

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b> <i>ENGINEERING &amp; COMPLIANCE</i> <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGES <b>18</b>	PAGE <b>1</b>
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	PROCESSED BY Belinda C. Wan	CHECKED BY CWT

**PERMIT TO CONSTRUCT**

**COMPANY NAME**                    BP West Coast Products LLC  
    BP Wilmington Calciner

**MAILING ADDRESS**                P.O. Box 1028  
    Wilmington, CA 90748-1028

**EQUIPMENT LOCATION**        1175 Carrack Avenue  
    Wilmington, CA 90748

**FACILITY ID**                        131249 (CYCLE 1)

**CONTACT PERSON**                Gary Tietavainen  
    (562) 499-3206

**PROPOSED CHANGES TO PERMITS:**

Proposed additions are underlined and proposed deletions are shown as ~~strikeouts~~.

**SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
<b>Process 1: CALCINED PETROLEUM COKE PRODUCTION</b>					P13.1
<b>System 4: PRODUCT HANDLING, STORAGE AND LOADING</b>					S7.1
STORAGE SILO, NO. 5, CALCINED COKE EMERGENCY DUMP AREA, WITH <u>ENCLOSURE</u> , PETROLEUM COKE, EQUIPPED WITH AN AUTOMATIC WATER SPRAY SYSTEM, WIDTH: 25 FT; HEIGHT: 16 FT 3 IN; LENGTH: 18 FT  <u>A/N 502187</u> <u>A/N: 473170</u>	D114			PM: (9) [RULE 405, 2-7-1986]	A63.2 A103.1 D323.2

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Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
<u>CHUTE, MAINTENANCE CHUTE, CALCINED COKE EMERGENCY DUMP, PETROLEUM COKE, EQUIPPED WITH MANUALLY ACTIVATED WATER SPRINKLER SYSTEM</u>  A/N: 502187	D115			PM: (9) [RULE 405, 2-7-1986]	<u>A63.2</u> <u>D323.2</u> <u>E193.2</u> <u>E193.3</u>

(10) Please refer to Section J of the facility permit for NESHAP/MACT requirements.

\*\*Please refer to Sections F and G of the facility permit for the monitoring, recordkeeping, and reporting requirements.

**CONDITIONS:**

The operator shall comply with the terms and conditions which are set forth below:

**PROCESS CONDITIONS**

**PROCESS CONDITION NO. P13.1**

All devices under this process are subject to the applicable requirements of the following rules or regulations:

<u>Contaminant</u>	<u>Rule</u>	<u>Rule/Subpart</u>
PM	District Rule	1158

[RULE 1158, 6-11-1999]

[ Processes subject to this condition: 1 ]

**SYSTEM CONDITION S7.1**

The following conditions shall apply to all coke handling and related devices from this system:

The operator shall regularly wash exterior conveyors and return belts, overhead structures and ground area down to the coke laden water return system to avoid accumulation of coke dust.

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The operator shall clean the exterior of the vehicle (including the tires) hauling the construction spoils prior to leaving the working site.

The operator shall drive all outgoing petroleum coke trucks, whether filled or empty, through the truck wash system in order to thoroughly wash any residual coke off the exterior of the trucks.

[RULE 1158, 6-11-1999]

[ Systems subject to this condition: Process 1, System 1, 4 ]

## DEVICE CONDITIONS

### A. Emission Limits

A63.2 The operator shall limit emissions from this equipment as follows:

Contaminant	Emission
Visible Emissions	Less than 10 Percent opacity

[RULE 1158, 7-11-2008]

[Devices subject to this condition : D1, D2, D3, D4, D5, D6, D7, D12, D13, D14, D15, D16, D17, D18, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D55, D56, D74, D91, D110, D111, D112, D113, D114, D115]

A103.1 The operator shall keep materials received sufficiently moist to prevent fugitive emissions:

[RULE 1158, 7-11-2008]

[Devices subject to this condition : D1, D2, D3, D4, D5, D6, D7, D64, D114]

### B. Material/Fuel Type Limits

None

### C. Throughput/Operating Limitation

C1.5 The operator shall limit the material processed to no more than 7200 ton(s) in any one day.

For the purpose of this condition, material processed shall be defined as calcined coke.

