days of the issuance of this Order (i.e., OAC 628c) and conducting subsequent source tests once every five years, between 3 months before and after the anniversary month of the initial source test as required in this Order term. Regarding the ppm limit in Condition 2, compliance shall be determined using 40 CFR 60 Appendix A Method 7E. For the lb/MMBtu limit in Condition 2, compliance shall be determined using 40 CFR 60 Appendix A Methods 7E and 19. The Method 19 analysis to determine the F-factor shall be performed using fuel gas composition data from the day of the test. For the tons per 12-month period limit in Condition 3, compliance shall be determined using the emission factor from the most recent stack test. Testing shall be performed at representative operating conditions. Development and submittal of the source test plan and test report along with the testing itself shall be in accordance with NWCAA Appendix A or as approved in writing in advance by the NWCAA.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

M.J. "Lyn" Tober
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Add requirement that new affected pump drains and junction boxes associated with the Light Ends Recovery Project at the DCU are subject to 40 CFR 60 Subparts A and QQQ.

Revision b: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to wastewater streams. Add provisions for demonstrating ongoing compliance. Remove one-time tasks that have been completed. Update agency name.

Revision c: Clarify nitrogen oxide testing schedule and test methods for determining ongoing compliance. Clarified the nitrogen oxide limit is on a dry-by-volume basis.

Revision d: Removed short-term heater duty limit. Incorporated averaging periods for NO_X limits.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph: 360.428.1617
fax: 360.428.1620
www.nwcleanair.org

Original Issuance: October 16, 1997

Revision a: March 4, 2004
Revision b: March 10, 2009
Revision c: January 30, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 630c

Project Summary: Modify burners in the H_2S Stripper Reboiler Heater (11H-102) and Fractionation Reboiler Heater (11H-103) at Hydrotreater Unit 2 (HTU2). The new burners incorporate low NO_x technology and increase the combined firing capacity of the heaters from 230 MMBtu/hour to 241 MMBtu/hour. Subsequent construction of the Ultra Low Sulfur Diesel project.

Approved Emission Units:

- HTU2 H_2S Stripper Reboiler Heater (11H-102) and Fractionation Reboiler Heater (11H-103) modified with low NO_x burners that combust only natural gas or refinery fuel gas
- HTU2 Charge Heater (11H-101) firing rate increase due to Ultra Low Sulfur Diesel project
- Fugitive component emissions associated with the HTU2
- Oily wastewater drains associated with the HTU2

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct 630b issued March 10, 2009.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

HTU2 H_2S Stripper Reboiler Heater (11H-102) and Fractionation Reboiler Heater (11H-103)

1 Visual emissions from the stack shall not exceed ten (10) percent opacity for more than three minutes in any one hour period as measured by Washington State Department of Ecology Method 9A.

2 Nitrogen oxide emissions from the heater stack shall not exceed 0.06 lb/MMBtu.

3 Ongoing compliance with the nitrogen oxide emission limitation in Condition 2 of this Order shall be demonstrated by conducting an initial source test within 180 days of the issuance of this Order (i.e., OAC 630c) and conducting subsequent source tests once every five years, between 3 months before and after the anniversary month of the initial source test as required in this Order term unless otherwise approved in writing in advance by the NWCAA. For the lb/MMBtu limit in Condition 2, compliance shall be determined using 40 CFR 60 Appendix A Methods 7E and 19 unless otherwise approved in writing in advance by the NWCAA. The Method 19 analysis to determine the F-factor shall be performed using fuel gas composition data from the day of the test. Testing shall be performed at representative operating conditions. Development and submittal of the source test plan and test report along with the testing itself shall be in accordance with NWCAA 367 and NWCAA Appendix A or as approved in writing in advance by the NWCAA.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

HTU2 Fugitive Components

4 When implementing the leak detection and repair (LDAR) program as required by 40 CFR 60.592(a) or 40 CFR 63.648(a), the following leak definitions shall be utilized for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous organic pollutants (HAPs) at HTU2, unless otherwise required to use a lower leak definition:

(A) 500 ppm for valves

(B) 2,000 ppm for pumps

5 If the refinery elects to use the sustainable skip period monitoring program for valves and pumps that have the potential to leak VOCs or HAPs at HTU2, the following skip rules will apply.

(A) PSR may move to less frequent monitoring at HTU2 using the following criteria

(i) If the HTU2 has less than 2 percent leaking valves for 2 consecutive months, PSR may monitor each valve once every quarter, beginning with the next quarter.

(ii) After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, PSR may elect to monitor each valve once every 2 quarters.

(iii) After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, PSR may elect to monitor each valve once every 4 quarters.

(B) PSR shall return to more frequent monitoring on HTU2 using the following criteria:

(i) If HTU2 is on a quarterly, semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 2 percent in any single detection period, PSR shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 5(A), above.

(ii) If HTU2 is on a semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, PSR shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 5(A), above.

(iii) If HTU2 is on an annual monitoring schedule and has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, PSR shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 5(A), above.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Add Conditions 6 through 8 to address construction of the ultra low sulfur diesel (ULSD) project at HTU2. Remove the one-time only startup notification for heaters 11H-102 and 11H-103 and removed the requirement to conduct initial NO_x source testing on the heaters because testing was completed in 1998.

Revision b: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks and wastewater streams. Revise leak definition and skip rule conditions to accommodate the format update.

Revision c: Move requirement to fire gaseous fuels to introduction. Delete heater firing rate limit. Clarify leak detection and repair requirements. Incorporate ongoing compliance demonstration with NO_x limit.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: June 17, 1999

Revision A: May 7, 2009
Revision B: May 3, 2010

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct 684b

Project Summary: Construction of a new Vacuum Charge Heater (1A-F8) rated at 97.6 MMBtu/hour heat input. The project also includes modifications to the Vacuum Distillation Tower (designated the Vacuum Residuum Uplift Project) and other indirect effects (debottlenecked units).

OPERATOR

Diane Rusher
Manager–Health, Safety and Environmental
Shell Oil Products US
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

OWNER

Equilon Enterprises DBA: Shell Oil Products
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

FACILITY LOCATION:

8505 South Texas Road – Anacortes, Washington, 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct (OAC) 684a dated May 7, 2009
- Upon issuance on May 7, 2009, OAC 684a replaced in full OAC 684, issued June 17, 1999

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR Part 63 Subpart A – General Provisions
- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

Vacuum Charge Heater (1A-F8)

1. Nitrogen oxide emissions from the 1A-F8 heater stack shall not exceed 0.05 lb/MMBtu of heat input.

2. The heater shall combust only pipeline grade natural gas or refinery fuel gas with a concentration of hydrogen sulfide less than 50 ppm (dry basis) twenty-four hour average. Compliance shall be determined by EPA Method 11, 40 CFR 60 Appendix A. Ongoing compliance with this permit term shall be demonstrated using the hydrogen sulfide continuous emission monitoring system on the refinery's main fuel mix drum installed and maintained as required by 40 CFR 60 Subpart J.

3. Opacity from the 1A-F8 heater stack shall not exceed ten percent opacity for more than three minutes in any one hour period as measured by Department of Ecology Method 9A.

4. Emissions of nitrogen oxide shall not exceed 21 tons per any 12 month period. Mass emissions of nitrogen oxide from the 1A-F8 heater stack shall be reported to the NWCAA monthly on a cumulative basis.

5. An operation and maintenance manual that identifies acceptable operation and maintenance procedures that will ensure compliance with applicable air pollution rules and regulations shall be maintained on site and made available to NWCAA personnel upon request.

6. A quality assurance manual for the hydrogen sulfide monitor shall be maintained on site and made available to NWCAA personnel upon request. The quality assurance procedures shall conform to 40 CFR 60 Appendix F and the NWCAA publication "Guidelines for Industrial Monitoring and Data Handling" dated January 1, 1992.

7. Ongoing compliance with the nitrogen oxide emission limitations in Conditions 1 and 4 of this Order shall be demonstrated by conducting an initial source test within 180 days of the issuance of this Order (i.e., OAC 684b) and conducting subsequent source tests once every five years, between 3 months before and after the anniversary month of the initial source test as required in this Order term. Compliance with the lb/MMBtu limit in Condition 1 shall be determined using 40 CFR 60 Appendix A Methods 7E and 19. The Method 19 analysis shall be performed using fuel gas composition data from the day of the test. For the tons per 12-month period limit in Condition 4, compliance shall be determined using the emission factor from the most recent stack test. Testing shall be performed at representative operating conditions. Development and submittal of the source test plan and test report along with the testing itself shall be in accordance with NWCAA 367 and Appendix A.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision A: Convert to current OAC format and agency name. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks. Remove the one-time requirements that have been completed.

Revision B: Clarify nitrogen oxide testing schedule and test methods for determining ongoing compliance.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: September 5, 2001

Revision A: March 20, 2009

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct 757a

Project Summary: Construction of a Diesel Railcar Loading Rack. The project includes the installation of equipment to load distillate products into railcars and is located next to the existing nonene railcar loading rack.

OPERATOR

Diane Rusher
Manager–Health, Safety and Environmental
Shell Oil Products US
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

OWNER

Equilon Enterprises DBA: Shell Oil Products
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

FACILITY LOCATION:

8505 South Texas Road – Anacortes, Washington, 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct (OAC) #757 dated September 5, 2001

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. Products loaded shall be heavy liquids (distillates) as defined in the *heavy liquid service* definition of 40 CFR 60.481.

2. Product loading shall employ *submerged loading* as defined in NWCAA Section 580.

3. Written procedures shall be in place and observed ensuring that only tanks in dedicated distillate service are loaded.

4. Emissions from the project shall not cause an exceedance of acceptable source impact levels specified in WAC 173-460-150 and -160 as determined by methods specified in WAC 173-460-080. Compliance with this condition shall be demonstrated upon request by the NWCAA.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director,
Engineering

Lynn Billington, P.E.
Director, Engineering

FOR

Revision A: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Remove one-time tasks that have been completed.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: May 24, 2001

Revision A: March 18, 2004
Revision B: March 20, 2009

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct 772b

Project Summary: Construct a new Butadiene Hydrogenation Unit (BHU) co-located at the existing Alkylation Unit #1 (Alky #1). The unit will hydrogenate butadiene contained in the Alky #1 feed, thus reducing sulfuric acid consumption during alkylation. There are no new combustion devices associated with this project. Volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions from process fugitives will be controlled using enhanced leak detection and repair.

