Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

Phillips 66 – San Francisco Refinery
Facility #A0016

Facility Address:
1380 San Pablo Avenue
Rodeo, CA 94572

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November 2017

Application Engineer: M.K. Carol Lee
Site Engineer: M.K. Carol Lee

Applications: 27798, 21850, 22672, 26487, 27532, 27560, 28688

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the "potential to emit," as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A0016.

This facility received its initial Title V permit on December 1, 2003. The permit was reopened and re-issued on December 16, 2004, April 12, 2005, and November 20, 2006. The permit was renewed on September 1, 2011. Minor revisions were issued on April 12, 2005, January 5, 2006, March 2, 2006, October 15, 2007, May 23, 2011, March 4, 2013, October 17, 2013, and August 1, 2014. Significant revisions were issued on January 5, 2006, January 18, 2007, October 31, 2008, and June 18, 2009. Section X of the permit, Revision History, has a list of these revisions in chronological order.

This application (#27798) is for the second renewal of the Title V permit. The application was submitted on February 26, 2016. Although the current permit expired on August 30, 2016, it continues in force until the District takes final action on the permit renewal. The standard sections of the permit have been upgraded to include new standard language used in all Title V permits. Also, various other corrections have been made to the permit. The draft Title V permit shows all proposed changes to the permit in ~~strikeout~~/underline format. This statement of basis discusses all substantive changes made to the Title V permit.

The facility has submitted the following applications that will be processed with this Title V renewal:

NSR Application	Description	Title V Application	Revision	NSR Issuance Date
21848	NOx Box Revisions	21850	Minor	Approval 9/3/14
22671	Hot Standby Mode for S45 and S461	22672	Significant	Waived Authority to Construct 4/13/11
26486	S442 Tank 112 Change of Conditions	26487	Minor	Permit to Operate 1/30/15
27061	Thermal Oxidizer for S-324 API Oil Water Separator	27532	Minor	Authority to Construct 9/10/15; Administrative Amendment on 9/17/15; Renewal of A/C submitted.
27557	SRU Temperature Limit, Change of Conditions	27560	Minor	Waived Authority to Construct 3/10/16
28110	NOx Box Revisions S3, S9	None	Minor	Approved 8/9/16
28687	Fire Training Fluid Storage Tank	28688	Minor	Authority to Construct 7/25/2017

Notes: NSR = New Source Review

Application 21848 requested revisions to the NOx boxes for 15 sources under condition 21235. Phillips 66 requested revisions to 23 of 27 NOx boxes.

Application 22671 requested the ability to operate two existing heaters S45 Heavy Gas Oil Feed Heater and S461 Hydrotreater Charge Heater in a hot standby mode consisting of a reduced firing rate where the temperature is too low to operate the SCR and no feedstock is sent to the process units.

Application 26486 requested a change of conditions for S442 External Floating Roof Tank (Tank 112). The tank previously only stored gas oil. The facility requested the ability to store crude oil in S442.

Application 27061 applied for an Authority to Construct to install a new permanent thermal oxidizer on S-324 API Oil Water Separator. An Authority to Construct was issued on

9/10/2015 and an administrative amendment on 9/17/2015. The Refinery was unable to install the thermal oxidizer within the two-year period of their Authority to Construct and a request for renewal of their Authority to Construct was submitted on August 1, 2017. The thermal oxidizer is expected to be installed by the end of 2017.

Application 27557 requested a change to lower the minimum S-1010 Sulfur Recovery Unit tail gas incinerator temperature (A-424) from 1496 degrees F to 1409 degrees F. The facility provided source test data at the new temperature that ensures there is no increase in emissions above existing permit limits.

Application 28110 requested revisions for 2 of the 15 sources with NOx boxes under condition 21235. Phillips 66 requested revisions to 4 of 27 NOx boxes.

Application 28687 was for a permit application for a new Fire Training Liquid Storage Tank. An Authority to Construct was issued on 7/25/2017. The storage tank is expected to be installed by the end of 2017.

The engineering evaluations for all the NSR applications to be included with the Title V permit renewal are attached to this statement of basis. Each engineering evaluation shows the effect on emissions for each permit application.

The facility has submitted following applications that will not be processed with the Title V permit renewal because they have not yet been issued or commenced construction:

NSR Application	**Description**	**Title V Application**	**Revision**	**NSR Issuance Date**
23987	Steam Power Plant, Request to Increase in SO2 Permit Limits	23988	TBD	TBD
25199	Propane Recovery Project	25200	Minor	Authority to Construct 3/18/15
25608	Marine Terminal, Request to Increase Crude brought by ship	28082	TBD	TBD
27954	S307 U240 Unicracking Unit and S434 U246 High Pressure Reactor Train, Request to Increase Throughput	27955	TBD	TBD
27870	Temporary Thermal Oxidizer for S-324 Oil Water Separator	None	Not Applicable	Authority to Construct 4/12/16

Notes: NSR = New Source Review

Application 23987 is a request to increase the SO2 permit limits at the Steam Power Plant. This application has not been processed. The increase in SO2 hourly emission rates requested by Phillips 66 may make the gas turbines and duct burners subject to Standards of

Performance for Stationary Combustion Turbines. An applicability determination request has been submitted by Phillips 66 to the USEPA to determine if the gas turbines and duct burners would become subject to Subpart KKKK if the short term SO2 permit limits were increased.

Application 25199 is for an Authority to Construct two new sources that would allow the Phillips 66 Refinery to start to recover propane from the existing fuel gas system and increase the amount of butane recovered from the fuel gas system. The project planned to install S-520 Refinery Fuel Gas Hydrotreatment Unit (27.25 MMscf/day) and S-521 LPG Recovery Unit (14,500 bbl/day). The project also altered numerous other Refinery sources. The project received an Authority to Construct on March 18, 2015, but has not yet commenced construction. The changes to the Title V permit associated with this NSR application will be processed when the project is closer to being constructed and actually starting to operate.

Application 25608 is a request to increase the marine terminal (S425, S426) permit limit for crude oil from 51,182 barrels per day to 101,182 barrels per day. The application also requests that the corresponding ship and tanker permit limits be increased from 59 to 114 tankers or ships per 12-month rolling average basis. The refinery processes crude from central California received by pipeline and from a variety of domestic and foreign crude sources delivered by ship at the marine terminal. The application does not request any throughput increases or modifications to downstream process units. However, some tankage may be affected by the increase in crude oil across the marine terminal. Phillips 66 has stated that the permit changes will not change or affect the types of crude oil that the refinery can process currently.

Application 27954 is a request to increase the throughput through S307 U240 Unicracking Unit and S434 Heavy Gas Oil Hydrocracker by 4,000 barrels per day above the existing 65,000 barrels per day permit limit. Three downstream tanks will also require throughput increases.

Application 27870 is for an Authority to Construct a thermal oxidizer to abate emissions from S-324 API Oil Water Separator. This unit is a rented unit and the permanent thermal oxidizer permitted under application 27061 should be online in the September 2017. The oxidizer permitted under application 27870 will no longer need to operate.

B. Facility Description

This facility is a typical full-scale oil refinery, which processes crude oils and other feedstocks into refined petroleum products, primarily fuel products such as gasoline and fuel oils. Feedstocks are received via marine tanker vessels and pipeline, and petroleum products are shipped from the refinery the same way. Refining is a process which takes crude oil and distills it under atmospheric pressure into its primary components: gases (light ends), gasolines, kerosene and diesels (middle distillates), heavy distillates, and heavy bottoms. The heavy bottoms go on to a vacuum distillation unit to be distilled again, this time under a vacuum, to salvage any light ends or middle distillates that did not get separated under atmospheric pressure; the heaviest bottoms are eventually processed into coke. Other

product components are processed by downstream units to be cleaned (hydrotreated), "cracked" into smaller molecules (catalytic or hydrocracking), reformed (catalytic reforming), or alkylated (alkylation) to form gasolines and high-octane blending components, or to have sulfur or other impurities removed to make diesel and other fuel oils. Refining byproducts include:

- Wastewater, which is treated and discharged to the San Francisco Bay
- Waste gases, which are collected and burned as fuel for refinery heaters, boilers and turbines
- Sulfur, a salable by-product which is removed from feedstocks and intermediate products in the form of hydrogen sulfide and other sulfur-containing gases, and converted to a pure, solid form which is sold
- Coke, a salable by-product that is the leftover solid material remaining after crude oil has been completely refined

Auxiliary facility operations include:

- a three-turbine power plant that burns refinery waste gases and natural gas, and which produces electrical power for the refinery and steam for various processing operations
- two hydrogen plants which produce pure hydrogen for use in various processing operations

Air emissions include both organic and inorganic gases that are emitted from storage tanks and from leakage from pipes and process vessels, as well as combustion emissions from refinery heaters and other combustion devices, and particulate emissions from operations such as coke and sulfur handling.

A more detailed description of petroleum refinery processes and the resulting air emissions may be found in Chapter 5 of EPA's publication AP-42, Compilation of Air Pollutant Emission Factors. This document may be found at:

http://www.epa.gov/ttn/chief/ap42/ch05/

The principal sources of air emissions from refineries are:

- Combustion units (furnaces, boilers, and cogeneration facilities)
- Storage tanks
- Fugitive emissions from pipe fittings, pumps, and compressors
- Sulfur plants
- Wastewater treatment facilities

Combustion unit emissions are generally controlled by utilizing burner technology, steam injection, or selective catalytic reduction. Storage tank emissions are controlled by utilizing add on control and or fitting loss control. Fugitive emissions have been controlled by utilizing inspection and maintenance frequencies. Sulfur plants are equipped with tail gas units to reduce emissions. Wastewater treatment facilities are controlled by covering units, gasketing covers, and add on controls such as, carbon canisters.

Phillips 66 also owns the Phillips 66 Carbon Plant (Plant # A0022). Because the refinery and the carbon plant are so close together, have a common owner, and are in the same industrial grouping, they are considered one facility. Because District review of the original permit applications was close to completion at the time of this determination, the carbon plant has been issued a separate Title V permit, which is authorized by Title V regulations.

The District has determined that no refinery source is subject to additional applicable requirements due to the refinery's association with the carbon plant.

BAAQMD Regulation 2-6-412.2 requires a description of the emissions changes in the public notice. The emissions change will be estimated based on the emissions in the District's database for 2003, when the initial permit was issued, the emissions summary submitted with the renewal application 18231, and the emissions summary submitted with the latest renewal application 27798. Note that because the 2008 emissions are calculated based on throughputs, they are subject to error. The emissions change statement is an estimate only.

The calculated emissions for 2003 from the District database were:

Particulate	70 tons per year
Organics	801 tons per year
Oxides of Nitrogen	1725 tons per year
Sulfur Dioxide	760 tons per year
Carbon Monoxide	330 tons per year
Ammonia	56 tons per year
Benzene	3.5 tons per year
Formaldehyde	16.6 tons per year
Methanol	87.6 tons per year
MTBE	6.2 tons per year
Phenol	2.6 tons per year
Toluene	2.4 tons per year
Xylene	7.8 tons per year

The reported emissions in 2008 for the Title V renewal were:

Particulate	119 tons per year
Organics	329 tons per year
Oxides of Nitrogen	347 tons per year
Sulfur Dioxide	484 tons per year
Carbon Monoxide	347 tons per year
Ammonia	63 tons per year
Benzene	2.6 tons per year
Formaldehyde	19.2 tons per year
Methanol	2.9 tons per year
MTBE	0 tons per year
Phenol	0 tons per year

Toluene	1 tons per year
Xylene	3.8 tons per year

The reported emissions in 2016 for the Title V renewal were:

Particulate	83 tons per year
Organics	314 tons per year
Oxides of Nitrogen	229 tons per year
Sulfur Dioxide	361 tons per year
Carbon Monoxide	281 tons per year
Ammonia	64 tons per year
Benzene	0.4 tons per year
Formaldehyde	4.0 tons per year
Methanol	Not Reported tons per year
MTBE	Not Reported tons per year
Phenol	0.01 tons per year
Toluene	0.45 tons per year
Xylene	0.72 tons per year

The difference is:

Particulate	-36 tons per year
Organics	-15 tons per year
Oxides of Nitrogen	-118 tons per year
Sulfur Dioxide	-123 tons per year
Carbon Monoxide	-66 tons per year
Ammonia	1.0 tons per year
Benzene	-2.2 tons per year
Formaldehyde	-15.2 tons per year
Methanol	-2.9 tons per year
MTBE	0 tons per year
Phenol	0.01 tons per year
Toluene	-0.55 tons per year
Xylene	-3.08 tons per year

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements

has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to permit

- The adoption dates of the rules in Standard Condition I.A have been updated.
- Regulation 2, Rule 1 and Rule 2 amendments which were incorporated into the SIP was updated in the Standard Condition 1.A.
- Regulation 2, Rule 5 and the SIP version of Regulation 2, Rule 6 were added to Standard Condition 1.A.
- Basis for Standard Condition I.B.11 was updated to include Regulation 2, Rule 6, Section 409.20.
- The mailing address has been updated and the email address added for the Director of Compliance and Enforcement in Standard Condition I.F.
- The contact information has been updated and the email address added for the U.S.EPA contact in Standard Condition I.G.
- The mailing address for the Air Quality Engineering Manager has been updated in Standard Condition I.J.2.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will also be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered a source (or "S").

The equipment section is considered part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

Changes to permit:

Table II A – Permitted Sources

- Source descriptions in Table II-A for S3 and S7 revised to indicate these sources no longer burn naphtha.
- S14 was removed from Table II-A since it has been permanently shut down.
- S54 and S55 were removed from Table II-A since these engines have been permanently shut down.
- S118 was removed from Table II-A since this source has been permanently shut down.
- S196 was removed from Table II-A since this source has been permanently shut down.
- S304 source description was updated in Table II-A and the capacity information was updated to indicate the permit limit is 12,198 barrels per day on a monthly average basis in Condition # 21095 Part 1.
- S307 capacity was revised in Table II-A from 45,000 barrels per day to 65,000 barrels per day. This increase was approved of under application 13424 in 2007.
- S308 capacity was revised in Table II-A from 16,087 barrels per day to 18,500 barrels per day. This increase was approved of under application 13424 in 2007.
- S388 was removed from Table II-A since this source has been permanently shut down.
- S389 was removed from Table II-A since this source has been permanently shut down.
- S432 capacity was updated in Table II-A from 7,600 barrels per day to 10,200 barrels per day as approved of by application 13424 in 2007.
- S434 capacity was updated in Table II-A to reflect how the daily capacity was derived from Condition 22969 which limits the source to 8,395,000 bbl per 12-month period.
- S442 model information was updated in Table II-A to reflect the fact that the tank stores crude oil and gas oil as approved under application 26486.
- S445 was corrected to reflect that it's a fixed roof tank and NOT an underground storage tank.
- S460 capacity information was updated in Table II-A to indicate the permit limit is 35,000 barrels per day on monthly average basis in Condition # 21094 Part 1.
- S503 capacity was corrected in Table II-A from 950 long ton/day to 471 long ton/day of sulfur.
- S507 was added to Table II-A. This source was permitted in 2010 under application 20801.

- S1002 and S1003 capacity was corrected to reflect removal S1001 for its combined limit.
- S-1012 was added to Table II-A. This source was permitted in 2017 under application 28687.

Table II B – Abatement Devices

- A2 updated Subpart Ja citation (from Subpart J) for 250 ppm SO2@0% O2 limit. See Applicability of NSPS Subpart Ja in Section IV (Source-Specific Applicable Requirements).
- A3 updated Subpart Ja citation (from Subpart J) for 250 ppm SO2@0% O2 limit. See Applicability of NSPS Subpart Ja in Section IV (Source-Specific Applicable Requirements).
- A7 was revised to indicate the minimum pressure settings on the abated tanks subject to condition 23724 is between 1.7 and 2.5 inches of water.
- A7 had S148 removed from the list of abated tanks subject to condition 23724 since this tank has been permanently shut down.
- A14 updated the sources controlled to the correct source numbers (S353, S356).
- Duplicate A47 abating S45 row was removed from Table II-B.
- A21 has been removed from Table II-B because the source it was abating has been shut down.
- A48 updated Subpart Ja citation (from Subpart J) for 250 ppm SO2@0% O2 limit. See Applicability of NSPS Subpart Ja in Section IV (Source-Specific Applicable Requirements).
- A49 does not abate S324 and this source was removed from sources controlled.
- A53 was added to Table II-B since this oxidizer now abates emissions from S324 API Oil Water Separator. A53 was permitted under application 27061 in 2015.
- A420 fuel gas H2S concentration limit removed from Table II-B since Subpart J has been revised and the vapors from loading material at the marine terminal are no longer subject to the standard based on the revised definition of fuel gas.
- A424 description revised in three locations to correct the typographical error of the maximum firing rate from 18 MMBtu per hour to 19.5 MMBtu per hour.
- A424 updated Subpart Ja citation ((from Subpart J) for 250 ppm SO2@0% O2 limit. See Applicability of NSPS Subpart Ja in Section IV (Source-Specific Applicable Requirements).
- A461 applicable requirement updated to show condition 21096 part 3b contains the applicable NOx limit.

Table II C – Significant Sources

No changes were made to Table II-C.

Table II D – Sources Exempt from Permit Requirements

- The following sources have been removed from Table II-D since they have been permanently shut down: S91, S120, S130, S131, S132, S141, S142, S143, S144, S145, S148, S149, S157, S158, S162, S164, S165, S166, S167, S171, S172, S187, S202, S206, S207, S224, S225, S226, S227, S228, S229, S230, S231, S236, S237, S240, S241, S266, and S267.

- The following exempt tanks were added to Table II-D: Tank 206 and Tank 224.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered significant sources pursuant to the definition in BAAQMD Rule 2-6-239.

<u>Changes to permit</u>

- The adoption dates of the rules have been updated.
- Regulation 2, Rule 2 was removed from Table III. This regulation is included in the Standard Conditions Section 1.A.
- Regulation 2, Rule 4 was removed from Table III. This regulation is included in the Standard Conditions Section 1.A.
- Regulation 2, Rule 6 was removed from Table III. This regulation is included in the Standard Conditions Section 1.A.
- Regulation 2, Rule 9 was removed from Table III. This regulation is now in Table IV.
- Regulation 3 was removed from Table III. This regulation is included in the Standard Conditions Section 1.C.
- Added SIP version of Regulation 8, Rule 2 to Table III.
- Added SIP version of Regulation 8, Rule 3 to Table III.
- Regulation 8, Rule 10 citations and SIP Regulation 8, Rule 10 citations removed from Table III and added to Table IV.
- Added Regulation 8, Rule 15 to Table III.
- Added SIP version of Regulation 8, Rule 40 to Table III.
- Added SIP version of Regulation 8, Rule 47 to Table III.
- Updated Regulation 11, Rule 10 citation.
- Removed "Notification Requirement" language from Table III. This regulation is now in Table IV.
- Added Air Toxics Control Measure for Stationary Diesel Engines to Table III.
- Added Air Toxics Control Measure for Portable Diesel Engines to Table III.
- Updated Description of Requirements for 40 CFR Part 82 requirements.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are "federally enforceable" and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Layout of Section IV:

The order of tables is as follows:
All sources, General applicable requirements – Table IV
Combustion equipment such as Heaters, Boilers, and Engines – Tables with "A" designation
Wastewater sources – Tables "B" through "J"
Gasoline Dispensing Facility – Table IV-K
Flares – Tables IV-L.1 and L.2
Process units – Tables "M" through "P"
Turbines and Duct Burners – Tables with "Q" designation
Solvent Cleaning – Table IV-R
Marine Loading – Table IV-S
Groundwater Extraction – Table IV-T
Sulfur Plants – Tables with "U" designation
Isomerization unit – Table IV-V
Silos – Tables "W" through "X"
Fuel gas caustic system – Table IV-Y

Fugitive requirements – Tables AA-AB
Tanks – Tables with "BB" designation
Cooling Towers – Tables with "CC" designation

Complex Applicability Determinations:

Applicability of District Regulation 8, Rule 2

The District has determined that the definition of "miscellaneous operation" in Regulation 8-2-201 excludes sources that are in a source category regulated by another rule in Regulation 8, even if they are exempt from the other rule. This is because such sources are limited by the terms of the exemption. Thus, for example, a hydrocarbon storage tank that stores liquids with a vapor pressure less than 0.5 psia is exempt form Regulation 8, Rule 5, Storage of Organic Liquids (8-5-117), and is not subject to Regulation 8, Rule 2, Miscellaneous Operations.

The policy justification for this determination is that the District considered appropriate controls for the source category when it adopted the rule governing that category. Part of the consideration includes determination of sources and activities that are not subject to controls.

Applicability of District Regulation 8, Rule 44

Regulation 8 Rule 44 has certain sections that apply to marine terminal and other sections that apply to marine vessel. The facility has requested that because they do not own or control the marine vessels that arrive at their marine terminal that all sections of Regulation 8-44 that apply to marine vessels operations be removed as applicable requirements from their Title V permit.

The District disagrees and has determined that all sections of 8-44 are applicable. Per Regulation 1-241, the owner or operator is defined as "any person who owns, leases, operates, controls or supervises a facility, building, structure, installation, or source which directly or indirectly results or may result in emissions of any air pollutant." Because the marine vessels are leased by the facility to transport product to and from the facility, the facility is meets the definition of owner or operator as defined per Regulation 1-241 and is considered responsible for ensuring compliance of all sections of 8-44 as long as it operates a marine terminal and receives marine vessels.

Exemption of Flares from Regulation 8

The two flares at the facility (S296, S398) meet the requirements of Regulation 12, Rule 11 and Rule 12. The destruction efficiency for each flare is greater than 90% (98% used for emission inventory) and meets the exemption in Regulation 8, Rule 1, Section 110.3. Regulation 8, Rule 1 does not apply to the refinery flares at Phillips 66.

The District adopted the flare control rule, Regulation 12, Rule 12 in 2006. As a part of the rulemaking, the District amended Regulation 8, Rule 2 to clarify that it does not apply to

refinery flares. As explained in the Staff Report and other documents for this rulemaking, the amendment to Regulation 8, Rule 2 was intended to reflect existing law at the time of the rulemaking.

Compliance with Regulation 9-1-313.2

The Phillips 66 sulfur recovery units (S1002, S1003, S1010) were designed to remove and recover over 99% of the H2S from the refinery fuel gas. The design of each sulfur recovery unit meets the requirements contained in Regulation 9, Rule 1, Section 313.2. The sulfur recovery units remove and recover greater than 95% from the refinery fuel gas, 95% of the H2S from process water streams, and remove 95% of the ammonia from process water streams. Demonstration of compliance with this requirement is based on the fact that each sulfur recovery unit is a three stage Claus process with H2S removal efficiencies that exceed the 95% required by 9-1-313.2. This regulation was intended to be a design standard which the Phillips 66 sulfur recovery units meet by a large compliance margin without ongoing monitoring for H2S. SO2 is monitored using a continuous emission monitor at the exhaust point for each sulfur recovery unit after the tail gas treatment units and the corresponding thermal oxidizers.

Facility Tanks

In both Section IV and Section VII, facility tanks have been grouped into several tables such that each table includes a number of tanks that have a common set of requirements. Specific requirements are triggered by various criteria, which include: tank size, tank construction date, vapor pressure of the tank contents, toxicity of the tank contents, tank roof design (floating roof versus fixed roof) and whether or not the tank is vented to a control device. For example, the fewest requirements apply to tanks which are relatively old and therefore are not subject to the federal New Source Performance Standard (NSPS), and which store low-vapor pressure materials and therefore are not subject to District Regulation 8, Rule 5. More requirements apply to newer tanks that store high vapor-pressure materials. All tanks are designated as “BB” in both Sections IV and VII.

Cooling towers

Cooling towers are subject to District Regulation 6, Rule 1, Particulate Matter, General Requirements and District Regulation 11, Rule 10, Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers. The cooling towers may also be subject to BAAQMD Regulation 8, Rule 2, Miscellaneous Operations, Section 8-2-114 exempts cooling towers, provided that "best modern practices" are used. Section 11-10-402 defines “best modern practices” for cooling towers. Phillips 66 has employed these “best modern practices” at all of the cooling towers onsite that are subject to the hydrocarbon monitoring requirements of Regulation 11, Rule 10. The facility has the burden of keeping records necessary to demonstrate that it qualifies for the exemption from Regulation 8, Rule 2. Regulation 11-10 requirements which were adopted on 12/16/15 have been added to the cooling tower sources (S452, S453, S455, S456, S457, S458, S500).

Relationship between Phillips 66 Carbon Plant (Plant A0022) and Phillips 66 Refinery (Plant A0016)

The District has determined that the Phillips 66 Carbon Plant and Phillips 66 Refinery are the same facility.

Federal Title V regulations allow the District to issue separate Title V permits to distinct operations within a facility. 40 CFR 70.2. Because the plants are separately managed, because processes at the two facilities are very different, and because both draft permits are very close to completion, the District has decided to issue separate permits to these two facilities. Before doing so, however, requirements that arise due to the facilities' association with each other must be added to the draft permits.

The District has determined that no additional requirements apply to sources at the refinery due to the determination that Federal regulations applicable to the Carbon Plant may be applicable to the refinery as well. Any additional requirements that apply to the carbon plant due to its association with the refinery will be addressed in the carbon plant Title V permit.

Applicability of NSPS Subpart J and Fuel Gas Combustion Devices

The A420 marine terminal thermal oxidizer does not meet the definition of a fuel gas combustion device in NSPS Subpart J. A420 abates displaced vapors from marine vessel loading at marine berths S425 and S426. The definition of fuel gas in 40 CFR Part 60.101(d) does not include "vapors that are collected and combusted in a thermal oxidizer or flare installed to control emissions from wastewater treatment units or marine tank vessel loading operations". As a result, the gas combusted by A-420 is not subject to the H_2S standard in 40 CFR Part 60.104(a)(1). In addition, monitoring of the H2S in the gas combusted at A-420 is not required in 40 CFR Part 60.105(a)(4)(iv) in accordance with 40 CFR Part 60.105(a)(3) or (a)(4) for gases that are exempt from 40 CFR Part 60.104(a)(1). The Title V permit will be updated to reflect this change.

Applicability of NSPS Subpart Ja

NSPS Subpart Ja applies to fluid catalytic cracking units, fluid coking units, delayed coking units, fuel gas combustion devises (including process heaters), flares and sulfur recovery plants for which construction, modification, and/or reconstruction is commenced after May 14, 2007. Modification to the Main Flare (S296) and the MP-30 Flare (S398) were completed at the refinery between June 24, 2008 and September 12, 2012. Therefore, the Main and MP-30 Flare are considered affected facilities with respect to NSPS Subpart Ja and associated requirements. The Title V permit will be updated to reflect this change.

The Sulfur Plant Unit 236 (S1002), Sulfur Plant Unit 238 (S1003), and the U235 Sulfur Plant (S1010) were all considered affected facilities subject to NSPS Subpart J, as reflected in the Title V permit. Because Phillip 66 chose to comply with NSPS Subpart Ja, which is their option per 40 CFR 60.100(e), Subpart J will be deleted from the Title V permit where Subpart Ja applies.

Applicability of 40 CFR Part 60, Subpart QQQ, Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

The Phillips 66 Title V permit cites 40 CFR 60, Subpart QQQ for the following sources: S324, U100_API Oil Wastewater Separator (with outlet channel cover); S400 and S401, Sumps; and S434, U246 High Pressure Reactor Train. In case of Sources S400 and S401, Subpart QQQ applies only to J-boxes downstream of them.

Applicability of 40 CFR Part 60, Subpart VV, Standards of Performance for Equipment Leaks (Fugitive Emission Sources)

The Phillips 66 permit cites 40 CFR 60, Subpart VV for the following sources: S350, U267 Crude Distillation Unit; S370, U228 Isomerization Unit; and S437, Hydrogen Manufacturing Unit. Sources S350, S370, and S437 are subject because they were built after 1983 and therefore are subject to 40 CFR 60, Subpart GGG. Any equipment that is subject to Subpart GGG is subject to Subpart VV. The affected facility is "equipment," which is defined in 60.481 as "each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart."

However, the standard in the NESHAPS 40 CFR 63, Subpart CC supersedes the standard in Subpart VV. Section 640(p) states that "After the compliance dates … equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in this subpart." In Section 640(d)(5), Subpart CC states that emission points routed to a fuel gas system are not subject to the standards. Section 648 does require the refineries to comply with the other leak standards in 40 CFR 60, Subpart VV-- Sections 60.482-1 through 60.482.9.

Applicability of 40 CFR Part 61, Subpart FF, National Emission Standard for Benzene Waste Operations (BWON)

The BWON regulation requires that refineries that produce 10 Mg/yr or more of benzene as waste treat each benzene containing waste to an approved standard. This facility has chosen to comply with the option in 40 CFR 61.342(e)(2), known as the “6BQ” option, to keep the benzene waste quantity as calculated per the BWON requirements equal to or less than 6 Mg/yr.

