Bay Area Air Quality Management District

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Permit Evaluation and Statement of Basis for REOPENING of the 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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May 2022~~October 2020~~

Application Engineer: Jimmy Cheng~~M.K. Carol Lee~~
Site Engineer: Jimmy Cheng

Applications # 30003, 29935

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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 January 25, 2018. 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, August 1, 2014, and December 27, 2018. 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 (#30003) is for the reopening of the Title V permit. Per Regulation 2-6-415.4, the District reopened the Title V permit for Phillips 66 on July 3, 2019 primarily to include recent amendments to Regulation 6, Rule 1. In addition, this permit action will also include minor revisions to the permit from the addition of two recent approved permit applications. Although the current permit will expire on January 24, 2023, it continues to remain in force until the District takes final action on the permit reopening. 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 have been recently approved by the District which will be incorporated into the Title V permit with this reopening permit action:

NSR Application	Description	Title V Application	NSR Issuance Date
28660	NEG-1 Standby Generator	NA	5/28/2019
29933	Change of Permit Condition # 1440	29935	07/08/2019

B. Facility Description

The facility description can be found in the statement of basis that was prepared for the renewal issued on January 25, 2018. It is available on request from the Engineering Division of the District.

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:

- Corrected a typo in the expiration date of when the next renewal of the Title V permit is due. The permit expires on January 24, 2023. The completed application for the renewal must be submitted in the year prior to expiration, which is 2022.
- Regulation 2, Rule 1 was amended on December 15, 2021. Therefore, the above rule has been updated in Part A. The current rule is effective until June 30, 2022 and the amended rule is effective July 1, 2022.
- SIP Regulation 2, Rules 1 and 2 were adopted by the EPA on May 21, 2018. The adoption date is reflected in Part A.
- Regulation 2, Rule 5 was amended on December 15, 2021. This rule has been added to Part A. The current rule is effective until June 30, 2022 and the amended rule is effective July 1, 2022.

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

- Added S1011which was permitted in May 2019 under Application # 28660.

Table II B – Abatement Devices

- Added A22, A40, A41, A50, and A110, since these abatement devices had been inadvertently left out of Table IIB.
- Updated applicable requirements for A422 and A423 Tail Gas Incinerators to reflect amended Regulation 6-1-311 limit.
- Added the option for A-53 to abate S1007 as allowed by Part 7 of Permit Condition # 1440 (Application # 29933).
- Corrected minimum temperature requirement for A424 Tail Gas Incinerator to align with Part 14 of Permit Condition # 23125.
- Updated Regulation 6-1 requirements to reflect the applicable limits and requirements in the amended rule.

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.

Changes to permit

- Regulation 2, Rule 1 was amended on December 15, 2021. Therefore, the above rule has been updated in Table III. The amended rule is effective July 1, 2022.
- Regulation 2, Rule 5 was amended on December 7, 2016. This rule has been added to Table III. The amended rule is effective until June 30, 2022.
- Regulation 2, Rule 5 was amended on December 15, 2021. This rule has been added to Table III. The amended rule is effective July 1, 2022.
- EPA recently added the District's Regulation 2, Rule 1 to the SIP. Because District Regulation 2-1-429 is now part of the SIP as is the entire Regulation 2, Rule 1 adopted by the District's Board on December 7, 2017, Regulation 2-1-429 was deleted and replaced with SIP Regulation 2, Rule 1 in Table III ~~Regulation 2, Rule 1 is now federally enforceable~~.

- Regulations 6 and 6, Rule 1 were amended on August 1, 2018. The amended Regulation 6 now includes common definitions and test methods. Therefore, the above rules have been updated in Table III.
- Regulation 6, Rule 6 was adopted on August 1, 2018 and is geared toward limiting the quantity of particulate matter in the atmosphere through control of trackout of solid materials onto paved roads outside the boundaries of Large Bulk Material Sites, Large Construction Sites, and Large Disturbed Surface Sites including landfills that are greater than an acre in size.
- Regulation 11 Rule 10 was amended on December 19, 2018. The date of this amended rule has been updated in Table III.
- Regulation 11, Rule 18 was adopted in November 15, 2017. This rule has been added to Table III.
- Regulation 12, Rule 15 was amended on December 4, 2019. This date for this amended rule has been updated in Table III.

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 EPA recently added to 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

Changes to permit

- Added Condition # 22951 to Table IV-K for S294. Condition # 22951 is already in Section VI "Permit Conditions" and applies to S294's vapor recovery system.
- Regulation 11 Rule 10 (Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Petroleum Refinery Cooling Towers) was amended on December 19, 2018. The date and title of this amended rule has been updated in the Table's IV "All Sources", "CC.1", and "CC.2"). Because Regulation 11-10-402 (Best Modern Practices) was deleted in the amended rule, references to Regulation 11-10-402 were deleted from the above tables.
- Cooling tower S456 in Table IV.CC.2 is in hydrogen production service and is therefore, excluded from the total hydrocarbon emission requirements in Regulations 11-10-304, 305, and 401, per Regulation 11-10-107. Table IV-CC.2 has been updated to reflect this exclusion.
- Regulation 11, Rule 18 (Reduction of Risk from Air Toxic Emissions at Existing Facilities) was adopted in November 15, 2017. This rule has been added to Table IV "All Sources".
- Regulation 12, Rule 15 (Petroleum Refining Emission Tracking) was amended on December 4, 2019. This rule has been added to Table IV "All Sources".
- Table IV – A.15 was amended to include S1011 and its applicable limits and compliance monitoring requirements.
- Tables IV-D for S1007 (Dissolved Air Flotation) (DAF) Unit and IV-Db for A51 (DAF Carbon Bed) were amended to remove Regulation 6-1 requirements because neither S1007 and/or A51 have the potential to generate particulate emissions. Instead, emissions generated from fuel combustion at the DAF thermal oxidizer (A49) are subject to

Regulation 6-1 requirements. Regulation 6-1 requirements for A49 are included in Table IV-Da.

