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July 14, 2011

Mr. Greg Solomon
Senior Air Quality Engineer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

**Chevron Energy & Hydrogen Renewal Project
Renewal of Authority to Construct – District Regulation 2-1-407
Application No. 12842, Plant 10**

Dear Mr. Solomon:

In connection with Chevron's September 15, 2010 request for renewal of the Authority to Construct (ATC) issued on September 19, 2008, the District recently requested additional information documenting "substantial use" for the Hydrogen Purity and Hydrogen Plant elements of Chevron's Revised Hydrogen & Energy Renewal Project (Renewal Project). In response to that request, Chevron is submitting the following information for the Hydrogen Purity portion of the Renewal Project. Chevron has already submitted photographic documentation for the Hydrogen Plant portion of the project and plans to submit additional purchasing documentation upon receipt from the facility owner Praxair.

- **Notice of Preparation (NOP) - Revised Environmental Impact Report (Attachment 1)**

The NOP provides an historical summary of the project and a description of the current revised project scope. As described, the City of Richmond will be preparing a revised environmental impact report that is consistent with the revised scope of work for those sources listed in this ATC renewal.

- **Draft Revised District Permit Conditions for Application No. 24136 (Attachment 2)**

Recommended revised permit conditions are provided in "strike through" and "comment" format. Those conditions requiring deletion or modification are based upon the revised scope of work described in the NOP.

- **Hydrogen Purity Element Equipment Status List (Attachment 3)**

When initially requesting the ATC renewal, Chevron considered only whether equipment was installed in the field in determining whether “substantial use” had occurred. Pursuant to the District’s recent request, Chevron reviewed purchasing records for the project and determined that nearly all equipment associated with the Hydrogen Purity and Hydrogen Plant elements of the project was purchased prior to the court order stopping project construction. As specified by District Regulation 2-1-407, Chevron anticipates subsequent two year ATC renewal periods until completion of project construction.

Attachment 3 lists equipment required as part of the Hydrogen Purity portion of the Renewal Project. Equipment purchase status is provided for “substantial use” verification along with the associated source number for the project.

Substantial use is defined under District Regulation 2-1-227 as:

Substantial Use: Substantial use of an Authority to Construct consists of one or more of the following: purchase or acquisition of the equipment that constitutes the source; ongoing construction activities other than grading or installation of utilities or foundations; a contract or commitment to complete construction of the source within two years.

Attachment 3 references purchasing documentation that establishes “substantial use” for all sources associated with the Hydrogen Purity portion of the Renewal Project. Chevron plans to provide copies of supporting purchasing documents once District staff have confirmed which documents would be necessary.

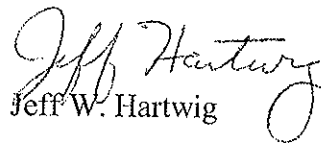
- **Revised Renewal Project Authority to Construct Renewal Fee Estimate (Attachment-4)**

The Source List & Fee estimate from Chevron’s prior ATC renewal correspondence has been revised to indicate those sources for which Chevron finds “substantial use” has been established. This document provides the status of all original project sources by source number. A revised fee estimate is also included. Chevron previously paid \$190,715.53 for the requested ATC renewal. The revised fee estimate based upon those sources removed from the project scope reduces the total fee to \$147,307.38. Chevron requests that the District credit the difference of \$43,408.15 as payment towards Chevron’s next annual refinery operating fee payment.

Mr. Greg Solomon
BAAQMD
July 14, 2011
Page 3

If you have any questions concerning the information provided in this submittal, please contact Bob Chamberlin at (510) 242-1466.

Sincerely,


Jeff W. Hartwig

Attachments

ATTACHMENT 1



**City of Richmond
NOTICE OF PREPARATION
CHEVRON REVISED PROJECT**

To: Affected Agencies (via Certified Mail)
Property Owners within 500 Feet of the Affected Property (via US Mail)
Interested Organizations and Persons (via US Mail)

From: City of Richmond

Lead Agency: City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Contact: **Lina Velasco**
Senior Planner
(510) 620-6841
Lina_Velasco@ci.richmond.ca.us

Subject: Notice of Preparation of a Revised Environmental Impact Report State CEQA Guidelines § 15082(a)

Notice is hereby given that the City of Richmond will be Lead Agency and prepare a Revised Environmental Impact Report (Revised EIR) for the Revised Energy and Hydrogen Renewal Project (Revised Project) proposed by Chevron Products (Chevron) at the Chevron Richmond Refinery (Refinery). The City is requesting comments on the scope and content of this Revised EIR. The City will use the Revised EIR prepared for this project when considering approval of the Revised Project. Responsible agencies will need to consider the Revised EIR prepared by the City of Richmond when considering any permit or other approval for the proposed project.

Further notice is hereby given that a public meeting to receive comments on this Notice of Preparation and the scope of the Revised EIR will be held by the Richmond Department of Planning and Building Services on June 22, 2011, at 6 pm at the City Council Chambers, 440 Civic Center Plaza, Richmond, CA 94804. You may also submit written comments at the public meeting.

Chevron's Renewal Project was originally approved by the City in July 2008. However, following a court challenge, the EIR for the Renewal Project was found by the Court of Appeal to be insufficient under the California Environmental Quality Act (CEQA). On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR. The Revised EIR is being prepared to meet the requirements set forth in the writ of mandate. In addition, Chevron has reduced the scope of the prior project by eliminating several components. The Revised EIR will consider the project as now proposed.

A description of the Revised Project, its location and the potential environmental effects are contained in the attached materials. The City has determined that an Initial Study is not required.

Your response must be received at the earliest possible date, but not later than July 12, 2011. Please send your response to Lina Velasco at the City of Richmond Department of Planning and Building Services at the address shown above. In your response, please include your name, the name of your agency or organization (if applicable), and contact information. The NOP and project file are available for review between the hours of 8:30 am to 5:00 pm, Monday through Friday at the City of Richmond Department of Planning and Building Services, Second Floor 450 Civic Center Plaza, Richmond CA 94804.