Per the 6BQ option, not all sources are required to be controlled per the BWON regulations, only those that will keep the 6BQ calculation below 6 Mg/yr. Details of the applicability are described below.

Generally Applicable Requirements (Table IV – All Sources)

As described above, Phillips 66 complies with the 6BQ option in 61.342(e)(2) and related citations. The control requirements for containers, individual drain systems and oil-water separators are listed as generally applicable because they can be controlled or uncontrolled as long as the 6BQ calculation accurately accounts for the control. In general, these types of

sources can change control status with respect to BWON each year or even within a given year. These changes are reflected in the annual Total Annual Benzene (TAB) report, which includes the 6BQ calculation.

Storage Tanks (Tables IV-BB.8, BB.13, BB.15a, BB.16)

Only the storage tanks that are used to manage benzene-containing waste and considered controlled per BWON are included. All other tanks either do not contain benzene waste or are not considered controlled with respect to BWON.

The following tanks were included in the Title V permit as controlled per BWON:

Tank	Source No.	TV Table	Control Type	Benzene Containing Waste
150	107	BB.13	EFR meeting NSPS Kb	Recovered Oil
193	133	BB.16	EFR meeting NSPS Kb	Recovered Oil
204	139	BB.15a	CVS, CD	Phenolic Water
205	140	BB.15a	CVS, CD	Phenolic Water
294	182	BB.15a	CVS, CD	Sour Water
104	101	BB.8	EFR meeting NSPS Kb	Sour Water
105	102	BB.8	EFR meeting NSPS Kb	Sour water
130	106	BB.8	EFR meeting NSPS Kb	Sour water
269	168	BB.15a/21	CVS, CD	Sour water

CVS = closed vent system; CD = control device; EFR = external floating roof

API Oil-Water Separator

The API Oil-Water Separator (API OWS, S324) is included because it is considered controlled and subject to the requirements of 61.347.

Other Sources Previously Included in the Title V Permit

The Dissolved Air Flotation Unit (DAF, S1007) requirements were included in the Title V permit as part of Application #13427. See the SOB for that application for applicability details.

Applicability of 40 CFR Part 63, Subpart CC, National Emissions Standards for Hazardous Air Pollutants from Petroleum Refineries

Subpart CC is generally applicable to this facility, as shown in Table IV-All Sources. 63.640(c)(2) is specifically applicable to storage tanks as shown in the tank tables.

Applicability of 40 CFR 63, Subpart R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

Sources affected by NESHAPS Subpart R, Section 63.420 are either bulk gasoline terminals or pipeline breakout stations. "Bulk gasoline terminal" means any gasoline facility that receives gasoline by pipeline, ship or barge. "Pipeline breakout station" means a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for reinjection and continued transportation by pipeline or to

other facilities. Phillips 66 has no bulk gasoline terminals and no pipeline breakout stations. Therefore, it is not subject to Subpart R.

Applicability of 40 CFR Part 63, Subpart UUU (Subpart UUU)

Subpart UUU applies to catalytic crackers, catalytic reformers, sulfur recovery units (SRUs) and bypass lines for this equipment. The purpose is to reduce emissions of organic and inorganic HAP from catalytic reformers and crackers and emissions of reduced sulfur compounds from SRUs. Subpart UUU is applicable to Phillips 66 catalytic reformers (S306 and S308) and sulfur recovery units (S301, S302, S303, S465, S1002, S1003, and S1010).

Phillips 66 does not have any catalytic crackers. The facility has a thermal cracker, S307, which is not subject to the standard. The facility has stated that there are no bypass lines, so the requirements for bypass lines do not apply.

Applicability of Refinery Sector Rule (RSR) on 40 CFR Part 63, Subpart CC and UUU

U.S. EPA's final Refinery Sector Rule (RSR) was issued on December 1, 2015, which included numerous revisions to the NESHAP subparts for Petroleum Refineries and Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (40 CFR 63 Subpart CC and UUU, respectively). The specific RSR revisions and their applicability to Phillips 66 are discussed in the following discussion.

Startup, Shutdown and Malfunctions

The RSR removed the startup, shutdown and malfunction (SSM) exemption and the Startup, Shutdown and Malfunction Plan (SSMP) requirements for 40 CFR 63, Subpart CC and for 40 CFR 63, Subpart UUU. The SSM provisions have been replaced by a general duty clause to operate and maintain equipment consistent with good air pollution control practices for minimizing emissions. To address this change, US EPA set alternative standards for fluidized catalytic cracking units and sulfur recovery units (SRUs) which apply during startup and shutdown and during periods of hot standby for FCCUs. The final rule also added monitoring and control requirements for flares, pressure relief devices (PRD), and miscellaneous process vents (MPV) to address SSM events. Subpart CC specifies new semi-annual report requirements for PRD, MPV, and flares. For SRUs, Subpart UUU requires reporting of the quantity and calculation method for excess emission deviations, as well as the reporting of deviations to work practices. Table IV – All Sources has been updated to include these new requirements.

Fenceline Monitoring

The RSR includes new provisions for fenceline monitoring for benzene Subpart CC. In accordance with the RSR rule revision, Philips 66 will be required to comply with the new fenceline monitoring program standards by January 30, 2018. Table IV – All Sources has been updated to include these new requirements.

Electronic Reporting Provisions

The RSR amendments included requirements for electronic submittal of performance tests and CEMS performance evaluation data via the Compliance and Emission Data Reporting Interface (CEIDRI) on US EPA's Central Data Exchange (CDX) system. This amendment

includes updates to both Subpart CC and Subpart UUU requirements. Table IV – All Sources has been updated to include these new requirements.

Flares

The RSR finalized revisions to 40 CFR 63 Subparts CC and UUU requirements for refinery flares used as control devices. PRD discharges at the refinery are normally routed to the fuel gas system; however, at times, these discharges may be controlled by the refinery flares. According to 40 CFR 63.648, any flare used to control equipment leaks including PRD discharges must comply with the new flare provisions in 40 CFR 63.670 and 63.671 by January 30, 2019. The Main Flare (S296) and the MP-30 Flare (S398) at the refinery may be used to control emissions from PRD in organic HAP service and are therefore subject to the new flare standards finalized in the RSR. These requirements were added to Table IV-L.1 and VII-L for S296 and Table IV – L.2 and VII – L for S398.

Delayed Coking Units

The RSR finalized new requirements for delayed coking units (DCU) decoking operations, including emissions generated during atmospheric depressuring, deheading, draining, and coke cutting. The new DCU provisions are included in 40 CFR 63.657. Additionally, in 40 CFR 63.641, the RSR finalized amendments to the definition of "delayed coking vent" and "miscellaneous process vents" and add definitions for "delayed coking unit" and "decoking operations." Compliance with the new DCU provisions is required by January 30, 2019. The U200 Delayed Coker Unit will be subject to the new standards. These requirements were added to Table IV – M and Table VII – M for S300.

Applicability of 40 CFR 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

The requirements for lean premix gas-fired turbines and diffusion flame gas-fired turbines in this regulation were stayed indefinitely by the EPA on August 18, 2004 (69 FR 55184).

The facility has 3 stationary combustion turbines (S352, S353, S354). The turbines were installed before January 14, 2003, and would be considered to be existing turbines as defined by Section 63.6090(a)(i). Section 63.6090(b)(4) exempts existing turbines from the standard, the requirements of 40 CFR 63, Subpart A, General Requirements, and from notification requirements.

Applicability of 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The facility has 10 compression ignition diesel-fueled engines (S50-S59). S50-S52 are used to start up the turbines (S352, S353, S354). The remaining engines are for emergency use. All engines are below 500 hp and were installed before June 12, 2006, and are therefore considered to be existing engines as defined by Section 63.6590(a)(ii). Section 63.6590(b)(3) exempts existing engines and emergency engines from the standard, the requirements of 40 CFR 63, Subpart A, General Requirements, and from notification requirements.

Applicability of 40 CFR 63, Subpart DDDDD, National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

The facility owns and operates boilers and process heaters subject to the requirements of 40 CFR 63, Subpart DDDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, known as the Boiler MACT. The finalized rule for 40 CFR 63, Subpart DDDDD was published in the Federal Register on January 31, 2013. All 32 of the process heaters and furnaces at the refinery are subject to the periodic tune-up and initial energy assessment requirements effective January 31, 2016, for the units designed to burn gas 1 subcategory fuel. The subject heaters are listed as follows: S2, S3, S4, S5, S7, S9, S10, S11, S12, S13, S15, S16, S17, S18, S19, S20, S21, S22, S29, S30, S31, S36, S43, S44, S45, S336, S337, S351, S371, S372, S438, and S461.

Applicability of 40 CFR 63, Subpart GGGGG, National Emission Standards for Hazardous Air Pollutants: Site Remediation

The site remediation activities at the facility are exempt from 40 CFR 63, Subpart GGGGG, because section 63.7881(b)(3) exempts activities that are performed under a Resource Conservation and Recovery Act (RCRA) corrective action conducted at a treatment, storage and disposal facility (TSDF) that is required by a permit issued a State program authorized by the EPA under RCRA section 3006. The facility is subject to a RCRA corrective action that is required by its permit issued by the Regional Water Quality Control Board.

Applicability of 40 CFR 64, Compliance Assurance Monitoring (CAM)

The Compliance Assurance Monitoring (CAM) regulation in 40 CFR 64 was developed to provide assurance that facilities comply with applicable emissions limitations by adequately monitoring control devices. The CAM rule was effective on November 21, 1997. However, most facilities are not affected by CAM requirements until they submit applications for Title V permit renewal. As required, Phillips 66 has conducted an applicability analysis for CAM for the Phillips 66 – San Francisco Refinery as part of this renewal application.

CAM applies to a source of criteria pollutant or hazardous air pollutant (HAP) emissions if all the following requirements are met:
The source is located at a major source for which a Title V permit is required; and
The source is subject to a federally enforceable emission limitation or standard for a criteria pollutant or HAP; and
The source uses a control device to comply with the federally enforceable emission limitation or standard; and
The source has potential pre-control emissions of the regulated pollutant that are equal to or greater than the major source threshold for the pollutant (in BAAQMD, the major source thresholds are 100 tons per year for each criteria pollutant, 10 tons per year for a single HAP, and 25 tons per year for two or more HAPs); and
The source is not otherwise exempt from CAM.

CAM exemptions are specified in 40 CFR 64.2(b)(1) – Exempt Emission Limitations or Standards. Exemptions that could reasonably apply to emission sources at the Phillips 66 Refinery are:
40 CFR 62(b)(1)(i) – Emission limitations or standards proposed by the Administrator after November 15, 1990, pursuant to section 111 or 112 of the ACT; or
40 CFR 62(b)(1)(vi) – Emission limitations or standards for which a Title V Permit specifies a continuous compliance determination method (a method, specified by the applicable standard or an applicable permit condition, which: (1) is used to determine compliance on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and (2) Provides data either in units of the standard or correlated directly with the compliance limit).

Emission sources at the Phillips 66 Refinery were first evaluated by the following criteria to identify sources requiring further analysis for CAM applicability:
The source is listed in the existing Title V Permit; and
The source uses a control device to routinely control the emissions of a regulated pollutant (criteria pollutant or listed HAP).

Appendix C contains a summary of the CAM requirements analysis for the emission sources that met these criteria. Based on this analysis, it was determined that no existing source is subject to CAM requirements. The only source that is subject to CAM requirements is S1010, Sulfur Recovery Unit for emissions of H2S, reduced sulfur compounds, and total reduced sulfur compounds. These emissions are abated by a tail gas treatment (A48) and an incinerator (A424). Condition # 23125 of the existing Title V permit contains the requirements necessary to satisfy the CAM requirements listed in 40 CFR 64.

<u>Changes to permit:</u>

- The adoption dates of the rules have been updated in all tables, where applicable, in Section IV.
- Table IV-A.12 for S14 was deleted because it has been shut down and removed from the facility.

<u>Table IV-Facility (All Sources)</u>

- Added BAAQMD Regulation 2, Rule 9 requirements (which are to be deleted once all the NOx IERC have expired).
- Added BAAQMD and SIP Regulation 8, Rule 10 requirements.
- Added BAAQMD Regulation 11, Rule 10 which was adopted in 12/16/2015.
- Updated 40 CFR 60 Subpart A.
- Updated 40 CFR 63 Subpart CC. Subpart CC specifies new semi-annual report requirements for PRD, MPV, and flares. In addition, Philips 66 will be required to comply with the new fenceline monitoring program standards by January 30, 2018. These new requirements have been added to this table.

- Added 40 CFR 63 Subpart UUU which was amended in 12/01/2015. For SRUs, Subpart UUU requires reporting of the quantity and calculation method for excess emission deviations, as well as the reporting of deviations to work practices. These reporting requirements have been added to this table.

Table IV-A.1

- Sources S2, S4, and S5 have been grouped because all requirements of the same. Thus, Table IV-A.3 and Table IV-A.4 has been deleted for S4 and S5, respectively.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.
- Updated Condition # 1694 by adding Part G.5.

Table IV- A.2

- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.
- Updated Condition # 1694 by removing Parts A.2b and A.2e, because the source S3 no longer burns naphtha.

Table IV-A.3 and A.4

- Sources S2, S4, and S5 have been grouped because all requirements of the same into Table A.1. Thus, Table IV-A.3 and Table IV-A.4 has been deleted for S4 and S5, respectively.
- Table IV-A.3 is now been renumbered for S7 and Table IV-A.4 has been renumbered for S9.
- Table IV-A.4 for S9 has been corrected to include both BAAQMD and SIP Regulation 6-1-401 (section already exists in Table IV-A.3).
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.
- Updated Condition # 1694 by removing Parts A.2b and A.2e, because the source S3 no longer burns naphtha.

Table IV-A.5

- Table IV-A.5 is now been renumbered for S10.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.6

- S11 and S12 have been grouped because all requirements are the same. Thus, Table IV-A.10 for S12 has been deleted.
- Table IV-A.6 has been renumbered for S11 and S12.
- Added BAAQMD and SIP Regulation 6-1-401.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.

- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Tables IV-A.7

- Table IV-A.7 has been renumbered for S13.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.8

- Table IV-A.7 has been renumbered for S15, S16, S17, S18, and S19 because all their requirements are the same. Thus, Table IV-A.14 for S16, Table IV-A.15 for S17, Table IV-A.16 for S18, Table IV-A.17 for S19 were deleted.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.9

- Table IV-A.9 has been renumbered for S20, S22, S29, S30, and S31 because all their requirements are the same. Thus, Table IV-A.20 for S22, Table IV-A.21for S29, Table IV-A.22 for S30, Table IV-A.23 for S31 were deleted.
- Added BAAQMD and SIP Regulation 6-1-401.
- Updated Regulation 9, Rule 10 which was amended in 10/16/2013.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.10

- Table IV-A.10 has been renumbered for S21. The prior Table IV-A.10 for S14 was deleted because S14 has been shut down and removed from service.
- Added BAAQMD and SIP Regulation 6-1-401.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.11

- Table IV-A.11 has been renumbered for S36.
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Tables IV-A.12

- Table IV-A.12 has been renumbered for S43.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.

- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.13

- Table IV-A.14 has been renumbered for S44.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.14

- Table IV-A.14 has been renumbered for S50, S51, and S52.
- Removed District Regulation 9-8-111.1 as applicable requirement because the requirement has since expired. Regulation 9-8-111.3 now applies.
- Added 40 CFR 63 Subpart ZZZZ as an applicable requirement which was adopted on 01/30/2013.

Table IV-A.15

- Table IV-A.15 has been renumbered for S53, S56, S57, S58, and S59.
- Sources S54 and S55 were removed because the sources have been shut down and removed from the facility.
- Removed District Regulation 9-8-111.1 as applicable requirement because the requirement has since expired. Regulation 9-8-111.3 now applies.
- Added 40 CFR 63 Subpart ZZZZ as an applicable requirement which was adopted on 01/30/2013.

Table IV-A.16

- Table IV-A.16 has been renumbered for S336 and S337. Table IV-A.30 has been deleted because S337 has been grouped with S336.
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.17

- Table IV-A.17 has been renumbered for S351.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV- A.18

- Table IV-A.18 has been renumbered for S371 and S372. Table IV-A.33 has been deleted because S372 has been grouped with S371.

- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.19

- Table IV-A.19 has been renumbered for S438.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.20

- Table IV-A.19 has been renumbered for S461.
- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.
- Applicable requirements to BAAQMD Regulation 9, Rule 10 was added.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.

Table IV-A.21

- Table IV-A.21 has been renumbered for S45.
- Added BAAQMD and SIP Regulation 6-1-401.
- Added 40 CFR 63 Subpart DDDDD which was adopted in 11/20/2015.
- Updated Condition 22962 by adding Part 9a. Condition 22962 was amended as part of 22671.

Table IV-C

- Added Condition 26069 for S324. Added Condition # 26069 which resulted from Application # 27061 for S324.

Table IV-D

- Added the recordkeeping requirements of Regulation 8-8-501 and 8-8-503 to the Regulation 8-8 requirements.

Table IV-Da and Db

- Updated BAAQMD Condition 1440 to include the subparts of Part 7a, Par 10, and Part 11, which were missing.
- Correction of temperature and monitoring requirements in BAAQMD Condition 1440.
- Inclusion of VOC limit and monitoring requirement for A51 (BAAQMD Condition 1440, Part 7b(vi))

- Updates to multiple monitoring requirements citations in Table Db, as A51 is not a gaseous fuel source.

Table IV-J

- Added BAAQMD Regulation 8-8-504 as an applicable requirement.

Tables IV-L1 and IV-L2

- Added 60.13 requirements to 40 CFR Part 60 Subpart A.
- Removed 40 CFR 60 Subpart J and added 40 CFR 60 Subpart Ja. Refinery flares are now subject to NSPS Subpart Ja.
- Added 40 CFR 63 Subpart A and Subpart CC as applicable requirement. According to 40 CFR 63.648, any flare used to control equipment leaks including PRD discharges must comply with the new flare provisions in 40 CFR 63.670 and 63.671 by January 30, 2019. The Main Flare (S296) and the MP-30 Flare (S398) at the refinery may be used to control emissions from PRD in organic HAP service and are therefore subject to the new flare standards finalized in the RSR. These requirements have been added to these tables.

Table IV-M

- Added 40 CFR 63 Subpart A and Subpart CC as applicable requirement. The new DCU provisions are included in 40 CFR 63.657. Additionally, in 40 CFR 63.641, the RSR finalized amendments to the definition of "delayed coking vent" and "miscellaneous process vents" and add definitions for "delayed coking unit" and "decoking operations." Compliance with the new DCU provisions is required by January 30, 2019. The U200 Delayed Coker Unit will be subject to the new standards. These requirements have been added to this table.

Tables IV-Na

- Updated Condition 20989, Part A to remove reference for S307.

Table IV-Nb

- Updated NESHAP Subpart A and Subpart UUU based on Refinery Section Rule updates. To simplify the permit and reduce the administrative burden associated with maintaining the most current details of Subpart A for individual emission units addressed in Tables Nb, Ua, and Ub, Subpart A were deleted from Table IV-Nb, Ua, and Ub. The details of Subpart A remain the "All Sources" Table which apply for all sources. Hence, this simplication will not result in the removal of any applicable citation but will eliminate duplication.

Table IV-Nc

- Removed references to BAAQMD Condition 20989, Part A which doesn't apply to S308.

Table IV-Q.1

- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).

- Added BAAQMD and SIP Regulation 6-1-401.
- Removed Part 16 from Condition 12122 which no longer exists.

Table IV-Q.2

- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Added BAAQMD and SIP Regulation 6-1-401.

Table IV-R

- Corrected recordkeeping of BAAQMD Regulation 8-16-501.3.

Table IV-S

- Corrected requirements of BAAQMD Regulation 8-44.
- Removed 40 CFR Subpart A and Subpart J. The marine loading berths are no longer subject to the requirements of NSPS Subpart J based on the definition of fuel gas.
- Updated Condition 4336 to remove Parts 10 through 13 which are not applicable requirements anymore because those requirements have since expired. This is discussed further in the Permit Conditions section of this document.

Table IV-T

- Removed extraneous Parts 11, 12, 13, and 14.

Table IV-Ua

- Updated Regulation 1 which was amended 4/18/2012 with CEM performance testing requirement (BAAQMD Regulation 1-522.3).
- Removed 40 CFR 60 Subpart J since now subject to 40 CFR 60 Subpart Ja.
- Added new applicable requirements for NESHAP Subpart A and Subpart UUU. To simplify the permit and reduce the administrative burden associated with maintaining the most current details of Subpart A for individual emission units addressed in Tables Nb, Ua, and Ub, Subpart A were deleted from Table IV-Nb, Ua, and Ub. The details of Subpart A remain the "All Sources" Table which apply for all sources. Hence, this simplification will not result in the removal of any applicable citation but will eliminate duplication.

Table IV-Ub

- Added new applicable requirements for NESHAP Subpart A and Subpart UUU. To simplify the permit and reduce the administrative burden associated with maintaining the most current details of Subpart A for individual emission units addressed in Tables Nb, Ua, and Ub, Subpart A were deleted from Table IV-Nb, Ua, and Ub. The details of Subpart A remain the "All Sources" Table which apply for all sources. Hence, this simplification will not result in the removal of any applicable citation but will eliminate duplication.

Table IV-X

- Table was renumbered for S462 and S463 after removal of table for S389 which was shut down.

Table IV-AA

- Removed sources (S196 and S388) that were shut down from the table.

Table IV-AB

- Updated BAAQMD Regulation 8-18 which was amended on 12/16/2015.
- Updated 40 CFR 60 Subpart VV.

Table IV – BB.2 through BB.29

- The tables been renumbered upon removal of Table IV-BB.2 for S-118 which has been shut down.
- Remove tanks that have been shut down from applicable tables.
- Added NSPS Kb citation for storage tanks with closed vent system and control devices to account for storage of material with TVP > 76.6 kPa (in Table IV-BB.9)
- Removed S173, S174 and S168 from Table IV-BB.19 because they are now controlled by A7 which makes them applicable instead to Table IV-BB.3 (S173 and S174) and BB.13a (S168).
- Added new applicable requirements for permit exempt Tank 224
- Added new applicable requirements for permit exempt Tank 206.
- Added new applicable requirements for S1012 which was permitted in 2017.

Table IV – CC.1 and CC.2

- Added Regulation 11-10 requirements for cooling towers.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

"409.10 A schedule of compliance containing the following elements:
10.1A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
10.2A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted."

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

Changes to permit:
None.

VI. Permit Conditions

Each permit condition is identified with a unique numerical identifier, up to five digits.

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted; all "underline" language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). It is also possible for permit conditions to be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:
BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
Cumulative Increase: This term is used for a condition imposed by the APCO that limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit pursuant to Regulation 2, Rule 2.
TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Changes to permit:

Condition # 1694

- S3 and S7 no longer us naphtha fuel during periods of natural gas curtailment. As a result, Parts 2b and 2c have been deleted.
- Removed S8 from reference in Part 6 since the source has been shut down and removed from service.
- The shutdown of S14 is federally enforceable because it was removed from the refinery. If the facility were to rebuild the unit, an Authority to Construct would be required. Thus, Part F.5 has been deleted.

Condition # 4336

- The thermal oxidizer (A420) is no longer subject to NSPS Subpart J due to the definition of "fuel gas" in the NSPS Subpart J. Thus, Part 10 has been deleted.
- Parts 11 through 13 do not apply going forward as they had requirements for calendar year 2013 and/or a due date of February 2014, if applicable. Thus, Parts 11 through 13 have been deleted.

Condition # 12127

- Condition # 12127 was amended as part of Application # 26486. The amendments are reflected in the changes indicated for this permit condition.

Condition # 18251

- Source S389 was shutdown and removed from service. As a result, the Part 1b for S389 was deleted. In addition, A21 which abated S389 was also deleted.

Condition # 18680

- Revised Part 2 to reflect new template language for source test results applying to gasoline dispensing facilities.

Condition # 20989

- Condition # 20989 was amended to remove reference to shutdown source S196, S388, and S389.
- S437 and S306 were inadvertently removed from Condition # 20989 in the Title V permit for Application 13427 in 2009. S306 has a limit of 7.67x10^6 bbl and S437 with 10.4x10^9 ft3. These are the values have been added back to Condition # 20989 of this renewal.

Condition # 21096

- Condition # 21096 was amended as part of Application # 22672. The amendments are reflected in the changes indicated for this permit condition.

Condition # 21235

- Condition # 21235 was amended as part of Application # 21848 and 28110. The amendments are reflected in the changes indicated for this permit condition.
- Condition # 21235 was amended to reflect the fact that the Continuous Emission Monitors (CEMs) are or will be installed on several heaters which are currently designated in the condition and Title V permit as not having the CEMs. The installation of CEMs is required by Regulation 9-10. These changes are merely to update the permit condition to reflect the CEMs installations.

Condition # 22121& 22122

- Because of the adoption of BAAQMD Regulation 11-10, the permit conditions that were added for monitoring per Regulation 2-6-503 were deleted, because there monitoring and recordkeeping required by BAAQMD Regulation 11-10. The only conditions remaining are for the facility to monitor total dissolved solids to ensure that the cooling towers stay below 5 tons per year of particulate emissions.

Condition # 22962

- Condition # 22962 was amended as part of 22671. The amendments are reflected in the changes indicated for this permit condition.

Condition # 22963

- Condition # 22963 was amended to remove reference to shutdown source S118.

Condition # 22951

- Revised Part 5 to reflect new template language for source test results applying to gasoline dispensing facilities.

Condition # 22970

- Removed S8 from reference in the condition since the source has been shut down and removed from service.
- Removed Part B since the compliance date has already passed and requirement has been met.

Condition # 23125

- Revised Parts 14 and 15, per Application Number 27557.

Condition # 26069

- Added Condition # 26069 which resulted from Application # 27061 for S324.

Condition # 26535

- Added Condition # 26535 which resulted from Application # 28687 for S1012.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate to provide a reasonable assurance of compliance.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements**.** It follows that, although Title V calls for a re-examination of all monitoring**,** there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

Changes to permit:

Table VII-A.1

- Sources S2, S4, and S5 have been grouped because all requirements of the same into Table A.1. Thus, Table VII-A.3 and Table VII-A.4 has been deleted for S4 and S5, respectively.

Table VII-A.3

- Table VII-A.3 has been renumbered for S7.
- Updated Condition # 1694 by removing Parts A.2b and A.2e, because the source S3 no longer burns naphtha. The change in permit condition # 1694 is also discussed in the permit condition section of this document.

Tables IV-A.4

- Table VII-A.4 has been renumbered for S9.

Table VII-A.5

- Table VII-A.5 has been renumbered for S10.

Table VII-A.6

- Table VII-A.6 has been renumbered for S11 and 12.
- Sources S11 and S12 have been grouped because all requirements of the same into Table A.1. Thus, Table VII-A.10 has been deleted for S12.

Table VII-A.7

- Table VII-A.7 has been renumbered for S13.

Tables VII-A.8

- Table VII-A.8 has been renumbered for S15, S16, S17, S18, and S19.
- Sources S15. S16, S17, S18, and S19 have been grouped because all requirements of the same into Table A.8. Thus, Table VII-A.14, A.15, A16, and A17, has been deleted for S16, S17, S18, and S19, respectively.

Table VII-A.9

- Table VII-A.9 has been renumbered for S20, S22, S29, S30, and S31.
- Sources S20, S22, S29, S30, and S31 have been grouped because all requirements of the same into Table A.9. Thus, Table VII- A.20, A.21, A.22, and A.23, has been deleted for S22, S29, S30, and S31, respectively.

Table VII-A.10

- Table VII-A.10 has been renumbered for S21.

Table VII-A.11

- Table VII-A.11 has been renumbered for S36.

Table VII-A.12

- Table VII-A.12 has been renumbered for S43.

Table VII-A.13

- Table VII-A.13 has been renumbered for S44.

Table VII-A.14

- Table VII-A.14 has been renumbered for S50, S51, and S52.
- Removed outdated exemption 9-8-111.1.
- Removed empty roll.

Table VII-A.15

- Table VII-A.15 has been renumbered for S53, S56, S57, S58 and S59. Removed S54 and S55 from the Table VII-A.15 to remove reference to shutdown sources.

Table VII-A.16

- Table VII-A.16 has been renumbered for S336 and S337.
- Sources S336 and S337 have been grouped because all requirements of the same into Table A.16. Thus, Table VII-A.30 has been deleted for S337.

Table VII-A.17

- Table VII-A.17 has been renumbered for S351.

