

**Bay Area Air Quality Management District**  
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**Permit Evaluation  
and  
Statement of Basis  
for  
Major Facility Review Permit  
Minor Revision**

**for  
Chevron Products Company  
Facility #A0010**

**Facility Address:**  
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Richmond, CA 94802

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November 2008

Application (Title V): 17429

By:

Greg Solomon, Senior Air Quality Engineer

## **Minor Revisions and Administrative Amendments of Title V permit for Chevron Products Company**

### **Statement of Basis**

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:

TV/NSR  
14676/14675  
15712/15711  
15822/15821  
15915/15914  
16591/16590  
16393/16392  
16643/16642  
17027/  
17429/17428  
17452/17446  
17282/17281  
17176/17175  
/6898  
/8451.

### Section II

Table II A 1 will be revised to reduce the throughput limits for S-4171 per district application #'s 16392/3.

Table II A 2 will be revised to reduce the throughput limits for S-4170 per district application #'s 16392/3.

Table II A 1 will be revised to include new sources S-7535 and S-7536 per district application #'s 17175/6.

Table II A 1 will be revised to include new source S-7534 per district application #'s 16590/1.

Table II A 2 will be revised to accurately reflect equipment changes that occurred in district application 6896.

Table II B will be revised to remove A-414, A-621, and A-625 since these abatement devices are no longer in service and A-620, A-622, A-623, A-624, A-627, and A-628 have been revised to accurately reflect changes that occurred in district application 14675/6.

Table II B will be revised to include A-32105 abating S-4148 per district application #'s 17446/17452.

Table II A 1 will be revised to include source S-1645 from Table II A 2 per district application # 8451.

Table II A 1 will be revised to include new sources S-4363, S-4364 and move existing S-4360 from Table II A 2 per district application #'s 15914/5.

Table II A 1 will be revised to remove S-7010 per district application # 17027.

Table II A 2 will be revised to reflect changes for S-7513, S-7514, S-7523, and S-7526 per district application #'s 16642/3.

Table II B will be revised to add abatement devices A-7513, A-7514, A-7523, and A-7526 per district application #'s 16642/3.

### Section III

Table III will be revised to include both BAAQMD Regulation 2-5 and the ATCM for compression ignition engines.

### Section IV

Table IV C.2.1 will be revised to include new consent decree SO<sub>2</sub> and NO<sub>x</sub> limits per district application #'s 15711/2.

Table IV A.2.1 will be revised to include NSPS subparts A and J to all of the refinery flares per district applications 15711/2 and 17281/2.

Table IV A.3.2 will be revised to include new consent decree permit condition # 23872 per district applications 16392/3.

Table IV A.3.3 will be revised to include new consent decree permit condition # 23872 per district applications 16392/3.

Table IV A.3.3 will be revised to have condition #'s 17310, 17628, 17973, and 18387 removed since condition # 21232 will replace these condition numbers.

Table IV A.4.1 will be revised to include new sources S-7535, S-7536 and permit condition #22850 per district application #'s 17175/6.

Table IV A.4.1 will be revised to include new source S-7534 and will be subject to permit condition #22850 per district application #'s 16590/1.

Table IV A.4.1 will be revised to include new source S-7537 and permit condition #24022 per district application #'s 17428/9.

Table IV B.2.1 will be revised to remove old condition #'s 710, 711, and 712 and include the new CARB executive order per district application #6896.

Table IV H.2.1 will be revised to remove condition # 22003 per application #'s 14675/6.

Table IV G.1.4 will be revised to include permit condition 24085 for A-32105 abating S-4148 per district application #'s 17446/17452.

Table IV A.4.1 will be revised to remove S-7010 and condition 20366 per district application # 17027.

Table IV A.4.1 will be revised to include S-7513, S-7514, S-7523, S-7526, and condition # 24070 per district application #'s 16642/3.

Table IV C.3.1 will be revised to remove S-4360 and add it to Table IV F.1.0 per district application #'s 15914/5.

Table IV F.1.0 will be revised to add S-4363 and S-4364 and condition #'s 23773/4 and 23675 per district application #'s 15914/5.

### Section VI

Condition #11066 for S-4285 will be revised to add SO<sub>2</sub> and NO<sub>x</sub> limits per district application #'s 15711/2.

Condition #'s 17973 and 18387 will be removed since condition # 21232 will replace these condition numbers.

Condition #'s 16679 and 16686 will be revised per the consent decree application #'s 16392/3.

Condition # 23872 will be added per the consent decree application #'s 16392/3.

Condition # 22850 will be added per application #'s 17175/6 and 16590/1.

Condition # 24022 will be added per application #'s 17428/9.

Condition # 8869 will be revised per application #'s 14675/6.

Condition # 22003 will be deleted per application #'s 14675/6.

Condition # 24085 will be deleted per application #'s 17446/17452.

Condition # 21232 will be revised per application #'s 15821/2.

Condition # 20366 will be removed per application # 17027.

Condition # 18337 will have the throughput for S-4360 removed per application #'s 15914/5.

Condition # 20225 will be have S-7513, S-7514, S-7523, and S-7526 removed per application #'s 16642/3.

Condition # 24070 will be added for S-7513, S-7514, S-7523, and S-7526 per application #'s 16642/3.

Condition #'s 23675, 23773, and 23774 will be added for S-4360, S-4363, and S-4364 per application #'s 15914/5.

### Section VII

Table VII C.2.1 will be revised to include new consent decree SO<sub>2</sub> and NO<sub>x</sub> limits per district application #'s 15711/2.

Table VII A.3.2 will be revised to include new consent decree NO<sub>x</sub> limits per district application #'s 16392/3.

Table VII A.3.3 will be revised to include both new consent decree NO<sub>x</sub> limits and fuel flow limits per district application #'s 16392/3.

Table VII A.5.1 will be revised to include new consent decree NO<sub>x</sub> limits per district application #'s 16392/3.

Table VII A.4.1 will be revised to include new sources S-7535, S-7536 and permit condition #22850 per district application #'s 17175/6.

Table VII A.4.1 will be revised to include new source S-7534 and will be subject to permit condition #22850 per district application #'s 16590/1.

Table VII A.4.1 will be revised to include new source S-7537 and permit condition #24022 per district application #'s 17428/9.

Table VII B.2.1 will be revised to remove old condition #'s 710 and 711 and include the new condition # 20666 per district application #6896.

Table VII H.2.1 will be revised to reflect the changes to the temperature requirements and monitoring in permit condition # 8869 per application #'s 14675/6.

Table VII H.2.1 will be corrected to show that monitoring per section 61.349(f) is quarterly as opposed to monthly.

Table VII G.1.4 will be revised to include Regulation 8-8-306.2 and permit condition 24085 for A-32105 abating S-4148 per district application #'s 17446/17452.

Table VII A.4.1 will be revised to remove S-7010 and condition 20366 per district application # 17027.

Table VII F.1.0 will be revised to add S-4360, S-4363 and S-4364 and condition #'s 23773/4 and 23675 per district application #'s 15914/5.

Table VII C.3.1 will be revised to remove S-4360 per district application #'s 15914/5.

Table VII A.4.1 will be revised to add condition 24070 for sources S-7513, S-7514, S-7523, and S-7526 per district application #'s 16642/3.

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 14675/14676**

**Background**

Chevron Products Co. (Chevron) is proposing several changes in conditions for its Thermal Oxidizers listed below:

A-414	#2 Dewax and #2 Deoiler Thermal Oxidizer, Thermatrix, Model ES-60H
A-620	LPG Loading Racks Thermal Oxidizer, Thermatrix, Model ES-60H
A-621	Alkane Pump Pad Thermal Oxidizer, Thermatrix, Model ES-60H
A-622	Alkylation Plant Thermal Oxidizer, Thermatrix, Model ES-60H
A-623	#21 Pump Station Thermal Oxidizer, Thermatrix, Model ES-60H
<u>A-624</u>	<u>#17 Pump Station Thermal Oxidizer, Thermatrix, Model ES-60H</u>
A-625	#19 Pump Station Thermal Oxidizer, Thermatrix, Model ES-60H
A-627	FCC Thermal Oxidizer, Thermatrix
A-628	Alkylation Plant Thermal Oxidizer

All of the above abatement devices are abating S-32103, Fugitive Sources – Pumps and Compressor Seals, which is a general source number created to track fugitive component emissions. The proposed changes are the following:

1. Remove A-414, A-621, and A-625 from Chevron's permit since these abatement devices are no longer in service.
2. Amend Permit Condition #8869 to raise the minimum temperature requirement based upon the most recent source test results.
3. Remove Permit Condition #22003 from Chevron's permit.

In 2005 and 2006, Chevron conducted two performance tests on Thermatrix Model ES-300 and ES-60H to determine the minimum temperature, which is required for both models to reach a volatile organic compound (VOC) destruction efficiency of 95% or greater by weight. The tests for Model ES-300 and ES-60H were conducted at 1500 and 1565 degrees Fahrenheit, respectively. Also, both tests were conducted at the maximum throughput for each model, which are 540 cubic feet per hour (CFH) for Model ES-300 and 240 CFH for Model ES-60H. The test results, verified by District's source test division, indicate that the VOC destruction efficiency is greater than 95% by weight.

Chevron proposed to amend Permit Condition #8869 based on the source test results, which verified compliance with the 95% destruction efficiency at minimum temperatures and at maximum throughput/flowrates for each model. These source tests are sufficient to demonstrate compliance with the VOC destruction efficiency requirement without completing the increments of progress required within Permit Condition #22003. This condition was created through the Title V process to address EPA concerns regarding compliance with both NSPS and NESHAPs (40 CFR 60.482-10(c), 40 CFR 60.692-5 (a), and/or 40 CFR 61.242-11(c)).

Chevron also requested to remove the minimum residence time requirement in the original Permit Condition #8869. As explained in the attached letter to Chevron from Brian Batement, District's Engineer Division Director, dated June 1, 2006, the District is satisfied that "temperature will serve as an adequate indicator of compliance at the maximum expected flows." Since Chevron did perform the source tests at maximum flowrates, the minimum residence time requirement will be removed from Permit Condition #8869.

In addition, Chevron claims that A-621, A-627, and A-628 should have been permitted as Model ES-300's instead of ES-60H's, and that A-622 should be located at Yard DIB. Since many years have elapsed from when these abatement devices were permitted (1994 and 2000), neither Chevron nor the District is able to locate the original documentation. However, both models were proved to have destruction efficiencies greater than 95% and therefore satisfy the permit condition and other applicable regulatory requirements. Changing the model will not affect the compliance status of S-32103 and will allow the proposed amendment in Permit Condition #8869 to reflect the correct minimum temperature requirements for two different models. The abatement device descriptions will also be updated according to the current physical location since such changes should not affect the compliance status of S-32103, either.

Furthermore, it should be noted that both of these thermal oxidizers, Model ES-300 and ES-60H, are electric, and not gas-fired.

The Chevron Title V permit Section II, IV, VI, VII will need to be changed to include the modifications to condition text.

### **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**

S32103 is subject to and expected to be in compliance with 40 CFR 60.482-10 (c), 40 CFR 60.692-5 (a), and 40 CFR 61.242-11 (c). The source is equipped with a thermal oxidizer with at least 95% control efficiency.

S-32103 will continue to comply with Regulation 8-18 (section) and all other applicable requirements specified in the most recent facility Title V permit.



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

This application is not subject to CEQA since the project is a ministerial action conducted using the fixed standards and objective measurements outlined in the Permit Handbook Chapter 3.4.

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

### **Conditions**

S-32103 abated by A-620, A-622 through 624, A-627, and A-628 is subject to the following amended Permit Condition #8869:

1. The owner/operator of A-620, A-627, and A-628 Thermal Oxidizers (Model ES-300) shall maintain each at a minimum VOC destruction efficiency of 95% by weight. The owner/operator shall operate each A-620, A-627, and A-628 (Model ES-300) at a minimum temperature of 1500 deg F. (basis: BACT, 40 CFR 60.482-10 (c), 40 CFR 60.692-5 (a), and 40 CFR 61.242-11 (c))
2. The owner/operator of A622 through 624 Thermal Oxidizers (Model ES-60H) shall maintain each at a minimum VOC destruction efficiency of 95% by weight. The owner/operator shall operate each A622 through 624 (Model ES-60H) at a minimum temperature of 1565 deg F. (basis: BACT, 40 CFR 60.482-10 (c), 40 CFR 60.692-5 (a), and 40 CFR 61.242-11 (c))
3. The owner/operator of each Thermal Oxidizer (A620, A622, A-623, A624, A-627, and A628) shall have a continuous temperature monitor. Each pump duct shall be equipped with a continuous flow monitor. (basis: BACT)
4. The owner/operator shall monitor twice daily and record in a District approved log the temperature of each of the thermal oxidizers (A-620, A622, A-623, A624, A-627, and A-628). These records shall be kept on site and made available for District inspection upon request for a period of 60 months from the date of entry. (basis: BACT)

### **Recommendation**

Recommend the following:

1. Archive A-414, A-621, and A-625.
2. Archive Permit Condition #22003.
3. Grant the following equipment a change in Permit Condition #8869, link this condition to the following abatement devices, and update the descriptions to the following:

A-620 Thermal Oxidizer: Make Thermatrix; Model ES-300; Abating pumps and compressors at S-4238 LPG Loading Rack.