Project Title: Chevron Revised Project
Project Applicant: Chevron

Date: June 10, 2011

NOTICE OF PREPARATION CHEVRON REVISED PROJECT

1) Background

In 2005, Chevron Products (Chevron) proposed the Energy and Hydrogen Renewal Project at the Chevron Richmond Refinery (Refinery). The original project involved several modifications to the Refinery: (1) Hydrogen Plant Replacement; (2) Hydrogen Purity Improvements; (3) Power Plant Replacement; (4) Catalytic Reformer Replacement; (5) Associated Infrastructure Modifications; and (6) Other New and Replacement Facilities (storage tanks, control building and central maintenance building).

In July 2008, the City of Richmond (City) certified an environmental impact report (EIR) and issued conditional use and design review permits for the project. Construction of two project components, the Hydrogen Plant replacement and the Hydrogen Purity Improvements, commenced in 2008, but was halted in July 2009 when the Superior Court found the EIR to be insufficient. At that time, construction of these two components was more than 50% complete.

Following an appeal by Chevron, the Court of Appeal found the EIR to be insufficient, and set aside the permits for the project. The Court of Appeal declined to rule on whether the EIR's analysis of cumulative impacts was sufficient. On March 14, 2011, the Superior Court issued a writ of mandate setting forth the issues to be addressed in a Revised EIR in order for the City to reconsider the permits for the project.¹

On May 23, 2011, Chevron submitted an application to the City for a Revised Project, which reduces the scope original project. The Revised Project will complete only the Hydrogen Plant replacement and the Hydrogen Purity Improvements. It will also include the associated equipment needed to tie the improvements into the Refinery. The Catalytic Reformer Replacement, Power Plant Replacement, and Other New and Replacement Facilities that were part of the original project have been eliminated: The Catalytic Reformer Replacement and the Power Plant Replacement, which was to support the Catalytic Reformer, are no longer needed due to changes in the transportation fuel market. The Other New and Replacement Facilities (storage tanks, control building and central maintenance building) are no longer proposed for economic and other reasons.

Accordingly, the City is now preparing a Revised EIR that addresses the May 23, 2011 application. The Revised EIR will address requirements set out in the Superior Court's writ of mandate. In addition to the City permits, Chevron will seek to obtain an Authority to Construct from the Bay Area Air Quality Management District (BAAQMD) and comply with all applicable plans, rules and regulations of the BAAQMD in respect to air emissions from the Revised Project. The BAAQMD will serve as a responsible agency under CEQA and will rely on the Revised EIR for issuance of the Authority to Construct.

¹ A more detailed description of the City's prior permit proceedings and the court decision is provided in **Appendix A**.

2) Project Location

The Revised Project is located entirely within the boundaries of the existing 2,900 acre Refinery, at 841 Chevron Way in the City of Richmond, County of Contra Costa. As shown in **Figure 1**, the project is located in the central and northern portions of the Refinery and within the existing Refinery footprint. The Hydrogen Plant replacement would be installed in an area of the Central Yard referred to as the "Y". This area is currently occupied with the partially constructed Hydrogen Plant. Construction of the Hydrogen Purity Improvements would occur within or adjacent to the Sulfur Recovery Units (SRUs) and Fluid Catalytic Cracker Feed Hydrotreater (FCCFHT).

Southeast of the Refinery, across Castro Street and Garrard Boulevard, are the residential communities of Atchison Village, Santa Fe and Iron Triangle. The Shields-Reid residential community lies toward the northeast. Further east are central and downtown Richmond. Parchester Village is located northeast of the Refinery and Point Richmond is located to the southwest. The Point San Pablo Peninsula and the San Francisco Bay form the western border and San Pablo Bay forms the northern boundary of the Refinery property.

The main portion of the Refinery lies within the City's M-3 Heavy Industrial, Zoning District. The Refinery is bounded by the Chevron Richmond Marketing Fuels Terminal to the southeast, and Chevron Energy Technology Company to the south. The Revised Project components will be located a minimum of 5,000 feet from any residential uses.

3) Project Description

The Refinery processes crude oil blends, externally sourced gas oils, and natural gas into a variety of fuel and oil products. In addition to producing motor gasoline, jet fuel, diesel fuel, and lubricating oils, the Refinery produces industrial fuel oil, liquefied petroleum gas, sulfur, and other products, such as ammonia. The Refinery also produces steam, electricity, fuel gas, and hydrogen, primarily for its own use.

The Revised Project is proposed by Chevron for several reasons. It would allow the Refinery to process crude oil blends and externally-sourced gas oils with higher sulfur content, in order to continue producing competitive transportation fuels and lubricating oils. In addition, it would replace the Refinery's existing hydrogen production facilities with a modern plant that is more energy efficient yields higher purity hydrogen, and has the capacity to produce more hydrogen.

Each of the Revised Project components is described below. **Appendix B** lists specific equipment changes for the Revised Project.

A. Hydrogen Plant Replacement

The Refinery's existing Hydrogen Plant produces approximately 95% pure hydrogen, with 5% impurities. Chevron proposes the replacement plant in order to produce more than 99%-pure hydrogen while using less energy. The replacement plant will also increase hydrogen production capacity from 180 million standard cubic feet per day (SCFD) to 230 million SCFD, utilizing refinery fuel gas, natural gas, and some ammonia as feedstock. The new plant will have sufficient

capacity to meet the Refinery's needs and to enable the owner and operator of the Hydrogen Plant to export hydrogen to third-party customers, consistent with the original project.

Improving hydrogen purity will reduce the density of hydrogen streams in the Refinery. This will necessitate replacement or modification of existing refinery compressors to preserve their current operation and capacities. The replacements and modifications will also reduce compressor energy consumption. The Revised Project will also include the installation of low-NO_x burners on five process heaters to maintain compliance with the Refinery-wide NO_x emission limit in BAAQMD Regulation 9, Rule 10.