Table VII-A.18

- Table VII-A.18 has been renumbered for S371 and S372.
- Sources S371and S372 have been grouped because all requirements of the same into Table A.18. Thus, Table VII-A.33 has been deleted for S372.

Table VII-A.19

- Removed S438 applicable requirements from VII-A.33 table and put into its own table renumbered as Table VII-A19.

Table VII-A.20

- Table VII-A.20 has been renumbered for S461.

- Added applicable monitoring requirement for Condition # 21096. Condition # 21096 was amended as part of Application # 22672.

Table VII-A.21

- Table VII-A.21 has been renumbered for S45.
- Added applicable monitoring requirement for Condition # 22962. Condition # 22962 was amended as part of 22671.

Table VII-B

- Amended the requirement to more accurately reflect the requirement (Condition # 1440 Part 4.b) for vapor tight, as defined in Regulation 8-8-204.

Table VII-C

- Amended the requirement to more accurately reflect the requirement (Condition # 1440 Part 4.b) for vapor tight, as defined in Regulation 8-8-204.
- Table was updated to include BAAQMD Condition # 26069 (from Application # 27061).

Table VII-D

- Amended the requirement to more accurately reflect the requirement (Condition # 1440 Part 4.b) for vapor tight, as defined in Regulation 8-8-204.

Table VII-Da and VII-Db

- Table VII-Da addresses the DAF Thermal Oxidizer and Table VII-Db addresses the DAF Carbon Bed. The limit "For control by carbon: Reduction of 44 tons POC per year" was removed from Table VII-Da (which applies only to the DAF Thermal Oxidizer) as the limit applies to the carbon bed system (and is listed correctly in Table VII-Db). Added SIP 8-8-307.2 as an applicable federally enforceable requirement, since the corresponding BAAQMD 8-8-307.2 is not.
- BAAQMD Condition 1440, Part 7c(vi) was added to Table VII-Db.
- The temperature requirement in Table VII-Db was deleted because it is not applicable to the Carbon Bed.

Table VII-E

- Amended the requirement to more accurately reflect the requirement (Condition # 1440 Part 4.b) for vapor tight, as defined in Regulation 8-8-204.

Table VII-G

- Amended the requirement to more accurately reflect the requirement (Condition # 1440 Part 4.b) for vapor tight, as defined in Regulation 8-8-204.

Table VII-H

- Removed empty row.

Table VII-J

- Amended the requirement to more accurately reflect the requirement BAAQMD Regulation 8-8-303 for vapor tight, as defined in Regulation 8-8-204.

Table VII-K

- Updated the requirements for California Air Resources Board Executive Order VR-101 for monitoring frequency and monitoring type.

Table VII-L

- Removed empty roll.
- Removed reference to 40 CFR 60.104(a)(l) which is not an applicable limit subject to monitoring.
- According to 40 CFR 63.648, any flare used to control equipment leaks including PRD discharges must comply with the new flare provisions in 40 CFR 63.670 and 63.671 by January 30, 2019. The Main Flare (S296) and the MP-30 Flare (S398) at the refinery may be used to control emissions from PRD in organic HAP service and are therefore subject to the new flare standards finalized in the RSR. These requirements have been added to this table.

Table VII – M

- Corrected federal enforceability status of BAAQMD 8-10-301 which is not federally enforceable.
- The new DCU provisions are included in 40 CFR 63.657. Additionally, in 40 CFR 63.641, the RSR finalized amendments to the definition of "delayed coking vent" and "miscellaneous process vents" and add definitions for "delayed coking unit" and "decoking operations." Compliance with the new DCU provisions is required by January 30, 2019. The U200 Delayed Coker Unit will be subject to the new standards. These requirements have been added to this table.

Table VII – Na

- Removed applicable requirement of S308 which does not below in this table. S308 and its requirement are covered in Table VII-Nb.

Table VII-X

- Table was renumbered for S462 and S463 after removal of table for S389 which was shut down.

Table VII– BB.2 through BB.28

- The tables been renumbered upon removal of Table VII-BB.2 for S-118 which has been shut down.
- Remove tanks that have been shut down from applicable tables.
- Added applicable provisions for 40 CFR 63 Subpart CC.
- Removed S173, S174 and S168 from Table VII-BB.19 because they are now controlled by A7 which makes them applicable instead to Table VII-BB.3 (S173 and S174) and BB.13a (S168).
- For S442 in Table VII-B.5, added Part 2 and amended Part 1 of Condition # 12127 that resulted from the Change of Condition application # 26486 for S442 Tank 112.

- For S137 in Table VII-B.13, corrected the applicable requirements specified in Conditions # 22518 for S137.
- For S340 in Table VII-B.15, corrected the applicable requirements specified in Condition # 25223.
- For S1012 in Table VII-B.28, added table for new source which was permitted in 2012.

Table VII– CC.1 and CC.2

- Added applicable monitoring required by Regulation 11-10 and removed reference of Condition # 22122 parts which have been superseded by Regulation 11-10. Only monitoring for PM is still subject to Condition # 22122 Part 2 which is to verify the permit/exemption status of the cooling tower.

Following is a summary of the limits and monitoring, organized by pollutant.

NOx Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
All combustion sources in Tables designated as "A" (except A.19, A.24, A.27, A.28, A.34, A.35 and A.36)	BAAQMD 9-10-303	This "interim" NOx limit, while still in force, is subsumed by more restrictive limits in this regulation.	None. Monitoring of more restrictive NOx limits is required.
S352 – S357	BAAQMD Condition 12122, Parts 9a and 9b. Note: Part 9b will apply after NOx emissions at S352-S357 are reduced to provide offsets for Application 13424	Combined NOx emissions from S- 352 - S-357 shall not exceed 66 lb/hr (averaged over any 3 hour period), nor 167 tons in any consecutive 365-day period. NOx emissions from each turbine/duct burner set shall not exceed 528 lb/day.	BAAQMD Condition 12122, Part 9c is a requirement for a NOx CEM.

NOx Discussion:

Every source at the refinery that is subject to a NOx limit is also subject to NOx monitoring. These monitoring requirements come either from Regulation 9-10, existing permit conditions, or both. For more detailed information on this matter, see Table VII. Sources

that are subject to this rule are found in the tables in Section VII Applicable Limits and Compliance Monitoring Requirements of the permit.

BAAQMD Regulation 9, Rule 10 "Inorganic Gaseous Pollutants: NOx and CO from Boilers, Steam Generators and Process heaters in Petroleum Refineries"

Regulation 9-10-502 requires the installation of a NOx, CO and O_2 continuous emission monitoring systems (CEMs) to demonstrate compliance with Regulation 9, Rule 10. Regulation 9-10-502 also allows a CEM equivalent verification system to determine compliance with Regulation 9-10-301. This CEM equivalent verification system is called the "NOx Box". The NOx Box is an operation window for the affected unit, expressed in terms of fired duty and oxygen content in the flue gas. The operating window is established by source tests for various operating conditions. The source tests demonstrate if the NOx emissions are equal to or less than a specified emission factor. As long as the fired unit duty and oxygen content are in this NOx Box operating window, the specified emission factor is used to determine compliance with 0.033 lb/MMBtu limit of Regulation 9-10-301. The Permit Condition that contains details of the NOx Box is #21235.

The NOx box must be established in accordance with the BAAQMD's Policy Memo of April 10, 2003, which is included in Appendix C of this document. The policy requires units that are controlled by SCR to have NOx CEMs. The following sources have SCR and CEMs: S43, S351, S371, and S372. Units with a capacity over 200 MMbtu/hr also require CEMs. Units S8, S10, and S44 are over 200 MMbtu/hr and have CEMs. Units S15 through S19 have a combined capacity of about 240 MMbtu/hr and exhaust through a common stack, which has a CEM. S13 has a capacity of 194 MMbtu/hr, but has a CEM.

The remaining sources are allowed to use equivalent verification systems. Units between 25 MMbtu/hr and 200 MMbtu/hr are required to establish NOx boxes by testing at low and high fire and low and high O2 concentrations. Facilities may establish a lower and higher NOx box for each unit. When the NOx box is established, operation within the NOx box corresponds to the emission factor established for the operating range in lb/MMbtu.

Sources under 25 MMbtu/hr do not have NOx boxes. The NOx emission factor is established by source test. The emission factor is verified by annual source tests.

CO Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
S352 – S357	BAAQMD Condition 12122, Part 7	CO emissions from each turbine/duct burner set shall not exceed 39 ppmv at 15% oxygen, averaged over any consecutive 30-day period. Emissions during startup periods, which shall not exceed four hours, and shutdown periods, which shall not exceed two hours, may be excluded when averaging emissions	BAAQMD Condition 12122, Part 10b is a requirement for a CO CEM.
S352 – S357	BAAQMD Condition 12122, Part 10a	The combined CO emissions from S352, S353, S354, S355, S356 and S357 shall not exceed 200 tons in any consecutive 365 day period	BAAQMD Condition 12122, Part 10b is a requirement for a CO CEM.
S438 and A46 SCR system	BAAQMD Condition 1694, Part E.4	CO emission concentration 32 ppmv @ 3% oxygen, averaged over any calendar day	S438 was source-tested on March 09, 2006 and was found to have a negligible CO emission concentration.

CO Discussion:

Every source at the refinery that is subject to a CO limit is also subject to CO monitoring. These monitoring requirements come either from Regulation 9-10, existing permit conditions, or both. For more detailed information on this matter, see Table VII. Sources that are subject to this rule are found in the tables in Section VII Applicable Limits and Compliance Monitoring Requirements of the permit.

BAAQMD Regulation 9, Rule 10 "Inorganic Gaseous Pollutants: NOx and CO from Boilers, Steam Generators and Process heaters in Petroleum Refineries"

Regulation 9-10-502 requires the installation of a NOx, CO and O_2 continuous emission monitoring systems (CEMs) to demonstrate compliance with Regulation 9, Rule 10. Regulation 9-10-502 also allows a CEM equivalent verification system to determine compliance with Regulation 9-10-301.

Per the BAAQMD's Policy Memo of April 10, 2003, Regulation 9, Rule 10, is the Best Available Retrofit Control Technology (BARCT) rule that limits the emissions of NOx and

CO from boilers, steam generators, and process heaters in petroleum refineries. Section 9-10-502 requires NOx, CO, and O_2 CEMs or "equivalent" verification on affected combustion units. Regulation 9-10 was not intended to obtain CO emission reductions. The 400 ppmv CO limit in the rule was included only to prevent sources from emitting higher CO emissions as a result of implementing NOx controls. Thus, the CO CEM equivalence verification standard does not need to be as stringent as that for NOx monitoring equivalency. Permit Condition 21235 contains details of the CO emission limits and monitoring requirements for different affected units.

SO2 Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
S301, S302, S303, S465 Sulfur Pits, S1001, S1002, S1003, S1010 Sulfur Plants	BAAQMD Regulation 9-1-313.2	Operation of a sulfur removal and recovery system that removes and recovers: 95% of H2S from refinery fuel gas, 95% of H2S and ammonia from process water streams (sulfur recovery is required when a facility removes 16.5 ton/day or more of elemental sulfur)	None. (Note 1)
S301, S302, S303, S465 Sulfur Pits, S1001, S1002, S1003, S1010 Sulfur Plants	BAAQMD Regulation 6-1-330	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	Condition 19278, Part 3 and Condition 23125, Part 20: Annual source test requirements. (Note 2)
S301, S302, S303, S465 Sulfur Pits, S1001, S1002, S1003, S1010 Sulfur Plants	40 CFR 60.104(a) (2) [Note: Applies upon startup of S1010]	250 ppm at 0% excess air, 12-hr rolling average	CEM on thermal oxidizer stack.
S301, S302, S303, S465 Sulfur Pits, S1001, S1002, S1003, S1010 Sulfur Plants	40 CFR 60.102a(f) (1) [Note: Applies upon startup of S1010]	250 ppm at 0% excess air, dry, 12-hr rolling average	CEM on thermal oxidizer stack.
S45, Heater, S434, High Pressure Reactor Train and S1010, Sulfur Plant	BAAQMD Condition 22970, Part A.2.b	34.4 tons per any consecutive 12 months for S45, S434, and S1010 combined	CEMS, source tests, and calculations
S1010, Sulfur Plant	BAAQMD Condition 23125, part 7a	50 ppmvd @ 0% O2, 24-hr average	CEM
S350 Crude Unit	BAAQMD Condition 383, Part 1a	Sulfur content of crude processed in Crude Unit #267 (S350) shall not exceed 1.5 weight%	BAAQMD Condition 383, Part 1b is a requirement for daily sampling to determine the sulfur content of crude feedstock blends.

SO2 Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
S438 Furnace	BAAQMD Condition 1694, Part E.3	1 ppmw TRS by wt in PSA offgas used as fuel at S438	None. (Note 3)
All combustion sources	BAAQMD 9-1-302	300 ppm (dry) SO2 in any combustion exhaust stream	None. (Note 4)
Combustion sources permitted for liquid fuel use	BAAQMD 9-1-304	Sulfur content of liquid fuel <0.5%, by weight	Low-Sulfur Fuel Certification by Supplier for each lot (Note 5)

SO_2 Discussion:

Note 1: Sulfur plants (S1001, S1002, S1003 and S1010) will not require annual source testing to demonstrate compliance with 9-1-313.2. This H2S and ammonia removal standard is more of a design standard than a performance standard. The entire removal system is designed to achieve the required removal. Please refer to discussion on "*Compliance with Regulation 9-1-313.2"* in Section IV of this document for more details.

Note 2: Sulfur plants (S1001, S1002, S1003 and S1010) will require annual source testing to demonstrate compliance with 6-1-330. More frequent monitoring is not required, because the system will exceed the standard only under upset conditions. The monitors and alarms that alert the operator to abnormal conditions are adequate to ensure that upsets are detected and corrected. The cost of more frequent tests is not justified by the incremental improvement in compliance assurance.

Note 3: The PSA offgas normally operates well below a 1 ppmv TRS level, and the offgas is only a portion of the fuel used at S438. As a result, a violation of the standard is unlikely.

Note 4: All facility combustion sources are subject to the SO_2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). Area monitoring to demonstrate compliance with the ground level SO_2 concentration requirements of Regulation 9-1-301 has been required by the District (per BAAQMD Regulation 9-1-501). No monitoring is required for BAAQMD regulation 9-1-302 because it only applies when the ground level monitors (GLMs) are not operating, which is infrequent.

Note 5: Per CAPCOA/ARB/EPA Agreement, certification by fuel supplier for each fuel delivery. California Diesel Fuel shall not exceed sulfur content of 0.05 %, by weight. Certification may be provided once for each purchase lot, if records are also kept of the purchase lot number of each delivery.

PM Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
Gaseous-fired combustion sources: S2, S4, S5, S8 through S-22, S29, S30, S31, S36, S43, S44, S45, S296, S336, S337, S351, S352-S357, S371, S372, S398, S438, S461	BAAQMD 6-1-301	Ringelmann 1 for no more than 3 minutes in any hour	N/A (Note 1)
Combustion sources permitted for discretionary liquid fuel use: S3, S7	BAAQMD 6-1-301	Ringelmann 1 for no more than 3 minutes in any hour	Condition 1694, Part A.2c is a requirement for visible emissions inspection after every 1 million gallons of diesel combusted. (Note 2) Condition 1694, Part A.2b is a requirement for monitoring of visible emissions during tube cleaning. (Note 5)
Diesel engines: S50 through S59	BAAQMD 6-1-303.1	Ringelmann 2 for no more than 3 minutes in any hour	None. (Note 7)
Combustion sources permitted for discretionary liquid fuel use and rated over 140 MM BTU/hr (with tubes): none	BAAQMD 6-1-304	During tube cleaning, Ringelmann No. 2 for 3 min/hr and 6 min/billion BTU in 24 hours	N/A

PM Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
All sources with particulate emissions	BAAQMD 6-1-305	No nuisance particulate fallout	None. (Note 6)
Diesel engines: S50 through S59	BAAQMD 6-1-310	0.15 grain/dscf @ 6% O2	None. (Note 7)
Gaseous-fired combustion sources: S2, S4, S5, S8 through S22, S29, S30, S31, S36, S43, S44, S45, S296, S336, S337, S351, S352-S357, S371, S372, S398, S438, S461	BAAQMD 6-1-310.3	0.15 grain/dscf @ 6% O2	None. (Note 1)
Combustion sources permitted for discretionary liquid fuel use: S3, S7	BAAQMD 6-1-310.3	0.15 grain/dscf @ 6% O2	Visible emissions inspection after every 1 million gallons of diesel combusted. (Note 2)
S380 (A20) baghouses	BAAQMD 6-1-301, 6-1-310 and 6-1-311	6-1-301: Ringelmann 1 for no more than 3 minutes in any hour 6-1-310: 0.15 grain/dscf @ 6% O2; 6-1-311: as specified in rule table	Condition 18251, Part 2 is a requirement to monitor differential pressure on baghouses. (Note 3)
S296, S398 flares	BAAQMD 6-1-301	Ringelmann 1 for no more than 3 minutes in any hour	Condition 18255, Part 4 is a requirement to perform video monitoring or visible inspection of operating flares. (Note 4)

PM Discussion:

Note 1: Gaseous Fuels: BAAQMD Regulation 6-1-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. No monitoring is required for sources that burn gaseous fuels exclusively, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP".

Note 2: Liquid Fuels: Per CAPCOA/ARB/EPA Agreement, adequate monitoring for combustion of liquid fuels is a visible emissions inspection after every 1 million gallons diesel combusted, to be counted cumulatively over a 5 year period. Since S3 and S7 may burn naphtha, not diesel, the 5-year cumulative basis is not used. If a visible emissions inspection documents opacity, a method 9 evaluation shall be completed within 3 working days, or during the next scheduled operating period if the unit ceases firing on diesel fuel within the 3 working day time frame. Condition 1694, Part A.2c is a requirement to monitor visible emissions before every 1 million gallon of fuel is combusted. This frequency was selected by balancing the likelihood of undetected significant non-compliance with the expense of more frequent inspections. The cost of more frequent monitoring is not justified for sources with liquid fuel usage that is infrequent or small. The cost of conducting method 9 evaluations is not justified unless a less formal inspection indicates that the source is emitting smoke.

Note 3: Condition 18251, Part 2a is a requirement for differential pressure gauges on these baghouses to detect either clogged or broken filter bags; Part 2b requires a quarterly gauge check and Part 3 requires records of quarterly readings. A properly functioning baghouse (all bags intact) cannot exceed the standard, and the differential pressure gauges allow such malfunctions to be detected.

Note 4: Condition 18255, Part 4 is a requirement to perform video monitoring or visual inspection of flares as soon as possible after a release begins. Flare S296 is only allowed to be used for upset and emergency conditions by Condition 18255.

Note 5: Tube cleaning is periodically performed on furnaces that burn liquid fuels, to remove built-up soot from the outside of furnace tubes. If improperly performed, it can result in visible emissions. Hourly observation of the stack during tube cleaning will ensure that improper tube cleaning performance is detected and corrected.

Note 6: Regulation 6-1-305 is for prohibition of nuisance. By definition, this regulation is not violated unless the source is a nuisance. No monitoring is necessary since a violation can only occur if, among other things, the particles emitted cause annoyance to another person.

Note 7: Particulate emissions from standby generators and turbine startup engines are not monitored because these engines are in intermittent use, for very limited periods of time.

POC Sources

S# & Description	Federally Enforceable Limit Citation	Federally Enforceable Limit	Monitoring
S324 Oil/Water Separator	BAAQMD Condition 1440, Part 6	Maximum design throughput	None for maximum design throughput. Average throughput is monitored through the annual throughput records required by Section VI of this permit
S294 Gasoline Dispensing Facility	BAAQMD Regulation 8-7-301.10	98% or highest vapor recovery rate specified by CARB	**None (see discussion below)**
S294 Gasoline Dispensing Facility	BAAQMD Regulation 8-7-313.1	Fugitives $\leq$ 0.42 lb/1000 gallon	**None (see discussion below)**
S294 Gasoline Dispensing Facility	BAAQMD Regulation 8-7-313.2	Spillage $\leq$ 0.42 lb/1000 gallon	**None (see discussion below)**
S294 Gasoline Dispensing Facility	BAAQMD Regulation 8-7-313.3	Liquid Retain + Spitting $\leq$ 0.42 lb/1000 gallon	**None (see discussion below)**
S294 Gasoline Dispensing Facility	SIP Regulation 8-7-301.2	95% recovery of gasoline vapors	**None (see discussion below)**
S294 Gasoline Dispensing Facility	BAAQMD Condition 7523	400,000 gal/yr gasoline throughput	Annual records required by District permit renewal program as allowed by BAAQMD Regulation 1-441
Low vapor pressure tanks (exempt from permits)	BAAQMD 8-5-117	No more than 0.5 psia true vapor pressure	Condition 20773, Part 1 is a requirement to determine true vapor pressure of tank contents whenever contents are changed.

POC Sources

S# & Description	Federally Enforceable Limit Citation	Federally Enforceable Limit	Monitoring
S352, S353, S354 Turbines, S355, S356, S357 Duct Burners	BAAQMD Condition 12122, Part 8	POC emissions from each turbine/duct burner set shall not exceed 6 ppmv at 15% oxygen averaged over any consecutive 30 day period, except during startup periods, which shall not exceed four hours, and shutdown periods, which shall not exceed two hours.	Condition 12122, Part 14 is an annual POC source test requirement to verify compliance with Part 8 of the same permit condition.
S352, S353, S354 Turbines, S355, S356, S357 Duct Burners	BAAQMD Condition 12122, Part 11	The combined POC emissions S-352, S-353, S-354, S-355, S-356 and S-357 shall not exceed 8.3 lb/hr nor 30.5 tons in any consecutive 365-day period.	Condition 12122, Part 14 is an annual POC source test requirement to verify compliance with Part 11 of the same permit condition.

POC Discussion:

Source S324, Oil / Water Separator:

The maximum throughput is fixed by the source design and construction and is not normally subject to monitoring. Modification of S324 to increase maximum throughput, as at any permitted sources, would require prior District evaluation and approval.

Source S294, Gasoline Dispensing Facility:

The standard District POC emission factor for uncontrolled aboveground tanks is 1.52 lb/1000 gallon pumped. Based on this emission factor, the maximum estimated POC emissions from this source are:

(400,000 gallon/year) x (1.52 lb/1000 gallon) = 608 lb POC/year = 0.3 ton POC/yr

The potential to emit is low. Therefore, additional monitoring of this source is not required. Regulation 8, Rule 7, Gasoline Dispensing Facilities requires records of throughput. Regulation 8, Rule 7, Section 313 requirements are requirements to install CARB-certified equipment; the standards are not performance standards.

Sources S352, 353, 354, Turbines:

Annual source tests are required to ensure that VOC emissions do not increase above design levels. Compliance with the CO (which is continuously monitored) limit is a good indicator of good combustion, and therefore that VOC emissions are not excessive.

Discussion of Other Pollutants:

Sulfuric Acid Mist (H_2SO_4) Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
S1001, S1002, S1003, S1010, Sulfur Plants	SIP 6-330	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	Source test on thermal oxidizer stack
S45, Heater, S434, High Pressure Reactor Train and S1010, Sulfur Plant	BAAQMD Condition 22970, Part A.2.f	6.01 tons per any consecutive 12 months for S45, S434, and S1010 combined	Source tests, and calculations
S45, Heater, S434, High Pressure Reactor Train and S1010, Sulfur Plant	BAAQMD Condition 22970, Part A.3	38 lb/day for S45, S434, and S1010 at Facility A0016 and S2 at Facility B7419 combined	Source tests and calculations
S1010, Sulfur Plant	BAAQMD Condition 23125, part 10a	31 lb/day	Source test
S1010, Sulfur Plant	BAAQMD Condition 23125, part 11g	5.65 tons per any consecutive 12 months	Source test

As can be seen from the above table, source test requirements at respective thermal oxidizer stacks for S1001, S1002, S1003, and S1010, Sulfur Plants will ensure compliance with H_2SO_4 emission limits.

Ammonia (NH_3) Sources

S# & Description	Enforceable Limit Citation	Federally Enforceable Emission Limit	Monitoring
S1001, S1002, S1003, S1010, Sulfur Plants	SIP 9-1-313.2	95% of H2S in refinery fuel gas is removed and recovered on a refinery-wide basis AND 95% of H2S in process water streams is removed and recovered on a refinery-wide basis AND 95% of ammonia in process water streams is removed	None (see discussion on "Compliance with 9-1-313.2" in Section IV of this document)

Additional HAPs: There is no need for additional monitoring of HAPs. All HAP limits contain adequate monitoring requirements. For more information on HAP monitoring see Section VII of the Title V permit.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements. If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to permit

Added various citations and corresponding test methods per BAAQMD Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.

Minor typos related to citations for Regulations 9-9-301 and 9-10-303 were corrected.

Deleted test methods related to NSPS 40 CFR 60.18 and NESHAP 40 CFR 63.11 as these requirements do not apply to the refinery flares (S296 and S396) anymore.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit that identifies and justifies specific federally enforceable regulations and standards which the APCO has confirmed are not applicable to a source or group of sources, or (2) A provision in a major facility review permit that identifies and justifies specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting which are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has both types of permit shields.

Changes to permit:

This action proposes no changes to permit shields.

X. Revision History

The revision history will be updated when the revision is issued.

XI. Glossary

Changes to the glossary:
Added the following definitions:

- API
- C5
- C6
- GLM
- grain
- ISOM
- LHV
- MSDS
- RFG
- RMG
- therm

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

There is no change in this section for this Title V renewal.

E. Compliance Status:

The responsible official for Phillips 66 submitted a signed Certification Statement form dated June 5, 2017. On this form, the responsible official certified that the following statements are true:

- Based on information and belief formed after reasonable inquiry, the sources identified in the Applicable Requirements and Compliance Summary form that are in compliance will continue to comply with the applicable requirements;
- Based on information and belief formed after reasonable inquiry, the sources identified in the Applicable Requirements and Compliance Summary form will comply with future-effective applicable requirements, on a timely basis;
- Based on information and belief formed after reasonable inquiry, information on application forms, all accompanying reports, and other required certifications is true, accurate, and complete;
- All fees required by Regulation 3, including Schedule P, have been paid.

APPENDIX A - GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

API
American Petroleum Institute

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

BARCT
Best Available Retrofit Control Technology

Basis
The underlying authority which allows the District to impose requirements.

C_5
An Organic chemical compound with five carbon atoms

C_6
An Organic chemical compound with six carbon atoms

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEC
California Energy Commission

CEQA
California Environmental Quality Act

CEM
A "continuous emission monitor" is a monitoring device which provides a continuous record of some parameter (e.g. NOx concentration) in an exhaust steam.

CFEP
Clean Fuel Expansion Project

CFR
The Code of Federal Regulations. contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of contain the requirements for air pollution programs.

CO
Carbon Monoxide

CO2
Carbon Dioxide

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

DAF
A "dissolved air flotation" unit is a process vessel where air bubbles injected at the bottom of the vessel are used to carry solids in the liquid into a froth on the liquid surface, where it is removed.

DWT
Dead Weight Tons

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

E 6, E 9, E 12
Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals $(4.53)x(10^6)$ = (4.53)x(10x10x10x10x10x10) = 4,530,000. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EFRT
An "external floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an EFRT, the floating roof is not enclosed by a second, fixed tank roof, and is thus described as an "external" roof.

EMP
Environmental Management Plan

ESP
Electrostatic Precipitator

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District Regulations.

FCC
Fluid Catalytic Cracker

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to Part 51, Subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), and also including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

GLM
Ground Level Monitor

grain
1/7000 of a pound

GRU
Gas Recovery Unit

H2S
Hydrogen sulfide

H_2SO_4
Sulfuric Acid

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by Part 63.

HC
Hydrocarbon

Hg
Mercury

HNC
Heavy Neutral Hydrocracker

HNHF
Heavy Neutral Hydrofinisher

HHV
High Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

IFRT
An "internal floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an IFRT, the floating roof is enclosed by a second, fixed tank roof, and thus is described as an "internal" roof.

ISOM
Isomerization plant

LFSO
Low sulfur fuel oil

LHV
Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

Lighter
"Lightering" is a transfer operation during which liquid is pumped from an ocean-going tanker vessel to a smaller vessel such as a barge. Like any liquid transfer operation, lightering of organic liquids produces organic vapor emissions.

LNC
Light Neutral Hydrocracker

LNHF
Light Neutral Hydrofinisher

LPG
Liquid Petroleum Gas

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Act and implemented by District Regulation 2, Rule 6.

MM
Million

Mo Gas
Motor gasoline

MOP
The District's Manual of Procedures

MSDS
Material Safety Data Sheet

MTBE
Methyl Tertiary Butyl Ether

NA
Not applicable

NAAQS
National Ambient Air Quality Standards

NESHAPs
National Emission Standards for Hazardous Air Pollutants. See in Parts 61 and 63.