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This limit shall be based on the total combined limit for equipment D52 and D56.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D52, D56]

**D. Monitoring/Testing Requirements**

D323.2 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on an annual basis, at least, unless the equipment did not operate during the entire annual period. The routine annual inspection shall be conducted while the equipment is in operation and during daylight hours.

If any visible emission (not including condensed water vapor ) are detected that last more than three minutes in any one hour, the operator shall verify and certify within 24 hours that the equipment causing the emissions and any associated air pollution control equipment are operating normally according to their design and standard procedures and under the same conditions under which compliance was achieved in the past, and either:

- 1). Take corrective action(s) that eliminates the visible emissions and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit; or
- 2). Have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures in the CARB manual "Visible Emission Evaluation", and report any deviations to AQMD.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1). Stack or emission point identification;
- 2). Description of any corrective actions taken to abate visible emissions;
- 3). Date and time visible emission was abated; and
- 4). All visible emission observation records by operator or a certified smoke reader.

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[RULE 3004(a)(4)- Periodic Monitoring, 12-12-1997; RULE 401, 3-21984; RULE 401, 11-9-2001 ]

[Devices subject to this condition :D1, D2, D3, D4, D5, D6, D7, D9, D10, D12, D13, D14, D15, D16, D17, D18, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D55, D56, D60, D63, D64, D65, D74, D91, D110, D111, D112, D113, D114, D115]

**E. Equipment Operation/Construction Requirements**

E125.1 The operator shall drive all the outgoing petroleum coke trucks, whether filled or empty, through the truck wash system in order to thoroughly wash any residual coke off the exterior of the trucks.

[RULE 1158, 7-11-2008]

[Devices subject to this condition : D1, D56]

E193.1 The operator shall operate and maintain this equipment according to the following requirements:

The operator shall activate the water sprinkler system when the hopper is in operation.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Off set, 5-10-1996]

[Devices subject to this condition : D112]

E193.2 The operator shall operate and maintain this equipment according to the following requirements:

The operator shall activate the water sprinkler system during all emergency coke dump incidents.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Off set, 5-10-1996]

[Devices subject to this condition : D115]

E193.3 The operator shall operate and maintain this equipment according to the following requirements:

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The operator shall only operate this equipment during periods of maintenance and inspection of the hot coke diversion system after completion and startup of the emergency coke dump enclosure.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Off set, 5-10-1996]

[Devices subject to this condition : D115]

**H. Applicable Rules**

None

**K. Recordkeeping/Reporting**

None

**BACKGROUND**

BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 is both NOx and SOx RECLAIM Cycle 1 facility that also belongs to the Title V program. BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 produces high quality, petroleum coke from green coke by heating it in a 120 MMBtu per hour rotary kiln and combusting the volatile hydrocarbons at its facility located at 1175 Carrack Avenue, Wilmington, CA 90748.

According to the New Source Review database, West Coast Products LLC, BP Wilmington Calciner, with Facility ID 131249 has a potential to emit 1920 lb per day of NOx, 828 lb per day of CO, 674 lb per day of PM<sub>10</sub>, 3144 lb per day of SOx and 43 lb per day of ROG.

In 2006, BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 reported 209.770 tons per year of NOx, 167.980 tons per year of SOx, 41.743 tons per year of total suspended particulate matter, 0.933 tons per year of CO and 5.185 tons per year of ROG.

BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 filed a petition for appeal with the Hearing Board, Case No. 5357-52 on November 4, 2008 on the initial Title V facility permit issued on October 3, 2008 and submitted application no. 496111 on 2-23-2009 for administrative revision to update equipment description and some permit conditions of the initial Title V facility permit issued on October 3, 2008. Application no. 496111 for the administrative permit revision of the initial Title V facility permit was approved on October 29, 2009 and the revised Title V Facility Permit issued to BP Wilmington Calciner.

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BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 submitted application no. 502187 on September 4, 2009 for the proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities to comply with the latest July, 2008 amendment of Rule 1158. The purpose of the project is to control PM emissions better when calcined coke is too hot to be processed by downstream equipment, or when downstream equipment such as a conveyor breaks down. As a result, PM<sub>10</sub> emissions are expected to decrease. The silo no. 5 area is an outdoor hot coke collection and containment area with walls on three sides and a water spray system along the top perimeter of the wall which activates when hot coke enters. The silo no. 5 emergency dump area and the coke cleanup hopper and conveyor are only operated during hot coke excursions and downstream equipment failures. The portable hopper was uncontrolled prior to the July 2008 Rule 1158 amendments. Currently, the hopper is equipped with a water sprinkler system fixed along its rim to control PM and PM<sub>10</sub> emissions. This water spray system is manually activated when the hopper is used.