- A-622 Thermal Oxidizer: Make Thermatrix; Model ES-60H; Abating pumps and compressors at S-4355 Yard DIB.
- A-623 Thermal Oxidizer: Make Thermatrix; Model ES-60H; Abating pumps and compressors at #21 Pump Station.
- A-624 Thermal Oxidizer: Make Thermatrix; Model ES-60H; Abating pumps and compressors at #17 Pump Station.
- A-627 Thermal Oxidizer: Make Thermatrix; Model ES-300; Abating pumps and compressors at S-4285 FCC Plant.
- A-628 Thermal Oxidizer: Make Thermatrix; Model ES-300; Abating pumps and compressors at S-4291 Alkylolation Plant.

by \_\_\_\_\_ date \_\_\_\_\_

Xuna Cai  
Air Quality Engineer I

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 15711/2**

**Background**

Chevron Products Co. (Chevron) is proposing to add two new permit conditions at S-4285 FCCU, and add a new condition subjecting all of its Flares (S-6012, 6013, 6015, 6016, 6017, 6019, and 6039) to NSPS subparts A and J as part of its EPA/DOJ Consent Decree at its refinery located in Richmond. These changes in conditions are to incorporate NSPS Subparts A and J into the Title V permit and the related permit conditions. The FCCU (S-4285) will accept new SO<sub>2</sub> and NO<sub>x</sub> emissions limits based on both a 365 day rolling average and a 7 day rolling average.

The Chevron Title V permit sections IV, VI, and VII will need to be changed to include the modifications to condition text for the FCCU and include NSPS Subparts A and J to the Flares.

**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**

The SRU's (S-4227 – 4229) and FCCU (S-4285) and several furnaces and boilers will now be subject to NSPS Subparts A and J.

These sources will continue to comply with all applicable requirements specified in the most recent facility Title V permit.

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

This application is exempt from CEQA since the project has no potential for causing a significant adverse environmental impact and the application is categorically exempt from CEQA under Regulation 2-1-312.5, which exempts permit applications submitted pursuant to a judicial enforcement order (see References – Part III). In making the determination that this application is

categorically exempt: 1) a review of the CEQA-Related Information submitted by the applicant (under Regulation 2-1-426.1), has been conducted indicating that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was not required; and 3) no unusual circumstances or cumulative impacts from successive projects of the same type in the same place over time were determined to result in significant adverse environmental impacts.

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

**Recommendation**

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

S-4285      FCCU

**Conditions**

See condition #'s 11066. (attached)

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

**EVALUATION REPORT  
Chevron Products Co., Plant #10  
Application Number 15821**

**Background**

Chevron Products Co. (Chevron) is proposing to change the NOx Box conditions (21232) for its NOx Box Furnace S-4188 F-651 27 MM Btu/hr max HHV, Propylene Polymer Plant Furnace at its refinery located in Richmond. This application replaces some old NOx Box/polygon data with a new data point from a more recent source test.

The Chevron Title V permit section VI will need to be changed to include the modified condition text for 21232 and remove the outdated NOx Box data point.

**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 6-301, 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 comply with Regulation 9-10.

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.

NSPS, NESHAPS, and PSD do not apply.

**Recommendation**

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

S-4188 F-651 Polymer Furnace, 27 MM Btu/h, HHV

**Conditions**

See condition #21232. (attached)

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



# ENGINEERING EVALUATION

Chevron Products Company  
Plant Number 10  
Application Number 15914

## BACKGROUND

Chevron Products Company (Chevron) Richmond Refinery (Richmond) plans to modify up to five perchloroethylene (perc) tanks, S-4360(V-1315), S-4361(V-591), , S-4362(V-3591), S-4363(V-3592), and S-4364(V-4091), to allow each source to vent to two carbon canisters in series (vapor recovery system) during loading operations. Presently, the perc tanks vent to the facility's relief gas system. However, Chevron believes the perc in the relief system may be contributing to reliability issues at downstream processing equipment. In order to reduce the reliability issues caused by perc, Chevron proposes to vent the tanks to a vapor control system with two carbon canisters in series instead of to the relief gas system during loading operations.

Currently, only S-4360 (V-1315) is permitted as its own source in the plant's Major Facility Review (MFR) permit. The other tanks are considered new sources, and will be assigned with new source numbers, namely: S-4361 (V-591), S-4362 (V-3591), S-4363 (V-3592), and S-4364 (V-4091).

Per Regulation 2-1-123.1, storage tanks and storage vessels having a capacity of less than 260 gallons are exempt from permitting. Therefore, S-4361 (94 gallons) and S-4362 (94 gallons) are exempt from permitting as shown in Attachment A. Each of the remaining three perc tanks will be abated by two carbon canisters in series with the arrangement as follows: A-4360 for S-4360, A-4363 for S-4363, A-4364 for S-4364. These carbon canisters will provide 95 % reduction<sup>1</sup> in perc for each combined two carbon canisters in series.

After reviewing the request for accelerated permitting, it appears that Chevron satisfied the requirements for the accelerated permitting. Therefore, per Regulation 2-1-106, Chevron qualified for the Accelerated Permitting Program as shown in Attachment B and Emission Calculations section. However, Chevron later indicated that the installation of A-4630 and A-4364 were undecided. Therefore, Authority to Construct will be recommended for A-4360 and A-4364.

## EMISSION CALCULATIONS

Since S-4361 and S-4362 are exempt from permitting, the emission calculations were only performed for S-4360, S-4363, and S-4364. Emissions for precursor organic compounds (POC) are expected from this project. Other criteria pollutants are not expected from this project. POC emissions will result from tanks operations (working losses). Per the attached May 21, 2007 email from Troy Howell (Chevron's Environmental Specialist), the only vents from the perc tanks go to the two carbon canisters in series and to the relief gas system. There will be no breathing losses expected, because the tanks are nitrogen blanketed. In addition, the tanks will always be gas tight and closed off after filling. If significant pressure were to exist in the vessels, the relief valve on the tanks is designed to lift and vent from the vessels to the relief system, in which the vented gas would be recovered by the Flare Gas Recovery system.

S-4360, S-4363 and S-4364 contain perc, and S-4361 and S-4362 contain an 8:1 mixture of reformate most of the time. However, the tanks may contain perc exclusively during periods of catalyst regeneration (approximately 351 days a year in the mixture service, and about 2 weeks a year in 100% perc service). Tank

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<sup>1</sup> Per the attached May 17, 2007 email from William Zavora (Senior Application Engineer, Calgon Carbon Corporation) to Troy Howell (Chevron), the combined two carbon canisters in series containing GAC (Granular Activated Carbon) will provide 95 % or greater reduction in perc.

Emissions were estimated using TANKS EPA software (version 4.09d), which estimates the VOC emissions from each tank. Controlled POC emissions were calculated by assuming 95 % control efficiency as stated on the background section.

A summary of the uncontrolled and controlled POC Emissions from each perc tank for this project is presented in Table 1 (the detailed air emission calculations are provided in Attachment B).

**Table 1. Summary of Potential POC Emission**

		Daily Max Emissions (lb/day)	Uncontrolled Annual Max Emissions (lb/yr)	Controlled Annual Max Emissions (lb/yr)
S-4360 (V-1315)		2.61	20.88	1.04
S-4361 (V-591)	*	0.77	8.04	8.04
S-4362 (V-3591)	*	0.77	8.04	8.04
S-4363 (V-3592)		1.37	65.66	3.28
S-4364 (V-4091)		0.08	19.41	0.97
Total		5.59	122.03	21.38

The POC emission concentration from S-4360, S-4363, and S-4364 after abatement will be permitted at a maximum perc concentration of 100 ppmv as measured at the outlet of each vapor recovery system. The maximum daily emissions and annual emissions were calculated based on 100 ppmv perchloroethylene concentration, and the resulting emissions are lower than the daily max emissions and controlled annual max emissions shown in Table 1. (See Attachment C for detailed calculations.) In other words, the 100 ppmv limit at the outlet of each vapor recovery system will ensure that the POC emission will not exceed the POC emissions shown in Table 1.

As stated above, this project does not trigger BACT since the daily maximum POC Emissions is lower than 10 lbs for the highest day. Note that Chevron will accept daily turnover permit condition limits used in the emission calculations and stated in Attachment A.

***Plant Cumulative Increase:***

Since S-4361 and S-4362 are exempt from permitting, the cumulative increase for this project only includes S-4360, S-4363, and S-4364. The cumulative increase for this project is summarized as follows:

$$\text{POC: S-4360} + \text{S-4363} + \text{S-4364} = 1.04 + 3.28 + 0.97 = \mathbf{5.29 \text{ lb/ yr} = 0.0024 \text{ Ton/yr}}$$

**Offsets:**

$$\text{POC: } 1.15 (0.0024 \text{ TPY}) = 0.003 \text{ TPY}$$

Chevron will provide credits from Banking Certificate #617 to offset the cumulative increase of 0.0024 TPY of POC emissions at a 1.15:1.0 ratio.

**TOXIC RISK SCREENING ANALYSIS**

No Toxic Risk Screening Analysis is required. This project does not exceed the risk screening trigger level for perchloroethylene and other toxic air contaminants from reformat in Table 2-5-1. Total emissions from the five perc tanks were estimated and calculated for the purpose of HRSA trigger level evaluation (Refer to Attachment B for the detailed HRSA trigger level evaluation).

**BACT**

BACT is not triggered since the maximum daily emissions of the pollutants do not exceed 10 lb/day. Please refer to Attachment B for the detailed maximum daily emission calculations.

### **STATEMENT OF COMPLIANCE**

This application will comply with Regulation 2-1-106, the Accelerated Permitting Program, as shown in Attachment B and Emission Calculations section. Therefore, this project does not require an authority to construct pursuant to Regulation 2-1-301 and construction and operation may begin immediately upon submittal of a complete application.

This application does not trigger BACT since the maximum daily emissions of the pollutants do not exceed 10 lb/day.

The controlled emission rate is less than 5 tons/ year (21.38 lbs/yr), and this application is not subject to the requirements of Regulation 2-1-316, 317, or 318. Therefore, the criteria of Regulation 2-1-319 is met.

Per Regulation 2-1-123.1 and 8-5-110, S-4361 (V-591) and S-4362 (V-3591) are exempt from permitting requirements of Regulation 2-1-301 and 302 for liquid storage tanks and storage vessels having a capacity of less than 260 gallons provided that the sources does not require permitting pursuant to Regulation 2-1-319 as described above.

To comply with Regulation 8-18 regarding equipment leaks, Chevron stated that it has LDAR (Leak Detection And Repair) program that will ensure continued compliance with this rule.

Since this project is not subject to 40 CFR 60 general provisions and 40 CFR 61 general provisions, the requirements of Subpart A do not apply.

This application is not subject to 40 CFR 60 subpart Kb, since the tanks are all below 75 cubic meters.

In compliance with 40 CFR 61 Subpart FF, this proposed project is not expected to generate any new benzene-containing waste. For existing benzene-containing waste, Chevron has in place a Benzene Waste Operation NESHAP (BWON) program that will ensure compliance with this rule

This application is subject to 40 CFR 63 Subpart CC since S-4361 and S-4362 are included as group 2 miscellaneous process vents. Currently, there is no control provisions identified in Subpart CC for group 2 process vents. Chevron has to comply with the applicable reporting and recordkeeping requirements of this subpart.

This application is not subject to 40 CFR 63 Subpart EEEE since this subpart does not regulate miscellaneous process vents and vessels that are less than 5000 gallons.

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 4.0.

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.