NMHC
Non-methane Hydrocarbons

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
Oxides of nitrogen.

NPOC
Non-precursor organic compounds

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Act, and implemented by Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2
The chemical name for naturally-occurring oxygen gas.

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NOx, PM10, and SO2.

OMMP
Operation, Maintenance and Monitoring Plan

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 72 from Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
Total Particulate Matter

PM10
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

Process Unit
For the purpose of startup and shutdown reporting, a process unit is defined as found in Part 60 Subpart GGG:

> Process Unit means components assembled to produce intermediates or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both Part 52 and District Regulation 2, Rule 2.

RACT
Reasonably Available Control Technology

Regulated Organic Liquid
"Regulated organic liquids" are those liquids which require permits, or which are subject

to some regulation, when processed at a liquid-handling operation. For example, for refinery marine terminals, regulated organic liquids are defined as "organic liquids" in Regulation 8, Rule 44.

RFG
Refinery Fuel Gas

RMG
Refinery Make Gas

SAM
Sulfuric Acid Mist

SCR
A "selective catalytic reduction" unit is an abatement device which reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

SDA
Solvent deasphalting

Shutdown
For reporting purposes only, a shutdown shall be defined as any of the following: there is no process feed to a unit, no furnace fires, or the boundary blinds are installed.

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SMM
Startup, shutdown, and malfunction

SMMP
Startup, shutdown, and malfunction plan

SO2
Sulfur dioxide

SO2 Bubble
An SO2 bubble is an overall cap on the SO2 emissions from a defined group of sources, or from an entire facility. SO2 bubbles are sometimes used at refineries because combustion sources are typically fired entirely or in part by "refinery fuel gas" (RFG), a waste gas product from refining operations. Thus, total SO2 emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H2S and other sulfur compounds in the RFG.

SO3
Sulfur trioxide

SRU
Sulfur Recovery Unit

ST-7
Source Test Method #7: Non-Methane Organic Carbon Sampling

Startup
For reporting purposes only, a startup shall be defined as any of the following: the removal of boundary blinds, first fire to a furnace, or the introduction of process feed to a unit. A startup only occurs following a shutdown unless it involves a newly constructed process unit.

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Units

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TKC
Taylor Kinetic Cracking

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TRS
"Total reduced sulfur" is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO2 by the combustion process.

TSP
Total Suspended Particulate

VE
Visible emissions

VGO
Vacuum Gas Oil

VOC
Volatile Organic Compounds

VR
Vapor Recovery

WWT
Wastewater Treatment

Units of Measure:

bbl	=	barrels
bhp	=	brake-horsepower
btu	=	British Thermal Unit
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb=	pound	
in=	inches	
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million, millimeter
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

APPENDIX B - BAAQMD ENGINEERING EVALUATION REPORTS

NSR Application	Description	Title V Application
21848	NOx Box Revisions	21850
22671	Hot Standby Mode for S45 and S461	22672
26486	S442 Tank 112 Change of Conditions	26487
27061	Thermal Oxidizer for S-324 API Oil Water Separator	27532
27557	SRU Temperature Limit, Change of Conditions	27560
28110	NOx Box Revisions S3, S9	None
28687	Fire Training Fluid Storage Tank	28688

Engineering Evaluation
Phillips 66 – San Francisco Refinery
Application No. 21848
Plant No. 21359

BACKGROUND

Phillips 66 has submitted a change of conditions application to revise condition 21235 which includes NOx boxes for 15 sources. Phillips 66 is requesting revisions to 23 of 27 NOx boxes for 15 sources that are subject to Regulation 9, Rule 10. The revised NOx box tables are shown below. All of the sources that utilize a NOx box to monitor emissions have two NOx boxes per source. The boxes are sometimes separated by firing rate and sometimes by oxygen content.

The existing approved NOx boxes (Application #14602) and the revised NOx boxes have the lower portions of some of the NOx boxes drawn down to a 20% low fire line and often there is no source test data at the corners of the NOx box. Phillips has submitted additional data (See email from J. Ahlskog dated June 21, 2013 to B. Lusher) that supports the fact that extending the NOx boxes to the 20% low fire line is a conservative NOx emission estimation methodology. The NOx emission rates at low fire conditions are lower than the conservative NOx box emission factor.

The data from S-3 and S-7 also supports the fact that extending the NOx box to the 20% low fire line is conservative. S-3 and S-7 have NOx boxes that are partially based on source test data that corresponds to a firing rate that is less than 20% of the maximum firing rate. The two data points below the 20% firing rate line have a much lower NOx emission rate on a lb/MMBtu basis than the associated NOx box emission factor.

In order to meet the new monitoring requirements contained in the revised Regulation 9, Rule 10, the Refinery plans to install CEMs on S-3, S-4, S-5, S-7, S-9, S-11, S-12, S-29, S-30, and S-336/S-337 (combined stack). After CEMs are installed on these sources only S-22 will have a non-standard NOx box. The remaining heaters S-2, S-20, and S-22 have a capacity less than 25 MMBtu/hour and may use an emission factor based on source testing to estimate emissions.

EMISSION CALCULATIONS/CUMULATIVE INCREASE

There is no emissions increase associated with this application.

The revised NOx boxes for the affected sources at the Refinery are shown below:

Revised NOx Box Table - Underline/Strikeout

Source No.	Emission Factor (lb/MMBtu)	Point 1~~Min O_2 at Low Firing~~ (O_2%, MMBtu/hr)	Point 2~~Max O_2 at Low Firing~~ (O_2%, MMBtu/hr)	Point 3~~Min O_2 at High Firing~~ (O_2%, MMBtu/hr)	Point 4~~Mid O_2 at Mid/High Firing (polygon)~~ (O_2%, MMBtu/hr)	Point 5~~Max O_2 at High Firing~~ (O_2%, MMBtu/hr)
2	0.0312~~5~~	N/A, 4.4	N/A, 4.4	N/A, 22	N/A	N/A, 22
3	0.14~~09~~	2.4, 10.6~~1.81, 12.4~~	2.4, 30~~1.81, 14.5~~	5.6, 34.4~~2.4, 31.1~~	5.7, 7.8~~7.0, 16.5~~	7~~.0, 12.4~~
3	0.16~~44~~	5.7, 7.8~~2.4, 31.1~~	5.6, 34.4~~33.2~~	10.2, 26.1~~9.0, 23.7~~	9.6, 7.7~~7.0, 16.5~~	8.6, 7.4
4	0.040~~4~~	1.6, 19.2	1.6, 66	2.0, 81~~.5~~	2.5, 74	2.5, 19.2
4	0.0495	2.5, 19.2	2.5, 74	3.8, 74	5.7, 37~~3.8, 19.2~~	5.7, 19.2
5	0.0464	1.6, 21~~0.8~~	1.6, 70~~69.5~~	1.7, 74.4	2.5, 74.4	2.5, 21~~0.8~~
5	0.0~~6558~~	2.5, 21~~0.8~~	2.5, 74.4	4.3, 71.2	6.8, 62.4~~4.3, 20.8~~	6.8, 21
7	0.137~~1~~	3.7, 11.2~~2.9, 13.3~~	2.5~~4~~, 29.1	13.0, 19.6	14.3, 4.7~~11.25, 10.71~~	12.9, 3.6~~3.7, 11.2~~
7	0.1372~~5~~	2.5~~4~~, 29.1	3.4, 53.4	4.4, 53.4	13.0, 19.6	
9	0.021	1.2, 12.2	1.2, 54	2.8, 54	3.3, 42.7	3.3, 12.2
9	0.032~~48~~	3.3, 12.2	3.3, 42.7	4.2, 54	7, 31~~4.2, 12.2~~	7, 12.2
11	0.058	1.3, 21.6	1.3, 98.8	2.5, 104~~2.06, 100.4~~	3.0, 95.2	3.0, 21.6
11	0.062~~1~~	3.0, 21.6	3.0, 95.2	5.6, 89~~5.0, 85.2~~	5.0, 21.6	
12	0.0241~~3~~	1.6, 8.4	1.6, 21	2.2, 312~~.15, 30.8~~	3, 312~~.6, 30.8~~	3.02~~.6~~, 8.4
12	0.03342~~82~~	3.02~~.6~~, 8.4	3, 312~~.6, 30.8~~	5.0, 310~~.8~~	6, 305~~.0, 8.4~~	6, 8.4
20	0.036	N/A, 4.6	N/A, 4.6	N/A, 23	N/A	N/A, 23
22	0.0362~~5~~	2.1~~1.37~~, 6.2	2.1, 24~~1.37, 20.8~~	4.4~~4~~, 24~~17.8~~	4.7, 21~~5.24, 14.22~~	4.7~~5.24~~, 6.2
22	0.0503~~7~~	4.7~~5.24~~, 6.2	4.7, 21~~5.24, 14.22~~	10, 20.3~~4.44, 17.8~~	10, 6.2~~7.2, 15.6~~	7~~.2, 6.2~~
29	0.03~~41~~	1.5, 21~~0.8~~	1.5, 93	3.1, 106~~2.9, 95.5~~	3.1, 21~~93~~	3~~.1, 20.8~~
29	0.042~~366~~	3.1, 21~~0.8~~	3.1, 106~~93~~	4.5, 100.3~~4.3, 95.5~~	6.2, 89.4~~4.3, 20.8~~	6.2, 21
30	0.043	1.8, 10	1.8, 38.3	3.1, 42~~2.8, 38.3~~	3.1, 10~~24~~	3~~.1, 10~~
30	0.052	3.1, 10	3.1, 42~~24~~	4.5, 45~~2.8, 38.3~~	7.5, 36~~4.5, 38.3~~	74.5, 10
31	0.0552~~69~~	N/A, 4	N/A, 4	N/A, 20	N/A	N/A, 20
336	0.0527~~48~~	2.0, 22.2	2.0, 8~~43.3~~	4, 94.3~~2.65, 86.1~~	4.4, 91~~73.7~~	4.4, 22.2
336	0.0615~~27~~	4.4, 22.2	4.4, 91~~73.7~~	5.4, 94.4~~2.65, 86.1~~	5.9, 87.1~~5.42, 94.4~~	5.9~~42~~, 22.2
337	0.048	1.8, 6.8	1.8, 31.8	2.7~~68~~, 31.8	4.3, 25	4.3, 6.8
337	0.065	4.3, 6.8	4.3, 25	2.7~~68~~, 31.8	6.2, 31.8	6.2, 6.8

Revised NOx Box Table - Without Underline Strikeout

Source No.	Emission Factor	Point 1	Point 2	Point 3	Point 4	Point 5
	(lb/MMBtu)	(O2%, MMBtu/hr)				
2	0.031	N/A, 4.4	N/A, 4.4	N/A, 22	N/A	N/A, 22
3	0.14	2.4, 10.6	2.4, 30	5.6, 34.4	5.7, 7.80	
3	0.16	5.7, 7.80	5.6, 34.4	10.2, 26.1	9.6, 7.7	8.6, 7.44
4	0.0404	1.6, 19.2	1.6, 66	2.0, 81	2.5, 74	2.5, 19.2
4	0.0495	2.5, 19.2	2.5, 74	3.8, 74	5.7, 37	5.7, 19.2
5	0.0464	1.6, 21	1.6, 70	1.7, 74.4	2.5, 74.4	2.5, 21
5	0.06	2.5, 21	2.5, 74.4	4.3, 71.2	6.8, 62.4	6.8, 21
7	0.137	3.7, 11.2	2.5, 29.1	13.0, 19.6	14.3, 4.7	12.9, 3.6
7	0.137	2,5, 29.1	3.4, 53.4	4.4, 53.4	13.0, 19.6	
9	0.021	1.2, 12.2	1.2, 54	2.8, 54	3.3, 42.7	3.3, 12.2
9	0.032	3.3, 12.2	3.3, 42.7	4.2, 54	7, 31	7, 12.2
11	0.058	1.3, 21.6	1.3, 98.8	2.5, 104	3.0, 95.2	3.0, 21.6
11	0.062	3.0, 21.6	3.0, 95.2	5.6, 89	5.6, 21.6	
12	0.0241	1.6, 8.4	1.6, 21	2.2, 31	3, 31	3, 8.4
12	0.0334	3, 8.4	3, 31	5.0, 31	6, 30	6, 8.4
20	0.036	N/A, 4.6	N/A, 4.6	N/A, 23	N/A	N/A, 23
22	0.036	2.1, 6.2	2.1, 24	4.4, 24	4.7, 21	4.7, 6.2
22	0.050	4.7, 6.2	4.7, 21	10, 20.3	10, 6.2	
29	0.034	1.5, 21	1.5, 93	3.1, 106	3.1, 21	
29	0.042	3.1, 21	3.1, 106	4.5, 100.3	6.2, 89.4	6.2, 21
30	0.043	1.8, 10	1.8, 38.3	3.1, 42,	3.1, 10	
30	0.052	3.1, 10	3.1, 42	4.5, 45	7.5, 36	7.5, 10
31	0.055	N/A, 4	N/A, 4	N/A, 20	N/A	N/A, 20
336	0.0527	2.0, 22.2	2.0, 84	4, 94.3	4.4, 91	4.4, 22.2
336	0.061	4.4, 22.2	4.4, 91	5.4, 94.4	5.9, 87.1	5.9, 22.2
337	0.048	1.8, 6.8	1.8, 31.8	2.7, 31.8	4.3, 25	4.3, 6.8
337	0.065	4.3, 6.8	4.3, 25	2.7, 31.8	6.2, 31.8	6.2, 6.8

The revised NOx boxes will be used to estimate emissions from each source and to demonstrate compliance with Regulation 9, Rule 10.

STATEMENT OF COMPLIANCE

Regulation 2, Rule 1
The facility is not located within 1,000 feet of a school and the notification requirements of 2-1-412 are not triggered.

Regulation 2, Rule 2
There is no emissions increase associated with this application. BACT review is not triggered.

Health Risk Screening Analysis, Regulation 2, Rule 5
This is no emissions increase associated with this application.

Regulation 6, Rule 1
The sources subject to condition 21235 are expected to continue to comply with Regulation 6, Rule 1.

Regulation 9, Rule 10
The sources subject to condition 21235 are expected to continue to comply with Regulation 9, Rule 10. The Refinery is still considering their compliance options to meet the recent revisions to Regulation 9, Rule 10. Refinery staff has indicated that an additional 10 CEMs may be installed in order to meet the revised rule.

NSPS/NESHAPS
There is no New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that applies to this source.

CEQA
Phillips 66 has provided an Appendix H for this application. This application is categorically exempt from CEQA per 2-1-312.1 (see below).

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

OFFSETS
There is no emissions increase associated with this application. In addition, there are no new sources being installed and no existing sources being modified under this application and CEQA does not apply.

PSD
The PSD permit program does not apply to this application.

PERMIT CONDITIONS

CONDITION 21235

This condition was amended by Applications 13424 in October 2007, 14602 in May, 2008, ~~and~~ 22904 in March, 2013~~.~~, and 21848 in September, 2014.

Regulation 9-10 Refinery-Wide Compliance

CONDITIONS FOR SOURCES S2, S3, S4, S5, S7, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S22, S29, S30, S31, S43, S44, S336, S337, S351, S371, S372

1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: [Regulation 9-10-301 and 305]

S#	Description	NOx CEM
2	U229, B-301 Heater	No
3	U230, B-201 Heater	No
4	U231, B-101 Heater	No
5	U231, B-102 Heater	No
7	U231, B-103 Heater	No
9	U240, B-2 Boiler	No
10	U240, B-101 Heater	Yes
11	U240, B-201 Heater	No
12	U240, B-202 Heater	No
13	U240, B-301 Heater	Yes
15	U244, B-501 Heater	Yes
16	U244, B-502 Heater	Yes
17	U244, B-503 Heater	Yes
18	U244, B-504 Heater	Yes
19	U244, B-505 Heater	Yes
20	U244, B-506 Heater	No
22	U248, B-606 Heater	No
29	U200, B-5 Heater	No
30	U200, B-101 Heater	No
31	U200, B-501 Heater	No
43	U200, B-202 Heater	Yes
44	U200, B-201 PCT Reboil Furnace	Yes

336 U231 B-104 Heater No
337 U231 B-105 Heater No
351 U267 B-601/602 Tower Pre-Heaters Yes
371 U228 B-520 (Adsorber Feed) Furnace Yes
372 U228 B-521 (Hydrogen Plant) Furnace Yes

2. The owner/operator of each source listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. [Regulation 9-10-502]

3. The owner/operator shall operate each source listed in Part 1, that does not have a NOx CEM within specified ranges of operating conditions (firing rate and oxygen content) as detailed in Part 5. The ranges shall be established by utilizing data from district-approved source tests.

a. The NOx Box for units with a maximum firing rate of 25 MMBtu/hr or more shall be established using the procedures in Part 4.
b. The NOx Box for units with a maximum firing rate less than 25 MMBtu/hr shall be established asfollows: High-fire shall be the maximum rated capacity. Low-fire shall be 20% of the maximum rated capacity. There shall be no maximum or minimum O2.
[Regulation 9-10-502]

4. The owner/operator shall establish the initial NOx box for each source subject to Part 3. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard operation. The procedure for establishing the NOx box is as follows:

a. Conduct district approved source tests for NOx and CO, while varying the oxygen concentration and firing rate over the desired operating ranges for the furnace;
b. Determine the minimum and maximum oxygen concentrations and firing rates for the desired operating ranges (Note that the minimum O2 at low-fire may be different than the minimum O2 at high-fire. The same is true for the maximum O2). The owner/operator shall also verify the accuracy of the O2 monitor on an annual basis.
c. Determine the highest NOx emission factor (lb/Mmbtu) over the preferred operating ranges while maintaining CO concentration below 200 ppm; the owner/operator may choose to use a higher NOx emission factor than tested.
d. Plot the points representing the desired operating ranges on a graph. The resulting polygon(s) is the NOx Box, which represents the allowable operating range(s) for the furnace under which the NOx emission factor from part 5a is deemed to be valid.

i. The NOx Box can represent/utilize either one or two emission factors.
ii. The NOx Box for each emission factor can be represented either as a 4 or 5-sided polygon. The NOx box is the area within the 4- or 5-sided polygon formed by connecting the source test based parameters that lie about the perimeter of successful approved source tests. The source test parameters forming the corners of the NOx box are listed in Part 5.

e. Upon establishment of each NOx Box, the owner/operator shall prepare a graphical

representation of the box. The representation shall be made available on-site for APCO review upon request. The box shall also be submitted to the BAAQMD with permit amendments.

5. Except as provided in Part 5b and 5c, the owner/operator shall operate each source within the NOxBox ranges listed below at all times of operation. This part shall not apply to any source which has a properly operated and properly installed NOx CEM.

NOx Box ranges

2/0.0312~~5~~/N/A, 4.4/N/A, 4.4/N/A, 22/N/A/N/A, 22

3/0.1409/2.4~~1~~.81, 10.6~~12~~.4/2.4~~1~~.81, 30~~14~~.5/5.6~~2~~.4, 34.4~~31~~.1/5.7~~7~~.0, 7.8~~16~~.5/~~7.0, 12.4~~

3/0.1644/5.7~~2~~.4, 7.8~~31~~.1/5.6, 34.4~~33~~.2/10.2~~9~~.0, 26.1~~3~~.7/9.6~~7~~.0, 7.7~~16~~.5/8.6, 7.4~~N/A~~

4/0.0404/1.6, 19.2/1.6, 66/2.0, 81~~.5~~/2.5, 74/2.5, 19.2

4/0.0495/2.5, 19.2/2.5, 74/3.8, 74/5.7, 37~~3~~.8, ~~19.2~~/5.7, 19.2~~N/A~~

5/0.0464/1.6, 2~~1~~0.8/1.6, 70~~69~~.5/1.7, 74.4/2.5, 74.4/2.5, 2~~1~~0.8

5/0.06~~55~~8/2.5, 2~~1~~0.8/2.5, 74.4/4.3, 71.2/6.8~~4~~.3, 62.4~~20~~.8/6.8, 21~~N/A~~

7/0.137~~1~~/3.7~~2~~.9, 11.2~~13~~.3/2.5~~4~~, 29.1/13.0, 19.6/14.3~~1~~.25, 4~~1~~0.7~~1~~/12.9~~3~~.7, 3.6~~11~~.2

7/0.13725/2.5~~4~~, 29.1/3.4, 53.4/4.4, 53.4/13.0, 19.6/N/A

9/0.021/1.2, 12.2/1.2, 54/2.8, 54/3.3, 42.7/3.3, 12.2

9/0.0324~~8~~/3.3, 12.2/3.3, 42.7/4.2, 54/7~~4~~.2, 312~~.2~~/7, 12.2~~N/A~~

11/0.058/1.3, 21.6/1.3, 98.8/2.5~~06~~, 10~~40~~.4/3.0, 95.2/3.0, 21.6

11/0.062~~1~~/3.0, 21.6/3.0, 95.2/5.6~~0~~, 8~~95~~.2/5.0, 21.6/N/A

12/0.024~~3~~/1.6, 8.4/1.6, 21/2.2~~15~~, 3~~10~~.8/3~~2~~.6, 3~~10~~.8/3.0~~2~~.6, 8.4

12/0.0334~~282~~/3.0~~2~~.6, 8.4/3~~2~~.6, 3~~10~~.8/5.0, 3~~10~~.8/6~~5~~.0, 30~~8~~.4/6, 8.4~~N/A~~

20/0.036/N/A, 4.6/N/A, 4.6/N/A, 23/N/A/N/A, 23

22/0.0362~~5~~/2.1~~1~~.37, 6.2/2.1~~1~~.37, 2~~40~~.8/4.4~~4~~, 24~~17~~.8/4.7~~5~~.24, 21~~14~~.22/4.7~~5~~.24, 6.2

22/0.0503~~7~~/4.7~~5~~.24, 6.2/4.7~~5~~.24, 21~~14~~.22/10~~4~~.44, 20.3~~17~~.8/10~~7~~.2, 6.2~~15~~.6/N/A~~7~~.~~2, 6.2~~

29/0.034~~1~~/1.5, 2~~10~~.8/1.5, 93/3.1~~2~~.9, 106~~95~~.5/3.1, 2193/N/A~~3.1, 20.8~~

29/0.042366/3.1, 210.8/3.1, 10693/4.53, 100.395.5/6.24.3, 89.420.8/6.2, 21N/A

30/0.043/1.8, 10/1.8, 38.3/3.12.8, 4238.3/3.1, 1024/N/A3.1, 10

30/0.052/3.1, 10/3.1, 4224/4.52.8, 4538.3/7.54.5, 368.3/74.5, 10

31/0.055269/N/A, 4/N/A, 4/N/A, 20/N/A/N/A, 20

336/0.052748/2.0, 22.2/2.0, 843.3/42.65, 94.386.1/4.4, 9173.7/4.4, 22.2

336/0.061527/4.4, 22.2/4.4, 9173.7/5.42.65, 94.486.1/5.942, 87.194.4/5.942, 22.2

337/0.048/1.8, 6.8/1.8, 31.8/2.768, 31.8/4.3, 25/4.3, 6.8
337/0.065/4.3, 6.8/4.3, 25/2.768, 31.8/6.2, 31.8/6.2, 6.8

The limits listed above are based on a calendar day averaging period for both firing rate and O2%.

b. Part 5a does not apply during:
i) startup or shutdown periods,
ii) periods of curtailed operation (i.e. firing rate less than or equal to 30% of unit's rated capacity as defined in 9-10-22), or
iii) to units temporary out of service.
~~During these conditions the~~ means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.4 and 301.5. ~~to low firing rate conditions (i. e., firing rate less than or equal to 20% of the unit's rated capacity) during startup or shutdown periods or periods of curtailed operation (ex. during heater idling, refractory dryout, etc.) lasting 5 days or less. During these conditions the means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.2 (i.e. units out of service and 30-day averaging data).~~

c. Part 5a does not apply during any source test required or permitted by this condition. (Reg. 9- 10-502). See Part 7 for the consequences of source test results that exceed the emission factors in Part 5.

6a. The owner/operator may deviate from the NOx Box (either the firing rate or oxygen limit) provided that the owner/operator conducts a district approved source test which replicates the past operation outside of the established ranges. The source test representing the new conditions shall be conducted no later than the next regularly scheduled source test period, or within eight months, whichever is sooner. The source test results will establish whether the source was operating outside of the emission factor utilized for the source. The source test results shall be submitted to the district source test manager within 60 days of the test. As necessary, a permit amendment shall be submitted.

i. Source Test <= Emission Factor

If the results of this source test do not exceed the higher NOx emission factor in Part 5, or the CO limit in Part 9, the unit will not be considered to be in violation during this period for operating out of the "box." The facility may submit an accelerated permit program permit application to request an administrative change of the permit condition to adjust the NOx Box operating range(s), based on the new test data. *The change will be considered to be an administrative change for the purpose of the District permit and a minor revision for the purpose of the Major Facility Review permit.*

ii. Source Test > Emission Factor

If the results of this source test exceed the permitted emission concentrations or emission rates then, utilizing measured emission concentration or rate, the owner/operator shall apply the higher emission factor retroactively to the date of the previous source test and provide sufficient NOx IERCs for that time period to ensure the facility is in compliance with the refinery wide limit specified in Regulation 9-10-301. The owner/operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301. The facility may submit a permit application to request an alteration of the permit condition to change the NOx emission factor and/or adjust the operating range, based on the new test data.

6b. The owner/operator must report conditions outside of box within 96 hours of occurrence.

7. For each source subject to Part 3, the owner/operator shall conduct source tests at the schedule listed below. The source tests are performed in order to measure NOx, CO, and O2 at the as-found firing rate, or at conditions reasonably specified by the APCO. The source test results shall be submitted to the District Source Test Manager within 60 days of the test. [Regulation 9-10-502]

a Source Testing Schedule

i. Heater < 25 MMBtu/hr: One source test per consecutive 12 month period. The time interval between source tests shall not exceed 16 months.

ii. Heaters = 25 MMBtu/hr: Two source tests per consecutive 12 month period. The time interval between source tests shall not exceed 8 months and not be less than 5 months apart. The source test results shall be submitted to the district source test manager within 60 days of the test.

[Regulation 9-10-502]

b If the results of any source test under this part exceed the permitted concentrations or emission rates, the owner/operator shall follow the requirements of Part 6a(ii). If the owner/operator chooses not to submit an application to revise the emission factor, the owner/operator shall conduct another Part 7 source test, at the same conditions, within 90 days of the initial test.

8. For each source listed in Part 1 with a NOx CEM installed, the owner/operator shall

conduct semi-annual district approved CO source tests at as-found conditions. The time interval between source tests shall not exceed 8 months. District conducted CO emission tests associated with District-conducted NOx CEM field accuracy tests may be substituted for the CO semi-annual source tests.

9. For any source listed in Part 1 for which any two source test results over any consecutive five year period are greater than or equal to 200 ppmv CO at 3% O2, the owner/operator shall properly install, properly maintain, and properly operate a CEM to continuously measure CO and O2. The owner/operator shall install the CEM within the time period allowed in the District's Manual of Procedures. [Regulation 9-10-502, 1-522]

10. In addition to records required by 9-10-504, the facility must maintain records of all source tests conducted to demonstrate compliance with Parts 1 and 5. These records shall be kept on site for at least five years from the date of entry in a District approved log and be made available to District staff upon request. [Recordkeeping, Regulation 9-10-504]

*11. The sources listed in Part 1 of this condition make up the group of sources that are operating under an Alternative Compliance Plan (ACP). The owner/operator shall demonstrate compliance with their ACP and with Regulation 9-10-301 by keeping a spreadsheet of the ACP calculations in a District approved format.
[basis:Regulation 2-9-303, 9-10-301]

Conditions for use of IERCs for compliance with Regulation 9-10-301:

*12. The owner/operator shall submit quarterly reports to the APCO, within 30 days following the end of each calendar quarter, or other 3-month interval established in the plan.
Each quarterly report shall include:
a. Summary of the amount of IERC's used during the previous quarter;
b. Sum of all IERC's used during the current ACP period;
c. A projection of the IERC's that are needed for the entire ACP period based on the IERC usage rates calculated in Parts 12a and 12b of this condition, including the Environmental Benefit Surcharge, per Regulation 2-9-309; and
d. Certification that the facility possesses IERC's equal to the amount projected in Part 12c of this condition or a description of how the facility will adjust its operat ion so that the amount of IERC's does not exceed the amount of IERC's possessed by the facility.
[basis: Regulation 2-9-502.3]

*13. The owner/operator shall submit an annual reconciliation report to the APCO within 30 days of following the end of the ACP period, and surrender the banking certificate(s) for all IERC's used during the ACP period, including the environmental benefit surcharge, per Regulation

2-9-309.
[basis:Regulation 2-9-502.4]

*14. The ACP must be reviewed and approved by the APCO on an annual basis. The owner/operator shall submit all necessary documents mentioned in Regulation 2-9-303 with
ACP renewal request. [basis: Regulation 2-9-303]

*15. The owner/operator shall retain records for five years from the date the record was made,
and shall submit such information as required by the APCO to determine compliance with
the ACP.
[basis: Regulation 2-9-502.2]

VI. RECOMMENDATION

Issue revised condition 23125 that include the revised NOx boxes for:
S-2, S-3, S-4, S-5, S-7, S-9, S-11, S-12, S-22, S-29, S-30, S-336, S-337.

