

**Bay Area Air Quality Management District**  
939 Ellis Street  
San Francisco, CA 94109  
(415) 771-6000

**Permit Evaluation  
and  
Statement of Basis  
for  
Major Facility Review Permit  
TV Renewal Permit  
for  
Chevron Products Company  
Facility #A0010**

**Facility Address:**  
841 Chevron Way  
Richmond, CA 94802

**Mailing Address:**  
Post Office Box 1272  
Richmond, CA 94802

November 2008

Application (Title V): 17946

By:

Greg Solomon, Senior Air Quality Engineer

**Renewal Title V Permit for Chevron Products Company**

## Statement of Basis

### General Description of an Oil Refinery:

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. It processes 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 continue on to a coker or an asphalt plant.

Other product components are processed by downstream units to remove less desirable impurities (hydrotreated), cracked (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 over-the-road diesel (low sulfur) or off-road diesel (higher sulfur). Depending on the process units in a refinery and the crude oil input, an oil refinery can produce a wide range of salable products: many different grades of gasoline and gasoline blend stocks, several grades of diesel, kerosene, jet and aviation fuel, fuel oil, bunker fuels, waxes, solvents, sulfur, coke, asphalt, or chemical plant feedstocks.

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 the Chevron Products Company refinery are:

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

Combustion unit emissions are generally controlled through the use of burner technology, steam injection (turbines), or selective catalytic reduction. Emissions from the FCCU are controlled through hydrotreating the feed, the use of catalysts to remove impurities, the use of improved catalyst regeneration, CO boilers, and electrostatic precipitators. Storage tank emissions are controlled through the use of add on control and or fitting loss control. Fugitive emissions have been minimized per Regulation 8-18 through the use of 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.

The Chevron Richmond Refinery:

On July 3, 1902, the Richmond Refinery began operations. At that time, it was by far the largest refining plant on the Pacific Coast and one of the largest in the world. Over the decades, the Richmond Refinery has steadily expanded. Today, this refinery produces primarily gasoline, jet and diesel fuels, and lubricants.

The refinery receives about 240,000 barrels of oil every day. All crude processed at the Richmond Refinery arrives by tanker. The Long Wharf consists of berths for four tankers and 2 barges. Ships dock at the Wharf and unload their cargo into storage tanks via pipes. The Wharf is equipped with a marine vapor recovery unit capable of achieving 95% reduction of hydrocarbons as the ships are loaded. The refinery has hundreds of storage tanks for crude oil and refined products. The largest tanks on the property can hold 750,000 barrels.

The processing of crude consists of four basic steps: distillation, extraction, conversion, and treating. The refinery has three main processing areas: Distillation & Reforming, Cracking, and Hydroprocessing.

In the Distillation & Reforming Area, there is a single large two-stage crude unit that starts the separation of the crude into light (gas), medium (jet and diesel) and heavy (gas oils) components. It takes the residuum (the bottom of the crude unit) and sends it to the Solvent Deasphalting Plant in the Hydroprocessing Area. Gas oil is extracted from the residuum oil and mixed with a solvent that draws the gas oil away leaving only tar behind. The solvent is then distilled from the gas oil and recycled. The extracted gas oil becomes feedstock for the fluidized catalytic cracking unit (FCCU).

The Richmond Refinery converts gas oil into gasoline, jet and diesel fuels, and lubricating oil, using a series of processing plants. Most of the oil is treated with hydrogen to remove contaminants before the conversion processes begin. Heat and catalysts are then used to convert the gas oil to lighter products.

One conversion method is called cracking because it literally splits (cracks) the heavy hydrocarbon molecules into lighter ones. The Richmond Refinery uses two cracking methods: fluid catalytic cracking and hydrocracking. The FCCU located in the Cracking Area uses high temperature catalyst to crack heavy gas oil mostly into gasoline. Lighter gas oil is converted, using a process called hydrocracking, in the Isomax Unit located in the Hydroprocessing Area. Hydrocracking involves mixing gas oil, hydrogen and catalyst under high pressure and high temperature to make both jet fuel and gasoline. They blend most of the products from the FCCU and the Isomax directly into transportation fuels such as gasoline and jet fuel.

While the cracking process breaks most of the gas oil into gasoline and jet fuel, it also breaks off some pieces that are lighter than gasoline. Since Richmond Refinery's primary focus is on making transportation fuels, they recombine lighter components in the Alkylation Unit. This process takes the small molecules and recombines them in the presences of catalyst to convert them into gasoline components.

Much of the gasoline that comes from the Crude Unit or from the cracking units does not have enough octane to burn well in cars. The refinery's Distillation & Reforming Area contains two reformers, where they rearrange and change gasoline to give it the high-octane cars need. The reforming process removes hydrogen from the low-octane gasoline. The hydrogen is recycled for use in the hydrotreating units.

The products from the Crude Unit and the feeds to the conversion units contain some natural impurities, such as sulfur and nitrogen. Using a process called hydrotreating (a milder version of hydrocracking), these impurities can be removed to reduce air pollution when their fuels are used.

In addition to transportation fuels, the Richmond Refinery also makes lubricating oils and waxes. In the refinery's lube oil facility, heavy gas oil from the Crude Unit is converted into several grades of lubricating oil.

The Richmond Refinery also produces wax from crude oil. Food-grade wax, for example is used to make waterproof corrugate (cardboard boxes) for produce, poultry and seafood, paper cups, sandwich bags, and waxed paper.

A final step is the blending of products. Gasoline, for example, is blended from treated components made in several processing units. Over 75 percent of the Richmond Refinery's products are primary transportation fuels: gasoline, jet and diesel. About 15 percent is fuel oil for ships and power plants. Four

percent are lubricating oils for a wide variety of machinery, including cars. The remaining 5 percent is variety of products like propane, aviation gasoline and wax.

This revision includes both minor and administrative changes as a result of several applications. The following is a list of both the Title V and NSR application numbers included in this revision:

19760/19757  
17723  
17724  
18740  
18647/6  
18717/6  
19299/8  
18092/1  
19075  
14486/14579  
19354/5  
18957/18960  
20760/1

### Section I

A standard condition will be added to address the issue of federal enforceability based on inclusion within the SIP.

### Section II

Table II A 1 will be revised to remove S-610.

Tables II A 1 and A 2 will be revised to remove S-25, S-605, S-870, S-4042, S-4043, S-4045, S-4061, S-4062, S-4068, S-4129, S-4131, S-4132, S-4133, S-4135, S-4152, S-4154, S-4155, S-4158, S-4167, S-4170, S-4229, S-4429, S-4433, S-4434, S-4435, S-6066, S-6125, and from A 2 and these sources will be added to A 1.

Table II A 1 will be revised to delete outdated NOx Box permit conditions with the application numbers as the basis for the maximum permitted throughput levels for sources S-4038 through S-4042, S-4158, S-4059, S-4060, S-4129, S-4131, S-4132, S-4135, S-4171, S-4040, S-4071, S-4072, S-4042, S-4043, S-4044, S-4045, S-4159, S-4160, S-4164, S-4165, S-4167, S-4168, S-4169, S-4068, S-4167, S-4061, S-4062.

Table II A 2 will be revised to delete S-660.

Table II A 2 will be revised to update the throughput for S-4435.

Table II A.1 will be revised to show that the asphalt throughput limit for S-4415 applies only when A-37 is down for cleaning or repair.

Table II A.1 will be revised to remove S-6061 since it is out of service and dismantled.

Table II A.1 will be revised to remove S-4261 since it is out of service and dismantled.

Table II B will be revised to remove S-4261, S-4262, A-53, and A-54 since this equipment is out of service and dismantled.

Table II A.1 will be revised to remove S-9302 and S-9303 since these sources are out of service and dismantled.

Table II A.2 will be revised to remove Condition 20666 and include Condition numbers 18680, 22951, and 24294 for S-9304 per TV application number 19760.

Table II A.1 will be revised per application 17724 to remove S-4265 since it has been out of service since 2004.

Table II B will be revised per application 17724 to remove S-4265 since it has been out of service since 2004.

Table II A.2 will be revised to reduce the throughput limits for S-4251 per application 18740.

Tables II A.1, A.2, and B will be revised per application 19075 to remove archived source S-7526/A-7526 and include new source S-7539/A-7539.

Table II A.1 will be revised per applications 18091/2 to include S-7538.

Table II C will be revised to remove S-4285.

Table II A 2 will be revised to correct S-7515 and S-7516 per applications 19354/5.

Table II A 1 will be revised to include S-4365 per application 20760/1.

### Section III

Table III will be revised to include update both BAAQMD and Federal Regulation changes.

### Section IV

Within its appeal Chevron requested that several sections of federal regulations be removed based on these sections being one-time notification requirements. These sections include: 63.646(i), 63.652(b), 63.654(f), 63.654(h), 63.9(b), 60.7(a), and

61.357(a). These sections are one-time notifications but also apply after modifications. Leaving these sections in may prevent a reopening in order to add these sections after modifications. It seems better to leave these sections in than to frequently be adding and removing these sections.

The entire permit will be revised in order to update all Regulatory changes that have occurred since the last issuance. District Regulations 1, 6-1, 8-4, 8-5, 8-8, 8-16, 8-18, 8-19, 8-28, 8-31, and 9-1 have been updated to include both the newer versions and the latest SIP approved versions. Federal Regulation updates include: part 60 subparts D, Db, GG, GGG, J, K, Kb, VV, and QQQ. Part 61 changes include: subparts A, FF J, and V. Part 63 changes include subparts A, Y, CC, VV, UUU, and GGGGG.

Table IV G.1.5 will be revised to include option of complying with limit of either 500 ppmv VOC or 10 ppmv benzene.

Table IV A.3.3 will be revised to remove outdated permit condition #16698.

Table IV A.3.3 will be revised to remove outdated permit condition #17628.

Table IV A.3.2 will be revised to remove outdated permit condition #17631.

Table IV A.3.2 will be revised to remove outdated permit condition #18003.

Table IV A.3.2 will be revised to remove outdated permit condition #18015.

Table IV A.3.2 will be revised to remove outdated permit condition #18172.

Table IV A.3.2/A.3.3 will be revised to remove outdated permit condition #19586.

Table IV A.3.3 will be revised to remove outdated permit condition #18387.

Table IV A.3.3 will be revised to remove outdated permit condition #16731.

Table IV A.3.2 will be revised to remove outdated permit condition #18350.

Table IV A.3.3 will be revised to remove outdated permit condition #18391.

Table IV A.3.3 will be revised to remove outdated permit condition #18400.

Table IV A.2.1 will be revised to restore permit condition #18656.

Table IV A.4.1 will be revised to correct the citations for permit condition #20225.

Table IV C.2.1 will be revised to delete section 63.1570(e).

Table IV C.3.1 will be revised to delete section 63.1570(e).

Table IV E.2.1 will be revised to delete section 63.1570(e).

Table IV F.1.1 and F.1.2 will be revised to add condition 20764.

Table IV G.1.1 will be revised to remove S-6061.

Table IV A.1.1 will be revised to include NSPS subpart J.

Table IV H.2.1 will be revised to specify that 61.349(f) requires a visual inspection.

Table IV G.1.1 will be revised to remove the reference to section 61.357(c) since this section is not applicable to this facility. Chevron will always have greater than 10 Mg/yr benzene.

Tables IV A.3.2 and A.3.3 will be revised to remove all sources from A.3.3 and add these sources to A.3.2 since all furnaces are now subject to NSPS J.

Table IV C.3.1 will be revised to remove S-4261, S-4262, and S-4265.

Table IV F.1.2 will be revised to remove S-1685.

Table IV A.3.3 will be deleted and all sources and conditions will be added to A.3.2 since these sources are now subject to NSPS subpart J.

Table IV F.1.8 will be removed since the sources have been removed.

Table IV G.1.1 will be revised to remove 61.348 since this section does not apply to facilities complying with 6BQ.

Table IV G.1.4 will be revised to remove sections 8-8-301, 8-8-302.1, .2, and .3 since these sections do not apply to this facility.

Table IV.H.1.1 will be revised to update the SIP and non-SIP versions of 8-16.

Table IV.G.1.1 will be revised to remove sections 61.350, 353, parts of 354, and parts of 355 per Chevron's request since Chevron asserts that these sections do not apply.

Table IV.G.1.1 to G.1.8 will be revised to include both SIP and non-SIP versions of Regulation 8-8.

Table IV.H.1.1 will be revised to update Regulation 8-16.

Table IV.H.3.1 will be revised to update all coating Regulations, including 8-4, 19, 31, 32.

Table IV.H.2.1 will be revised to update the following Regulations; 8-18, 28, 40 CFR 60 subpart vv, 61 subpart v.

Table IV A.5.1 will be revised to remove outdated permit condition #16650.

Table IV A.5.1 will be revised to remove outdated permit condition #17675.

Table IV A.5.1 will be revised to remove outdated permit condition #18029.

Table IV F.1.1 will be removed and all sources will be added to Table IV F.1.2.

Table IV B.2.1 will be revised to include Condition numbers 18680, 22951, and 24294 for S-9304 per TV application number 19760.

Tables IV A.4.1 will be revised per application 19075 to remove archived source S-7526/A-7526, include new source S-7539/A-7539, and add Condition 24285.

Table IV A.3.2 will be revised to include Condition 22923 per applications 13012/13610.

Table IV A.1.1 will be revised to include Condition 22923 per applications 13012/13610.

Table IV A.3.2 will be revised to include S-4069 in the parametric monitoring per applications 18717/6.

Table IV A.4.1 will be revised per applications 18091/2 to include S-7538.

Table IV C.1.1 will be revised to remove references to S-6054 and S-6055 since these sources are archived.

Table IV D 1.1 will be revised to include references to 40 CFR part 98 Subparts A, C, Y, and MM.

Table IV A.3.2 will be revised to include S-4132 and S-4135 as subject to permit condition 23872.

Table IV H.2.1 will be revised to include condition 24433 per application 14486/14579.

Table IV A 4 1 will be revised to include condition 22820 as a result of application 19354/5.

Table IV F.1.0 will be revised to include S-4365 as a result of application 20760/1.

## Section VI



Condition 10160 will be corrected due to a typo.

Condition 16698 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 17631 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18003 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18015 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18172 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 19586 will be deleted since it has been replaced by condition #'s 21232 and 16686 and the maximum capacities are limited by Table II A.1.

Condition 16731 will be deleted since it has been replaced by condition #'s 21232 and 16686 and the maximum capacities are limited by Table II A.1.

Condition 18350 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18391 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18400 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 18656 will be revised or corrected to include parts 1 and 2.

Condition 20773 will be removed since it's a duplicate of Condition 20764.

Condition 11193 will be revised to remove S-6061.

Condition 11193 part 8 will be revised in the permit to say that the VOC abatement efficiency shall be at least 95%.

Condition 16391 will be removed since all of the equipment associated with this condition have been removed/dismantled.

Condition 469 will be revised to delete S-4262 and S-4265.

Condition 18166 will be deleted since it has been replaced by condition #21232 and the maximum capacities are limited by Table II A.1.

Condition 15671 part 7 will be revised in the permit to be consistent with the district's databank version.

Condition 23009 will be added to the permit as a result of application 14354.

Condition 16650 will be deleted since it has been replaced by condition #'s 21232 and 16686 and the maximum capacities are limited by Table II A.1.

Condition 17675 will be deleted since it has been replaced by condition #'s 21232 and 16686 and the maximum capacities are limited by Table II A.1.

Condition 18029 will be deleted since it has been replaced by condition #'s 21232 and 16686 and the maximum capacities are limited by Table II A.1.

Condition 20666 will be removed and Condition numbers 18680, 22951, and 24294 will be added for S-9304 per TV application number 19760.

Condition 13370 will be revised to correct the numbering per application 17723.

Condition 22850 will be revised per application 19075 to remove archived source S-7526/A-7526, include new source S-7539/A-7539, and add Condition 24285.

Condition 21232 will be revised per applications 18647/6, 18717/6, and 19298/9.

Condition 22850 will be revised per applications 18091/2 to include S-7538.

Conditions 10597 and 10598 will be removed since the sources have also been removed/archived.

Condition 23872 will be revised to fix a typo in the source description of S-4170.

Condition 24433 will be added as a result of application 14486/14579.

Condition 22820 will be added as a result of application 19354/5.

Condition 15698 will be revised as a result of application 18960/18957.

Condition 24452 will be added as a result of application 20760/1.

## Section VII

Table VII A.3.3 will be revised to remove permit condition 16698 and replace it with permit condition 21232.

Table VII A.3.3 will be revised to remove permit condition 17628 and replace it with permit condition 21232.

Table VII A.3.3 will be revised to remove permit condition 18387 and replace it with permit conditions 21232 and 16686.

Table VII A.3.2 will be revised to remove permit condition 17631 and replace it with permit condition 21232.

Table VII A.3.2 will be revised to remove permit condition 18003 and replace it with permit condition 21232.

Table VII A.3.2 will be revised to remove permit condition 18015 and replace it with permit condition 21232.

Table VII A.3.2 will be revised to remove permit condition 18172 and replace it with permit condition 21232.

Table VII A.3.3 will be revised to remove permit condition 16731 and replace it with permit condition 21232 and a reference to Table II A.1 for maximum throughput limits.

Table VII A.3.2 will be revised to remove permit condition 18350 and replace it with permit condition 21232 and a reference to Table II A.1 for maximum throughput limits.

Table VII A.3.3 will be revised to remove permit condition 18391 and replace it with permit condition 21232 and a reference to Table II A.1 for maximum throughput limits.

Table VII H.2.1 will be corrected regarding monitoring type and frequency for section 61.349(a)(2).

Table VII F.1.1 and F.1.2 will be revised to replace condition 20773 with condition 20764.

Table VII C.2.1 will be revised to correct a typo in “catalyst regeneration.”

Table VII G.1.1 will be revised to remove S-6061.

Table VII H.2.1 will be revised to remove archived condition number 22003.

Table VII Abatement will be revised to indicate that A-54 has a continuous temperature monitor.

Table VII A.1.1 will be revised to correct the NO<sub>x</sub> limit for Regulation 9-1-301.3.

Table VII A.3.2 will be revised to remove an incorrect version of condition 469 e fuel flow limit.

Table VII G.1.5 will be revised to remove reference to section 61.343(a)(1)(i)(c) since the facility does not operate this equipment under negative pressure.

Table VII G.1.5 will be revised to correct the reference to section 61.349(a)(2)(ii) since it was previously incorrectly cited.

Tables VII A.3.2 and A.3.3 will be revised to remove all sources from A.3.3 and add these sources to A.3.2 since all furnaces are now subject to NSPS J.

Table VII C.3.1 will be revised to remove S-4261, S-4262, and S-4265.

Table VII F.1.2 will be revised to remove S-1685.

Table VII A.3.3 will be deleted and all sources and conditions will be added to A.3.2 since these sources are now subject to NSPS subpart J.

Table VII D.1.1 will be revised to remove section 61.348 since Chevron complies with 61.342(e) and 61.342(c)(1)(iii).

Table VII D.1.1 will be revised to remove section 61.354(d) and (e) since 61.349(h) requires compliance with 61.354(c).

Table VII G.1.1 will be revised to remove section 61.348 since Chevron complies with 61.342(e).

Table VII G.1.5 and G.1.8 will be revised to remove section 61.354(d) and (e) since 61.349(h) requires compliance with 61.354(c).

Table VII G.1.8 will be revised to remove section 61.345(a)(1)(i)(C) since Chevron does not operate this equipment under negative pressure.

Table VII H.2.1 will be revised to correct the monitoring frequency for 61.349(f) and 61.354(c) to initially and quarterly thereafter.

Table VII D.1.1 will be revised to remove section 61.347 since Chevron asserts that it is not subject to this requirement since all the facilities oil/water separators handle only aqueous streams.

Table VII G.1.4 will be revised to remove sections 8-8-301, 8-8-302.1, .2, and .3 since these sections do not apply to this facility.

Tables VII G.1.2, and 3 will be revised to include the non-SIP version of Regulation 8-8.

Table VII A.5.1 will be revised to remove outdated permit condition #16650.

Table VII A.5.1 will be revised to remove outdated permit condition #17675.

Table VII A.5.1 will be revised to remove outdated permit condition #18029.

Table VII C.3.1 will be revised in order to update throughput limits in condition 469.

Table VII F.1.1 will be removed and all sources will be added to Table VII F.1.2.

Table VII F.1.8 will be removed since all of the sources have been removed.

Table VII B.2.1 Condition 20666 will be removed and Condition numbers 18680, 22951, and 24294 will be added for S-9304 per TV application number 19760.

Tables VII A.4.1 will be revised per application 19075 to remove archived source S-7526/A-7526, include new source S-7539/A-7539, and add Condition 24285.