This project to enclose silo 5 emergency coke dump area and portable coke cleanup hopper also includes the construction of a maintenance chute on the hot coke diversion scraper conveyor 00C13 identified as device D24. Conveyor 00C13 is vented to baghouse C70. This maintenance chute is necessary to allow construction and maintenance activity on the silo 5 area, while still allowing hot coke abatement events to occur safely. As currently built and operated, the drag chain conveyor 00C13 periodically receives hot coke diverted from the cooler. The hot coke is dumped into an outdoor coke collection area known as the silo 5 emergency dump area. Once the silo 5 modifications are complete, the maintenance chute will dump hot coke to a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. All Rule 1158 compliance and notification requirements will apply to the use of the maintenance chute.

To allow safe construction activities at the silo 5 area and future maintenance and inspection, the maintenance chute will be constructed by cutting a square hole in the bottom of the diversion conveyor 00C13 enclosure. The hole and chute will extend across the bottom of the 00C13 drag chain enclosure, prior to the current silo 5 outlet. Attached to the outlet will be vertical two-piece metal chute, assembled and attached via bolted flanges, discharging the hot coke into metal rollaway waste bins provided by waste management company.

The waste bins measure are lined with plastic to prevent leakage and fitted with hinged lids which are closed once full, thus complying with Rule 1158(d)(8) requirements. They are then rolled away from the diversion point and managed and shipped offsite as waste. The hot coke from the roll-off bins cannot be returned to the product stream, as is done during the current configuration.

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Application no. 501257 was submitted on August 11, 2009 for Title V De Minimis Significant Permit Revision and RECLAIM Facility Permit amendment since BP Wilmington Calciner was already issued an initial Title V Facility Permit effective October 3, 2008. This Title V Facility Permit amendment is classified as a Title V de minimis significant permit revision due to the installation of enclosures on silo 5 emergency coke dump area and portable coke cleanup hopper and the installation of a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities since the cumulative emission increases of PM<sub>10</sub> do not exceed the maximum limit of 30 lbs per day. The installation of enclosures on silo 5 emergency coke dump area and portable coke cleanup hopper and conveyor will result in a decrease of PM<sub>10</sub> emissions but the installation of the maintenance chute will increase PM<sub>10</sub> emissions by less than 1 lb per day.

Amended Rule 1158, adopted on July 11, 2008, expanded the definition of a "transfer point" to include anywhere petroleum coke is dropped. Prior to the rule amendment, a "transfer point" was limited to a coke drop from conveyor to conveyor. The coke drops that became new transfer points under amended Rule 1158 are those 1) from the calcined coke diversion conveyor C0013 identified as D24, to the silo 5 area; and from the front end loader into the portable cleanup hopper.

Rule 1158 (d)(10) specifies several options for controlling PM<sub>10</sub> emissions at "transfer points", including a total enclosure and a water spray system. BP controls the PM<sub>10</sub> emissions at the silo 5 transfer point using an automatic water spray system, which pre-existed the July 2008 amendment. After the Rule 1158 amendments, BP voluntarily implemented an additional PM control measure by installing a temporary tarp roof over the silo 5 structure. The transfer point at the portable hopper is equipped with a water sprinkler system affixed to its rim. This water spray system is manually activated when the hopper is used.

BP proposes to modify and enclose the silo 5 area and portable hopper to control better PM emissions when calcined coke is diverted away from the normal process, and to eliminate the need to make AQMD notifications under Rule 1158(k)(7)(A) when hot coke abatement events occur. On the silo 5 structure, BP will 1) replace the steel sheeting against the concrete wall where the hot coke enters; 2) replace the two steel side walls; 3) install a new roof of fiberglass reinforced plastic (FRP) panels; and 4) install a manually operated water spray system where the calcined coke enters and at the double door entrance.