- Updated Regulation 2-1 prior adoption date of December 7, 2017 and changed "Federally Enforceable" designation to "Y." This version of Regulation 2-1 is effective until June 30, 2022.
- Added recently adopted Regulation 2-1, which was adopted on December 15, 2021 and is effective July 1, 2022.
- Updated SIP Regulation 2-1 adoption date, updated requirements to reflect applicable requirements in amended rule, and changed "Federally Enforceable" designation to "Y."
- Updated Regulation 6-1 requirements to reflect the applicable limits and requirements in the amended rule.

Complex Applicability Determinations:

Applicability of District Regulation 6, Rule 1

The District has updated the Regulation 6, Rule 1 citations to reflect the applicable limits for the sources subject to the rule.

Only Regulation 6-1-310.1 and 311.1 shall apply to particulate matter emissions from the combustion equipment such as Heaters, Boilers, and Engines (Tables with "A" designation). Tables with a "A" designation were updated to reflect these applicable requirements.

In addition, the following tables for other combustion equipment are also only subject to Regulation 6-1-310.1 and 311.1, per Regulation 6-1-114:

- Table IV – Da (A49 DAF Thermal Oxidizer)
- Table IV – L.1 (S296 C-1 Flare)
- Table IV – L.2 (S398 MP-30 Flare)
- Table IV – Q.1 (S353, S354 Combustion Turbines)
- Table IV – Q.2 (S355, S356, S357 Supplemental Duct Burners)
- Table IV – Ua (S1002 Sulfur Plant Unit 236, S1003 Sulfur Plant Unit 238, and S301, S302, S303 Molten Sulfur Pits) [only the Sulfur Plant Units (S1002, S1003) are subject to 6-1-310.1, 6-1-311.1, 6-1-330, 6-1-505 and 602)
- Table IV-Ub (S465 Molten Sulfur Pit and S1010 U235 Sulfur Plant Unit) [only the Sulfur Plant Unit (S1010) is subject to Regulations 6-1-310.1, 6-1-311.1, 6-1-330, 6-1-505 and 602]

The following sources, which are not combustion equipment, have been determined to not have a Potential to Emit TSP greater than 1,000 kg (1.1 tons) per year. As a result, they are subject to Regulation 6-1-310.1 and 6-1-311.1:

- S300 – U-200 DELAYED COKER (TABLE IV – M)
- S380 – ACTIVATED CARBON SILO (P-204) (TABLE IV – W)

Only S452, S455, and S457 Cooling Towers have a Potential to Emit TSP greater than 1,000 kg (1.1 tons) per year. As a result, S452, S455, and S457 in Table IV-CC.1 are subject to Regulation 6-1-310.2 and 6-1-311.2. Note that Regulation 6-1-504 (Demonstration of Total Suspended Particles (TSP) Compliance) does not apply because cooling towers do not have a defined stack.

Reference of Regulation 6-1-310 and 311 and SIP 6-310 and 3-311 were deleted from the Table IV-All Sources, Facility-Specific Generally Applicable Requirements since the sections have been placed specifically into the source specific tables of Section IV to reflect the applicable requirement. In addition, as noted by District staff in response to comments in the Regulation 6-1 Staff Report, Regulation 6-1-310 and 6-1-311 do not apply liquid sulfur storage, but that any vent or breather stack from any liquid sulfur pit or liquid sulfur storage is subject to visible emission limit in Section 6-1-301 and 6-1-302.

Exemption of Cooling Towers from Regulation 8, Rule 2

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, but Section 8-2-114 exempts cooling towers, provided that "best modern practices" are used. Phillips 66 has employed “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 amended on 12/19/18 have been updated on the cooling tower sources (S452, S453, S455, S456, S457, S458, S500). Refer to Tables IV-CC.1 and CC.2.

Other Changes to permit

- NSPS Subpart Ja and NESHAPs Subparts A, CC and UUU amendment dates were updated.
- "Future Effective Dates" that have passed have been removed.

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 # 1440 was amended to reflect the change of condition permitted in Application # 29933.
- Condition # 12122 Part 14 was amended to increase to 60 days (from 45 days) the maximum time allowed of the facility for their submittal of source test results to the District to be consistent with the other source test report requirements of the facility.
- Condition # 19278 Part 3 was amended to increase to 60 days (from 45 days) the maximum time allowed of the facility for their submittal of source test results to the District to be consistent with the other source test report requirements of the facility.
- Condition # 19278 Part 5 was amended to reflect the change of reference of Regulation 6-1-310 and 311 to identify the applicable standards for the sources.
- Condition # 19488 was amended to update the updated ATCM reference applicable to the diesel engines.

- Condition # 21235 Part 5a was amended to remove S11 and S12 because they now are monitored by CEM. Part 1 was amended during the Title V permit renewal to reflect that S11 and S12 are equipped with CEMs but Part 5a was inadvertently not updated then.
- Condition # 22121 Part 7 was amended to remove reference to the annual update to reflect current District procedures.
- Condition # 22122 Part 6 was amended to remove reference to the annual update to reflect current District procedures.
- Added missing basis' to Condition # 22951.
- Applicable references to Regulations 6-1-310 and 311were updated in Condition # 23125 Parts 13.a and b and 20.
- Condition # 22850 was added for new source S1011 which was permitted in Application # 28660.

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**.**

<u>Changes to permit:</u>

- Sources which are subject to Regulation 6-1 requirements were updated to reflect the applicable limits and monitoring requirements.
- Table VII – A.15 was amended to include S1011 and its applicable limits and compliance monitoring requirements.
- Table VII – Na was amended to correct the annual throughput limit for S305. As part of the minor revision (Application # 10871) in 2005, the limit was changed from 9.23E6 bbl to 10.22E6 bbl per consecutive twelve-month period. However, this change was inadvertently not made to the Title V permit even though it was indicated in the Statement of Basis for Application # 10871. S-305's throughput is correctly reflected in Condition # 20989.
- Corrected Table VII-Ub to reflect minimum temperature requirement in Part 14 of Permit Condition # 23125 for A424.

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
The amended citations and corresponding test methods per BAAQMD Regulation 6, Rule 1 were updated.