B. Hydrogen Purity Improvements (Sulfur Removal)

The Hydrogen Purity Improvements will enable the Refinery to process crude oil blends that contain up to approximately 3% sulfur. These improvements will also provide the Refinery with the flexibility to process more externally-sourced medium-high sulfur gas oils (containing 0.5% sulfur or more). This change is likely to result in the replacement of some low-sulfur gas oils by medium-high sulfur gas oils; however, the overall amount of feedstock and petroleum product output will be consistent with the Refinery's current capacity. Chevron proposes equipment changes to recover the additional sulfur, which would then be sold as a product.

The primary equipment changes involved in the Hydrogen Purity Improvements are to: increase the capacity of the FCCFHT (from 65,000 to 80,000 barrels per day) in keeping with the potentially higher sulfur feedstock slate; enable sulfur removal from the recycle hydrogen stream of the FCCFHT; add a #6 Hydrogen Sulfide Amine Regenerator; and increase the sulfur recovery capacity of the Sulfur Recovery Units (SRUs) (from 600 to 900 long tons per day). Under the application, there will also be related modifications and additions of ancillary process equipment such as pumps, piping, heat exchangers, vessels, tanks, instrumentation, off-plot interconnections and utilities.

C. Associated Infrastructure Improvements

To tie the new Hydrogen Plant and Hydrogen Purity Improvements into the existing Refinery, new pipe racks, piping, and utility infrastructure (including electricity, steam, fuel gas, process gas, water, instrumentation, process and storm sewer connections) will be installed.

4) Potential Environmental Effects.

The Revised EIR will consider potential environmental effects that may be associated with the Revised Project. The Revised EIR will also examine whether changes will occur in other Refinery operations as a result of the changes associated with the Revised Project (e.g., Hydrogen Plant replacement, the Hydrogen Purity Improvements). Consistent with the writ of mandate issued by the Superior Court, the analysis will focus on relevant resources identified in Appendix G to the California Environmental Quality Act (CEQA) Guidelines, including, but not limited to, criteria air pollutants, toxic air contaminants, human health risks, water discharges, and GHG emissions.

Although the only physical change to conversion or treating units proposed by Chevron in the Revised Project is an increase in throughput capacity of the FCCFHT, the Revised EIR will

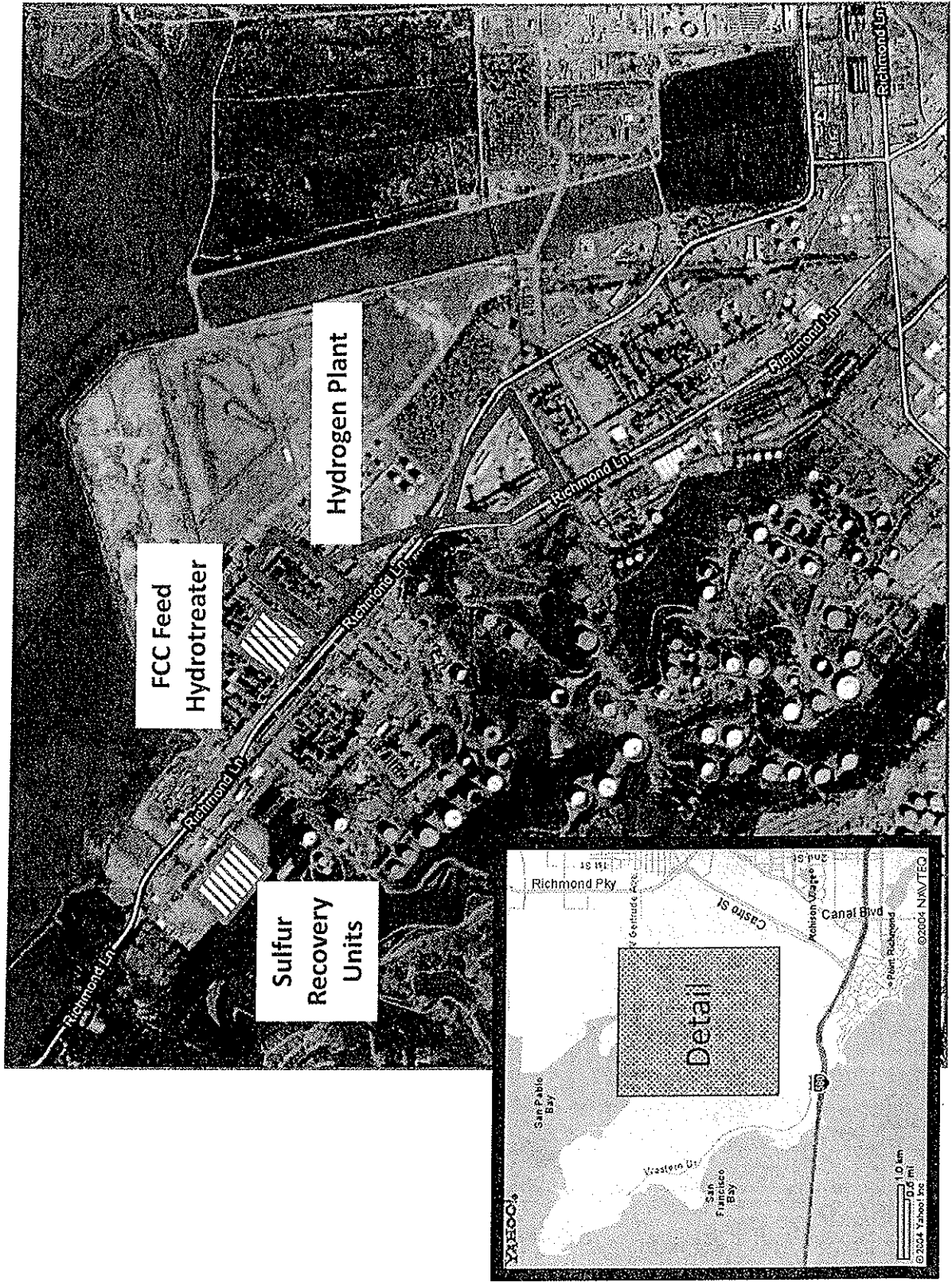
examine a range of foreseeable operating scenarios (e.g., different feedstocks and crude slates) for the full Refinery once the Revised Project is completed and analyze the range of potential environmental effects. This analysis of potential environmental effects will also consider the full Refinery, including refinery emergencies and flaring.