### **Permit Conditions**

Chevron proposed to monitor the perchloroethylene emissions from the vapor recovery systems with Drager Colormetric Tubes as opposed to photo-ionization detector (PID), which has been commonly used for such applications in the District. The manufacturer

specifications of the Drager perc tubes 2/a that Chevron proposed to use have been reviewed. Its measuring range is from 2 to 300 ppm and seems capable to detect the 100 ppmv limit in the permit condition. Its accuracy ranges from +/- 15% to 20 % and is similar to PID, which has accuracy range of +/- 10% to 20%. However, actual testing data is needed to determine whether Drager Colormetric Tubes can be as reliable as PID for monitor perchloroethylene emissions The District will decide whether to approve the use of Drager Colormetric Tubes for this project once Chevron provides sufficient data from side-by-side testing of Drager Colormetric Tubes and PID.

***For S-4360 at Plant 10 (Condition #23765):***

1. The owner/operator of S-4360 (V-1315) shall limit the total number of vessel volume turnovers to not exceed 8 turnovers in any consecutive 12-month period and 1 turnover in any consecutive 24-hour period for S-4360 when the two carbon canisters in series (A-4360) is installed.  
[Basis: Cumulative increase]
2. The owner/operator shall only use S-4360 for storage and handling of perchloroethylene (perc), and S-4360 shall be nitrogen blanketed at all times.  
[Basis: Cumulative increase]
3. The owner/operator shall vent S-4360 to the refinery relief gas system at all times of operation, except during loading operations when S-4360 is abated by the two carbon canisters in series (A-4360).  
[Basis: Cumulative increase]
4. The owner/operator of S-4360 shall monitor with a photo-ionization detector (PID), or other method pre-approved in writing by the Air Pollution Control Officer (APCO) at the following locations:
  - a. At the inlet to the first carbon vessel in series of A-4360.
  - b. At the inlet to the last carbon vessel in series of A-4360.
  - c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere of A-4360.

The owner/operator shall calibrate the PID for perchloroethylene. Concentrations measured shall be considered perchloroethylene for the purposes of these permit conditions

5. The owner/operator shall maintain a District-approved monthly log of all monitoring data at the time taken. The monitoring results shall be used to estimate the frequency of Carbon change-out necessary to maintain compliance with part numbers 6 and 7, and shall be conducted during each filling/loading cycle. If any periods between each filling/loading cycle are more than 30 days, the owner/operator shall monitor at least once every 30 days. The owner/operator may request for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Engineering Division shall be received by the owner/operator prior to a change to the monitoring schedule.
6. The owner/operator of A-4360 shall immediately change the second to last Carbon vessel with unspent Carbon upon breakthrough, defined as the detection at its outlet of the higher of the following:
  - a. 10 % of the inlet stream concentration to the vessel, or
  - b. 100 ppmv.

[Basis: Cumulative increase]

7. The owner/operator of A-4360 shall not exceed 100 ppmv at the outlet of the last carbon vessel. The owner/operator shall cease venting S-4360 to A-4360, immediately upon detection of 100 ppmv at the outlet of the last carbon vessel, and shall vent immediately to the refinery relief gas system. The owner/operator shall not use A-4360 until the last carbon vessel has been changed out with fresh carbon.  
[Basis: Cumulative increase]
8. The owner/operator of S-4360 shall maintain the following records for each month of operation of the source:
  - a. The date and amount of time of each loading operation and the amount loaded.
  - b. Each monitor reading or analysis result for the day of operation that the readings are taken.
  - c. The number of Carbon beds removed and installed from service.

The owner/operator shall maintain in the district-approved monthly log all measurements, records, and data required above. This log shall be retained on site for at least five years from the date of entry and be made available to district staff upon request.

[Basis: Reg. 2-6-501]

***For S-4363 at Plant 10 (Condition 23773):***

1. The owner/operator of S-4363 (V-3592) shall limit the total number of vessel volume turnovers to not exceed 48 turnovers in any consecutive 12-month period and 1 turnover in any consecutive 24-hour period for S-4363 when the two carbon canisters in series (A-4363) is installed.  
[Basis: Cumulative increase]
2. The owner/operator shall only use S-4363 for storage and handling of perchloroethylene (perc), and S-4363 shall be nitrogen blanketed at all times.  
[Basis: Cumulative increase]
3. The owner/operator shall vent S-4363 to the refinery relief gas system at all times of operation, except during loading operations when S-4363 is abated by the two carbon canisters in series (A-4363).  
[Basis: Cumulative increase]
4. The owner/operator of S-4363 shall monitor with a photo-ionization detector (PID), or other method pre-approved in writing by the Air Pollution Control Officer (APCO) at the following locations:
  - a. At the inlet to the first carbon vessel in series of A-4363.
  - b. At the inlet to the last carbon vessel in series of A-4363.
  - c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere of A-4363.

The owner/operator shall calibrate the PID for perchloroethylene. Concentrations measured shall be considered perchloroethylene for the purposes of these permit conditions

5. The owner/operator shall maintain a District-approved monthly log of all monitoring data at the time taken. The monitoring results shall be used to estimate the frequency of Carbon change-out necessary to maintain compliance with part numbers 6 and 7, and shall be conducted during each filling/loading cycle. If any periods between each filling/loading cycle are more than 30 days, the owner/operator shall monitor at least once every 30 days. The owner/operator may request for District review, based on actual measurements taken at the site during

operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Engineering Division shall be received by the owner/operator prior to a change to the monitoring schedule.

6. The owner/operator of A-4363 shall immediately change the second to last Carbon vessel with unspent Carbon upon breakthrough, defined as the detection at its outlet of the higher of the following:
  - a. 10 % of the inlet stream concentration to the vessel, or
  - b. 100 ppmv.

[Basis: Cumulative increase]

7. The owner/operator of A-4363 shall not exceed 100 ppmv at the outlet of the last carbon vessel. The owner/operator shall cease venting S-4363 to A-4363, immediately upon detection of 100 ppmv at the outlet of the last carbon vessel, and shall vent immediately to the refinery relief gas system. The owner/operator shall not use A-4363 until the last carbon vessel has been changed out with fresh carbon.

[Basis: Cumulative increase]

8. The owner/operator of S-4363 shall maintain the following records for each month of operation of the source:
  - a. The date and amount of time of each loading operation and the amount loaded.
  - b. Each monitor reading or analysis result for the day of operation that the readings are taken.**
  - c. The number of Carbon beds removed and installed from service.

The owner/operator shall maintain in the district-approved monthly log all measurements, records, and data required above. This log shall be retained on site for at least five years from the date of entry and be made available to district staff upon request.

[Basis: Reg. 2-6-501]

***For S-4364 at Plant 10 (Condition 23774):***

1. The owner/operator of S-4364 (V-4091) shall limit the total number of vessel volume turnovers to not exceed 248 turnovers in any consecutive 12-month period and 1 turnover in any consecutive 24-hour period for S-4364.

[Basis: Cumulative increase]

2. The owner/operator shall only use S-4364 for storage and handling of perchloroethylene (perc), and S-4364 shall be nitrogen blanketed at all times.

[Basis: Cumulative increase]

3. The owner/operator shall vent S-4364 to the refinery relief gas system at all times of operation, except during loading operations when S-4364 is abated by the two carbon canisters in series (A-4364).

[Basis: Cumulative increase]

4. The owner/operator of S-4364 shall monitor with a photo-ionization detector (PID), or other method pre-approved in writing by the Air Pollution Control Officer (APCO) at the following locations:

- a. At the inlet to the first carbon vessel in series of A-4364.

- b. At the inlet to the last carbon vessel in series of A-4364.
- c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere of A-4364.

The owner/operator shall calibrate the PID for perchloroethylene. Concentrations measured shall be considered perchloroethylene for the purposes of these permit conditions

- 5. The owner/operator shall maintain a District-approved monthly log of all monitoring data at the time taken. The monitoring results shall be used to estimate the frequency of Carbon change-out necessary to maintain compliance with part numbers 6 and 7, and shall be conducted during each filling/loading cycle. If any periods between each filling/loading cycle are more than 30 days, the owner/operator shall monitor at least once every 30 days. The owner/operator may request for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Engineering Division shall be received by the owner/operator prior to a change to the monitoring schedule.
- 6. The owner/operator of A-4364 shall immediately change the second to last Carbon vessel with unspent Carbon upon breakthrough, defined as the detection at its outlet of the higher of the following:
  - a. 10 % of the inlet stream concentration to the vessel, or
  - b. 100 ppmv.[Basis: Cumulative increase]
- 7. The owner/operator of A-4364 shall not exceed 100 ppmv at the outlet of the last carbon vessel. The owner/operator shall cease venting S-4364 to A-4364, immediately upon detection of 100 ppmv at the outlet of the last carbon vessel, and shall vent immediately to the refinery relief gas system. The owner/operator shall not use A-4364 until the last carbon vessel has been changed out with fresh carbon.  
[Basis: Cumulative increase]
- 8. The owner/operator of S-4364 shall maintain the following records for each month of operation of the source:
  - a. The date and amount of time of each loading operation and the amount loaded.
  - b. **Each monitor reading or analysis result for the day of operation that the readings are taken.**
  - c. The number of Carbon beds removed and installed from service.

The owner/operator shall maintain in the district-approved monthly log all measurements, records, and data required above. This log shall be retained on site for at least five years from the date of entry and be made available to district staff upon request.

[Basis: Reg. 2-6-501]

## **RECOMMENDATION**

**Issue Letters of Exemption to Chevron for:**

S-4361 Perchloroethylene Storage Tank V-591

S-4362 Perchloroethylene Storage Tank V-3591

**Waive Authority to Construct and issue Permit to Operate to Chevron for:**

S-4363 Perchloroethylene Storage Tank V-3592

S-4364 Perchloroethylene Storage Tank V-4091

A-4363 Two Carbon Canister in series abating S-4363 Perchloroethylene Storage Tank V-3592

**Issue Authority to Construct to Chevron for:**

A-4360 Two Carbon Canister in series abating S-4360 Perchloroethylene Storage Tank V-1315

A-4364 Two Carbon Canister in series abating S-4364 Perchloroethylene Storage Tank V-4091

\_\_\_\_\_  
Xuna Cai  
Air Quality Engineer

\_\_\_\_\_  
Date



## Attachment A

**Table A.1 Tank Dimensions and Volumes**

Tank	Diameter (ft)	Height (ft)	Volume (Gallons)	Exempt from Permitting
S-4360 (V-1315)	6.57	10.33	2,558	No
S-4361 (V-591)	2	4	94	Yes
S-4362 (V-3591)	2	4	94	Yes
S-4363 (V-3592)	4.88	16	2,260	No
S-4364 (V-4091)	3	7	370	No

**Table A.2 Tank Turnover Limits**

Tank	Maximum Annual Turnover	Maximum Daily Turnover
S-4360 (V-1315)	8	1
S-4361 (V-591)	-	6 (4 Perc, 2 Mix <sup>2</sup> )
S-4362 (V-3591)	-	6 (4 Perc, 2 Mix <sup>2</sup> )
S-4363 (V-3592)	48	1
S-4364 (V-4091)	248	1

Per Chevron's statement on the Title V Application 15915, the hourly emission is adjusted to reflect only one filling per hour.

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<sup>2</sup> Both S-4361 and S-4362 will contain an 8:1 mixture of reformat to perc most of the time, as described on emission calculations section.

**Attachment B**

In order to qualify for the Accelerated Permitting Program per Regulation 2-1-106, Chevron must satisfy the following conditions:

**2-1-106 Limited Exemption, Accelerated Permitting Program:**

Unless subject to any of the provisions of Sections 2-1-316 through 319, any new or modified source is exempt from the Authority to Construct requirements of Section 2-1-301, provided that the owner or operator submits a complete application under the Accelerated Permitting Program. A complete permit application under this program consists of: a completed permit application form and source data form(s); payment of applicable fees (the minimum permit fee required to install and operate each source); and certification that the source meets all of the criteria set forth in Sections 2-1-106.1 through 106.3.

Such a source is still subject to the Permit to Operate requirements of Section 2-1-302, but will be evaluated under the Accelerated Permitting Program, as described in Section 2-1-302.2.

**106.1 Uncontrolled emissions of POC, NPOC, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and CO are each less than 10 pounds per highest day; or the source is pre-certified per Section 2-1-415; and**

**106.2 Emissions of toxic compounds do not exceed the trigger levels identified in Table 2-5-1 of Regulation 2, Rule 5; and**

**106.3 The source is not subject to the public notice requirements of Section 2-1-412.**

In addition to the above, the replacement of any abatement device is exempt from the Authority to Construct requirements of Section 2-1-301 and will be evaluated under the Accelerated Permitting Program in Section 2-1-302.2, provided that the owner or operator certifies for all pollutants that the abatement device is as efficient as, or more efficient than, the abatement device being replaced. In addition to the above, any alteration of a source is exempt from the Authority to Construct requirements of Section 2-1-301 and will be evaluated under the Accelerated Permitting Program in Section 2-1-302.2, provided that the owner or operator certifies for all pollutants that the alteration does not result in an increase in emissions.