OPERATOR

Diane Rusher
Manager–Health, Safety and Environmental
Shell Oil Products US
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

OWNER

Equilon Enterprises DBA: Shell Oil Products
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

FACILITY LOCATION:

8505 South Texas Road – Anacortes, Washington, 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct (OAC) 772a dated March 18, 2004
- Upon issuance on March 18, 2004, OAC 772a replaced in full OAC 772, issued May 24, 2001

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- Subpart A – General Provisions
- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. This subpart provides regulatory provisions for cases where requirements of this subpart overlap those of other applicable rules, such as 40 CFR 60 Subpart GGG. Project equipment leaks are assumed to be in organic hazardous air pollutant (HAP) service and, thus, are subject to the provisions of this subpart.

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. When implementing the leak detection and repair (LDAR) program as required by 40 CFR 63.648(a), the following leak definitions shall be utilized for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous organic pollutants (HAPs) at the BHU:
    a. 500 ppm for valves
    b. 2,000 ppm for pumps

2. In the sustainable skip period monitoring program for valves and pumps that have the potential to leak VOCs or HAPs at the BHU, the following skip rules will apply in lieu of 40 CFR 63.168(d)(2)-(4) and 40 CFR 60.483-2(b)(2)-(3).
    a. PSR may move to less frequent monitoring at the BHU using the following criteria
        i. If the BHU has less than 2 percent leaking valves for 2 consecutive months, PSR may monitor each valve once every quarter, beginning with the next quarter.
        ii. After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, PSR may elect to monitor each valve once every 2 quarters.
        iii. After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, PSR may elect to monitor each valve once every 4 quarters.
    b. PSR shall return to more frequent monitoring on the BHU using the following criteria:
        i. If the BHU is on a quarterly, semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 2 percent in any single detection period, PSR shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(a), above.
        ii. If the BHU is on a semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, PSR shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(a), above.

iii. If the BHU is on an annual monitoring schedule and has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, PSR shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(a), above.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director,
Engineering

Lynn Billington, P.E.
Director, Engineering

Revision A: Remove references to the Equilon consent decree enhanced LDAR program and add direct text describing the enhanced LDAR requirements to avoid consent decree "sunset" problems. Remove condition requiring WAC 173-460 compliance as this was reviewed during initial permitting. Remove one-time only condition requiring notice of project completion; startup notice was received on November 15, 2001.

Revision B: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks. Revise leak definition and skip rule conditions to accommodate the format update.

Original Issuance: January 20, 2003
Revision a: July 21, 2003
Revision b: March 11, 2004
Revision c: March 10, 2005
Revision d: May 25, 2005
Revision e: April 17, 2009
Revision f: December 8, 2017

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 787f

Project Summary:

Construct and operate a 34,000 BPD gasoline hydrotreater unit (HTU #3) at the refinery to comply with more stringent federal sulfur standards for gasoline including installation of a Catalytic Distillation Technology Hydrodesulfurization (CDHDS) bottoms reactor system and associated hydrocarbon processing equipment. The unit generates its own fuel gas stream combusted in the CDHDS heater.

Approved Emission Units:

- CDHDS heater (60F201) with (6) ultra low NOx burners rated at 80 MMBtu/hr, combusting its own fuel gas stream
- New equipment components in light liquid service (valves, flanges, PRVs, pumps, drains and compressor)

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 787e dated April 17, 2009

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries

- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) The CDHDS heater firing rate shall not exceed either of the following:

a. 80 MMBtu/hr as a 12-month rolling average

b. 104.8 MMBtu/hr as an hourly average

PSR shall calculate 12-month rolling averages on a monthly basis and retain records documenting compliance with a. and b. for five years. PSR shall combust only one or a combination of the following four fuels in the CDHDS heater: pipeline grade natural gas, refinery fuel gas, low Btu inside battery limits (ISBL) fuel and/or high Btu ISBL fuel.

(2) Visible emissions from the CDHDS heater stack shall not exceed five percent (5%) opacity for more than six minutes in any one hour as determined by EPA Method 9.

(3) Fuel combusted in the CDHDS heater shall not exceed 162-ppm H_2S based on a 3-hour rolling average or 50-ppm H_2S based on a 24-hour rolling average. During periods of heater operation, the H_2S content of refinery fuel gas combusted in CDHDS heater shall be continuously monitored in accordance with 40 CFR Part 60 Subpart J, Subpart A and Appendix F.

(4) Nitrogen oxide emissions from the CDHDS heater shall not exceed 0.030 lb NO_x per MMBtu heat input (higher heating value) based on a 3-hour rolling average.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

PSR shall conduct annual source tests to demonstrate compliance with conditions 1 and 4 of this Order. After two consecutive annual tests indicating compliance with conditions 1 and 4 of this Order, the testing frequency will be reduced to once every five years.

Ongoing periodic testing shall be completed in accordance with EPA Reference Method 19. A test plan shall be submitted to the NWCAA at least 20-days prior to testing. Results of the test shall be submitted to the NWCAA within 60-days following completion of testing.

(5) Maintain all equipment associated with the HTU3 using a leak detection and repair (LDAR) program meeting the standards, monitoring, recordkeeping, and reporting requirements of 40 CFR 60 Subpart GGGa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction or Modification Commenced after November 7, 2006 which references portions of 40 CFR 60 Subpart VVa.

(6) Provide NWCAA with a written notification of the startup date of the new equipment components in light liquid service and completion of modification of CDHDS heater no later than 15 days after they begin operating and include a reference to OAC 787f.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision a: Revise sulfur monitoring methodology from fuel gas H_2S to stack SO_2 as allowed under 40 CFR 60 Subpart J.

Revision b: Revise Condition 3 sulfur monitoring from stack SO_2 to fuel gas H_2S after initial SO_2 monitoring found that combusting hydrogen rich fuel gas caused SO_2 concentrations in the stack to be overly stringent in demonstrating an equivalent 50 ppm H_2S BACT limit. Remove references to the Equilon consent decree enhanced LDAR program in condition 6 and add direct text describing the enhanced LDAR requirements. Remove condition 9 that required notification of HTU #3 start-up because this one-time requirement has been completed.

Revision c: Revise CDHDS firing rate limit to include both a short-term (i.e., hourly) and a long-term (i.e., 12-month) limit in Condition 1.

Revision d: Revise CDHDS 12-month average firing rate limit and exchange periodic stack emissions tests for the periodic fuel heat content testing.

Revision e: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks and wastewater streams. Revise leak definition and skip rule conditions to accommodate the revised conditions.

Revision f: Modification to HTU3 – replacement of CDHDS heater burners, addition of catalytic reactor, and new stablizer column to meet Tier III low sulfur gasoline standards; addition of new equipment components in light liquid hydrocarbon service.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance: January 20, 2003
Revision a: July 21, 2003
Revision b: March 11, 2004
Revision c: March 10, 2005
Revision d: May 25, 2005
Revision e: April 17, 2009
Revision f: December 8, 2017
Revision g: May 15, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 787g

Project Summary:

Construct and operate a 34,000 BPD gasoline hydrotreater unit (HTU #3) at the refinery to comply with more stringent federal sulfur standards for gasoline including installation of a Catalytic Distillation Technology Hydrodesulfurization (CDHDS) bottoms reactor system and associated hydrocarbon processing equipment. The unit generates its own fuel gas stream combusted in the CDHDS heater.

Approved Emission Units:

- CDHDS heater (60F201) with (6) ultra low NOx burners rated at 80 MMBtu/hr, combusting its own fuel gas stream
- New equipment components in light liquid service (valves, flanges, PRVs, pumps, drains and compressor)

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, NWCAA OAC 787f dated December 8, 2017 is revoked. Once modifications to CDHDS Bottoms Reactor System at HTU#3 are completed, this Order supersedes NWCAA OAC 787e dated April 17, 2009.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) The CDHDS heater firing rate shall not exceed either of the following:

a. 80 MMBtu/hr as a 12-month rolling average

b. 104.8 MMBtu/hr as an hourly average

PSR shall calculate 12-month rolling averages on a monthly basis and retain records documenting compliance with a. and b. for five years. PSR shall combust only one or a combination of the following four fuels in the CDHDS heater: pipeline grade natural gas, refinery fuel gas, low Btu inside battery limits (ISBL) fuel and/or high Btu ISBL fuel.

(2) Visible emissions from the CDHDS heater stack shall not exceed five percent (5%) opacity for more than six minutes in any one hour as determined by Department of Ecology Method 9B.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

(3) Fuel combusted in the CDHDS heater shall not exceed 162-ppm H_2S based on a 3-hour rolling average or 50-ppm H_2S based on a 24-hour rolling average. During periods of heater operation, the H_2S content of refinery fuel gas combusted in CDHDS heater shall be continuously monitored in accordance with 40 CFR Part 60 Subpart J, Subpart A and Appendix F.

(4) Nitrogen oxide emissions from the CDHDS heater shall not exceed 0.030 lb NO_x per MMBtu heat input (higher heating value) based on a 3-hour rolling average.

PSR shall conduct annual source tests to demonstrate compliance with conditions 1 b. and 4 of this Order. After two consecutive annual tests indicating compliance with conditions 1 b. and 4 of this Order, the testing frequency will be reduced to once every five years. Any single test that indicates non-compliance with either condition 1 b. or 4 of this Order resets the source testing frequency to annual.

Ongoing periodic testing shall be completed in accordance with EPA Reference Methods 3A, 7E and 19. A test plan and results of the test shall be submitted to the NWCAA in accordance with NWCAA Section 367 and Appendix A.

(5) Maintain all equipment associated with the HTU3 using a leak detection and repair (LDAR) program meeting the standards, monitoring, recordkeeping, and reporting requirements of 40 CFR 60 Subpart GGGa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction or Modification Commenced after November 7, 2006 which references portions of 40 CFR 60 Subpart VVa.

(6) Provide NWCAA with a written notification of the startup date of the new equipment components in light liquid service and completion of modification of CDHDS heater no later than 15 days after they begin operating and include a reference to OAC 787g.

Crystal Rau
Crystal Rau
Air Quality Scientist

Agata McIntyre P.E.
Agata McIntyre, P.E.
Engineering Manager

Revision a: Revise sulfur monitoring methodology from fuel gas H_2S to stack SO_2 as allowed under 40 CFR 60 Subpart J.