Table VII A.4.1 will be revised per applications 18091/2 to include S-7538.

Table VII C.1.1 will be revised to remove references to S-6054 and S-6055 since these sources are archived.

Table VII Abatement will be revised to remove A-54 since this abatement device has been removed from the facility.

Table VII C.3.1 will be revised to remove all references to permit condition 16393 since this condition has been removed/archived.

Table VII H.2.1 will be revised to include condition 24433 per application 14486/14579.

Table VII A 4 1 will be revised to include condition 22820 as a result of application 19354/5.

Table VII F.1.0 will be revised to include S-4365 as a result of application 20760/1.

### Section IX

Table IX A.1 will be revised to state that Cogen units do not meet applicability of 60.334.



**T. A. Lizarraga**  
Manager

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September 2, 2008

Bay Area Air Quality Management District  
939 Ellis St.  
San Francisco, CA 94109  
Attn: Mr. Barry Young, Air Quality Engineering Manager

**Compliance Assurance Monitoring (CAM) Rule Applicability Analysis**

Dear Mr. Young:

Chevron contracted a 3<sup>rd</sup> party to assess applicability of the Compliance Assurance Monitoring (CAM) rule to Richmond Refinery emissions sources with abatement devices in our Title V permit. The contractor's completed analysis concludes that none of these sources are subject to the CAM rule.

Since Chevron's June 30, 2008, submittal to BAAQMD of the preliminary results of this assessment, we completed a quality review of the analysis to verify its accuracy. We enclose with this letter a detailed analysis of CAM applicability to our sources, as we agreed to provide to the BAAQMD in May 12 and August 28, 2008, e-mails from Mr. Troy Howell of my staff to you and Mr. Greg Solomon of your staff.

If there is anything we can clarify or we should discuss, please contact Troy at (510) 242-2026.

Yours truly,

Tery A. Lizarraga  
Manager, Health, Environment & Safety

Enclosure – Table

Cc: Dennis Jang, BAAQMD Permitting Division  
Janet Stromberg, BAAQMD Permitting Division  
Greg Solomon, BAAQMD Permitting Division  
Xuna Cai, BAAQMD Permitting Division

Chevron Richmond Refinery, Facility #A0010  
 40 CFR 64 Compliance Assurance Monitoring (CAM) Applicability Analysis  
 9/1/2008

Source No.	Source Description	Pollutant with Federally Enforceable Emissions Limit or Standard 40 CFR 64.2(a)(1)	Control Device Used for Compliance 40 CFR 64.2(a)(2)	Subject to CAM?
4094	Thermoform Kiln Stack Burner	PM	A-0008, Kiln-Baghouse, Filter Building Baghouse, Reverse Air	No. Pre-control PTE < MST.
4285	FCC Plant	PM	A-0014, K-13, FCC Electrostatic Precipitator, Single Stage Electrostatic Precipitator	No. Exempt per 40 CFR 64.2(b)(1)(i) - basis of limit proposed after 11/15/90.
4285	FCC Plant	VOC	A-6016, FCC Flare V 731, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4285	FCC Plant	SO2	SOx reduction additive	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4227	SRU #1 Train	SO2	A-0020, Tail Gas Unit for 2100 Plant, #1 SRU Train, Absorption and Regeneration	No. Exempt per 40 CFR 64.2(b)(1)(i) - basis of limit proposed after 11/15/90.
4227	SRU #1 Train	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4228	SRU #2 Train	SO2	A-0021, Tail Gas Unit for 2200 Plant, #2 SRU Train, Absorption and Regeneration	No. Exempt per 40 CFR 64.2(b)(1)(i) - basis of limit proposed after 11/15/90.
4228	SRU #2 Train	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4229	SRU #3 Train	SO2	A-0022, Tail Gas Unit for 2300 Plant, #3 SRU Train, Absorption and Regeneration	No. Exempt per 40 CFR 64.2(b)(1)(i) - basis of limit proposed after 11/15/90.
4229	SRU #3 Train	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4415	Asphalt Tank Truck Loading Racks	PM	A-0037, Mist Eliminator Scrubber, Fibrous Packed Scrubber - Asphalt Loading Racks	No. Pre-control PTE < MST.
4330	HNHF Reactor Furnace, F 1610	NOx	A-0065, Hydrofinisher SCR Unit (HNHF, LNHF, Hot Oil Furnace), Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4331	LNHF Reactor Furnace, F 1310	NOx	A-0065, Hydrofinisher SCR Unit (HNHF, LNHF, Hot Oil Furnace), Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4332	Hot Oil Furnace, F 1360	NOx	A-0065, Hydrofinisher SCR Unit (HNHF, LNHF, Hot Oil Furnace), Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4333	TKC Vacuum Furnace, F 1750	NOx	A-0066, TKC SCR Unit; Unclassified Abatement Device, (TKC Vac Furnace, LNC)	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4334	LNC Atmos Furnace, F 1200	NOx	A-0066, TKC SCR Unit; Unclassified Abatement Device, (TKC Vac Furnace, LNC)	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4335	LNC Vacuum Furnace, F 1250	NOx	A-0066, TKC SCR Unit; Unclassified Abatement Device, (TKC Vac Furnace, LNC)	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4336	HNC Reactor Furnace, F 1410	NOx	A-0067, HNC Hydrocracker SCR Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4337	HNC Atmos Furnace, F 1500	NOx	A-0067, HNC Hydrocracker SCR Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4338	HNC Vacuum Furnace, F 1550	NOx	A-0067, HNC Hydrocracker SCR Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4339	LNC Reactor Furnace, F 1110	NOx	A-0067, HNC Hydrocracker SCR Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4350	Gas Turbine with Steam Injection	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).

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4350	Gas Turbine with Steam Injection	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4350	Gas Turbine with Steam Injection	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4350	Gas Turbine with Steam Injection	CO	A-0070, Cogeneration Unit Train 1000 CO/HC Catalyst Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4351	Heat Recovery Steam Generator	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4351	Heat Recovery Steam Generator	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4351	Heat Recovery Steam Generator	NOx	A-0072, Cogeneration Unit Train 1000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4351	Heat Recovery Steam Generator	CO	A-0070, Cogeneration Unit Train 1000 CO/HC Catalyst Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4352	Gas Turbine with Steam Injection	NOx	A-0073, Cogeneration Unit Train 2000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4352	Gas Turbine with Steam Injection	CO	A-0071, Cogeneration Unit Train 2000 CO/HC Catalyst Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4353	Heat Recovery Steam Generator	NOx	A-0073, Cogeneration Unit Train 2000 SCR Unit; SCR NOx Reduction Catalyst, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4353	Heat Recovery Steam Generator	CO	A-0071, Cogeneration Unit Train 2000 CO/HC Catalyst Unit, Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4170	F 305 H2 Reforming Furnace, H2 Plant	NOx	A-260, Hydrogen A-Train SCR Unit (Furnace F-305), Unclassified Abatement Device	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4170	F 305 H2 Reforming Furnace, H2 Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4250	Hydrogen Manufacturing Plant	VOC	A-261, Scrubber for De-aerator Vent Methanol Abatement for Hydrogen Plant "A" Train, (V 311) and A-262, Scrubber/Condenser for De-aerator Vent Methanol Abatement for Hydrogen Plant (S-4250) "B" Train (V 361)	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4250	Hydrogen Manufacturing Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
605	Fixed Roof Tank	VOC	A-0607, Carbon Bed Feed Surge Tank Absorber Unit for S-0605 Tank (Alkane GWTU) (VOC Vapor Abatement D607 A/B), Activated Carbon/Charcoal Canisters	No. Pre-control PTE < MST.
610	Fixed Roof Tank	VOC	A-0607, Carbon Bed Feed Surge Tank Absorber Unit for S-0605 Tank (Alkane GWTU) (VOC Vapor Abatement D607 A/B), Activated Carbon/Charcoal Canisters  A-0611, Carbon Adsorber Unit, Activated Carbon Containers, D611 A/B	No. Pre-control PTE < MST.
660	Fixed Roof Tank	VOC	A-0615, Carbon Canisters (2 in series)	No. Pre-control PTE < MST.
6066	Process Water Tank	VOC	A-0615, Carbon Canisters (2 in series)	No. Pre-control PTE < MST.



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32103	Pumps and compressor seals	VOC	A-0620, Thermax, Model ES-300, Thermal Oxidizer, LPG Racks	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
32103	Pumps and compressor seals	VOC	A-0622, Thermax, Model ES-60H, Thermal Oxidizer, Yard DIB	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
32103	Pumps and compressor seals	VOC	A-0623, Thermax, Model ES-60H, Thermal Oxidizer, 21 PS	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
32103	Pumps and compressor seals	VOC	A-0624, Thermax, Model ES-60H, Thermal Oxidizer, 17 PS	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
32103	Pumps and compressor seals	VOC	A-0627, Thermax, Model ES-300, Thermal Oxidizer, FCC Unit (backup)	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
32103	Pumps and compressor seals	VOC	A-0628, Thermax, Model ES-300, Thermal Oxidizer, Alkylation Plant	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
6250	Oil Water Separator	VOC	A-0630 and A-0631, DEBRU Carbon Abatement Containers for Spent Carbon Regeneration, Adsorption, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
9321	Marine Loading Berth #1	VOC	A-0900, Emission Reduction Device (Thermal Oxidizer) – Marine Vapor Recovery	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
9322	Marine Loading Berth #2	VOC	A-0900, Emission Reduction Device (Thermal Oxidizer) – Marine Vapor Recovery	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
9323	Marine Loading Berth #3	VOC	A-0900, Emission Reduction Device (Thermal Oxidizer) – Marine Vapor Recovery	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
9324	Marine Loading Berth #4	VOC	A-0900, Emission Reduction Device (Thermal Oxidizer) – Marine Vapor Recovery	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
9325	Marine Loading Berth #9	VOC	A-0900, Emission Reduction Device (Thermal Oxidizer) – Marine Vapor Recovery	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
3110	Fixed Roof Tank	VOC	A-3200, Abatement 4 Crude Unit Furnace 1100B – DEBRU (See S-4071 – F1100B 4 Crude Furnace). [Note: the abatement device is the firebox of the process heater (F-1100B)]	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
3111	Fixed Roof Tank	VOC	A-3200, Abatement 4 Crude Unit Furnace 1100B – DEBRU (See S-4071 – F1100B 4 Crude Furnace). [Note: the abatement device is the firebox of the process heater (F-1100B)]	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
3192	Tank (Pressure Tank)	VOC	A-3200, Abatement 4 Crude Unit Furnace 1100B – DEBRU (See S-4071 – F1100B 4 Crude Furnace). [Note: the abatement device is the firebox of the process heater (F-1100B)]	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
3192	Tank (Pressure Tank)	VOC	A-3200, Abatement 4 Crude Unit Furnace 1100B – DEBRU (See S-4071 – F1100B 4 Crude Furnace). [Note: the abatement device is the firebox of the process heater (F-1100B)]	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
3192	Tank (Pressure Tank)	VOC	A-3200, Abatement 4 Crude Unit Furnace 1100B – DEBRU (See S-4071 – F1100B 4 Crude Furnace). [Note: the abatement device is the firebox of the process heater (F-1100B)]	No. Exempt per 40 CFR 64.2(b)(1)(vi) - a continuous compliance determination method already exists (CEMS, COMS, or CPMS).
4240	Asphalt Tank Truck Loading Rack	PM	A-4241, Mist Eliminator Scrubber, Fibrous Packed Scrubber – Asphalt Loading Racks	No. Pre-control PTE < MST.
4241	Asphalt Tank Truck Loading Rack	PM	A-4241, Mist Eliminator Scrubber, Fibrous Packed Scrubber – Asphalt Loading Racks	No. Pre-control PTE < MST.
4233	#1 Jet Hydrotreater	VOC	A-6010, High Level Flare, LSFO Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.

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4233	#1 Jet Hydrotreater	VOC	A-6015, Refinery Waste Gas Flare D&R	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4233	#1 Jet Hydrotreater	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4234	No. 5 Naphtha Hydrotreater	VOC	A-6010, High Level Flare, LSFO Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4234	No. 5 Naphtha Hydrotreater	VOC	A-6015, Refinery Waste Gas Flare D&R	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4234	No. 5 Naphtha Hydrotreater	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4235	Diesel Hydrotreater	VOC	A-6010, High Level Flare, LSFO Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4235	Diesel Hydrotreater	VOC	A-6015, Refinery Waste Gas Flare D&R	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4235	Diesel Hydrotreater	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4236	No. 4 Crude Unit	VOC	A-6010, High Level Flare, LSFO Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4237	No. 5 Rheniformer	VOC	A-6010, High Level Flare, LSFO Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4237	No. 5 Rheniformer	VOC	A-6015, Refinery Waste Gas Flare D&R	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4237	No. 5 Rheniformer	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4251	Solvent Deasphalting (SDA) Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4348	H2 Recovery Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4171	F 355 Reforming Furnace, H2 Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4434	#4 H2S Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4429	#8 Plant	VOC	A-6012, Refinery Waste Gas Flare, V 282, South Isomax Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.

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4429	#8 Plant	None	A-4429, Temporary odor control scrubber	No. No federally-enforceable emissions limit or standard.
4252	TKN Isocracker	VOC	A-6013, North Isomax Flare V 281, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4253	TKC Plant	VOC	A-6013, North Isomax Flare V 281, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4282	Penhex Isomerization Unit	VOC	A-6015, Refinery Waste Gas Flare D&R, 3MMBtu/h	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4282	Penhex Isomerization Unit	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4283	No. 4 Catalytic Reformer	VOC	A-6015, Refinery Waste Gas Flare D&R, 3MMBtu/h	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4283	No. 4 Catalytic Reformer	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4435	#5 H2S Plant	VOC	A-6015, Refinery Waste Gas Flare D&R, 3MMBtu/h	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4435	#5 H2S Plant	VOC	A-6020, K3950, Flare Gas Recovery Compressor System, Cooper/Penn. Unclassified Abatement Device	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4286	Light Ends Recovery	VOC	A-6017, Alkane Flare, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4286	Light Ends Recovery	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4289	F-309	VOC	A-6017, Alkane Flare, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4290	HF Alkane Plant	VOC	A-6017, Alkane Flare, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4291	H2SO4 Alkylation Plant	VOC	A-6017, Alkane Flare, Refinery Waste Gas Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4291	H2SO4 Alkylation Plant	VOC	A-6018, Flare Relief Drum – V780 Poly Flare, FCC	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4291	H2SO4 Alkylation Plant	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4292	FCC Polymer Plant	VOC	A-6018, Flare Relief Drum – V780 Poly Flare, FCC	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.

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4292	FCC Polymer Plant	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4355	Deisobutanizer Plant	VOC	A-6019, Alky-Poly Flare, Refinery Waste Gas Flare, V 732A	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4340	Light Neutral Hydrocracker (LNC)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4341	Light Neutral Hydrofinisher (LNHF)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4342	Heavy Neutral Hydrocracker (HNC)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4343	Heavy Neutral Hydrofinisher (HNHF)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4345	No 2 NH3-H2S Plant (WWT)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
4346	Gas Recovery Unit (GRU)	VOC	A-6039, V 3501; Lube RLOP Flare	No. The flare is considered "inherent process equipment" per 40 CFR 64.1, not a control device, because it is necessary for the safe functioning of the refining process equipment.
6200	Portable Polyethylene Storage Container	VOC	A-6200, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6201	Portable Polyethylene Storage Container	VOC	A-6201, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6202	Portable Polyethylene Storage Container	VOC	A-6202, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6203	Portable Polyethylene Storage Container	VOC	A-6203, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6204	Portable Polyethylene Storage Container	VOC	A-6204, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6205	Portable Polyethylene Storage Container	VOC	A-6205, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6206	Portable Polyethylene Storage Container	VOC	A-6206, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6207	Portable Polyethylene Storage Container	VOC	A-6207, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6208	Portable Polyethylene Storage Container	VOC	A-6208, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.

Chevron Richmond Refinery, Facility #A0010  
 40 CFR 64 Compliance Assurance Monitoring (CAM) Applicability Analysis  
 9/1/2008

Source No.	Source Description	Pollutant with Federally Enforceable Emissions Limit or Standard 40 CFR 64.2(a)(1)	Control Device Used for Compliance 40 CFR 64.2(a)(2)	Subject to CAM?
6209	Portable Polyethylene Storage Container	VOC	A-6209, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6210	Portable Polyethylene Storage Container	VOC	A-6210, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6211	Portable Polyethylene Storage Container	VOC	A-6211, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6212	Portable Polyethylene Storage Container	VOC	A-6212, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6213	Portable Polyethylene Storage Container	VOC	A-6213, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6214	Portable Polyethylene Storage Container	VOC	A-6214, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6215	Portable Polyethylene Storage Container	VOC	A-6215, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6216	Portable Polyethylene Storage Container	VOC	A-6216, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6217	Portable Polyethylene Storage Container	VOC	A-6217, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6218	Portable Polyethylene Storage Container	VOC	A-6218, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6219	Portable Polyethylene Storage Container	VOC	A-6219, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6220	Portable Steel Storage Container	VOC	A-6220, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6221	Portable Steel Storage Container	VOC	A-6221, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6222	Portable Steel Storage Container	VOC	A-6222, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6223	Portable Steel Storage Container	VOC	A-6223, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6224	Portable Steel Storage Container	VOC	A-6224, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6225	Portable Steel Storage Container	VOC	A-6225, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6226	Portable Steel Storage Container	VOC	A-6226, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6227	Portable Steel Storage Container	VOC	A-6227, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.

Chevron Richmond Refinery, Facility #A0010  
 40 CFR 64 Compliance Assurance Monitoring (CAM) Applicability Analysis  
 9/1/2008

Source No.	Source Description	Pollutant with Federally Enforceable Emissions Limit or Standard 40 CFR 64.2(a)(1)	Control Device Used for Compliance 40 CFR 64.2(a)(2)	Subject to CAM?
6228	Portable Steel Storage Container	VOC	A-6228, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6229	Portable Steel Storage Container	VOC	A-6229, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6230	Portable Steel Storage Container	VOC	A-6230, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6231	Portable Steel Storage Container	VOC	A-6231, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6232	Portable Steel Storage Container	VOC	A-6232, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6233	Portable Steel Storage Container	VOC	A-6233, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6234	Portable Steel Storage Container	VOC	A-6234, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6235	Portable Steel Storage Container	VOC	A-6235, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6236	Portable Steel Storage Container	VOC	A-6236, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6237	Portable Steel Storage Container	VOC	A-6237, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6238	Portable Steel Storage Container	VOC	A-6238, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.
6239	Portable Steel Storage Container	VOC	A-6239, Two each Vapor Phase Carbon Canisters in Series for Baker/Poly Tanks, Activated Carbon/Charcoal	No. Pre-control PTE < MST.

Notes:

Only pollutants with a federally enforceable emission standard that are abated by control equipment are listed.

PTE = Potential to Emit

MST = Major Source Threshold

CEMS = Continuous Emissions Monitoring System

COMS = Continuous Opacity Monitoring System

CPMS = Continuous Parametric Monitoring System

Per 40 CFR 64, a control device does not include passive control measures that act to prevent pollutants from forming, such as the use of seals, lids, or roofs to prevent the release of pollutants, use of low-polluting fuel or feedstocks, or the use of combustion or other process design features or characteristics.



# Engineering Evaluation

Chevron Products Company,  
 Plant Number: 10, and Application Number: 18091  
 Evaluated by: Olabode Thomas Ajibola

**Background**

Chevron Products Company has applied to obtain an Authority to Construct (AC) and/or a Permit to Operate (PO) for the following new equipment:

S-7538

Emergency Standby Diesel Generator	at	841 Chevron Way
2008 MTU Detroit Diesel, Model: 12V4000G43		Richmond, CA 94801
2328 BHP, 3491 cu in		

Because this is a diesel generator set, chapter 2.3 of the permit handbook is applicable. BACT is triggered, and BACT2 is applicable because the source will operate primarily during emergencies.

**Recommendation**

Issue Authority to Construct for above equipment.

**EMISSIONS**

**Annual Average Emissions:**

- Basis:
- 2328 bhp output rating, 50 hr/yr operation for testing and maintenance
  - NMHC + NOx, PM10, and CO emission factors provided by CARB Certification with Executive Order U-R-052-0004
  - The NMHC emission rate is assumed to be equal to 5% of the NMHC + NOx emission factor certified by CARB
  - Heat capacity of diesel is 137,000 BTU/gal
  - SO2 emissions are quantified based on the full conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ULS diesel fuel with a density of 7.206 lbs/gal that is consumed at a rate of 111 gallons/hr.