By _____ Date _____
Brian K Lusher, Senior Air Quality Engineer

21848 Eval 090214 FinalR1

Engineering Evaluation
Conoco Phillips San Francisco Refinery
1380 San Pablo Avenue
Rodeo, CA 94572
Plant No. 16
Application No. 22671

BACKGROUND

Conoco Phillips has applied to operate two existing heaters S45 and S461 in a hot standby mode consisting of a reduced firing rate where the temperature is too low to operate the SCR and no feedstock is fed to the process units.

```
45  Heavy Gas Oil Feed Heater
    Furnace - Other, 85MM BTU/hr max, Natural gas, Refinery make gas

461  Hydrotreater Charge Heater
    Process Heater/Furnace, 50MM BTU/hr max, Multifuel, 7 days/wk
```

The facility has no incentive to use the standby mode on a frequent basis, since no product is being made during this mode. The use of standby mode is expected to help the facility reduce startup and shutdown emissions by reducing the number of these events. The use of standby mode may also help the facility reduce flaring events.

EMISSIONS SUMMARY

The emissions are expected to be similar to startup/shutdown emission events for the two heaters. Daily and hourly emissions are not expected to increase due to this application. Annual emissions are not expected to increase due to the use of standby mode on S45 and S461. Permit conditions will be added for each heater that require the owner/operator to develop an emission factor for startup/shutdown and standby modes. The emission factors will be used by the owner/operator to ensure that CO emissions from each heater do not exceed annual permitted limits. Conoco Phillips would be subject to enforcement action if the facility exceeds any of the annual ton per year limits for any of the criteria pollutants contained in Condition 21096 (S461) and Condition 22962 (S45).

Plant Cumulative Increase: (tons/year)

There is no change to the plant cumulative increase.

Toxic Risk Screening:

This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

S-45 and S-461 are expected to continue to comply with Regulation 1 requirements including 520 Continuous Emission Monitors, 521 Monitoring May Be Required, Continuous Emission Monitoring and Recordkeeping Procedures.

S-45 and S-461 are expected to continue to comply with Regulation 6 requirements including opacity limits contained in 6-1-301.

S-45 and S-461 are expected to continue to comply to 40 CFR Part 60 Subpart A and Subpart J.

S-45 and S-461 are expected to continue to comply with 40 CFR Part 63 Subpart B.

This permit action is considered a significant revision since it is not a administrative amendment under 2-6-201 and is not a minor revision under 2-6-215. The definition of a significant revision under 2-6-226 is as follows:

2-6-226 Significant Permit Revision: Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:
226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:
4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or
4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

This permitting action is considered to be a change to a case-by-case determination of an emission limit for a non standard operating mode (standby mode). This permitting action will be considered to be a significant revision to the Title V permit.

The project is considered to be exempt from CEQA requirements under the District's CEQA regulation 2-1-312.1 and therefore is not subject to CEQA review.

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

The project is not located within 1000 feet from a School. The project is not increasing emissions of toxic air contaminants and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

The project does not have an emissions increase and BACT is not triggered for any pollutant.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application per Regulation 2-2-302.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

COND# 21096 ----------

APPLICATION 5814, CONOCOPHILLIPS REFINERY; PLANT 16
CONDITIONS FOR S461 HEATER

1. The owner/operator of the S461 heater shall fire only refinery fuel gas or natural gas at this unit. [BACT, Cumulative Increase]

2. Based on refinery gas HHV, the owner/operator of S461 shall not exceed the following firing rates:

   a. 50.2 million BTU/hr

b. 439,800 million BTU in any consecutive 12-month period. [Cumulative Increase]

3a. The owner/operator of S461 shall abate emissions from S461 at the A461 SCR system whenever S461 is operated, except that S461 may operate without SCR abatement on a temporary basis for periods of standby and planned or emergency maintenance. A District-approved NOx CEM shall monitor and record the S461 NOx emission rate whenever S461 operates without abatement. All emission limits applicable to S461 shall remain in effect even if it is operated without SCR abatement. [BACT, Cumulative Increase]

3b. The owner/operator of A461 shall not exceed the following emission rates from S461/A461 except during startups, ~~and~~ shutdowns, and standby mode (SCR temperature below 475 deg. F along with no fresh process feed). Startups and shutdowns shall not exceed 24 consecutive hours. The 24-consecutive-hour startup period is in addition to heater dryout/warmup periods, which shall not exceed 72 consecutive hours.

NOx 10 ppmv @ 3% oxygen (3 hr average) [BACT, Cumulative Increase]

CO 28 ppmv @ 3% oxygen (8 hr average) at 25.1 MM BTU/hr and higher firing rates, 50 ppmv @ 3% oxygen (8 hr average) at firing rates below 25.1 MM BTU/hr [BACT, Cumulative Increase]

POC 5.5 lb/MM ft3 [Cumulative Increase]
PM10 7.6 lb/MM ft3 [Cumulative Increase]

*3c. The owner/operator of S461 shall not exceed the following emission rate from S461/A461 except during startups ~~and~~, shutdowns, and standby mode (SCR temperature below 475 deg. F along with no fresh process feed). Startups and shutdowns shall not exceed 24 consecutive hours. The 24 consecutive-hour startup period is in addition to heater dryout/warmup periods, which shall not exceed 72 consecutive hours.

Ammonia 10 ppmv @ 3% oxygen (8 hr average) [~~Toxic Management~~Regulation 2, Rule 5]

4~~3~~. The owner/operator shall equip S461 with a District-approved continuous fuel flow monitor and recorder in

order to determine fuel consumption. A parametric monitor as defined in Regulation 1-238 is not acceptable. The owner/operator shall keep continuous fuel flow records for at least five years and shall make these records available to the District upon request. [Cumulative Increase]

5a. The owner/operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx and O2. The owner/operator shall keep NOx and O2 data for at least five years and shall make these records available to the District upon request. [BACT, Cumulative Increase]

5b. Following the initial source test ~~required in Part 8~~, the owner/operator shall monitor compliance with the CO emission rate limit in Part 3b with a District-approved semi-annual source test, with at least one source test per year deemed by the District to be representative of normal operation.

The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. The time interval between source tests shall not exceed 8 months. CO source tests performed by the District may be substituted for semi-annual CO source tests. If two or more CO source tests, over any consecutive five year period, indicate a CO emission rate of 200 ppmv @ 3% O2 or higher, the owner/operator shall install and operate a District-approved continuous CO monitor/recorder within the time period specified in the District Manual of Procedures. [BACT, Cumulative Increase]

5c. The owner/operator shall measure CO concentrations using a District approved handheld monitor during the first standby mode, startup, and shutdown events after this condition is incorporated into the Title V permit. Thereafter, the owner/operator shall measure CO concentrations using a District approved handheld monitor once every three years to determine CO emission factors during startup, shutdown, and standby mode. The measured CO concentrations and fuel flow data will be used to develop an emission factor or emission factors for CO emissions during startup, shutdown, and standby mode. The owner/operator may record CO concentrations over a period of time and average the concentrations to establish a more representative emission factor for each operational mode. Hand-held portable monitors shall be operated, maintained and calibrated in accordance with manufacturer guidelines.

6. The owner/operator shall use only refinery fuel gas at S461 which does not exceed the following limits:

a. 100 ppmv totaled reduced sulfur (TRS), averaged over a calendar day

b. 45 ppmv TRS, averaged over any rolling consecutive 365-day period. [BACT, Cumulative Increase]

7a. The owner/operator shall test refinery fuel gas prior to combustion at S461 to determine total reduced sulfur (TRS) concentration by GC analysis at least once per 8 hour shift (3 times per calendar day). At least 90% of these samples shall be taken each calendar month. No readable samples or sample results shall be omitted. TRS shall include hydrogen sulfide, methyl mercaptan, methyl sulfide, dimethyl disulfide.

7a.1. As an alternative to GC TRS analysis, the fuel gas total sulfur content may be measured with a dedicated total sulfur analyzer (Houston Atlas or equivalent). For the purposes of the daily limit, the owner/operator will presume that the results are TRS, unless the sample is analyzed for TRS by GC analysis. At least one sample per week shall be analyzed using a GC. The owner/operator shall use the results of the samples that have been analyzed by GC analysis for the purposes of the annual limit. [BACT, Cumulative Increase]

7b. To demonstrate compliance with Part 6, the owner/operator shall measure and record the 24-hour average TRS content and the 365-day average TRS content of the refinery fuel gas fired in S461, unless required to operate a District-approved continuous monitor/recorder by Part 7a. The owner/operator shall keep TRS records, whether they are the results of GC analysis or continuous analyzer data, for at least five years and shall make these records available to the District upon request. [BACT, Cumulative Increase]

7c. For the purpose of demonstrating compliance with the H2S limit in 40 CFR 60.104(a)(1), the owner/operator shall test refinery fuel gas prior to combustion at S461 to determine total H2S concentration at least once per 8 hour shift (3 times per calendar day). At least 90% of these samples shall be taken each calendar month. No readable samples or sample results shall be omitted. Records of H2S monitoring shall be kept for at least five years after the date the record was made. The owner/operator shall submit a semi-annual report regarding this monitoring to the District and to EPA. The reporting periods shall start on January 1st and July 1st of

each year. The reports shall be submitted by January 31st and July 31st of each year. If the limit has not been exceeded during the reporting period, this information shall be stated in the report. If the limit has been exceeded, the owner/operator shall report the date and time that the exceedance began and the date and time that the exceedance ended. The owner operator shall estimate and report the excess emissions during the exceedance. [40 CFR 60.13(i)]

~~7~~8. Deleted Application 11626

~~8~~9. Deleted Application 11626

~~9~~10. The owner/operator shall record the duration of all startups, shutdowns, standby mode, and heater dryout/warmup periods to determine compliance with parts 3b and 3c. The owner/operator shall calculate emissions from S461 for all periods using NOx CEM data, fuel flow rates, and District approved emission factors. The owner/operator of S461 shall not exceed the following annual emission rates including startup, shutdown, standby, heater dryout/warmup periods, and malfunctions.

NOx: 2.86 tons/year
CO: 5.06 tons/year
POC: 0.79 tons/year

Year is defined as every consecutive 12-month period. Month is defined as a calendar month.

The owner/operator shall keep the records for at least five years and shall make these records available to the District upon request. The owner/operator shall submit the basis for the CO emission factor(s) for each operating mode (startup, shutdown, standby mode, dryout/warmup periods) to the Director of the District's Engineering Division no later than 60 days after the measurements were taken as required by Part 5c of this condition.
[2-6-503, Cumulative Increase]

COND# 22962 ----------

This condition was amended by Application 13424 in October, 2007.

Source 45, U246 B-801/B-802 Heater

1. The owner/operator of the S45 heater shall fire only refinery fuel gas and/or natural gas at this unit. [BACT, Cumulative Increase]

2. Based on refinery gas HHV, the owner/operator of S45 shall not exceed the following firing rates:

a. 85 MMbtu/hr
b. 744,600 MMbtu in any consecutive 12-month period. [Cumulative Increase]

3. The owner/operator of S45 shall abate emissions from S45 at the A47 SCR system whenever S45 is operated, except that S45 may operate without SCR abatement on a temporary basis for periods of standby and planned or emergency maintenance. A District-approved NOx CEM shall monitor and record the S45 NOx emission rate whenever S45 operates without abatement. All emission limits applicable to S45 shall remain in effect even if it is operated without SCR abatement. [BACT, Cumulative Increase]

4. The owner/operator of S45 shall not exceed the following emission concentrations or rates from S45/A47 except during startups, ~~and~~ shutdowns, and standby mode (SCR temperature below 475 deg. F along with no fresh process feed). Startups and shutdowns shall not exceed 48 consecutive hours. The 48 consecutive-hour startup period is in addition to heater dryout/warmup periods, which shall not exceed 24 consecutive hours.
a.NOx: 5 ppmv @ 3% oxygen (3 hr average) [BACT, Cumulative Increase]
b.CO: 28 ppmv @ 3% oxygen (3 hr average) when operating under 30 MMbtu/hr [BACT, Cumulative Increase, 40 CFR 63.52(a)]
c.POC: 5.5 lb/MM ft3 [Cumulative Increase]
d.PM10: 7.6 lb/MM ft3 [BACT, Cumulative Increase]
e.CO: 10 ppmv @ 3% oxygen (3 hr average) when operating over 30 MMbtu/hr [BACT, Cumulative Increase, 40 CFR 63.52(a)]

If the heater operates at rates below and above 30 MMbtu/hr in any 3-hour period, the CO limit shall be a weighted average.

5. *The owner/operator of S45 shall not exceed the following emission rate from S45/A47 except during startups and shutdowns and standby mode (SCR temperature below 475 deg. F along with no fresh process feed). Startups and shutdowns shall not exceed 48

consecutive hours. The 48 consecutive-hour startup period is in addition to heater dryout/warmup periods, which shall not exceed 24 consecutive hours.

Ammonia: 15 ppmv @ 3% oxygen (8 hr average)
[Regulation 2, Rule 5]

6. The owner/operator of S45 shall not exceed the following annual emission rates from S45/A47 including startups, shutdowns, standby mode, and malfunctions.
NOx: 2.3 tons/yr [BACT, Cumulative Increase, PSD]
CO: 2.8 tons/yr [BACT, Cumulative Increase]
POC: 1.5 tons/yr [Cumulative Increase]
PM10:2.1 tons/yr [BACT, Cumulative Increase, PSD]
SO2: 4.7 tons/yr [BACT, Cumulative Increase]

The owner/operator shall calculate emissions from S45 using NOx CEM data and District approved emission factors.

Year is defined as every consecutive 12-month period. Month is defined as calendar month.

The owner/operator shall submit the basis for the CO emission factor(s) for each operating mode (startup, shutdown, standby dryout/warmup periods) to the Director of the District's Engineering Division no later than 60 days after the measurements were taken as required by Part 9a of this condition.

7. The owner/operator shall equip S45 with a District-approved continuous fuel flow monitor and recorder in order to determine fuel consumption. A parametric monitor as defined in Regulation 1-238 is not acceptable. The owner/operator shall keep continuous fuel flow records for at least five years and shall make these records available to the District upon request. [Cumulative Increase]

8. The owner/operator shall install, calibrate, maintain, and operate District-approved continuous emission monitors and recorders for NOx and O2. The owner/operator shall keep NOx and O2 data for at least five years and shall make these records available to the District upon request. [BACT, Cumulative Increase]

9. The owner/operator shall conduct District-approved source tests two times per year to determine compliance with the CO limit. The tests shall be no less than 4 months apart and no

more than 8 months apart. The source tests shall be performed on the heater in an as-found condition. CO source tests performed by the District may be substituted for semi-annual CO source tests. If the heater exceeds the limits in parts 4b or 4e more than once in any 3-year period, the owner/operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for CO within the time period specified in the District Manual of Procedures after the second exceedance of the limits in parts 4b or 4e. The owner/operator shall keep CO data for at least five years and shall make these records available to the District upon request.

For tests conducted by the owner/operator, the owner/operator shall conduct the source tests in accordance with Part 17. The owner/operator shall submit the source test results to the Director of Compliance and Enforcement, the Source Test Manager, and the Manager of Permit Evaluation at the District no later than 60 days after the source test.
[BACT, Cumulative Increase]

9a. The owner/operator shall measure CO concentrations using a District approved handheld monitor during the first standby mode, startup, and shutdown events after this condition is incorporated into the Title V permit. Thereafter, the owner/operator shall measure CO concentrations using a District approved handheld monitor once every three years to determine CO emission factors during startup, shutdown, and standby mode. The measured CO concentrations and fuel flow data will be used to develop an emission factor or emission factors for CO emissions during startup, shutdown, and standby mode. The owner/operator may record CO concentrations over a period of time and average the concentrations to establish a more representative emission factor for each operational mode. Hand-held portable monitors shall be operated, maintained and calibrated in accordance with manufacturer guidelines.

10. The owner/operator shall use only refinery fuel gas and/or natural gas at S45 that does not exceed 100 ppmv total sulfur, averaged over a calendar month. [BACT, Cumulative Increase]

11. The owner/operator shall test refinery fuel gas prior to combustion at S45 to determine total sulfur concentration by GC analysis or with a total sulfur analyzer (Houston Atlas or equivalent) at least once per 8-hour shift (3 times per calendar day). At least 90% of these samples shall be taken each calendar month. No readable samples or sample results shall be omitted. [BACT, Cumulative Increase]

12. To demonstrate compliance with Part 10, the owner/operator shall measure and record the daily average sulfur content. The owner/operator shall keep records of sulfur content in fuel gas for at least five years and shall make these records available to the District upon request. [BACT, Cumulative Increase]

13. For the purpose of demonstrating compliance with the H2S limit in 40 CFR 60.104(a)(1), the owner/operator shall test refinery fuel gas prior to combustion at S45 to determine total H2S concentration at least once per 8 hour shift (3 times per calendar day). At least 90% of these samples shall be taken each calendar month. No readable samples or sample results shall be omitted. Records of H2S monitoring shall be kept for at least five years after the date the record was made. The owner/operator shall submit a semi-annual report regarding this monitoring to the District and to EPA. The reporting periods shall start on January 1st and July 1st of each year. The reports shall be submitted by January 31st and July 31st of each year. If the limit has not been exceeded during the reporting period, this information shall be stated in the report. If the limit has been exceeded, the owner/operator shall report the date and time that the exceedance began and the date and time that the exceedance ended. The owner/operator shall estimate and report the excess emissions during the exceedance. [40 CFR 60.13(i)]

14. The owner/operator shall record the duration of all startups, shutdowns, standby mode, and heater dryout/warmup periods to determine compliance with parts 4, ~~and~~ 5, and 6. The owner/operator shall keep the records for at least five years and shall make these records available to the District upon request. [2-6-503]

15. Prior to the commencement of construction, the owner/operator shall submit plans to the District's Source Test Manager to obtain approval of the design and location of the source test ports. The sample ports shall be installed in accordance with Manual of Procedures, Volume 4, Section 1.2.4. (basis: Regulation 1-501)

16. No later than 90 days from the startup of S45, the owner/operator shall conduct District-approved source tests to determine initial compliance with the limits in Part 4 for NOx, CO, POC, PM10 and ammonia. For PM10, USEPA Methods 201 and 202 with the back-half ammonium

__ sulfate subtracted, shall be used. The owner/operator shall
__ conduct the source tests in accordance with Part 17. The
__ owner/operator shall submit the source test results to the
__ District staff no later than 60 days after the source test.
[BACT, Cumulative Increase, Regulation 2, Rule 5]

17. The owner/operator shall comply with all applicable requirements for source tests specified in Volume IV of the District's Manual of Procedures and all applicable testing requirements for continuous emissions monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Manager, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [BACT, Cumulative Increase, Regulation 2, Rule 5]

RECOMMENDATION

Issue a Change in Permit Condition for Condition No. 22962 (S-45) and 21096 (S-461).

```
45  Heavy Gas Oil Feed Heater
    Furnace - Other, 85MM BTU/hr max, Natural gas, Refinery make gas

461  Hydrotreater Charge Heater
    Process Heater/Furnace, 50MM BTU/hr max, Multifuel, 7 days/wk
```

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

22671 Evaluation Final 040611

ENGINEERING EVALUATION
ConocoPhillips, San Francisco Refinery
Application #26486- Plant #16

I. BACKGROUND

ConocoPhillips has applied for a change of conditions for the following equipment:

S442 External Floating Roof Tank, 6,762K barrel capacity (Tank 112)

The facility receives and refines both gas oil and crude oil. The tank currently only stores gas oil. The facility would like the ability to also store crude oil in S442. The facility has also requested a throughput increase from 2.74 to 10 MMbbl/yr for gas oil or crude oil service.

The ability to store crude oil in tank S442 will allow the Refinery to store more crude oil which may reduce vessel trips at the marine terminal. The Refinery can sometimes only partly unload a vessel, and the vessel may actually have to return to the Refinery later to complete the unloading operation. In addition, allowing S-442 to store both gas oil and crude oil will afford the facility greater flexibility in removing other storage tanks from service so maintenance can be performed. Application 22904 allowed the Refinery to increase the amount of crude received by the marine terminal.

This application does not involve changing the type of crude oil processed by the Refinery or increasing the amount of crude oil processed by the Refinery. District staff verified that the amount of crude oil storage is not a “bottleneck” to the amount of crude oil that the Refinery can process. S97 (Tank 100) has a capacity of 298,000 bbl. S-334 (Tank 107) has a capacity of 180,000 bbl. S-340 (Tank 108) has a capacity of 200,000 bbl. Each of these tanks has sufficient capacity to provide more crude oil in a day than the Refinery can currently process. The Refinery has permit limits at S-350 crude unit (36,000 bbl/day) and at S-300 delayed coker (81,000 bbl/day) which limit the amount of crude oil that may be processed by the Refinery on a daily basis.

District staff also verified that the storage capacity of gas oil is not a “bottleneck” to the amount of material the Refinery can process. The Refinery currently processes the majority of gas oil at S-307 U240 Unicraking Unit. Condition 22965 limits the daily throughput of S-307 to 65,000 bbl/day. The amount of gas oil processed at S-307 includes the amount of gas oil that can be processed at S-434 U246 High Pressure Reactor Train (Cracking) which has a capacity of 23,000 bbl/day (Table II of Title V permit). S168 Tank 269, S173 Tank 280, and S174 Tank 281 each has a capacity of 134,000 bbl. S442 Tank 112 has a capacity of 6,762,000 bbl. Each of these tanks has sufficient capacity to provide more gas oil in a day than the Refinery can currently process.

II. EMISSION CALCULATIONS

The increase in POC emissions for each tank was calculated using EPA's Tanks 4.09(d) software before and after the throughput changed. The Tanks printouts are in Appendix A.

S442 (Tank 112) Emission Summary using Tanks 4.09d

Material	Vapor Pressure (psia)	Daily Emissions (lb/day)	Annual Emissions (lb/year)
Crude Oil	11	54.2	7419
Gas Oil 0.5 psia	0.5	11.5	1160
Gas Oil 3.0 psia	3.0	19.6	4119

Notes: Daily emissions calculated based on one turnover per day (worst case per Refinery staff).

S442

S442 was initially permitted in 1998 in Application 12412. The increase for S442 was 4,598 lb POC/yr, which was offset in 1998. The total increase for Application 12412 did trigger a risk screen. The total amount of toxics emitted from S442 will be considered for toxics in this permitting action.

For the purposes of cumulative increase, the increase will be the difference between the offset value of 4,598 lb/yr and the new potential to emit of 7,419 lb/yr or 2,821 lb/yr.

TAC emissions from crude oil storage:

Toxic Air Contaminant	Concentration in Crude Oil	S442 (lb/hour)	S442 (lb/year)	Acute Trigger Level (lb/hour)	Chronic Trigger Level (lb/year)
Benzene	0.169	3.8E-03	12.5	2.9	3.8
Hexane	1.174		87.1		2.7E05
Napthalene	0.047		3.5		3.2
Toluene	0.360	8.1E-03	26.7	82	1.2E04
Xylene	0.568	1.3E-02	42.1	49	2.7E04

TAC emissions from gas oil storage (0.5 psia):

Toxic Air Contaminant	Concentration in Gas Oil	S442 (lb/hour)	S442 (lb/year)	Acute Trigger Level (lb/hour)	Chronic Trigger Level (lb/year)
Benzene	0.107	5.1E-04	1.2	2.9	3.8
Hexane	0.02		0.2		2.7E05
Napthalene	0.147		1.7		3.2
Toluene	0.381	1.8E-03	4.4	82	1.2E04
Xylene	1.173	5.6E-03	13.6	49	2.7E04

TAC emissions from gas oil storage (3.0 psia):

Toxic Air Contaminant	Concentration in Gas Oil	S442 (lb/hour)	S442 (lb/year)	Acute Trigger Level (lb/hour)	Chronic Trigger Level (lb/year)
Benzene	0.107	8.7E-04	4.4	2.9	3.8
Hexane	0.02		0.8		2.7E05
Napthalene	0.147		6.1		3.2
Toluene	0.381	3.1E-03	15.7	82	1.2E04
Xylene	1.173	9.6E-03	48.3	49	2.7E04

Maximum TAC emissions from crude oil or gas oil storage:

Toxic Air Contaminant	Concentration in Material	S442 (lb/hour)	S442 (lb/year)	Acute (lb/hour)	Chronic (lb/year)
Benzene	0.169	3.8E-03	12.5	2.9	3.8
Hexane	1.174		87.1		2.7E05
Napthalene	0.147		6.1		3.2
Toluene	0.381	8.1E-03	26.7	82	1.2E04
Xylene	1.173	9.6E-03	48.3	49	2.7E04

III. CUMULATIVE INCREASE

The cumulative increase for this application will be 1.41 tpy of POC.

IV. OFFSETS

The facility is permitted to emit more than 35 tpy of POC. In accordance with BAAQMD Regulation 2-2-302 offsets are required at a ratio of 1.15 to 1. The facility will be required to surrender 1.62 tons of POC to offset the emissions increase associated with this application. The facility has surrendered ERC certificate number 1424 to offset the emissions increase associated with this application. This certificate holds 45.585 tons of POC.

V. TOXIC SCREENING ANALYSIS

The emissions of benzene exceeded the chronic trigger level and a health risk screening analysis was required. The health risk screening analysis results are in a memorandum from Daphne Chong to Brian Lusher dated December 2, 2014. The maximum cancer risk to a resident was calculated to be 0.01 chances in a million; the maximum chronic non-cancer hazard index for a resident was 0.00001; and the maximum acute non-cancer hazard index was 0.0. The maximum cancer risk to a worker was calculated to be 0.01 chances in a million; the maximum chronic non-cancer hazard index for a worker was 0.00002; and the maximum acute non-cancer hazard index was 0.0. Therefore, the project complies with Regulation 2, Rule 5 requirements.

VI. BEST AVAILABLE CONTROL TECHNOLOGY

The POC emissions from S442 will be more than 10 lb/day after the throughput increase and are subject to BACT requirements in accordance with 2-2-301. For external floating roof tanks holding crude oil or storing materials with a vapor pressure less than 3 psia, the District's BACT/TBACT workbook has the following for BACT:

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *Vapor recovery system w/ an overall system efficiency >98%*	1. *Thermal Incinerator; or Carbon Adsorber; or Refrigerated Condenser; or BAAQMD approved equivalent*
	2. *BAAQMD Approved roof w/ liquid mounted primary seal and zero gap secondary seal, all meeting design criteria of Reg. 8, Rule 5. Also, no ungasketed roof penetrations, no slotted pipe guide pole unless equipped with float and wiper seals, and no adjustable roof legs unless fitted w/ vapor seal boots or equivalent.* *Additionally, a dome is required for tanks that meet all of the following: 1) capacity greater than or equal to 19,815 gallons 2) located at a facility with greater than 20 tpy VOC emissions since the year 2000 and 3) storing a material with a vapor pressure equal to or greater than 3 psia (except for crude oil tanks that are permitted to contain more than 97% by volume crude oil).*	2. *BAAQMD Approved Roof and Seal Design*

In accordance with the BACT Workbook Policy and Implementation Procedure (See Appendix B), District staff prepared a simplified cost effectiveness analysis to determine if doming S442 and routing the tank emissions to an approved control system with an overall abatement efficiency of greater than 98% (BACT1) would be cost effective. The cost effectiveness analysis only considered the cost to dome S442. Cost data contained in the Final Staff Report for Proposed Rule 1178 (South Coast Air Quality Management District, December 11, 2001) indicated that it cost one Refinery in the South Coast $200,000 to dome a 120 ft diameter tank. S442 is a 138 ft diameter tank. A simple ratio of tank diameters was used to adjust the $200,000 cost for a 120 ft tank to $230,000 for a 138 ft tank (200,000 x 138/120 =

230,000). This cost information is in 2001 dollars. District staff used the Consumer Price Index to adjust the 2001 dollars to 2014 dollars. Per the CPI, 2014 dollars equals 1.34 x 2001 dollars. The cost to dome a 138 ft tank in 2014 dollars is approximately $308,200 ($230,000 x 1.34). District staff used a cost effectiveness spreadsheet based on the 2002 EPA Air Pollution Control Cost Manual (Sixth Edition, January 2002) to determine the cost effectiveness of doming S442. The cost effectiveness for the cost to dome S442 (no other costs considered) was $26,501 based on 3.7 tons of POC emissions. This estimate exceeds the current cost effectiveness guideline of $17,500 per ton of POC (BACT Workbook). Therefore, BACT1 is not cost effective and will not be required at this time.