The top of the portable coke cleanup hopper is currently open. BP will replace the three sides and back walls of the hopper with taller walls and install a steel lid on top. This will create a rectangular opening in front of the hopper to accommodate the front end loader. This modification will essentially mitigate PM emissions by decreasing the size of and changing the angle of, the exposed opening. A manually operated water spray system will be

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installed on the rectangular rim of the opening to further mitigate PM emissions during loading operations. The portable coke cleanup hopper and conveyor will be parked and bolted in place during normal operation. However the wheels on the portable system will remain in place for the infrequent occasions when the system must be moved to access other equipment.

The hot coke diversion scraper conveyor 00C13 moves the calcined coke along the bottom of the conveyor enclosure, using evenly spaced metal plates attached to chains. Thus, it is also known as a "drag chain" conveyor. The spaces between the scraper plates allow discharge of the coke by gravity at any point along the enclosure, simply by providing an outlet at the bottom of the enclosure. Currently, this outlet is at a chute near the end of the drag chain and discharges into silo 5.

#### **COMPLIANCE RECORD REVIEW**

A search of the AQMD Compliance Database shows that there was one Notice of Violation No. P43492, issued on June 27, 2006 for failure to submit accurate quarterly certificate of emission reports for the second/third quarters of 2005. Otherwise, there are currently no other outstanding compliance issues concerning the facility.

#### **PROCESS DESCRIPTION**

BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 produces high quality, petroleum coke from green coke by heating it in a 120 MMBtu per hour rotary kiln and combusting the volatile hydrocarbons at its facility located at 1175 Carrack Avenue, Wilmington, CA 90748. Waste heat is recovered as high pressure steam which can be used for electrical power generation.

Green petroleum coke, which is manufactured at the BP Los Angeles Refinery, is fed to the rotary kiln (13.5 feet internal diameter x 270 feet in length). The kiln includes a combination burner capable of firing natural gas and diesel oil which is rated at a maximum capacity of 120 MMBtu per hour. An oxygen injection system is used to increase the efficiency of the kiln system.

Gases from the kiln enter the pyroscrubber afterburner where most entrained particulate combusts or settles out. Residual organics and other combustible gases are oxidized in the chamber, which has a normal residence time of 10 seconds. Gases leave the pyroscrubber at a temperature of no less than 2200<sup>0</sup>F. During normal operation, the hot gases pass through the waste heat recovery boiler and air pollution control systems. The hot by-pass stack located at the exit of the pyroscrubber is for emergency use only to protect downstream equipment in case of a low water level in the steam drum, fan failure, or a boiler feed water pump failure.

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Heat is recovered from the flue gas in a waste heat boiler. The boiler generates approximately 300,000 pounds of high pressure steam per hour, which in turn is used by a turbine generator to generate electricity.

The flue gas leaves the waste heat boiler at a temperature of 450<sup>0</sup>F and enters a spray dryer reactor (30 feet in diameter by 55 feet high). A lime slurry is introduced through an atomizer which generates liquid droplets. These droplets react with the sulfur oxides in the flue gas to form calcium sulfates and sulfites. The gas leaves the spray dryer at about 210<sup>0</sup>F and enters a baghouse. The baghouse consists of twelve modules, each contains 168 teflon-coated fiberglass bags, 8 inches in diameter by 26 feet in length.

The flue gas is drawn through the baghouse by an induced draft fan and discharged to the atmosphere through a stack with an internal diameter of 104 inches and a height from flow disturbances of 85 feet.

The calcined coke leaving the kiln is cooled in a rotary cooler before being conveyed to storage silos. Occasionally, the calcined coke exiting the cooler is either too hot to be processed by downstream equipment, or downstream equipment (typically a conveyor) breaks down. In such cases, the calcined coke must be diverted to a scraper conveyor, conveyor C0013, which dumps to an outdoor coke collection area known as the silo 5 emergency dump area. A front-end loader is used to scoop the diverted coke from the silo 5 area into the portable coke cleanup hopper, which is connected to the calcined coke cleanup conveyor. The cleanup conveyor returns the coke to conveyor C0014 and from there, it is combined with other calcined coke product.