Pollutant	Engine Emissions g/kw-hr	Engine Emissions g/bhp-hr
NMHC (POC)	0.156	0.116
NOx	7.012	5.231
NMHC+NOx	7.168	5.347
CO	0.664	0.495
PM	0.065	0.048



Pollutant	hours/yr		BHP		emission factor g/bhp-hr		lb=454 grams		lb/year		TPY
NOx	50	x	2328	x	5.230952	/	454	=	1341.15	=	0.67057
CO	50	x	2328	x	0.495344	/	454	=	127.00	=	6
POC	50	x	2328	x	0.116376	/	454	=	29.84	=	0.01491
PM10	50	x	2328	x	0.04849	/	454	=	12.43	=	9
											0.00621
											6

	Sulfur content		fuel density (lb/gal)		Max fuel use		(lb SO2/lb S)		hr/yr		lb/yr		TPY
	0.00001										1.19979		
SO2	5	x	7.206	x	111	x	2	x	50	=	9	=	0.0006

### 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.

Pollutant	hours/yr		BHP		emission factor g/bhp-hr		lb=454 grams		lb/day
NOx	24	x	2328	x	5.230952	/	454	=	643.75
CO	24	x	2328	x	0.495344	/	454	=	60.96
POC	24	x	2328	x	0.116376	/	454	=	14.32
PM10	24	x	2328	x	0.04849	/	454	=	5.97

	Sulfur content		fuel density (lb/gal)		Max fuel use		(lb SO2/lb S)		hr/day		lb/day
	0.00001										0.57590
SO2	5	x	7.206	x	111	x	2	x	24	=	4

### Plant Cumulative Increase

Although Chevron Products Company is not a new facility, but this emergency standby diesel generator set that will be used to power its emergency power scrubber system is a new engine. Therefore, the District's database does not contain information on existing emissions at the plant relating to this specific source. Table 1 summarizes the cumulative increase in criteria pollutant emissions that will result at Plant 10 from the operation of S-7538.

Table 1

Pollutant	Current plant	Increase in plant emissions associated with	Cumulative emissions

	emissions (TPY)	this application (TPY)	(Current + Increase)
NOx	0	0.6706	0.6706
CO	0	0.0635	0.0635
POC	0	0.0149	0.0149
PM10	0	0.0062	0.0062
SO2	0	0.0006	0.0006

**Toxic Risk Screening Analysis**

The cancer risk is calculated based on the emission rate of diesel exhaust particulate matter. Diesel exhaust particulate matter is used as a surrogate for all toxic contaminants found in diesel exhaust. Because the proposed emissions (12.43 lb/yr) exceed the risk screening trigger level for diesel exhaust particulate matter in Table 2-5-1 (0.58 lb/yr), a risk screening will be performed.

**BACT**

BACT is triggered for NOx, CO, and POC since the maximum daily emissions of the above pollutants 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 this source category as shown below:

***Source Category***

Source:	<i>IC Engine - Compression Ignition</i>	Revision:	<i>5</i>
		Document #:	<i>96.1.2</i>
Class:	<i>&gt; or = 175 horsepower output rating</i>	Date:	<i>01/11/02</i>

***Determination***

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
POC	1. 0.30 g/bhp-hr [62 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 1.5 g/bhp-hr [309 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. Catalytic Oxidation and CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine <sup>a,b</sup> 2. CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine <sup>b,c</sup>
NOx	1. 1.5 g/bhp-hr [107 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b,c</sup> 3. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ] <sup>2</sup>	1. Selective Catalytic Reduction (SCR) + Timing Retard + Turbocharger w/ Intercooler <sup>a,b</sup> 2. Timing Retard ≤ 4° + Turbocharger w/ Intercooler <sup>a,b,c</sup> 3. Timing Retard ≤ 4° + Turbocharger w/ Intercooler

SO <sub>2</sub>	1. n/d 2. fuel oil < 0.05% sulfur <sup>a,b</sup>	1. n/d 2. Fuel Selection <sup>a,b</sup>
CO	1. n/s 2. 2.75 g/bhp-hr [319 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. Catalytic Oxidation <sup>b</sup> 2. CARB or EPA (or equivalent) low-CO emitting certified engine <sup>b,c</sup>
PM <sub>10</sub>	1. n/d 2. If practical, gas-fueled engine or electric motor. If not, "California Diesel Fuel" (fuel oil w/ < 0.05% by weight sulfur and < 20% by volume aromatic hydrocarbons) <sup>b</sup> 3. 0.1 grams/bhp-hr	1. Catalyst Guard Bed <sup>a,b</sup> 2. Fuel Selection <sup>b,d</sup> 3. CARB or EPA (or equivalent) low-particulate matter emitting certified engine, or particulate filter
NPOC	1. n/a 2. n/a	1. n/a 2. n/a

### References

- a. CARB/CAPCOA Clearinghouse
- b. BAAQMD NOTE: IC Engine BACT and TBACT is a low emitting, spark-ignited, gas-fueled engine with lean burn combustion or rich burn with non-selective catalytic reduction, or electric motor. A diesel engine will be permitted only if a gas-fueled engine, or electric motor, is not practical (e.g., a remote location without natural gas availability or electric power, or only a diesel engine will meet the portability and/or power/torque/rpm requirements of the application under review, or the engine is used exclusively for emergency use during involuntary loss of power).
- c. Timing retard, etc. controls alone may be acceptable only in very limited situations for temporary sources.

It can be seen from above that S-7538 satisfies the current BACT 2 standard for NO<sub>x</sub> (5.22 g/bhp-hr), CO (0.5 g/bhp-hr) and POC (0.12g/bhp-hr). The more restrictive BACT 1 standard is not applicable to this engine because it will be limited to operation as an emergency standby engine.

### Offsets

As stated earlier this source in the Chevron Products Company's plant is a new facility. Table 2 summarizes the increase in criteria pollutant emissions that will result at Plant 10 from the operation of S-7538.

Table 2

Pollutant	Total Annual Emissions TPY	Regulation 2-2-302 and 2-2-303 Offset Triggers (TPY)
NO <sub>x</sub>	0.6706	> 10; < 35
CO	0.0635	> 10; < 35
POC	0.0149	NA
PM <sub>10</sub>	0.0062	> 1
SO <sub>2</sub>	0.0006	> 1

It can be seen from Table 2 above that S-7538 does not trigger any offset. Therefore, offsets are not warranted for any emission.

**CARB STATIONARY DIESEL ENGINE 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, title 17, CA Code of Regulations.

**Diesel PM – General Requirements**

1. Meet 0.15 g/bhp-hr PM standard
2. Operate 50 hours per year, or less, for maintenance and testing (except emergency use and emissions testing)

**HC, NO<sub>x</sub>, NMHC+NO<sub>x</sub>, CO**

1. Meet standards for off-road engines of the same model year and horsepower rating As specified in the OFF-Road Compression Ignition Engine Standards; Or if no standards have been established
2. Meet the Tier 3 standards in Title 13, CCR, Section 2423 for off-road engines of the same horsepower rating, irrespective of the new engine’s model year

This emergency standby diesel engine (S-7538) 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 EPA Tier 3 requirements for HC, NO<sub>x</sub>, NMHC+NO<sub>x</sub> and CO. As shown in the Table3, the engines meet these requirements.

**TABLE3. ATCM TIER 3 COMPLIANCE**

	Engine Emissions g/bhp-hr	ATCM Tier 3 g/bhp-hr
NMHC (POC)	0.116	N/A
NO <sub>x</sub>	5.231	N/A
NMHC+NO <sub>x</sub>	5.347	4.8
CO	0.495	2.6
PM	0.048	0.15

**STATEMENT OF COMPLIANCE**

The owner/operator of S-7538 shall comply with Reg. 6 (Particulate Matter and Visible Emissions Standards) and Reg. 9-1-301 (Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentrations). Since this engine meets TBACT for PM10 (<0.15 g/hp-hr), it is expected to comply with Reg. 6. Ultra-low sulfur diesel (15 PPM sulfur) will be used to meet the sulfur limitation of 0.5wt% in Reg. 9-1-304 as well as to minimize PM10 emissions. Because S-7538 is an emergency standby generator, Reg. 9-8-110 (Inorganic Gaseous Pollutants: Nitrogen Oxides from Stationary Internal Combustion Engines) exempts the requirements for emission limits of Sections 9-8-301, 302, and 502. Allowable operating hours and the corresponding record keeping in Reg. 9-8-330 and 530 will be included in the Permit Conditions below.

This diesel engine is subject to the Stationary Diesel Airborne Toxics Control Measure (ATCM) and is considered a new stationary emergency standby diesel generator since it will be installed after January 1, 2005 and is larger than 50 HP. The requirements of the ATCM will be included in the permit conditions.

The project is considered to be ministerial under the District's CEQA 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 emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.3)

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

#### **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 95.4 liters and has 12 cylinders, so each cylinder has a volume of less than 10 liters. The engine is a 2008 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 engine greater than or equals to 750 hp, these standards are:

NMHC+NOx: 4.8 g/hp-hr

CO: 2.6 g/hp-hr

PM: 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 CARB Executive Order U-R-052-0004, the engine will comply with the standards.

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.

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 maximum sulfur content of 500 parts per million (ppm), a cetane index of 40 or a maximum aromatic content of 35 percent by volume. 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 maximum sulfur content of 15 parts per million (ppm), and the same cetane index or aromatic content as previously stated. California Air Resources Board (CARB) diesel fuel, which has a maximum sulfur content of 15 ppm and a maximum aromatic content of 10 to 20 percent by volume, is the only diesel fuel available in California. Staff in the Stationary Source Division of CARB indicate that some verified diesel fuel in California may have a maximum aromatic content greater than 10 percent if the fuel has been demonstrated to have an equal or greater emissions benefit as diesel fuel with maximum aromatic content of 10 percent, but no verified fuel has had an aromatic content greater than 25 percent.

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(b) 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, it is not subject to Section 60.4209(b) (installation of a backpressure monitor) or 60.4214(c) (records of corrective action taken after high backpressure).

The owner/operator is required to comply with certain sections of 40 CFR 60, Subpart A, General Provisions. These are listed in the permit conditions. [Subpart IIII, Table 8]

PSD and NESHAPS are not triggered.

## **PERMIT CONDITIONS**

Condition No. 22850

1. Operating for reliability-related activities is limited to 50 hours per year per engine.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(B)(3) or Regulation 2-5]

2. The owner or 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 or 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)]

**Recommendation:**

Issue Chevron Products Company an Authority to Construct for the following equipment:

S-7538

<u>Emergency Standby Diesel Generator</u>	<b>at</b>	<u>841 Chevron</u>
<u>Way,</u>		
2008 MTU Detroit Diesel, Model: 12V4000G43		Richmond, CA
94801		
2328 BHP, 3491 cu in		

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Ajibola  
**Air Quality**  
**Engineering Intern**  
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Division



**ENGINEERING EVALUATION  
CHEVRON PRODUCTS COMPANY  
PLANT NO. 10  
APPLICATION NO. 19074**

**BACKGROUND**

Chevron Products Company is applying for Authority to Construct and/or Permit to Operate a FCC Backup Air Compressor.

**S-7539 Emergency Standby FCC Backup Air Compressor: Diesel Engine, 6 cylinder, Caterpillar, Model LGK07055, Model Year 2007, Rated 440 BHP; Abated by A-7539: Diesel Particulate Filter, Johnson Matthey CRT, DPF Particulate Trap.**

**EMISSIONS SUMMARY**

**Annual Emissions:**

Basis:

- One engine rated at 440 bhp output for full-load, standby operation
- 50 hour/year operation for reliability-related activities at each engine
- NO<sub>x</sub>, POC, CO, and PM<sub>10</sub> emission factors per CARB Certification data (Executive Order U-R-001-0306-1)
- Johnson Matthey-DPF reduces PM<sub>10</sub> emission by 85 percent

<b>Pollutant</b>	<b>Unabated Emission factor (g/hp-hr)</b>	<b>Abated Emission factor (g/hp-hr)</b>
NO <sub>x</sub>	2.55	2.55
CO	1.64	1.64
POC	0.13	0.13
PM <sub>10</sub>	0.07	0.011

- The emission factor for SO<sub>2</sub> is from Chapter 3, Table 3.4-1 of the EPA Document AP-42, Compilation of Air Pollutant Emission Factors, which is based on full conversion of fuel sulfur to SO<sub>2</sub> and which will therefore be considered applicable to any diesel engine (sulfur content will be assumed to be the California limit of 0.0015 wt% sulfur):

$$\text{SO}_2 \quad 8.09\text{E-}3 \text{ (\% S in fuel oil) lb/hp-hr} = 8.09\text{E-}3 \text{ (0.0015\% S) (454 g/lb)} = 0.000055 \text{ g/hp-hr}$$

For this engine,

$$\begin{aligned} \text{NO}_x &= ( 2.55 \text{ g/hp-hr) ( 440 hp) ( 50 hr/yr) (lb/454g) = 123.58 \text{ lb/yr} = 0.062 \text{ TPY} \\ \text{CO} &= ( 1.64 \text{ g/hp-hr) ( 440 hp) ( 50 hr/yr) (lb/454g) = 79.50 \text{ lb/yr} = 0.040 \text{ TPY} \\ \text{POC} &= ( 0.13 \text{ g/hp-hr) ( 440 hp) ( 50 hr/yr) (lb/454g) = 6.5 \text{ lb/yr} = 0.003 \text{ TPY} \\ \text{PM}_{10} &= ( 0.01 \text{ g/hp-hr) ( 440 hp) ( 50 hr/yr) (lb/454g) = 0.48 \text{ lb/yr} = 0.000 \text{ TPY} \\ \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr) ( 440 hp) ( 50 hr/yr) (lb/454g) = 0.003 \text{ lb/yr} = 0.0000 \text{ TPY} \end{aligned}$$

**Maximum 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). A full 24-hour day will be assumed since no daily limits are imposed on intermittent and unexpected operations.

For each engine,

$$\begin{aligned} \text{NO}_x &= ( 2.55 \text{ g/hp-hr} ) ( 440 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 59.32 \text{ lb/day} \\ \text{CO} &= ( 1.64 \text{ g/hp-hr} ) ( 440 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 38.16 \text{ lb/day} \\ \text{POC} &= ( 0.13 \text{ g/hp-hr} ) ( 440 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 3.12 \text{ lb/day} \\ \text{PM}_{10} &= ( 0.01 \text{ g/hp-hr} ) ( 440 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 0.26 \text{ lb/day} \\ \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr} ) ( 440 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 0.001 \text{ lb/day} \end{aligned}$$

**Plant Cumulative Increase (Post 4/5/1991): (tons/year)**

Pollutant	Current	Application Increase	Contemporaneous Decrease from Banking Certificate	New Total
NO <sub>x</sub>	0	0.062	0.071	0.0
CO	0	0.040	0.0	0.040
POC	0	0.003	0.0035	0.0
PM <sub>10</sub>	0	0.000	0.0	0.0

**Toxic Risk Screening:**

The toxic emission of diesel particulate does exceed the District Risk Screening Trigger, as shown in Table (1) below, and a Risk Screening Analysis has been performed.

**Table 1.** Calculated incremental increase in diesel exhaust particulate matter

Source	PM <sub>10</sub> Emission Factor (g/HP-hr)	HP	Annual Usage (Hours/year)	Diesel Exhaust Particulate Emissions (lb/year):	Trigger Level (lb/yr)	Risk Screen Required? (Yes/No)
S-7539	0.011	440	50	0.53	0.58	No

This application will not require a Health Risk Screening Analysis since the toxic emissions will not exceed the trigger level.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-7539 shall comply with Reg. 6-1 (Particulate Matter and Visible Emissions Standards) and Reg. 9-1-301 (Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentrations). Since these engine meet TBACT for PM<sub>10</sub> (<0.15 g/hp-hr), it is expected to comply with Reg. 6-1. Ultra-low sulfur diesel (15 PPM sulfur) will be used to meet the sulfur limitation of 0.5 wt% in Reg. 9-1-304 as well as to minimize PM<sub>10</sub> emissions. Because the engines are emergency standby generators,

Reg. 9-8-110 (Inorganic Gaseous Pollutants: Nitrogen Oxides from Stationary Internal Combustion Engines) exempts the requirements for emission limits of Sections 9-8-301, 302, and 502. Allowable operating hours and the corresponding record keeping in Reg. 9-8-330 and 530 will be included in the Permit Conditions below.

This diesel engine is subject to the Stationary Diesel Airborne Toxics Control Measure (ATCM) and is considered new stationary emergency standby diesel engine since it will be installed after January 1, 2005 and is larger than 50 HP. The requirements of the ATCM will be included in the permit conditions.

The project is considered to be ministerial under the District's CEQA 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 emissions factors outlined in the Permit Handbook Chapter 2.3.1 and therefore is not discretionary as defined by CEQA.

The project is over 1000 feet from the nearest school and therefore not subject to the public notification requirements of Reg. 2-1-412.

**Best Available Control Technology:**

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, NO<sub>x</sub>, CO, SO<sub>2</sub> or PM<sub>10</sub>.

Based on the emission calculations above, the owner/operator of S-7539 is subject to BACT for the following pollutants: NO<sub>x</sub>, and CO. BACT 1 levels do not apply for 'engines used exclusively for emergency use during involuntary loss of power' as per Reference b, Document 96.1.2 of the BAAQMD BACT Guidelines for IC Engines. Hence, the owner/operator has to meet BACT 2 limits presented below.

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
NO <sub>x</sub>	1. 1.5 g/bhp-hr [107 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b,c</sup> 3. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ]	1. <i>Selective Catalytic Reduction (SCR) + Timing Retard + Turbocharger w/ Intercooler</i> <sup>a,b</sup> 2. <i>Timing Retard ≤ 4° + Turbocharger w/ Intercooler</i> <sup>a,b,c</sup> 3. <i>Timing Retard ≤ 4° + Turbocharger w/ Intercooler</i>
CO	1. n/s 2. 2.75 g/bhp-hr [319 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. <i>Catalytic Oxidation</i> <sup>b</sup> 2. <i>CARB or EPA (or equivalent) low-CO emitting certified engine</i> <sup>b,c</sup>
POC	1. 0.30 g/bhp-hr [62 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 1.5 g/bhp-hr [309 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. <i>Catalytic Oxidation and CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine</i> <sup>a,b</sup> 2. <i>CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine</i> <sup>b,c</sup>

The NO<sub>x</sub>, CO and POC emission limits set by BACT 2 are met, as shown in the table below.

Table (2)

Pollutant	Engine Emission Factors (g/hp-hr)	Emission Factor Limits as set by BACT 2 (g/hp-hr)	Have the limits been met?
NOx	2.55	6.9	YES
CO	1.64	2.75	YES

Therefore, S-7539 is determined to be in compliance with the BACT 2 limits for NOx and CO.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits or will be permitted to emit more than 10 tons/yr of POC or NOx. According to the Permitted Increase program in the District's Databank, Chevron Products is permitted to emit greater than 10 tons/yr of both POC and NOx. Therefore, offset requirements are triggered in this application.

Chevron will submit a banking certificate 617, in order to fully offset the emissions increases from this application. Banking Certificate 617 will be used to provide 0.0035 tons/yr of POC credits and 0.071 tons/yr of NOx credits.

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

The engine has a total displacement of 12.5 liters and 6 cylinders. So, each cylinder has a volume of less than 10 liters. The engines are 2007 model year and are not fire pumps. Section 60.4205(b) requires these engines to comply with the standards in Section 60.4202 that apply to the same model year and maximum engine power. For engines above 50 hp, below 3000 hp, and that have a displacement less than 10 liters per cylinder, the requirement is to comply with the certification standards in 40 CFR 89.112 and 89.113 for all pollutants.

For engines between 225 kW and 450 kW, the standards in Section 89.112 are:

- NMHC + NOX: 4.0 g/kW-hr
- CO: 3.5 g/kW-hr
- PM: 0.2 g/kW-hr

According to CARB Executive Order U-R-001-0306-1, the engine will comply with these standards.

Section 89.113 states that the exhaust opacity must not exceed:

- 20 percent during acceleration
- 15 percent during lugging
- 50 percent during peaks in acceleration or lugging modes

The engine has been certified by EPA and therefore will comply with the above standards.

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 requirement in Section 60.4211(e) to run for less than 100 hours per year per engine for maintenance checks and readiness testing, and the prohibition of running for any reason other than emergency operation, maintenance, and testing because the facility is limited by permit condition to 45 hours per year per engine 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/operator does not have to submit an initial notification to EPA for emergency engines.

Because the engine has a diesel particulate filter, it is subject to and expected to comply with Section 60.4214(c).

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.