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

No changes to the glossary are proposed in this reopening.

D. Alternate Operating Scenarios

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

APPENDIX A - BAAQMD ENGINEERING EVALUATION REPORTS

NSR Application	Description	Title V Application
28660	NEG-1 Standby Generator	NA
29933	Change of Permit Condition # 1440	29935

ENGINEERING EVALUATION

Phillips 66 Company
Application: 28660
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-1011 NEG-1 Standby Generator
2010 Cummins, Model: QSL9-G3
Engine Family: ACEXL0540AAB
363 BHP, 2.63 MMBTU/hr

This is for a temporary emergency backup generator to be used if the refinery experiences a loss of electrical power. The generator is solely dedicated to providing power to outside lighting in the case the refinery experiences a loss of electrical power. The generator is expected to be onsite for approximately 12-14 weeks while the permanent steam-driven generator is replaced.

The NEG-1 Standby Generator (S-1011) is equipped with the best available control technology (BACT) for minimizing the release of air borne criteria pollutants and harmful air toxins due to fuel combustion. The criteria pollutants are nitrogen oxides (NOx), carbon monoxide (CO), precursor organic compounds (POC) from unburned diesel fuel, sulfur dioxide (SO_2) and particulate matter (PM_{10}). POC is also denoted as NMHC (non-methane hydrocarbon).

This engine meets the Environmental Protection Agency and California Air Resources Board (EPA/CARB) Tier 3 Off-road standard. The engine will burn commercially available California low sulfur diesel fuel. The sulfur content of the diesel fuel will not exceed 0.0015% by weight. The operation of the engine should not pose any health threat to the surrounding community or the public at-large.

This engine will be subject to attached condition #: 22850.

EMISSIONS

S-1011 has been certified by CARB. Except for SO_2, the emission factors for the S-1011 engine are CARB-certified emission levels per CARB Executive Order U-R-002-0521. The SO_2 emissions were calculated based on the maximum allowable sulfur content (0.0015 wt% S) of the diesel fuel with assumption that all of the sulfur present will be converted to SO_2 during the combustion process.

Basis:
363 bhp output rating
50 hr/yr operation for reliability testing and maintenance
19.2 gallons/hr max fuel use rate
NMHC, NOx, CO and PM_{10} emission factors provided by the CARB Executive Order U-R-002-0521
SO_2 emissions are quantified based on the full conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ULS diesel fuel.
The SO_2 emission factor was derived from EPA AP-42, Table 3.4-1.

Annual Emissions:
Annual emissions are calculated based on the number of hours per year of operation for reliability testing and maintenance.

Daily Emissions:
Daily emissions are calculated to establish whether a source triggers the requirement for BACT (10 lb/highest day total source emissions for any class of pollutants). 24-hr/day of operation will be assumed since no daily limits are imposed on intermittent and unexpected operations.

Table 1 – Estimated Emissions

Pollutant	Emission Factors (g/kW-hr)	Emission Factors (g/hp-hr)	Annual Emissions (lb/yr)	Annual Emissions (TPY)	Max. Daily (lb/day)
NOx[1]	3.23	2.41	96.33	0.048	46.24
POC[1]	0.17	0.13	5.07	0.003	2.43
CO	1.9	1.42	56.66	0.028	27.20
PM_{10}	0.18	0.134	5.37	0.003	2.58
SO_2*		0.001515	0.20	0.000	0.10
		*lb SO_2/MMBTU			

PLANT CUMULATIVE INCREASE
Table 2 summarizes the cumulative increase in criteria pollutant emissions that will result from the operation of S-1011.
1.

Table 2 – Cumulative Increase

Pollutant	Annual Emissions (TPY)
NOx	0.048
POC	0.003
CO	0.028
PM_{10}	0.003
SO_2	0.000

TOXIC RISK SCREENING ANALYSIS
This application required a Toxics Risk Screen because the diesel particulate emissions are greater than the toxic trigger level.

Toxic Pollutant Emitted	Emission Rate (lb/yr)	Risk Screening Trigger (lb/yr)
PM10 (Diesel Particulate)	5.37	0.26

S-1011 meets Best Available Control Technology for toxics (TBACT) since the diesel particulate emissions are less than 0.15 g/bhp-hr. For an engine that meets the TBACT requirement, it must also pass the toxic risk screening level of less than ten in a million. Estimates of residential risk assume exposure to annual average toxic air contaminant concentrations occur 24 hours per day, 350 days per year, for a 70-year lifetime. Risk estimates for offsite workers assume exposure occurs 8 hours per day, 245 days per year, for 40 years. Risk estimates for students assume a higher breathing rate, and exposure is assumed to occur 10 hours per day, 36 weeks per year, for 9 years.

As determined using the District's HRSA Streamlining Policy Checklist for Stationary Emergency Standby and Fire Pump Diesel Engines, this application qualifies for the District's May 6, 2015 HRSA Streamlining Policy for Stationary Diesel Fire IC Engines Used for Backup Power or Fire Pumps. Based on this policy, the District has determined that this project will comply with District TBACT requirements and will result in health impacts of less than 10 in a million cancer risk and less than 1.0 chronic hazard index based on conservative HRSA screening procedures. Therefore, this project will comply with Regulation 2, Rule 5, Section 301 and 302. A refined HRSA is not required for this application.

BACT

[1] NOx is assumed to be 95% of NMHC + NOx; POC is assumed to be 5% of NMHC + NOx.

Permit Evaluation and Statement of Basis: Site #A0016, Phillips 66 – San Francisco Refinery, 1380 San Pablo Avenue, Rodeo, CA 94572

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 triggered for NOx and CO since the maximum daily emissions of NOx and CO exceed 10 lb/day. Please refer to the discussion on "Daily Emissions" in page 2 of this evaluation. BACT for this source is presented in the current BAAQMD BACT/TBACT Workbook for IC Engine – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document # 96.1.3, Revision 7 dated 12/22/2010.