The silo no. 5 area is an outdoor hot coke collection and containment area with walls on three sides. A water spray system along the top perimeter of the wall activates when hot coke enters. The moisture content of calcined coke must not exceed 0.5%. The abated hot coke in the silo no. 5 area has a high moisture content because hot coke entering the area is automatically wetted by the water spray system. This moistened coke is returned to the process in a controlled manner to ensure that the calcined coke product meets the maximum moisture content of 0.5%. The portable hopper is adjacent to the silo no. 5 area. A front end loader is used to transfer loads of abated hot coke from the silo no. 5 area to the portable hopper, which returns the abated hot coke to the process. The existing silo no. 5 area is equipped with a water spray system, which pre-existed the July 2008 rule amendment and meets the control requirements of the amended Rule 1158. Rule 1158(d)(10) specifies several options for controlling PM emissions at "transfer points," including total enclosure or a water spray system. BP will control PM emissions at the transfer point from the maintenance chute into the roll-off bins using a manually-actuated water spray system. Use of the maintenance chute will trigger Rule 1158(k)(7)(A) notification requirements for each hot coke incident, and Rule 1158 compliance controls, such as water sprays, will be required at all times, during use.

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The portable hopper is equipped with a water sprinkler/misting system fixed along its rim to control PM and PM<sub>10</sub> emissions. This water spray system is manually activated when the hopper is used.

**EMISSIONS CALCULATION**

1. Application No. 502187 - Modification of Storage Silo No. 5, Emergency Calcined Coke Dump Area and Portable Calcined Coke Cleanup Hopper by Installation of Enclosures and Maintenance Chute

Application no. 502187 was submitted on 9-04-2009 to enclose storage silo no. 5, the emergency calcined coke dump area and the portable calcined coke cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities to comply with the latest July, 2008 amendment of Rule 1158. Storage silo 5, the emergency calcined coke dump area and the portable calcined coke cleanup hopper belong to System 4 for Product Handling, Storage and Loading System for Process 1 for Calcined Petroleum Coke Production of the Facility Permit.

Emissions of PM and PM<sub>10</sub> from the operation of storage silo no. 5, the portable calcined coke cleanup hopper and the maintenance chute are controlled by water spray systems. Therefore, no emission increase of PM and PM<sub>10</sub> results from this project to enclose storage silo no. 5 of existing portable calcined coke cleanup hopper.

Condition C1.8 for the 120 MMBtu per hour rotary kiln specifies that the operator shall limit the green coke processed to no more than 2400 tons in any one day. The maximum production rate of calcined coke corresponding to the maximum feed rate of green coke is approximately 1,680 tons/day. This maximum production rate is based on historic process data, which consistently shows a 70% conversion rate of green coke into calcined coke. Silo 5 has a volume of 4,320 cubic feet and a capacity of 125 tons.

Maximum amount of hot coke diverted to silo no. 5 = 11.7 tons per event  
 = 11.7 tons per hour = 11.7 tons per day = 23.3 tons per month = 280 tons per year.

Controlled PM<sub>10</sub> emission factor for coke transfer emissions estimated by AP-42 13.2.4.3 Equation 1 = EF in lb PM<sub>10</sub> per ton =  $k (0.0032) (U/5)^{1.3} / (M/2)^{1.4} (100 - \text{Eff})/100$  where

k = particle size multiplier, dimensionless, = 0.35

U = mean wind speed, mph = 6.4

M = material moisture content, % = 9.3

Eff = Control efficiency, % = 80 from Rule 1158 Staff Report, 3/12/99, Table 4-2 – Water Spraying during loading/unloading

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$$\text{EF in lb PM}_{10} \text{ per ton} = 0.35 (0.0032) (6.4/5)^{1.3} / (9.3/2)^{1.4} (100 - 80)/100 = 0.0000359$$

Controlled emissions of  $\text{PM}_{10}$  from the operation of maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities = (0.0000359 lb per ton) (11.7 tons per hour)  
= 0.00042 lb per hour = 0.00042 lb per day = 0.01005 lb per year

Uncontrolled emissions of  $\text{PM}_{10}$  from the operation of maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities = 0.00042 lb per hour / 0.20 = 0.0021 lb per hour  
= 0.0021 lb per day = 0.05026 lb per year

Emissions of  $\text{PM}_{10}$  from the operation of maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities are controlled by water spray systems resulting in net  $\text{PM}_{10}$  emissions of less than 1 lb per day .