For 2007 model year and later engines, Section 60.4211(c) requires that the owner/operator purchase an engine certified to the emissions standard in Section 60.4205(b), and install and configure the engine according to the manufacturer's specifications. Compliance with the requirement of purchasing a certified engine is expected since the Authority to Construct is only issued to the engines being evaluated and the engines meet the emissions standard in Section 60.4205(b) as discussed above.

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 maximum sulfur content of 500 parts per million (ppm), a cetane index of 40 or a maximum aromatic content of 35 volume percent. 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 maximum sulfur content of 15 parts per million (ppm), and the same cetane index or aromatic content. California Air Resource Board (CARB) Diesel Fuel, which has a maximum sulfur content of 15 ppm and a maximum aromatic content of 10 to 25 volume percent, will be used as agreed by the applicant. Staff in the Stationary Source Division of CARB indicates that some certified diesel fuel in California may have a maximum aromatic content greater than 10 percent if the fuel has been demonstrated to have an equal or greater emission benefit as diesel fuel with maximum aromatic content of 10 percent, but no certified fuel has had an aromatic content greater than 25 percent.

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

Incorporation of applicable requirements in 40 CFR 60, Subpart IIII into the standard permit condition is currently under management's consideration. If it is determined to be necessary to modify the standard condition, the modified condition will be issued to the applicant in the next permit renewal.

**NESHAP:** This engine is not subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, since this engine's output rating is less than 500 hp.

**PSD does not apply.**

### **PERMIT CONDITIONS**

Conditions for S-7539:

Create a new condition number for the following:

1. The owner/operator of S-7539 shall abate S-7539 (emergency standby engine) by the properly maintained and operated A-7539 (diesel particulate filter) during all periods of operation. [Basis: "ATCM for Stationary Compression Ignition Engines" Section 93115.6(a)(3), title 17, CA Code of Regulations]

2. The owner/operator of S-7539 shall install and maintain a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached at S-7539. The owner/operator shall maintain records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached in a District-approved log for at least 60 months from the date of entry.

[Basis: "ATCM for Stationary Compression Ignition Engines" Section 93115.10(e), title 17, CA Code of Regulations; 40 CFR 60.4214(c)]

3. The owner/operator of S-7539 shall use only ultra low sulfur diesel fuel in the S-7539 engine. (cumulative increase)

### Permit Condition Number 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 or 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 hours 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 or 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)]

**RECOMMENDATION**

Issue Authority to Construct to Chevron Products Company for:

**S-7539 Emergency Standby FCC Backup Air Compressor: Diesel Engine, 6 cylinder, Caterpillar, Model LGK07055, Model Year 2007, Rated 440 BHP; Abated by A-7539: Diesel Particulate Filter, Johnson Matthey CRT, DPF Particulate Trap.**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Greg Solomon  
Senior Air Quality Engineer

**EVALUATION REPORT**  
**CHEVRON PRODUCTS COMPANY**  
**PLANT NUMBER 10**  
**APPLICATION NUMBER 14486**

**Background**

Chevron Products Company (Chevron) is proposing to upgrade its sour gas system to reduce the corrosion and failure risk. The proposed upgrade includes installing new stainless steel piping and therefore affects the fugitive components at or between the following permitted sources:

**S-4252 TKN Isocraker**

**S-4253 TKC Plant**

**S-4348 H2 Recovery Plant**

*S-4435 NO. 4 H2S Plant*

Chevron indicated that the modifications would not de-bottleneck or result in an increase in throughput in upstream or downstream permitted sources. Therefore, no modifications will be made to the existing throughputs of any Chevron's permitted sources.

All fugitive components in the project are required to meet both BACT and the standards in Regulation 8-18. Originally, Chevron proposed to limit the POC emissions to be less than 10 pounds per highest day in order to avoid triggering BACT. The project would not be exempt from permit requirements per Regulation 2-1-180.21 since Regulation 8-18 allows for the emissions from this project to exceed 10 pounds/highest day. Chevron later decided to trigger and satisfy the BACT requirement in order to avoid both a permit condition limiting emissions to less than 10 pounds per highest day and the monitoring requirements in order to demonstrate compliance with that emissions limit. Chevron will accept a permit condition that requires it to demonstrate that emissions from components in hydrocarbon service will not exceed the permitted levels. In other words, if Chevron has a pegged leaker from any of these new components, it will provide an emissions estimate demonstrating both whether adequate offsets have been provided and if the proposed emissions limit has been exceeded.

Chevron requested relief from the monitoring associated with the pressure relief devices since these components are vented to the flare gas recovery system. The Permit Evaluation Manager agreed to this request for this project only since there are very few process drains being added. This issue will be reviewed further for other projects.

Furthermore, the H2S emissions based on the maximum concentrations in the process streams exceed the health risk screening trigger level in Regulation 2-5, and a health risk screening analysis is required.



During the review period, Chevron also argued that the stripped water line upstream to Scrubber 771 contains aqueous solution that has been distilled under high temperature and high pressure, so volatile organic compounds are not likely to present. Chevron has submitted the lab test report on a sample of this process stream, which shows that only one organic compound, 2-Methylphenol, was detected at a concentration of 5.75 ug/L. Because the initial boiling point of 2-Methylphenol is above 302 degree Fahrenheit, the fugitive components in the stripped water line upstream to Scrubber C-771 qualified for the limited exemption in Regulation 8-18-113, Initial Boiling Point, and therefore are not subject to the requirements in Regulation 8-18-400.

## **Emission Calculations**

The emissions associated with this project are POC emissions from all the new (including replaced) fugitive components.

The emission factors are derived from the Correlation Equation Method (Method 3) of the “California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities” prepared by the California Air Pollution Control Officers Association Engineering Managers Committee and the California Air Resources Board.

The screening values used in the correlation equations for each type of fugitive components are the allowable leak rates in Regulation 8-18, and are coherent to the current leak detection and repair program at Chevron.

Since Regulation 8-18 allows for certain percentage of non-repairable fugitive components (aka, pegged leakers) to exceed the screening values, the total emissions estimated for this project includes the emissions resulting from those non-repairable or parts not complying with the allowable leak rates.

Chevron also estimated that there would be 46 valves, 1 pump, and 28 flanges installed in the stripped water line upstream to Scrubber 771. Chevron has provided lab test data to demonstrate that the organic compound concentration in the stripped water is less than 1%. Because of the low concentration within the stripped water, the emissions from these fugitive components are unlikely to exceed the limits specified within Regulation 8-18 and therefore no emissions from non-repairable components are assumed for these fugitive components in the stripped water line upstream to Scrubber 771.

The total POC emissions for this project are estimated to be greater than 10.0 lb/highest day and 3073.27 lb/year (=1.537 tons/yr). This emissions estimate assumes approximately 1 pegged leaker ( $\leq 10,000$  ppm). The worst-case daily emissions estimate assumes compliance with Regulation 8-18, which allows for more than one component type to be a pegged leaker. The worst-case daily emissions estimate would exceed 10 pounds per highest day, which triggers

BACT. Chevron agreed to accept an emissions limit that corresponds to less than the emissions allowed per Regulation 8-18. Chevron will accept a permit condition that requires a district-approved emissions calculation to demonstrate compliance with the annual emissions limit only when there is one or more pegged leaker(s) from this project. Please refer to Attachment A for detailed calculations.

### **Plant Cumulative Increase (tons per year)**

$$\text{POC} = 1.537 \text{ tpy (new)} - 1.537(1.15)(\text{offsets}) = 0.0 \text{ tpy}$$

### **Toxic Risk Screening**

The Hydrogen Sulfide emissions based on the maximum concentrations in the process streams are estimated to be 743 pounds per year. Because it exceeds the respective trigger level (390 lb/yr), a health risk screening analysis was performed for this application. The maximum incremental cancer risk is estimated to be 0.0005 in a million, the chronic hazard index is 0.0007, and the acute hazard index is 0.05. After the analysis was performed, Chevron has refined the fugitive component count estimation and the POC emission calculation method has also been modified. The revised maximum H<sub>2</sub>S emission estimate is 3714 pounds per year, which is about 5 times the previous estimated value used in the risk analysis. Since the health risks are directly proportional to the emissions, a 5-fold increase in emission will result in a 5-fold increase in the health risks. The revised maximum incremental cancer risk is estimated to be 0.0025 in a million, the chronic hazard index is 0.0035, and the acute hazard index is 0.25. These risk levels are less than 1 in a million in cancer risk, 0.2 in chronic hazard index, and 1.0 in acute hazard index, and therefore the risk levels from this project are considered acceptable in accordance with the District's Regulation 2-5.

### **Statement of Compliance**

All fugitive components involved in this project are subject to Regulation 8-18. Chevron is expected to comply with the allowable leak rates in Regulation 8-18-302, 303, 304, and 305 the non-repairable equipment requirement in Regulation 8-18-306. To comply with Regulation 8-18 regarding equipment leaks, Chevron stated that it has an LDAR (Leak Detection And Repair) program that will ensure continued compliance with this rule.

Fugitive components in the stripped water line upstream to Scrubber 771 are exempt from the inspection and identification (LDAR) requirements in Regulation 8-18-400 since the process stream qualifies for the limited exemption in Regulation 8-18-113, Initial Boiling Point. Emissions from these components will not be included in the annual permitted emissions limit since these components are not included within the

LDAR program. Chevron has raised the issue that these components should not be subject to Regulation 8-18 entirely because the organic concentration within the stripped water is less than 1%. However, Regulation 8-18 does not specify an organic concentration limit that exempts fugitive components handling such liquid streams. District staff in the Engineering, Enforcement, and Rule Development Section has started to review this issue further. At this time, since a policy decision has not been finalized, these components are subject to all other requirements in Regulation 8-18.

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 3.4.

***BACT (Best Available Control Technology):***

This application will trigger BACT since the maximum daily permitted emissions will be greater than 10 pounds POC per highest day. Chevron has agreed to install BACT complying components, BACT concentration limits, and monitoring consistent with a BACT level. BACT level monitoring is quarterly for valves and biannual (2x per year) for connectors and flanges. Chevron requested relief from monitoring the 5 pressure relief devices and district management agreed with the request for this application only.

***Offsets:***

Chevron is required to provide POC offset credits at a 1.15 to 1.0 ratio for this project since the facility emissions are greater than 35 tons of POC per year. This application requires 1.766 tons per year of POC offset credits. The offset amount corresponds to emissions estimated for all fugitive components including the ones installed in the stripped water line upstream to Scrubber 771. Chevron has agreed to use Banking Certificate # 584 and # 617 from the refinery to provide the offset credits.

***NSPS (New Source Performance Standard):***

Fugitive components at Chevron are subject to 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries. In this subpart, the leak standards are 500 ppm or more. Since the allowable leak rates in the District Regulation 8-18 are 500 ppm or less, the project is also expected to comply with the standards in Subpart GGGa

NESHAPS and PSD do not apply to this application.

**Permit Conditions**

This project will be subject to Permit Condition Number 24433 listed below. The annual emission limit in Part 9 of this condition excludes the emissions associated with the fugitive components installed in the stripped water line upstream to Scrubber 771 since these components are exempt from the

inspection and identification (LDAR) requirements in Regulation 8-18-400. Therefore, this limit is different than the amount of offset credits submitted, as indicated in Part 3. Chevron is required to provide offset credits for the entire project, including emissions associated with the fugitive components installed in the stripped water line upstream to Scrubber 771.

Application 14486 Proposed Conditions with BACT

1. Within 30 days of District's issuance of the Permit to Operate for Application 14886 or the completion of the sour gas pipeline upgrade project at or between S-4252, S-4253, S-4348, and S-4435, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes in this project. The owner/operator has been permitted to install the following fugitive components:

- 154 valves in hydrocarbon service;
- 5 pressure relief valves in hydrocarbon service;
- 257 flanges in hydrocarbon service;
- 46 valves in stripped water service;
- 1 pump in stripped water service;
- 28 flanges in stripped water service.

[Basis: Cumulative Increase, offsets, Regulation 2-5]

2. If any of the fugitive component counts exceed a count stated in Part 1, the plant's cumulative emissions for the project shall be adjusted, subject to APCO approval, to reflect the difference between emissions based on predicted versus actual component counts. The Owner/Operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 21 days after submittal of the final POC fugitive count. The Owner/Operator submitted 1.766 tons per year of POC offset credits corresponding to the component counts in Part 1. If the actual component count is less than the predicted, the total emissions in Part 2 may be adjusted accordingly, subject to APCO approval, and all emission offsets applied by the owner/operator in excess of the fully offset permitted total POC emissions may be credited back to the owner/operator upon approval by the APCO.

[Basis: offsets]

3. The Owner/Operator shall as part of the sour gas pipeline upgrade project install only the following types of valves in hydrocarbon service: (1) bellows sealed, (2) live loaded, (3) graphitic packed, (4) quarter-turn (e.g., ball valves or plug valves), or equivalent as determined by the APCO.

[Basis: BACT]

4. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed as part of the sour gas pipeline upgrade

project in hydrocarbon service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: BACT, Regulation 8 Rule 18]

5. The Owner/Operator shall install graphitic-based gaskets, metal ring joints, or equivalent technology as determined by the APCO on all flanges or connectors installed as part of the sour gas pipeline upgrade project in hydrocarbon service.  
[Basis: BACT]

6. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed as part of the sour gas pipeline upgrade project in hydrocarbon service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: BACT, Regulation 8 Rule 18]

7. The Owner/Operator shall vent all pressure relief devices installed as part of the sour gas pipeline upgrade project in hydrocarbon service to a flare gas recovery system with a recovery and/or destruction efficiency of at least 98% by weight.  
[Basis: BACT]

8. The Owner/Operator shall conduct inspections of fugitive components installed as part of the sour gas pipeline upgrade project in hydrocarbon service in accordance with the frequency below:

Valves: Quarterly  
Connectors (Not Flanges): Biannual  
Flanges: Biannual

[Basis: BACT, Regulations 8 Rule 18]

9. The Owner/Operator shall not exceed 1.450 tons of POC emissions per consecutive 365-day period measured as C1 from for all fugitive components installed as part of the sour gas pipeline upgrade project in hydrocarbon service. Compliance with this provision shall be verified quarterly using methods described in part 10. The results shall be submitted to the District within 30 days of the close of each calendar quarter after the completion of the sour gas pipeline upgrade project or the District's issuance of the Permit to Operate for Application 14486.  
[Basis: Cumulative Increase, offsets]

10. If none of the fugitive components installed as part of the sour gas pipeline upgrade project in hydrocarbon service are leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. For any calendar quarter in which one or more of these components is leaking at a rate equal to or

greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all sour gas pipeline upgrade project fugitive components in hydrocarbon service utilizing District approved methods for the consecutive 12 month period ending with this quarter. For leaking components the owner/operator shall use the modified trapezoidal method and LeakDAS as documented within the application 12842 or other method pre-approved by the District. The Owner/Operator shall include emissions estimates from all sour gas pipeline upgrade project fugitive components in hydrocarbon service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 9.  
[Basis: Cumulative Increase, BACT, Offsets]

11. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts of the sour gas pipeline upgrade project, each component's unique permanent identification codes, monitoring results, and any annual emissions estimates required per parts 9 and 10 for at least five years from date of entry. The log shall be retained on site and made available to district staff upon request.  
[Basis: offsets, recordkeeping]

### **Recommendation**

[Grant an Authority to Construct to Chevron for installing fugitive components at or between the following permitted sources:](#)

- S-4252 TKN Isocraker**
- S-4253 TKC Plant**
- S-4348 H2 Recovery Plant**
- S-4435 NO. 4 H2S Plant**

by \_\_\_\_\_ date \_\_\_\_\_  
Xuna Cai  
Air Quality Engineer

# Appendix A

## Emission Calculations for Application 14486

	Unit	Valve	Pump	Connectors	Flange	Pressure Relief Valve	Total
<b>Reg. 8-18 Screening Value (SV)</b>	ppm	100	500	100	100	500	
<b>POC emission factor using correlation equation at Reg. 8-18 SV</b>	kg/hr	0.0001	0.0024	0.0000	0.0001	0.0005	
	lb/hr	0.0002	0.0053	0.0001	0.0003	0.0010	
	lb/day	0.0037	0.1280	0.0024	0.0062	0.0248	
<b>Total Number of Components</b>		200	1	0	285	5	
<b>Number of Components in the stripped water line</b>		46	1		28	0	
<b>POC correlation equation emission factor for SV ≥ 10,000 ppmv</b>	kg/hr	0.0640	0.0890	0.0300	0.0950	0.0820	
	lb/hr	0.1411	0.1962	0.0661	0.2094	0.1807	
	lb/day	3.3853	4.7077	1.5869	5.0251	4.3375	
<b>Non-repairable Component allowed per Reg. 8-18</b>		1.00	0.00	0.00	1.00	1.00	
<b>Permitted Daily Emission</b>	lb/day	2.313	0.128	0.000	5.638	0.341	8.420
<b>Permitted Annual Emission</b>	lb/yr	844.254	46.718	0.000	2057.807	124.495	3073.274
<b>Daily Emission per 8-18</b>	lb/day	4.134	0.128	0.000	6.789	4.462	15.513
<b>Annual Emission per 8-18</b>	lb/yr	1509.034	46.718	0.000	2477.832	1628.513	5662.097
<b>Annual Emission for components in the stripped water line assuming no pegged leakers</b>	lb/yr	62.878	46.718	0.000	63.237	0.000	172.833
<b>Permitted Annual Emission excluding components in the stripped water line</b>	lb/yr	781.375	0.000	0.000	1994.570	124.495	2900.441
<b>Annual Emission per 8-18 excluding components in the stripped water line</b>	lb/yr	1446.155	0.000	0.000	2414.595	1628.513	5489.264

**ENGINEERING EVALUATION  
CHEVRON PRODUCTS COMPANY  
PLANT NO. 10  
APPLICATION NO. 19354**

**BACKGROUND**

Chevron Products Company is applying for change in conditions for the following equipment at its facility located in Richmond:

**S-7515 Emergency Standby Stormwater Pump P-351A: Diesel Engine, Caterpillar, Model 3412, Model Year 1990, Rated 624 BHP**

**S-7516 Emergency Standby Stormwater Pump P-351B: Diesel Engine, Caterpillar, Model 3412, Model Year 1990, Rated 624 BHP**

The change in conditions is being proposed to comply with the ATCM, which requires that diesel engines not exceed 20 hours per year for reliability-related testing.

**EMISSIONS SUMMARY**

There will be no increase in emissions as a result of this application.

**Toxic Risk Screening:**

This application will not require a Health Risk Screening Analysis since the toxic emissions will not be increasing as a result of this application.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-7515/6 shall comply with Reg. 6-1 (Particulate Matter and Visible Emissions Standards) and Reg. 9-1-301 (Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentrations). Since these engine meet TBACT for PM<sub>10</sub> (<0.15 g/hp-hr), it is expected to comply with Reg. 6-1. Ultra-low sulfur diesel (15 PPM sulfur) will be used to meet the sulfur limitation of 0.5 wt% in Reg. 9-1-304 as well as to minimize PM<sub>10</sub> emissions. Because the engines are emergency standby generators, Reg. 9-8-110 (Inorganic Gaseous Pollutants: Nitrogen Oxides from Stationary Internal Combustion Engines) exempts the requirements for emission limits of Sections 9-8-301, 302, and 502. Allowable operating hours and the corresponding record keeping in Reg. 9-8-330 and 530 will be included in the Permit Conditions below.

This diesel engine is subject to the Stationary Diesel Airborne Toxics Control Measure (ATCM) and is considered new stationary emergency standby diesel engine since it will be installed after January 1, 2005 and is larger than 50 HP. The requirements of the ATCM will be included in the permit conditions.

The project is considered to be ministerial under the District's CEQA 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 emissions factors outlined in the Permit Handbook Chapter 2.3.1 and therefore is not discretionary as defined by CEQA.



The project is over 1000 feet from the nearest school and therefore not subject to the public notification requirements of Reg. 2-1-412.

**Best Available Control Technology/Offsets:**

This application will not trigger BACT/Offsets since emissions will not be increasing as a result of this application.

**NSPS:** The engine is not subject to 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because the engine was not constructed, modified, or reconstructed after July 11, 2005.

**NESHAP:** This engine is not subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, since 40 CFR Part 63, Section 6590 paragraph (b)(3)"A stationary RICE which is ... an existing emergency stationary RICE.. does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary."

