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<b>ENGINEERING AND COMPLIANCE DIVISION</b> <b>Refinery &amp; Waste Management Permitting</b>	A/N 544780-781	Date 3/15/13
<b>BP WEST COAST PRODUCTS, LLC</b> <b>CARSON PRODUCTS TERMINAL</b>	Processed by TL03	Checked by

EVALUATION FOR MODIFICATION (PC) TO AN  
AIR POLLUTION CONTROL SYSTEM

**COMPANY NAME AND LOCATION ADDRESS**

BP West Coast Products, LLC (Carson Products Terminal)  
2149 E. Sepulveda Boulevard  
Carson, CA 90745

Facility ID# 800395

**APPLICATIONS & DESCRIPTION**

A/N 544780

Air Pollution Control System (Refrigeration/Oxidation) Serving Bulk Loading Racks →

See draft permit for detailed equipment description.

A/N 544781

Title V Revision Application

**BACKGROUND**

BP West Coast Products, LLC's Carson Products Terminal (BPCPT) is a petroleum product storage and distribution facility located in Carson, CA. The CPT is a Title V facility which operates under AQMD permits eight petroleum storage tanks, two tank truck loading racks, one tank truck unloading rack, and an air pollution control system. The air pollution control system controls VOC vapors that are displaced during the tank truck loading operations at the two permitted loading racks.

BPCPT has submitted this application (A/N 544780) for a modification to the existing permit (A/N 419716; P/O R-F65483) for the air pollution control (APC) system. The modification involves the removal of a portion of the APC system, namely the vapor recovery (refrigeration condenser) equipment that recovers some of the gasoline for re-use. There are two primary reasons BPCPT wishes to remove the refrigeration condenser. First, it is energy intensive (electricity) and expensive to operate. Secondly, it is very maintenance intensive, causing



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operational burdens as well as additional operational costs. Replacement parts are also becoming difficult to obtain.

The remaining components of the APC system (vapor bladder & flare) will remain intact. In addition to changing the equipment description as a result of the proposed modification, changes to the conditions of the permit will also be required so that the conditions are consistent with the modified equipment configuration. Other conditions will be updated as necessary for clarity and/or to reflect current practices.

No changes in emissions are anticipated as a result of this modification, and the project will be treated as a minor permit revision (Title V revision A/N 544781) under Regulation XXX.

### **NOV/NC HISTORY**

There have been no Notices of Violation (NOVs) or Notices to Comply (NCs) issued to BP's Carson Products Terminal in the last two years. The Terminal was last inspected on April 19<sup>th</sup>, 2012 by AQMD and found to be in full compliance.

### **PROCESS DESCRIPTION**

#### **Current Configuration & Operation (Pre-Mod)**

The current air pollution control system consists of three stages: collection, recovery, and processing. The collection phase utilizes a vapor holder (bladder) which receives displaced gasoline vapors from tank truck loading operations. Vapors from in the bladder are in turn sent to the recovery phase consisting of an Edwards refrigeration condenser. The condenser recovers (liquefies) vapor product and the liquid product is returned to petroleum storage tanks. Vapors not liquefied in the recovery phase are sent to the processing phase which consists of a Zink flare(thermal oxidizer) where the petroleum vapors are thermally combusted and destroyed.

The bladder features several process control dynamics based on vapor level. At a "high" vapor level in the bladder, the thermal oxidizer (flare) fires and the blower is activated, and at a "low" level, the thermal oxidizer and blower are shutdown. There is also a "high-high" vapor level where tank truck loading operation ceases.



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### Proposed Configuration & Operation (Post-Mod)

BPCPT proposes to permanently bypass and ultimately remove the vapor recovery phase of the system. This phase of the system are described in Items B1 and B2 of the current permit (P/O R-F65483; copy included in this file). This change results in vapors from the bladder being sent directly to the Zink flare (thermal oxidizer) without any product recovery in between.

The bladder tank will continue to have level sensors for process control just as in the current (pre-modification) configuration.

### EVALUATION

The removal of the vapor recovery (refrigeration condenser) portion of the air pollution control system will result in loss of recovered product, however, it is not expected to compromise the overall effectiveness of the system from an “emissions to atmosphere” point of view. In removing the refrigeration condenser, it may be erroneous to assume that it results in an “instantaneous” increase in vapor load to the flare. This is because the system’s vapor collection system includes a vapor holder (bladder), and this, coupled with the same blower configuration and capacity (500 CFM), allows the vapor flow to be properly controlled and delivered to the flare without overloading it and compromising its current required performance. Additionally, AQMD has had experience with comparable systems with like modifications that did not compromise overall system performance. At present, BPCPT is required to achieve an emission rate of 0.08 pounds of VOC per 1000 gallons of product loaded (Rule 462 limit) at the loading rack and past source testing shows compliance with this limitation. In addition, in 1994, the system was CARB certified to meet this limit (it was determined to be .007 pounds VOC per 1000 gallons) at a maximum loading capacity of 3,200,000 gallons per day. The current permit is limited to a loading rate of only 2,000,000 million gallons per day and 700,000,000 gallons per year.