The Appeal Court decision held that the prior EIR: (1) was unclear and inconsistent as to whether the project will enable Chevron to process a heavier crude slate than it is currently processing; and (2) did not state a baseline for crude gravity in order to measure the potential for increased impacts from any changes in the crude oil slate due to the project. The Revised EIR will consider whether the Revised Project includes any changes that would enable processing crude oil blends with heaviness outside the range of the Refinery's current baseline operation, in the light-intermediate crude gravity range. It will also describe the crude slate used by Chevron in recent operations in order to define the operational baseline, and will analyze whether there would be any potential environmental impacts from processing a variety of crude blends that utilize the Refinery's existing capacity.

The Appeal Court decision also held that the City improperly deferred the formulation of GHG mitigation measures to a future, post-EIR process. The Revised EIR baseline and post-project GHG emissions will be calculated consistent with AB-32 requirements, and will identify specific measures to achieve a net-zero emissions standard for GHG emissions over the pre-Revised Project baseline.

The Superior Court decision indicated that the EIR's cumulative impacts analysis may be affected. Therefore, the Revised EIR will consider whether there will be potentially significant cumulative impacts from operation of the Revised Project or the Refinery as modified by the Revised Project.

Figure 1. Richmond Refinery Site Plan



NOTICE OF PREPARATION CHEVRON REVISED PROJECT

APPENDIX A - LEGAL BACKGROUND

On April 6, 2005, Chevron applied to the City of Richmond (City) for permits necessary to construct and operate the Energy and Hydrogen Renewal Project (Original Project) within existing manufacturing facilities at the Richmond Refinery (Refinery). The Original Project involved the replacement of existing equipment at four main process plants with newer technology and included the following components:

- Hydrogen Plant Replacement
- Hydrogen Purity Improvements
- Power Plant Replacement
- Catalytic Reformer Replacement
- Associated Infrastructure Modifications
- Other New and Replacement Facilities (storage tanks, control building and central maintenance building)

On July 17, 2008, the City certified an environmental impact report (Original EIR or EIR) and approved the permits for the Original Project. Following the City's issuance of the Notice of Determination (NOD) on August 5, 2008, and the issuance of an authority to construct by the Bay Area Air Quality Management District (BAAQMD) on September 19, 2008, Chevron proceeded with construction of the Hydrogen Plant Replacement and Hydrogen Purity Improvements. Construction of these components was more than 50% complete when, in July 2009, the project was halted under a writ of mandate and injunction issued by the Superior Court of Contra Costa County ("Superior Court") pursuant to the petition filed by Communities for a Better Environment, West County Toxics Coalition and Asian Pacific Environmental Network. Chevron appealed the Superior Court's ruling and in April 2010, the Court of Appeal issued a decision instructing the Superior Court to "enter a new and different judgment granting the petition for writ of mandate with regard to the EIR's failure to provide an adequate project description and its failure to define mitigation measures for greenhouse gas emissions, while denying mandate relief with regard to the claim of improper segmentation of a larger project." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70.)

In its decision, the Court of Appeal held that (i) the project description in the Original EIR was unclear and inconsistent as to whether or not the project would enable Chevron to process a heavier crude slate than it currently processes; (ii) the EIR did not establish a baseline for purposes of determining whether there would be any increased impacts from any changes in the crude slate processed at the Refinery; and (iii) the EIR improperly deferred the formulation of greenhouse gas mitigation measures to a future, post-EIR process. The Court of Appeal did not address the EIR's cumulative impacts analysis challenged by Petitioners on the basis that the analysis would likely be affected by a revised project description and greenhouse gas analysis.

As directed by the Court of Appeal, the Superior Court entered a final judgment and issued a writ of mandate (Writ of Mandate) on March 16, 2011, directing the City to set aside: (1) Resolution No. 93-08, under which the City Council certified the Original EIR and adopted findings and a mitigation monitoring and reporting program for the Original Project; (2) Resolution No. 94-08, under which the City Council upheld the Planning Commission's approval of the conditional use and design review permits for the Original Project, and (3) any additional permits, authorizations, and any and all other approvals for the Original Project. The Writ of Mandate also ordered that the City take no action in reliance on the EIR and permits until the City reconsiders its approval of the EIR, brings the EIR into compliance with the requirements of CEQA, and makes the EIR consistent with the Court of Appeal's decision. Additionally, the Writ of Mandate enjoins Chevron from engaging in any project activity until the City complies with the Writ of Mandate and issues new permits for the project.