Revision b: Revise Condition 3 sulfur monitoring from stack SO_2 to fuel gas H_2S after initial SO_2 monitoring found that combusting hydrogen rich fuel gas caused SO_2 concentrations in the stack to be overly stringent in demonstrating an equivalent 50 ppm H_2S BACT limit. Remove references to the Equilon consent decree enhanced LDAR program in condition 6 and add direct text describing the enhanced LDAR requirements. Remove condition 9 that required notification of HTU #3 start-up because this one-time requirement has been completed.

Revision c: Revise CDHDS firing rate limit to include both a short-term (i.e., hourly) and a long-term (i.e., 12-month) limit in Condition 1.

Revision d: Revise CDHDS 12-month average firing rate limit and exchange periodic stack emissions tests for the periodic fuel heat content testing.

Revision e: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks and wastewater streams. Revise leak definition and skip rule conditions to accommodate the revised conditions.

Revision f: Modification to HTU3 – replacement of CDHDS heater burners, addition of catalytic reactor, and new stablizer column to meet Tier III low sulfur gasoline standards; addition of new equipment components in light liquid hydrocarbon service.

Revision g: Revoke OAC 787f, identify OAC 787g supersedes OAC 787e upon startup of HTU3 following modification of the CDHDS bottoms reactor system. Clean-up VE method and update testing condition to reference NWCAA regulations.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance: January 20, 2003
Revision a: July 21, 2003
Revision b: March 11, 2004
Revision c: March 10, 2005
Revision d: May 25, 2005
Revision e: April 17, 2009
Revision f: December 8, 2017
Revision g: May 15, 2018
Revision h: May 5, 2021

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 787h

Project Summary:

Construct and operate a 34,000 BPD gasoline hydrotreater unit (HTU #3) at the refinery to comply with more stringent federal sulfur standards for gasoline including installation of a Catalytic Distillation Technology Hydrodesulfurization (CDHDS) bottoms reactor system and associated hydrocarbon processing equipment. The unit generates its own fuel gas stream combusted in the CDHDS heater.

Approved Emission Units:

- CDHDS heater (60F201) with (6) ultra low NOx burners rated at 80 MMBtu/hr, combusting its own fuel gas stream
- New equipment components in light liquid service (valves, flanges, PRVs, pumps, drains and compressor)

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, NWCAA OAC 787g dated May 15, 2018 is revoked. OAC 787h is effective immediately upon issuance.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) The CDHDS heater firing rate shall not exceed either of the following:

a. 80 MMBtu/hr as a 12-month rolling average

b. 104.8 MMBtu/hr as an hourly average

PSR shall calculate 12-month rolling averages on a monthly basis and retain records documenting compliance with a. and b. for five years. PSR shall combust only one or a combination of the following four fuels in the CDHDS heater: pipeline grade natural gas, refinery fuel gas, low Btu inside battery limits (ISBL) fuel and/or high Btu ISBL fuel.

(2) Visible emissions from the CDHDS heater stack shall not exceed five percent (5%) opacity for more than six minutes in any one hour as determined by Department of Ecology Method 9A.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

(3) Fuel combusted in the CDHDS heater shall not exceed 162-ppm H_2S based on a 3-hour rolling average or 50-ppm H_2S based on a 24-hour rolling average. During periods of heater operation, the H_2S content of refinery fuel gas combusted in CDHDS heater shall be continuously monitored in accordance with 40 CFR Part 60 Subpart J, Subpart A and Appendix F.

(4) Nitrogen oxide emissions from the CDHDS heater shall not exceed 0.030 lb NO_x per MMBtu heat input (higher heating value) based on a 3-hour rolling average.

PSR shall conduct annual source tests to demonstrate compliance with conditions 1 b. and 4 of this Order. After two consecutive annual tests indicating compliance with conditions 1 b. and 4 of this Order, the testing frequency will be reduced to once every five years. Any single test that indicates non-compliance with either condition 1 b. or 4 of this Order resets the source testing frequency to annual.

Ongoing periodic testing shall be completed in accordance with EPA Reference Methods 3A, 7E and 19. A test plan and results of the test shall be submitted to the NWCAA in accordance with NWCAA Section 367 and Appendix A.

(5) Maintain all equipment associated with the HTU3 using a leak detection and repair (LDAR) program meeting the standards, monitoring, recordkeeping, and reporting requirements of 40 CFR 60 Subpart GGGa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction or Modification Commenced after November 7, 2006 which references portions of 40 CFR 60 Subpart VVa.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision a: Revise sulfur monitoring methodology from fuel gas H_2S to stack SO_2 as allowed under 40 CFR 60 Subpart J.

Revision b: Revise Condition 3 sulfur monitoring from stack SO_2 to fuel gas H_2S after initial SO_2 monitoring found that combusting hydrogen rich fuel gas caused SO_2 concentrations in the stack to be overly stringent in demonstrating an equivalent 50 ppm H_2S BACT limit. Remove references to the Equilon consent decree enhanced LDAR program in condition 6 and add direct text describing the enhanced LDAR requirements. Remove condition 9 that required notification of HTU #3 start-up because this one-time requirement has been completed.

Revision c: Revise CDHDS firing rate limit to include both a short-term (i.e., hourly) and a long-term (i.e., 12-month) limit in Condition 1.

Revision d: Revise CDHDS 12-month average firing rate limit and exchange periodic stack emissions tests for the periodic fuel heat content testing.

Revision e: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Clarify the applicability of the Refinery MACT overlap provisions to equipment leaks and wastewater streams. Revise leak definition and skip rule conditions to accommodate the revised conditions.

Revision f: Modification to HTU3 – replacement of CDHDS heater burners, addition of catalytic reactor, and new stablizer column to meet Tier III low sulfur gasoline standards; addition of new equipment components in light liquid hydrocarbon service.

Revision g: Revoke OAC 787f, identify OAC 787g supersedes OAC 787e upon startup of HTU3 following modification of the CDHDS bottoms reactor system. Clean-up VE method and update testing condition to reference NWCAA regulations.

Revision h: Revoke OAC 787g, Correct typo in VE method, delete startup notification.

NORTHWEST
AIR POLLUTION AUTHORITY

1600 South Second Street
Mount Vernon, WA 98273-5202
Tel: (360) 428-1617 / Fax: (360) 428-1620

Serving Island, Skagit and Whatcom Counties

February 27, 2002

Tom Smith, President
Puget Sound Refining Company
8505 South Texas Road
P.O. Box 622
Anacortes, WA 98221-0622

Order of Approval to Construct (OAC) #797

Dear Mr. Smith:

On January 24, 2002, Puget Sound Refining Company submitted a "Notice of Construction and Application for Approval (NOC) to construct and operate a diesel-fired standby emergency generator with a nominal capacity of 500 kW to provide backup electrical power for the refinery's wharf area.

Notice of Construction information for this project was reviewed to determine that all known, available, and reasonable air pollution control measures would be employed. Best Available Control Technology (BACT) for this generator has been determined to be the use of low sulfur diesel fuel and internal combustion controls. The project was evaluated in accordance with Northwest Air Pollution Authority (NWAPA) Regulation Sections 300, 301 and 302 and, WAC 173-400-110 and 173-460. A Mitigated Determination of Non-significance (MDNS) was issued for this project by Skagit County on October 30, 2001.

You are hereby granted approval to install the emergency generator subject to the following conditions:

1. Visual emissions from the generator shall not exceed five-percent (5%) opacity for more than three minutes in any sixty-minute period as determined by Department of Ecology Method 9A.

2. The generator shall not operate more than five-hundred (500) hours per calendar year. A record of operating hours shall be kept on-site for a minimum of five years and made available to the NWAPA upon request.

3. Diesel fuel combusted in the generator shall not contain more than 0.05 % by weight sulfur. Fuel quality records shall be kept on-site for a minimum of five years and made available to the NWAPA upon request.

4. The NWAPA shall be notified in writing of the generator installation date within 30 days of completion.

A "Certificate of Approval to Operate" will be issued by the NWAPA after we determine that the

project was constructed in accordance with the information submitted in the NOC and that the generator can operate in compliance with conditions of this approval and any other applicable air pollution requirements.

Please call Dan Mahar, at extension 203, if you have any questions about the approval of this project.

Sincerely,

James Randles
Director

Reviewed by: Lynn Billington, P.E.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance (OAC 693): June 1, 1999
Original Issuance (OAC 828): May 5, 2003
Revision a: April 17, 2009
Revision b: September 4, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 828b

Project Summary: Operate refinery Sulfur Recovery Unit (SRU), SRU3 (also referred to as the Primary SRU) and SRU4 (also referred to as the new SRU) in parallel configuration, with each unit designed to be able to carry the entire refinery sulfur load.

Approved Emission Units:

- SRU3 has an elemental sulfur production capacity of 150 ltpd and includes a SCOT tail gas treating unit with a 34.23 MMBtu/hour primary incinerator, a sulfur tank sweep ejector, and a system to provide 100% oxygen injection. Condensed elemental sulfur is routed directly to (2) liquid sulfur storage tanks.
- SRU4 train has an elemental sulfur production capacity of 170 ltpd and includes an oxygen enriched thermal reactor, a two stage CLAUS unit, a SCOT tail gas treating unit, and a new 33.5 MMBtu/hr incinerator. SRU4 has a dedicated sulfur pit that collects condensed sulfur before it is transferred to (2) liquid sulfur storage tanks.

Owner/Operator	Facility Name and Location
Equilon Enterprises PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env. Engineer	Shell PSR 8505 South Texas Road Anacortes, WA 98221

Permit History

- Upon completing installation of the necessary meters used to measure oxygen and airflow to perform SO_2 adjustment calculation for oxygen enriched units, this Order supersedes NWCAA OAC 828a issued April 17, 2009.

Note that in addition to other applicable rules and regulations, the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries. The elemental sulfur pit is included as part of the "Claus sulfur recovery plant" and subject to all applicable requirements. In addition, SRU3 and SRU4 qualify as affected "Claus sulfur recovery plants"

and "fuel gas combustion devices" as defined in the regulation and subject to all applicable requirements.

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Except during natural gas curtailments, supplemental fuel combusted at the SRU shall be limited to pipeline grade natural gas. All refinery fuel gas combusted during natural gas curtailments shall have a hydrogen sulfide concentration of less than 162 ppmvd based on a three hour rolling average in accordance with 40 CFR 60 Subpart J.