*(Adopted 6/7/95; Amended 10/7/98; 5/17/00; 6/15/05)*

To demonstrate the ability to satisfy the above requirements, the detailed emission calculations were performed and summarized as follows:

**Maximum Daily Emission Calculations:**

Assuming the maximum daily turnover as stated on Table A.2, the maximum unabated daily emissions are modeled using two approaches (from annual emission model result and continuous operation model result<sup>3</sup>). After calculating the emissions per turnover value for each tank, it appears that the emission values from annual emission model is more conservative than the continuous model. Therefore this approach is used for the purpose of calculating the maximum daily emissions for this project, which generates the result as the following:

**Table B.1. Potential Emissions and TAC Emissions**

	S-4360	S-4361	S-4362	S-4363	S-4364
--	--------	--------	--------	--------	--------

<sup>3</sup> For this method, the tanks are assumed to run all day and 365 days/ year

		V-1315	V-591(perc)	V-591(8:1)	V-3591(perc)	V-3591(8:1)	V-3592	V-4091
Annual Throughput	gal/yr	2.03E+04	2.90E+03	1.55E+04	2.90E+03	1.55E+04	8.06E+04	6.56E+04
Hourly Throughput	gal/hr	7.68E+03	4.80E+02	4.80E+02	4.80E+02	4.80E+02	4.20E+03	2.16E+02
POC Emmissions	lb/yr	20.88	2.71	5.33	2.71	5.33	65.66	19.41
Toxic Emissions								
Perchloroethylene	lb/yr	2.01E+01	2.71E+00	3.80E-01	2.71E+00	3.80E-01	6.57E+01	1.94E+01
Benzene	lb/yr			3.40E-01		3.40E-01		
Butadiene 1,3	lb/yr			4.10E-01		4.10E-01		
Ethylbenzene	lb/yr			8.00E-02		8.00E-02		
n-hexane	lb/yr			1.33E+00		1.33E+00		
naphthalene	lb/yr			0.00E+00		0.00E+00		
styrene	lb/yr			0.00E+00		0.00E+00		
toluene	lb/yr			1.21E+00		1.21E+00		
xylenes	lb/yr			3.40E-01		3.40E-01		
Isopropyl Alcohol	lb/yr			7.00E-02		7.00E-02		
Annual Max Turnover		8	28	28	28	28	48	248
Daily Max Turnover		1	4	2	4	2	1	1
Daily Max Emission	lb/day	2.61	0.39	0.38	0.39	0.38	1.37	0.08

Using the daily maximum emission values from Table B.1, the maximum daily emissions and annual emissions can be summarized as follows:

**Table B.2 Daily and Annual POC Emissions Summary**

		Daily Max Emissions (lb/day)	Uncontrolled Annual Max Emissions (lb/yr)	Controlled Annual Max Emissions (lb/yr)
S-4360 (V-1315)		2.61	20.88	1.04
S-4361 (V-591)	*	0.77	8.04	8.04
S-4362 (V-3591)	*	0.77	8.04	8.04
S-4363 (V-3592)		1.37	65.66	3.28
S-4364 (V-4091)		0.08	19.41	0.97
Total		5.59	122.03	21.38

As stated on Table B.2 above, the total of maximum daily POC emission from this project is lower than 10 lb/day. Therefore, this project satisfies the requirement on Regulation 2-1-106.1.

### HRSA Trigger Level Evaluation

Totaling the TAC emission from Table B.1, the TAC emission for this project can be summarized as follows:

**Table B.3 HRSA Trigger Level Evaluation**

Chemical Name	CAS Number	Uncontrolled		Controlled		Acute Trigger	Chronic Trigger	Exceeds Acute Trigger Level?	Exceeds Chronic Trigger Level?
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr		
Perchloroethylene	127-18-4	4.180	111.380	0.209	5.569	4.40E+01	3.00E+01	no	no
Benzene	<sup>4</sup> 71-43-2	0.024	0.680	0.024	0.680	2.90E+00	6.40E+00	no	no
Butadiene 1,3	<sup>5</sup> 106-99-0	0.029	0.820	0.029	0.820	NA	1.10E+00	no	no
Ethylbenzene	<sup>5</sup> 100-41-4	0.006	0.160	0.006	0.160	NA	7.70E+04	no	no
n-hexane	<sup>5</sup> 110-54-3	0.095	2.660	0.095	2.660	NA	2.70E+05	no	no
napthalene	<sup>5</sup> 91-20-3	0.000	0.000	0.000	0.000	NA	1.10E-02	no	no
styrene	<sup>5</sup> 100-42-5	0.000	0.000	0.000	0.000	4.60E+01	3.50E+04	no	no
toluene	<sup>5</sup> 108-88-3	0.086	2.420	0.086	2.420	8.20E+01	1.20E+04	no	no
xylenes	<sup>5</sup> 1330-20-7	0.024	0.680	0.024	0.680	4.90E+01	2.70E+04	no	no
Isopropyl Alcohol	<sup>5</sup> 67-63-0	0.005	0.140	0.005	0.140	7.10E+00	2.70E+05	no	no

As determined above, there are no TAC trigger levels exceeded by this project. Therefore, no Toxic Risk Screening Analysis is required. And, this project satisfies the requirement on Regulation 2-1-106.2.

**Accelerated Permitting Program Requirements Checklist**

The demonstration that the project qualifies for the Accelerated Permitting Program is provided below:

1. This project is not subject to any of the provisions of Sections 2-1-316 through 319
  - Regulation 2-1-316 : Hazardous Air Pollutants.  
The total POC emission does not exceed the trigger level in Table 2-5-1 (2-1-316.1)  
This project does not expect to emit any pollutant identified on hazardous substances list in Regulation 2-1-318 (2-1-316.2)
  - Regulation 3-1-317 : Public Nuisance Sources.  
Chevron stated that the facility operates and will continue to operate with good management practices and does not anticipate nuisance emission from this project.
  - Regulation 3-1-318 : Hazardous Substances.  
This project does not expect to emit any pollutant identified on hazardous substances list in Regulation 2-1-318
  - Regulation 3-1-319 : Source Expressly Subject to Permitting Requirements  
Emission rate is lesser than 5 tons/ year (21.38 lbs/yr)  
The source is not subject to the requirements of Section 2-1-316, 317, or 318.

<sup>4</sup> Per Chevron’s statement on the Title V Application 15915, the hourly emission is adjusted to reflect only one filling per hour.

<sup>5</sup> This Tank has no abatement device installed. Therefore, the uncontrolled emission value is similar to the controlled emission value.

2. This project satisfies Regulation 2-1-106.1: Uncontrolled emissions of POC, NPOC, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and CO are each less than 10 pounds per highest day (5.59 lb/day); or the source is pre-certified per Section 2-1-415.

3. This project satisfies Regulation 2-1-106.2: Emissions of toxic compounds do not exceed the trigger levels identified in Table 2-5-1 of Regulation 2, Rule 5 (Refer to Table B.3).

4. This project satisfies Regulation 2-1-106.3: The source is not subject to the public notice requirements of Section 2-1-412 because the sources are not within 1,000 feet of any school. Therefore, public notice as defined by Regulation 2-1-412 is not required.

In light of the above, this project qualifies for the Accelerated Permitting Program.

**Attachment C**

Emission Calculation Based on 100 ppmv Perchloroethylene Concentration at the Outlet of Each Vapor Recovery System for S-4360, S-4363, and S-4364.

**Assumptions:**

- The outlet gas follows the ideal gas law.
- The outlet gas is at ambient temperature (298 K) and atmospheric pressure (101.3 kPa).

Source No.	Tank Volume	Turnover Permitted	Max Liquid Transferred*		Max Vapor Moved		Perc Mass Emission	
	Gallons		#/year	Gallons/hr	Gallon/yr	SCF/hr	SCF/yr	lb/hr (lb/day)*
S-4360 (V-1315)	2558	8	2558	20464	342.77	2742.18	0.014	0.12
S-4363 (V-3592)	2260	48	2260	108480	302.84	14536.32	0.013	0.61
S-4364 (V-4091)	370	248	370	91760	49.58	12295.84	0.002	0.52

Note: \* Maximum liquid transferred per hour is equal to the tank volume because it takes less than one hour to fill each tank and maximum turnover permitted is once per day for each tank. For the same reason, the maximum Perc emission per day is equal to the maximum emission per hour.

**ENGINEERING EVALUATION  
CHEVRON PRODUCTS COMPANY, RICHMOND REFINERY  
PLANT NO. 10  
APPLICATION NO. 16590**

**BACKGROUND**

Chevron Products Company, Richmond Refinery (Chevron) is applying for an Authority to Construct and/or Permit to Operate the following:

**S-7534 Emergency Standby Generator (Plant Protection Building): Diesel Engine; Make Cummins; Model QSL9-G3 NR3; Model Year 2007; Rated Horsepower 399 HP.**

The generator is used to produce backup power for critical networks and equipment at the plant protection building that serves as the central hub for the facility emergency response personnel and equipment.

**EMISSION Calculations**

**Annual Emissions:**

Basis:

- 399 bhp output rating for full-load, standby operation
- 50 hour/year operation for reliability-related activities
- NO<sub>x</sub>, POC, CO, and PM<sub>10</sub> emission factors per CARB Certification data (Executive Order U-R-002-0393)
- POC is assumed to be 5% of NMHC + NO<sub>x</sub>
- NO<sub>x</sub> is assumed to be 95% of NMHC + NO<sub>x</sub>
- 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):  
SO<sub>2</sub> 8.09E-3 (% S in fuel oil) lb/hp-hr = 8.09E-3 (0.0015% S) (454 g/lb) = 0.000055 g/hp-hr

**Table 1: Emission Factor Summary**

Pollutant	Emission factor (g/hp-hr)
NO <sub>x</sub>	2.76
CO	2.46
POC	0.15
PM <sub>10</sub>	0.11
SO <sub>2</sub>	0.000055

For S-7534,

$$\begin{aligned}
 \text{NO}_x &= ( 2.76 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 121.41 \text{ lb/yr} = 0.061 \text{ TPY} \\
 \text{CO} &= ( 2.46 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 108.14 \text{ lb/yr} = 0.054 \text{ TPY} \\
 \text{POC} &= ( 0.15 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 6.39 \text{ lb/yr} = 0.003 \text{ TPY} \\
 \text{PM}_{10} &= ( 0.11 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 4.92 \text{ lb/yr} = 0.002 \text{ TPY} \\
 \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 0.002 \text{ lb/yr} = 0.000001 \text{ TPY}
 \end{aligned}$$

**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 S-7534,

$$\begin{aligned} \text{NOx} &= ( 2.76 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 58.28 \text{ lb/day} \\ \text{CO} &= ( 2.46 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 51.91 \text{ lb/day} \\ \text{POC} &= ( 0.15 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 3.07 \text{ lb/day} \\ \text{PM}_{10} &= ( 0.11 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 2.36 \text{ lb/day} \\ \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr} ) ( 399 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 0.001 \text{ lb/day} \end{aligned}$$

**PLANT CUMULATIVE INCREASE**

The plant’s cumulative increase post year 1991 is summarized in Table 2.

**Table 2**

Pollutant	Current	Application Increase	New Total
NOx	0	0.061	0.061
CO	3.072	0.054	3.126
POC	1.815	0.003	1.818
PM <sub>10</sub>	0.214	0.002	0.216

**OFFSETS**

Facility-wide, Chevron has been permitted to emit more than 35 tons per year or more, on a pollutant specific basis, of POC and NOx, and therefore Chevron is required to provide offsets for POC and NOx at a 1.15 to 1.0 ratio per Regulation 2-2-302. In addition, Chevron is a Major Facility, which has been permitted to emit more than 1.0 tons of PM10 per year. Per Regulation 2-2-303, Chevron is also required to provide emission offsets for PM10 at a 1.0 to 1.0 ratio. Chevron will use Banking Certificate # 617 to provide all the emission reduction credits summarized in Table 3.

**Table 3**

Pollutant	Application Increase	Offset Ratio	Emission Reduction Credits Required
NOx	0.061	1.15 to 1.0	0.070
POC	0.003	1.15 to 1.0	0.003
PM <sub>10</sub>	0.002	1.0 to 1.0	0.002

**TOXICS RISK SCREENING**



The toxic emission of diesel particulate at S-7534 does exceed the District Risk Screening Trigger, as shown in Table 4, and a Risk Screening Analysis has been performed.