**NOTICE OF PREPARATION
CHEVRON REVISED PROJECT**

Appendix B - Specific Equipment To Be Installed or Modified As Part of the Revised Project:

Component	Proposed Scope
<p style="text-align: center;">Hydrogen Plant Replacement (construction 50% complete)</p>	<ol style="list-style-type: none"> 1. Construct new Hydrogen Plant, including hydrogen separation PSA units (2 trains)² 2. Shut down existing Hydrogen Plant (2 trains) 3. Install hydrogen recovery PSA unit (1) 4. Shut down PSA section of the existing hydrogen recovery unit (1) 5. Construct new cooling water tower (1) 6. Construct new flare (1) 7. Construct a new Hydrogen Plant Control Room (1) 8. Upgrade Richmond Lube Oil Plant (RLOP) Area Compressors (4) 9. Upgrade Distillation and Reforming Area Compressors (3) 10. Install Steam Turbine Generator (1) 11. Install low-nitrogen oxides (NO_x) burners on existing TKN Hydrocracker³ furnaces (3) 12. Install low-NO_x burners on existing Poly (Polymer) Plant furnaces (2) 13. Upgrade Isomax Area Compressors (8) 14. Relocate electrical infrastructure and Refinery power cables (5) 15. Install communication cables (6)

² The Revised Project includes one new stand-alone hydrogen recovery unit, a Pressure Swing Adsorption ("PSA") unit that recovers hydrogen from the feed to the new hydrogen plant before that feed is sent to the hydrogen plant. This is BAAQMD source S-4451. Each of the new hydrogen plants (S-4449 and S-4450) also includes a PSA unit after the reformer furnace to separate produced hydrogen from byproducts. These PSA units are considered part of each respective hydrogen plant, and are not considered separate units (i.e., they do not have a separate BAAQMD source number).

³ TKN is the trade name of a Hydrocracker at the Refinery.

Component	Proposed Scope
<p>Hydrogen Purity Improvements (construction 57% complete)</p>	<ol style="list-style-type: none"> 1. Construct new Recycle Hydrogen Amine Contactor (1) for Fluid Catalytic Cracker Feed Hydrotreater 2. Refurbish and rename Fresh Amine Storage Tank T-2421 from T-2400 (1) (switched to Amine service from caustic) 3. Construct new Rich Amine Storage Tank T-2420 (1) 4. Construct new Amine Regenerator (1) 5. Upgrade Isomax Area Compressor (1) 6. Construct new Oxygen Storage Tanks (2) 7. Upgrade sour water processing 8. Construct new Acid Gas Scrubber (1) 9. Construct new Fresh Caustic Tank T-2440 (1) 10. Construct new Spent Caustic Tank T-2445 (1) 11. Modify existing Fluid Catalytic Cracker Feed Hydrotreater (1) 12. Modify existing Sulfur Recovery Units (3) 13. Install new sulfur loading rack (1) including option to replace or upgrade existing vent scrubber (1) 14. Install truck and railcar loading and unloading stations for amines, sodium bisulfite, fresh and spent caustic (5) 15. Install automated caustic dilution and delivery system (1)
<p>Associated Infrastructure Improvements (construction 60% complete)</p>	<ol style="list-style-type: none"> 1. Construct P, Q, U, V, and W Pipe Racks from various plants to Hydrogen Plant for Refinery process gas, hydrogen gas and utilities (steam, instrument air, firewater, freshwater). 2. Install approximately 7 miles of new process and utility piping 3. Install or modify Refinery Electrical Infrastructure 4. Install or Modify Instrument and Communication Cables with Pipe-Way Structural Supports

ATTACHMENT 2

CONDITION NO. 24136

CHEVRON PRODUCTS COMPANY Plant A0010
RENEWAL PROJECT Application No. 12842
841 Chevron Way
Richmond, CA 94802

Comment [RLJ11]: DRAFT REVISED
PERMIT CONDITIONS FOR REDUCED
RENEWAL PROJECT SCOPE OF WORK -
JULY 12, 2011.

FUGITIVE EQUIPMENT

1) Fugitive Equipment

Parts 1 through 4 apply to the Renewal Project ~~Continuous Catalyst
Regeneration, Reformer, Power Plant Replacement, and the Hydrogen
Purity Improvements.~~ The Hydrogen Plant fugitive equipment
conditions appear in Parts 2, 3, 35, and 36.

Comment [RLJ12]: Sources removed from
project scope of work.

- a) The Owner/Operator shall as part of the Renewal Project install only the following types of valves in hydrocarbon service as defined in part 2: (1) bellows sealed, (2) live loaded, (3) graphitic packed, (4) quarter-turn (e.g., ball valves or plug valves), or equivalent as determined by the APCO. [Basis: Cumulative Increase, BACT, Offsets, Regulation 8-18]
- b) The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valve installed as part of the Renewal Project in hydrocarbon service as defined in part 2 unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. Valves that are not of a type listed in part 1(a) and for which a leak greater than 100 ppm (measured as C1) has been determined, shall become subject to the inspection provisions contained in Regulation 8-18 unless the component is already subject to the Part 4 inspection frequency. If the leak remains greater than 100 ppm (measured as C1) after repair, or if the valve is determined to have a leak greater than 100 ppm (measured as C1) a second time within a 5-year period, the Owner/Operator shall replace the valve with a type listed in part 1(a) within 5 years or at the next scheduled turnaround, whichever is sooner. [Basis: BACT, Regulation 8 Rule 18]
- c) The Owner/Operator shall install graphitic-based gaskets on all flanges or connectors (gasketed) installed as part of the Renewal Project in hydrocarbon service as defined in part 2 unless the Owner/Operator demonstrates to the satisfaction of the APCO that the service requirements prevent this gasket material from being used. [Basis: BACT]
- d) The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges/connectors installed as part of the Renewal Project in hydrocarbon service as defined in part 2 unless the owner/operator

complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT, Regulation 8 Rule 18]

- e) The Owner/Operator shall install dual mechanical seals w/ non-VOC barrier fluid (gas or liquid); or seal system with leakage vented to a thermal oxidizer; or oil ring seals with non-VOC/barrier fluid; or other District approved equivalent control device or technology as determined by the APCO on all compressors installed as part of the Renewal Project. [Basis: BACT]
- f) The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any pumps and/or compressors installed as part of the Renewal Project in hydrocarbon service as defined in part 2 unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT]
- g) The Owner/Operator shall install double mechanical seals w/ barrier fluid; magnetically coupled pumps; canned pumps; magnetic fluid sealing technology; seal system with leakage vented to thermal oxidizer, or other BAAQMD approved equivalent control device; or District approved control technology as determined by the APCO on all pumps installed as part of the Renewal Project in hydrocarbon service as defined in part 2. The Owner/Operator shall install mechanical seals or District approved equivalent technology on all pumps in hydrocarbon service.