$\text{PM}_{10}$  control efficiency of the water spray system = 80%

Offsets are not required for the emission increase of 0.00042 lb per day of  $\text{PM}_{10}$  from the operation of maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities.

Process weight for the maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities  
= 11.7 tons per hour = 23,400 lbs per hour

Maximum allowable emissions of  $\text{PM}_{10}$  corresponding to a process weight of 23,400 lbs per hour according to Rule 405 = 12.5 lbs per hour

Controlled maximum emissions of 0.00042 lb per hour < Maximum allowable  $\text{PM}_{10}$  emissions of 12.5 lb per hour specified by Rule 405.

Therefore, operation of the maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities when equipped with water spray is expected to comply with Rule 405.

Controlled emissions of  $\text{PM}_{10}$  from the enclosure of storage silo no. 5 and of existing portable calcined coke cleanup hopper = (0.0000359 lb per ton) (11.7 tons per hour)  
= 0.00042 lb per hour = 0.00042 lb per day = 0.01005 lb per year

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Uncontrolled emissions of  $PM_{10}$  from the enclosure of storage silo no. 5 and of existing portable calcined coke cleanup hopper =  $0.00042 \text{ lb per hour} / 0.20 = 0.0021 \text{ lb per hour}$   
=  $0.0021 \text{ lb per day} = 0.05026 \text{ lb per year}$

Maximum amount of hot coke diverted to silo no. 5 = 11.7 tons per event  
= 11.7 tons per hour = 11.7 tons per day = 23.3 tons per month = 280 tons per year.

Controlled  $PM_{10}$  emission factor for coke transfer emissions estimated by AP-42 13.2.4.3  
Equation 1 =  $EF \text{ in lb } PM_{10} \text{ per ton} = k (0.0032) (U/5)^{1.3} / (M/2)^{1.4} (100 - Eff)/100$  where

$k$  = particle size multiplier, dimensionless, = 0.35

$U$  = mean wind speed, mph = 6.4

$M$  = material moisture content, % = 9.3

$Eff$  = Control efficiency, % = 80 from Rule 1158 Staff Report, 3/12/99, Table 4-2 – Water Spraying during loading/unloading

$EF \text{ in lb } PM_{10} \text{ per ton} = 0.35 (0.0032) (6.4/5)^{1.3} / (9.3/2)^{1.4} (100 - 80)/100 = 0.0000359$

Controlled emissions of  $PM_{10}$  from the operation of storage silo no. 5 without enclosure but with water spray system

=  $(0.0000359 \text{ lb per ton}) (11.7 \text{ tons per hour})$

=  $0.00042 \text{ lb per hour} = 0.00042 \text{ lb per day} = 0.01005 \text{ lb per year}$

$PM_{10}$  control efficiency of the water spray system = 80%

Uncontrolled emissions of  $PM_{10}$  from the operation of storage silo no. 5 with water spray system =  $0.00042 \text{ lb per hour} / 0.20 = 0.0021 \text{ lb per hour} = 0.0021 \text{ lb per day}$   
=  $0.05026 \text{ lb per year}$

Controlled emissions of  $PM_{10}$  from the operation of storage silo no. 5 with enclosure

=  $(0.0000359 \text{ lb per ton}) (11.7 \text{ tons per hour})$

=  $0.00042 \text{ lb per hour} = 0.00042 \text{ lb per day} = 0.01005 \text{ lb per year}$

Uncontrolled emissions of  $PM_{10}$  from the operation of storage silo no. 5 with enclosure

=  $0.00042 \text{ lb per hour} / 0.20 = 0.0021 \text{ lb per hour}$

=  $0.0021 \text{ lb per day} = 0.05026 \text{ lb per year}$

Offsets are not required for the emission decrease of  $0.00042 \text{ lb per day}$  of  $PM_{10}$  from the enclosure of storage silo 5.

Process weight for enclosure of storage silo 5 = 11.7 tons per hour = 23,400 lbs per hour

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Maximum allowable emissions of PM<sub>10</sub> corresponding to a process weight of 23,400 lbs per hour according to Rule 405 = 12.5 lbs per hour

Controlled maximum emissions of 0.00042 lb per hour < Maximum allowable PM<sub>10</sub> emissions of 12.5 lb per hour specified by Rule 405.