**Table 4**

Source	PM <sub>10</sub> Emission Factor (g/HP-hr)	HP	Annual Usage (Hours/year) <sup>5</sup>	Diesel Exhaust Particulate Emissions (lb/year):	Trigger Level (lb/yr)	Risk Screen Required? (Yes/No)
S-7534	0.11	399	50	4.92	0.58	Yes

Per the attached memo from Jane Lundquist dated November 1, 2007, results from the health risk screening analysis indicate that the maximum cancer risk is 0.2 in a million and the chronic hazard index is 0.0001 for 50 hours of operation per year. In accordance with the District’s Regulation 2-5, this risk level is considered acceptable.

**BACT**

In accordance with Regulation 2-2-301, Best Available Control Technology (BACT) is triggered for any new source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO<sub>2</sub> or PM<sub>10</sub>.

Based on the emission calculations above, the owner/operator of S-7534 is subject to BACT for the following pollutants: NOx 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 in Table 5.

**Table 5**

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
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> ]	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
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>

The NOx and CO emission limits set by BACT 2 are met, as shown in Table 6.

**Table 6**

<sup>5</sup> Annual Usage based on 50 hours per year of operation for reliability-related activities as prescribed by Subsection (E)(2)(A) of section 93115, title 17, California Code of Regulations.

Pollutant	Engine Emission Factors (g/hp-hr)	Emission Factor Limits as set by BACT 2 (g/hp-hr)	Have the limits been met?
NO <sub>x</sub>	2.76	6.9	YES
CO	2.46	2.75	YES

Therefore, S-7534 is determined to be in compliance with the BACT 2 limits for NO<sub>x</sub> and CO.

### **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 1 standards for an off-road engine for the same maximum rated power.

This emergency standby diesel engine (S-7534) is in compliance with the above ATCM requirements. The owner/operator is limited by permit conditions to 50 hours per year for maintenance and reliability testing. This engine is subject to the Tier 3 off-road CI engine standards for HC, NO<sub>x</sub>, NMHC+NO<sub>x</sub> and CO. As shown in the Table 7, the engine meets these requirements.

**Table 7. ATCM Tier 3 Compliance**

	CARB certified g/bhp-hr	ATCM Tier 3 g/bhp-hr
NMHC+NO <sub>x</sub>	2.91	2.98
NO <sub>x</sub>	N/A	N/A
NMHC (POC)	N/A	N/A
CO	2.46	2.61
PM	0.11	0.15

### **NSPS**

The engine is subject to 40 CFR 60, Subpart III, 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 8.9 liters and 6 cylinders, so each cylinder has a volume of less than 10 liters. The engine is a 2007 engine and is not a fire pump. 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-002-0393, this 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.

The owner/operator of S-7534 is subject to and expected to comply with Sections 60.4206 and 60.4211(a), which 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 requirements is expected since the Authority to Construct is only issued to the engine being evaluated and the engine meets 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), and 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 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, will be used. 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.

Section 60.4209(a) requires a non-resettable hour meter. This requirement is 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 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 conditions to 50 hours per year for reliability testing and otherwise may only operate for emergencies.

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

Section 60.4214 states that owner/operator does 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 60.4214(c).

The owner/operator is subject to and expected to comply with 40 CFR 60, Subpart A, General Provisions.

### **NESHAP**

In accordance with 40 CFR 63.6590, the engine is not subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because the engine is rated less than 500 break horsepower.

### **STATEMENT OF COMPLIANCE**

The owner/operator of S-7534 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 PM<sub>10</sub> (<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 PM<sub>10</sub> emissions. Because S-7534 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.

The application 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 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.

**PSD does not apply.**

### **PERMIT CONDITIONS**

Application 16590; Plant 10;  
Conditions for S-7534

**PC22850**

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)(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 an Authority to Construct to Chevron for:

**S-7534 Emergency Standby Generator (Plant Protection Building): Diesel Engine; Make Cummins; Model QSL9-G3 NR3; Model Year 2007; Rated Horsepower 399 HP.**

By: \_\_\_\_\_  
Xuna Cai  
Air Quality Engineer I

Date: \_\_\_\_\_

**EVALUATION REPORT**  
**Chevron Products Co., Plant #10**  
**Application Number 16392/3**

**Background**

Chevron Products Co. (Chevron) is proposing to incorporate terms of Consent Decree No. C 03-04650 with the U.S. Environmental Protection Agency and Plaintiff-Intervenors (including the Bay Area Air Quality Management District) affecting multiple heaters at its Richmond refinery into its District operating permit. The proposed changes in this application are to include additional permit limits and monitoring conditions on the following furnaces and boilers within the refinery:

<b>Source #</b>	<b>Source Description</b>	
S-4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Process Heater/Furnace, 198MM BTU/hr max
S-4043	F560, #5 RHENIFORMER	Process Heater/Furnace, 133MM BTU/hr max
S-4044	#5 RHENIF F570	Process Heater/Furnace, 78MM BTU/hr max
S-4045	#5 RHENIF F580	Process Heater/Furnace, 51MM BTU/hr max
S-4059	#1 JHT Furnace #247	Process Heater/Furnace, 121MM BTU/hr max
S-4061	#5 NAPH HYDROTREATER F410	Process Heater/Furnace, 122MM BTU/hr max
S-4062	#5 NAPH HYDROTREATER F447	Process Heater/Furnace, 165MM BTU/hr max
S-4070	#4 CRUDE UNIT F 1100A	Process Heater/Furnace, 398MM BTU/hr max
S-4071	#4 CRUDE UNIT F1100B	Process Heater/Furnace, 405MM BTU/hr max
S-4072	#4 CRUDE UNIT F1160	Process Heater/Furnace, 336MM BTU/hr max
S-4129	800# STM BLR #1 #IPP	Industrial Boiler - Other
S-4132	800# STM BLR #4 #1 PP	Industrial Boiler - Other
S-4135	800# STM BLR #7 #1 PP	Industrial Boiler - Other
S-4158	Hydrogen Plant Preheat Furnace F-340	Process Heater/Furnace, 48MM BTU/hr max
S-4159	F410 TKC FEED FURNACE TKC ISOMAX	Process Heater/Furnace, 68MM BTU/hr max
S-4160	F420 TKC FEED FURNACE TKC ISOMAX	Process Heater/Furnace, 71MM BTU/hr max
S-4167	F-710 TKC FRACTIONATOR ISOMAX	Process Heater/Furnace, 145MM BTU/hr max

S-4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low NOX Burners	Process Heater/Furnace, 331MM BTU/hr max
S-4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Process Heater/Furnace, 260MM BTU/hr max
S-4170	F355 REFORMING FURNACE, H2 PLANT	Process Heater/Furnace, 847MM BTU/hr max
S-4171	F355 REFORMING FURNACE, H2 PLANT	Process Heater/Furnace, 847 MM BTU/hr max

New, modified and deleted permit conditions and source description for this application:

- Modify the source descriptions of S-4170 and S-4171 to reduce the maximum design capacity from 847 to 820 MM BTU/hr.
- Modify Condition #16679 for S-4170 to reduce the maximum design capacity from 847 to 820 MM BTU/hr.
- Modify Condition # 16686 for S-4170 and S-4171 to reduce the firing rates (higher heating value) for each from 20,328 to 19,680 MMBTU/day as the enforceable daily limit and from 847 to 820 MMBTU/hr as the basis for fuel calculations.
- Delete Condition #17973, the NOx limit for S-4171 because it has already been superceded by condition 21232.
- Add a new condition limiting 365-day average NOx emission rates and compliance requirements for heaters and boilers covered by Consent Decree No. C 03-04650 (CRB).

The Chevron Title V permit sections II, IV, VI, and VII will need to be changed to include the modifications to condition text and two source descriptions for the heaters and boilers.

### **Emission Calculations**

No emission increases are expected as a result of this application. New source-specific emission limits will not relax the requirements of District Rule 9-10.

### **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**

Each source covered by this permit application (as listed above) will now be subject to NSPS Subparts A and J.



These sources will continue to comply with all applicable requirements specified in the most recent facility Title V permit.

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

This application is exempt from CEQA since the project has no potential for causing a significant adverse environmental impact and the application is categorically exempt from CEQA under Regulation 2-1-312.5, which exempts permit applications submitted pursuant to a judicial enforcement order (see References – Part III). In making the determination that this application is categorically exempt: 1) a review of the CEQA-Related Information submitted by the applicant (under Regulation 2-1-426.1), has been conducted indicating that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was not required; and 3) no unusual circumstances or cumulative impacts from successive projects of the same type in the same place over time were determined to result in significant adverse environmental impacts.

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

**Recommendation**

Recommend that the following equipment be granted a change in conditions and that the descriptions of S-4170 and 4171 be revised to reflect the reduction in maximum design capacities:

<b>Source #</b>	<b>Source Description</b>	
S-4,042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	Process Heater/Furnace, 198MM BTU/hr max
S-4,043	F560, #5 RHENIFORMER	Process Heater/Furnace, 133MM BTU/hr max
S-4,044	#5 RHENIF F570	Process Heater/Furnace, 78MM BTU/hr max
S-4,045	#5 RHENIF F580	Process Heater/Furnace, 51MM BTU/hr max
S-4,059	#1 JHT Furnace #247	Process Heater/Furnace, 121MM BTU/hr max
S-4,061	#5 NAPH HYDROTREATER F410	Process Heater/Furnace, 122MM BTU/hr max
S-4,062	#5 NAPH HYDROTREATER F447	Process Heater/Furnace, 165MM BTU/hr max
S-4,070	#4 CRUDE UNIT F 1100A	Process Heater/Furnace, 398MM BTU/hr max
S-4,071	#4 CRUDE UNIT F1100B	Process Heater/Furnace, 405MM BTU/hr max
S-4,072	#4 CRUDE UNIT F1160	Process Heater/Furnace, 336MM BTU/hr max
S-4,129	800# STM BLR #1 #IPP	Industrial Boiler - Other

S-4,132	800# STM BLR #4 #1 PP	Industrial Boiler - Other
S-4,135	800# STM BLR #7 #1 PP	Industrial Boiler - Other
S-4,158	Hydrogen Plant Preheat Furnace F-340	Process Heater/Furnace, 48MM BTU/hr max
S-4,159	F410 TKC FEED FURNACE TKC ISOMAX	Process Heater/Furnace, 68MM BTU/hr max
S-4,160	F420 TKC FEED FURNACE TKC ISOMAX	Process Heater/Furnace, 71MM BTU/hr max
S-4,167	F-710 TKC FRACTIONATOR ISOMAX	Process Heater/Furnace, 145MM BTU/hr max
S-4,168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low NOX Burners	Process Heater/Furnace, 331MM BTU/hr max
S-4,169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	Process Heater/Furnace, 260MM BTU/hr max
S-4,170	F355 REFORMING FURNACE, H2 PLANT	Process Heater/Furnace, <del>847</del> <u>820</u> MM BTU/hr max
S-4,171	F355 REFORMING FURNACE, H2 PLANT	Process Heater/Furnace, <del>847</del> <u>820</u> MM BTU/hr max

## Conditions

### Modify Condition # 16679

Conditions for A-260 Selective Catalytic Reduction (SCR) System for abatement of: S-4170 F-305 Furnace, ~~847~~ 820 MMBtu/hour, at Hydrogen Plant A-Train:

1. Ammonia emissions from Source 4170, Hydrogen Reforming A Train Furnace F-305, shall not exceed 120 pounds per hour (Basis: toxic risk screen).

2. To ensure compliance with Condition 1, a flow restriction orifice shall be installed in the ammonia injection system to limit ammonia flow to below 120 pounds per hour.

3. A-260, SCR System, shall be properly operated and properly maintained and shall abate the emissions from Source 4170, whenever Source 4170 is emitting NOx.. (Basis: Regulation 9, Rule 10)

4. Chevron shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx and O2 from the stack of Source 4170, Furnace F-305.

(Basis: Regulation 2-1-403)

5. Start-up and shutdown of Source S-4170 shall be limited to a maximum of 20 hours under normal conditions. Upon

approval by the District, the start-up or shutdown period may be extended to a period no to exceed 72 hours for the following situations:

a. the start-up or shutdown has been proceeding continuously, and Chevron has been increasing or decreasing temperatures at a rate limited by metallurgy or other physical constraints prescribed in their start-up/shutdown procedure.

b. start-up following installation or replacement of refractory lining.

c. start-up following initial catalyst pre-sulfiding following catalyst replacement or catalyst regeneration.  
(Basis: Regulation 2-1-403)

6. To demonstrate compliance with the above conditions, the owner/operator shall keep the following records on site and made available for District inspection for a period of 5 years from the date on which a record is made.

a. All source test records

b. The date, time, and duration of any start-up, shutdown or malfunction in the operation of A-260, SCR System.

c. Records, including the vendor specifications, that demonstrate compliance with the orifice design requirements of Condition 1 above.  
(Basis: Regulation 9-10-504)

Modify Condition # 16686

Chevron Richmond Refinery (Plant #10)  
Condition Added 09/02/99  
Condition modified 01/17/08

Each combustion source listed below shall not exceed its indicated maximum firing rate (higher heating value), expressed in the units of million BTU per day (MMBTU/day). These firing rates are sustainable maximum firing rates. The sustainable hourly firing rates, used for billing purposes, are established by dividing the maximum daily firing rates by 24 hours.