(2) Visual emissions from each SRU incinerator stack shall not exceed ten percent opacity for more than three minutes in any one hour period as measured by Department of Ecology Method 9A.

(3) Sulfur dioxide emissions from each SRU incinerator stack shall not exceed the limit calculated in the equation below, based on a 12-hour rolling average.

$$E_{LS} = k_1 \times (-0.038 \times (\%O_2)^2 + 11.53 \times \%O_2 + 25.6)$$

Where:

E_{LS} = Emission limit for large sulfur recovery plant, ppmv (as SO_2, dry basis at 0% excess air)

K_1 = Constant factor for emission limit conversion, $k_1 = 1$ for converting to the SO_2 limit for a sulfur recovery plant with an oxidation control system or a reduction system followed by incineration and $k_1 = 1.2$ for converting to the reduced sulfur compounds limit for a sulfur recovery plant with a reduction control system not followed by incineration; and

$\%O_2$ = O_2 concentration of the air/oxygen mixture supplied to the Claus burner, percent by volume (dry basis). If only ambient air is used for the Claus burner or if the owner or

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

operator elects not to monitor O_2 concentration of the air/oxygen mixture used in the Claus burner or for non-Claus sulfur recovery plants, use 20.9% for $\%O_2$.

Air flow meters and instruments to measure oxygen concentration continuously in the Claus Burners shall be installed and operated in accordance with the requirements in §60.106a(a)(6). Stack sulfur dioxide and oxygen concentrations shall be continuously monitored in accordance with §60.102a(f)(1)(i), Subpart A, Appendix B, F and the NWCAA Appendix A.

(4) Cumulative sulfur dioxide emissions from the SRU shall not exceed 53 tons on a 12-month rolling basis. The 12-month rolling tons of sulfur dioxide emissions and the monthly average daily elemental sulfur production rate shall be reported to the NWCAA in the refinery's monthly emissions report. The monthly emissions report shall be due at the end of each calendar month immediately following completion of the reported month.

(5) Whenever technically feasible, emissions from the elemental sulfur pit shall be controlled through a closed vent system to the front end of SRU4. Otherwise, such as during turndown, maintenance, and repair activities, emissions from the elemental sulfur pit may be routed through a closed vent system directly to the SRU4 incinerator. PSR shall keep records of all periods that emissions from the sulfur pit are not routed to the front end of SRU4.

(6) The average monthly sulfur dioxide emission rate from the entire refinery shall not exceed 2,100 lbs per hour. This emission limit includes emissions from startup, shutdown and malfunction of refinery process units.

(7) An operation and maintenance manual for the SRU shall identify good air pollution control practices for minimizing emissions in accordance with 40 CFR §60.11(d) including, but not limited to, an air pollution compliance monitoring plan and a plantwide sulfur dioxide emissions abatement plan to be implemented during SRU upset conditions. The operation and maintenance manual shall be kept on-site and available for inspection by the NWCAA.

(8) The refinery quality assurance (QA) manual for emissions monitoring shall be updated to reflect any new monitoring equipment and procedures implemented as a result of this project. The QA manual shall be kept on-site and available for inspection by the NWCAA.

(9) Raw data, calculation results, test results, and monitoring data required by this approval order shall be kept on-site and available for inspection by the NWCAA for a period of not less than five years.

(10) Provide written notice to the NWCAA of the date of the completed installation of the meters necessary to perform SO_2 adjustment calculation. Postmark the notice no later than 15 days after completion of installation and include a reference to OAC 828b.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision from OAC 693 to OAC 828: Construct a new sulfur processing train (SRU4) at the Sulfur Recovery Unit (SRU). Modify the existing sulfur processing equipment including decommissioning of Thermal/CLAUS Units #1 and 2.

Revision a: Convert to current OAC format. Move explicit references to regulatory applicability from OAC conditions to OAC introduction. Remove "normal" and "abnormal" operation terminology. Delete the NOx and CO emission limits (initial testing completed and compliance demonstrated). Remove one-time tasks. Update agency name.

Revision b: Update SO_2 concentration limit to allow an adjustment calculation for oxygen enriched units, reflected in recently promulgated changes to 40 CFR 63 Subpart UUU and 40 CFR 60 Subpart Ja.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph: 360.428.1617
fax: 360.428.1620
www.nwcleanair.org

Original Issuance: July 20, 2004

Revision a: Not Issued
Revision b: January 30, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 883b

Project Summary: Install a catalytic isomerization unit, including two new fractionation columns, two catalytic reactor vessels, one charge drum, one separator vessel, two overhead accumulation drums, and associated heat exchangers. One existing accumulator drum will be replaced with a larger drum.

Approved Emission Units:

- Fugitive component emissions associated with the Isomerization Unit (ISOM)
- Process drains associated with the Isomerization Unit

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct 883 issued July 20, 2004.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

Fugitive Components associated with the Isomerization Unit

1 When implementing the leak detection and repair (LDAR) program as required by 40 CFR 60.592(a) or 40 CFR 63.648(a), the following leak definitions shall be utilized for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous organic pollutants (HAPs) at the Isomerization Unit, unless otherwise required to use a lower leak definition:

(A) 500 ppm for valves

(B) 2,000 ppm for pumps

2 If the refinery elects to use the sustainable skip period monitoring program for valves and pumps that have the potential to leak VOCs or HAPs at the Isomerization Unit, the following skip rules will apply.

(A) PSR may move to less frequent monitoring at the Isomerization Unit using the following criteria

(i) If the Isomerization Unit has less than 2 percent leaking valves for 2 consecutive months, PSR may monitor each valve once every quarter, beginning with the next quarter.

(ii) After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, PSR may elect to monitor each valve once every 2 quarters.

(iii) After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, PSR may elect to monitor each valve once every 4 quarters.

(B) PSR shall return to more frequent monitoring on the Isomerization Unit using the following criteria:

(i) If the Isomerization Unit is on a quarterly, semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 2 percent in any single detection period, PSR shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

(ii) If the Isomerization Unit is on a semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, PSR shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

(iii) If the Isomerization Unit is on an annual monitoring schedule and has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, PSR shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Not issued. See the OAC 883a file for further detail.

Revision b: Clarified leak detection and repair requirements.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 12, 2004

Revision a: January 30, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 887a

Project Summary: Install one spare flare drum pump at the Alkylation Unit 1 (ALKY1) flare drum.

Approved Emission Units:

- Fugitive component emissions associated with ALKY1

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct 887 issued July 12, 2004.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

Fugitive Components associated with ALKY1

1 When implementing the leak detection and repair (LDAR) program as required by 40 CFR 60.592(a) or 40 CFR 63.648(a), the following leak definitions shall be utilized for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous organic pollutants (HAPs) at ALKY1, unless otherwise required to use a lower leak definition:

(A) 500 ppm for valves

(B) 2,000 ppm for pumps

2 If the refinery elects to use the sustainable skip period monitoring program for valves and pumps that have the potential to leak VOCs or HAPs at ALKY1, the following skip rules will apply.

(A) PSR may move to less frequent monitoring at ALKY1 using the following criteria

(i) If ALKY1 has less than 2 percent leaking valves for 2 consecutive months, PSR may monitor each valve once every quarter, beginning with the next quarter.

(ii) After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, PSR may elect to monitor each valve once every 2 quarters.

(iii) After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, PSR may elect to monitor each valve once every 4 quarters.

(B) PSR shall return to more frequent monitoring on ALKY1 using the following criteria:

(i) If ALKY1 is on a quarterly, semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 2 percent in any single detection period, PSR shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

---

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

(ii) If ALKY1 is on a semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, PSR shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

(iii) If ALKY1 is on an annual monitoring schedule and has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, PSR shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 2(A), above.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Clarified leak detection and repair requirements.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Original Issuance: June 9, 2005

Revision a: April 8, 2010
Revision b: January 30, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 918b

Project Summary: Construct and operate a flare gas recovery unit including five flare gas liquid ring recovery compressors, two separators, one fuel gas recovery trim cooler, one fuel gas recovery amine absorber, and all associated equipment.

Approved Emission Units:

- Flare Gas Recovery Unit
- Fugitive component emissions associated with the Flare Gas Recovery Unit
- Process drains associated with the Flare Gas Recovery Unit

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct 918a issued April 8, 2010.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

Flare Gas Recovery Unit

1 PSR shall install and operate a continuous emission monitor to determine and record the total sulfur content of any gas being flared. Purge natural gas need not be monitored, and engineering calculations may be used in lieu of the continuous monitor during periods of downtime of the east flare. PSR shall conduct quarterly accuracy assessments of the monitor using a method approved in advance by the NWCAA.

2 PSR shall install and operate mass flow meters with pressure and temperature compensation to continuously monitor and record the flow of flare gas to each flare.

3 Flare gas produced at PSR shall be routed to and recovered by the flare gas recovery unit. Compliance with this condition shall be demonstrated by following written standard operating procedures that ensure flare gas is properly routed to the flare gas recovery unit except during a process upset or when maintenance is required. Excess hydrogen produced by the CRU/HTU and ISOM units during process imbalances may bypass the flare gas recovery system and be routed directly to the l[flare. This excess hydrogen sent to the flare shall not be considered the result of process upset or malfunction when determining compliance with applicable requirements.

4 A record shall be kept of each process upset or maintenance activity when flare gas is not recovered in accordance with Condition 3. Records shall include the time, date, duration and description of each event and an estimate of the resulting SO_2 emissions that would have otherwise been recovered.

5 PSR shall continuously monitor and record the flow of hydrogen from the HTU/CRU and ISOM units routed directly to the flare and the flow determination method. The flow of hydrogen shall be determined by using the flare mass flow meters or an engineering estimate, whichever method provides the most accurate estimate of flow.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

Fugitive Components associated with the Flare Gas Recovery Unit

6 When implementing the leak detection and repair (LDAR) program as required by 40 CFR 60.592(a) or 40 CFR 63.648(a), the following leak definitions shall be utilized for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous organic pollutants (HAPs) at the Flare Gas Recovery Unit, unless otherwise required to use a lower leak definition:

(A) 500 ppm for valves

(B) 2,000 ppm for pumps

7 If the refinery elects to use the sustainable skip period monitoring program for valves and pumps that have the potential to leak VOCs or HAPs at the Flare Gas Recovery Unit, the following skip rules will apply.