Source:	***IC Engine – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump***	**Revision:**	***7***
		Document #:	***96.1.3***
Class:	***> 50 BHP Output***	**Date:**	***12/22/2010***

POLLUTANT	**BACT** **1. Technologically Feasible/ Cost Effective** **2. Achieved in Practice** **3. TBACT**	**TYPICAL TECHNOLOGY**
POC	1. n/s[c] 2. CARB ATCM standard[a] for POC at applicable horsepower rating (see attached Table).	1. n/s[c] 2. Any engine certified or verified to achieve the applicable standard. [a]
NOx	1. n/s[c] 2. CARB ATCM standard[a] for NOx at applicable horsepower rating (see attached Table).	1. n/s[c] 2. Any engine certified or verified to achieve the applicable standard. [a]
SO_2	1. n/s[c] 2. Fuel sulfur content not to exceed 0.0015% (wt) or 15 ppm (wt).	1. n/s[c] 2. CARB Diesel Fuel (Ultra Low Sulfur Diesel)
CO	1. n/s[c] 2. CARB ATCM standard[a] for CO at applicable horsepower rating (see attached Table).	1. n/s[c] 2. Any engine certified or verified to achieve the applicable standard. a
PM_{10}	1. n/s[c] 2. 0.15 g/bhp-hr 3. 0.15 g/bhp-hr	1. n/s[c] 2. Any engine or technology demonstrated, certified or verified to achieve the applicable standard. 3. Any engine or technology demonstrated, certified or verified to achieve the applicable standard.
NPOC	1. n/s[c] 2. n/s[c]	1. n/s[c] 2. n/s[c]

Reference:

a. ATCM standard (listed below): Where NMHC + NOx is listed (with no individual standards for NOx or NMHC) as the standard, the portions may be considered 95% NOx and 5% NMHC. For the purposes of determining BACT NMHC = POC. Any engine which has been certified or demonstrated to meet the current year tier standard may be considered compliant with the certified emission standard for that pollutant.
b. Deleted (no longer applies).
c. Cost effectiveness analysis must be based on lesser of 50 hr/yr or non-emergency operation as limited by District health risk screen analysis.

BACT 2 Emission Limits based on CARB ATCM

Emissions Standards for Stationary Emergency Standby Diesel-Fueled CI Engines >50 BHP g/Kw-hr (g/bhp-hr)			
Maximum Engine Power	**PM**	**NMHC+NOx**	**CO**
37 < KW < 56 (50 < HP < 75)	0.20 (0.15)	4.7 (3.5)	5.0 (3.7)
56 < KW < 75 (75 < HP < 100)	0.20 (0.15)	4.7 (3.5)	5.0 (3.7)
75 < KW < 130 (100 < HP < 175)	0.20 (0.15)	4.0 (3.0)	5.0 (3.7)
130 < KW < 225 (175 < HP < 300)	0.20 (0.15)	4.0 (3.0)	3.5 (2.6)
225 < KW < 450 (300 < HP < 600)	0.20 (0.15)	4.0 (3.0)	3.5 (2.6)
450 < KW < 560 (600 < HP < 750)	0.20 (0.15)	4.0 (3.0)	3.5 (2.6)
KW > 560 (HP > 750)	0.20 (0.15)	6.4 (4.8)	3.5 (2.6)

For NOx, BACT(2) standard is 3.8 g/kW-hr (2.85 g/hp-hr). For POC, BACT(2) standard is 0.2 g/kW-hr (0.15 g/hp-hr). For CO, BACT(2) standard is 3.5 g/kW-hr(2.6 g/hp-hr). BACT(1) has not been determined. S-1011 meets the current emissions standard based on the emissions factors from CARB Executive Order U-R-002-0521.

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 and NOx emissions. Thus, offsets are required for the POC and NOx emissions of this application. The facility has provided Banking Certificate # 1300 for NOx and Banking Certificate # 1456 for POC for use to offset the following emissions increase with an offset ratio of 1.15:

NOx = 0.048 TPY x 1.15 = 0.055 TPY
POC = 0.028 TPY x 1.15 = 0.032 TPY

New Source Performance Standards (NSPS)

The engine is subject to 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because it was manufactured after April 1, 2006, as required by Section 60.4200(a)(2)(i).

The engine has a total displacement of 6.8 liters and has 6 cylinders, so each cylinder has a volume of less than 10 liters. The engine is a 2016 model year engine and is not a fire pump. Section 60.4205(b) requires these engines to comply with the emission standards in Section 60.4202, which refers to 40CFR89.112 and 40CFR89.113 for all pollutants. For engines between 300 and 600 HP, these standards are:

NMHC+NOx: 4.0 g/kW-hr (3.0 g/hp-hr)
2. CO: 3.5 g/kW-hr (2.60 g/hp-hr)
PM: 0.2 g/kW-hr (0.15 g/hp-hr)
20% opacity during acceleration mode
15% opacity during lugging mode
50% opacity during peaks in acceleration or lugging mode

According to the CARB Executive Order: U-R-002-0521, the engine with the manufacturer's recommended maintenance will comply with these standards.
3.

Sections 60.4206 and 60.4211(a) require that the owner/operator operate and maintain the engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine. The owner/operator is expected to comply with this requirement.

Section 60.4207(a) requires that by October 1, 2007, the owner/operator must use fuel that complies with 40 CFR 80.510(a). This means that the fuel must have a sulfur content of 500 parts per million (ppm) maximum, a cetane index of 40 or a maximum aromatic content of 35 volume percent. The owner/operator is expected to comply with this requirement because CARB diesel is required to be used in California.

Section 60.4207(b) requires that by October 1, 2010, the owner/operator must use fuel that complies with 40 CFR 80.510(b). This means that the fuel must have a sulfur content of 15 parts per million (ppm) maximum, and the same cetane index or aromatic content as above. The owner/operator is expected to comply with this requirement because CARB diesel is required to be used in California.

Section 60.4209(a) requires a non-resettable hour meter. This requirement is already in the standard permit conditions.

The engine will comply with the requirements of Section 60.4211(c) because it has been certified in accordance with 40 CFR Part 89.