Source	Furnace #/ Source Description	Enforceable Limit, MMBTU/day	Used for Fees, MMBTU/hr
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4044	F-570 #5 Rheniformer	1872	78
4070	F-1100A #4 Crude Unit	9552	398
4071	F-1100B #4 Crude Unit	9720	405
4072	F-1160 #4 Crude Unit	8064	336
4131	Blr #3 800# Steam Boiler	5664	236
4132	Blr #4 800# Steam Boiler	5640	235
4133	Blr #5 800# Steam Boiler	5688	237
4152	F-100 Asphalt Soln. Htr.	1212	50.5
4154	F-120 Asphalt Soln. Htr.	1212	50.5
4159	F-410 TKC Feed Furnace	1632	68
4160	F-420 TKC Feed Furnace	1704	71
4161	F-510 TKN Feed Furnace	1464	61
4162	F-520 TKN Feed Furnace	1464	61
4163	F-530 TKN Feed Furnace	1464	61
4168	F-730 Isomax Furnace	7944	331
4170	F-305 Reform Furn. H2 plt.	<del>20328</del> 19680	<del>847</del> <u>820</u>
4171	F-355 Reform Furn. H2 plt.	<del>20328</del> 19680	<del>847</del> <u>820</u>
4334	F-1200 LNC Atmos Furnace	607.2	25.3
4335	F-1250 LNC Vacuum Furnace	595.2	24.8
4338	F-1550 HNC Vacuum Furnace	864	36
4339	F-1110 LNC Reactor Furnace	456	19

Add New Condition #

Heater and Boiler NOx limits per.

The owner/operator of the following affected facilities/sources under Consent Decree No. C 03-04650 (CRB) shall comply with the NOx limits, monitoring requirements and emission calculation requirements set forth below.

1. The consecutive 365-day average NOx emission rates from the sources listed below shall not exceed the corresponding emission rate limits.
2. For each source S-4170 and S-4171 (F-305 and F-355) the daily maximum firing rate shall be 19,680 million BTU (HHV). The annual maximum firing rate for each of these units shall be 7,183,200 million BTU (HHV).
3. Effective June 30, 2007 the owner/operator shall collect monitoring data for compliance with the limits listed below. The owner/operator shall use CEMS data or source test data to calculate emission rates for compliance determinations.

Source #	Source Description	NOx Limit (lb/MMBtu)	Monitoring Type
S-4042	#5 RHENIFORMER F550 w/36 Ultra Low NOx Burners	0.040	CEMS
S-4043	F560, #5 RHENIFORMER	0.040	CEMS
S-4044	#5 RHENIF F570	0.040	CEMS
S-4045	#5 RHENIF F580	0.040	CEMS
S-4059	#1 JHT Furnace #247	0.060	CEMS
S-4061	#5 NAPH HYDROTREATER F410	0.068	CEMS
S-4062	#5 NAPH HYDROTREATER F447	0.068	CEMS
S-4070	#4 CRUDE UNIT F 1100A	0.026	CEMS
S-4071	#4 CRUDE UNIT F1100B	0.027	CEMS
S-4072	#4 CRUDE UNIT F1160	0.029	CEMS
S-4129	800# STM BLR #1 #IPP	0.033	CEMS
S-4132	800# STM BLR #4 #1 PP	0.031	CEMS
S-4135	800# STM BLR #7 #1 PP	0.033	CEMS

S-4158	Hydrogen Plant Preheat Furnace F-340	0.035	Source Testing
S-4159	F410 TKC FEED FURNACE TKC ISOMAX	0.035	CEMS
S-4160	F420 TKC FEED FURNACE TKC ISOMAX	0.035	CEMS
S-4167	F-710 TKC FRACTIONATOR ISOMAX	0.040	CEMS
S-4168	F-730 ISOCRACKER SPLITTER FEED FURNACE ISOMAX w/Ultra Low NOX Burners	0.034	CEMS
S-4169	F-731 ISOCRACKER REBOILER ISOMAX w/Ultra Low NOX Burners	0.033	CEMS
S-4170	F355 REFORMING FURNACE, H2 PLANT	0.021	CEMS
S-4171	F355 REFORMING FURNACE, H2 PLANT	0.023	CEMS

(basis: Consent Decree Case No. C 03-04650 CRB, 6/29/2005)

Delete Condition # 17973 (superceded by existing condition 21232)

~~1. The owner/operator of S 4171 shall conduct at least two District approved CO source tests within a 12 month period in order to demonstrate compliance with Regulation 9 10 and the Monitoring Policy for Regulation 9 10. The time interval between tests shall not exceed 8 months. At least one of the source tests each year shall be deemed, by the district, to be representative of normal operation. (basis: Reg.9 10)~~

~~a) If any two source test results, over any consecutive five year period, are > 200 ppmv CO at 3% O2, the owner/operator is required to install and operate a CEM to continuously measure CO. The owner/operator shall be given the time period allowed in the District's Manual of Procedures to have the CEM installed and properly operating. (basis: Reg.9 10)~~

~~2. The owner/operator of S 4171 shall properly install and properly operate an in stack NOx CEM, an O2 CEM, fuel gas flowmeter, and recorder on these units in order to demonstrate compliance with Regulation 9 10. (basis: Reg.9 10)~~

~~3. Each combustion source listed below shall not exceed its indicated maximum firing rate (higher heating value), expressed in units of million Btu per day (MM Btu/day). These firing rates are~~

~~sustainable maximum firing rates. The sustainable hourly firing rates, used for billing purposes, are established by dividing the maximum daily firing rates by 24 hours.~~

<del>Source Description</del>	<del>Enforceable Limit</del>	<del>used for fees</del>
<del>MM Btu/day</del>	<del>MM Btu/h</del>	
<del>S 4171 F 355 Hydrogen B Furnace</del>	<del>20,328</del>	<del>847</del>

~~4. The owner/operator of S 4171 shall maintain daily records of all CEM data, NOx mass emissions, fuel usage, and the higher heat content of the fuel in order to demonstrate compliance with condition #3 and Regulation 9 10. 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)~~New Condition

by \_\_\_\_\_ date \_\_\_\_\_  
Janet Stromberg  
Supervising Air Quality Engineer

**ENGINEERING EVALUATION  
CHEVRON PRODUCTS COMPANY, RICHMOND REFINERY  
PLANT NO. 10  
APPLICATION NO. 16642**

**BACKGROUND**

Chevron Products Company, Richmond Refinery (Chevron) is applying for an Authority to Construct and/or Permit to Operate the following equipment.

- A-7513 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7513, Stormwater Pump Diesel Engine P-302A: Make Caterpillar, Model 3412, Model Year 1989, 450 HP.**
- A-7514 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7514, Stormwater Pump Diesel Engine P-302B: Make Caterpillar, Model 3412, Model Year 1989, 450 HP.**
- A-7523 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7523, Air Compressor Diesel Engine P-1603: Make Cummins, Model A855C450, Model Year 1990, 435 HP.**
- A-7526 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7523, Air Compressor Diesel Engine P-1606: Make Cummins, Model A855C450, Model Year 1990, 435 HP.**

Chevron proposed to install these diesel particulate filters on their existing standby diesel engines to comply with the requirements in the State's Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition engines.

The Johnson Matthey Particulate Filter has been certified to be a level 3 device (greater than or equal to 85% Diesel Particulate Matter reduction) for certified off-road engines with PM emission levels of 0.4 g/bhp-hr or less. The controlled PM emission factor for this system is 0.06 g/bhp-hr.

To derive emission factors for the engines, Chevron has conducted source tests for backup compressor engine S-7521 (identical to S-7523 and S-7526) and backup stormwater pump S-7513 (identical to S-7514). The District's Source Test Section has reviewed these tests and has approved the methods and calculations. The tests are used to demonstrate that the uncontrolled PM emission factor is 0.4 g/bhp-hr or less and that the other pollutants comply with Tier I emission standard.

After installing the filters, Chevron will be allowed to operate S-7513, S-7514, S-7523, and S-7526 up to 50 hours per year per engine according to Section 93115.6(b)(3) of the Stationary Compression Ignition Engine ATCM.

**EMISSIONS SUMMARY**

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**

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**

S-7513, S-7514, S-7523, and S-7526 are subject to the Stationary Diesel Airborne Toxics Control Measure (ATCM) and are considered in-use stationary standby diesel-fueled engines since they were installed prior to January 1, 2005 and are larger than 50 bhp. 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 and therefore is not discretionary as defined by CEQA.

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

PSD, NSPS, NESHAP do not apply.

### **PERMIT CONDITIONS**

After installing the proposed diesel particulate filters, S-7513, S-7514, S-7523, and S-7526 will be subject to the following permit conditions, which Chevron has agreed to.

1. The owner/operator shall abate S-7513, S-7514, S-7523, and S-7526 (emergency standby engines) by the properly maintained and operated A-7513, A-7514, A-7523, and A-7526 (diesel particulate filters), respectively, during all periods of operation.

[Basis: "ATCM for Stationary Compression Ignition Engines" Section 93115.6(b)(3), title 17, CA Code of Regulations]

2. The owner/operator of S-7513, S-7514, S-7523, and S-7526 shall not exceed 50 hours per year per engine for reliability-related testing.

[Basis: "ATCM for Stationary Compression Ignition Engines" Section 93115.6(b)(3), title 17, CA Code of Regulations]

3. The owner/operator of S-7513, S-7514, S-7523, and S-7526 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: "ATCM for Stationary Compression Ignition Engines" Section 93115.6(b)(3), title 17, CA Code of Regulations]

4. The owner/operator of S-7513, S-7514, S-7523, and S-7526 shall install and maintain the following monitoring equipment at each emergency standby engine:

- a) A non-resettable hour meter with a minimum display capability of 9,999 hours;

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

5. Records: The owner/operator of S-7513, S-7514, S-7523, and S-7526 shall maintain the following monthly records in a District-approved log for at least 60 months from the date of entry. 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: "ATCM for Stationary Compression Ignition Engines" Section 93115.10(g), title 17, CA Code of Regulations (or, District Regulation 2-6-501)]

End of Condition

**RECOMMENDATION**

Issue an Authority to Construct to Chevron for:

- A-7513 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7513, Stormwater Pump Diesel Engine P-302A: Make Caterpillar, Model 3412, Model Year 1989, 450 HP.**
- A-7514 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7514, Stormwater Pump Diesel Engine P-302B: Make Caterpillar, Model 3412, Model Year 1989, 450 HP.**
- A-7523 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7523, Air Compressor Diesel Engine P-1603: Make Cummins, Model A855C450, Model Year 1990, 435 HP.**
- A-7526 Diesel Particulate Filter: Make Johnson Matthey, Model Continuously Regenerating Technology Particulate Filter; Abating S-7523, Air Compressor Diesel Engine P-1606: Make Cummins, Model A855C450, Model Year 1990, 435 HP.**

By: \_\_\_\_\_

Xuna Cai  
Air Quality Engineer I

Date: \_\_\_\_\_

**ENGINEERING EVALUATION  
CHEVRON PRODUCTS COMPANY, RICHMOND REFINERY  
PLANT NO. 10  
APPLICATION NO. 17175**

**BACKGROUND**

Chevron Products Company, Richmond Refinery (Chevron) is applying for an Authority to Construct and/or Permit to Operate the following:

**S-7535 Emergency Standby Fire Pump: Diesel Engine; Make: Cummins; Model: CFP15E-F10; Model Year: 2006; Rated Horsepower: 479 HP.**

**S-7536 Emergency Standby Fire Pump: Diesel Engine; Make: Cummins; Model: CFP15E-F10; Model Year: 2006; Rated Horsepower: 479 HP.**

During an emergency use, the diesel fire pumps will provide additional required firewater flow rates to process units.

