NORTHWEST CLEAN AIR AGENCY

In the Matter of Additional Action Required by:  )

)  AGREED COMPLIANCE ORDER

)  )

BP Cherry Point Refinery

)  )  No. 05

)  )

TO:  Stacey McDaniel
     Business Unit Leader
     BP West Coast Products LLC
     BP Cherry Point Refinery
     4519 Grandview Road
     Blaine, WA 98230

I.

Jurisdiction

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

II.

Findings of Fact

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

A. BP West Coast Products LLC owns and operates the BP Cherry Point Refinery, a petroleum refinery located at 4519 Grandview Road, Blaine, Washington.

B. BP entered into a consent decree with the U.S. Department of Justice entitled United States, et. al. v. BP Exploration & Oil, et. al., Northern District of Indiana, Hammond Division, Civil Action No. 2:96CV 095 RL (Consent Decree). The Consent Decree was lodged with the court on June 18, 2001. As of the date of this Order, the Consent Decree is in its sixth amendment.
C. Paragraph 17.C.iv. of the Consent Decree states, “By no later than September 30, 2005, all heaters and boilers at the Cherry Point Facility shall be considered affected facilities for purposes of 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J as those Subparts apply to fuel gas combustion devices.”

D. BP West Coast Products LLC has requested that Paragraph 17.C.iv. of the Consent Decree be memorialized in a federally enforceable order issued by the NWCAA prior to termination of the Consent Decree.

E. On May 15, 2002, the NWCAA issued Regulatory Order 28. The intent of Regulatory Order 28 Condition I was to memorialize Paragraph 17.C.iv. of the Consent Decree.

F. On October 26, 2005, the NWCAA issued Order of Approval to Construct (OAC) 890a. Condition 12 of OAC 890a states; “Condition II of the NWCAA Regulatory Order #28 shall become void upon startup of [Tail Gas Unit] TGU #2”.

G. Startup of the TGU #2, also referred to as the #2 Tail Gas Unit, occurred on June 30, 2006.

H. The following heaters and boilers located at the Cherry Point Refinery were constructed after the June 18, 2001, lodging date of the Consent Decree; #2 Diesel Hydrodesulfurization (HDS) Charge Heater, Isomerization Hydrotreater (IHT) Heater, and #5 Boiler, #6 Boiler and #7 Boiler.

I. The following boilers that were in place and operational at the Cherry Point Refinery on the June 18, 2001, lodging date of the Consent Decree, have since been decommissioned; #1 Boiler, #2 Boiler and #3 Boiler.

III.

Regulatory Basis

A. 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries does not apply to heaters and boilers that have been constructed, reconstructed or modified after May 14, 2007.

B. 40 CFR 60 Subpart J requires heaters and boilers that combust refinery generated fuel gas, to combust gas that is limited to a hydrogen sulfide (H₂S) 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 H₂S 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 heaters and boilers 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 H2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H2S 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:


B. Condition I of NWCAA Regulatory Order 28 issued May 15, 2002 as written may not be enforceable and may not satisfy the interest of BP West Coast Products LLC in obtaining a federally enforceable order issued by the NWCAA that memorializes Paragraph 17.C.iv of the Consent Decree prior to termination of the Consent Decree.

C. This Order satisfies the interests of BP West Coast Products LLC in replacing NWCAA Regulatory Order 28 issued May 15, 2002, with this Order.

D. As of the effective date of this Order, NWCAA Regulatory Order 28 issued May 15, 2002, is deemed null and void.

E. The heaters and boilers to which Paragraph 17.C.iv of the Consent Decree refers are those heaters and boilers located at the Cherry Point Refinery on June 18, 2001, that have not been decommissioned as of the effective date, and are listed in Section V.A., of this Order.