The engine will comply with the requirement in Section 60.4211(e) to run for less than 100 hours per year for maintenance checks and readiness testing, and the prohibition of running for any reason other than emergency operation, maintenance, and testing because they are limited by permit condition to 50 hours per year for reliability testing and otherwise may only operate for emergencies.

The owner/operator is not required to perform tests in accordance with Section 60.4212 or 60.4213.

Section 60.4214 states that owner/operators do not have to submit an initial notification to EPA for emergency engines.

Because the engine does not have a diesel particulate filter, the owner/operator is not subject to Section 60.4214(c).

The owner/operator is required to comply with certain sections of 40 CFR 60, Subpart A, General Provisions. The owner/operator is expected to comply with this requirement.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

This engine is subject to the emission or operating limitations in 40 CFR 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines. Per NESHAP 40CFR63.6590(c)(1), a new or constructed reciprocating internal combustion engine is subject to Regulations under 40 CFR Part 60 (NSPS) and no further requirements apply for such engines under NESHAP. Therefore, S-1011 complies with NESHAP by meeting the requirements under 40CFR60 (NSPS).

CARB STATIONARY DIESEL ENGINE AIRBORNE TOXIC CONTROL MEASURE (ATCM)

The State Office of Administrative Law approved the Airborne Toxic Control Measure (ATCM) on November 8, 2004. State law requires the local Air Districts to implement and enforce the requirements of the ATCM. Effective January 1, 2005, there is a prohibition on the operation of new diesel emergency standby engines greater than 50 bhp unless the following operating requirements and emission standards are met:

"Stationary Diesel Engine ATCM" section 93115.6 (3)(A), title 17, CA Code of Regulations, Amended May 2011.

1. New stationary emergency standby diesel-fueled engines (>50 bhp) shall:
    a. meet the applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in the following Table Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines, in effect on the date of acquisition or submittal, and
    b. after December 31, 2008, be certified to the new nonroad compression-ignition (CI) engine emission standards for all pollutants for 2007 and later model year engines as specified in 40 CFR, PART 60,

Subpart III-Standards of Performance for Stationary Compression Ignition Internal Combustion Engines(2006); and
c. not operate more than 50 hours per year for maintenance and testing purposes.

2. The District may allow a new stationary emergency standby diesel-fueled Cl engine (> 50 hp) to operate up to 100 hours per year for maintenance and testing purposes on a site-specific basis, provided the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.

Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engine g/bhp-hr (g/kW-hr)				
Maximum Engine Power	**Model Year**	**PM**	**NHMC+NOx**	**CO**
50 ≤ HP < 75 (37 ≤ kW < 56)	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	2008+		3.5 (4.7)	
75 ≤ HP < 100 (56 ≤ kW < 75)	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	2008+		3.5 (4.7)	
100 ≤ HP <175 (75 ≤ kW < 130)	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
	2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			
600 ≤ HP < 750 (450 ≤ kW < 560)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			
HP > 750 (kW > 560)	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
	2008+			

This emergency standby diesel engine (S-1011) is in compliance with the above ATCM requirements. The diesel engine will operate for no more than 50 hours per year for maintenance and reliability testing. This engine is subject to the Current off-road CI engine standards for HC, NOx, NMHC+NOx and CO. As shown in the Table 4, the engine meets these requirements.

Table 4. ATCM Emission Standard Compliance

Pollutant	Emissions from S-1011 g/bhp-hr	ATCM Standard g/bhp-hr
NMHC+NOx	2.54	3.0
NOx	2.41	2.85
NMHC (POC)	0.13	0.15
CO	1.42	2.6
PM	0.13	0.15

STATEMENT OF COMPLIANCE

Source S-1011 is subject to and expected to be in compliance with the requirements of District Regulation 1-301 (*Public Nuisance*), Regulation 6-1-303 (*Particulate Matter and Visible Emissions*), Regulation 9-1 (*Sulfur Dioxide*) and Regulation 9-8 (*NOx and CO from Stationary Internal Combustion Engines*). In order to ensure compliance with the requirements of these regulations, the facility will be conditionally permitted to meet the requirements.

From Regulation 1-301, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30 day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.

S-1011 is subject to the limitations of Regulation 6-1-303 (*Particulate Matter*). Regulation 6-1-303 states that a person shall not emit for a period or periods aggregating more than three minutes in any hour, a visible emission that is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District Regulations, be equal to or greater than 40% opacity. This low PM_{10} emitting engine is not expected to produce visible emissions or fallout in violation of this regulation, and it will be assumed to be in compliance with Regulation 6, Rule 1 pending a regular inspection.

S-1011 is also subject to the SO_2 limitations of Regulation 9-1-301 (*Limitations on Ground Level Concentrations of Sulfur Dioxide*), Regulation 9-1-302 (*Limitations Sulfur Dioxide Emissions*) and 9-1-304 (*Burning of Solid and Liquid Sulfur Dioxide Fuel*). From Regulation 9-1-301, the ground level concentrations of SO_2 will not exceed 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Per Regulation 9-1-302, a person shall not emit from any source a gas stream containing sulfur dioxide in excess of 300 ppm (dry). And Regulation 9-1-304, states that a person shall not burn any liquid fuel having sulfur content in excess of 0.5% by weight. Compliance with Regulation 9, Rule 1 is very likely since diesel fuel with a 0.0015% by weight sulfur is mandated for use in California.

From Regulation 9-8 (*NOx and CO from Stationary Internal Combustion Engines*), Section 110.5 (*Emergency Standby Engines*), S-1011 is exempt from the requirements of Regulations 9-8-301 (*Emission Limits on Fossil Derived Fuel Gas*), 9-8-302 (*Emission Limits on Waste Derived Fuel Gas*), 9-8-303 (*Emissions Limits – Delayed Compliance, Existing Spark-Ignited Engines, 51 to 250 bhp or Model Year 1996 or Later*), 9-8-304 (*Emission Limits – Compression-Ignited Engines*), 9-8-305 (*Emission Limits – Delayed Compliance, Existing Compression-Ignited Engines, Model Year 1996 or Later*), 9-8-501 (*Initial Demonstration of Compliance*) and 9-8-503 (*Quarterly Demonstration of Compliance*). However, it is subject to the monitoring and record keeping procedures described in Regulation 9-8-530 (*Emergency Standby Engines, Monitoring and Recordkeeping*). The requirements of this Regulation are included in the permit conditions.