**EMISSION Calculations**

**Annual Emissions:**

Basis:

- 479 bhp output rating for full-load, standby operation for each engine
- 50 hour/year operation for reliability-related activities for each engine
- EPA Engine Family Name: 6CEXL015AAD
- NO<sub>x</sub>, POC, CO, and PM<sub>10</sub> emission factors are based on ISO 8178 D2 cycle weighted-average test data from tests conducted by manufacturer. This method is approved per "Use of PM Emission Factors to Determine ATCM Operating Hour Limits for In-Use Diesel Emergency Generators" a Policy Memorandum dated January 9, 2006 and signed by the District's Engineering Director.
- POC is assumed to be 5% of NMHC + NO<sub>x</sub>
- NO<sub>x</sub> is assumed to be 95% of NMHC + NO<sub>x</sub>
- 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):  
SO<sub>2</sub> 8.09E-3 (% S in fuel oil) lb/hp-hr = 8.09E-3 (0.0015% S) (454 g/lb) = 0.000055 g/hp-hr

**Table 1: Emission Factor Summary**

Pollutant	Emission factor (g/hp-hr)
NO <sub>x</sub>	2.83
CO	2.61
POC	0.15
PM <sub>10</sub>	0.15
SO <sub>2</sub>	0.000055

For each engine,

$$\begin{aligned} \text{NO}_x &= ( 2.83 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 149.49 \text{ lb/yr} = 0.075 \text{ TPY} \\ \text{CO} &= ( 2.61 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 137.69 \text{ lb/yr} = 0.069 \text{ TPY} \end{aligned}$$

$$\begin{aligned}
 \text{POC} &= ( 0.15 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 7.87 \text{ lb/yr} = 0.004 \text{ TPY} \\
 \text{PM}_{10} &= ( 0.15 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 7.86 \text{ lb/yr} = 0.004 \text{ TPY} \\
 \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 50 \text{ hr/yr} ) ( \text{lb}/454\text{g} ) = 0.003 \text{ lb/yr} = 0.0000015 \text{ TPY}
 \end{aligned}$$

**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,

$$\begin{aligned}
 \text{NO}_x &= ( 2.83 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 71.76 \text{ lb/day} \\
 \text{CO} &= ( 2.61 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 66.09 \text{ lb/day} \\
 \text{POC} &= ( 0.15 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 3.78 \text{ lb/day} \\
 \text{PM}_{10} &= ( 0.15 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 3.77 \text{ lb/day} \\
 \text{SO}_2 &= ( 0.000055 \text{ g/hp-hr} ) ( 479 \text{ hp} ) ( 24 \text{ hr/day} ) ( \text{lb}/454\text{g} ) = 0.0014 \text{ lb/day}
 \end{aligned}$$

**PLANT CUMULATIVE INCREASE**

The plant’s cumulative increase post year 1991 is summarized in Table 2. The application increase includes emissions from S-7535 and S-7536.

**Table 2**

Pollutant	Current	Application Increase	New Total
NO <sub>x</sub>	0	0.149	0.149
CO	0	0.138	0.138
POC	0	0.008	0.008
PM <sub>10</sub>	0	0.008	0.008
SO <sub>2</sub>	0	0.000	0.000

**OFFSETS**

Facility-wide, Chevron has been permitted to emit more than 35 tons per year or more, on a pollutant specific basis, of POC and NO<sub>x</sub>, and therefore Chevron is required to provide offsets for POC and NO<sub>x</sub> at a 1.15 to 1.0 ratio per Regulation 2-2-302. In addition, Chevron is a Major Facility, which has been permitted to emit more than 1.0 tons of PM<sub>10</sub> per year. Per Regulation 2-2-303, Chevron is also required to provide emission offsets for PM<sub>10</sub> at a 1.0 to 1.0 ratio. Chevron will use Banking Certificate # 617 to provide all the emission reduction credits summarized in Table 3.

**Table 3**

Pollutant	Application Increase	Offset Ratio	Emission Reduction Credits Required
NO <sub>x</sub>	0.149	1.15 to 1.0	0.171

POC	0.008	1.15 to 1.0	0.009
PM <sub>10</sub>	0.008	1.0 to 1.0	0.008

**TOXICS RISK SCREENING**

The calculated incremental increase in the emission rate of diesel exhaust particulate matter associated with each engine is in excess of the risk screening triggers, as shown in Table 4, and a Risk Screening Analysis has been performed.

**Table 4**

Source	PM <sub>10</sub> Emission Factor (g/HP-hr)	HP	Annual Usage (Hours/year) <sup>6</sup>	Diesel Exhaust Particulate Emissions (lb/year):	Trigger Level (lb/yr)	Risk Screen Required? (Yes/No)
S-7535	0.15	479	50	7.86	0.58	Yes
S-7536	0.15	479	50	7.86	0.58	Yes

Per the attached memo from Jane Lundquist dated January 22, 2008, results from the health risk screening analysis indicate that, for this project including two diesel engines, the maximum cancer risk is 0.07 in a million and the chronic hazard index is 0.0005. In accordance with the District’s Regulation 2-5, this risk level is considered acceptable.

**BACT**

In accordance with Regulation 2-2-301, Best Available Control Technology (BACT) is triggered for any new source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO<sub>2</sub> or PM<sub>10</sub>.

Based on the emission calculations above, the owner/operator of S-7535 and S-7536 is subject to BACT for the following pollutants: NOx 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 the meet BACT 2 limits presented in Table 5.

**Table 5**

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
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%	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>

<sup>6</sup> Annual Usage based on 50 hours per year of operation for reliability-related activities as prescribed by Subsection (E)(2)(A) of section 93115, title 17, California Code of Regulations.

	$O_2]$ <sup>a,b,c</sup> 3. 6.9 g/bhp-hr [490 ppmvd @ 15 % $O_2]$	3. <i>Timing Retard</i> $\leq 4^\circ$ + Turbocharger w/ <i>Intercooler</i>
CO	1. <i>n/s</i> 2. 2.75 g/bhp-hr [319 ppmvd @ 15% $O_2]$ <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>

The NOx and CO emission limits set by BACT 2 are met, as shown in Table 6.

**Table 6**

Pollutant	Engine Emission Factors (g/hp-hr)	Emission Factor Limits as set by BACT 2 (g/hp-hr)	Have the limits been met?
NOx	2.83	6.9	YES
CO	2.61	2.75	YES

Therefore, S-7535 and S-7536 are determined to be in compliance with the BACT 2 limits for NOx and CO.

**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,NOx, NMHC+NOx, 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 1 standards for an off-road engine for the same maximum rated power.

The two emergency standby diesel engines (S-7535 and S-7536) are in compliance with the above ATCM requirements. The owner/operator is limited by permit conditions to 50 hours per year for each engine for maintenance and reliability testing. The two engines are subject to the Tier 3 off-road CI engine standards for NOx, NMHC+NOx and CO. As shown in the Table 7, the engine meets these requirements.

**Table 7. ATCM Tier 3 Compliance**

	Engine Emission Factors	Tier 3 Standards
--	-------------------------	------------------

	g/hp-hr	g/hp-hr
NMHC+NO <sub>x</sub>	2.98	2.98
CO	2.61	2.61
PM	0.15	0.15

### NSPS

The engines are subject to 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Each engine has a total displacement of 15 liters and 6 cylinders, so each cylinder has a volume of less than 30 liters. The engines are 2006 engines and are fire pumps. Section 60.4205(c) requires these engines to comply with the standards in table 4 to Subpart IIII.

For engines between 300 HP and 600 HP with model year 2008 and earlier, the standards in Table 4 are:

- NMHC + NO<sub>x</sub>: 7.8 g/HP-hr
- CO: 2.6 g/HP-hr
- PM: 0.40 g/hp-hr

According to the ISO 8178 D2 cycle weighted-average test data from tests conducted by manufacturer, the engines will comply with these standards.

The owner/operator of S-7535 and S-7536 is subject to and expected to comply with Sections 60.4206 and 60.4211(a), which 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 fire pump engine that is manufactured prior to the model years in table 3 to this subpart, Section 60.4211(b) requires that the owner/operator must demonstrate compliance according to one of the methods specified in (b) (1) through (5). The owner/operator of S-7535 and S-7536 has provided records of engine manufacturer data indicating compliance with the standards as discussed above, and therefore complies with Section 60.4211 (b) according to the method in (b) (3).

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), and 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 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, will be used. 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.

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

The engines 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 the facility is limited by permit conditions to 50 hours per year for each engine for reliability testing and otherwise may only operate for emergencies.

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

Because the engines do not have a diesel particulate filter, they are not subject to Section 60.4214(c).

The owner/operator is subject to and expected to comply with 40 CFR 60, Subpart A, General Provisions.

## **NESHAP**

In accordance with 40 CFR 63.6590, the engine is not subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because the engine is rated less than 500 break horsepower.

## **STATEMENT OF COMPLIANCE**

The owner/operator of S-7535 and S-7536 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 these engines meet TBACT for PM<sub>10</sub> ( $= < 0.15$  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 PM<sub>10</sub> emissions. Because S-7535 and S-7536 are emergency standby fire pumps, 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, and 302. Allowable operating hours and the corresponding record keeping in Reg. 9-8-330 and 530 will be included in the permit conditions below.

The application 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 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.

**PSD does not apply.**

## **PERMIT CONDITIONS**

Application 17175; Plant 10;  
Conditions for S-7535 and S-7536

### **Permit Condition No. 22850**

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.



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

2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.

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

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection(e)(4)(G)(1)]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
  - a. Hours of operation for reliability-related activities (maintenance and testing).
  - b. Hours of operation for emission testing to show compliance with emission limits.
  - c. Hours of operation (emergency).
  - d. For each emergency, the nature of the emergency condition.
  - e. Fuel usage for each engine(s).

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

5. At School and Near-School Operation:  
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:  
The owner/operator shall not operate each stationary

emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session. "School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.

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

End of Conditions

**RECOMMENDATION**

Issue Authority to Construct to Chevron for:

**S-7535 Emergency Standby Fire Pump: Diesel Engine; Make: Cummins; Model: CFP15E-F10; Model Year: 2006; Rated Horsepower: 479 HP.**

**S-7536 Emergency Standby Fire Pump: Diesel Engine; Make: Cummins; Model: CFP15E-F10; Model Year: 2006; Rated Horsepower: 479 HP.**

By: \_\_\_\_\_

Xuna Cai  
Air Quality Engineer I

Date: \_\_\_\_\_

**EVALUATION REPORT  
Chevron Products Co., Plant #10  
Application Number 17281/2**

**Background**

Chevron Products Co. (Chevron) is proposing to add a new condition subjecting S-6010 LSFO Flare to NSPS subparts A and J as part of its EPA/DOJ Consent Decree at its refinery located in Richmond. These changes in conditions are to incorporate NSPS Subparts A and J into the Title V permit and the related permit conditions. This is the last of Chevron's Flares to become subject to NSPS A and J. The other Flares at Chevron were made subject to NSPS A and J through application 15711. The effectiveness date is the date Chevron sent a letter to EPA certifying that the flare is in compliance with NSPS J.

The Chevron Title V permit sections IV, VI, and VII will need to be changed to include the change in conditions for the LSFO Flare and include NSPS Subparts A and J for this Flare.

**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**

S-6010 LSFO Flare will now be subject to all applicable parts of both NSPS Subparts A and J.

These sources will continue to comply with all applicable requirements specified in the most recent facility Title V permit.

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

This application is exempt from CEQA since the project has no potential for causing a significant adverse environmental impact and the application is categorically exempt from CEQA under Regulation 2-1-312.5, which exempts permit applications submitted pursuant to a judicial enforcement order (see References – Part III). In making the determination that this application is

categorically exempt: 1) a review of the CEQA-Related Information submitted by the applicant (under Regulation 2-1-426.1), has been conducted indicating that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was not required; and 3) no unusual circumstances or cumulative impacts from successive projects of the same type in the same place over time were determined to result in significant adverse environmental impacts.

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

**Recommendation**

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

S-6010      LSFO Flare, 878,900 #/hr vent gas maximum capacity

**Conditions**

See condition # 23735. (attached)

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

# Engineering Evaluation

Chevron Products Company

Application # 17428

Plant # 10

## background

Chevron Products is applying for an Authority to Construct/Permit to Operate for the following:

**S-7537            Primary FCCU Pump Diesel Engine**  
**Deutz AG, Family 4DZXL06.5037, Model BF6L914C, Year 2004, 158 bhp**

**A-7537            Catalyzed Diesel Particulate Filter**  
**Abatement device for S-7537**

This engine was installed on June 27, 2007 under the California Portable Equipment Registration Program, serving as a booster pump for influent flow of cooling water to an overhead condenser that has fouled within the facility's FCC unit. The booster pump will return the cooling water supply pressure to the normal operating flow for the condenser (prior to the unit fouling) until the system can be overhauled.