F. 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 BP West Coast Products LLC take the following actions:

A. The following process heaters and boilers at the Cherry Point Refinery 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. Crude Heater (10-1401)
b. South Vacuum Heater (10-1451)
c. North Vacuum Heater (10-1452)
d. #1 Reformer Heater (11-1403, 4, 5, 6)
e. Naphtha HDS Charge Heater (11-1401)
f. Naphtha HDS Stripper Reboiler (11-1402)
g. Hydrocracker 1st Stage Reactor Heater (15-1401)
h. Hydrocracker 2nd Stage Reactor Heater (15-1402)
i. Hydrocracker 1st Stage Fractionator Reboiler (15-1451)
j. Hydrocracker 2nd Stage Fractionator Reboiler (15-1452)
k. North Coker Charge Heater (12-1401-01)
l. South Coker Charge Heater (12-1401-02)
m. #1 Diesel HDS Charge Heater (13-1401)
n. #1 Diesel HDS Stabilizer (13-1402)
o. #1 Hydrogen Plant North Reforming Furnace (14-1401-01)
p. #1 Hydrogen Plant South Reforming Furnace (14-1401-02)
q. #1 & 2 Calciners, supplemental firing (20-70)
r. #3 Calciner, supplemental firing (20-71)
s. #4 Boiler (30-1604)

B. If any fuel gas combustion device listed in term V.A. of this Order is modified or reconstructed and thereby triggering 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 Regulation 200, WAC 173-400 & 401, RCW 70.94, 40 CFR 60 Subparts A, J, and Ja shall control the meanings of the terms used in this Agreed Order.

VII.

Enforcement

Pursuant to RCW 70.94.221, 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 Regulation 122.

Effective date of this Order: ______________________

ORDERED BY:
NORTHWEST CLEAN AIR AGENCY

By: ___________________________________________  Date

Mark Asmundson,
Executive Director

AGREED BY:
BP WEST COAST PRODUCTS LLC

By: _______________________________  Date

Stacey McDaniel
Business Unit Leader
August 16, 2013

Stacey McDaniel  
Business Unit Leader  
BP Cherry Point Refinery  
4519 Grandview Road  
Blaine, WA 98230

Dear Ms. McDaniel:

Regional Haze Best Available Retrofit Technology (BART) Determination

Best Available Retrofit Technology (BART) is required to reduce the regional haze impacts of emissions of your facility. The enclosed order #7836 contains our BART determination for your facility including a schedule for compliance.

If you have questions or requests relating to this order, please contact Alan Newman at (360) 407-6810 or by mail at the address above.

Sincerely,

Jeff Johnston, Ph.D.  
Manager, Science and Engineering Section  
Air Quality Program

jj/te

Enclosure

cc:  Agata McIntyre, NWCAA  
Jim Chalfant, BP Cherry Point Refinery  
Alan Newman, Ecology
IN THE MATTER OF AN
ADMINISTRATIVE ORDER AGAINST:

BP Cherry Point Refinery

TO: Mr. Jeff Pitzer
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

ORDER NO. 7836
Revision 1

This is an Administrative Order requiring your company to comply with WAC 173-400-151 by taking the actions which are described below. Chapter 70.94 RCW authorizes the Washington State Department of Ecology’s Air Quality Program (Ecology) to issue Administrative Orders to require compliance with the requirements of Chapter 70.94 RCW and regulations issued to implement it.

Ecology has determined that portions of your facility are subject to the provisions of the federal and state visibility protection program (WAC 173-400-151 and 40 CFR Part 51, Subpart P). The rules require that the State determine what technologies and level of emission control constitutes Best Available Retrofit Technology (BART) for the eligible emission units at your facility. The rules also require the installation and use of those emission controls on the BART-eligible emission units. The emission controls are to be installed as expeditiously as possible, but in no event can the State allow them to start operation later than five years after the State’s Regional Haze SIP amendment is approved by the United States Environmental Protection Agency (EPA).

FINDINGS

The BP Cherry Point Refinery operates an oil refinery near Blaine, Washington that contains emission units that are subject to BART.

A. The BART-eligible emission units at the BP Cherry Point Refinery are:

   a. Process heaters and boilers:

      1. 30-1601, Boiler #1
      2. 30-1603, Boiler #3
      3. 10-1401, Crude Charge Heater
      4. 10-1451, South Vacuum Heater
      5. 11-1401, Naphtha HDS Charge Heater
      6. 11-1402, Naphtha HDS Stripper Reboiler
      7. 11-1403-1406, #1 Reformer Heaters
8. 12-1401-01, Coker Charge Heater (#1 North)
9. 12-1401-02, Coker Charge Heater (#2 South)
10. 13-1401, #1 Diesel HDS Charge Heater
11. 13-1402, #1 Diesel HDS Stabilizer Reboiler
12. 14-1401, Steam Reforming Furnace #1 - (North Hydrogen (H2) Plant)
13. 14-1402, Steam Reforming Furnace #2 - (South H2 Plant)
14. 15-1401, R-1 HC Reactor Heater
15. 15-1402, R-4 HC Reactor Heater
16. 15-1451, 1st Stage HC Fractionator Reboiler
17. 15-1452, 2nd Stage HC Fractionator Reboiler

b. Other units:

1. 17, 19, SEU & TGU
2. 29.110, High Pressure Flare
3. 29-111, Low Pressure Flare
4. Green Coke Load out

B. BART emission limitations for the BART-eligible emission units is a combination of:

a. Use of existing burners on process heaters and reboilers.

b. Continued use of the current refinery fuel gas sulfur scrubbing system for control of sulfur dioxide (SO₂) emissions.

C. Treatment of Specific Units

a. Boilers #1 and #3 will be decommissioned by no later than March 27, 2010.


**YOU ARE ORDERED:** To install and operate emission control equipment in accordance with the following conditions:

**BART Emission Limitations**

1. Particulate Matter Emissions
1.1. All BART eligible units listed in Finding A above, meet the emission limitations for particulate matter found in NWCAA’s Regulation 455.1 given below.

1.1.1. Emissions shall not exceed 0.10 grain/dscf (corrected to seven percent oxygen), except from all gaseous and distillate fuel burning equipment (the definition of fuel burning equipment does not include internal combustion engines), emissions shall not exceed 0.05 grain/dscf (0.11 g/m³) corrected to seven percent oxygen.

1.2. Compliance with the particulate emission limits above will be determined as follows:

1.2.1. Burn only gaseous fuels.

1.2.2. For all BART-eligible units, perform particulate emissions testing to determine compliance when requested in writing by NWCAA or Ecology. Particulate testing is performed using EPA Test Method 5 in 40 CFR Part 60 Appendix A, and Method 202 in 40 CFR 51 Appendix M.

2. Nitrogen Dioxide (NO$_X$) Emissions

2.1. South Vacuum Heater, Unit 10-1451

2.1.1. NO$_X$ emissions shall not exceed 10.5 lb/hr based on a calendar day average.

2.1.2. Compliance with this condition shall be determined by a CEM installed, calibrated, maintained, and operated to measure NO$_X$ and oxygen in the stack.

2.1.3. Each monitor shall meet the appropriate sections of NWCAA Section 366 and NWCAA Appendix A.

2.1.4. Hourly emission rates for NO$_X$ shall be recorded. On-site documentation shall be kept showing the method of calculating the mass emission rate.

2.1.5. Report data in monthly monitoring report.

2.2. Coker Charge Heater (#1 North), 12-1401-01

2.2.1. NO$_X$ emissions shall not exceed 15.2 lb/hr and 66 tons per year.

2.2.2. Compliance shall be determined by biennial performance tests on one of two identical heaters (#2 North or #2 South) using 40 CFR 60 Appendix A Method 7A or 7E.

2.3. Coker Charge Heater (#2 South), 12-1401-02

2.3.1. NO$_X$ emissions shall not exceed 15.2 lb/hr and 66 tons per year.

2.3.2. Compliance shall be determined by biennial performance tests on one of two identical heaters using 40 CFR 60 Appendix A Method 7A or 7E.

2.4. #1 Diesel HDS Charge Heater, 13-1401 and Diesel HDS Stabilizer Reboiler, 13-1402
2.4.1. **NC\textsubscript{X}** emissions from the #1 Diesel Hydrotreater Charge Heater shall not exceed 0.040 lb/MMBtu (higher heating value), or if this emission limit is exceeded, 1.9 lb/hr.

2.4.2. **NC\textsubscript{X}** emissions from the Stabilizer Reboiler Heater shall not exceed 26 ppmv (dry basis corrected to 7% O\textsubscript{2}) based on a 24-hour rolling average. If this concentration is exceeded, a secondary limit to demonstrate compliance is 2.2 lb/hour based on a 24-hour rolling average.

2.4.2.1. Ongoing compliance with this condition shall be determined by a continuous emission monitor (CEM) installed, calibrated, maintained, and operated to measure NOX and O\textsubscript{2} in the stack by no later than December 1, 2008. Each monitor shall meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A.