**PSD does not apply.**

**PERMIT CONDITIONS**

Conditions for S-7515/6:

COND# 22820 -----

1. The owner/operator shall not exceed 20 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)]

## **RECOMMENDATION**

Issue a Change in Conditions to Chevron Products Company for:

**S-7515 Emergency Standby Stormwater Pump P-351A: Diesel Engine, Caterpillar,  
Model 3412, Model Year 1990, Rated 624 BHP**

**S-7516 Emergency Standby Stormwater Pump P-351B: Diesel Engine, Caterpillar,  
Model 3412, Model Year 1990, Rated 624 BHP**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Greg Solomon  
Senior Air Quality Engineer

# EVALUATION REPORT

## Chevron Products Co., Plant #10

### Application Number 18960

#### Background

Chevron is requesting a change in conditions for A-260 and A-261 Hydrogen Plant De-Aerator Methanol Scrubbers abating Hydrogen Plant, S-4250 at its refinery located in Richmond. S-4250 serves S-4233 Jet Hydrotreater, S-4234 Naphtha Hydrotreater, S-4235 Diesel Hydrotreater, S-4252 TKN Isomax, S-4253 TKC, S-4282 Penhex, S-4340 RLOP LNC, S-4341 RLOP LNHF, S-4342 RLOP HNC, S-4343 RLOP HNHF, and S-4348 Hydrogen Recovery Plant. Previously, in Application 10158 Chevron changed the catalyst in order to reduce emissions and allow for an increase in throughput at S-4250. Chevron is requesting that the washwater temperature be increased from 80F to 90F. The efficiency of the scrubber will drop by approximately 50% when temperatures increase beyond 80F. Chevron was cited for exceeding this temperature limit about a year ago. At the Hearing, Chevron claimed that it had no control over the temperature of the water that it receives from EBMUD. However, the water travels to the facility underground and once at the facility travels 1.5 miles above ground in a black pipe. I asked Chevron if it would merely paint the pipe white. Chevron stated that it could not paint the pipe because of its texture. Chevron did not provide any information regarding the water temperature of the water from the underground EBMUD pipe.

Chevron's position is that since the emissions from the vents of these two Scrubbers were originally permitted to emit 6.6 pounds per day combined and that it can accept this emissions level as a permit condition with a monitoring and recording requirement. The 6.6 pounds per day plus 8.3 pounds per day from the drain kept the organic compound emissions less than 15 pounds per day as required per 8-2. The monitoring will be an annual source test, a daily emissions calculation, and recordkeeping. It is worth noting that Chevron/Praxair has received an Authority to Construct a new Hydrogen Plant so this equipment should not be around for too many more years.

The catalyst change made within application 10158 at the A-train of S-4250 Hydrogen Plant is estimated to have reduced methanol emissions of that train by 80 – 90% by weight. A Shift Converter catalyst that generates less methanol became available in the late 1990s. Chevron switched to a low-methanol type the catalyst in the B train in the late 1990s and the district conducted a source test that demonstrated that methanol emissions were reduced through the use of the new catalyst.

#### Emission Calculations

This application is not expected to increase emissions beyond permitted levels and Chevron will be accepting an emissions limit with monitoring and recordkeeping.

## **Plant Cumulative Increase**

The Plant Cumulative Increase is not expected to increase as a result of this application.

## **Toxic Risk Screening Analysis**

A toxic risk screening analysis is not required for this application since no emissions increases are expected.

## **Statement of Compliance**

S-4250 will continue to comply with Regulation 8-2-301, which requires that emissions not exceed 15 pounds per day and 300 ppm total carbon on a dry basis.

This application will not trigger BACT since the permitted emissions will not be exceeding permitted levels.

This application will not require offsets since this application will not result in an increase in permitted emissions.

PSD does not apply to this application.

The District has determined that the CEQA categorical exemption of Section 2-1-312.11 of the District Rules and Regulations and the CEQA "Common Sense Exemption" apply.

CEQA Categorical Exemptions and CEQA "Common Sense Exemption":

Though the District concludes that the project is ministerial, it also concludes that, even if it were not ministerial, certain other exemptions from CEQA apply (see CEQA Guidelines § 15300.1). Section 2-1-312 of the District Rules and Regulations sets forth specific types of projects, which have been determined by the District to be categorically exempt from CEQA.

Per Section 2-1-312.11, in addition to ministerial projects, permit applications for a new or modified source or sources or for process changes, which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2 and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality, are exempt from the CEQA review. The reason for this exemption should be apparent on its face: if a facility is given legal permission to emit more air pollutants from certain points while at the same time being disallowed permission for an equivalent amount of the same type of emissions from other points at the facility, then there is deemed to be no net effect on the

air environment, and therefore no possibility of a significant effect under CEQA, provided no-air impacts are also examined and deemed to be of no possible significant consequence.

Also, per the CEQA Guidelines in Title 14, California Code of Regulations, Chapter 3, Article 5, Section 15061(b)(3), a project is exempt from CEQA if the activity is covered by the general rule that CEQA applies only to projects, which have the potential for causing a significant effect on the environment. This is commonly known as the "Common Sense Exemption". Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The "no net increase" exemption of 2-1-312.11 is essentially a specific, codified, instance of the Common Sense Exemption.

For this permit application, the District determined that the project will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2. Chevron has completed and submitted to the District CEQA Appendix H, Environmental Information Form, for the project.

The District has reviewed the CEQA Appendix H form from Chevron dated 11/13/08. Chevron only checked "yes" for the items regarding "Site on filled land or on slope of 10 percent or more." All other items on the form were checked "no". In the November 21, 2008 letter to the District, Chevron explained that the existing plant area is nearly flat and is much less than 10% sloped. The entire site of the existing plant is on hydraulic and engineered fill from the 1960's and earlier. No new areas will be filled. Also, no grading is planned for this project.

Based on all of the information before the District and the District's review of the information submitted, the District has determined that there is no possibility that the project may have any significant environmental effect.

The District finds these assertions and arguments to be credible. Thus, the District concludes that the permit application is exempt from CEQA because it is ministerial, it is categorically exempt from CEQA, and the project qualifies for the "Common Sense Exemption" of Subsection (b)(3) of the State CEQA Guidelines.

The District has considered whether this project is part of a larger project for CEQA purposes, and has concluded that it is not. Although other Chevron refinery permitting applications have been acted on or are currently pending before the District, the project is not necessarily linked to any of these. Specifically, completion of the project is not necessary in order for Chevron to proceed with other permit applications, nor is the project a foreseeable consequence of other permit applications.

On a general level, the stated purpose of the project is to increase the allowed wash water temperature to the scrubbers without an increase in permitted

emissions. This purpose does not imply any necessary relationship to other projects, in the sense of being prerequisite to other projects or a foreseeable consequence of them.

## Recommendation

Recommend that a Change in Conditions be granted for the following altered equipment:

S-4250 Hydrogen Manufacturing Plant equipped with low-methanol type Catalyst for Train A/B abated by A-260 and A-261 Hydrogen Plant De-Aerator Methanol Scrubbers

## Conditions

COND# 15698 -----

Conditions for A-261 and A-262:

- 1) The owner/operator of A-261 and A-262 shall not exceed a washwater temperature of 90 degrees Fahrenheit during any consecutive 3-hour period. The owner/operator of A-261 and A-262 shall not exceed 6.6 pounds per day of organic compound emissions (measured as C1) combined from the vents of both A-261 and A-262. (cumulative increase and Regulation 8, Rule 2, cumulative increase)
- 2) Each Hydrogen Plant De-Aerator Vent shall not have a vent flow above 5000 pounds per hour during any 3-hour averaging period. (Basis: Regulation 8, Rule 2)
- 3) Washwater flow in each scrubber (A-261 and A-262) shall not average less than 30 gallons per minute during any 3-hour averaging period. (Basis: Regulation 8, Rule 2)
- 4) For each scrubber (A-261 and A-262), the ratio of washwater to De-aerator vent flow shall not be less than 11.6 gallon/minute for each 1000 pounds/hour of De-aerator vent flow during any 3-hour averaging period. (Basis: Regulation 8, Rule 2)
- 5) The parametric condition limits above shall not apply during the 72 hour periods preceding and following any Hydrogen Plant shutdown. (Basis: startup/shutdown allowance)
- 6) These parametric limits may be adjusted administratively, if District-approved data demonstrate to the satisfaction of the APCO that alternative parametric conditions are necessary for or capable of maintaining compliance with the emission limits of Regulation 8, Rule 2 as determined by the designated

method, or by a District-approved equivalent. (Basis: Regulation 8, Rule 2)

7) The owner/operator of A-261 and/or A-262, water scrubbers, shall abate the emissions from the Hydrogen Plant De-Aerator vents, whenever they are emitting methanol. One scrubber may be used to abate the De-Aerator vents from both the Hydrogen Plant Trains unless the temperature of the washwater exceeds 80 degrees Fahrenheit, during which time both scrubbers shall be used unless only one train is in operation, in which case one scrubber shall be required. (Basis: Regulation 8, Rule 2, cumulative increase)

8) To determine compliance with Regulation 8-2-301 and part 1, the owner/operator of A-261 and A-262 shall conduct district approved source test on each scrubber vent annually in the month of September. The test method shall be the test method specified in Regulation 8, Rule 2, or a District-approved equivalent.

Compliance with the 15 lb/day organics emission limit of Regulation 8-2-301 shall be determined based on the sum of the average source tested emission rates from the scrubber vents plus the District-approved calculated scrubber drain emission rate of 8.3 lb/day organics (as carbon) or an alternate District-approved scrubber drain emission rate which is less than 8.3 lb/day organics (as carbon). The owner/operator shall demonstrate compliance with the emissions rate in part 1 based on the district-approved source test emission rate from the combined A-261 and A-262 scrubber vents, which shall require an adjustment for efficiency based on the temperature washwater during the source test and the permitted washwater temperature.

The Permit Holder shall notify the Manager of the District's Source Test Section at least seven days prior to the test, to provide the District staff the option of observing the testing. Within 45 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition.

(Basis: Regulation 2-1-403 and Regulation 8, Rule 2, cumulative increase)

9) To demonstrate compliance with the above conditions, Permit Holder shall keep the following records on site and made available for District staff for a period of 5 years from the date on which a record is made. These records may be in the form of computer generated reports which are available to District personnel on short notice (rather than actual paper copies of throughput data). The parametric measurements mentioned



above, 3-hour average temperature records, the hours and date of any Hydrogen Plant shutdowns, district-approved emissions data and calculations in pounds per day (as C1), and all source test records.

(Basis: Regulation 8,  
Rule 2, cumulative increase, recordkeeping)

- 10) Chevron shall provide Emission Reduction Credits in the amount of 1.39 tons per year of Precursor Organic Compounds for this project to install their Hydrogen Plant De-Aerator Vents (Permit Application Number 18529). The credits shall be provided to the District at least 30 days prior to the date of Plant #10's annual plant permit renewal. (Basis: Emission Offsets)

Conditions for S-4393

- 1) Upon receipt of a violation notice of Regulation 1-301, Standard for Public Nuisance, or Regulation 7, Odorous Substances, resulting from operation of S-4393, Bioreactor, the Air Pollution Control Officer may require the Permit Holder to:
  - a. Make a concerted effort to identify and correct the cause of the violation in as prompt a manner as possible.
  - b. Add deodorant to reduce the nuisance or odors from S-4393.
  - c. Optimize the bioreactor aeration flowrate to minimize the nuisance or odors from S-4393.(Basis: Regulation 1-301, 7-301, 7-302, 7-303)

**EVALUATION REPORT  
Chevron Products Co., Plant #10  
Application Number 20760**

**Background**

Chevron Products Co. (Chevron) is proposing to install a new S-4365 Chemical Tote, 400 gallon capacity storing only materials with less than 0.5 psia vapor pressure, at its refinery located in Richmond. The tank will be used to store Tri-Act 1825 only and this material has a true vapor pressure less than 0.5 psia. The emission calculation was performed using EPA's AP42 Chapter 7.

**Emission Calculations**

S-4365 External Floating Roof Storage Tank

Chevron submitted an emissions estimate using AP42 Chapter 7. (See attached)

POC: 10.34 #/y, 0.005 tpy

**Plant Cumulative Increase**

POC: 0.005 tpy – 0.006 tpy (offsets) = 0.0 tpy

**Toxic Risk Screening Analysis**

<u>TOXIC</u>	<u>EMISSION RATE</u>	<u>TRIGGER LEVEL</u>
cyclohexylamine		N/A
diethylethanolamine		N/A
morpholine		N/A

A toxic risk analysis is not required for this application since the toxic emissions did not have respective trigger levels.

**Statement of Compliance**

This application will comply with Regulation 8-5-117, which is a limited exemption for tanks storing materials with a vapor pressure less than or equal to 0.5 psia. The source will comply with Regulation 8-5-307.3, which requires that the tank be maintained vapor tight if it is pressurized or blanketed with organic gases other than natural gas. This tank will not be pressurized or blanketed.

This application will not trigger BACT since the increase in emissions will be less than 10 pounds per highest day.

This application will require POC offsets since the facility emissions are greater than 50 tons per year. This application requires 0.006 tons per year of POC offsets.

This application is considered ministerial since this source category is covered in Permit Handbook Chapter 4.1.

A toxic risk analysis is not required for this application since the toxic emissions did not have respective trigger levels.

NSPS subpart Kb does not apply to this tank since it is less than 75 cubic meters.

PSD and NESHAPS do not apply to this application.

### **Recommendation**

Recommend that the following equipment be granted an Authority to Construct:

**S-4365 Chemical Tote, 400 gallon capacity, storing only materials with a true vapor pressure less than or equal to 0.5psia**

### **Conditions**

1. The owner/operator of S-4365 shall not exceed 3000 gallons of Tri-Act 1825 in any consecutive 12 month period. (cum inc)
2. The owner/operator of S-4365 shall only store materials with a true vapor pressure not to exceed 0.5 psia. (8-5-117 and cum inc)
3. The owner/operator of S-4365 shall maintain a district approved monthly log of all material throughput and vapor pressure at S-4365. This log shall be kept on site for at least 5 years from the date of entry and made available to district staff upon request. (record keeping)

by \_\_\_\_\_ date \_\_\_\_\_  
Gregory Solomon  
Senior Air Quality Engineer

**Evaluation Report  
A/N 19757  
G# 7609 (Plant 10, Source 9304)  
Chevron Refinery, Richmond**

**Background**

Chevron has applied for an A/C to replace the Phase II vapor recovery on the existing GDF at the Richmond refinery with an EVR certified Phase II system. No other work is proposed under this application.

Chevron currently operates a 20,000 gallon underground gasoline tank with two EW A4005 gasoline nozzles equipped with Phil Tite EVR Phase I and balance Phase II vapor recovery. This equipment is permitted as Source 9304 at Plant 10 and is subject to condition #7880, which limits annual gasoline throughput to 500,000 gallons per year and #18680, the standard operating and testing condition for the Phil-Tite Phase I equipment.

Proposed Phase II equipment consists of the Healy EVR Phase II system with the Clear Air Separator (CAS) pursuant to CARB Executive Order VR-201. ISD controls have not been proposed.

**Emissions**

No change in permitted throughput has been requested.

As the EVR Phase II equipment is certified to slightly more stringent standards than the existing balance Phase II vapor recovery equipment, there should be no increase in emissions per unit throughput.

The net emission increase under this A/N will be zero.

**Statement of Compliance**

As there will be no net emissions increase from this project, this application is not subject to the BACT and offset requirements of Regulation 2, Rule 2.

The proposed Healy EVR Phase II equipment is certified under VR-201. Plans submitted with this application verify that the installation will satisfy the requirements of this Executive order:

- The vapor return piping does not include any vapor pots or condensate traps.
- The separator will be located properly within 100' of the vents.
- Piping connecting the CAS to the vent will be sloped away from the CAS.
- The dispenser will be equipped with a Healy 900 nozzle and Healy Vapor pump

ISD equipment will not be installed. This GDF is conditioned to less than 600,000 gal/yr and is not subject to ISD requirements.

Use of CARB certified equipment satisfies all requirements of District Regulation 8, Rule 7.

### Permit Conditions

*Authority to Construct Conditions:*

#### **Cond #24294**

1. The Healy EVR Phase II Vapor Recovery System without ISD, including all associated underground plumbing, shall be installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order **VR-201**. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.
2. Only CARB-certified EVR Phase I vapor recovery systems shall be used in conjunction with the Healy EVR Phase II Vapor Recovery System without ISD.
3. The owner/operator of the facility shall maintain records in accordance with the following requirements. Records shall be maintained on site and made available for inspection for a period of 24 months from the date the record is made.
  - a. Monthly throughput of gasoline pumped, summarized on an annual basis
  - b. A record of all testing and maintenance as required by E.O. VR-201, Exhibit 2. The records shall include the maintenance or test date, repair date to correct test failure, maintenance or test performed, affiliation, telephone number, name and Certified Technician Identification Number of individual conducting maintenance or test.
4. All applicable components shall be maintained to be leak free and vapor tight. Leak Free, as per BAAQMD (District) Regulation 8-7-203, is a liquid leak of no greater than three drops per minute. Vapor Tight as defined in District Manual of Procedures, Volume IV, ST-30.
5. **Start-up notification:** applicant must contact the assigned Permit Engineer, listed in the correspondence section of this letter, by phone, by fax [(415) 749-4949], or in writing at least three days before the initial operation of the equipment is to take place. Operation includes any start-up of the source for testing or other purposes. Operation of equipment without notification being submitted to the District, may result in enforcement action. **Please do not send start-up notifications to the Air Pollution Control Officer.**
6. The following performance test shall be successfully conducted at least ten (10) days, but no more than thirty (30) days after start-up. For the purpose of compliance with this Condition, all tests shall be conducted after back-filling, paving, and installation of all required Phase I and Phase II components:
  - a. **Vapor-to-Liquid Test in accordance with E.O. VR-201, Exhibit 5. The vapor-to-liquid ratio shall be between 0.95 and 1.15 when measured at dispensing rates between 6 and 10 gallons per minute. NOTE: For start up testing ONLY, two gallons of liquid gasoline must be introduced down each dispenser riser prior to the test.**
  - b. **Healy Clean Air Separator Static Pressure Performance test in accordance with E.O. VR-201, Ex. 4.**
  - c. **Static Pressure Performance Test, in accordance with CARB Test Procedure TP-201.3 (3/17/99). If the tank size is 500 gallons or less, the test shall be performed on an empty tank.**
  - d. **Nozzle Bag Test on all nozzles in accordance with E.O. VR-201, Ex. 7.**
7. The Healy EVR Phase II system without ISD shall be capable of demonstrating on-going compliance with the vapor integrity requirements of CARB Executive Order VR-201. The owner or operator shall

conduct and pass a **Static Pressure Decay Test**, a **Vapor-to-Liquid Test**, a **Healy Clean Air Separator Static Pressure Performance test** and **Nozzle Bag Tests on all nozzles** at least once in each 12-month period following successful completion of start-up testing. Tests shall be conducted using the above referenced test methods.

8. The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted in a District-approved format within thirty days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email ([gdfresults@baaqmd.gov](mailto:gdfresults@baaqmd.gov)), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).
9. The maximum length of the coaxial hose assembly, including breakaway, swivels, and whip hoses, shall be twenty (20) feet. The maximum allowable length of hose which may be in contact with the top of the island block or the ground shall be six (6) inches.
10. The dispensing rate shall not exceed ten (10.0) gallons per minute (gpm), nor be less than six (6.0) gpm with the trigger at the highest setting. Compliance with this condition shall be verified with only one nozzle in operation per product supply pump.
11. The Healy Clean Air Separator (HCAS) shall be located no more than 100 feet from the tank vent lines. The line connecting the HCAS shall slope down towards the vent lines at a minimum of 1/8" per linear foot. The Air Breather Assembly shall be a minimum of 12 feet above grade.
12. All ball valves shall be positioned for normal operation as shown in E.O. VR-201, Ex. 2 except when necessary for testing and maintenance.
13. The Healy EVR Phase II Vapor Recovery System without ISD shall be installed, operated, and maintained in accordance with the System Operating Manual approved by CARB.
14. No dispensing shall be allowed when a vapor collection pump is disabled for maintenance or for any other reason. Only those nozzles affected by the disabled vapor collection pump are subject to this condition.
15. Regardless of proposed work, all vapor return and vent lines shall be a minimum nominal internal diameter of 2 inches from the dispensers or vent stacks to the first manifold. All lines after the first manifold and back to the underground storage tanks shall have a minimum internal diameter of 3 inches. All lines shall slope down towards the lowest octane tank at a minimum of 1/8 inch per linear foot. Condensate traps or knock-out pots are prohibited.
16. For projects involving addition, replacement, or removal of more than 50% of the vapor return piping, the vapor return lines shall be manifolded below grade at the tanks. This is in addition to any manifolds at the dispensers or on the vent lines.
17. Each vent pipe shall be equipped with a CARB certified pressure/vacuum relief valve as required by the applicable Phase I E.O.. Plumbing may be manifolded to reduce the number of relief valves needed. The District recommends that vents be manifolded to a single relief valve whenever possible.
18. The inner diameter of the connector between the dispenser and the vapor return piping riser shall be 1".
19. The Healy EVR Phase II Vapor Recovery System without ISD shall be retrofitted with ISD controls as required by CARB.