All pumps installed as part of the Renewal Project in hydrocarbon service where either the hydrocarbon has an initial boiling point greater than 302 degrees Fahrenheit or a flash point greater than 250 degrees Fahrenheit, shall be subject to quarterly inspection provisions contained in Part 4.c). If any of these pumps is determined to have a leak greater than 100 ppm (measured as C1) and if the leak remains greater than 100 ppm (measured as C1) after repair, or if the pump is determined to have a leak greater than 100 ppm (measured as C1) a second time within a 5-year period, then the owner/operator shall install double mechanical seals w/ barrier fluid; magnetically coupled pumps; canned pumps; magnetic fluid sealing technology; or gas seal system vented to thermal oxidizer or other BAAQMD approved equivalent control device or technology as determined by the APCO within 5 years or at the next scheduled turnaround, whichever is sooner. [Basis: BACT]

- h) The Owner/Operator shall vent all pressure relief valves installed as part of the Renewal Project in hydrocarbon service as defined in part 2 subject to Rule 8-28 to a flare gas recovery system with a recovery and/or destruction efficiency of at least 98% by weight. [Basis: BACT]

- i) Unless the equipment exclusively handles material(s) with a flash point greater than 250F, the Owner/Operator shall identify all new and replacement valves, pressure relief devices, flanges, connectors, process drains, pumps, and compressors installed as part of the Renewal Project in hydrocarbon service as defined in part 2 with a unique permanent identification code and shall include all new and replaced fugitive equipment in the fugitive equipment monitoring and repair program as specified in Parts 1 through 4. The owner/operator shall monitor all repaired equipment within 24 hours of the repair. The unique permanent identification code does not apply to quarter-inch or less tubing and connectors associated with analytical sampling systems. [Basis: Cumulative Increase, Offsets, BACT]
- 2) The Owner/Operator shall submit a count of pumps, compressors, valves, pressure relief devices, flanges/connectors, and process drains installed in hydrocarbon service. For the purpose of this condition, hydrocarbon service is defined as all organic compound materials with a flash point less than or equal to 250F or an Initial Boiling Point less than or equal to 302F. The intent of this condition is to extend the monitoring beyond that contained in Rule 8-18 up to the flash point of 250F. The owner/operator shall submit the component count within 30 days of the close of each calendar quarter until completion of project construction. The Owner/Operator has been permitted to install the following number of these hydrocarbon service fugitive components for the Renewal Project, including the Hydrogen Plant Replacement.

Pumps: 43 [As identified in part 1(i)]
Compressors: 46
Valves: 8,932
Pressure Relief Devices: 240
Connectors (No Flanges): 4,718
Flanges: 12,465
Process Drains: 207

The Owner/Operator shall not exceed 15.92 tons per year of POC emissions measured as C1 from all fugitive components included in the above counts, including Hydrogen Plant Replacement fugitive components. Compliance with this provision shall be verified quarterly using methods described in part 3. The results shall be submitted to the District within 30 days of the close of each calendar quarter after commencing with start-up of the first Renewal Project source. The owner/operator shall keep documentation of fugitive component counts and corresponding POC emissions for at least five years from date of entry.

Within 30 days of the completion of the installation of all fugitive components, the owner/operator shall submit a final component count and POC emissions estimate to the District. If any of the fugitive component counts exceed a count stated

above, the plant's cumulative increase emissions for the Renewal Project shall be adjusted as needed, subject to APCO approval, to reflect only the difference between emissions based on predicted component counts versus actual component counts. The Owner/Operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 21 days after the submittal of the final POC fugitive equipment count and corresponding final fugitive component POC emissions estimate. If any of the fugitive component counts are less than a count stated above, the total cumulative increase emissions may be adjusted accordingly and emission offsets applied by the owner/operator in excess of the permitted levels may be requested by the owner/operator through the submittal of a banking application. [Basis: Cumulative Increase, Offsets, Rule 2-5]

Comment [RL13]: Chevron recommends correction of any emissions estimates and related offsets post-project.

- 3) The Owner/Operator shall calculate fugitive emissions from all Renewal Project fugitive components in hydrocarbon service (including the Hydrogen Plant Replacement) utilizing District approved methods. For leaking components the owner/operator shall use the modified trapezoidal method and LeakDAS as documented within the application 12842 or other method pre-approved by the District. The owner/operator shall include emissions estimates from all Renewal Project fugitive components regardless of the component Rule 8-18 repair status. [Basis: Cumulative Increase, BACT, Offsets]
- 4) a) The Owner/Operator shall conduct inspections of Renewal Project fugitive components in hydrocarbon service as defined in Part 2 of these conditions in accordance with the frequency below:
 - Pumps: Quarterly
 - Compressors: Quarterly
 - Valves: Quarterly
 - Pressure Relief Devices: Quarterly
 - Process drains: Quarterly
 - Connectors (Not Flanges): Biannual
 - Flanges: Biannual[Basis: BACT, Regulations 8-18, 8-8]
- b) The Owner/Operator shall conduct quarterly inspections of all Renewal Project pumps in hydrocarbon service with a flash point less than or equal to 250F. [Basis: BACT]
- c) The Owner/Operator shall conduct quarterly inspections of all Renewal Project pumps in hydrocarbon service where either the hydrocarbon has an initial boiling point greater than 302 degrees Fahrenheit or a flash point greater than 250 degrees Fahrenheit. [Basis: BACT]

HYDROGEN PLANT REPLACEMENT

5) The Owner/Operator of Hydrogen Plant Trains (S-4449, S-4450) shall not exceed the following maximum capacity limit for each train: [Basis: Cumulative Increase]

140 MMSCF of hydrogen, calendar day maximum

6) The Owner/Operator of the Hydrogen Recovery Unit (S-4451) shall not exceed the following maximum capacity limitations: [Basis: Cumulative Increase]