(A) PSR may move to less frequent monitoring at the Flare Gas Recovery Unit using the following criteria

(i) If the Flare Gas Recovery Unit has less than 2 percent leaking valves for 2 consecutive months, PSR may monitor each valve once every quarter, beginning with the next quarter.

(ii) After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, PSR may elect to monitor each valve once every 2 quarters.

(iii) After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, PSR may elect to monitor each valve once every 4 quarters.

(B) PSR shall return to more frequent monitoring on the Flare Gas Recovery Unit using the following criteria:

(i) If the Flare Gas Recovery Unit is on a quarterly, semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 2 percent in any single detection period, PSR shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 7(A), above.

(ii) If the Flare Gas Recovery Unit is on a semi-annual or annual monitoring schedule and has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, PSR shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 7(A), above.

(iii) If the Flare Gas Recovery Unit is on an annual monitoring schedule and has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, PSR shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in Condition 7(A), above.

M. J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Allow excess hydrogen generated during process imbalances to bypass the flare gas recovery system. Clarify applicability of federal rules. Delete one-time tasks that have been completed. Update to current OAC format.

Revision b: Clarified leak detection and repair requirements.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: September 12, 2005

Revision a: April 12, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 919a

Project Summary: Modify burners in heaters 1A-F5 and 1A-F6 at the Vacuum Pipe Still.

Approved Emission Unit:

- Vacuum Pipe Still Heaters 1A-F5 and 1A-F6 firing natural gas or refinery fuel gas modified with low NO_X burners rated at 415 MMBtu/hr (combined)

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 919 issued September 12, 2005.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Nitrogen oxides (NO_X) from VPS Heaters 1A-F5 and 1A-F6 shall not exceed:
    a. 0.09 lb/MMBtu (higher heating value) as a 12-month rolling average.
    b. 164 tons in any 12-month rolling period.

2. Compliance with Condition 1 shall be determined using a NO_X continuous emission monitor (CEM). Operate the CEM in accordance with NWCAA 367 and NWCAA Appendix A, 40 CFR 60 Appendices B and F.

3. On a calendar month basis, report the total NO_X emissions from VPS Heaters 1A-F5 and 1A-F6 expressed in units of tons during the immediately preceding 12 months.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Deleted NSPS Subpart J applicability to be handled in another action. Moved gaseous fuel description to introduction. Included MACT Subpart DDDDD applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: September 12, 2005
Revision a: July 27, 2006
Revision b: April 12, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 929b

Project Summary: Modify burners in heater 1A-F4 at the Vacuum Pipe Still.

Approved Emission Unit:

- Vacuum Pipe Still Heater 1A-F4 firing natural gas or refinery fuel gas modified with low NO_X burners rated at 157 MMBtu/hr

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA RO 20 issued February 10, 2000, NWCAA RO 20a issued November 16, 2000, and NWCAA OAC 929a issued July 27, 2006.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions[1]:

1. Nitrogen oxides (NO_X) from VPS Heater 1A-F4 shall not exceed:
    a. 0.06 lb/MMBtu (higher heating value) as a 12-month rolling average.
    b. 41 tons in any 12-month rolling period.
2. Compliance with Condition 1 shall be determined using a NO_X continuous emission monitor (CEM). Operate the CEM in accordance with NWCAA 367 and NWCAA Appendix A, 40 CFR 60 Appendices B and F.
3. On a calendar month basis, report the total NO_X emissions from VPS Heater 1A-F4 expressed in units of tons during the immediately preceding 12 months.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Updated to reflect current OAC format. Deleted NSPS Subpart J applicability to be handled in another action. Eliminated gaseous fuel requirement. Included MACT Subpart DDDDD applicability in introduction.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)], concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to NWCAA Regulation 300.10 and chapter 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 22, 2009

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct 1045

Project Summary: Construct the Benzene Reduction Project (BRP) to reduce the benzene concentration in gasoline. The BRP involves construction of a new decyclohexanizer (DCH) column, a new debutanizer column for Hydrotreater Unit 2 (HTU2), additional piping to the ParIsom Unit, additional piping to the flare system, additional piping to storage tanks, and additional miscellaneous equipment including valves, pumps, and flanges.

OPERATOR

Diane Rusher
Manager–Health, Safety and Environmental
Shell Oil Products US
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

OWNER

Equilon Enterprises DBA: Shell Oil Products
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

FACILITY LOCATION:

8505 South Texas Road – Anacortes, Washington, 98221

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGGa - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced after November 7, 2006
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. Notwithstanding the 40 CFR 63 Subpart CC overlap provision of §63.640(p), a leak detection and repair (LDAR) program that conforms with the requirements of 40 CFR 60 Subpart GGGa and Subpart VVa (as referenced by Subpart GGGa), shall be conducted for subject equipment associated with the Benzene Reduction Project, including equipment installed as part of the DCH column, debutanizer column, and ParIsom unit..

2. A written notice of completion of the Benzene Reduction Project shall be submitted to the NWCAA and postmarked within 15 days after completion of the project.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director,
Engineering

Lynn Billington, P.E.
Director, Engineering

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 22, 2009

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct 1046

Project Summary: Construct the Ethanol Unloading and Storage Project (project) to provide adequate storage capacity for ethanol for gasoline product blending. The project involves construction of a 25,000 barrel internal floating roof storage tank and installation and repurposing fugitive components.

OPERATOR
Diane Rusher
Manager–Health, Safety and Environmental
Shell Oil Products US
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

OWNER
Equilon Enterprises DBA: Shell Oil Products
Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221

FACILITY LOCATION:

8505 South Texas Road – Anacortes, Washington, 98221

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- 40 CFR 60 Subpart GGGa - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced after November 7, 2006

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. Because, the project equipment leaks do not contain or contact a fluid (liquid or gas) that is at least 5 percent by weight of total organic hazardous air pollutants, the fugitive components are not subject to 40 CFR 63 Subpart CC requirements. The ethanol storage tank is subject to 40 CFR 63 Subpart CC Group 2 requirements.

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. The ethanol storage tank shall be equipped with an internal floating roof with both a primary and secondary seal. Records documenting the roof type and seals shall be maintained while the storage tank is in ethanol service.

2. A written notice of completion of the Ethanol Unloading and Storage Project shall be submitted to the NWCAA and postmarked within 15 days after completion of the project.

M.J. "Lyn" Tober, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director,
Engineering

Lynn Billington, P.E.
Director, Engineering

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: October 25, 1996

Revision a: April 12, 2013

Northwest Clean Air Agency (NWCAA) hereby issues

REGULATORY ORDER 14a

Project Summary: This Order is written for the purpose of mitigating air pollution caused by petroleum coke emissions while hauling coke to and from the Puget Sound Refinery in Anacortes, WA.

Owner/Operator	Facility Name and Location
Equilon Enterprises LLC dba Shell Oil Products US P.O. Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Sr. Staff Engineer	Shell Oil Products US Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Order History

- As of the date of issuance, this Order supersedes NWCAA RO 14 issued October 25, 1996.

Pursuant to RCW 70.94.141(3), RCW 70.94.211, and NWCAA Section 121, you are hereby ordered to operate in the following manner:

1. Cover the haul trucks during the transport of petroleum coke to the Port of Anacortes and on the return trip to the refinery.
2. Lower the loading chute during loading to minimize the petroleum coke that is ejected from the truck trailer during loading.

Attest:

Mark Asmundson, Director — Date: 4/12/13

Revision a: Updated to reflect current format. Reworded for clarity. Removed deadlines that have passed.

Effective Date: 4/10/13

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

NORTHWEST CLEAN AIR AGENCY

In the Matter of Additional Action Required by:	)	
	)	COMPLIANCE ORDER
	)	
Shell Puget Sound Refinery	)	
	)	
	)	No. 07
	)	

TO: Thomas J. Rizzo
General Manager
Equilon Enterprises LLC dba Shell Oil Products US
Shell Puget Sound Refinery
8505 South Texas Road
Anacortes, WA 98221

I.

Jurisdiction

This Compliance Order ("Order") is issued pursuant to the authority of RCW 70.94.141 and NWCAA 103 and 121.

II.

Findings of Fact

Northwest Clean Air Agency (NWCAA) makes the following Findings of Fact:

A. Equilon Enterprises LLC dba Shell Oil Products US (Equilon) owns and operates the Shell Puget Sound Refinery (PSR), a petroleum refinery located at 8505 South Texas Road, Anacortes, Washington.

B. Equilon entered into a consent decree with the U.S. Department of Justice entitled United States, et. al. v. Motiva Enterprises LLC, Equilon Enterprises LLC, and Deer Port Refining Limited Partnership (S.D. Tex. 2001) (Consent Decree). The Consent Decree was lodged with the court on March 21, 2001. As of the date of this Order, the Consent Decree is in its sixth amendment (lodged December 2, 2010).

C. Paragraph 24(a). of the Consent Decree states, "Each Company agrees that all of its heaters and boilers that burn fuel gas, and those units identified in Attachment 2 are affected facilities regulated under NSPS Subpart J and subject to all of the applicable requirements of NSPS Subpart J. The units identified in Attachment 2 of this Consent Decree will be in compliance with the NSPS Subpart J requirements in accordance with the schedule set forth in Attachment 2."

D. Attachment 2 of the Consent Decree states, "Pursuant to Paragraph 24 of this Consent Decree, the Companies shall come into compliance with the requirements of NSPS Subpart J for the identified heaters and boilers in accordance with the following schedule: By December 31, 2001: Puget Sound: Truck Loading Rack Vapor Combustor; Compliance Dates as Defined: Puget Sound: FCCU CO Boilers – Compliance by 12/08"

E. Paragraph 27. of the Consent Decree states, "Each Company shall apply to incorporate into the relevant permits the NSPS Subpart J limits for hydrogen sulfide ("H_2S") content of fuel gas, or SO_2 – emissions, where appropriate, for each heater and boiler that combusts fuel gas as set forth in this Section."

F. Shell PSR has requested that Paragraph 27. of the Consent Decree be memorialized in a federally enforceable order issued by the NWCAA prior to termination of the Consent Decree.

G. The following fuel gas combustion devices located at PSR were constructed after the March 21, 2001, lodging date of the Consent Decree: CDHDS Heater (60-F201) (2003).