2.5. **R-1 HC Reactor Heater, 15-1401**

2.5.1. Nitrogen oxides (NO\textsubscript{X}) from the Hydrocracker R-1 Heater shall not exceed the following emission limits;

2.5.1.1. 26 ppm by volume, dry basis, corrected to seven percent oxygen, based on a 24-hour rolling average. Or, if this concentration based limit is exceeded, the following mass emission rate limit shall be used to demonstrate compliance.

2.5.1.2. 3.6 lb/hour based on a 24-hour rolling average.

2.5.2. Biennial source testing shall be completed within two months of the anniversary date of the initial test. The test shall be performed under representative operating conditions and at a heater firing rate that corresponds to the operating condition of the Hydrocracker Unit on the scheduled test day. The test shall be conducted in accordance with USEPA Reference Method 7E, NWCAA Regulation Section 367 and NWCAA Appendix A.

2.5.3. NO\textsubscript{X} emissions shall be continuously monitored by a certified continuous emission monitoring system (CEMS) for nitrogen oxides and oxygen. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A.

2.5.4. An operating and maintenance manual that contains O&M information on the ultra-low NO\textsubscript{X} burners shall be maintained on site.

2.6. **1st Stage HC Fractionator Reboiler, 15-1451**

2.6.1. NO\textsubscript{X} emissions from the boiler stack shall not exceed 0.07 lb/MMBtu monthly average, or 56.2 tons per calendar year.
2.6.2. A continuous emission monitor or equivalent method approved by the NWCAA shall be used to measure nitrogen oxide emissions.

2.6.3. An operating and maintenance manual that contains O&M information on the low NOx burners shall be maintained on site.

2.7. 2nd Stage HC Fractionator Reboiler, 15-1452

2.7.1. Emission of NOx from the heater stack shall not exceed 0.07 lb/MMBtu based on a 24-hour average and shall not exceed 56.2 tpy on a calendar year rolling average.

2.7.2. Report NOx emissions based on firing rates on a calendar month basis within 30 days after the end of the previous month.

2.7.3. Conduct periodic source testing once every five years within three months of the anniversary of the initial test. Follow 40 CFR 60 Appendix A Method 20.

2.7.4. An operating and maintenance manual that contains O&M information on the low NOx burners shall be maintained on site.

2.8. No nitrogen dioxide emission limitations are applicable to the following units:

2.8.1. Crude Charge Heater Unit 10-1401, the Naphtha HDS Charge Heater Unit 11-1401,

2.8.2. Naphtha HDS Stripper Reboiler Unit 11-1402,

2.8.3. #1 Reformer Heaters 11-1403-1406,

2.8.4. Steam Reforming Furnace #1 (North Hydrogen (H2) Plant Unit 14-1401,

2.8.5. Steam Reforming Furnace #2 (South H2 Plant) Unit 14-1402,

2.8.6. R 4 HC Reactor Heater, Unit 15-1402.

3. Sulfur Dioxide Emissions

3.1. Coker Charge Heaters #1 North and #1 South

3.1.1. SO2 emissions shall not exceed 14.9 lb/hr and 66 tons per year per heater.

3.1.2. Compliance shall be determined by biennial performance tests on one of two identical heaters using 40 CFR 60 Method 6 or 6C or Fuel Gas Analysis using Method 11 or 15.

3.2. Plant-wide refinery fuel gas requirements

3.2.1. All units shall meet the emissions limitations for fuel gas contained in the NWCAA’s RO #28 dated May 15, 2002.

3.2.1.1. Fuel gas is limited to a composition of H2S<230 mg/dscm (0.10 gr/dscf). Equivalent to 162 ppm H2S, 3-hour rolling average.
3.2.2. Operate CEM for H₂S concentration at the fuel feed line in accordance with NWCAA 367 and Appendix A - “Ambient Monitoring, Emission Testing, and Continuous Emission and Opacity Monitoring”, 40 CFR 60 Subpart J and 40 CFR 60 Appendices B and F.

3.2.3. Periods of excess emissions that shall be determined and reported are defined as follows. All rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system under §60.105(a)(4) exceeds 162 ppmv.