50 MMSCF of hydrogen, calendar day maximum

7) The Owner/Operator shall fire only natural gas (including medium BTU natural gas), or Hydrogen Plant offgas ("PSA tail gas"), in the Hydrogen Plant Reformer Furnaces (S-4471, S-4472). The owner/operator of S-4471 and S-4472 shall not exceed a maximum of 30% natural gas of the total annual fuel usage (Btu basis) with the balance being PSA tail gas. [Basis: BACT]

8) The Owner/Operator shall abate the S-4471 furnace at all times of operation except startup, shutdown, dryout/warmup, and commissioning periods by the properly operated and properly maintained SCR unit A-0302. The Owner/Operator shall abate the S-4472 furnace at all times of operation except startup, shutdown, dryout/warmup, and commissioning periods by the properly operated and properly maintained SCR unit A-0303. [Basis: BACT]

9) a) The Owner/Operator shall not exceed the following combined annual limits from the hydrogen plant reformer furnaces (S-4471, S-4472) and hydrogen plant flare (S-6021) in any consecutive 12 month period: [Basis: Cumulative Increase, 2-2-302, 2-2-303]

Pollutant	Annual (tons)
NOx	64.43
CO	92.28
SO2	5.25
PM10	20.98
POC	28.6

b) The Owner/Operator shall not exceed the following combined annual emissions limits from the hydrogen plant reformer furnaces (S-4471, S-4472) in any consecutive 12 month period: [Basis: Cumulative Increase, 2-2-302, 2-2-303]

Pollutant	Annual (tons)
NOx	53.28
CO	64.88
SO2	4.94
PM10	20.68
POC	23.22

c) The Owner/Operator shall determine the daily and monthly emissions used to establish rolling annual emissions totals from S-4471 and S-4472 using continuous emission monitor

(CEM) data for NOx and CO, and using District approved emission factors shown in part 14 and District-approved fuel consumption data from each S-4471 and S-4472 for PM10 and POC. The owner/operator shall determine daily (with monthly totals) SO2 emissions from the sum of the total sulfur in the natural gas (including medium BTU natural gas) fuel stream and the total sulfur in the feed gas stream ("PSA tail gas"), assuming 100% conversion of total sulfur to SO₂. SO2 emissions shall be calculated using a method approved by the APCO. The sulfur in the natural gas fuel stream shall be calculated as the concentration of sulfur in the incoming natural gas supply, as measured daily by an on-stream analyzer, multiplied by the measured flow of natural gas used as fuel. The sulfur in the feed gas stream shall be calculated as the measured total feed gas processed in the desulphurization unit multiplied by the actual total sulfur content either as measured downstream of the desulphurization unit by the continuous on-stream analyzer or that analyzer's lower detection limit, whichever is greater.

The owner/operator of the hydrogen plant flare (S-6021) shall use the emissions factors presented in part 27 in order to demonstrate compliance with the part 9a annual limits.

[Basis: Monitoring, cumulative increase, offsets]

10) For each furnace (S-4471, S-4472), the Owner/Operator shall install, calibrate, maintain, and operate a District-approved CEM and recorder for NOx, CO and O2. [Basis: Regulation 1-523]

11) The Owner/Operator of S-4471 and S-4472 shall properly install and operate District-approved equipment for continuous fuel flow monitoring and recording in order to determine fuel consumption, at each S-4471 and/or S-4472 using District approved methods. The Btu content of the fuels used at S-4471 and S-4472 shall be calculated or measured hourly at a minimum using a District-approved method. The gas composition analysis and sulfur content of the fuels used at S-4471 and/or S-4472 shall be measured and recorded hourly at a minimum using a District-approved method. Combustion stack flow shall be calculated using a District-approved method from either the fuel flow, gas composition, and combustion stack CEM excess oxygen monitor information, or a flow meter. [Basis: Monitoring, Cumulative Increase]

12) The Owner/Operator shall not exceed the following maximum heat input limits for each furnace (S-4471, S-4472): (1) 8,059,200 MMBTUs (HHV) in any consecutive 12 month period, and (2) 950 MMBTUs (HHV)/hr averaged over any calendar day. [Basis: Cumulative Increase, Offsets]

13) a) The "Commissioning Period" is a one-time occurrence for each furnace, that shall commence when all mechanical, electrical, and control systems are installed and individual system

start-up has been completed for that furnace. The Commissioning Period for each furnace shall terminate when the furnace has completed performance testing and is available for operation. In no event shall the Commissioning Period for either furnace exceed 90 days unless the applicant has made a written request for an extension and the District has granted such an extension. The commencement of the Commissioning Period shall be considered the date of initial operation for the Authority to Construct. The final startup conducted at the end of the Commissioning Period shall be considered the initial startup.

- b) "Commissioning Activities" shall be defined as all testing, adjustment, tuning, and calibration activities during the Commissioning Period, recommended by the equipment manufacturers and the construction contractor, to insure safe and reliable steady state operation of the hydrogen plant reformer furnace and associated systems. [Basis: cumulative increase, offsets]
- i) The Owner/Operator of S-4471 and S-4472 shall submit a District-approved commissioning plan that includes all commissioning activities and corresponding commissioning emissions estimates and monitoring within 60 days prior to any commissioning activities. [Basis: Cumulative Increase]
- c) The following conditions shall apply during the Commissioning Period and Commissioning Activities:
- i. During the Commissioning Period, the Owner/Operator shall demonstrate compliance with parts ii through iii below through the use of properly operated and properly maintained continuous emission monitors and data recorders for the following parameters:
- firing hours;
 - fuel flow rates (calculated exhaust flow rate or measured exhaust flow rate);
 - stack gas nitrogen oxide emission concentrations;
 - stack gas carbon monoxide emission concentrations; and
 - stack gas oxygen concentrations.
- ii. The Owner/Operator shall not exceed 300 hours for each furnace during the Commissioning Period of S-4471 and S-4472 hydrogen plant reformer furnaces without abatement by A-302 and A-303 SCR Systems, respectively. Such operation of the S-4471 and S-4472 hydrogen plant reformer furnaces without abatement shall be limited to discrete Commissioning Activities that can only be properly executed without the SCR system in operation. Upon completion of these activities for each furnace, the owner/operator shall provide written notice to the District and the unused balance of the 300 firing hours per furnace without abatement shall expire. The