H. The following fuel gas combustion devices triggered applicability of 40 CFR 60 Subpart J prior to March 21, 2001, lodging date of the Consent Decree: Vacuum Charge Heater (1A-F8) (1999), Charge Heater (15F-100) (1983), CO Boilers 1 and 2 (COB-1 & -2) (1998), Charge Heater (6D-F2) (1987), Interheater #1 (6D-F3) (1987), Interheater #2 (6D-F4) (1987), Charge Heater (7C-F4) (1990), Fractionator Reboiler (7C-F5) (1990), H2S Stripper Reboiler (11H-102) (1997), Fractionator Reboiler (11H-103) (1997), and Truck Rack Vapor Combustor (1992).

III.

Regulatory Basis

A. 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries applies to fuel gas combustion devices, including but not limited to heaters and boilers, that have been constructed, reconstructed or modified after June 11, 1973 but before May 14, 2007.

B. 40 CFR 60 Subpart J requires fuel gas combustion devices that combust refinery-generated fuel gas, to combust gas that is limited to a hydrogen sulfide (H_2S) concentration of no greater than 230 milligrams per dry standard cubic feet (162 ppmvd equivalent), based on a 3-hour average, with compliance determined by continuously monitoring the H_2S concentration of the fuel gas.

C. 40 CFR 60 Subpart Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 applies to fuel gas combustion devices that have been constructed, reconstructed or modified after May 14, 2007.

D. 40 CFR Subpart Ja requires that owners or operators shall not burn in any fuel gas combustion device any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H_2S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

IV.

Determinations

Based upon the foregoing Findings of Fact and Regulatory Basis, NWCAA makes the following Determinations:

A. The heaters and boilers to which Paragraph 24(a). of the Consent Decree refers are those heaters and boilers located at Shell PSR on March 21, 2001 are listed in Section V.A., of this Order.

B. The heaters and boilers listed in Section V.A. of this Order have not been constructed, reconstructed, or modified between the June 11, 1973 and May 14, 2007 applicability trigger date range of 40 CFR 60 Subpart J.

C. The heaters and boilers listed in Section V.A. of this Order have not been constructed, reconstructed, or modified after the May 14, 2007 applicability trigger date of 40 CFR 60 Subpart Ja.

V.

Terms of Order: Actions to Be Taken

Based on the forgoing Facts, Regulatory Basis, and Determinations, it is hereby ordered that Equilon take the following actions:

A. The following process heaters and boilers at Shell PSR shall be considered affected facilities for purposes of 40 CFR Part 60, Subpart J, and shall comply with all requirements of 40 CFR Part 60, Subparts A and J as those Subparts apply to fuel gas combustion devices.

   a. Gas Oil Tower Heater (1A-F4)
   b. Atmospheric Charge Heater (1A-F5)
   c. Atmospheric Charge Heater (1A-F6)
   d. Charge Heater (10H-101)
   e. Interheater #1 (10H-102)
   f. Interheater #2 (10H-103)
   g. Stabilizer Reboiler (10H-104)
   h. Charge Heater (11H-101)
   i. Erie City Boiler 1 (31GF1)

B. If any heater or boiler listed in term V.A. of this Order is modified or reconstructed and thereby triggers applicability of 40 CFR Part 60 Subpart Ja, the terms of this Order no longer apply to that unit as of the date of the initial notification pursuant to 40 CFR 60.108a.

VI.

Terms and Definitions in Order

Unless otherwise specified, the definitions set forth in NWCAA 200, ch 173-400 and 401 WAC, ch 70.94 RCW, 40 CFR 60 Subparts A, J, and Ja shall control the meanings of the terms used in this Order.

VII.

Enforcement

Pursuant to RCW 70.94.211, this Order may be enforced by the Northwest Clean Air Agency.

VIII.

Order Not Subject to Appeal

The terms of this Order having been agreed to by both parties, it is further stipulated that the same shall be final and not be subject to appeal in accordance with RCW 43.21B.230 and NWCAA 122.

ORDERED BY:
NORTHWEST CLEAN AIR AGENCY

By: Mark Asmundson 4/10/13
Mark Asmundson Date
Executive Director

AGREED BY:
EQUILON ENTERPRISES LLC DBA SHELL OIL PRODUCTS US

By: Thomas J. Rizzo 04/09/13
Thomas J. Rizzo Date
General Manager

Effective Date: 4/29/13

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

NORTHWEST CLEAN AIR AGENCY

In the Matter of Additional Action Required by:	)	
	)	COMPLIANCE ORDER
	)	
Shell Puget Sound Refinery	)	
	)	
	)	No. 08
	)	

TO: Thomas J. Rizzo
General Manager
Equilon Enterprises LLC dba Shell Oil Products US
Shell Puget Sound Refinery
8505 South Texas Road
Anacortes, WA 98221

I.

Jurisdiction

This Compliance Order ("Order") is issued pursuant to the authority of RCW 70.94.141 and NWCAA 103 and 121.

II.

Findings of Fact

Northwest Clean Air Agency (NWCAA) makes the following Findings of Fact:

A. Equilon Enterprises LLC dba Shell Oil Products US (Equilon) owns and operates the Shell Puget Sound Refinery (PSR), a petroleum refinery located at 8505 South Texas Road, Anacortes, Washington.

B. Equilon entered into the US EPA's Storage Tank Emission Reduction Partnership Program (STERPP) Agreement under 65 FR 19891 (April 13, 2000).

C. EPA promulgated New Source Performance Standards (NSPS) for Petroleum Liquid Storage Vessels and for Volatile Organic Liquid Storage Vessels, appearing in 40 CFR Part 60, Subparts Ka and Kb.

D. Shell PSR owns and operates certain affected facilities under 40 CFR 60 Subpart Ka and/or Kb that have or had floating roofs with slotted guidepoles.

E. Shell PSR identified Tank 38 (40 CFR 60 Subpart Kb) as the only refinery storage vessel subject to the STERPP Agreement.

III.

Terms of Order: Actions to Be Taken

Based on the forgoing Facts, it is hereby ordered that Equilon take the following actions:

A. For Tank 38, the sliding cover shall be in place over the slotted-guidepole opening through the floating roof at all times except when the sliding cover must be removed for access. If the control technology used includes a guidepole float, the float shall be floating within the guidepole at all times except when it must be removed for access to the stored liquid or when the tank is empty.

B. For Tank 38, visually inspect the deck fitting for the slotted guidepole at least once every 10 years and each time the vessel is emptied and degassed. If the slotted guidepole deck fitting or control devices have defects, or if a gap of more than 0.32 centimeters (1/8 inch) exists between any gasket required for control of the slotted guidepole deck fitting and any surface that it is intended to seal, such items shall be repaired before filling or refilling the storage vessel with regulated material.

IV.

Terms and Definitions in Order

Unless otherwise specified, the definitions set forth in NWCAA 200, ch. 173-400 and 401 WAC, ch. 70.94 RCW, 40 CFR 60 Subparts A, Ka, and Kb shall control the meanings of the terms used in this Order.

V.

Enforcement

Pursuant to RCW 70.94.211, this Order may be enforced by the Northwest Clean Air Agency.

VI.

Order Not Subject to Appeal

The terms of this Order having been agreed to by both parties, it is further stipulated that the same shall be final and not be subject to appeal in accordance with RCW 43.21B.230 and NWCAA 122.

ORDERED BY:
NORTHWEST CLEAN AIR AGENCY

By: _____ 4/29/13
Mark Asmundson — Date
Executive Director

AGREED BY:
EQUILON ENTERPRISES LLC DBA SHELL OIL PRODUCTS US

By: _____ 4/12/13
Thomas J. Rizzo — Date
General Manager

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Effective Date: 2/12/14

NORTHWEST CLEAN AIR AGENCY

In the Matter of Additional Action Required by:	)	
	)	COMPLIANCE ORDER
	)	
Shell Puget Sound Refinery	)	
	)	
	)	No. 10
	)	

TO: Thomas J. Rizzo
General Manager
Equilon Enterprises LLC dba Shell Oil Products US
Shell Puget Sound Refinery
8505 South Texas Road
Anacortes, WA 98221

I

Jurisdiction

This Compliance Order ("Order") is issued pursuant to the authority of RCW 70.94.141 and NWCAA 103 and 121.

II

Findings of Fact

Northwest Clean Air Agency (NWCAA) makes the following Findings of Fact:

(A) Equilon Enterprises LLC dba Shell Oil Products US (Equilon) owns and operates the Shell Puget Sound Refinery (PSR or Puget), a petroleum refinery located at 8505 South Texas Road, Anacortes, Washington.

(B) Equilon entered into a consent decree with the U.S. Department of Justice entitled United States, et. al. v. Motiva Enterprises LLC, Equilon Enterprises LLC, and Deer Park Refining Limited Partnership (S.D. Tex. 2001) (Consent Decree). The Consent Decree was lodged with the court on March 21, 2001. As of the date of this Order, the Consent Decree is in its sixth amendment (lodged December 2, 2010).

Sulfur Dioxide (SO_2) Emission Limits at the Fluidized Catalytic Cracking Unit (FCCU)

(C) Paragraph 33 of the Consent Decree states: "By no later than December 31, 2006, Equilon shall complete installation and begin operation of a WGS [wet gas scrubber] on emissions from the Puget FCCU. Equilon shall design and operate the WGS to achieve an SO_2 concentration of 25 ppmvd or lower on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each at 0% oxygen."

(D) Paragraph 34 of the Consent Decree states: "By no later than June 30, 2001, Equilon shall use an SO_2 CEMS [Continuous Emission Monitoring System] to monitor performance of the FCCU and, subsequently, performance of the WGS and to report compliance with the terms and conditions of this Consent Decree. Equilon shall make CEMS data available to EPA upon demand as soon as practicable."

(E) Paragraph 35 of the Consent Decree states: "Equilon shall install, certify, calibrate, maintain, and operate all CEMS required by this Consent Decree in accordance with the requirements of 40 CFR 60.11, 60.13 and Part 60 Appendix A, B, and F. These CEMS will be used to demonstrate compliance with emission limits."

(F) Based on PSR's notification letter received October 25, 2006, the WGS began operation on October 9, 2006.

(G) According to the Consent Decree quarterly reports, the SO_2 and O_2 CEMS were installed on the FCCU/CO Boiler exhaust stack prior to the lodging of the Consent Decree (i.e., prior to March 21, 2001).