3.2.4. Report average H₂S content (3-hour rolling average) in monthly report.

4. All Other BART Units

4.1. SRU and TGU

4.1.1. Sulfur dioxide emissions from TGU stacks 1 and 2 shall not exceed any of the following emission limits.

4.1.1.1. 250 (2.50 x 10²) ppm by volume, dry basis, corrected to zero percent oxygen, based on a 12-hour rolling average. The 12-hour rolling average shall be calculated based on corrected hourly averages for the twelve, most recent, consecutive clock hours.

4.1.1.2. 1500 (1.50 x 10³) ppm by volume, dry basis, corrected to zero percent oxygen, based on a one-hour.

4.1.1.3. Compliance with this condition shall be determined by a continuous emission monitor (CEM) installed, calibrated, maintained, and operated to measure sulfur dioxide and oxygen in each TGU stack. Each monitor shall meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Regulation Section 367 and NWCAA Appendix A.

4.1.1.4. Total tons of sulfur dioxide emitted from the sulfur recovery unit shall not exceed 135 tons based on each consecutive 12-month rolling period. The most recent 12-month rolling total shall be reported to the NWCAA on each monthly emissions report.

Schedule for Compliance

5. For all requirements in Conditions 1, 2, 3 and 4, compliance is required by August 7, 2009.

Monitoring and Recordkeeping Requirements

6. Sulfur Dioxide Emissions

6.1. SO₂ performance tests required by Conditions 3.1.2 shall be submitted to NWCAA and Ecology upon request.
6.2. Operate CEMS measuring H₂S concentration in accordance with NWCAA 367 and NWCAA Appendix A, and 40 CFR 60 Subpart J and 40 CFR 60 Appendices B and F.

6.3. CEMS date including daily average H₂S concentrations of the refinery fuel gas shall be recorded and retained at the facility available for review by NWCAA or Ecology inspectors.

Other Requirements

7. Boilers #1 and #3 shall be decommissioned by no later than March 27, 2010. The Northwest Clean Air Agency (NWCAA) shall be notified in writing of the decommissioning date of each boiler. Notifications shall be postmarked no later than 15 days after each decommissioning event.

8. BP may request this compliance Order be rescinded after all of the following occur:

8.1. All BART units at the plant have continuously complied with the emissions limitations in Conditions 1 through 4 for a period of 3 years.

8.2. The emission limitations in this Order have been incorporated into one or more enforceable orders or permits issued under the criteria of RCW 70.94.152 or 70.94.153 and NWCAA regulations implementing these provisions.

8.3. The emission limitations in the enforceable orders or permits have been incorporated into the Air Operating Permit issued by NWCAA to BP.

9. Issuance of this order indicates requirements of Order 5069 have been complied with.

Within 20 days of receipt of this Order, you may request a delay in the submittal date. Any such request must be accompanied by a written justification for the delay.

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

You have a right to appeal this Order. To appeal you must:

- File your appeal with the Pollution Control Hearing Board within 30 days of the “date of receipt” of this document. Filing means actual receipt by the Board during regular office hours.

- Serve your appeal on the Department of Ecology within 30 days of the “date of receipt” of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). “Date of receipt” is defined at RCW 43.21B.001(2).

If you appeal, you must:
• Include a copy of this document with your Notice of Appeal.
• Serve and file your appeal in paper form; electronic copies are not accepted.

To file your appeal with the Pollution Control Hearing Board:

Mail appeal to:

The Pollution Control Hearings Board
P.O. Box 40903
Olympia, WA 98504-0903

Deliver your appeal in person to:

The Pollution Control Hearings Board
4224-6th Avenue SE Rowe Six, Bldg 2
Lacey, WA 98503

OR

To serve your appeal on the Department of Ecology:

Mail appeal to:

Department of Ecology
Appeals Coordinator
P.O. Box 47608
Olympia, WA 98504-7608

Deliver your appeal in person to:

Department of Ecology
Appeals Coordinator
300 Desmond Drive SE
Lacey, WA 98503

OR

And send a copy of your appeal packet to:

Alan Newman
Department of Ecology
Air Quality Program
P. O. Box 47600
Olympia, WA 98504-7600

For additional information, go to the Environmental Hearings Office website at http://www.cho.wa.gov.


Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320. These procedures are consistent with Chapter 43.21B RCW.
BP Cherry Point Refinery
BART Compliance Order #7836
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DATED this 16 day of August, 2013 at Olympia, Washington.

Jeff Johnston, Ph.D.
Manager, Science and Engineering Section
Department of Ecology
Air Quality Program