A “zero-gap seal” is a term that means a seal that complies with BAAQMD Regulation 8-5-322.5. The tank seals on S442 meet BACT2 requirements. A dome will not be required for S-442 Tank 112 since the tank will hold crude oil which is exempt from the dome requirement, or gas oil that has a vapor pressure less than 3.0 psia. S442 meets BACT2 requirements.

VIII. STATEMENT OF COMPLIANCE

The tank will continue to comply with BAAQMD Regulation 8, Rule 5. Section 301 requires an internal or external floating roof for tanks with a volume over 39,626 gal that hold liquids with a vapor pressure between 0.5 psia and 11 psia. S442 is a external floating roof tank.

The tank will continue to comply with the requirements in Section 304 to have primary seals that meet the requirements of Section 321, secondary seals that meet the requirements of Section 322. The floating roof will rest on the surface of the liquid tank contents and must be in good operating condition. The facility will comply with the requirement for no liquid tank contents on top of either the primary or secondary seal, or on top of the floating roof (this requirement does not apply to liquid that clings to the inside tank walls as the tank is drained, or to liquid that drips from the tank walls onto the seals). The shell will be in good operating condition with no liquid leakage through the shell. The tanks will not be operated with organic liquid tank contents in any tank pontoon unless the following conditions are met: Within 48 hours of discovery of organic liquid in a pontoon, all lids or other openings on the affected pontoon shall be sealed and maintained in a gas tight condition; and The next time the tank is removed from service, repairs shall be made on all pontoon leaks on that tank.

The tank will comply with the tank fitting requirements in Section 320, the primary seal requirements in Section 321, and the secondary seal requirements in Section 322.

The above requirements are already in the Title V permit for this tank.

S442 is subject to and will comply with the requirements of 40 CFR 60, Subpart Kb, Standards of Performance for Storage Vessels for Volatile Organic Liquid Storage

Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. Tanks that are subject to NSPS Subpart Kb and NESHAPS Subpart CC are only subject to the requirements of NSPS Subpart Kb.

The Air District has determined that the issuance of this change of conditions is exempt from CEQA because the permitting of the project involved negligible expansion of use beyond that existing at the time of the Air District's CEQA determination. (CEQA § 21084; Guidelines § 15301).

The issuance of this change of conditions increases the throughput of an existing storage tank and allows the tank, currently only used to store gas oil, also to store crude oil in a facility that already receives and refines both gas oil and crude oil. The permit action does not involve any change to the type or amount of material processed by the Refinery. The amount of storage for both crude oil and gas oil is not a "bottleneck" to the amount of material the Refinery can process. As a consequence, this permit action is subject ot the "Class 1" exemption (Guidelines § 15301) because it involves only a negligible or no expansion of the use of an existing facility.

This facility is subject to Regulation 2, Rule 6 and requires a minor revision to the Title V permit in accordance with section 2-6-404.4. The minor revision will be handled in Application #26487. The changes proposed in this application are not significant as defined by section 2-6-226, since the changes are not considered a major modification under 40 CFR Parts 51 or 52 (PSD) nor a modification under 40 CFR Parts 60 (NSPS), 63 (NESHAPs). The increase in emissions is relatively small at 1.41 tons per year of POC. The change will not be a significant change or relaxation of monitoring, reporting, or recordkeeping nor will it allow the facility to avoid an applicable requirement. The change is not a case-by-case determination of any emission limit or standard or facility-specific determination or incorporation of any requirement promulgated by EPA. In accordance with section 2-6-215, this change is a minor permit revision.

This project is not located within 1,000 feet of the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

IX. CONDITIONS

COND# 12127 ----------

APPLICATION 12412; MODIFIED UNDER A26486 (2015);
SAN FRANCISCO REFINERY; PLANT 16
CONDITIONS FOR S-442 (T-112)

1. The owner/operator shall ensure that following total throughput limits are not exceeded in any rolling consecutive 12 month period:
   a. 10 million barrels of gas oil.
   b. 10 million barrels of crude oil.
   c. 10 million barrels of gas oil and crude oil combined.
   [Basis: Cumulative Increase]

2. The owner/operator shall only store the following in S-442: gas oil with a true vapor pressure less than or equal to 3.0 psia, or crude oil with a true vapor pressure less than or equal to 11.0 psia. [Basis: BACT, Cumulative Increase]

3. The owner/operator shall operate S-442 with closed, gasketed covers on all tank openings except pressure relief valves and vacuum breaker valves. The owner/operator shall equip S-442 with a BAAQMD approved roof with liquid mounted primary seal that meets the design criteria of BAAQMD Regulation 8-5-321.3 and secondary seal that meets the design criteria of BAAQMD Regulation 8-5-322.5. The owner/operator shall ensure that there are no ungasketed roof penetrations, no slotted pipe guide poles unless equipped with float and wiper seals, and no adjustable roof legs unless fitted with vapor seal boots or equivalent. [Basis: BACT, Cumulative Increase]

4. Monthly records of the throughput of each material processed at this tank shall be kept in a District-approved log for at least 5 years and shall be made available to the District upon request. [Basis: Cumulative Increase]

X. RECOMMENDATION

Issue a Change of Conditions for the following equipment:

S442 External Floating Roof Tank, 6,762K barrel capacity (Tank 112)

Brian Lusher
Senior Air Quality Engineer

26486EVAL

ENGINEERING EVALUATION
Phillips 66 – San Francisco Refinery
Rodeo, CA
Application #27061 - Plant #21359

I. BACKGROUND

Phillips 66 had previously applied for a Temporary Permit to Operate under application 26440 for the following equipment:

A-52 Temporary Thermal Oxidizer, Mako Industries, 1500Makotherm, 3 MMBtu/hour, abating S-324 U100 API Oil Water Separator

The design air flowrate of air being sent to A-52 was 2,000 scfm. This unit was shutdown after the temporary permit expired. The operational experience was used to design the permanent oxidizer to abate POC emissions from S-324 U100 API Oil Water Separator.

Phillips 66 Refinery has now applied for an Authority to Construct for the following equipment:

A-53 Thermal Oxidizer, Eclipse ThermJet, TJ0750, 7.5 MMBtu/hour, abating S-324 U100 API Oil Water Separator

This oxidizer will abate organic emissions from S-324 U100 API Oil Water Separator. The design flowrate of air being sent to A-53 is 8,000 scfm.

The permanent oxidizer is being installed to ensure compliance with Regulation 8, Rule 8 requirements for S-324.

The oxidizer is abating POC emissions from S-324 and the unabated POC emissions from S-324 are expected to exceed 10 lb/day. In accordance with Regulation 2, Rule 2, Section 112 the secondary emissions from the oxidizer are subject to Reasonably Available Control Technology requirements and not BACT requirements.

II. EMISSION CALCULATIONS

Criteria Pollutants

Phillips 66 - Refinery
Plant No. 21359
BAAQMD July 2015

Criteria Pollutant Emissions from A-53 Thermal Oxidizer

Pollutant	Maximum (lb/hour)	Maximum (lb/day)	Maximum (lb/year)	Maximum (ton/year)	Basis
NOx	0.64	15.4	5606	2.803	Vendor Estimate 70 ppm @3% O2, 0.085 lb/MMBtu
CO	1.7	40.3	14717	7.358	Refinery Estimate of 100 ppm @15% O2
POC as NMHC	0.041	1.0	359	0.180	AP-42, Table 1.4-2
PM10	0.056	1.3	491	0.245	AP-42, Table 1.4-2
SO2	0.08	1.9	701	0.350	Source Test < 2 ppm @15% O2, 0.01 lb/MMBtu

Notes:

NOx RACT lb/hour = 7.5 MMBtu/hour x 0.2 lb NOx/MMBtu = 1.5 lb/hour

CO RACT lb/hour = 7.5 MMBtu/hour x 0.8 lb CO/MMBtu = 6.0 lb/hour

CO Vendor Estimate 80% @15% O2, Refinery Requested limit of 100 ppm @15% O2 for compliance margin.

CO lb/MMBtu = 100 ppm x 1/386.9 dscf/lb-mol x 28 lb/lb-mol x 8743 dscf/MMBtu x 20.9/(20.9-15) = 0.224 lb/MMBtu

CO lb/hour = 0.224 lb/MMBtu x 7.5 MMBtu/hour = 1.68 lb/hour

POC Emissions from S-324 will be reduced by the oxidizer

POC Natural Gas Combustion lb/MMBtu E.F. = 0.0054, AP-42 Table 1.4-2 (July 1998)

PM Natural Gas Combustion lb/MMBtu E.F. = 0.00745, AP-42 Table 1.4-2 (July 1998)

SO2 Based on Source Test on Temporary Thermal Oxidizer (0.02 lb/hour x 4)

NOx emissions were based on a vendor guarantee of 70 ppm @3% O2 (0.085 lb/MMBtu). CO emissions were based on a vendor estimate of 80 ppm @15% O2 which was raised to 100 ppm @15% O2 as requested by the refinery to provide additional compliance margin. The NOx and CO emissions meet the RACT levels for Thermal Oxidizers (NOx 50 ppm @15% O2, CO 350 ppm @15% O2) in accordance with Engineering Division policy. POC emissions from the combustion of natural gas were estimated using the AP-42 emission factor for natural gas of 5.5 lb/MMscf. PM10 emissions from A-53 were estimated using the AP-42 emission factor for natural gas of 7.6 lb/MMscf. The SO2 emissions from A-53 were based on the SO2 concentration measured during a October 2014 source test on the temporary thermal oxidizer (A-52).

Toxic Air Contaminants

Pollutant	E.F. (lb/MMBtu)	(lb/hour)	(lb/year)	Acute (lb/hour)	Chronic (lb/year)
Benzene	2.06E-06	1.55E-05	1.35E-01	2.9	3.8
Formaldehyde	7.35E-05	5.51E-04	4.83E+00	0.12	18
Toluene	3.33E-06	2.50E-05	2.19E-01	82	12000

The emissions of toxic air contaminants were estimated using the emission factors for miscellaneous natural gas combustion (Emission Factors for Toxic Air Contaminants from Miscellaneous Natural Gas Combustion Sources, Policy 9/7/05) and the maximum firing rate for A-53 of 7.5 MMBtu/hour. The emissions of all toxic air contaminants were less than the acute and chronic trigger levels in Regulation 2, Rule 5. A health risk screen was not required for this application.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

Pollutant	Pre 4/5/91 Emissions (TPY)	Cumulative Increase Offset (TPY)	Cumulative Increase Not Offset (TPY)	Increase for A-53	Decrease from abatement of S-324 (TPY)	Application Cumulative Increase Subject to Offsets (TPY)
NOx	709.012	45.803	0	2.803	0	2.803
CO	63.327	203.140	0	7.358	0	7.358
POC	101.652	89.435	0.002	0.180	>0.180	0
PM10	0.000	16.72	0	0.245	0	0.245
SO2	101.652	63.433	0.120	0.350	0	0.350
NPOC	0	0	0	0	0	0

Notes: Phillips 66 Carbon Plant (Plant 21360) is considered to be part of the refinery. The refinery is required to offset all pollutants except CO.

Application 11293 (2006) for S-437 Hydrogen Manufacturing Unit had a SO2 increase of 0.120 tons per year that was never offset. This amount of SO2 emission reduction credits will be collected from ERC 1372 during the processing of this application.

IV. OFFSETS

Offsets are required for the increase in NOx per Regulation 2-1-302. The NOx emission increase will be offset at a ratio of 1.15 to 1. Offsets are also required for PM10 and SO2 per Regulation 2-2-303. PM10 and SO2 emission increases will be offset at a ratio of 1 to 1.

The NOx increase of 2.803 ton/year (2.803 x 1.15 = 3.223 tons offsets to be surrendered) will be offset by ERC #1456 (43.963 tons POC). Regulation 2-2-302.2 allows the use of POC emission reduction credits to offset NOx emissions increases.

The PM10 increase of 0.245 ton/year will be offset by ERC #1297 (3.600 tons PM10). The SO2 increase from this application of 0.329 ton/year and the existing cumulative increase of 0.120 ton/year will be offset by ERC 1372 (0.497 tons SO2).

V. TOXIC SCREENING ANALYSIS

There is no emissions increase of toxics air contaminants above acute and chronic trigger levels associated with this application and a health risk screening analysis is not required under Regulation 2, Rule 5.

The emissions of hydrogen sulfide from S-324 will be reduced by the operation of A-53. The emissions of organic toxic air contaminants from S-324 will also be reduced by the operation of A-53.

VI. BEST AVAILABLE CONTROL TECHNOLOGY

A-53 is an abatement device and in accordance with Regulation 2, Rule 2, Section 112 BACT is not triggered for secondary pollutants from an abatement device (NOx, CO, PM10, and SO2). POC emissions from S-324 are being reduced by the operation of A-53. POC emissions from A-53 are expected to be less than 10 lb/day based on the source test results from the temporary oxidizer (less than 0.01 lb/hour POC).

A-53 is required to meet Reasonably Available Control Technology (RACT) for thermal oxidizers. A-53 meets the NOx and CO RACT levels of 50 ppm @15% O2 (0.20 lb/MMBtu) and 350 ppm @15% O2 (0.8 lb/MMBtu), respectively. Based on the emission estimates above, A-53 is expected to emit NOx and CO at 0.085 lb/MMBtu and 0.224 lb/MMBtu, respectively.

VII. STATEMENT OF COMPLIANCE

Regulation 6, Rule 1

A-53 is subject to Regulation 6, Rule 1 ("Particulate Matter"). Regulation 6-1-301 limits opacity from A-53 to Ringelmann 1 for period of no more than 3 minutes in any hour. Regulation 6-1-305 limits emissions of visible particles on adjacent properties. Regulation 6-1-310 limits particulate concentration to less than or equal to 0.15 grains/dscf exhaust volume. A-53 burns natural gas and is expected to comply with Regulation 6, Rule 1 requirements.

Regulation 8, Rule 2
A-53 is expected to comply with 8-2-301 by emitting less than 15 lb/day of organics and at a concentration less than 300 ppm as carbon on a dry basis.

Regulation 8, Rule 8
A-53 is expected to meet the requirements contained in 8-2-302.3 for S-324 which states:
A vapor-tight fixed cover with an organic compound vapor recovery system
which has a combined collection and destruction efficiency of at least 95

percent, by weight, inspection and access hatches shall be closed except when the opening is being used for inspection, maintenance, or wastewater sampling,

A-53 is also expected to meet the requirements contained in 8-8-312 which states:
8-8-312 Controlled Wastewater Collection System Components at Petroleum Refineries: Effective January 1, 2006, all controlled wastewater collection system components at petroleum refineries shall be vapor tight except when in use for active inspection, maintenance, repair or sampling. A leak in any controlled wastewater collection system component that is not vapor tight must be minimized within 24 hours and repaired within 7 days.

Regulation 9, Rule 1
A-53 is expected to comply with 9-1-301 (ground level concentration) by combusting natural gas. H2S present in the S-324 exhaust stream will be oxidized to SO2. A-53 is also expected to comply with 9-1-302 by emitting less than 300 ppm SO2. A-53 is expected to emit approximately 2 ppm SO2.

CEQA
The applicant has filled out an Appendix H Environmental Information Form. The project is exempt from CEQA requirements in accordance with 2-1-312.2 (See below).

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.2 Permit applications to install air pollution control or abatement equipment.

Regulation 2, Rule 1, Section 412
This project is greater than 1,000 ft from the nearest public school and therefore is not subject to the public notification requirements of Regulation 2-1-412.

NSPS Subpart J – Standards of Performance for Petroleum Refineries

A-53 burns natural gas as the primary fuel and it burns vapors from S-324 Oil Water Separator. The vapors from S-324 could be considered to be refinery fuel gas. However, the definition of fuel gas excludes vapors that are collected and combusted in a thermal

oxidizer to control emissions from wastewater treatment units (Section 60.101 (d)). Subpart J does not apply to A-53 since it is not a fuel gas combustion device.

NSPS Subpart Ja – Standards of Performance for Petroleum Refineries

A-53 burns natural gas as the primary fuel and it burns vapors from S-324 Oil Water Separator. The vapors from S-324 could be considered to be refinery fuel gas. However, the definition of fuel gas excludes vapors that are collected and combusted in a thermal oxidizer to control emissions from wastewater treatment units (Section 60.101a). Subpart Ja does not apply to A-53 since it is not a fuel gas combustion device.

PSD review is not triggered under this application.

NESHAPS review are not triggered under this application.

VIII. CONDITIONS

COND# 26069 ----------

1. The owner/operator shall abate emissions from Source S-324 with Abatement device A-53, Thermal Oxidizer during all periods of operation of S-324, except for up to 175 hours per any consecutive 12-month period for startup, shutdown, and for maintenance. (basis: Cumulative Increase)

2. The owner/operator shall not allow emissions from A-53 to exceed the following emission limits: NOx 0.64 lb/hour, CO 1.7 lb/hour. The owner/operator shall operate A-53 to meet the following VOC destruction efficiency requirements:
   a. A-53 outlet VOC concentration of 10 ppmv or less; or
   b. All of the following standards depending on the applicable A-53 inlet VOC concentration:
   c. VOC destruction efficiency >= 98.5% if A-53 inlet VOC concentration > 2,000 ppmv;
   d. VOC destruction efficiency >= 97% if A-53 inlet VOC concentration <= 2,000 ppmv;

   (basis: Cumulative Increase, Regulation 8-8-302.3)

3. The owner/operator shall operate A-53 to be at least 1400 degrees F. The District may adjust this minimum temperature, if source test data demonstrates that an alternate temperature is

necessary for or capable of maintaining compliance with Part 2 above.
(basis: Cumulative Increase)

4. The temperature limit in Part shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller setpoint complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
   a. A temperature excursion not exceeding 20 degrees F; or
   b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
   c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
      i. the excursion does not exceed 50 degrees F;
      ii. the duration of the excursion does not exceed 24 hours; and
      iii. the total number of such excursions does not exceed 12 per calendar year (or any consecutive 12 month period).

   Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit.
   (basis: Regulation 2-1-403)

5. For each Allowable Temperature Excursion that exceeds 20 degrees F and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
   a. Temperature controller setpoint;
   b. Starting date and time, and duration of each Allowable Temperature Excursion;
   c. Measured temperature during each Allowable Temperature Excursion;
   d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
   e. All strip charts or other temperature

records.
(basis: Regulation 2-1-403)

6. To determine compliance with the temperature requirement in these permit conditions, the owner/operator of A-53 shall be equipped with a temperature measuring device capable of continuously measuring and recording the temperature in A-53. The owner/operator shall install, and maintain in accordance with manufacturer's recommendations, a temperature measuring device that meets the following criteria: the minimum and maximum measurable temperatures with the device are 200 degrees F and 1900 degrees F, respectively, and the minimum accuracy of the device over this temperature range shall be 1.0 percent of full-scale.
(basis: Cumulative Increase)

7. The owner/operator shall report any non-compliance with Part 3 of this condition to the Director of the Compliance & Enforcement Division at the time that it is discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time of occurrence.
(basis: Cumulative Increase)

8. Within 90 days of startup of A-53, the owner/operator shall conduct District approved source tests to determine initial compliance with the limits in part 2. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test.
(basis: Cumulative Increase)

9. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.
(basis: Cumulative Increase)

10. The owner/operator of A-53 shall maintain records of hours of operation, oxidizer

temperature, and source test results in a District approved log for at least 5 years from the date of entry. These records shall be made available to District staff upon request.
(basis: Cumulative Increase, Recordkeeping)

IX. RECOMMENDATION

Recommend issuing a conditional Authority to Construct to Phillips 66 for the following:

A-53 Thermal Oxidizer, Eclipse ThermJet, TJ0750, 7.5 MMBtu/hour, abating S-324 U100 API Oil Water Separator

By: _____ _____
Brian Lusher Date
Senior Air Quality Engineer

27061 Eval

Memorandum to File

September 17, 2015

Application #27061

Via: Pam J. Leong

Via: Doug W. Hall

Author: Brian Lusher

Subject: Administrative Condition Change for Condition #26069 (A27061)

Phillips has requested the removal of part 1 and part 7 of condition 26069.

Phillips 66 is installing the oxidizer on a voluntary basis and not for offsets or to meet BACT requirements and there is no regulatory basis for part 1. Staff agrees that there is no basis to require abatement of S-324 for a specific amount of time per year.

Phillips 66 is requesting the deletion of part 7 since it is duplicative of the Title V permit reporting requirements. Phillips 66 has not submitted a corresponding Title V revision application at this time. Phillips 66 intends to submit a Title V revision application in the near future. Staff agrees that the Title V deviation reporting requirements are sufficient for reporting non-compliance with these conditions.

Staff recommends approving of this administrative condition change. Condition 26069 has been revised as shown below.

COND# 26069 ----------

~~1. The owner/operator shall abate emissions from Source S-324 with Abatement device A-53, Thermal Oxidizer during all periods of operation of S-324, except for up to 175 hours per any consecutive 12 month period for startup, shutdown, and for maintenance. (basis: Cumulative Increase)~~

12. The owner/operator shall not allow emissions from A-53 to exceed the following emission limits: NOx 0.64 lb/hour, CO 1.7 lb/hour. The owner/operator shall operate A-53 to meet the following VOC destruction efficiency requirements:
    a. A-53 outlet VOC concentration of 10 ppmv or less; or
    b. All of the following standards depending on the applicable A-53 inlet VOC

concentration:
c. VOC destruction efficiency >= 98.5% if A-53 inlet VOC concentration > 2,000 ppmv;
d. VOC destruction efficiency >= 97% if A-53 inlet VOC concentration <= 2,000 ppmv;

(basis: Cumulative Increase, Regulation 8-8-302.3)

23. The owner/operator shall operate A-53 to be at least 1400 degrees F. The District may adjust this minimum temperature, if source test data demonstrates that an alternate temperature is necessary for or capable of maintaining compliance with Part 2 above.
(basis: Cumulative Increase)

34. The temperature limit in Part shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller setpoint complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
a. A temperature excursion not exceeding 20 degrees F; or
b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
i. the excursion does not exceed 50 degrees F;
ii. the duration of the excursion does not exceed 24 hours; and
iii. the total number of such excursions does not exceed 12 per calendar year (or any consecutive 12 month period).

Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit.
(basis: Regulation 2-1-403)

45. For each Allowable Temperature Excursion that exceeds 20 degrees F and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above.

Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:

a. Temperature controller setpoint;
b. Starting date and time, and duration of each Allowable Temperature Excursion;
c. Measured temperature during each Allowable Temperature Excursion;
d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
e. All strip charts or other temperature records.

(basis: Regulation 2-1-403)

56. To determine compliance with the temperature requirement in these permit conditions, the owner/operator of A-53 shall be equipped with a temperature measuring device capable of continuously measuring and recording the temperature in A-53. The owner/operator shall install, and maintain in accordance with manufacturer's recommendations, a temperature measuring device that meets the following criteria: the minimum and maximum measurable temperatures with the device are 200 degrees F and 1900 degrees F, respectively, and the minimum accuracy of the device over this temperature range shall be 1.0 percent of full-scale.
(basis: Cumulative Increase)

~~7. The owner/operator shall report any non-compliance with Part 3 of this condition to the Director of the Compliance & Enforcement Division at the time that it is discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time of occurrence.~~
~~(basis: Cumulative Increase)~~

68. Within 90 days of startup of A-53, the owner/operator shall conduct District approved source tests to determine initial compliance with the limits in part 2. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test.
(basis: Cumulative Increase)

79. The owner/operator shall obtain approval for

all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.
(basis: Cumulative Increase)

8~~10~~. The owner/operator of A-53 shall maintain records of hours of operation, oxidizer temperature, and source test results in a District approved log for at least 5 years from the date of entry. These records shall be made available to District staff upon request.
(basis: Cumulative Increase, Recordkeeping)

Engineering Evaluation
Phillips 66
Plant #21359
Application #27557

BACKGROUND

Phillips 66 is applying for a change of conditions for the following source:

S-1010 U235 Sulfur Recovery Unit
CHEM> Claus, modified 3 stage, Sulfur, 10 tons/hr max, 7 days/wk

Abated by:
A-48 Sulfur Plant Tail Gas Treatment Plant

A-424 Sulfur Plant Tail Gas Incinerator

This sulfur recovery unit was permitted under application 13424 in 2007 as part of the Clean Fuels Expansion Project. This source has been compliance tested on an annual basis since December of 2009.

Phillips 66 is now requesting to lower the minimum S-1010 Sulfur Recovery Unit tail gas incinerator temperature (A-424) from 1496 degrees F to 1409 degrees F. Phillips 66 has submitted source test results that demonstrate S-1010 operates well within permit limits at the new temperature.

District staff reviewed all of the source test results for S1010 and has concluded that the results demonstrate the actual emissions of all pollutants with permit limits are well below the permit limits (See results summarized below). The change in tail gas incinerator temperature involves no change of equipment, does not increase sulfur recovery unit capacity, and does not substantially change the operation of the sulfur recovery unit and associated abatement equipment.

Based upon review of all available emissions data, District staff concludes that there is no emissions increase above the permit limits contained in condition 23125 associated with this application. The change in tail gas incinerator temperature is considered to be an alteration to S-1010 in accordance with District Regulation 2, Rule 1, Section 233.

Emissions

There is no emissions increase associated with this application. Please see OS-5117 source test results which are summarized below.

Summary of Source Test Results for S-1010

Memorandum	NOx (ppm)	NOx (lb/hr)	CO (ppm)	POC (ppm)	PM10 (lb/day)	SO2 (ppm)	H2S (ppm)	H2S (lb/hr)	NH3 (ppm)	NH3 (lb/hr)	H2SO4 (lb/day)
Permit Limits	**42.2**	**8.0**	**75**	**None**	**9.5**	**50**	**2.5**	**0.23**	**12.5**	**0.88**	**31**
OS-3188, 2009	16.25	1.23	2.56	<0.78	2.49	9.81	0.481	0.018	<0.131	<0.004	0.535
OS-3289, 2010	11.67	2.34	33.51	NM	4.05	7.3	<0.024	<0.002	<0.574	<0.043	1.129
OS-3454, 2010					2.05						
OS-3742, 2011	12.4	2.29	2.9	NM	2.25	2.395	<0.005	<0.0005	<0.099	<0.007	1.386
OS-4195, 2012	12.88	1.93	12.91	NM	2.40	3.48	<0.005	<0.0003	<0.12	<0.10	0.868
OS-4560, 2013	12.2	1.66	19.57	NM	8.57	11.16	<0.005	<0.0003	<0.060	<0.0032	13.04
OS-4700, 2013					6.45						<1.6
OS-4804, 2013					3.6/5.0						
OS-5116, 2014	12.7	2.35	16.4	NM	4.3	2.3	<0.005	<0.0004	<0.10	<0.007	1.5
OS-5117, 2014	11.6	1.96	48.0	<0.26	2.2	0.98	<0.005	<0.0004	<0.11	<0.007	1.6
OS-5118, 2014					2.2						
OS-5713, 2015	10.9	1.99	18.6	NM	2.35	2.78	<0.01	<0.0011	<0.23	<0.016	1.9

Notes:
OS-5117 testing was done at a lower tail gas unit temperature (1417.7 to 1409.3 deg. F).
NOx ppm @7% O2, CO ppm @7% O2, SO2 ppm @0% O2), H2S ppm @0% O2, NH3 ppm @7% O2
SO2 emissions are monitored with a continuous emission monitor to demonstrate compliance with the short term and annual limits of 29.7 tons/12-month period.
CO emissions are monitored with a continuous emission monitor to demonstrate compliance with the short term and annual limit of 37.9 tons/12-month period.
POC emissions were measured during the initial source test and used to develop an emission factor to demonstrate compliance with the annual limit of 0.43 tons/12-month period.
PM10 emissions are measured during source testing and used to develop an emission factor (grains/dscf) to demonstrate compliance with the annual limit of 1.19 ton/12-month period.
Flowrate is measured with a continuous flow monitor.
NM = Not Measured

Plant Cumulative Increase: (tons/year)

Pollutant	Increase
NOx	0.000
CO	0.000
POC	0.000
PM_{10}	0.000
SO_2	0.000

Toxic Risk Screening:

There is no increase of toxic air contaminant emissions associated with this application.

STATEMENT OF COMPLIANCE

Regulation 1 – General Provision and Definitions

Section 1-301 Public Nuisance

The sources and equipment associated with the project are not expected to cause a public nuisance.

Regulation 2, Rule 2
There is no increase in emissions associated with this application and BACT requirements are not triggered under 2-2-301. Offset provisions are also not triggered under 2-2-302 and 2-2-303.