S-1011 is also subject to and expected to comply with Regulation 9-8-330 (*Emergency Standby Engines, Hours of Operation*) since non-emergency hours of operation will be limited in the permit conditions to 50 hours per year.

California Environmental Quality Review (CEQA)

This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subject to 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 2.3.

Public Notification, Schools

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

Prevention of Significant Deterioration (PSD)

PSD is not triggered.

PERMIT CONDITIONS

COND# 22850 ----------

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained. [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection(e)(4)(G)(1)]
4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
    a. Hours of operation for reliability-related activities (maintenance and testing).
    b. Hours of operation for emission testing to show compliance with emission limits.
    c. Hours of operation (emergency).
    d. For each emergency, the nature of the emergency condition.
    e. Fuel usage for each engine(s).

    [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection e)(4)(I), (or, Regulation 2-6-501)]

5. At School and Near-School Operation:
    If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply: The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:
    a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
    b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session. "School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.

    [Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)] or (e)(2)(B)(2)]

End of Conditions

RECOMMENDATION

I recommend that the District issue an Authority to Construct to Phillips 66 Company for the following source:

S-1011 NEG-1 Standby Generator
2010 Cummins, Model: QSL9-G3
Engine Family: ACEXL0540AAB
363 BHP, 2.63 MMBTU/hr

_____ _____

Carol Lee Date
Senior Air Quality Engineer
Engineering Division

ENGINEERING EVALUATION
Phillips 66 – San Francisco Refinery, Plant: 21359
1380 San Pablo Avenue, Rodeo, CA 94572
Application 29933

Background

Phillips 66 Refinery is requesting a Change of Condition to Permit Condition #1440, which applies to the following equipment:

S-1007 U100-Dissolved Air Flotation Unit (with fixed roof), abated by:
A-49 DAF Thermal Oxidizer or
A-51 DAF Carbon Bed

The facility is requesting permit condition changes to allow the following abatement device (A-53) to be used as an alternate abatement device for S-1007:

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

Permit Condition #1440 Part 7 currently allows S-1007 to be abated by either A-49 DAF Thermal Oxidizer or A-51 DAF Carbon Bed. A-53 was permitted to achieve an overall abatement efficiency of up to 98.5% POC, which exceeds the permitted abatement efficiencies of the two existing abatement devices at S-1007 (up to 98% POC for A-49 and A-51).

A-53 currently abates organic emissions from S-324 U100 API Oil Water Separator. A-53 will have the capability to abate both S-324 and S-1007 simultaneously.

Emissions Calculations

This project will not result in an increase in emissions. The combustion emissions from A-53 were previously included under Application 27061, and A-53 has a higher abatement efficiency than the two existing abatement devices at S-1007.

Plant Cumulative Increase

There is no cumulative increase associated with this application.

Toxic Risk Screening Analysis

This project will not result in an increase in TAC emissions. A Health Risk Assessment (HRA) is not required under Regulation 2-5.

Best Available Control Technology (BACT)

In accordance with Regulation 2-2-301, 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, PM_{10}, or $PM_{2.5}$. BACT is not triggered for any pollutant.

A-53 previously triggered RACT (Reasonably Available Control Technology) requirements for secondary pollutants when it was first permitted under Application 27061. Under that application, it was determined that A-53 met RACT requirements.

Offsets

Per Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits more than 10 TPY of POC or NOx. Per Regulation 2-2-303, offsets for PM_{10}, $PM_{2.5}$, and SO_2 are required if the source is located at a Major Facility and is over 1.0 TPY since April 5, 1991 for PM_{10}, $PM_{2.5}$, and SO_2. This project will not result in an increase in emissions. Therefore, offsets are not required for any criteria pollutant.

Statement of Compliance

District Rules

S-1007 and A-53 are expected to continue to comply with the applicable requirements of Regulation 6-1 (Particulate Matter- General Requirements).

A-53 is expected to continue to comply with the applicable requirements of Regulation 8-2 (Organic Compounds- Miscellaneous Operations).

S-1007 and A-53 are expected to continue to comply with the applicable requirements of Regulation 8-8 (Organic Compounds- Wastewater Collection and Separation Systems).

A-53 is expected to continue to comply with the applicable requirements of Regulation 9-1 (Inorganic Gaseous Pollutants- Sulfur Dioxide).

CEQA

The Air District has determined that this permit action is exempt from CEQA because the Air District's approval was "ministerial" and therefore exempt from CEQA under Public Resources Code § 21080(b)(1). The Air District's approval is also categorically exempt because the permitting of the project involved no or negligible expansion of use beyond that existing at the time of the Air District's CEQA determination. (CEQA Guidelines § 15301). The action is further exempt under the "common sense" exemption. (CEQA Guidelines § 15061(b)(3)). An Appendix H Environmental Information Form has been completed and submitted by the applicant. A Notice of Exemption will be filed with the Contra Costa County Clerk.

Public Notices

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.

Federal Rules

S-1007 is expected to continue to comply with the applicable requirements of 40 CFR Subpart FF (NESHAP for Benzene Waste Operations).

PSD review is not triggered under this application.

TITLE V STATEMENT OF BASIS (SOB)

This facility is a Major Facility with a Title V permit. The changes to this Title V permit to incorporate this Change of Condition application are included in Appendix A of this evaluation report.

Permit Conditions

COND# 1440 ----------

Conditions for S324, S381, S382, S383, S384, S385, S386, S387, S390, S392, S400, S401, S1007, S1008, S1009 This condition was amended by Applications 483 in 1988, 10623 in 2005, 13424 in 2007, 13727 in 2009, ~~and~~ 21295 in 2010, and 29933 in 2019.