Chevron has evaluated non-diesel power options, including electric motors and alternative-fueled (natural gas/propane) engines. Due to the location of the engine and the engine requirements, only a diesel engine can meet the reliability, power and torque requirements of this specific application.

Chevron determined that the engine would need to remain in place beyond the 12 consecutive months allowed by the PERP program because the system can be overhauled only during shutdown. The next scheduled shutdown for the FCCU is January 1, 2011. This engine will be removed from service on or before January 1, 2011.

S-7537, a model year 2004 engine is considered an 'in-use' prime engine under the Airborne Toxic Control Measure (ATCM). As such, the engine is subject to the PM requirements for an in-use prime engine, according to Section 93115.7(b), which requires applying an 85% PM reduction technology with a certified in-use engine. The proposed Johnson Mathey Continuously Regenerating Technology (CRT) Particulate Filter satisfies the 85% control requirement, and the engine is a certified Tier 2 engine. The proposed engine configuration therefore complies with the Stationary Diesel ATCM.

Plant # 10 is a Title V facility; the corresponding Title V application is Application # 17429.

## Emissions

### **Annual Average Emissions:**

Basis:            - 158 bhp output rating  
                     - 8760 hr/yr operation  
                     - NO<sub>x</sub>, VOC, CO and PM<sub>10</sub> emission factors from the manufacturer:

NO <sub>x</sub> :	4.33 g/hp-hr
POC:	0.30 g/hp-hr
CO:	0.90 g/hp-hr
PM <sub>10</sub> :	0.02 g/hp-hr (after 85% abatement)

- SO<sub>2</sub> emission factor is from EPA AP-42, Table 3.3-1 ("Uncontrolled Gasoline and Diesel Industrial Engines"), 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 0.05 wt% sulfur):  
SO<sub>2</sub>: 2.05E-3(0.05) lb/hp-hr (454 g/lb) = 0.05 g/hp-hr

**NO<sub>x</sub>:** (8760 hr/yr)(158 hp)(4.33 g/hp-hr)(lb/454 g) = **13,201 lb/yr = 6.600 tpy**

**POC:** (8760 hr/yr)(158 hp)(0.30 g/hp-hr)(lb/454 g) = **914.6 lb/yr = 0.457 tpy**

**CO:** (8760 hr/yr)(158 hp)(0.90 g/hp-hr)(lb/454 g) = **2743.8 lb/yr = 1.372 tpy**

**PM<sub>10</sub>:** (8760 hr/yr)(158 hp)(0.02 g/hp-hr)(lb/454 g) = **60.97 lb/yr = 0.030 tpy**

**SO<sub>2</sub>:** (8760 hr/yr)(158 hp)(0.05 g/hp-hr)(lb/454 g) = **152.4 lb/yr = 0.076 tpy**

**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 operation will be assumed.

**NO<sub>x</sub>:** (24 hr/day)(158 hp)(4.33 g/hp-hr)(lb/454 g) = **36.2 lb/day**

**POC:** (24 hr/day)(158 hp)(0.30 g/hp-hr)(lb/454 g) = **2.5 lb/day**

**CO:** (24 hr/day)(158 hp)(0.90 g/hp-hr)(lb/454 g) = **7.5 lb/day**

**PM<sub>10</sub>:** (24 hr/day)(158 hp)(0.02 g/hp-hr)(lb/454 g) = **0.2 lb/day**

**SO<sub>2</sub>:** (24 hr/day)(158 hp)(0.05 g/hp-hr)(lb/454 g) = **0.4 lb/day**

Plant Cumulative Increase

Table 1 summarizes the cumulative increase in criteria pollutant emissions that will result at Plant 10 from the operation of S-7537.

Table 1

Pollutant	Increase in plant emissions associated with this application (TPY)
NO <sub>x</sub>	6.600
POC	0.457
CO	1.372
PM <sub>10</sub>	0.030
SO <sub>2</sub>	0.076

TOXIC RISK SCREENING ANALYSIS

A Toxics Risk Screening Analysis was required for diesel particulate emissions. Per the Risk Screen memo from Jane Lundquist, dated May 12, 2008, the maximum cancer risk was found to be 0.4 in a million. In accordance with the District's Regulation 2-5, this risk level is considered acceptable.

BACT

In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds per highest day of POC, NO<sub>x</sub>, CO, SO<sub>2</sub>, or PM<sub>10</sub>. Based on the above emission calculations, S-7537 is subject to BACT for NO<sub>x</sub> emissions.

Selective Catalytic Reduction (SCR) is the typical technology used to achieve BACT1 for NO<sub>x</sub>. Chevron received a quote for purchase and installation of SCR for approximately \$400,000, exceeding the cost per ton threshold of \$17,500. BACT1 was determined not cost effective. The engine does, however, satisfy BACT2 limits.

BACT for this source is presented in the current BAAQMD BACT/TBACT Workbook for this source category as shown below:

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Best Available Control Technology (BACT) Guideline**

**Source Category**

Source:	<i>IC Engine - Compression Ignition</i>	Revision:	<i>5</i>
		Document #:	<i>96.1.1</i>
Class:	<i>&lt; 175 horsepower output rating</i>	Date:	<i>01/11/02</i>

**Determination**

POLLUTANT	BACT	TYPICAL TECHNOLOGY
	1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	
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> ] <sup>d</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

**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.

offsets

This application requires offsets, which are summarized in the following table:

	<b>NO<sub>x</sub></b>	<b>POC</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>
Maximum emissions, tons/year	6.60	0.46	0.03	0.08
Offset Ratio	1.15	1.15	1.0	1.0
Offsets Required, tons/year	7.59	0.53	0.03	0.08

statement of compliance

The owner/operator of S-7537 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). 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.

This engine is considered an in-use stationary diesel engine. Therefore, the PM emissions reduced by 85% comply with the diesel ATCM.

This engine triggers BACT for NO<sub>x</sub> emissions. BACT1 for NO<sub>x</sub> (SCR) was deemed not cost-effective. BACT2 for NO<sub>x</sub> is 6.9 g/bhp-hr. At 4.33 g/hp-hr, this engine is well within the BACT2 limits.

This project requires offsets per 2-2-302 for POC and NO<sub>x</sub> and will be provided at a ratio of 1.15 to 1. Offsets are also required per 2-2-303 for PM<sub>10</sub> and SO<sub>2</sub> and will be provided at a ratio of 1 to 1. Banking Certificate # 617 will be used to provide these offsets.

A Toxic Risk Screening Analysis was required, per Regulation 2-5. The maximum cancer risk was found to be 0.4 in a million, a risk level considered acceptable.

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)

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

PSD, NSPS, and NESHAPs do not apply to this application.

permit conditions

Conditions for S-7537, Primary FCCU Pump Diesel Engine  
Application #17428, Plant #18824

COND# 24022

1. The owner/operator shall operate S-7537 only when abated by A-7537, Catalyzed Diesel Particulate Filter, in accordance with manufacture's specifications. [Basis: Diesel Engine ATCM]
2. Within 60 days and each 60 day period thereafter during which S-7537 operates for at least 72 cumulative hours, the owner/operator shall visually inspect the exhaust system of S-7537 with the engine running to ensure that there are no exhaust leaks upstream of the



catalyzed diesel particulate filter. [Basis: Cumulative increase, Toxic risk screen, Diesel Engine ATCM]

3. This permit shall expire 30 days after the shutdown of the FCC unit, or January 1, 2011, whichever is earlier. The owner/operator shall cease operation of S-7537 upon expiration of this permit. [Basis: BACT, Cumulative increase, Toxic risk screen]
4. The owner/operator shall notify the Director of Compliance and Enforcement or designee upon shutdown of S-7537 in compliance with Part 3 [Basis: Notification]
5. The owner/operator shall maintain the following records for S-7537:
  - a. Document the manufacturer's recommended procedures for performing catalyzed diesel particulate filter maintenance, including the minimum inlet temperature to the catalytic particulate filter;
  - b. Date, time and reason for any catalyzed diesel particulate filter maintenance;
  - c. Date and results of visual inspection for exhaust system leaks;
  - d. Monthly fuel usage for engine; and
  - e. Records shall be kept at least for 5 years from the date of entry and be available for inspection upon request. [Basis: Recordkeeping]

End of Conditions

recommendation

Waive Authority to Construct and issue Permit to Operate to Chevron Products Company for:

S-7537            Primary FCCU Pump Diesel Engine

by: \_\_\_\_\_ Date: \_\_\_\_\_

Faye Bruno  
Air Quality Engineer I

# Engineering Evaluation

Chevron Products Company

Application # 17446

Plant # 10

## background

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

### **A-32105          Carbon Adsorbers, Calgon VAPOR PAC, 2 drums, 200 lb ea.**

The carbon canisters will be used to abate S-32105 – Outfall Basin Downstream of S-4148 –Oil-Water Separator #13.

## Emissions

There is no net increase in emissions. There is no increase in plant operational capacity as a result of this project. The average non-methane hydrocarbon concentration provided by the monitoring data has been 2,975 ppm. A 90% reduction efficiency of the carbon canisters results in breakthrough concentrations of 298 ppm and 30 ppm at the outlets of the first and second canisters, respectively.

## Plant Cumulative Increase

There is no net increase in emissions.

## TOXIC SCREENING ANALYSIS

This application only concerns abatement, so there is no impact on toxic emissions. Therefore, a Toxics Risk Screening Analysis was not performed.

## Public Notification

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

## BACT

There is no increase in emissions associated with this abatement application, thus BACT does not apply.

## statement of compliance

There is no change to the requirements of this facility.

The project is considered to be ministerial under 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 emission factors (MOP Chapter 2.3) and therefore is not discretionary as defined by CEQA.

Offsets are not required.

PSD, NSPS, NESHAPs do not apply to this application.

## permit conditions

COND#    24085    -----

Conditions for A-32105 Carbon Adsorbers, Calgon  
VAPOR PAC, 2 drums, 200 lb ea. Abating S-4148  
Application # 17446, Plant # 10

1. The owner/operator shall vent Source S-32105 (S-4148) at all times to Abatement device A-32105, two (200 lb minimum capacity) activated carbon vessels arranged in series.

(Basis: Cumulative Increase)

2. The owner/operator of this source shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer at the following locations:

- a. At the inlet to the second to last carbon vessel in series.
- b. At the inlet to the last carbon vessel in series.
- c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere. When using an FID to monitor breakthrough, readings may be taken with and without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane for the purposes of these permit conditions.

(Basis: Cumulative Increase)

3. The owner/operator shall record these monitor readings in a monitoring log at the time they are taken. The monitoring results shall be used to estimate the frequency of carbon change-out necessary to maintain compliance with conditions number 4 and 5, and shall be conducted on a daily basis. The owner/operator of this source may propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Permit Services Division must be received by the owner/operator prior to a change to the monitoring schedule.

(Basis: Cumulative Increase)

4. The owner/operator shall change out the second to last carbon vessel with unspent carbon upon breakthrough, defined as the detection at its outlet of the higher of the following:

- a. 10 % of the inlet stream concentration to the Carbon vessel.
  - b. 298 ppmv or greater (measured as C4).  
(Basis: Cumulative Increase)
5. The owner/operator shall change out the last carbon vessel with unspent carbon upon detection at its outlet of 30 ppmv or greater (measured as C4).  
(Basis: Cumulative Increase)
6. The owner/operator of this source shall maintain the following records for each month of operation of the source:
- a. The hours and times of operation.
  - b. Each monitor reading or analysis result for the day of operation they are taken.
  - c. The number of carbon beds removed from service.

All measurements, records and data required to be maintained by the owner/operator shall be retained and made available for inspection by the District for at least two years [Note: This is five years for Title V facilities] following the date the data is recorded. (Basis: Cumulative Increase)

7. The owner/operator shall report any non-compliance with parts 4 and/or 5 to the Director of the Compliance & Enforcement Division at the time that it is discovered. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time of occurrence.  
(Basis: Cumulative Increase)

recommendation

Waive Authority to Construct and issue Conditional Permit to Operate to Chevron Products Company for:

**A-32105          Carbon Adsorbers, Calgon VAPOR PAC, 2 drums, 200 lb ea.**

by: \_\_\_\_\_ Date: \_\_\_\_\_

Faye Bruno  
Air Quality Engineer I