(H) Equilon submitted a permit application on May 19, 2004 for the installation of the wet gas scrubber on the FCCU. The NWCAA issued OAC 623c on January 5, 2005 which included the FCCU SO_2 limits from Paragraph 33 of the Consent Decree.

Nitrogen Oxides (NO_X) and Carbon Monoxide (CO) Emission Limits at the FCCU

(I) Paragraphs 17 and 18 of the Equilon Consent Decree required PSR to demonstrate the performance of using a NO_X absorbing catalyst additive and low NO_X CO promoter in the FCCU over a 12-month period in accordance with Attachment 2 of the Consent Decree. NO_X and O_2 shall be monitored at the stack using a CEMS; O_2 shall also be monitored at the inlet to the CO Boilers using a process analyzer (Paragraph 21). Paragraph 20 of the Consent Decree required that no later than 60 days after the completion of each 12-month demonstration, Equilon report the results of each demonstration. This report should include a proposal for short- and long-term concentration based NO_X limits (Paragraph 22). EPA then evaluated the proposed limit using the CEMS data and other relevant information to establish the final limits (Paragraph 24). EPA (Phillip A. Brooks, Air Enforcement Division, OECA, EPA) wrote a letter to Michael Gallagher (Manufacturing HSSE Manager Americas,

Shell Oil Products) dated October 15, 2010 (referred to as the EPA letter) outlining the final limits (Paragraph 25). The EPA letter required that Equilon shall apply for and make all reasonable efforts to incorporate these final limits into minor or major New Source Review and other applicable, federally enforceable permits for the FCCU, as soon as practicable, but in no even later than 60 days following the effective date of these limits, as required by Paragraph 155 of the Consent Decree.

The limits mandated in the EPA letter are as follows:

- Nitrogen oxide (NO_X) concentrations from the WGS stack shall not exceed any of the following interim limits while the FCCU is operating, until such time as the final limits take effect:
  - 276 ppmvd corrected to 0% oxygen on a 24-hour rolling average, not including periods of startup, shutdown and malfunction; hours when the FCCU is not operating shall be skipped in calculating averages
  - 221 ppmvd corrected to 0% oxygen on a 365-day rolling average, including periods of startup, shutdown and malfunction; days when the FCCU is not operating shall be skipped in calculating averages
- NO_X concentrations from the WGS stack shall not exceed any of the following final limits while the FCCU is operating, which shall take effect on the earlier of December 31, 2014, or upon completion of the FCCU turnaround currently planned for 2014:
  - 185.4 ppmvd corrected to 0% oxygen on a 24-hour rolling average, not including periods of startup, shutdown and malfunction; hours when the FCCU is not operating shall be skipped in calculating averages
  - 142.2 ppmvd corrected to 0% oxygen on a 365-day rolling average, including periods of startup, shutdown and malfunction; days when the FCCU is not operating shall be skipped in calculating averages
- Carbon monoxide (CO) concentration in the Regenerator flue gas shall not exceed 5.2% by volume on a 90-day rolling average while the FCCU is operating, until such time as the final NO_X limits take effect. Once the final limits take effect, this CO concentration limit no longer applies.

Note that the October 15, 2010 letter listed both 142.1 ppmvd and 142.2 ppmvd as the NO_X limit. According to EPA (John Fogarty and Dan Roper – email dated December 16, 2010), this was a typo; the actual limit is 142.2 ppmvd.

(J) Paragraph 26 of the Consent Decree states: "Beginning no later than June 30, 2001, Equilon shall use a NO_X CEMS to monitor performance of the Puget FCCU and subsequently, the catalyst additives, and to report compliance with the terms and conditions of this Consent Decree."

(K) Paragraph 28 of the Consent Decree states: "Equilon shall install, certify, calibrate, maintain, and operate all CEMS required by this Consent Decree in accordance with the requirements of 40 CFR 60.11, 60.13 and Part 60 Appendix A, B and F. These CEMS will be used to demonstrate compliance with emission limits."

(L) According to the Consent Decree quarterly reports, the NO_x CEMS was installed on the FCCU/CO Boiler exhaust stack prior to the lodging of the Consent Decree (i.e., prior to March 21, 2001).

(M) On November 15, 2010, PSR submitted a request to modify OAC 623d to incorporate the requirements in the EPA letter (Phillip A. Brooks, Air Enforcement Division, OECA, EPA to Michael Gallagher, Manufacturing HSSE Manager Americas, Shell Oil Products) dated October 15, 2010. The NWCAA issued OAC 623e on July 12, 2012 which included both the interim and final FCCU NO_x and CO limits from the EPA letter.

NSPS Subpart J for Sulfur Dioxide Applicability at the FCCU

(N) Paragraph 47(a). of the Consent Decree states: "Equilon's FCCU Regenerators at [Bakersfield, CA, Los Angeles, CA, Martinez, CA, Puget Sound, WA] shall be affected facilities subject to the requirements of NSPS Subpart A and J for each relevant pollutant by the dates specified below: ... Puget: SO_2 – 12/31/06"

(O) The FCCU catalyst regenerator at PSR triggered 40 CFR 60 Subpart J for opacity/particulate matter and carbon monoxide as part of the Vertical Riser Project in 1999.

Permitting Requirements

(P) Paragraph 154 of the Consent Decree states: "Equilon agrees to apply for and make all reasonable efforts to obtain in a timely manner all appropriate federally enforceable permits (or construction permit waivers) for the construction of the pollution control technology required to meet the above pollution reductions."

(Q) Paragraph 155 of the Consent Decree states: "As soon as practicable, but in no event later than 60 days following a final determination of concentration limits, Equilon shall apply for and make all reasonable efforts to incorporate the concentration limits required by this Consent Decree into New Source Review ('NSR') and other applicable, federally enforceable, permits for these facilities."

(R) Paragraph 156 of the Consent Decree states: "Equilon shall apply to incorporate NSPS applicability into the relevant permits."

(S) Equilon submitted a request on November 15, 2010 to modify OAC 623e to extract out the Consent Decree requirements.

(T) Equilon has requested that Paragraphs 33, 34, 35; 26, 28, and 47(a) of the Consent Decree; and requirements in the EPA letter dated October 15, 2010 be memorialized in a federally enforceable order issued by the NWCAA prior to termination of the Consent Decree.

III

Regulatory Basis

(A) 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries applies to FCCU catalyst regenerators that have been constructed, reconstructed or modified after June 11, 1973 but before May 14, 2007.

(B) 40 CFR 60 Subpart J requires FCCU catalyst regenerators with add-on control devices (such as a WGS) reduce SO_2 emissions by 90 percent or maintain SO_2 emissions to less than or equal to 50 ppm by volume on a 7-day rolling average basis, whichever is less stringent. Compliance is demonstrated using a CEMS at the inlet and/or outlet of the control device as appropriate.

(C) 40 CFR 60 Subpart Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 applies to FCCUs that have been constructed, reconstructed or modified after May 14, 2007.

(D) 40 CFR Subpart Ja requires SO_2 emissions from FCCUs be limited to 50 ppmv dry basis corrected to 0 percent excess air on a 7-day rolling average basis and 25 ppmv dry basis corrected to 0 percent excess air on a 365-day rolling average basis.

IV

Determinations

Based upon the foregoing Findings of Fact and Regulatory Basis, NWCAA makes the following Determinations:

(A) Because Equilon installed the WGS and it began operation on October 9, 2006, Equilon satisfied installation and commencement of operation requirements under Paragraph 33. As such, the requirement to install and begin operation is not included in Section V of this Order.

(B) Pursuant to the Federal Clean Air Act Section 114, EPA can request any data, including CEMS data, at any time. As such, the requirement that PSR shall make the CEMS data available to EPA upon demand as soon as practicable is not necessary and is not included in Section V of this Order.

(C) The EPA letter mandated NO_x limits that become effective "on the earlier of December 31, 2014, or upon completion of the FCCU turnaround currently planned for 2014". Until the final limits become effective, the letter states that PSR shall comply with the NO_x and CO limits proposed in the Amended NO_x Demonstration Report until the final limits are effective. Because these interim limits are temporary and are being resolved in the near future, these interim limits are not addressed in Section V of this Order. Regardless of this Order, PSR must still comply with the Consent Decree which includes the interim NO_x and CO limits; the Consent Decree will not be allowed to terminate if the interim limits are still in effect but have not been memorialized in an Order.

(D) With the application to modify the existing New Source Review permit (i.e., OAC 623b), PSR applied for and made all reasonable efforts to obtain a federally enforceable permit in a timely manner for the installation of the wet gas scrubber pursuant to Paragraph 154 of the Consent Decree. These requirements have been extracted from OAC 623e in favor of this Compliance Order.

(E) With the application to modify the existing New Source Review permit (i.e., OAC 623d), PSR applied for and made all reasonable efforts to incorporate the final FCCU NO_x limits into a federally enforceable permit in a timely manner. These requirements have been extracted from OAC 623e in favor of this Compliance Order.

V

Terms of Order: Actions to Be Taken

Based on the foregoing Facts, it is hereby ordered that PSR take the following actions:

(A) Sulfur dioxide (SO_2) emissions from the FCCU/CO Boilers shall not exceed 25 ppmvd at 0% oxygen on a 365-day rolling average basis and 50 ppmvd at 7% oxygen on a 7-day rolling average.

(B) NO_x concentrations from the WGS stack shall not exceed any of the following final limits while the FCCU is operating, which shall take effect on the earlier of December 31, 2014, or upon completion of the FCCU turnaround currently planned for 2014:

(i) 185.4 ppmvd corrected to 0% oxygen on a 24-hour rolling average, not including periods of startup, shutdown and malfunction; hours when the FCCU is not operating shall be skipped in calculating averages.

(ii) 142.2 ppmvd corrected to 0% oxygen on a 365-day rolling average, including periods of startup, shutdown and malfunction; days when the FCCU is not operating shall be skipped in calculating averages.

(C) Compliance with Conditions V(A) and V(B) shall be determined using an SO_2 and a NO_x continuous emission monitor (CEM), respectively, and an O_2 monitor. Install,

certify, calibrate, maintain, and operate the CEMS in accordance with the requirements of 40 CFR 60.11, 60.13, and Part 60 Appendices A, B, and F.

(D) The FCCU catalyst regenerator at PSR shall be considered an affected facility for purposes of 40 CFR Part 60 Subpart J for SO_2 and shall comply with all requirements of 40 CFR Part 60 Subparts A and J as those Subparts apply to SO_2 at FCCU catalyst regenerators.