*Permit to Operate Conditions*

COND# 7880 -----

Pursuant to BAAQMD Toxic Section policy, this facility's annual throughput shall not exceed 500,000 gallons in

any consecutive 12 month period.

COND# 18680

1. The Phil Tite EVR Phase I Vapor Recovery System, including all associated plumbing and components, shall be operated and maintained in accordance with the most recent version of California Air Resources Board (CARB) Executive Order VR-101. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.
2. The owner or operator shall conduct and pass a Rotatable Adaptor Torque Test (CARB Test Procedure TP201.1B) and either a Drop Tube/Drain Valve Assembly Leak Test (TP201.1C) or, if operating drop tube overflow prevention devices ("flapper valves"), a Drop Tube Overflow Prevention Device and Spill Container Drain Valve Leak Test (TP201.1D) at least once in each 36-month period. Measured leak rates of each component shall not exceed the levels specified in VR-101.

The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted within fifteen (15) days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email ([gdfresults@baaqmd.gov](mailto:gdfresults@baaqmd.gov)), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

COND# 22951

Permit Conditions for Healy EVR Phase II System w/o  
ISD per CARB E.O. VR-201

- 1) The Healy EVR Phase II Vapor Recovery System without ISD, including all associated underground plumbing, shall be installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order VR-201. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.

- 2) The owner/operator of the facility shall maintain records in accordance with the following requirements. Records shall be maintained on site and made available for inspection for a period of 24 months from the date the record is made.
  - a) Monthly throughput of gasoline pumped, summarized on an annual basis
  - b) All scheduled maintenance activities required under E.O. VR-201, Exhibit 2, Figure 2B-11
- 3) All applicable components shall be maintained to be leak free and vapor tight. Leak Free, as per BAAQMD (District) Regulation 8-7-203, is a liquid leak of no greater than three drops per minute. Vapor Tight as defined in District Manual of Procedures, Volume IV, ST-30.
- 4) The Healy EVR Phase II system shall be capable of demonstrating on-going compliance with the vapor integrity requirements of CARB Executive Order VR-201. The owner or operator shall conduct and pass the following tests at least once in each 12-month period following successful completion of start-up testing. Tests shall be conducted using the referenced test methods:
  - a) Vapor-to-Liquid Test in accordance with E.O. VR-201, Exhibit 5. The vapor-to-liquid ratio shall be between 0.95 and 1.15 when measured at dispensing rates between 6 and 10 gallons per minute.
  - b) Healy Clean Air Separator Static Pressure Performance test in accordance with E.O. VR-201, Ex. 4.
  - c) Static Pressure Performance Test, in accordance with CARB Test Procedure TP-201.3 (3/17/99). If the tank size is 500 gallons or less, the test shall be performed on an empty tank.
- 5) The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted within fifteen (15) days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results



may be submitted by email (gdfresults@baaqmd.gov), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

6) The maximum length of the coaxial hose assembly, including breakaway, swivels, and whip hoses, shall be twenty (20) feet. The maximum allowable length of hose which may be in contact with the top of the island block or the ground shall be six (6) inches.

7) The dispensing rate shall not exceed ten (10.0) gallons per minute (gpm), nor be less than six (6.0) gpm with the trigger at the highest setting. Compliance with this condition shall be verified with only one nozzle in operation per product supply pump.

8) All ball valves shall be positioned for normal operation as shown in E.O. VR-201, Ex. 2, Figs. 2B-5 through 2B-9 except when necessary for testing and maintenance.

9) The Healy EVR Phase II Vapor Recovery System without ISD shall be maintained in accordance with the System Operating Manual approved by CARB.

10) No dispensing shall be allowed when a vapor collection pump is disabled for maintenance or for any other reason. Only those nozzles affected by the disabled vapor collection pump are subject to this condition.

11) Permanent access to vacuum assist equipment shall be provided for the purpose of inspection and/or testing.

12) The Healy EVR Phase II Vapor Recovery System without ISD shall be retrofitted with ISD controls as required by CARB.

#### **Title V Permit Revisions**

This plant has a Title V permit. This project will require a minor revision of the Title V permit.

Proposed revisions to the Title V permit are attached.

#### **Recommendation**

All fees have been paid. Recommend that an A/C be issued for the above project.

By \_\_\_\_\_ date\_\_\_\_\_

Scott Owen  
Supervising AQ Engineer

**Table IV.B.2.1 Loading Terminals  
Source-specific Applicable Requirements**

**Gasoline**

**S-9304 Gasoline Dispensing Facility**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 8 Rule 7</b>	<b>Organic Compounds – Gasoline Dispensing Facilities (<del>11/17/99</del> <u>11/6/02</u>)</b>		
8-7-301	Phase I Requirements	Y	
8-7-301.1	Requirement for CARB Phase I System	Y	
8-7-301.2	Installation of Phase I Equipment per CARB Requirements	Y	
8-7-301.3	Submerged Fill Pipes	Y	
8-7-301.5	Maintenance of Phase I Equipment per Manufacturers Guidelines or CARB Executive Order	Y	
8-7-301.6	Leak-Free, Vapor-Tight	Y	
8-7-301.7	Poppeted Drybreaks	Y	
8-7-301.8	No Coaxial Phase I Systems on New and Modified Tanks	Y	
8-7-301.9	CARB-Certified Anti-Rotational Coupler or Swivel Adapter	Y	
8-7-301.10	System Vapor Recovery Rate	Y	
8-7-301.11	CARB-Certified Spill Box	Y	
8-7-301.12	Drain Valve Permanently Plugged	Y	
<u>8-7-301.13</u>	<u>Annual Leak Testin</u>	<u>Y</u>	
8-7-302	Phase II Requirements	Y	
8-7-302.1	Requirement for CARB Certified Phase II System	Y	
8-7-302.2	Maintenance of Phase II System per CARB Requirements	Y	
8-7-302.3	Maintenance of All Equipment as Specified by Manufacturer	Y	
8-7-302.4	Repair of Defective Parts Within 7 Days	Y	
8-7-302.5	Leak-Free, Vapor-Tight	Y	
8-7-302.6	Insertion Interlocks	Y	
8-7-302.7	Built-in Vapor Check Valve	Y	
8-7-302.8	Minimum Liquid Removal Rate	Y	
8-7-302.9	Coaxial Hose	Y	
8-7-302.10	Galvanized Piping or Flexible Tubing	Y	
8-7-302.11	ORVR Compatible	Y	
8-7-302.12	Liquid Retainment Limit	Y	
8-7-302.13	Spitting Limit	Y	
<u>8-7-302.14</u>	<u>Annual Back Pressure Test</u>	<u>Y</u>	
<u>8-7-302.15</u>	<u>Annual Vacuum Assist Testing</u>	<u>Y</u>	

**Table IV.B.2.1 Loading Terminals  
Source-specific Applicable Requirements**

**Gasoline**

**S-9304 Gasoline Dispensing Facility**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-7-303	Topping Off	Y	
8-7-304	Certification Requirements	Y	
8-7-306	Prohibition of Use	Y	
8-7-307	Posting of Operating Instructions	Y	
8-7-308	Operating Practices	Y	
8-7-309	Contingent Vapor Recovery Requirements	Y	
8-7-313	Requirements for New or Modified Phase II Installations	Y	
8-7-315	Pressure Vacuum Valve Requirement, Underground Storage Tank	Y	
8-7-401	Permit Requirements, New and Modified Installations	Y	
8-7-406	Testing Requirements, New and Modified Installations	Y	
<a href="#">8-7-407</a>	<a href="#">Periodic Testing Requirements</a>	<a href="#">Y</a>	
<a href="#">8-7-408</a>	<a href="#">Periodic Testing Notification and Submission Requirements</a>	<a href="#">Y</a>	
8-7-501	Burden of Proof	Y	
8-7-502	Right of Access	Y	
8-7-503	Record Keeping Requirements	Y	
8-7-503.1	Gasoline Dispensed Records	Y	
8-7-503.2	Dispensing Facility Maintenance Records	Y	
8-7-503.3	Dispensing Records Retention	Y	

**Table VII.B.2.1 Loading Terminals  
Applicable Limits and Compliance Monitoring Requirements**

**Gasoline**

**S-9304 Gasoline Dispensing Facility**

<b>Pollutant</b>	<b>Citation of Limit</b>	<b>FE Y/N</b>	<b>Future Effective Date</b>	<b>Limit</b>	<b>Monitoring Requirement Citation</b>	<b>Monitoring Frequency (P/C/N)</b>	<b>Monitoring Type</b>
VOC	BAAQMD Regulation 8-7-301.6 and 8-7-302.5	Y		Vapor recovery equipment shall be leak-free and vapor tight	BAAQMD Regulation 8-7-301.13	A	Vapor tightness test

**Table VII.B.2.1 Loading Terminals  
Applicable Limits and Compliance Monitoring Requirements**

**Gasoline**

**S-9304 Gasoline Dispensing Facility**

<b>Pollutant</b>	<b>Citation of Limit</b>	<b>FE Y/N</b>	<b>Future Effective Date</b>	<b>Limit</b>	<b>Monitoring Requirement Citation</b>	<b>Monitoring Frequency (P/C/N)</b>	<b>Monitoring Type</b>
VOC	8-7-301.10	N		98% or highest vapor recovery rate specified by CARB	Regulation 8-7-304 Regulation 8-7-503 <del>CARB State Executive Order G-70-138</del>	<del>P/6 months</del> N	Recordkeeping and CARB certification testing
VOC	None			None	BAAQMD Regulation 8-7-302.14	A	Backpressure test
<u>VOC</u>	<u>None</u>	<u>N</u>		<u>0.95 &lt; V/L &lt; 1.15</u>	<u>BAAQMD Regulation 8-7-302.15, CARB E.O. VR-201</u>	<u>A</u>	<u>V/L Test</u>
VOC	8-7-313.1	N		Fugitives ≤ 0.42 lb/1000 gallons dispensed	8-7-503	<del>NP/6 months</del>	Recordkeeping and CARB certification testing
VOC	8-7-313.2	N		Spillage ≤ 0.42 lb/1000 gallons dispensed	8-7-503	<del>NP/6 months</del>	Recordkeeping and CARB certification testing
VOC	8-7-313.3	N		Liquid Retain + Spitting ≤ 0.42 lb/1000 gallons dispensed	8-7-503	<del>P/6 months</del> N	Recordkeeping and CARB certification testing
	None	N		None	8-7-503	P/A	Recordkeeping
VOC	SIP 8-7-301.2	Y		95% recovery of gasoline vapors	8-7-503	<del>P/6 months</del> N	Recordkeeping and CARB certification testing–
Throughput	Condition 7880	N		Annual Throughput	None	N	N/A
	Condition 20666	N		Phase I Operating Conditions	Conditions 20666 Part 2	P/every three years	Torque and leak tests
	<u>Condition 22951</u>			<u>Phase II Operating Conditions</u>		<u>P/A</u>	<u>V/L test</u>

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 18646/7**

**Background**

Chevron Products Co. (Chevron) is proposing to change the NOx Box conditions (#21232) for its NOx Box Furnace S-4158 TKC Furnace, F-340, 48 MM Btu/hr maximum firing rate, HHV, at its refinery located in Richmond. This application requests an additional data point based on source test data for this source's NOx Box/polygon. Chevron submitted the source test results that support the requested NOx Box data point.

This application raised an interesting issue that may need to be addressed in the NOx Box policy and/or conditions. The NOx Box conditions state that the firing rates in MMBtu/hr and the oxygen content in weight percent are considered to be calendar day averages. The NOx Boxes have been populated using source test data, which does not correspond to calendar day averaging but a much shorter time period usually around 90 minutes. In most situations this is not a problem. However, in this situation the source tested firing rate exceeded the maximum design firing rate that is limited by permit condition, source description, and implied conditions based on information submitted on this furnace. Chevron insisted on using the source test data firing rate information in the NOx Boxes conditions but that would have made this a modified source since its capacity would be increasing beyond the capacity listed in both a permit condition and source description. If modified, the source would trigger BACT/offsets. Chevron agreed to accept the permit condition that would not exceed the existing permitted maximum limit. It seems that the policy should clarify that the district will use shorter term averaging time (source testing) with the exception not to exceed the daily maximum permitted limit or when establishing a permitted limit based on source testing the district will use the actual calendar day firing rates and oxygen contents to establish the NOx Boxes, or eliminate the reference in the NOx Box conditions that states that the firing rates and oxygen contents are considered to be calendar day averages since the data used to establish the NOx Boxes is based on a much shorter averaging time.

The Chevron Title V permit section VI will need to be changed to include the modified condition text for 21232.

**Emission Calculations**

No emission increases are expected as a result of this application.

**Plant Cumulative Increase**

There will be no increase in the Plant Cumulative Increase as a result of this application.

**Toxic Risk Screening Analysis**

A toxic risk analysis is not required for this application since the emissions are not expected to increase as a result of this application.

**Statement of Compliance**

This application will comply with Regulation 6-1-301, 305, and 310, which require that particulate emissions not exceed a Ringelmann 1.0, visible emissions not cause a public nuisance, and that particulate emissions not exceed 0.15 gr/dscf.

Chevron is expected to continue to comply with both Regulation 9-10 and NSPS subpart J. This source became subject to NSPS subpart J through the consent decree and is required to comply per permit condition #22923. Compliance with subpart J is achieved through continuous H2S monitoring of the fuel used and compliance with the 160 ppm (230 mg/dscm, 0.10 gr/dscf) H2S standard.

This application will not trigger BACT or offsets since there will be no increase in emissions as a result of this application.

This application is not subject to CEQA since the evaluation is a ministerial action outlined in the Permit Handbook Chapter 2.4.

A toxic risk analysis is not required for this application as stated above.

NESHAPS and PSD do not apply.

**Recommendation**

Recommend that the following equipment be granted a change in conditions:

S-4158 F-340 TKC Furnace, 48 MM Btu/h maximum firing rate, HHV

**Conditions**

See condition #21232. (attached)

COND# 21232 -----

Regulation 9-10 Refinery-Wide Compliance Affected Sources \*1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: (9-10-301 & 305)

S# (Y/N,EF)	description	CEM
S-4038	F-3550	Y
S-4039	F-3560	Y
S-4040	F-3570	Y
S-4041	F-3580	Y
S-4042	F-550	Y
S-4043	F-560	Y

S-4044	F-570	Y
S-4045	F-580	Y
S-4059	F-247	Y
S-4060	F-210A/B	Y
S-4061	F-410	Y
S-4062	F-447	Y
S-4068	F-1610	N
S-4069	F-1660	N
S-4070	F-1100A	Y
S-4071	F-1100B	Y
S-4072	F-1160	Y
S-4095	F-210	N
S-4129	Blr #1	Y
S-4131	Blr #3	Y
S-4132	Blr #4	Y
S-4133	Blr #5	Y
S-4135	Blr #7	Y
S-4152	F-100	Y
S-4154	F-120	N
S-4155	F-135	Y
S-4156	F-320	N
S-4158	F-340	N
S-4159	F-410	Y
S-4160	F-420	Y
S-4161	F-510	Y
S-4162	F-520	Y
S-4163	F-530	Y
S-4164	F-630	Y
S-4165	F-620	Y
S-4166	F-610	Y
S-4167	F-710	Y
S-4168	F-730	Y
S-4169	F-731	Y
S-4170	F-305	Y
S-4171	F-355	Y
S-4188	F-651	N
S-4189	F-661	N
S-4330	F-1610	Y
S-4331	F-1310	Y
S-4332	F-1360	Y
S-4333	F-1750	Y
S-4334	F-1200	Y
S-4335	F-1250	Y
S-4336	F-1410	Y
S-4337	F-1500	Y
S-4338	F-1550	Y
S-4339	F-1110	Y

Monitoring Device Installation

\*2. The owner/operator of each source listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. This Part shall be effective September 1, 2004. (Reg.9-



10-502)

#### NOx Box Overview

\*3. The owner/operator shall operate each source listed in Part 1, which 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. (Reg. 9-10-502)

1. The NOx Box for units with a maximum firing rate of 25 MMBH or more shall be established using the procedures in Part 4. 2. The NOx Box for units with a maximum firing rate less than 25MMBH shall be established as follows: 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 O<sub>2</sub>.

#### NOx Box Establishment

\*4. The owner/operator shall establish the initial NOx box for each source subject to Part 3 by June 1, 2004. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard operation. (9-10-502) The procedure for establishing the NOx box is

- 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 O<sub>2</sub> at low-fire may be different than the minimum O<sub>2</sub> at high-fire. The same is true for the maximum O<sub>2</sub>). The owner/operator shall also verify the accuracy of the O<sub>2</sub> 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) are 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. 1)The NOx Box can represent/utilize either one or two emission factors.

2)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 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.

#### NOx Box Limits

\*5A. Except as provided in part 5B & C, the owner/operator shall operate each source within the NOx Box ranges listed below at all times of operation. This part shall not apply to any source that has a properly operated and properly installed NOx CEM. (9-10-502)

#### NOx Box ranges

Source No.: S-4154

Emission Factor: 0.035 lb/MMBtu

Firing rate MMBtu/h, HHV: 02%

18.9, 1.5

18.7, 4.6

7.9, 5.9

7.4, 5.2

7.3, 3.7

14, 1.3

Source No.: S-4158

Emission Factor: 0.035 lb/MMBtu

Firing rate MMBtu/h, HHV: 02%

29, 1.7

43.71, 1.73

45.31, 5.62

15, 4.6

17, 3.4

48.0, 3.28

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Source No.: S-4188

Emission Factor: 0.25 lb/MMBtu

Firing rate MMBtu/h, HHV: 02%

11.9, 3.2

4.8, 5.4

13.73, 10.31

27, 4.9

22.3, 4

Source No.: S-4189

Emission Factor: 0.25 lb/MMBtu

Firing rate MMBtu/h, HHV: 02%  
3, 25  
3, 0  
15, 0  
15, 25

Source No.: S-4068  
Emission Factor: 0.14 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
56.79, 3.7  
65, 9.5  
27, 9.5  
23.5, 3.59

Source No: S-4069  
Emission Factor: 0.045 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
11.91, 2.18  
11.73, 8.17  
22.13, 1.85  
23.68, 6.52

S-4156 is Not in service The limits listed above are based on a calendar day averaging period for both firing rate and 02%.

5B) Part 5A does not apply 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 & 30-day averaging data).

5C) 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.

#### NOx Box Deviations

\*6. NOx Box Deviations (9-10-502) 1) 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 reasonably 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 45 days of the test. The owner/operator may request, and the APCO may grant, an extension of 15 days for submittal of results. As necessary, a permit amendment shall be submitted.

1. Source Test  $\leq$  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."

a. 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.

2. Source Test  $>$  Emission Factor If the results of this source test exceed the permitted emission concentrations or emission rates then the actions described below must be followed:

a. Utilizing measured emission concentration or rate, the owner/operator shall perform an assessment, retroactive to the date of the previous source test, of compliance with Section 9-10-301. The unit will be considered to have been in violation of 9-10-301 for each day the facility was operated in excess of the refinery wide limit.

b. 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. 2) Reporting - The owner/operator must report conditions outside of box within 96 hours of occurrence.

Periodic Source Testing for Sources w/o NOx CEM

\*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 45 days of the test. The owner/operator may request, and the APCO may grant, an extension of 15 days for submittal of results. (Reg.9-10-502)

a)Source Testing Schedule

1. Heater < 25 MMBtu/hr

One source test per consecutive 12 month period. The time interval between source tests shall not exceed 16 months.

2. 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 45 days of the test. (Reg.9-10-502)

b)Source Test Results > NOx Box Emission Factor

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 6A2 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.

Periodic Source Testing for Sources w/ NOx CEM

\*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.

CO Exceedance & CEM Installation

\*9. For any source listed in Part 1 with a maximum firing limit greater than 25 MMBtu/h 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. (Reg.9-10-502, 1-522)

Recordkeeping

\*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 number 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. (record keeping & 9-10-504)

NOx Box Policy  
Rev. 2, Updated 9/30/03

by \_\_\_\_\_ date \_\_\_\_\_  
Gregory Solomon  
Senior Air Quality Engineer

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 18716/7**

**Background**

Chevron Products Co. (Chevron) is proposing to change the NOx Box conditions (21232) for its NOx Box Furnace S-4069 Hydrogen Plant Furnace, F-1660, 52 MM Btu/hr maximum firing rate, HHV, at its refinery located in Richmond. This application establishes a NOx Box for this source since it has not been in service and did not have a NOx Box previously. Chevron submitted the source test results that support the requested NOx Box parameters. It should be noted that Chevron submitted this source test data twice since the original submittal contained some errors.