Therefore, operation of enclosure of storage silo 5 when equipped with water spray is expected to comply with Rule 405.

2. Application No. 501257 - Title V/PECLAIM Facility Permit Revision

Application no. 501257 was submitted on August 11, 2009 for De Minimis Significant Title V Revision and RECLAIM Facility Permit amendment due to the installation of enclosures of silo no. 5 and portable hopper to control PM<sub>10</sub> emissions when calcined coke is diverted away from the normal process and the installation of maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. BP Wilmington Calciner was already issued an initial Title V Facility Permit effective October 3, 2008 but a revised Title V permit was issued on October 29, 2009 after the facility filed a petition for appeal with the Hearing Board (Case No. 5357-52) on November 5, 2008 and application no. 496111 for an administrative Title V Permit revision was submitted on February 23, 2009. The proposed permit will be submitted to EPA for a 45-day review period upon completion of AQMD's evaluation before a final permit is issued. EPA will comment and submit recommendations to AQMD during the 45-day period.

**FEE SUMMARY:**

The fees paid for these applications are shown in Table 1 below:

Application No.	Application Type	Facility ID	Fee Submitted	Required Permit Processing Fee
502187	Modification of Silo 5 Emergency Dump Area Equipped with Automatic Water Spray System by Installing Enclosures and Maintenance Chute including Expedited Permit Processing Fee	131249	\$4,867.37	\$4,867.37 (including XPP fee as agreed by the applicant after initial submittal of application)

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501257	Title/ RECLAIM Facility Permit Revision	131249	\$1,687.63	\$ 1,687.63
Total			\$6,546.00	\$6,546.00

BP West Coast Products LLC, BP Wilmington Calciner. with Facility ID 131249 requested expedited permit processing for the modification of storage silo no. 5 by installing enclosure and maintenance chute but this application was processed with no overtime work. Since BP Wilmington Calciner with Facility ID 131249 already paid for additional expedited permit processing fee of \$1,622.46 on September 29, 2009, the facility is entitled to a refund of \$1,622.46.

**RULE EVALUATION:**

***PART I SCAQMD REGULATIONS***

**Rule 212**      Standards for Approving Permits and Issuing Public Notices  
*11/14/97*      Rule 212 requires public notice for the construction of a new source at a facility if 1) it is located within 1000 feet of a school; 2) any emission increase exceeds the daily maximums as specified in subsection (g) of this rule; or 3) any emission increase in toxic air contaminants for which a person may be exposed to a Maximum Individual Cancer Risk (MICR) of 1 in a million or greater . A public notice is not required here because the source is not located within 1000 feet of a school. Furthermore, no emission increase is expected since the proposed project simply involves enclosing the silo 5 emergency dump area and the portable cleanup hopper and the installation of a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. As a result, PM and PM<sub>10</sub> emissions are expected to decrease.

**Rule 401**      Visible Emissions  
*11/9/2001*      Visible emissions are not expected as a result of this project to enclose the silo 5 emergency dump area and the portable cleanup hopper and the installation of a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. Emissions of PM<sub>10</sub> from the operation of the maintenance chute will be controlled by a water spray system. The proposed project is an air pollution control project that will improve the control of visible emissions.

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**Rule 402**  
05/07/76

Nuisance

This rule prohibits the discharge of air contaminants that cause injury, detriment, nuisance, or annoyance to a considerable number of persons; endanger the comfort, health or safety of any person; or cause injury to property. Public nuisances are not expected as a result of this project to enclose the silo 5 emergency dump area and the portable cleanup hopper and the installation of a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. Emissions of PM<sub>10</sub> from the operation of the maintenance chute will be controlled by a water spray system. The proposed project is an air pollution control project that will improve the control of potential nuisance emissions.

**Rule 403**  
06/03/05

Fugitive Dust

Fugitive dust is not expected as a result of this project. The proposed project is an air pollution control project that will improve the control of potential fugitive dust emissions.

**Rule 405**  
02/07/86

Solid Particulate Matter

Operation of the silo 5 emergency dump area, the portable cleanup hopper and the maintenance chute is subject to Rule 405 but emissions of PM<sub>10</sub> are controlled by water spray systems and enclosure. After implementation of the proposed project, operation of the silo 5 emergency dump area, the portable cleanup hopper and the maintenance chute will continue to comply with the provisions of this rule.