Regulation 2, Rule 6 – Major Facility Review
Phillips 66 is a major facility and holds a Title V operating permit. Phillips 66 has applied for a minor revision of the Title V permit under application #27560. This Title V revision application will be processed with the upcoming Title V renewal application which will be submitted by the end of March.

Regulation 6, Rule 1

S1010, Sulfur Recovery Unit, and A424, Tail Gas Incinerator are subject to Sections 6-1-301, 6-1-305, 6-1-310, 6-1-311, 6-1-330, and 6-1-501 of the regulation.

Section 6-1-310 is the general grain-loading limit of 0.15 gr filterable particulate/dscf. Section 6-1-311 is the process weight limit. Section 6-1-330 has a limit of 0.08 gr/dscf of

SO3 or H2S04, or both, expressed as 100% H2S04, exceeding 0.08 gr/dscf of exhaust gas volume. "Filterable particulate" means particulate as measured by District Source Test Method ST-15, Particulate.

S-1010 is expected to continue to comply with the standards contained in sections 6-1-301, 6-1-305, and 6-1-330.

The magnitude of the limit in Section 6-311 is determined by the process weight rate of the unit. Since the capacity of the unit is 200 long tons/day, the maximum process weight is 18,667 lb/hr, and the maximum limit is 18.3 lb filterable particulate/hr. If the process weight is less than 18,667 lb/hr, the limit is pro-rated using the equation in the section. S-1010 is expected to continue to comply with section 6-1-311.

The facility is required to perform annual source testing to assure compliance with Regulation 6, Rule 1 requirements.

California Environmental Quality Act (CEQA):

The applicant has completed an Appendix H for this application. This application meets the following exemption under District Regulation 2, Rule 1. (2-1-312.1).

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.
312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

The Air District has determined that the issuance of this change of permit conditions is exempt from CEQA because the permitting of the project involved no expansion of use

beyond that existing at the time of the Air District's CEQA determination. (CEQA § 21084; Guidelines § 15301). The Air District's action was also exempt under the "common sense" exemption. (Guidelines § 15061(b)(3)).

The project involves no change of equipment or expansion of capacity; rather, it just involves a slight change in operation of an existing abatement device, specifically, allowing operation of an incinerator at a slightly lower temperature, with no more than a negligible effect on emissions. Issuance of this change of permit conditions does not authorize expansion of the existing use. In addition, even if the project did constitute an expansion of an existing use, the applicant has included in its permit application CEQA-related information (CEQA Appendix H) that demonstrates that the project has no potential for resulting in any additional or different environmental impacts beyond what is already entailed in the applicant's existing use the sulfur recovery unit and associated abatement equipment, and the project would also be exempt under the "Common Sense" exemption (Guidelines § 15061(b)(3)).

School Notification
The project is not located within 1000 feet of a school. The project is not subject to the public notification requirements of Reg. 2-1-412.

Offsets: There is no emissions increase associated with this application and the offset requirements of sections 2-2-302 and 2-2-303 are not triggered.

New Source Performance of Standards

40 CFR Part 60 Subpart A-General Provisions
Any source subject to an applicable standard under 40 CFR Part 60 is also subject to the general provisions of Subpart.

NSPS Subpart J
S1010, U235 Sulfur Recovery Unit, is subject to the SO2 limit in Section 60.104(a)(2)(i) of 250 ppm SO2 at zero percent excess air. Compliance will be assured by the continuous SO2 monitoring required by Section 60.105(a)(5).

NESHAP

40 CFR Part 63 Subpart UUU
S-1010 is also subject to Subpart UUU which is essentially equivalent to the SO2 standard in 40 CFR Part 60 Subpart J (Please see 63.1568(b)(5)).

PSD

PSD is not triggered by this application.

PERMIT CONDITIONS

COND# 23125 ----------

Source S1010, U235 Sulfur Recovery Unit, S503, Sulfur Storage Tank, S504, Sulfur Degassing Unit, S505, Sulfur Truck Loading Rack This condition was amended by Application 13424 in October, 2007 and Application 25621 in April, 2014.

For the purposes of this condition, total reduced sulfur shall mean dimethyl disulfide, dimethyl sulfide, hydrogen sulfide, and methyl mercaptan; and reduced sulfur compounds shall mean hydrogen sulfide, carbonyl sulfide, and carbon disulfide.

1. The owner/operator shall ensure that the throughput of molten sulfur at S1010 does not exceed 200 long tons/day. [Cumulative Increase]

2. The owner/operator shall ensure that the throughput of molten sulfur at S503 does not exceed 471 long tons/day. [Cumulative Increase]

3. The owner/operator shall ensure that S1010 is abated at all times of operation by A48, SRU Tail Gas Treatment Unit, and A424, Incinerator. [Cumulative Increase]

4. The owner/operator shall ensure that S503, Sulfur Storage Tank, S504, Sulfur Degassing Unit, and S505, Sulfur Truck Loading Rack, are controlled at all times of operation by the Claus reaction furnace at S1010 or S1003, Sulfur Recovery Units. [Cumulative Increase, 2-1-305]

5. All pressure relief devices on S1010 shall be vented to a fuel gas recovery system, furnace, or flare with a recovery/destruction efficiency of 98%. [8-28-302, BACT]

6. The owner/operator shall ensure that the supplemental fuel used at A424, Tail Gas Incinerator, is PUC quality natural gas. [BACT]

7. The owner/operator shall not exceed the following emission concentrations from S1010/A48/A424:
a.SO2 50 ppmv @ 0% O2, 24-hour basis. [BACT]
b.CO 75 ppmvd @ 7% O2, 1-hour basis. [BACT]
c. NOx 42.2 ppmv @ 7% O2, 1-hour basis.[BACT]

8. The owner/operator shall not exceed the following emission concentrations from S1010/A48/A424:
a.NH3 12.5 ppmv @ 7% O2, 24-hour basis [Regulation 2, Rule 5]
b.H2S:2.5 ppmv @ 0% O2 [Regulation 2, Rule 5]

9. The owner/operator shall not exceed the following hourly limits from S1010/A48/A424:
a.NOx: 8.0 lb/hr [2-1-305]
b.H2S: 0.23 lb/hr [Regulation 2, Rule 5]
c. NH3: 0.88 lb/hr [Regulation 2, Rule 5]

10. The owner/operator shall ensure that daily emissions, including startups, shutdowns, upsets, and malfunctions, from S1010/A48/A424 do not exceed the following limits:
a.Sulfuric acid mist: 31 lb/day [PSD]
b. PM10: 9.5 lb/day [2-1-301]

11. The owner/operator shall ensure that that annual emissions, including startups, shutdowns, upsets, and malfunctions, from S1010/A48/A424, do not exceed the following limits per any consecutive 12-month period:
a.SO2: 29.7 tons [BACT, Cumulative Increase]
b.NH3: 3.85 tons [Regulation 2, Rule 5]
c.CO: 37.9 tons [BACT, Cumulative Increase]
d.NOx: 11.2 tons [BACT, Cumulative Increase]
e.POC: 0.43 tons [Cumulative Increase]
f.PM10: 1.19 tons [Cumulative Increase]
g.Sulfuric acid mist: 5.65 tons [2-1-301]
h.H2S: 0.975 tons [Regulation 2, Rule 5]
i.Total Reduced Sulfur: 10 tons [PSD]
j. Reduced Sulfur Compounds: 10 tons [PSD]

12. Prior to the commencement of construction, the owner/operator shall submit plans to the District's Source Test Division to obtain approval of the design and location of the source test ports. The sample ports shall be installed in accordance with Manual of Procedures, Volume 4, Section 1.2.4. Ports for particulate testing shall be installed. [basis: Regulation 1-501]

13. No later than 90 days from the startup of S1010, the owner/operator shall conduct District-approved source tests to determine (1) initial compliance with the limits in Parts 7, 8, 9, and 13 for NOx, CO, POC, PM10, SO2, sulfuric acid mist, H2S, ammonia, (2) the BAAQMD Regulation 6 requirements below, and (3) the emission rates in lbs/dry standard cubic foot of NOx, POC, PM10, sulfuric acid mist, NH3, H2S, and reduced sulfur compounds. The owner/operator shall conduct the source tests in accordance with Part 19. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. During the source test, the owner/operator shall determine the temperature required to achieve an outlet concentration of 2.5 ppmv H2S @ 0% O2, while meeting all other limits. The temperature shall become an enforceable limit.

a. BAAQMD Regulation 6-1-310: 0.15 gr PM/dscf

b.BAAQMD Regulation 6-1-311: PM emissions based on Process Rate Weight

c. BAAQMD Regulation 6-1-330: SO3 and H2SO4 limit

If the rate of reduced sulfur compounds, including H2S, exceeds 2.2 lb/hr, or if the rate of total reduced sulfur, including H2S, exceeds 2.2 lb/hr, the District reserves the right to require additional PSD analysis or to impose a higher temperature limit for A424, Incinerator, to control total reduced sulfur and reduced sulfur compounds. [BACT, Cumulative Increase; Regulation 2, Rule 5; BAAQMD Regulation 6; PSD]

14. After the initial source test required in part 13 of this condition, the owner/operator shall ensure that the minimum temperature shall not be lower than 1409 ~~1496~~ deg. F.[Offsets]

15. To determine compliance with the temperature limit in part 14,A424, Thermal Oxidizer, shall be equipped with a temperature measuring device capable of continuously measuring and recording the temperature in A424. The owner/operator shall install, and maintain in accordance with manufacturer's recommendations, a temperature measuring device that meets the following criteria: the minimum and maximum measurable temperatures with the device are 0~~(TBD)~~ degrees F and 2,300 ~~(TBD)~~ degrees F, respectively, and the minimum accuracy of the device over this temperature range shall be 1.0 percent of full-scale. [Regulation 1-521]

16. The temperature limit in part 14 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller setpoint complies with the temperature limit. For the purposes of parts 16 and 17 of this condition, a temperature excursion refers only to temperatures below the limit. An Allowable Temperature Excursion is one of the following:
    a. A temperature excursion not exceeding 20 degrees F; or b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.

    i.the excursion does not exceed 50 degrees F; ii. the duration of the excursion does not exceed 24 hours; and iii. the total number of such excursions does not exceed 12 per calendar year (or any consecutive 12 month period).

    Two or more excursions greater than 15 minutes in Duration occurring during the same 24-hour period shall be counted as one excursion toward the 12 excursion limit. [Regulation 2-1-403]

17. For each Allowable Temperature Excursion that exceeds 20 degrees F and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records

shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
a. Temperature controller setpoint; b. Starting date and time, and duration of each Allowable Temperature Excursion; c. Measured temperature during each Allowable Temperature Excursion; d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and e. All strip charts or other temperature records.
[Regulation 2-1-403]

18. For the purposes of parts 16 and 17 of this condition, a temperature excursion refers only to temperatures below the limit. (Basis: Regulation 2-1-403)

19. The owner/operator shall submit protocols for all source test procedures to the District's Source Test Section at least three weeks prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the projected test dates at least 7 days prior to testing. [BACT, Cumulative Increase; Regulation 2, Rule 5]

20. The owner/operator shall perform an annual District-approved source test to verify compliance with the following requirements. A copy of the source test results shall be provided to the District Director of Compliance and Enforcement within 60 days of the test. a. BAAQMD Regulation 6-1-310: 0.15 gr PM/dscf b. BAAQMD Regulation 6-1-311: PM emissions based on Process Rate Weight c. BAAQMD Regulation 6-1-330: SO3 and H2SO4 limit d. Emission rates in parts 7c, 8a, 8b, 9a, 9b, and 9c of this condition. e. Emission rates of sulfuric acid mist, total reduced sulfur, and reduced sulfur compounds [BACT, Regulation 6, PSD; Regulation 2, Rule 5; Cumulative increase]

21. The owner/operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for exhaust gas flowrate, SO2 and O2. The owner/operator shall keep exhaust gas flow, SO2 and O2 data for at least five years and shall make these records available to the District upon request. The owner/operator shall measure SO2 concentration and mass emissions on a clock-hour basis. The monitors shall comply the requirements of 40 CFR 60.105, 40 CFR 63.1572, and the District's Manual of Procedures, Volume 5. [BACT, Cumulative Increase, 40 CFR 63.1568(a)(1)(i)]

22. The owner/operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for exhaust gas flow and CO. The owner/operator shall keep flow and CO data for at least five years and shall make these records available to the District upon request. The owner/operator shall measure CO concentration and mass emissions on a clock-hour basis. The monitors shall comply the requirements of the District's Manual of Procedures, Volume 5. [BACT, Cumulative Increase]

23. The owner/operator will ensure that S1010, SRU, complies with all applicable provisions of 40 CFR 60, Subpart J, and 40 CFR 63, Subpart UUU. This provision will be deleted when the applicable citations from these standards are incorporated into the Major Facility Review permit. [40 CFR 60, Subpart J; 40 CFR 63, Subpart UUU]

24. The owner/operator shall keep throughput records for sources S1010 and S503 on a daily basis. The records shall be kept on site for a period of at least 5 years and shall be made available for inspection by District staff upon request. [Cumulative Increase]

25. The owner/operator shall use the source tests required in parts 13 and 20 to determine compliance with the daily limit in part 10 and the annual limits in parts 11b, 11d, 11e, 11f, 11h, and 11i. At the end of every month, the owner/operator shall summarize the exhaust gas flow in dry standard cubic feet for the month and

shall calculate the estimated emissions of each pollutant for the previous consecutive 12-month period and for H2S for each day of the month using the emission rate determined in the last source test. The summaries and calculations shall be completed within 60 days of the end of each month. Alternately, the owner/operator may establish a daily and monthly exhaust gas flow level after each source test that will ensure compliance with the daily and annual limits. In this case, the owner/operator will log the daily and monthly exhaust gas flows from S1004/A48/A424. [Cumulative increase; Regulation 2, Rule 5; Cumulative Increase, PSD]

26. The Owner/Operator shall perform a visible emissions check on Source S1010 on a monthly basis. The visible emissions check shall take place while the equipment is operating and during daylight hours. If any visible emissions are detected, the owner/operator shall have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures outlined in the CARB manual, "Visible Emissions Evaluation" for six (6) minutes within three (3) days and record the results of the reading. If the reading is in compliance with the Ringelmann 1.0 limit in BAAQMD Regulation 6-1-301, the reading shall be recorded and the owner/operator shall continue to perform a visible emissions check on a monthly basis. If the reading is not in compliance with the Ringelmann 1.0 limit in BAAQMD Regulation 6-1-301, the owner/operator shall take corrective action and report the violation in accordance with Standard Condition 1.F of the Title V permit. The certified smoke-reader shall continue to conduct the Method 9 or CARB Visible Emission Evaluation on a daily basis until the daily reading shows compliance with the applicable limit or until the equipment is shut down. Records of visible emissions checks and opacity readings made by a CARB-certified smoke reader shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulations 6-301, 2-1-403]

RECOMMENDATION

Issue a change of condition to condition 23125 as shown above for the following source.

1010 U235 Sulfur Recovery Unit
CHEM> Claus, modified 3 stage, Sulfur, 10 tons/hr max, 7 days/wk

Abated by:
48 Sulfur Plant Tail Gas Treatment Plant

424 Sulfur Plant Tail Gas Incinerator

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

27557 Eval Final

Engineering Evaluation

Phillips 66 – San Francisco Refinery
Application No. 28110
Plant No. 21359

BACKGROUND

Phillips 66 has submitted a change of conditions application to revise condition 21235 which includes NOx boxes for 15 sources. Phillips 66 is requesting revisions to 4 of 27 NOx boxes for the15 sources that are subject to Regulation 9, Rule 10. The NOx boxes for S3 and S9 (2 each) are being revised under this application.

The existing approved NOx boxes (Application #14602, 21848) and the revised NOx boxes for S9 have the lower portions of some of the NOx boxes drawn down to a 20% low fire line and often there is no source test data at the corners of the NOx box. Phillips has previously submitted additional data (See email from J. Ahlskog dated June 21, 2013 to B. Lusher) that supports the fact that extending the NOx boxes to the 20% low fire line is a conservative NOx emission estimation methodology. The NOx emission rates at low fire conditions are lower than the conservative NOx box emission factor.

The data from the revised S3 and the existing S7 also supports the fact that extending the NOx box to the 20% low fire line is conservative. S3 and S7 have NOx boxes that are partially based on source test data that corresponds to a firing rate that is less than 20% of the maximum firing rate. The two data points below the 20% firing rate line have a much lower NOx emission rate on a lb/MMBtu basis than the associated NOx box emission factor.

In order to meet the new monitoring requirements contained in the revised Regulation 9, Rule 10, the Refinery plans to install CEMs on S-3, S-4, S-5, S-7, S-9, S-11, S-12, S-29, S-30, and S-336/S-337 (combined stack). After CEMs are installed on these sources only S-22 will have a non-standard NOx box. The remaining heaters S-2, S-20, and S-22 have a capacity less than 25 MMBtu/hour and may use an emission factor based on source testing to estimate emissions.

EMISSION CALCULATIONS/CUMULATIVE INCREASE

There is no emissions increase associated with this application.

The revised NOx boxes for the affected sources at the Refinery are shown below. The boxes are sometimes separated by firing rate and sometimes by oxygen content.

Revised NOx Box Table - Underline/Strikeout

Source No.	Emission Factor	Point 1	Point 2	Point 3	Point 4	Point 5
	(lb/MMBtu)	(O2%, MMBtu/hr)				
2	0.031	N/A, 4.4	N/A, 4.4	N/A, 22	N/A	N/A, 22
3	0.14	2.4, 10.6	2.4, 30	5~~.6, 34.4~~ 6.0, 43.4	5.7, 7.80	
3	0.16	5.7, 7.80	5~~.6, 34.4~~ 6.0, 43.4	10.2, 26.1	9.6, 7.7	8.6, 7.44
4	0.0404	1.6, 19.2	1.6, 66	2.0, 81	2.5, 74	2.5, 19.2
4	0.0495	2.5, 19.2	2.5, 74	3.8, 74	5.7, 37	5.7, 19.2
5	0.0464	1.6, 21	1.6, 70	1.7, 74.4	2.5, 74.4	2.5, 21
5	0.06	2.5, 21	2.5, 74.4	4.3, 71.2	6.8, 62.4	6.8, 21
7	0.137	3.7, 11.2	2.5, 29.1	13.0, 19.6	14.3, 4.7	12.9, 3.6
7	0.137	2,5, 29.1	3.4, 53.4	4.4, 53.4	13.0, 19.6	
9	0.021	1.2, 12.2	1.2, 54	2.8, 54	3.3, 42.7	3.3, 12.2
9	0.0~~32~~4	3.3, 12.2	3.3, 42.7	4.2, 54	7~~, 31~~ 9.8,28.9	7~~, 12.2~~ 9.8,12.2
11	0.058	1.3, 21.6	1.3, 98.8	2.5, 104	3.0, 95.2	3.0, 21.6
11	0.062	3.0, 21.6	3.0, 95.2	5.6, 89	5.6, 21.6	
12	0.0241	1.6, 8.4	1.6, 21	2.2, 31	3, 31	3, 8.4
12	0.0334	3, 8.4	3, 31	5.0, 31	6, 30	6, 8.4
20	0.036	N/A, 4.6	N/A, 4.6	N/A, 23	N/A	N/A, 23
22	0.036	2.1, 6.2	2.1, 24	4.4, 24	4.7, 21	4.7, 6.2
22	0.050	4.7, 6.2	4.7, 21	10, 20.3	10, 6.2	
29	0.034	1.5, 21	1.5, 93	3.1, 106	3.1, 21	
29	0.042	3.1, 21	3.1, 106	4.5, 100.3	6.2, 89.4	6.2, 21
30	0.043	1.8, 10	1.8, 38.3	3.1, 42,	3.1, 10	
30	0.052	3.1, 10	3.1, 42	4.5, 45	7.5, 36	7.5, 10
31	0.055	N/A, 4	N/A, 4	N/A, 20	N/A	N/A, 20
336	0.0527	2.0, 22.2	2.0, 84	4, 94.3	4.4, 91	4.4, 22.2
336	0.061	4.4, 22.2	4.4, 91	5.4, 94.4	5.9, 87.1	5.9, 22.2
337	0.048	1.8, 6.8	1.8, 31.8	2.7, 31.8	4.3, 25	4.3, 6.8
337	0.065	4.3, 6.8	4.3, 25	2.7, 31.8	6.2, 31.8	6.2, 6.8

The revised NOx boxes will be used to estimate emissions from each source and to demonstrate compliance with Regulation 9, Rule 10.

STATEMENT OF COMPLIANCE

Regulation 2, Rule 1
The facility is not located within 1,000 feet of a school and the notification requirements of 2-1-412 are not triggered.

Regulation 2, Rule 2
There is no emissions increase associated with this application. BACT review is not triggered.

Health Risk Screening Analysis, Regulation 2, Rule 5
This is no emissions increase associated with this application.

Regulation 6, Rule 1
The sources subject to condition 21235 are expected to continue to comply with Regulation 6, Rule 1.

Regulation 9, Rule 10
The sources subject to condition 21235 are expected to continue to comply with Regulation 9, Rule 10. As previously discussed Phillips 66 plans to install an additional 10 CEMs in order to meet the revised rule.

NSPS/NESHAPS
There is no New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants that applies to this source.

CEQA
Phillips 66 has provided an Appendix H for this application. This application is categorically exempt from CEQA per 2-1-312.1 (see below).

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

OFFSETS
There is no emissions increase associated with this application. In addition, there are no new sources being installed and no existing sources being modified under this application and CEQA does not apply.

PSD
The PSD permit program does not apply to this application.

PERMIT CONDITIONS

COND# 21235 ----------

This condition was amended by Applications 13424 in October 2007, 14602 in May, 2008. 22904 in March, 2013, and 21848 in September, 2014.
Regulation 9-10 Refinery-Wide Compliance
CONDITIONS FOR SOURCES S2, S3, S4, S5, S7, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S22, S29, S30, S31, S43, S44, S336, S337, S351, S371, S372

1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: [Regulation 9-10-301 and 305]

S#	Description	NOx CEM
2	U229, B-301 Heater	No
3	U230, B-201 Heater	No
4	U231, B-101 Heater	No
5	U231, B-102 Heater	No
7	U231, B-103 Heater	No
9	U240, B-2 Boiler	No
10	U240, B-101 Heater	Yes
11	U240, B-201 Heater	No
12	U240, B-202 Heater	No
13	U240, B-301 Heater	Yes
15	U244, B-501 Heater	Yes
16	U244, B-502 Heater	Yes
17	U244, B-503 Heater	Yes
18	U244, B-504 Heater	Yes
19	U244, B-505 Heater	Yes
20	U244, B-506 Heater	No
22	U248, B-606 Heater	No
29	U200, B-5 Heater	No
30	U200, B-101 Heater	No
31	U200, B-501 Heater	No
43	U200, B-202 Heater	Yes
44	U200, B-201 PCT Reboil Furnace	Yes

336 U231 B-104 Heater No
337 U231 B-105 Heater No
351 U267 B-601/602 Tower Pre-Heaters Yes
371 U228 B-520 (Adsorber Feed) Furnace Yes
372 U228 B-521 (Hydrogen Plant) Furnace Yes

2. The owner/operator of each source listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. [Regulation 9-10-502]

3. The owner/operator shall operate each source listed in Part 1, that does not have a NOx CEM within specified ranges of operating conditions (firing rate and oxygen content) as detailed in Part 5. The ranges shall be established by utilizing data from district-approved source tests.

a. The NOx Box for units with a maximum firing rate of 25 MMBtu/hr or more shall be established using the procedures in Part 4.
b. The NOx Box for units with a maximum firing rate less than 25 MMBtu/hr shall be established asfollows: High-fire shall be the maximum rated capacity. Low-fire shall be 20% of the maximum rated capacity. There shall be no maximum or minimum O2. [Regulation 9-10-502]

4. The owner/operator shall establish the initial NOx box for each source subject to Part 3. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard operation. The procedure for establishing the NOx box is as follows:

a. Conduct district approved source tests for NOx and CO, while varying the oxygen concentration and firing rate over the desired operating ranges for the furnace;
b. Determine the minimum and maximum oxygen concentrations and firing rates for the desired operating ranges (Note that the minimum O2 at low-fire may be different than the minimum O2 at high-fire. The same is true for the maximum O2). The owner/operator shall also verify the accuracy of the O2 monitor on an annual basis.
c. Determine the highest NOx emission factor (lb/Mmbtu) over the preferred operating ranges while maintaining CO concentration below 200 ppm; the owner/operator may choose to use a higher NOx emission factor than tested.

d. Plot the points representing the desired operating ranges on a graph. The resulting polygon(s) is the NOx Box, which represents the allowable operating range(s) for the furnace under which the NOx emission factor from part 5a is deemed to be valid.

i. The NOx Box can represent/utilize either one or two emission factors.

ii. The NOx Box for each emission factor can be represented either as a 4 or 5-sided polygon. The NOx box is the area within the 4- or 5-sided polygon formed by connecting the source test based parameters that lie about the perimeter of successful approved source tests. The source test parameters forming the corners of the NOx box are listed in Part 5.

e. Upon establishment of each NOx Box, the owner/operator shall prepare a graphical representation of the box. The representation shall be made available on-site for APCO review upon request. The box shall also be submitted to the BAAQMD with permit amendments.

5. Except as provided in Part 5b and 5c, the owner/operator shall operate each source within the NOxBox ranges listed below at all times of operation. This part shall not apply to any source which has a properly operated and properly installed NOx CEM.

A. NOx Box ranges

2/0.031/N/A, 4.4/N/A, 4.4/N/A, 22/N/A/N/A, 22

3/0.14/2.4, 10.6/2.4, 30/~~5.6, 34.4~~6.0, 43.4/5.7, 7.8

3/0.16/5.7, 7.8/~~5.6, 34.4~~6.0, 43.4/10.2, 26.1/9.6, 7.7/ 8.6, 7.44

4/0.0404/1.6, 19.2/1.6, 66/2.0, 81/2.5, 74/ 2.5, 19.2

4/0.0495/2.5, 19.2/2.5, 74/3.8, 74/5.7, 37/ 5.7, 19.2

5/0.0464/1.6, 21/1.6, 70/1.7, 74.4/2.5, 74.4/ 2.5, 21

5/0.06/2.5, 21/2.5, 74.4/4.3, 71.2/6.8, 62.4/ 6.8, 21

7/0.137/3.7, 11.2/2.5, 29.1/13.0, 19.6/
14.3, 4.7/12.9, 3.6

7/0.137/2.5, 29.1/3.4, 53.4/4.4, 53.4/
13.0, 19.6/N/A

9/0.021/1.2, 12.2/1.2, 54/2.8, 54/3.3, 42.7/
3.3, 12.2

9/0.0~~43~~2/3.3, 12.2/3.3, 42.7/4.2, 54/~~7, 31~~9.8, 28.9/
~~7, 12.2~~9.8, 12.2

11/0.058/1.3, 21.6/1.3, 98.8/2.5, 104/3.0, 95.2/
3.0, 21.6

11/0.062/3.0, 21.6/3.0, 95.2/5.6, 89/5.0, 21.6/
N/A

12/0.024/1.6, 8.4/1.6, 21/2.2, 31/3, 31/3.0, 8.4

12/0.0334/3.0, 8.4/3, 31/5.0, 31/6, 30/6, 8.4

20/0.036/N/A, 4.6/N/A, 4.6/N/A, 23/N/A/N/A, 23

22/0.036/2.1, 6.2/2.1, 24/4.4, 24/4.7, 21/4.7, 6.2

22/0.050/4.7, 6.2/4.7, 21/10, 20.3/10, 6.2/N/A.
29/0.034/1.5, 21/1.5, 93/3.1, 106/3.1, 21/N/A
29/0.042/3.1, 21/3.1, 106/4.5, 100.3/6.2, 89.4/
6.2, 21
30/0.043/1.8, 10/1.8, 38.3/3.1, 42/3.1, 10/N/A

30/0.052/3.1, 10/3.1, 42/4.5 45/7.5, 36/7.5, 10

31/0.055/N/A, 4/N/A, 4/N/A, 20/N/A/N/A, 20

336/0.0527/2.0, 22.2/2.0, 84/4, 94.3/4.4, 91/
4.4, 22.2

336/0.061/4.4, 22.2/4.4, 91/5.4, 94.4/5.9, 87.1/
5.9, 22.2

337/0.048/1.8, 6.8/1.8, 31.8/2.7, 31.8/4.3, 25/
4.3, 6.8

337/0.065/4.3, 6.8/4.3, 25/2.7, 31.8/6.2, 31.8/
6.2, 6.8

The limits listed above are based on a calendar day

averaging period for both firing rate and O2%.

b. Part 5a does not apply during:
   i) startup or shutdown periods,
   ii) periods of curtailed operation (i.e. firing rate less than or equal to 30% of unit's rated capacity as defined in 9-10-22), or
   iii) to units temporary out of service.
   During these conditions the means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.4 and 301.5.

c. Part 5a does not apply during any source test required or permitted by this condition. (Reg. 9- 10-502). See Part 7 for the consequences of source test results that exceed the emission factors in Part 5.