(E) If the FCCU catalyst regenerator or the FCCU, as defined under 40 CFR 60 Subpart Ja, is modified or reconstructed and thereby triggers applicability of 40 CFR Part 60 Subpart Ja, Condition V(D) of this Order no longer applies to the FCCU catalyst regenerator as of the date of the initial notification pursuant to 40 CFR 60.108a.

VI

Terms and Definitions in Order

Unless otherwise specified, the definitions set forth in NWCAA 200, ch 173-400 and -401 WAC, ch 70.94 RCW, 40 CFR 60 Subparts A, J, and Ja shall control the meanings of the terms used in this Order.

VII

Enforcement

Pursuant to RCW 70.94.211, this Order may be enforced by the Northwest Clean Air Agency.

VIII

Order Not Subject to Appeal

The conditions of this Order having been agreed to by both parties, it is further stipulated that the same shall be final and not be subject to appeal in accordance with RCW 43.21B.230 and NWCAA 122.

ORDERED BY:
NORTHWEST CLEAN AIR AGENCY

By: Mark Asmundson 2/12/14
Mark Asmundson Date
Executive Director

AGREED BY:
EQUILON ENTERPRISES LLC DBA SHELL OIL PRODUCTS US

By: Thomas J. Rizzo 2/7/14
Thomas J. Rizzo Date
General Manager

Original Issuance: June 12, 2014

Revision a: July 11, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1181a

Project Summary: Rail unloading facility for receiving feedstocks that will be further processed at the refinery; the PSR feedstocks import (PFI) project. The materials proposed for receipt at this rail unloading facility are heavy feedstocks including fluidized catalytic cracking unit (FCCU) feed, delayed coking unit (DCU) feed, vacuum pipe still (VPS) feed and lighter feedstocks for the hydrotreaters including light cycle gas oil and diesel, but excluding light Bakken crudes.

The PFI is a dual-sided unloading station with the capacity to unload up to 14 railcars per day (7 railcars on each side). Heavy feedstocks for the FCCU, DCU, and VPS have lower API gravity with higher viscosity at ambient temperatures. Lighter feedstocks for the hydrotreaters have higher vapor pressures with lower viscosity at ambient temperatures.

If needed, railcars with heavy feedstocks will be heated by non-contact steam upon arrival at the station to allow the material to reach a temperature and viscosity that allows it to gravity drain out of the railcar. For all feedstocks: offloading hoses will be connected in parallel to the bottom of each railcar, collecting the material into a header (large collection pipe) from which the material is pumped to existing tankage. The collection header and railcar vacuum breaker vents are designed as a closed system.

Approved Emission Units:

- Oily water wastewater collection equipment
- Piping equipment components

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 **Contact:** Tim Figgie, Senior Env. Engineer	Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Permit History

- The effective date of this Order is the date of the first receipt of light feedstock. Once this Order becomes effective, it supersedes NWCAA OAC 1181, issued June 12, 2014.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

- 40 CFR 60 Subpart QQQ - Standards of Performance for Wastewater Operations at Petroleum Refineries

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Railcar unloading operations at the PFI shall be conducted using a closed-loop system that prevents emissions of vapor to the atmosphere. Materials received and handled at the PFI may range from light liquids such as light cycle gas oil and diesel to heavy liquids as defined in 40 CFR Part 60 Subpart VVa, but excluding light Bakken crude.

(2) The facility shall maintain records of the type of material received at the PFI unloading area, the material density and volatile compound content, as well as the date of receipt.

(3) Equipment components associated with this project that are not located within refinery process units (as defined in 40 CFR Part 60 Subpart GGGa) shall be in a leak detection and repair program meeting the monitoring, recordkeeping and reporting provisions of 40 CFR Part 60 Subpart GGGa including referenced requirements under Subpart VVa for light liquids.

(4) The facility shall provide the NWCAA with a written notification of the date they begin receiving lighter feedstocks at of the PFI. The notice shall be postmarked no later than 15 days after the first shipment is received and shall include a reference to OAC 1181a.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Revision a: Allow receipt of lighter feedstocks through existing rail unloading facility.

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Issuance: July 30, 2015

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1215

Project Summary: Construct and operate new refinery laboratory facilities, replacing the existing laboratory. The new laboratory facilities will include: new bottle wash/retaining/reference fuels building; new material storage building; and new septic tank, catch basin, manhole, and drainage system. The laboratory oily wastewater collection system will be connected to existing wastewater treatment facilities through a new junction box.

Approved Emission Unit(s):

- (1) Junction Box for oily water wastewater collection

Owner	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 **Contact**: Tim Figgie, Senior Environmental Engineer	Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR Part 60 Subpart A - General Provisions
- 40 CFR Part 60 Subpart QQQ - Standards of Performance for Wastewater Operations at Petroleum Refineries

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR Part 61 Subpart A – General Provisions
- 40 CFR Part 61 Subpart FF – National Emission Standards for Benzene Waste Operations

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions[1]:

1 The new junction box shall be equipped with a vent pipe connected to a closed-vent

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

system and control device designed, monitored and operated in accordance with 40 CFR Part 61 Subpart FF §61.349.

2 The existing laboratory shall be decommissioned upon successful commissioning of the new laboratory. Written notice of the date the laboratory is decommissioned shall be submitted to the NWCAA within 15 days. The notice shall include a description of the decommissioning method (e.g., demolition) and a reference to OAC 1215.

3 The facility shall provide the NWCAA with a written notification of the startup date of the new refinery laboratory postmarked no later than 15 days after it begins operation and shall include a reference to OAC 1215.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Original Issuance: October 21, 2016

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1253

Project Summary: Upgrade the Vacuum Pipestill (VPS) unit for operational flexibility and reliability by:

- Adding a new 2nd stage desalters and booster pumps (2),
- Upgrading (2) existing desalters,
- Upgrading existing desalter wash-water system,
- Replacing VPS flash drum and pump
- Replacing atmospheric column internal tray
- Upgrading atmospheric column overhead system, and
- Upgrading product rundowns from atmospheric column.

Approved Emission Unit: New equipment components in light liquid service (valves, flanges, PRV, pumps) and reconstructed individual drain system at the VPS unit.

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

- The effective date of this Order is the startup date of the VPS Unit following completion of the Process Improvement project.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions.
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems.

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR Part 63 Subpart A – General Provisions.
- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. (references Subpart FF).

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Maintain all equipment associated with the VPS process unit using a leak detection and repair (LDAR) program meeting the standards, monitoring, recordkeeping, and reporting requirements of 40 CFR Part 60 Subpart GGGa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after November 7, 2006 which references portions of Subpart VVa.

(2) Provide NWCAA with a written notification of the startup date of the Vacuum Pipestill unit following completion of the Process Improvement project, no later than 15 days after it begins operation and include a reference to OAC 1253.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Issuance: June 7, 2018

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1291

Project Summary: Construct a new crude storage tank (TK503).

Approved Emission Units:

- One (1) external floating roof crude oil tank with maximum storage capacity of 344,171 bbl and maximum annual throughput of 15,220,500 bbl/year, equipped with mechanical shoe primary seal and rim-mounted secondary seal, and designed to drain with no significant liquid heel left in the tank after emptying. Ancillary equipment associated with the tank including access and gauge-hatches, sampling ports, automatic bleeder vents, fixed deck legs, deck drain, unslotted & slotted guidepoles and wells.
- Oily wastewater drains and junction box associated with Tank TK503.

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

The effective date of this Order is the initial filling of Crude Tank TK503.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart QQQ – Standards of Performance For VOC Emissions From Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
- 40 CFR 63 Subpart WW - National Emission Standards for Storage Vessels (Tanks)

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Track each load of crude received for storage within the tank with crude oil evaluation data sheet, daily throughput of crude through the tank, volume of crude delivered and the date received. Maintain records onsite for no less than 5 years from the date of generation and keep readily available for review by NWCAA personnel.

(2) Provide the NWCAA with written notice of the initial filling of tank TK503. Postmark the notice no later than 15 days after the initial filling of the tank and include a reference to OAC 1291.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360-428-1617
fax 360-428-1620
info@nwcleanairwa.gov
www.nwcleanairwa.gov

Issuance: July 1, 2019

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1301

Project Summary: Construct new finished diesel (TK504) and finished blended gasoline (TK505) storage tanks.

Approved Emission Units:

- One (1) fixed cone roof diesel tank with maximum storage capacity of 157,360 bbl and maximum annual throughput of 7 MMbbl/yr.
- One (1) external floating roof gasoline tank with maximum storage capacity of 147,919 bbl and maximum annual throughput of 6 MMbbl/year, equipped with dual seals, and designed to drain with no significant liquid heel left in the tank after emptying. Ancillary equipment associated with the tank including gauge- and access hatches, sampling port, automatic bleeder vents, deck legs, pontoon legs, deck drain, slotted guidepole and well.
- Two (2) new oily wastewater system drains associated with the gasoline and diesel tanks.

Owner/Operator	Facility Name and Location
Equilon Enterprises, LLC PO Box 622 Anacortes, WA 98221 Contact: Tim Figgie, Senior Env Engineer	Shell Puget Sound Refinery (PSR) 8505 South Texas Road Anacortes, WA 98221

Permit History

The effective date of this Order is the initial filling of either diesel storage tank TK504 or gasoline storage tank TK505, whichever occurs first.

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart QQQ – Standards of Performance For VOC Emissions From Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF – Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions

- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
- 40 CFR 63 Subpart WW - National Emission Standards for Storage Vessels (Tanks)

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions[1]:

(1) Store only finished blended gasoline with a true vapor pressure of 11.1 psia in TK505, unless approved in advance by NWCAA. Maintain records of the average monthly storage temperature, the maximum true vapor pressure, and the date and volume of finished blended gasoline transferred.

(2) Store only diesel in TK504. Maintain records of each date diesel is transferred to the tank.

(3) Maintain the records required by this order onsite for no less than 5 years from the date of generation and keep readily available for review by NWCAA personnel.

(4) Provide the NWCAA with written notice of the initial filling of both the diesel storage tank TK504 and the gasoline storage tank TK505. Postmark the notices no later than 15 days after the initial filling of each tank and include a reference to OAC 1301.

Crystal Rau
Air Quality Scientist

Agata McIntyre, P.E.
Engineering Manager

[1] Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: http://www.eluho.wa.gov/ under PCHB.