**Rule 1158**  
07/11/2008

Storage, Handling, and Transport of Coke, Coal and Sulfur

Operation of the petroleum coke calcining facility is subject to, and complies with Rule 1158. Rule 1158(d)(10) specifies several options for controlling PM emissions at "transfer points" including a total enclosure and a water spray system. As the coke drops (1) from the conversion conveyor conveyor 13 (D24) to the silo 5 area, and 2) from the front end loader into the portable cleanup hopper, BP currently complies with provision (d)(10) using a water spray system. After implementation of the proposed project, BP will comply with provision (d)(10) using a total enclosure as well as water spray systems.

**Reg. XIII**  
12/06/02

New Source Review for VOC, CO, PM<sub>10</sub>, and NH<sub>3</sub> Emissions

This proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a new location for the hot coke dumps, at an earlier point along conveyor 13, first to allow safe construction activities for the silo 5 area will not cause a significant increase of PM<sub>10</sub> emissions.

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Therefore, BACT and emission offset evaluations are not required under New Source Review. Because no significant emission increase of PM and PM<sub>10</sub> is expected, New Source Review (NSR) does not apply to this proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute.

**Reg. XIV**  
06/05/09

Toxics

Rule 1401 New Source Review of Toxic Air Contaminants

There will be no increase in toxic air contaminants from this proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. These modifications are expected to result in decrease of PM<sub>10</sub> emissions and toxic air contaminants. Storage silo no .5 is already equipped with an automatic water spray system and the portable receiving hopper/transfer station is now equipped with a manually activated water sprinkler system along its rim after the July 2008 amendments of Rule 2008 to further control PM and PM<sub>10</sub> emissions. The maintenance chute is also equipped with manually activated water sprinkler system. Because there is no increase in emission of toxic contaminants due to these modifications, a health risk assessment is not required. Compliance with this rule is expected because emission reduction of toxic air contaminants does not cause an increase in health risks after these modifications.

**Reg. XX**  
05/06/05

Regional Clean Air Incentives Market (RECLAIM)

BP West Coast Products LLC, BP Carson Refinery with Facility ID 131003 is both NOx and SOx Cycle II RECLAIM facility. It is therefore subject to Reg XX. However, RECLAIM does not apply to this proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities since there are no emissions of NOx and SOx from the operation of these enclosures and the maintenance chute.

• **Reg. XXX**  
11/14/97

Title V Permits

BP West Coast Products LLC, BP Wilmington, with Facility ID 131249 was issued an initial Title V facility permit on October 3, 2008 and was issued a revised Title V facility permit on October 29, 2009 after application no. 496111 was submitted on 2-13-2009 for administrative revision to update equipment description and some permit conditions of the initial Title V facility permit issued on October 3, 2008. Application no. 501257 was submitted for a Title V De Minimis Significant Permit Revision and

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RECLAIM Facility Permit Amendment to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities. The proposed permit will be submitted to EPA for a 45-day review period upon completion of AQMD's evaluation before a final permit is issued. EPA will comment and submit recommendations to AQMD during the 45-day period.

**PART II STATE REGULATIONS**

**CEQA California Environmental Quality Act**

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects be considered. Because this proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities is an air pollution control project that results in a decrease of PM<sub>10</sub> emissions, no further CEQA review is required.

**PART III FEDERAL REGULATIONS**

**CONCLUSION:**

Based on the evaluation above, this proposed project to enclose the silo 5 emergency dump area and the portable cleanup hopper and to install a maintenance chute where hot coke can be dumped at a location upstream of the silo 5 structure only during silo 5 maintenance and inspection activities results in a decrease of PM<sub>10</sub> emissions. I recommend a Permit to Construct to install the enclosures on silo no. 5 emergency dump area and the portable cleanup hopper and to install the maintenance chute with the conditions listed in the Conditions Section of this evaluation since this project is expected to comply with AQMD, State, and Federal Rules and Regulations. Emissions of PM and PM<sub>10</sub> from the enclosures of silo no. 5 and the portable cleanup hopper are controlled by enclosures and water spray systems while emissions of PM and PM<sub>10</sub> from the operation of the maintenance chute are controlled by a water spray system.