The CARB certification mentioned above was done while the system was operating in “polish” mode, that is, with the Edwards refrigeration condenser in full operation. The air pollution control system, though capable in operating in other modes, was never tested in such alternate modes. Thus, even though the system is expected to comply with the current emission standard with the vapor recovery portion (refrigeration condenser) of the system removed, this must be demonstrated per Rule 462 requirements via Rule 462 and CARB certification source testing and to verify final allowable system loading (rack product throughputs). In the interim, the current throughput limits and allowable emission limit will remain in place, and, after completion source testing/CARB certification, the final Permit to Operate can be finalized with regards to emission



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and throughput limits such that compliance with the requirements of Rule 462, CARB, and New Source Review can be assured.

## **EMISSION CALCULATIONS**

### **Process VOC Emissions**

The modified air pollution controlled system is expected to meet the current required limit of .08 pounds VOC per 1000 gallons of product loaded. BPCPT is also expecting the CARB certification throughput to exceed current permitted throughputs, but even so, BPCPT is not expecting to request throughput increases at this time. Therefore, no VOC emission increases from tank truck loading operations are expected as a result of this modification.

It should be noted that the removal of the vapor recovery (refrigeration condenser) portion of the system results in the removal of fugitive components and a corresponding decrease in emissions (see page 7-3 of BPCPT's application submittal). However, in the long permitting history of the air pollution control system, emissions from the fugitive components of the air pollution control system were never calculated and included in the NSR data base. Due to the complex nature of past modifications and changes in NSR data base entry methodology, it is prudent not to enter NSR emission numbers for the air pollution control system but rather qualitatively recognize that this modification results in a net decrease in the potential to emit for process VOC emissions.

### **Combustion Emissions**

The removal of the Edwards refrigeration unit may at times increase the quantity of process vapors to the Zink flare (thermal oxidizer). However, from an NSR potential to emit perspective, the capacity of the oxidizer remains unchanged based on the following system design, permit features, and calculation methodologies. First, the quantity of vapors the flare can receive (pre and post mod) is limited at 500 cfm (the blower capacity). Secondly, the existing Condition No. 4 for the APC system requires that all of the vapor in the bladder be vented to the vapor disposal system, which is assumed to be the flare. Thirdly, there is no performance standard/efficiency for the refrigeration system, indicating that the flow of vapors to the flare can range in value depending on how well the refrigeration unit is operating or how much vapor it can effectively recover at any given time (at one time in the earliest version of the permit, circa 1992, operational temperatures of the condenser were on the permit but have long since been removed). Finally, in the 1997 application analysis, worst case assumptions were used to assess combustion emissions, i.e., the maximum burner rating was used. Therefore, based on all of these items, it is concluded the maximum quantity of combustion contaminants (NO<sub>x</sub>, CO, SO<sub>x</sub>, and PM<sub>10</sub>) on an potential to emit basis remains unchanged as a result of this modification.



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## **SUMMARY OF PERMIT CHANGES**

The proposed changes to the permit that result from this modification are summarized below.

### **Equipment Description**

- Propose bypassing/removal of Items B1 & B2 of current permit (vapor recovery/refrigeration portion of air pollution control system).
- Re-name vapor processing system to vapor disposal system & call out the combustor as a thermal oxidizer.

### **Permit Conditions**

- Update Condition No. 4 to make terminology consistent with equipment description;
- Require CARB notification & CARB recertification of air pollution control system;
- Require source testing to demonstrate compliance with Rule 462 emission limit; and
- Change periodic source testing to be performed once every 5 years (60 calendar months) to be more consistent with Title V periodic monitoring guidelines.

## **RULES EVALUATION**



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#### Rule 212

There is no increase in emissions or MICR, and there is no school within 1000 feet; no public notice is required.

#### Rule 401

Visible emissions are not expected under proper operation of this equipment.

#### Rule 402

No nuisance complaints are expected with proper operation of the equipment.

#### Rule 1147

The thermal oxidizer (flare) utilizes natural gas as fuel only to bring unit up to operating temperature and is exempt per Rule 1147(g)(3)(B)

#### Rule 1173

Though bulk terminals are exempt from this rule, facility is required to comply with fugitive component monitoring as required by this Rule pursuant to a 1991 settlement agreement, as conditioned and rule tagged on the permit.

#### Reg. XIII

There are no emission increases for any criteria pollutants (in fact, a suspected decrease in ROG<sub>s</sub> is expected for reduction in associated fugitive components) as a result of this proposed modification, there BACT, Offsets, or Modeling is not required.

The facility is currently in compliance with all applicable rules and regulations of the District and thus meets the requirements of 1303(b)(4).

#### Rule 1401

There are no increases in toxic emissions as a result of this change of condition, thus no increase in MICR or HI are expected and this rule is not applicable.

#### Regulation XXX



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The Title V permit has been issued for this facility. This modification results in an emissions decrease and thus constitutes a minor permit revision (TV Revision A/N 544781) and will be proposed to EPA for 45-day review prior to being incorporated into Section H of the Title V Permit.

#### CEQA

The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document.

#### 40CFR 63 Subpart R (Gasoline Distribution MACT)

This facility is not a major source of HAPs and is thus only subject to the minor source requirements (recordkeeping) of this Subpart as stated in the facility-wide condition in Section D with supporting conditions in Section J of Title V permit. Continued compliance is expected.

#### 40CFR 63 Subpart BBBB (Gasoline Distribution GACT)

As a minor source under Subpart R, this facility is required to comply with this Subpart as required by a facility-wide condition in Section D with supporting conditions in Section J of Title V permit. Continued compliance is expected.

### **RECOMMENDATIONS**

Propose the draft thermal oxidizer permit (with modification and associated change of conditions) to EPA for 45-day review (expedited) as a minor revision (see sample permit).