1. S324 API Separator shall be operated such that the liquid in the main separator basin is in full contact with the fixed concrete roof. This condition shall not apply during separator shutdown for maintenance or when S-324 is abated by an oxidizer. [Cumulative Increase]

2. Diversions of refinery wastewater around the Water Effluent Treating Facility to the open Storm Water Basins (S1008, S1009) shall be minimized. These diversions shall not cause a nuisance as defined in District Regulation 7 or Regulation 1-301. [Cumulative Increase]

3. Records shall be maintained of each incident in which refinery wastewater is diverted to the open storm water basins. These records shall include the reason for the diversion, the total quantity of wastewater diverted to the basins, and the approximate hydrocarbon content of the water. [Cumulative Increase]

4. The sources below shall conduct monthly leak inspections in accordance with Regulation 8-8-603. After three consecutive inspections with no leaks detected that are not vapor-tight, inspections will be conducted quarterly

for that source. If any leak is detected that is not vapor-tight during an inspection, then monthly inspections must be completed until there are three consecutive inspections without any leaks that are not vapor-tight. Any leak found by the owner/operator or BAAQMD that is not vapor-tight must be minimized within 24 hours and repaired within 7 days. Vapor-tight is defined in Regulation 8, Rule 8.

a. Doors, hatches, covers, and other openings on the S324 API Separator, forebay, outlet basin, and channel to the S1007 DAF Unit.
b. Doors, hatches, covers, and other openings on the S1007 DAF Unit and the S400 Wet and S401 Dry Weather Sumps, except for the vent opening on S-400 and S-401.
c. Any open process vessel, distribution box, tank, or other equipment downstream of the S1007 DAF Unit (S381, S382, S383, S384, S385, S386, S387, S390, S392). [Cumulative Increase]

5. Records shall be kept of each inspection in Part 4 and shall be made available to District personnel upon request. [Cumulative Increase]

6. The maximum wastewater throughput at the S324 API Separator and S1007 DAF Unit shall not exceed 7,500 gpm during media filter backwash and 7,000 gpm during all other times for each unit. Any modifications to equipment at this facility that increase the annual average waste water throughput at S324 and S1007 shall first be submitted to the BAAQMD in the form of a permit application. [Cumulative Increase]

7. This part will apply after VOC emissions at S1007 must be reduced to provide offsets for Application 13424 per Condition 22970, Part B. The owner/operator shall ensure that S1007, DAF, is controlled by A49, DAF Thermal Oxidizer, ~~or~~ A51, DAF Carbon Bed, or A53, Thermal Oxidizer, at all times of operation of S1007, except for up to 175 hours per any consecutive 12-month period for startup, shutdown, or maintenance. [Offsets]

   a. Through source testing as described in Part 7(b) and 7c, the owner/operator must demonstrate that the total reduction of emissions through use of A49, DAF Thermal Oxidizer and/or A51, DAF Carbon Bed will result in a total reduction of 44 tons POC per year, considering that abatement will not occur with either abatement device up to 175 hours per year. If initial testing does not demonstrate total reduction of 44 tons POC per year, the owner/operator may choose to:
      i. In the case of A49, DAF Thermal Oxidizer, perform 4 tests in one year and average the results. In this case, the tests will be

performed no less than 2 months apart and no more than 4 months apart.

ii. In the case of A51, DAF Carbon Bed, average the results of one year's worth of monitoring.

If, after further testing, a total of 44 tons worth of POC reduction is not demonstrated, the owner/operator will supply offsets necessary to ensure a total reduction of 44 tons per year POC pursuant to BAAQMD Regulation 2-2-302. [Offsets, CEQA]

b. The following conditions apply to operation of A49, DAF Thermal Oxidizer:

i. Within 90 days of the startup date of A49, DAF Thermal Oxidizer, the owner/operator shall perform a source test to determine the following:

1. Mass emissions rate for POC that is collected and sent to A49.
2. Mass emissions rate for POC after abatement by A49.
3. Mass emissions rate for H2S that is collected and sent to A49.
4. Mass emissions rate for H2S after abatement by A49.
5. Mass emissions rate for SO2

During the source test, the owner/operator shall determine the temperature required to achieve 98.0% destruction by weight of POC or a concentration of 10 ppmv POC at the outlet. The temperature shall become an enforceable limit.

For the purposes of determining the amount of POC controlled, the owner/operator shall use District Method ST-7, Organic Compounds. The owner/operator shall submit the source test results to the District Source Test Manager, the District Permit Evaluation Manager, and the District Director of Compliance and Enforcement no later than 60 days after any source test. [Offsets, CEQA]

ii. After the initial source test required in Part 8 of this condition, the minimum temperature for A49 shall be 1445 degrees F. A49 shall not be operated below the minimum temperature except during an "Allowable Temperature Excursion" as defined below:

1) Operation of A49 within 20°F below the minimum temperature
2) Operation of A49 more than 20°F below the minimum temperature for a period or periods which, when combined are less than or equal to 15 minutes in any hour; or
3) Operation of A49 more than 20°F below the minimum temperature 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:
a. The excursion does not exceed 50°F below the minimum temperature;
b. The duration of the excursion does not exceed 24 hours; and
c. 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.

For each such excursion, sufficient records shall be kept to demonstrate that they meet the qualifying criteria described above. Records shall include at least the following information:
1) Temperature controller setpoint;
2) Starting date and time, and duration of each Allowable Temperature Excursion;
3) Measured temperature during each allowable Temperature Excursion;
4) Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
5) All strip charts or other temperature records.