The Chevron Title V permit section VI will need to be changed to include the modified condition text for 21232 and sections IV and VII will be changed to include the new NOx Box for S-4069.

**Emission Calculations**

No emission increases are expected as a result of this application.

**Plant Cumulative Increase**

There will be no increase in the Plant Cumulative Increase as a result of this application.

**Toxic Risk Screening Analysis**

A toxic risk analysis is not required for this application since the emissions are not expected to increase as a result of this application.

**Statement of Compliance**

This application will comply with Regulation 6-1-301, 305, and 310, which require that particulate emissions not exceed a Ringelmann 1.0, visible emissions not cause a public nuisance, and that particulate emissions not exceed 0.15 gr/dscf.

Chevron is expected to continue to comply with both Regulation 9-10 and NSPS subpart J. This source became subject to NSPS subpart J through the consent decree and is required to comply per permit condition #22923. Compliance with subpart J is achieved through continuous H<sub>2</sub>S monitoring of the fuel used and compliance with the 160 ppm (230 mg/dscm, 0.10 gr/dscf) H<sub>2</sub>S standard.

This application will not trigger BACT or offsets since there will be no increase in emissions as a result of this application.

This application is not subject to CEQA since the evaluation is a ministerial action outlined in the Permit Handbook Chapter 2.4.

A toxic risk analysis is not required for this application as stated above.

NESHAPS and PSD do not apply.



**Recommendation**

Recommend that the following equipment be granted a change in conditions:

S-4069

F-1660 Hydrogen Plant Furnace, 52 MM Btu/h maximum firing rate, HHV

**Conditions**

See condition #21232. (attached)

by \_\_\_\_\_ date \_\_\_\_\_  
Gregory Solomon  
Senior Air Quality Engineer

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 19298/9**

**Background**

Chevron Products Co. (Chevron) is proposing to change the NOx Box conditions (21232) for its NOx Box Furnace S-4154 Asphalt Solution Heater, F-120, 51 MM Btu/hr maximum firing rate, HHV, at its refinery located in Richmond. This application requests an additional data point based on source test data for this source's NOx Box/polygon. Chevron submitted the source test results that support the requested NOx Box data point.

The Chevron Title V permit section VI will need to be changed to include the modified condition text for 21232.

**Emission Calculations**

No emission increases are expected as a result of this application.

**Plant Cumulative Increase**

There will be no increase in the Plant Cumulative Increase as a result of this application.

**Toxic Risk Screening Analysis**

A toxic risk analysis is not required for this application since the emissions are not expected to increase as a result of this application.

**Statement of Compliance**

This application will comply with Regulation 6-1-301, 305, and 310, which require that particulate emissions not exceed a Ringelmann 1.0, visible emissions not cause a public nuisance, and that particulate emissions not exceed 0.15 gr/dscf.

Chevron is expected to continue to comply with both Regulation 9-10 and NSPS subpart J. This source became subject to NSPS subpart J through the consent decree and is required to comply per permit condition #22923. Compliance with subpart J is achieved through continuous H2S monitoring of the fuel used and compliance with the 160 ppm (230 mg/dscm, 0.10 gr/dscf) H2S standard.

This application will not trigger BACT or offsets since there will be no increase in emissions as a result of this application.

This application is not subject to CEQA since the evaluation is a ministerial action outlined in the Permit Handbook Chapter 2.4.

A toxic risk analysis is not required for this application as stated above. NESHAPS and PSD do not apply.

## Recommendation

Recommend that the following equipment be granted a change in conditions:

S-4154 F-120 Asphalt Solution Heater, 51 MM Btu/h maximum firing rate, HHV

## Conditions

See condition #21232. (attached)

COND# 21232 -----

Regulation 9-10 Refinery-Wide Compliance Affected Sources \*1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: (9-10-301 & 305)

S# (Y/N,EF)	description	CEM
S-4038	F-3550	Y
S-4039	F-3560	Y
S-4040	F-3570	Y
S-4041	F-3580	Y
S-4042	F-550	Y
S-4043	F-560	Y
S-4044	F-570	Y
S-4045	F-580	Y
S-4059	F-247	Y
S-4060	F-210A/B	Y
S-4061	F-410	Y
S-4062	F-447	Y
S-4068	F-1610	N
S-4069	F-1660	N
S-4070	F-1100A	Y
S-4071	F-1100B	Y
S-4072	F-1160	Y
S-4095	F-210	N
S-4129	Blr #1	Y
S-4131	Blr #3	Y
S-4132	Blr #4	Y
S-4133	Blr #5	Y
S-4135	Blr #7	Y
S-4152	F-100	Y
S-4154	F-120	N
S-4155	F-135	Y
S-4156	F-320	N
S-4158	F-340	N
S-4159	F-410	Y
S-4160	F-420	Y
S-4161	F-510	Y
S-4162	F-520	Y
S-4163	F-530	Y

S-4164	F-630	Y
S-4165	F-620	Y
S-4166	F-610	Y
S-4167	F-710	Y
S-4168	F-730	Y
S-4169	F-731	Y
S-4170	F-305	Y
S-4171	F-355	Y
S-4188	F-651	N
S-4189	F-661	N
S-4330	F-1610	Y
S-4331	F-1310	Y
S-4332	F-1360	Y
S-4333	F-1750	Y
S-4334	F-1200	Y
S-4335	F-1250	Y
S-4336	F-1410	Y
S-4337	F-1500	Y
S-4338	F-1550	Y
S-4339	F-1110	Y

Monitoring Device Installation

\*2. The owner/operator of each source listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. This Part shall be effective September 1, 2004. (Reg.9-10-502)

NOx Box Overview

\*3. The owner/operator shall operate each source listed in Part 1, which 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. (Reg. 9-10-502)

1. The NOx Box for units with a maximum firing rate of 25 MMBH or more shall be established using the procedures in Part 4. 2. The NOx Box for units with a maximum firing rate less than 25MMBH shall be established as follows: 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.

NOx Box Establishment

\*4. The owner/operator shall establish the initial NOx box for each source subject to Part 3 by June 1, 2004. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard

operation. (9-10-502) The procedure for establishing the NOx box is

- 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) are 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.
- 1)The NOx Box can represent/utilize either one or two emission factors.  
2)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 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.

#### NOx Box Limits

\*5A. Except as provided in part 5B & C, the owner/operator shall operate each source within the NOx Box ranges listed below at all times of operation. This part shall not apply to any source that has a properly operated and properly installed NOx CEM. (9-10-502)

#### NOx Box ranges

Source No.: S-4154

Emission Factor: 0.035 lb/MMBtu

Firing rate MMBtu/h, HHV: O2%

18.9, 1.5

18.7, 4.6  
7.9, 5.9  
7.4, 5.2  
7.3, 3.7  
14, 1.3

Source No.: S-4158  
Emission Factor: 0.035 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
29, 1.7  
43.71, 1.73  
45.31, 5.62  
15, 4.6  
17, 3.4

Source No.: S-4188  
Emission Factor: 0.25 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
11.9, 3.2  
4.8, 5.4  
13.73, 10.31  
27, 4.9  
22.3, 4

Source No.: S-4189  
Emission Factor: 0.25 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
3, 25  
3, 0  
15, 0  
15, 25

Source No.: S-4068  
Emission Factor: 0.14 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
56.79, 3.7  
65, 9.5  
27, 9.5  
23.5, 3.59

Source No: S-4069  
Emission Factor: 0.045 lb/MMBtu  
Firing rate MMBtu/h, HHV: 02%  
11.91, 2.18  
11.73, 8.17  
22.13, 1.85  
23.68, 6.52

S-4156 is Not in service The  
limits listed above are based on a  
calendar day averaging period for  
both firing rate and 02%.

5B) Part 5A does not apply 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 & 30-day averaging data).

5C) 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.

#### NOx Box Deviations

\*6. NOx Box Deviations (9-10-502) 1) 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 reasonably 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 45 days of the test. The owner/operator may request, and the APCO may grant, an extension of 15 days for submittal of results. As necessary, a permit amendment shall be submitted.

1. Source Test  $\leq$  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."

a. 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.

2. Source Test  $>$  Emission Factor If the results of this source test exceed the permitted emission concentrations or emission rates then the actions described below must be followed:

a. Utilizing measured emission concentration or rate, the owner/operator shall perform

an assessment, retroactive to the date of the previous source test, of compliance with Section 9-10-301. The unit will be considered to have been in violation of 9-10-301 for each day the facility was operated in excess of the refinery wide limit.

b. 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. 2) Reporting - The owner/operator must report conditions outside of box within 96 hours of occurrence. Periodic Source Testing for Sources w/o NOx CEM

\*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 45 days of the test. The owner/operator may request, and the APCO may grant, an extension of 15 days for submittal of results. (Reg.9-10-502)

a) Source Testing Schedule

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

2. 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 45 days of the test. (Reg.9-10-502)

b) Source Test Results > NOx Box Emission Factor

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 6A2 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.  
Periodic Source Testing for Sources w/ NOx CEM

\*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.  
CO Exceedance & CEM Installation

\*9. For any source listed in Part 1 with a maximum firing limit greater than 25 MMBtu/h for which any two source test results over any consecutive five year period are greater than or equal to 200 ppmv CO at 3% O<sub>2</sub>, the owner/operator shall properly install, properly maintain, and properly operate a CEM to continuously measure CO and O<sub>2</sub>. The owner/operator shall install the CEM within the time period allowed in the District's Manual of Procedures.  
(Reg.9-10-502, 1-522)

#### Recordkeeping

\*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 number 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.  
(record keeping & 9-10-504)

NOx Box Policy  
Rev. 2, Updated 9/30/03

by \_\_\_\_\_ date \_\_\_\_\_  
Gregory Solomon  
Senior Air Quality Engineer

## **Appendix A**

### **BAAQMD - Compliance Record**

**COMPLIANCE & ENFORCEMENT DIVISION**

**Inter-Office Memorandum**

**March 12, 2010**

TO: BRIAN BATEMAN – DIRECTOR OF ENGINEERING *BB*  
FROM: KELLY WEE – DIRECTOR OF ENFORCEMENT *NKw for*  
SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

**CHEVRON PRODUCTS COMPANY - SITE # A0010**

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**Background**

This review was initiated as part of the District evaluation of an application by Chevron Products Company for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance review in advance of a renewal of a Title V Permit to Operate. The purpose of this review is to assure that any non-compliance problems identified during the prior five-year permit term have been adequately addressed by returning the facility to compliance, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

**Compliance Review**

Staff reviewed Chevron Products Company Annual Compliance Certifications for December 1, 2003 to September 30, 2009 and found no ongoing non-compliance and no recurring pattern of violations, which have not already been corrected.

The District has conducted a compliance review of 100 Notices of Violation (NOVs) issued to Chevron Products Company from December 1, 2003 to September 30, 2009. While the petroleum refining facility received a number of violations over this 5.8-year period, for facilities as large, complex, and heavily-regulated as a petroleum refining facility within the Bay Area Air Quality Management District's jurisdiction, violations are likely to occur. It is important to note that all of the violations associated with the NOVs were in compliance at the time of this review. The District's analysis of the NOVs for the 5.8-year period indicated that there are no ongoing violations or pattern of recurring violations that would currently require a compliance schedule.

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Understanding how the District handles the violations associated with the NOV's is important to understanding how the District evaluated the facility's compliance status. Whenever the District discovers a violation, it begins a two-step process. The first step is to end the violation and bring the alleged violator back into compliance. Once compliance is achieved, the second step is to proceed with penalty assessment. It is District policy to not proceed with penalty assessment until compliance has been achieved. If a facility has not achieved compliance in a timely fashion, the District proceeds with additional enforcement action. The vast majority of Notice of Violation penalties are resolved through settlement negotiations.

The results of the District's compliance review are shown in Table I. As stated above, the 107 violations associated with the 100 NOV's were in compliance at the time of this review. In 75% of the violations, compliance was achieved within 1 day of occurrence. In the remaining 25% of the violations, the violations achieved compliance shortly after discovery but did not represent ongoing violation that would require a compliance schedule in a Title V permit. In some cases, permit condition modifications have been made to address permit condition violations during the review period. There were several sources that had multiple violations. The violations did not indicate recurrent patterns of violation because investigations into the cause of the violations revealed unrelated causes. Of the 100 NOV's issued, approximately 80% of the violations resulted from the facility self-reporting, pursuant to District Regulations and Title-V requirements.

Based on this review and analysis of all the violations for the 5.8-year period, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in Chevron Products Company's Title V permit, as the record showed that the violations returned to compliance, were intermittent or did not evidence on-going non-compliance, there are no patterns of recurring violation, and the facility was in compliance at the time of this review.

The violation details associated with the 100 Notices of Violation (107 violations) are summarized below and detailed in Table 1.

Violation Category	TOTAL
Emissions Related	49
Administrative	37
Permit-to-Operate	21
<b>TOTAL</b>	<b>107</b>

District Staff has conducted a compliance review of 27 Notice to Comply (NTC's) issued to Chevron Products Company from December 1, 2003 through September 30, 2009. The District may use the NTC to achieve compliance by using enforcement action appropriate to the severity of the violation. In most cases, these minor violations involve procedural, administrative, or recordkeeping omissions that did not conceal a violation or were de minimis emissions. During this reporting period none of the NTC's resulted in the issuance of an Notice of Violation for failing to correct a minor violation.

Staff also reviewed additional District compliance records for Chevron Products Company for December 1, 2003 to September 30, 2009. During this period Chevron Products Company activities known to the District include:

The District received two hundred eighty-nine (289) air pollution complaints alleging Chevron Products Company as the source. Fifty-one (51) of these complaints were confirmed.

The District received three hundred ninety-seven (397) notifications for Reportable Compliance Activity (RCA)<sup>1</sup>: twenty-four (24) breakdown requests, one hundred twenty-three (123) indicated monitor excesses, zero (0) pressure relief device releases, and two hundred fifty (250) in-operative monitor reports. Fifty-four (54) of the RCAs resulted in NOV's.

The District entered into three (3) enforcement agreements with Chevron Products Company.

- The Agreement dated March 17, 2004, came about because Chevron disagreed with certain conditions in the initial Title V issuance. The agreement allowed Chevron Products Company to comply with specified conditions in lieu of certain specified conditions in the Title V permit.
- The Agreement dated June 28, 2005, extended the time period of the agreement dated March 17, 2004, above from December 16, 2004, until the earlier of either completion of a permit revision or December 31, 2005.
- The Agreement dated December 5, 2008, allowed Chevron to continue using a portable generator to power the #5 H<sub>2</sub>S Emergency Scrubber, C-840, until a permanent generator became operational. The delay in issuing an Authority to Construct for the permanent generator was, in part, what created the need for the agreement. This delay was from December

<sup>1</sup> Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, and inoperative monitor reports.

5, 2008 until the earlier of either date of installation of a "Permanent Generator" or March 15, 2009.

The District processed eight (8) dockets for variances and permit appeals before the District's Hearing Board. There is currently one variance and one permit appeal pending final increments of progress or resolution.

- Docket # 3478 was filed for a tank seal failure that could not be immediately repaired until the tank was drained and degassed. The emergency variance was granted.
- Docket #3534 was filed for NOx emissions from 4 furnaces caused by a manufacture defect. The emergency variance was granted.
- Docket #3541 was filed for a fugitive emission leak that could not be immediately repaired. The emergency variance was granted from September 27, 2007 through October 12, 2007.
- Docket #3559 was filed for continuing high wash water temperatures due to elevated ambient temperature. A short term variance was granted on August 8, 2008.
- Docket #3451, #3488, and #3524 were filed as appeals to the various revisions of the Title V Permit. These matters were continued and handled through resolutions of issues with the permit.

The District is a Plaintiff-Intervener to a Consent Decree with Chevron, filed on June 29, 2005 (Case #03-04650). The Plaintiff, the United States Government, alleges environmental violations against the Defendant, Chevron USA, Inc., which includes the Chevron Products Company. The emission limits and standards required by the Consent Decree were incorporated into the Title V Permit through the District's Permit Application Process. The requirements of the Consent Decree include:

- NOx emission limit at the FCCU.
- Use of SO<sub>2</sub> reducing catalyst additives at the FCCU.
- PM (Particulate Matter) emission at the FCCU.
- CO emission limit at the FCCU.
- NOx emission limit for heaters and boilers.

Chevron is in compliance with the Consent Decree.

REVIEW OF COMPLIANCE RECORD OF:  
**CHEVRON PRODUCTS COMPANY - SITE #A0010**  
March 23, 2010  
Page 5 of 5

### **Conclusion**

The Compliance and Enforcement Division has made a determination that for the review period Chevron Products Company was in intermittent compliance. There is no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule or additional permit terms. The Division does not have any recommendations for any additional permit conditions and limitations to improve compliance beyond what is already contained in the Title V Permit under consideration.



TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A49795A	3223	12/01/03	07/22/09	8-18-401.2	Missing Leak Detect and Repair (LDAR) records.	04/22/09	This violation was an administrative violation, related to the tagging of components and including the components as part of the LDAR monitoring requirements.
A45200A	6250	12/17/03	12/02/04	2-6-307	Failure to vent emissions from oil water separator to carbon vessels and for not monitoring for breakthrough on a daily basis.	10/19/04	This violation was corrected in 2 days by routing emissions to the carbon vessel and it took 5 days for Chevron to begin monitoring for breakthrough.
A47077A	4354	12/31/03	03/08/05	8-18-401.3	55 inaccessible valves were not inspected	01/01/04	This violation was corrected within 1 day when the valves were identified, tagged and inspected.
A45281A	4413	01/12/04	01/21/04	8-8-302.4	5 leaks >1000 ppm	01/16/04	This violation was corrected within 4 days by repairing the leaks.
A45282A	4414	01/12/04	01/21/04	8-8-302.4	Two leaks >1000 ppm	01/13/04	This violation was corrected within 1 day by repairing the leaks.
A45186A	679	01/13/04	01/15/04	8-5-320.5.2	Not having a zero gap pole wiper sleeve on the slotted sampling/gauge well.	01/15/04	This violation was corrected within 4 days by installing a zero gap pole wiper seal.
A45187A	4352	01/21/04	03/16/04	1-522.6	Failed field accuracy test on Knox monitor.	01/21/04	This violation was corrected when the NOx monitor was recalibrated and passed the source test.
A45189A	4229	01/29/04	05/04/04	9-1-307	(RCA #04B88) - SO2 excess from the Sulfur Recovery Unit	01/29/04	This violation was corrected within 1 day by bringing SO2 levels below regulatory limits.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A45195A	6016	03/09/04	10/26/04	12-11-502.3.1	No samples drawn during a flaring event.	03/09/04	This violation was corrected by installing new alarms, flow meter, pressure indicators and re-wiring connections.
A45195B	6016	03/09/04	10/26/04	12-11-505	Flare flow meter did not record a change in flow and no sample was taken during a flaring event.	03/29/05	This violation was corrected within 1 day by improved operating procedures and equipment reliability.
A45197A	6016	04/21/04	10/26/04	12-11-502.3.1	Failure to identify a flaring event and engaging the auto-sampling.	04/22/04	This violation was corrected by improving operating procedures and equipment reliability.
A45197B	6016	04/21/04	10/26/04	12-11-505	No records of samples produced during a flaring event.	04/22/04	This violation was corrected within 1 day by improving operating procedures and equipment reliability.
A45198A	6012	04/21/04	10/26/04	12-11-502.3.1	Failure to identify a flaring event and engaging the auto-sampling.	04/21/04	This violation corrected by improving operating procedures and equipment reliability.
A45199A	6039	04/21/04	10/26/04	12-11-502.3.1	A sample was taken but lost at the Lab and never analyzed.	04/21/04	This violation was corrected within 1 day by improving operating procedures and equipment reliability.
A45199B	6039	04/21/04	10/26/04	12-11-505	Failure to identify a flaring event and engaging the auto-sampling.	04/21/04	This violation was corrected by improving operating procedures and equipment reliability.
A45188A	3191	04/22/04	04/22/04	8-5-303	P/V valve leaking >10,000 ppm.	04/22/04	This violation was corrected within 1 day by removing the P/V valve from service.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A45190A	4155	04/26/04	08/04/04	2-1-307	(RCA #04D53) - H <sub>2</sub> S >50 pm average over 24 hr period	04/27/04	This violation was corrected within 1 day by removing non-condensable gas and returned to normal operations.
A45191A	None	04/26/04	08/04/04	10	(RCA #04D50) - H <sub>2</sub> S >1600 ppm, 3 hr average	04/26/04	This violation was corrected within 1 day by bringing H <sub>2</sub> S levels below regulatory limits.
A45284	4340	05/17/04	08/04/04	9-10-305	Failed field accuracy test for CO analyzer.	08/04/04	This violation was corrected by replacing the CO analyzer and installing CO alarms on the RLOP furnaces.
A45283A	4038	05/21/04	07/28/04	1-522.4	Late reporting of an inoperative monitor.	07/27/04	This was an administrative violation, related to the late reporting of an in-operative monitor. Though they were late, the inoperative monitor episode were reported to the District
A45285A	4429	05/24/04	08/04/04	9-1-307	SO <sub>2</sub> >250 ppm	08/04/04	This violation was corrected by increasing the feed to minimize SO <sub>2</sub> emissions.
A45196A	6010	05/28/04	10/20/04	12-11-502.3.1	Auto sampler failed to take samples and no manual samples were taken during a flaring event.	05/29/04	This violation was corrected by improving operating procedures and equipment reliability.
A45196B	6010	05/28/04	10/20/04	12-11-505	No sample was taken during a flaring event.	05/29/04	This violation was corrected within 1 day by making repairs to the flare sampling system.
A45194A	4285	06/08/04	10/26/04	2-6-307	(RCA #04E46) - The secondary current of the 2 TR sets <200 milliamps, 3 hr average.	06/08/04	This violation was corrected within 1 day by installing a new ammonia line and implementing a new procedure.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<u>A45192A</u>	4285	06/14/04	08/04/04	1-522.4	Late reporting of an inoperative monitor.	06/14/04	This was an administrative violation, related to the late reporting of an in-operative monitor. Though they were late, the inoperative monitor episode were reported to the District
<u>A46752A</u>	4424	08/05/04	11/16/04	2-1-307	Exceeded a daily POC limit.	11/16/2004	This violation was corrected within 1 day by terminating the coating operation.
<u>A46752B</u>	None	08/05/04	11/16/04	8-19-302	Sprayed non-compliant air dried coating	11/16/04	This violation was corrected within 1 day by terminating the coating operation.
<u>A47076A</u>	3100	11/24/04	01/06/05	2-1-307	Tank with a failed emission control device.	12/02/04	This violation was corrected within 8 days by installing a new flexible pole sleeve.
<u>A47078A</u>	6010	11/24/04	02/03/05	12-11-505	(RCA #04K03) - Samples were not analyzed and no records of the analysis for a flaring event.	11/24/04	This violation was corrected within 1 day by repairing the eductor and counseling personnel on lab retention procedures.
<u>A47079A</u>	4285	01/05/05	03/18/05	2-6-307	(RCA #04k03) - The secondary current of the 2 TR sets <200 milliamps, 3 hr average.	01/09/05	This violation was corrected within 4 days by re-introducing feed to the FCC and this allowed the pressures and temperatures increased back to normal at the ESP.
<u>A47079B</u>	4285	01/05/05	03/18/05	1-523.3	(RCA #04K68) - Late reporting of a parametric monitor excess.	01/09/05	This was an administrative violation, related to the late reporting of a parametric monitor excess. Though they were late, the episode was reported to the District
<u>A49254A</u>	1287	01/30/05	09/27/07	8-5-320.3.1	Vacuum breaker on a tank lifted and opened.	01/30/07	This violation was corrected within 24 months by adding product to the tank to raise the roof to reset the vacuum breaker.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A47080A	4285	01/31/05	03/08/05	1-522.5	No daily calibration on a CEM O <sub>2</sub> analyzer	01/31/05	This violation was corrected within 1 day by calibrating the CEM and implementing a database and confirmation system to ensure daily calibration.
A47082A	6013	02/08/05	03/24/05	12-11-502.3.1b	Samples were not analyzed and no records of the analysis for a flaring event.	02/28/05	This violation was corrected within 20 days by the implementation of a Chain of Custody procedure.
A47081A	4285	02/10/05	03/18/05	2-6-307	(RCA #04K89 & RCA #04K86) - The secondary current of the 2 TR sets <200 milliamps, 3 hr average.	02/11/05	This violation was corrected within 1 day by increasing the NH <sub>3</sub> injection rates and the TR sets recovered.
A13869A	4285	02/28/05	01/25/06	2-6-307	(RCA # 04Q22 & RCA #04Q26) - The secondary current of the 2 TR sets <200 milliamps, 3 hr average.	09/28/05	This violation was corrected within 1 day. This violation was due to grid damage from catalyst dust.
A11924A	4285	03/02/05	06/07/05	2-6-307	(RCA #04L30) - The secondary current of the 2 TR sets <200 milliamps, 3 hr average.	03/03/05	This violation was corrected within 1 day when the source was shut down.
A47089A	6016	03/03/05	03/24/05	12-11-502.3.1a	No samples taken during a flaring event.	03/03/05	This violation occurred on 1 day and was for failing to follow administrative procedures for taking flare gas samples. This is a manual sampling task, and there were some internal communication delays to the operators. Facility has conducted training to remind operators of the regulatory responsibility for taking flare samples.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<u>A13866A</u>	None	03/06/05	08/31/05	10	(RCA #04L41) - H2S >160 ppm	03/06/05	This violation was corrected within 1 day by cutting back the level of propane vaporizing to lower H2S levels.
<u>A13866B</u>	None	03/06/05	08/31/05	1-522.7	Late reporting of RCA #04L41, H <sub>2</sub> S > 160 ppm.	03/06/05	This was an administrative violation, related to the late reporting of an H2S excess. Though they were late, the excess was reported to the District
<u>A46299A</u>	1514	03/30/05	08/02/05	8-5-321.1	Torn primary and secondary tank seal	04/04/05	This violation was corrected within 5 days by repairing both the primary seal and the secondary seal.
<u>A46299B</u>	1514	03/30/05	08/02/05	8-5-322.1	Torn fabric, secondary seal	04/04/05	This violation was corrected within 5 days when the seals were repaired.
<u>A13868A</u>	4229	04/03/05	10/05/05	9-1-307	(RCA #04M05) - SO2 >250 ppm	04/03/05	The violation was corrected within 1 day. SO2 excess maybe due to an instrument malfunction. No corrective actions stated.
<u>A46300A</u>	6016	04/27/05	08/02/05	12-11-502.3.1b	Samples were lost and not analyzed from a flaring event.	05/09/05	This violation was corrected within 12 days by reporting the deviation.
<u>A46300B</u>	None	04/27/05	08/02/05	2-6-307	Late reporting of a flaring event	5/9/05	This was an administrative violation, related to the late reporting of flaring event.
<u>A13865A</u>	4285	05/20/05	07/25/05	1-522.5	Failure to perform daily calibration of the O2 analyzer.	05/21/05	This violation was corrected within 1 day by calibrating the monitor.
<u>A47326A</u>	3197	05/30/05	07/15/05	8-5-320.3	No hatch cover on the gauge well	05/31/05	This violation was corrected within 1 day when the gauge well hatch cover was replaced.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A47327A	1514	07/11/05	08/30/05	8-5-321.1	Holes in primary tank seal	07/12/05	This violation was corrected within 1 day by repairing the primary seal.
A47327B	1514	07/11/05	08/30/05	8-5-322.1	Holes in secondary tank seal.	07/12/05	This violation was corrected within 1 day when the secondary seals were replaced.
A47328A	3107	07/11/05	08/30/05	8-5-322.1	Gap in the secondary tank seal.	07/12/05	This violation was corrected within 1 day by repairing the secondary seal.
A47335A	4155	07/23/05	02/02/06	2-6-307	(RCA #04P09) - H2S > 50 ppm H <sub>2</sub> S averaged over 24 hr.	07/24/05	This violation was corrected within 1 day by updating the DCS (Digital Control System) to include a new field on the overview page that includes the current 24 hr. H2S in fuel gas average for F-135.
A47329A	3191	08/01/05	08/30/05	8-5-321.1	Tear in primary tank seal	08/02/05	This violation was corrected within 1 day by repairing the primary seal.
A13871A	4152	08/17/05	01/25/06	2-6-307	Not conducting a source test within 8 months after installation	08/17/05	This violation was corrected when a source test was performed on asphalt solution heater on 9/21/05.
A47330A	6010	08/29/05	09/22/05	12-11-502.3.1a	One of 5 required flare samples was not taken.	08/29/05	This violation was corrected within 1 day.
A47331A	3073	09/19/05	01/19/06	8-5-301	Vapor pressure > 11.0 psia on 3 days	10/03/05	This violation was corrected within 14 days when the temperature of the isomerate dropped and the vapor pressure returned to compliance.
A13873A	4285	09/28/05	03/14/06	10	(RCA #04Q33 & RCA #04Q27) - CO > 500 ppm	09/28/05	This violation was corrected within 1 day by pulling feed from the unit.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A13872A	4285	10/03/05	02/02/06	6-302	Opacity >20% for more than 3 minutes	10/03/05	This violation was corrected within 1 day when the FCC achieved normal operations.
A13875A	4285	10/11/05	05/01/06	6-302	Opacity >20% for more than 3 minutes	10/11/05	This violation was corrected within 1 day by shutting down the main blower.
A47333A	6016	10/15/05	01/19/06	12-11-502.3.1a	No sample taken during a flaring event	10/15/05	This violation occurred on 1 day, and was for failing to follow administrative procedures for taking flare gas samples. This is a manual sampling task, and there were some internal communication delays to the operators. Facility has conducted training to remind operators of the regulatory responsibility for taking flare samples.
A47334A	6019	10/15/05	01/19/06	12-11-502.3.1a	2 required flare samples not taken during a flaring event	10/15/05	This violation occurred on 1 day, and was for failing to follow administrative procedures for taking flare gas samples. This is a manual sampling task, and there were some internal communication delays to the operators. Facility has conducted training to remind operators of the regulatory responsibility for taking flare samples.
A47765B	6019	10/15/05	07/06/06	2-6-307	Late reporting of a failure to analyze a flare vent gas sample	11/29/05	This was an administrative violation, related to the late reporting. Though they were late, this was reported to the District
A47765A	6019	10/16/05	07/06/06	12-11-502.3.1b	No sample was taken during a flaring event and reported late	11/29/05	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. This is a manual sampling task, and there were some internal communication delays to the operators. Facility has conducted training to remind operators of the regulatory responsibility for taking flare samples.



TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<del>A13870A</del>	6010	10/29/05	01/25/06	12-11-502.3	No sample taken during a flaring event	10/29/05	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. This is a manual sampling task, and there were some internal communication delays to the operators. Facility has conducted training to remind operators of the regulatory responsibility for taking flare samples.
<del>A47332A</del>	4339	11/08/05	01/19/06	2-6-307	(RCA #04R16 & RCA #04R19) - Exceeded fire rates on a furnace on 2 dates	11/14/05	This violation was corrected within 6 days by lowering the alarm value and bringing the firing rate down.
<del>A47332B</del>	4339	11/08/05	01/19/06	1-522.7	Late reporting of the exceeded fire rates	11/14/05	This was an administrative violation, related to the late reporting of an in-operative monitor. Though they were late, the inoperative monitor episode were reported to the District
<del>A47762A</del>	4060	12/08/05	05/17/06	9-10-305	Failed Field Accuracy Test on CO monitor and CO >400 ppm	12/09/05	This violation was corrected within 1 day by conducting a compliant source test for carbon monoxide by the District Source Test staff.
<del>A47763A</del>	6010	01/18/06	06/20/06	12-11-502.3	Missed flare sample.	01/18/06	This violation was corrected within 1 day by resetting the automatic flare sampler.
<del>A47764A</del>	4235	02/27/06	06/20/06	2-6-307	Failed to report an unscheduled start-up or shutdown of a process unit within 48 hrs.	02/28/06	This was an administrative violation, related to not reporting an unscheduled start-up or shutdown of a process unit. This violation was corrected by submitting notification to the District
<del>A47766A</del>	4229	03/11/06	11/06/06	9-1-307	(RCA #04T31) - SO2 > 250 ppm	03/11/06	This violation was corrected within 1 day by bringing SO2 levels within regulatory limits.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<u>A47770A</u>	4155	05/19/06	06/06/07	10	(RCA #04U94) - H2S >160 ppm over 3 hr average	05/19/06	The violation was corrected within 1 day when the H2S excess cleared after the 24 hour time period.
<u>A47770B</u>	4155	05/19/06	06/06/07	2-6-307	(RCA #04U95) - H2S >50 ppm over 24 hr average	05/19/06	This violation was corrected within 1 day by restoring power to the circulation pump and H2S readings decreased to below 50 ppm
<u>A49256A</u>	None	07/01/06	11/30/07	8-18-401.2	Failed to do quarterly inspections on the valves	01/04/07	This was an administrative violation, and was corrected by entering the valves into the database and becoming a part of the monitoring program.
<u>A48632A</u>	None	08/04/06	03/05/08	8-8-313	Failure to install controls on uncontrolled component after 30 days after a 3rd failed inspection.	08/04/06	This violation was corrected within 1 day by installing a gasketed seating pan.
<u>A47771A</u>	4228	08/19/06	06/06/07	9-1-307	(RCA #04W43) - SO2 > 250 ppm	08/19/06	This violation was corrected within 1 day when the operators increased caustic injection which lowered the SO2 levels to normal.
<u>A49255A</u>	4233	09/12/06	11/30/07	8-10-501	No monitoring of organics prior to opening a vessel	09/12/06	This violation was corrected within 1 day by modifying shutdown procedures.
<u>A47772A</u>	4285	09/16/06	06/06/07	6-302	(RCA #04W81) - Opacity >30% on a CEM	09/16/06	This violation was corrected within 1 day when the opacity exceedance had stopped and resumed compliance.
<u>A49257A</u>	991	10/05/06	11/30/07	8-5-322.1	Holes / tears in secondary tank seal fabric	10/05/06	This violation was corrected within 1 day by repairing the secondary seal.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<del>A49253A</del>	991	10/21/06	09/27/07	8-5-320.3.1	Vacuum breaker lifted opened	02/19/07	This violation was corrected within 4 months by adding product to the tank to raise the roof, thus resetting the vacuum breakers closed. The low pump out level setting was also raised to compensate for the length of the breaker legs.
<del>A48631A</del>	6010	01/17/07	03/05/08	2-6-307	Flare above daily maximum allowable gas flow capacity	01/17/07	This violation was corrected within 1 day by lowering the pilot / purge gas flow.
<del>A49251A</del>	6010	01/27/07	08/30/07	12-11-502.3.1a	Missed flare gas sample	01/27/07	This violation was corrected within 1 day when the flare gas auto sampling system resumed normal sampling to properly obtain gas samples for analysis.
<del>A49258A</del>	4340	04/23/07	12/05/07	1-522.6	Failure to maintain accuracy of NOx CEM	04/23/07	This violation was corrected within 1 day by replacing the faulty solenoid and the unit was retested to confirm compliance.
<del>A49252A</del>	6039	04/27/07	08/29/07	12-11-502.3.1a	Late flare sample	04/27/07	This violation was corrected within 1 day when a sample was obtained and the flare gas auto sampling system resumed to normal operation.
<del>A49260A</del>	3196	05/21/07	12/05/07	2-1-301	New tank roof constructed prior to submitting permit application	11/08/07	This violation was corrected within 1 day by submitting an application to the District.
<del>A47775A</del>	4349	06/01/07	08/29/07	2-6-307	Failed source test CO > 50 ppm	06/22/07	This violation was corrected when a compliant source test for carbon monoxide was conducted on 6/22/07.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A49259A	None	07/17/07	12/05/07	8-18-402	Missing tags on equipment identified as leaking organic compounds	07/17/07	This violation was corrected within 1 day by replacing missing leaker tags.
A48630A	4340	08/09/07	02/21/08	9-10-305	Failed source test for CO emissions >400ppm	08/09/07	This violation was corrected when a compliant source test by the District for carbon monoxide.
A48637A	None	09/27/07	07/08/08	10	Benzene Waste Operations NESHAP (B/WON) waste not properly stored	02/06/08	This violation was corrected within 5 months by transferring the material to a compliant container.
A48629A	4393	10/24/07	11/02/07	1-301	Public Nuisance - 5 confirmed complaints traced to bioreactor	10/24/07	This violation was corrected within 1 day by initiating a deodorizing spray system.
A48634A	4354	11/12/07	03/05/08	2-6-307	Failed to notify of planned shutdown within 3 days	11/12/07	This was an administrative violation, related to not reporting an unscheduled start-up or shutdown of a process unit. This violation was corrected within 1 day by submitting notification to the District.
A48635A	4133	11/19/07	03/05/08	9-10-305	Failed source test for CO >400 ppmv at 3% oxygen	11/19/07	This violation was corrected within 1 day when the boiler controls were adjusted to bring the CO back into compliance.
A49454A	4148	12/27/07	12/27/07	8-8-306.1	Open vents on metal covers on the oil-water effluent basin	12/27/07	This violation was corrected within 1 day by installing pressure relief valve and a carbon system on the effluent basin.
A48638A	6010	01/05/08	07/08/08	2-6-307	Flare exceeded the pilot / purge gas flow	01/06/08	This violation was corrected within 1 day by reducing the pilot/purge gas flow to the flare

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
<del>A49930A</del>	4229	02/06/08	11/18/08	9-1-307	(RCA #05E08) - SO2 >250 ppm	02/06/08	This violation was corrected within 1 day by pulling feed from the unit and shutting it down.
<del>A48636A</del>	4171	03/24/08	06/05/08	1-522.6	Failed field accuracy test on the NOx & O2 monitor	05/06/08	The violation was corrected within 43 days when the NOx and O2 CEMs were repaired, retested and its accuracy verified on 5/16/08.
<del>A48636B</del>	None	03/24/08	06/05/08	1-522.4	Late reporting of an inoperative NOx and O2 CEM	05/06/08	This was an administrative violation, related to the late reporting of 2 in-operative monitors. Though they were late, the inoperative monitor episode were reported to the District
<del>A48641A</del>	3213	03/31/08	08/19/08	2-6-307	Tank exceeded its 9,100.00 barrels throughput limit	03/31/08	This violation was corrected within 1 day by going below the throughput limit.
<del>A48639A</del>	None	04/07/08	08/19/08	10	Annual Benzene Waste Operations Report was submitted late	04/07/08	This was an administrative violation, and was corrected within 1 day by submitting the report to the District.
<del>A48642A</del>	None	04/29/08	11/20/08	9-2-301	GLM H2S Excess for 3min & 60min from flaring	04/29/08	This violation was corrected within 1 day when the cooler at the exchanger was unplugged and H2S emissions fell back into compliance.
<del>A48640A</del>	4161	06/05/08	08/19/08	1-523.2	Fuel flow meter inoperative for more than 15 days	06/08/08	This violation was corrected within 3 days by repairing the monitor and bringing it back on line.
<del>A49491A</del>	None	07/01/08	03/24/09	8-2-301	Vacuum truck gasoline spill resulting in >15 lbs per day & 300ppm total carbon	07/01/08	This violation was corrected within 1 day by stopping the spill and collecting the gasoline and contaminated soil.

TABLE 1

V#	S#	Occur	Issue	Reg	Violation Comments	Compliance Achieved	Basis for No Compliance Schedule
A49490A	4340	08/26/08	03/04/09	9-10-305	CO >400 ppm average 24 hr period	08/27/08	This violation was corrected by replacing the CO CEM by 1/12/09.
A48644A	None	01/12/09	05/19/09	10	H2S >160 ppm averaged over 3 hr	01/13/09	This violation was corrected within 1 day by restoring power to the fin-fans, cooling the lean DEA in the absorption column and bringing H2S / SO2 levels back into compliance.
A49492A	None	02/13/09	03/30/09	8-5-332.1	Liquid crude sludge spilled / leaked from portable steel tank.	02/13/09	This violation was corrected within 1 day by shutting down the operation, containing the spill, and removing the fugitive oil with a vacuum truck.
A49796A	4189	06/23/09	06/30/09	8-18-304	3 connector leaks >100 ppm VOC	06/30/09	This violation was corrected within 1 day by repairing the leaking connectors immediately after they were discovered.
A49940A	4188	06/23/09	06/30/09	8-18-304	3 connector leaks > 100 ppm VOC	06/23/09	This violation was corrected within 1 day by repairing the leaking connectors immediately after they were discovered.
A49944A	6013	08/17/09	11/12/09	12-12-301	Operating NISO Flare in violation of FMP	08/17/09	This violation was corrected within 1 day by updating the FMP to reflect the use of the bypass line to the flare.
A49945A	6013	08/17/09	11/12/09	12-11-501	No flow monitoring on bypass line to NISO Flare	08/17/09	This violation was corrected within 1 day by developing a short and long term plan to take the bypass line out of service.