6a. The owner/operator may deviate from the NOx Box (either the firing rate or oxygen limit) provided that the owner/operator conducts a district approved source test which replicates the past operation outside of the established ranges. The source test representing the new conditions shall be conducted no later than the next regularly scheduled source test period, or within eight months, whichever is sooner. The source test results will establish whether the source was operating outside of the emission factor utilized for the source. The source test results shall be submitted to the district source test manager within 60 days of the test. As necessary, a permit amendment shall be submitted.

i. Source Test <= Emission Factor

If the results of this source test do not exceed the higher NOx emission factor in Part 5, or the CO limit in Part 9, the unit will not be considered to be in violation during this period for operating out of the "box." The facility may submit an accelerated permit program permit application to request an administrative change of the permit condition to adjust the NOx Box operating range(s), based on the new test data. The change will be considered to be an administrative change for the purpose of the District permit and a minor revision for the purpose of the Major Facility Review permit.

ii. Source Test > Emission Factor

If the results of this source test exceed the permitted emission concentrations or emission rates then, utilizing

measured emission concentration or rate, the owner/operator shall apply the higher emission factor retroactively to the date of the previous source test and provide sufficient NOx IERCs for that time period to ensure the facility is in compliance with the refinery wide limit specified in Regulation 9-10-301. The owner/operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301. The facility may submit a permit application to request an alteration of the permit condition to change the NOx emission factor and/or adjust the operating range, based on the new test data.

6b. The owner/operator must report conditions outside of box within 96 hours of occurrence.

7. For each source subject to Part 3, the owner/operator shall conduct source tests at the schedule listed below. The source tests are performed in order to measure NOx, CO, and O2 at the as-found firing rate, or at conditions reasonably specified by the APCO. The source test results shall be submitted to the District Source Test Manager within 60 days of the test. [Regulation 9-10-502]

a Source Testing Schedule

i. Heater < 25 MMBtu/hr: One source test per consecutive 12 month period. The time interval between source tests shall not exceed 16 months.

ii. Heaters = 25 MMBtu/hr: Two source tests per consecutive 12 month period. The time interval between source tests shall not exceed 8 months and not be less than 5 months apart. The source test results shall be submitted to the district source test manager within 60 days of the test. [Regulation 9-10-502]

b If the results of any source test under this part exceed the permitted concentrations or emission rates, the owner/operator shall follow the requirements of Part 6a(ii). If the owner/operator chooses not to submit an application to revise the emission factor, the owner/operator shall conduct another Part 7 source test, at the same conditions, within 90 days of the initial test.

8. For each source listed in Part 1 with a NOx CEM installed, the owner/operator shall conduct semi-annual district approved CO source tests at as-found conditions. The time interval between source tests shall not exceed 8 months. District conducted CO emission tests associated with District-conducted NOx CEM field accuracy tests may be substituted for the CO semi-annual source tests.

9. For any source listed in Part 1 for which any two source test results over any consecutive five year period are greater than or equal to 200 ppmv CO at 3% O2, the owner/operator shall properly install, properly maintain, and properly operate a CEM to continuously measure CO and O2. The owner/operator shall install the CEM within the time period allowed in the District's Manual of Procedures. [Regulation 9-10-502, 1-522]

10. In addition to records required by 9-10-504, the facility must maintain records of all source tests conducted to demonstrate compliance with Parts 1 and 5. These records shall be kept on site for at least five years from the date of entry in a District approved log and be made available to District staff upon request. [Recordkeeping, Regulation 9-10-504]

*11. The sources listed in Part 1 of this condition make up the group of sources that are operating under an Alternative Compliance Plan (ACP). The owner/operator shall demonstrate compliance with their ACP and with Regulation 9-10-301 by keeping a spreadsheet of the ACP calculations in a District approved format.
[basis:Regulation 2-9-303, 9-10-301]

Conditions for use of IERCs for compliance with Regulation 9-10-301:

*12. The owner/operator shall submit quarterly reports to the APCO, within 30 days following the end of each calendar quarter, or other 3-month interval established in the plan.
Each quarterly report shall include:
a.Summary of the amount of IERC's used during the previous quarter;
b.Sum of all IERC's used during the current ACP period;
c.A projection of the IERC's that are needed for the entire ACP period based on the IERC usage rates

calculated in Parts 12a and 12b of this condition, including the Environmental Benefit Surcharge, per Regulation 2-9-309; and

d. Certification that the facility possesses IERC's equal to the amount projected in Part 12c of this condition or a description of how the facility will adjust its operation so that the amount of IERC's does not exceed the amount of IERC's possessed by the facility.
[basis: Regulation 2-9-502.3]

*13. The owner/operator shall submit an annual reconciliation report to the APCO within 30 days of following the end of the ACP period, and surrender the banking certificate(s) for all IERC's used during the ACP period, including the environmental benefit surcharge, per Regulation 2-9-309.
[basis:Regulation 2-9-502.4]

*14. The ACP must be reviewed and approved by the APCO on an annual basis. The owner/operator shall submit all necessary documents mentioned in Regulation 2-9-303 with ACP renewal request.
[basis: Regulation 2-9-303]

*15. The owner/operator shall retain records for five years from the date the record was made, and shall submit such information as required by the APCO to determine compliance with the ACP.
[basis: Regulation 2-9-502.2]

VI. RECOMMENDATION

Approve of change of conditions for condition 23125 that include the revised NOx boxes for:
S-3, and S-9.

By _____ Date _____
Brian K Lusher, Senior Air Quality Engineer

28110 Eval

ENGINEERING EVALUATION

Phillips 66 Company
Application: 28687
Plant: 21359
1380 San Pablo Avenue, Rodeo, CA 94572

BACKGROUND

Phillips 66 Company has applied to obtain an Authority to Construct (AC) and/or a Permit to Operate for the following equipment:

S-1012 Fire Training Fluid Tank, Fixed Roof Tank, 8000-gallon capacity

Phillips 66 conducts training in specialized fire-fighting techniques at an on-site Fire School typically three times per year. E-III Industrial Grade Fire Training Liquid (E-III) produced by the Chevron Phillips Chemical Company is used as a training aid during the Fire Schools. E-III is a gasoline-range hydrocarbon material composed of Naphtha (0-95%), C9-C11 Isoalkanes (0-95%), C8-C10 Isoalkanes (0-95%) and Isopentane (0-15%), which are not listed in Table 2-5-1 as toxic air contaminants (TACs). Each Fire School training session uses approximately 2,500 gallons of E-III, for a total of 7,500 gallons per year. However, since the proposed tank has an 8,000-gallon capacity, Phillips 66 has requested a throughput of 8,000 gallons per year.

EMISSIONS

U.S. EPA Tanks 4.0 software was used to estimate volatile organic compound (VOC) emissions from the storage tank (S-1012). The fire training liquid does not contain TACs. The Reid Vapor Pressure (RVP) provided by the manufacturer is 2-5 psi. It was assumed that the Gasoline RVP 6 option in the Tanks list of stored materials was the closest match to E-III and provides a conservative analysis due to a higher assumed RVP (i.e., 6 psi as opposed to 2-5 psi). Per Tanks 4.0, the total VOC emissions from S-1012 is the following:

POC = 820.29 lbs/yr = 0.41 TPY
POC = 2.25 lbs/day (365-day average)

PLANT CUMULATIVE INCREASE

Table 2 summarizes the cumulative increase in criteria pollutant emissions that will result from the operation of S-1012.

1. Table 2 – Cumulative Increase

Pollutant	Annual Emissions (TPY)
NOx	0
POC	0.41
CO	0
PM_{10}	0
SO_2	0

TOXIC RISK SCREENING ANALYSIS
Because no TACs will be emitted from S-1012, no health risk assessment is required.

BACT
In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10}.

BACT is not triggered because emissions are estimated to not exceed 2.25 lbs/day of POC.

OFFSETS
Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx per Regulation 2-2-302. Phillips 66 Company is a major facility for POCs emissions. Thus, emission reduction credits are required to offset the POC emissions increase in this application. Since Phillips 66 emits 35 tons or more of POC emissions per year, the facility is required to provide the offsets pursuant to Regulation 2-2-302. The facility has provided Banking Certificate # 1456 for POC for use to offset the following emissions increase with an offset ratio of 1.15:1.

POC = 0.41 TPY x 1.15 = 0.47 TPY

STATEMENT OF COMPLIANCE

Source S-1012 is subject to and expected to be in compliance with the requirements of District Regulation 8-5, because it will have a submerged fill pipe.

New Source Performance Standards (NSPS)
Storage tank may be subject to the 40 CFR 60 Subpart Kb, if it has a capacity greater than or equal to 75 cubic meters (m3) (19,815 gallons) that stores volatile organic liquids for which construction, reconstruction, or modification is started after July 23, 1984. Because the proposed tank is only 8,000 gallons in capacity, it is not subject to the NSPS.

California Environmental Quality Review (CEQA)
This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subjected to any further CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.

Public Notification, Schools
This facility is not located within 1,000 feet of the nearest school and therefore is not subject to the public notification requirements of Regulation 2-1-412.

Prevention of Significant Deterioration (PSD)
PSD is not triggered.

PERMIT CONDITIONS

I recommend the following conditions for S-1012:

1. The owner/operator of S-1012 shall not exceed the following throughput limits during any consecutive twelve-month period:
   E-111 Industrial Grade Fire Training Liquid 8000 Gallons
   (Basis: Cumulative Increase)

2. The owner/operator may store alternate liquid(s) other than the materials specified in Part 1 and/or usages in excess of those specified in Part 1, provided that the owner/operator can demonstrate that all of the following are satisfied:
   a. Total POC emissions from S-1012 do not exceed 820 pounds in any consecutive twelve-month period; and
   b. The use of these materials does not increase toxic emissions above any risk screening trigger level of Table 2-5-1 in Regulation 2-5.

   (Basis: Cumulative Increase; Toxics)

3. To determine compliance with the above parts, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:
   a. Quantities of each type of liquid stored at this source on a monthly basis.
   b. If a material other than those specified in Part 1 is stored, POC and toxic component contents of each material used; and mass emission calculations to demonstrate compliance with Part 2, on a monthly basis;
   c. Monthly throughput and/or emission calculations shall be totaled for each consecutive twelve-month period.
   d. Demonstration that any toxic air contaminants in alternate liquids stored in Part 2, do not exceed the acute and chronic trigger levels by calculating toxic air contaminant emissions on a lb/hour and lb/year basis, respectively.

   All records shall be retained on-site for five years, from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. (Basis: Cumulative Increase; Toxics)

RECOMMENDATION

I recommend that the District issue an Authority to Construct to Phillips 66 Company for the following source:

S-1012 Fire Training Fluid Tank, Fixed Roof Tank, 8000-gallon capacity

_____ _____

Carol Lee Date
Senior Air Quality Engineer
Engineering Division

28687 Eval

APPENDIX C – CAM Requirements

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-13	U240, B-301 Natural Gas, Refinery Fuel Gas Heater	Yes	A113	NOx	0.015 lb NOx/MMBtu	BAAQMD Condition 1694, Part F.4b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
S-36	U200, B-102 Natural Gas, Refinery Fuel Gas Heater	Yes	A36	NOx	10 ppmv NOx at 3% O2 (3 hour average). Except startup and shutdowns.	BAAQMD Condition 21097, Part 3b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
S-43	U200, B-202 Natural Gas, Refinery Fuel Gas Heater	Yes	A4	CO	50 ppmv CO at 3% O2 (monthly average). Except at startup and shutdown.	BAAQMD Condition 1694, Part D.3	None	Not necessary to evaluate. Pre-control emissions less than major source threshold.	83.0	No	See Attachment 2: Detailed Emission Calculations	No	CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
		Yes	A4	NOx	40 ppmv NOx at 3% O2 (8 hour average). Except startup and shutdowns.	BAAQMD Condition 1694, Part D.2	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
S-45	U246, B-801 Natural Gas, Refinery Fuel Gas A/B Heater	Yes	A47	NOx	5 ppmv NOx at 3% O2 (3 hour average). Except startups, shutdowns, and standby mode.	BAAQMD Condition 22962, Part 4a	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			2.3 tons NOx/yr	BAAQMD Condition 22962, Part 6a	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-135	Tank 200	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-135.
		Yes				SIP 8-5-306							
S-137	Tank 202	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-137.
S-139	Tank 204 (also oil-water separator)	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-139.
		Yes				BAAQMD 8-8-302.3							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-140	Tank 205 (also oil-water separator)	Yes Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306 SIP 8-8-302.3	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-140.
S-168	Tank 269	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-168.
S-173	Tank 280	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-173.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-174	Tank 281	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-174.
S-175	Tank 285	Yes	A7	VOC	No VOC emission limit.	N/A	None	Not necessary to evaluate. No VOC emission limit.	Not necessary to evaluate. No VOC emission limit.			No	CAM does not apply per 40 CFR 64.2(a)(1) and (2) as there is no emission limit or standard established where a control device is necessary to achieve compliance.
S-182	Tank 294	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-306	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-182.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-301	Molten Sulfur Pit 234	Yes	A8	SO2	250 ppm at 0% excess air, 12-hr rolling average	40 CFR 63.1568(a)(1)(i)	SO2 CEMS	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including A8, is considered "inherent process equipment" except for the three tailgas incinerators (A48, A422, and 423). As such, if A8 reduces SO2 emissions generated from S-301, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, A8 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-301.
		Yes		SO3, H2SO4	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	SIP 6-330	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including A8, is considered "inherent process equipment" except for the three tailgas incinerators (A48, A422, and 423). As such, if A8 reduces SO3/H2SO4 emissions generated from S-301, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, A8 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-301.
		Yes		H2S	95% of H2S in refinery fuel gas is removed and recovered on a refinery-wide basis	SIP 9-1-313.2	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	This limit requires that 95% of the H2S be removed and recovered from the refinery fuel gas. As described previously, A8 is considered "inherent process equipment" and does assist with meeting this H2S limit. As such, A8 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-301.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-302	Molten Sulfur Pit 236	Yes	A2, A9, & A422	SO2	250 ppm at 0% excess air, 12-hr rolling average	40 CFR 63.1568(a)(1)(i)	SO2 CEMS	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including A2 and A9, is considered "inherent process equipment" except for the three taigas incinerators (A48, A422, and 423). The taigas incinerator's sole purpose is to convert H2S into SO2; therefore, A422 is not a control device for SO2. As such, if A2 or A9 reduce SO2 emissions generated from S-302, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, A2 or A9 do not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-302.
		Yes		SO3, H2SO4	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	SIP 6-330	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including A2 and A9, is considered "inherent process equipment" except for the three tailgas incinerators (A48, A422, and 423). The taigas incinerator's sole purpose is to convert H2S into SO2; therefore, A422 is not a control device for SO3/H2SO4. As such, if A2 or A9 reduce SO3/H2SO4 emissions generated from S-302, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, A2 or A9 do not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-302.
		Yes		H2S	95% of H2S in refinery fuel gas is removed and recovered on a refinery-wide basis	SIP 9-1-313.2	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	This limit requires that 95% of the H2S be removed and recovered from the refinery fuel gas. As described previously, A2 and A9 are considered "inherent process equipment" and do assist with meeting this H2S limit. Although the three taigas incinerators (A48, A422, and 423) do control H2S emissions to the atmosphere, the incinerators are not used to remove and recover H2S from the refinery fuel gas. As such, the incinerators are not used to achieve compliance with this emission limit, and S-302 is not subject to CAM per 40 CFR Part 64.2(a)(2).

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-303	Molten Sulfur Pit 238	Yes	S1003, A3, A10 & A423	SO2	250 ppm at 0% excess air, 12-hr rolling average	40 CFR 63.1568(a)(1)(i)	SO2 CEMS	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including S1003, A3, and A10, is considered "inherent process equipment" except for the three taigas incinerators (A48, A422, and 423). The taigas incinerator's sole purpose is to convert H2S into SO2; therefore, A423 is not a control device for SO2. As such, if S1003, A3, and/or A10 reduce SO2 emissions generated from S-303, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, S1003, A3, and A10 do not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-303.
		Yes		SO3, H2SO4	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	SIP 6-330	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including S1003, A3, and A10, is considered "inherent process equipment" except for the three tailgas incinerators (A48, A422, and 423). The taigas incinerator's sole purpose is to convert H2S into SO2; therefore, A423 is not a control device for SO3/H2SO4. As such, if S1003, A3, and A10 reduce SO3/H2SO4 emissions generated from S-303, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, S1003, A3, and A10 do not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-303.
		Yes		H2S	95% of H2S in refinery fuel gas is removed and recovered on a refinery-wide basis	SIP 9-1-313.2	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	This limit requires that 95% of the H2S be removed and recovered from the refinery fuel gas. As described previously, S1003, A3, and A10 are considered "inherent process equipment" and do assist with meeting this H2S limit. Although the three taigas incinerators (A48, A422, and 423) do control H2S emissions to the atmosphere, the incinerators are not used to remove and recover H2S from the refinery fuel gas. As such, the incinerators are not used to achieve compliance with this emission limit, and S-303 is not subject to CAM per 40 CFR Part 64.2(a)(2).

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-324	U100 API Oil Wastewater Separator (with outlet channel cover)	Yes	A49	VOC	No VOC emission limit.	N/A	None	Not necessary to evaluate. No VOC emission limit.	Not necessary to evaluate. No VOC emission limit.			No	CAM does not apply per 40 CFR 64.2(a)(1) and (2) as there is no emission limit or standard established where a control device is necessary to achieve compliance.
S-351	U267 B-601/602 Natural Gas, Refinery Fuel Gas Tower Pre-heaters	Yes	A6	NOx	20 ppmv NOx at 3% O2 (averaged over 3 hours). Except startups and shutdowns.	BAAQMD Condition 1694, Part B.2	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-352	Combustion Turbine (natural gas, refinery fuel gas)	Yes	A13	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	9 ppmv @15% O2 (dry)	SIP 9-9-301.3	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			110 ppmv @15% O2 (dry)	40 CFR 60.332 (a)(2)							
		Yes			66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and Part 9b							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-353	Combustion Turbine (natural gas, refinery fuel gas)	Yes	A14	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	9 ppmv @15% O2 (dry)	SIP 9-9-301.3	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			110 ppmv @15% O2 (dry)	40 CFR 60.332 (a)(2)							
		Yes			66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and Part 9b							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-354	Combustion Turbine (natural gas, refinery fuel gas)	Yes	A15	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	9 ppmv @15% O2 (dry)	SIP 9-9-301.3	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			110 ppmv @15% O2 (dry)	40 CFR 60.332 (a)(2)							
		Yes			66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and Part 9b							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-355	Supplemental Firing Duct Burners (natural gas, refinery fuel gas)	Yes	A13	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and 9b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			0.20 lb/MMBtu for natural gas-firing only conditions	40 CFR 60.44b(a)(4)(i)							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-356	Supplemental Firing Duct Burners (natural gas, refinery fuel gas)	Yes	A14	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and 9b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			0.20 lb/MMBtu for natural gas-firing only conditions	40 CFR 60.44b(a)(4)(i)							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-357	Supplemental Firing Duct Burners (natural gas, refinery fuel gas)	Yes	A15	CO	39 ppmv @ 15% O2 (Averaged over 30 days). Except startup and shutdown.	BAAQMD Condition 12122, Part 7	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		CO	200 ton CO/yr	BAAQMD Condition 12122, Part 10a	CO CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the CO emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes		NOx	66 lb/hr (averaged over any 3 hour period)	BAAQMD Condition 12122, Part 9a and 9b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			0.20 lb/MMBtu for natural gas-firing only conditions	40 CFR 60.44b(a)(4)(i)							
		Yes			664 lb/day per turbine/duct burner set or 83 lb/hr total or 25 ppmv at 15% O2 (3 hr average)	BAAQMD Condition 18629, Part IX.E							

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-360	Mid-Barrel Tank 223	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-360.
		Yes				SIP 8-5-306							
S-371	U228 B-520 (Adsorber Feed) Furnace (natural gas, refinery fuel gas)	Yes	A16	CO	50 ppmv CO at 3% O2 over any 3 hours, except startups and shutdowns	BAAQMD Condition 1694, Part C.3	None	Not necessary to evaluate. Pre-control emissions less than major source threshold.	20.9	No	See Attachment 2: Detailed Emission Calculations	No	CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
		Yes		NOx	20 ppmv NOx at 3% O2 (average over 3 hours). Except startups and shutdowns.	BAAQMD Condition 1694, Part C.2	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi).	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
S-372	U228 B-521 (Hydrogen Plant) Furnace (natural gas, refinery fuel gas)	Yes	A17	CO	50 ppmv CO at 3% O2 over any 3 hours, except startups and shutdowns	BAAQMD Condition 1694, Part C.3	None	Not necessary to evaluate. Pre-control emissions less than major source threshold.	20.9	No	See Attachment 2: Detailed Emission Calculations	No	CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
		Yes		NOx	20 ppmv NOx at 3% O2 (average over 3 hours). Except startups and shutdowns.	BAAQMD Condition 1694, Part C.2	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-380	Activated Carbon Silo (P-204)	Yes	A20	PM	No emissions from source > 343 mg per dscm (0.15 grains per dscf) of gas volume	SIP 6-310	None	Not necessary to evaluate. Pre-control emissions less than major source threshold.	11.9	No	See Attachment 2: Detailed Emission Calculations	No	CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
S-425	Marine Loading Berth M1	Yes	A420	POC	Controlled > 98.5% weight	BAAQMD Condition 4336, Part 9	Temperature CPMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the temperature is continuously monitored with a CPMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			POC Emission ≤ 5.7 grams per cubic meter (2 lb/1000 barrel loaded)	SIP 8-44-301.1	Temperature CPMS						

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-426	Marine Loading Berth M2	Yes	A420	POC	Controlled > 98.5% weight	BAAQMD Condition 4336, Part 9	Temperature CPMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the temperature is continuously monitored with a CPMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.
		Yes			POC Emission ≤5.7 grams per cubic meter (2 lb/1000 barrel loaded)	SIP 8-44-301.1	Temperature CPMS						
S-433	MOSC Storage Tank	Yes	A7	VOC	95% Control Efficiency	SIP 8-8-302.3	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-433.
S-438	U110, H-1 (H2 Plant Reforming) Furnace (natural gas, refinery fuel gas, PSA offgas)	Yes	A46	CO	32 ppmv CO at 3% O2 (daily average). Except startup and shutdown.	BAAQMD Condition 1694, Part E.4	None	Not necessary to evaluate. Pre-control emissions less than major source threshold.	90.2	No	See Attachment 2: Detailed Emission Calculations	No	CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
		Yes		NOx	7 ppmv NOx at 3% O2 (1-hr average)	BAAQMD Condition 1694, Part E	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-445	Tank 271 (Cracked Naphtha)	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-445.
		Yes				SIP 8-5-306	None						
S-446	Tank 310 (Isopentane)	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-446.
		Yes				SIP 8-5-306	None						

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-447	Tank 311 (Isopentane)	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-447.
		Yes				SIP 8-5-306	None						
S-449	Tank 285 (Cracked Naphtha)	Yes	A7	VOC	95% Control Efficiency	SIP 8-5-603.1	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-449.
		Yes		VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None						
S-461	U250, B-701 Heater (natural gas, refinery fuel gas	Yes	A461	NOx	10 ppmv NOx at 3% O2 (3 hour average). Except startups, shutdowns, and standby mode.	BAAQMD Condition 21096, Part 3b	NOx CEMS	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)	Not necessary to evaluate. Exempt per 40 CFR 64.2(b)(1)(vi)			No	Exempt per 40 CFR 64.2(b)(1)(vi), as the NOx emissions are continuously monitored with a CEMS which meets the definition of a continuous compliance determination method per 40 CFR 64.1.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-503	Sulfur Storage Tank	Yes	S1003 or S1010	PM	0.15 grain/dscf	SIP 6-310	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	All equipment associated with the sulfur recovery process, including S-1003 or S-1010, is considered "inherent process equipment" except for the three tailgas incinerators (A48, A422, and 423). The taigas incinerator's sole purpose is to convert sulfur compounds, namely H2S, into SO2. As such, if S1003 or S1010 reduce PM emissions generated from S-503, S-504, and/or S-505, then this is a secondary benefit to the primary function of the respective units (i.e., to recovery sulfur from sulfur laden streams from the refinery process). As such, S1003 and S1010 do not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-503, S-504, and S-505.
S-504	Sulfur Degassing	Yes	S1003 or S1010	PM	0.15 grain/dscf	SIP 6-310	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	
S-505	Sulfur Truck Loading Rack	Yes	S1003 or S1010	PM	0.15 grain/dscf	SIP 6-310	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	
S-506	Tank 257	Yes	A7	VOC	95% Control Efficiency	40 CFR 60.112b (a)(3)(ii)	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	The primary purpose of the A7 vapor recovery system is to recovery usable fuel gas for use in the refinery fuel gas system and to prevent oxygen from entering the product stored in the respective tank. An added benefit is that A7 also prevents public nuisance by controlling odors from certain tanks. As such, A7 does not meet the definition of a control device under 40 CFR 64.1 and CAM does not apply to S-506.
		Yes				SIP 8-5-306	None						

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-1002	Sulfur Plant Unit 236 (including aux. burner, water stripper)	Yes	A2 & A422	SO2	250 ppm at 0% excess air, 12-hr rolling average	40 CFR 63.1568(a)(1)(i)	SO2 CEMS	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-302.
		Yes		H2S/NH3	95% of H2S/NH3 in refinery fuel gas is removed and recovered on a refinery-wide basis	SIP 9-1-313.2	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-302.
		Yes	A422	SO3, H2SO4	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	SIP 6-330	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-302.
S-1003	Sulfur Plant Unit 238 (including aux. burner)	Yes	A3 & A423	SO2	250 ppm at 0% excess air, 12-hr rolling average	40 CFR 63.1568(a)(1)(i)	SO2 CEMS	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-303, S-503, S-504, and S-505.
		Yes		H2S/NH3	95% of H2S/NH3 in refinery fuel gas is removed and recovered on a refinery-wide basis	SIP 9-1-313.2	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-303, S-503, S-504, and S-505.
		Yes	A423	SO3, H2SO4	0.08 grain/dscf exhaust concentration of SO3 and H2SO4, expressed as 100% H2SO4	SIP 6-330	None	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.	Not necessary to evaluate. Inherent process equipment per 40 CFR 64.1.			No	See reasoning provided for S-303, S-503, S-504, and S-505.

Phillips 66 CAM Evaluation

Source	Description	Control Device Used? [1]	Control Device #	Pollutant	Federally Enforceable Emission Limit or Standard		Continuous Compliance Determination Method?	Is Limit or Standard post 11/15/90?	Uncontrolled Potential to Emit (PTE)			Subject to CAM?	
					Limit	Reference			PTE (tpy)	Above Major Source Threshold?	Reference	Yes/No	Reason
S-1007	U100 Dissolved Air Flotation Unit (with fixed roof)	Yes	A49	VOC	Collection/Destruction efficiency 70% by weight	SIP 8-8-307.2	Temperature CPMS	Not necessary to evaluate. Pre-control emissions less than major source threshold.	45.0	No	Appendix A of the BAAQMD Engineering Evaluation for Application No. 13424, issued October 5, 2007.	No	Per Appendix A of the BAAQMD Engineering Evaluation for Application No. 13424, uncontrolled VOC emissions for S1007 are calculated to be 45 tpy. As such, CAM does not apply per 40 CFR 64.2(a)(3) as the pre-control potential emissions are less than the major source threshold of 100 tpy.
		Yes			For control by thermal oxidizer: Reduction of 44 tons POC per year	BAAQMD Condition 1440, Part 7a							
		Yes	A51		Collection/Destruction efficiency 70% by weight	SIP 8-8-307.2	None						
		Yes			10 ppm VOC or 98% reduction of VOC	BAAQMD Condition 1440, Part 7c							
		Yes			For control by carbon bed: Reduction of 44 tons POC per year								
S-1010	Sulfur Plant Unit 235 (including aux. burner)	Yes	A48 & A424	Per the April 2009 Permit Evaluation and Statement of Basis for Applications 13427, 16941, 18744, and 18747, BAAQMD determined that CAM applies to S1010 for CO, SO2, H2S, Total Reduced Sulfur, and Reduced Sulfur Compounds.									

1. Emission units without any type of control device listed in Table II-B of the Major Facility Review Permit were not evaluated for CAM applicability.