[Offsets, CEQA]

iii. To determine compliance with the temperature limit in Part 9, A49, Thermal Oxidizer shall be equipped with a temperature measuring device capable of continuously measuring and recording the temperature in A49. The temperature device shall be installed and maintained in accordance with the manufacturer's recommendations, shall be ranged appropriately to measure the temperature limit determined, and shall have a minimum accuracy over the range of 1.0 percent of full-scale. [Offsets, CEQA]

iv. Deleted Application 13427.

v. The owner/operator shall perform a source test to determine emissions of SO2 from A49, DAF Thermal Oxidizer using District Method ST-19A, Sulfur Dioxide, Continuous Sampling. The owner/operator shall submit the source test results to the District Source Test Manager, the District Permit Evaluation Manager and the District Director of Compliance and Enforcement no later than 60 days after any source test. [Offsets, CEQA]

vi. If source test data per Part 7.b.v shows that the annual SO2 emissions are greater than 1.2 tons per year, the owner/operator shall provide additional

SO2 offsets in accordance with BAAQMD Regulation 2-2-303. [Offsets, CEQA]

c. The following conditions apply to A51, DAF Carbon Bed
   i. A51 shall consist of two or more activated carbon vessels arranged in series, with at least one carbon vessel in service except for up to 175 hours per any consecutive 12-month period for startup, shutdown, or maintenance. [Offsets, CEQA]
   ii. Total emission reduction of A51 shall be demonstrated through use of an in-line flowmeter, and the results of monitoring per the conditions below.[Offsets]
   iii. The owner/operator of A51 shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer at the following locations:
      1) The stream prior to any carbon vessels
      2) At the inlet to the last carbon vessel in series
      3) At the outlet of the carbon vessel that is last in series prior to venting to atmosphere [Offsets]

   iv. When using an FID to monitor breakthrough, readings may be taken with or without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane for the purpose of these permit conditions. [Offsets]

   v. All breakthrough monitoring readings shall be recorded in a monitoring log each time they are taken. Readings shall be conducted on a daily basis initially, but after two months of daily collection, the owner/operator may propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed to weekly based on the demonstrated breakthrough rates of the carbon vessels. If the District Engineering Division does not disapprove of the proposed monitoring changes within 30 days, the owner/operator shall commence weekly monitoring. [Offsets]

   vi. The owner/operator shall utilize the activated carbon vessels in such a manner to ensure that the outlet stream to atmosphere contains below 10 ppm VOC or 98% reduction of VOC, whichever is greater. [Offsets]

   vii. The owner/operator of this source shall maintain the following records for each month of operation

of A51:
1) The hours and times of operation
2) Each monitor reading or analysis result for the day of operation they are taken.
3) The number of spent carbon beds removed from service.
[Offsets]

8. Deleted Application 13427.

9. This part will apply after VOC emissions at S1007 must be reduced to provide offsets for Application 13424 per Condition 22970, Part B. The owner/operator shall seal the DAF outlet channel and downstream sumps by a solid cover with gaskets. Any vents installed on the covered channel shall be routed to the thermal oxidizer or an equivalent control as determined by the APCO. [Offsets, CEQA]

*10. The owner/operator must control with a thermal oxidizer at least 90% of the time on a consecutive 12-month basis, unless owner/operator controls H2S with an equivalent control device as determined by the APCO. [CEQA]

Alternate Operating Scenario for S1007
11. During periods when A49, DAF Thermal Oxidizer, ~~or~~ A51, DAF Carbon Bed, and A53, Thermal Oxidizer are not in operation and not abating S1007, the owner/operator shall comply with the following requirements:
a. Affected facility wastes routed to the API or DAF shall be included in the facility TAB in accordance with 40 CFR 61, Subpart FF.
b. The owner/operator shall comply with BAAQMD and SIP Regulations 8-8-307.2 in lieu of BAAQMD and SIP Regulations 8-8-307.1.
c. S1007 shall not be subject to the closed vent and control device requirements in 40 CFR 61.349.
d. The owner/operator shall comply with parts 4, 5, 7, and 9 of this condition during periods when A49, DAF Thermal Oxidizer, ~~or~~ A51, DAF Carbon Bed, and A53, Thermal Oxidizer are not in operation and not abating S1007.
This is considered an Alternate Operating Scenario in accordance with BAAQMD Regulation 2-6-409.7 and 40 CFR 70. The owner/operator shall keep a record in a contemporaneous log when a period of non-control at S1007 commences and when control of S1007 resumes. [40 CFR 61, Subpart FF, 40 CFR 70.6(a)(9), BAAQMD Regulation 2-6-409.7]

Recommendation

Issue a Change of Conditions to Phillips 66 for the following:

S-1007 U100-Dissolved Air Flotation Unit (with fixed roof), abated by:
A-49 DAF Thermal Oxidizer or
A-51 DAF Carbon Bed

By: _____ _____
Jimmy Cheng Date
Senior Air Quality Engineer

APPENDIX A

The proposed changes to the tables in Section IV and permit conditions in Section VI of the Title V permit are provided below. For conditions, please refer to the Permit Condition Section of the Evaluation Report for Application # 29933.

Table IV:

Table IV – D
Source-specific Applicable Requirements
S1007 DISSOLVED AIR FLOTATION UNIT

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
40 CFR 61 Subpart FF	National Emission Standards for Benzene Waste Operations (12/04/2003) (Applies to DAF and Thermal Oxidizer (A49)~~,~~ ~~or~~ Carbon Adsorption (A51), or Thermal Oxidizer (A53) when A49~~,~~ ~~and/or~~ A51, and/or A53 are in operation)		

Table IV – Da
Source-specific Applicable Requirements
A49 DAF THERMAL OXIDIZER

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
40 CFR 61 Subpart FF	National Emission Standards for Benzene Waste Operations (12/04/2003) (Applies to closed vent system and control devices from DAF to Thermal Oxidizer (A49)~~,~~ ~~or~~ Carbon Adsorption (A51), or Thermal Oxidizer (A53) when A49~~,~~ ~~and/or~~ A51, and/or A53 are in operation)		

Table IV – Db
Source-specific Applicable Requirements
A51 DAF CARBON BED

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
40 CFR 61 Subpart FF	National Emission Standards for Benzene Waste Operations (12/04/2003) (Applies to closed vent system and control devices from DAF to Thermal Oxidizer (A49)~~,~~ ~~or~~ Carbon Adsorption (A51), and/or Thermal Oxidizer (A53) when A49~~,~~ ~~and/or~~ A51, and/or A53 are in operation)		

Section VI. Permit Conditions:
The changes to the permit conditions are shown in the “Permit Conditions” section above.