Owner/Operator shall maintain records of all furnace firing hours without the SCR systems in place and operational. (Basis: offsets, Cumulative Increase)

iii. The total mass emissions of NOx, CO, POC, PM10, and SO2 that are emitted by the S-4471 and S-4472 hydrogen plant reformer furnaces during the commissioning period shall be included towards the consecutive twelve-month emission limitations specified in part 9. (Basis: offsets)

- d) "Startup" shall mean that period of time including Furnace Startup as defined in part 13e and the introduction of hydrocarbon feedstock to the Hydrogen Plant S-4449 and S-4450, ending with the full routing of the PSA tail gas to either of the respective furnaces. The period of time from the introduction of hydrocarbon feedstock to S-4449 and S-4450 to the end of startup shall not exceed 8 hours. Each individual "Startup", which includes Furnace Startup, shall not exceed 24 hours except during the "Commissioning Period". For S-4449, "Startup" is completed once PV-17004 PSA1 Tail Gas to Flare Control Valve, has been closed for 30 minutes. For S-4450, "Startup" is completed once PV-27004 PSA2 Tail Gas to Flare Control Valve, has been closed for 30 minutes. If "Startup" shall be interrupted before completion, the resumed startup activities shall constitute a second "Startup" with its own time limitations.
- e) "Furnace Startup" shall mean that period of time during which the furnace is put into service immediately following "Commissioning Period" as defined in part 13a, or any subsequent shutdown, by following a prescribed series of separate steps or operations. "Furnace Startup" shall be initiated when the furnace begins to receive fuel flow from its inactive, pre-startup temperature up to the point where the respective SCR unit is placed in operation in accordance with part 16. If "Furnace Startup" shall be interrupted before completion, the resumed furnace startup activities shall constitute a second "Furnace Startup" with its own time limitations.
- i) The Owner/Operator of Furnaces S-4471 and S-4472 shall not exceed a combined total of 132 consecutive hours during any consecutive 12-month period for "Furnace Startup". The owner/operator of each individual "Furnace Startup" shall not exceed 20 hours for each hydrogen plant reformer furnace (S-4471 and S-4472) except during the "Commissioning Period".
- f) "Shutdown" shall mean that period of time during which the furnace is taken out of service following a prescribed series of separate steps or operations including clearing the reformer system piping of combustibles. "Shutdown" for each furnace S-4471 and S-4472 is initiated once ammonia injection into the respective SCR units (A-0302, A-0303) has been stopped in accordance with part 16. The end of shutdown is

reached when the fuel supply to the reformer has been shut off and reformer system piping has been cleared of combustibles.

- g) Except during the commissioning period, the Owner/Operator of S-4471 and S-4472 shall not exceed the following operation limitations for either furnace:

(1) Each "Shutdown" shall not exceed 9 consecutive hours.

- h) The owner/operator shall not exceed 600 hours of total combined hours of Startup and Shutdown in any consecutive 12-month period. To demonstrate compliance with this part, the owner/operator shall maintain a District-approved log of the total time in hours and minutes of each Startup and Shutdown as defined in parts (d), (e), (f), and (g) above. The log shall be retained for five years of date of entry and shall be made available to District staff upon request.

- i) "Dryout/warmup" shall mean an event that occurs during the Commissioning Period and whenever new hydrogen plant reformer furnace refractory has been installed. When this new refractory is heated for the first time, the hydrogen plant reformer furnace is brought gradually to operating temperature through a series of prescribed steps designed to ensure safe operation of the furnace.

- j) Except during the commissioning period, the Owner/Operator of S-4471 and S-4472 shall not exceed the following operation limitation for either furnace:

(1) Each "Dryout/Warmup" of new furnace refractory heating shall not exceed 120 hours.

- 14) The Owner/Operator of S-4471 and S-4472 shall not exceed the following emission limits at each furnace except during startup, shutdown, dryout/warmup, and commissioning periods, unless specifically noted below:

- a) NO_x emissions – 5.0 ppmv, dry, corrected to 3% oxygen, averaged over any 1 hour period. Note: This NO_x emissions limit applies at times of operation of A-302 and A-303 as required in Part 16 of these conditions, when the catalyst bed is equal to or greater than 562 degrees F.; [Basis: BACT]
- b) CO emissions – 10.0 ppmv, dry, corrected to 3% oxygen averaged over any 1 hour period; [Basis: BACT]
- c) PM₁₀ emissions – 0.0026 lb/MMBtu (HHV), averaged over 3 hours; [Basis: BACT] and
- d) POC emissions – 0.00288 lb/MMBtu (HHV), averaged over 3 hours.

e) SO2 emissions - See part 9c.

[Basis: BACT, cumulative increase]

- 15) The Owner/Operator of S-4471 and S-4472 shall demonstrate compliance with part 14 using a District-approved CEM for NOx and CO, and using District-approved fuel consumption and emission factors verified through District-approved source tests as specified in parts 17 and 18 for PM10 and POC. The owner/operator of S-4471 and S-4472 shall determine the SO2 emissions as specified in condition part 9c. [Basis: BACT]
- 16) The Owner/Operator of A-0302 and A-0303 shall operate A-302 and/or A-303 at all times of operation of S-4471 and/or S-4472, respectively, when the catalyst bed is equal to or greater than 500 degrees Fahrenheit except for during dryout/warmup. The Owner/Operator of A-0302 and A-0303 shall not exceed the following ammonia emission limits except during periods of startup, shutdown, dryout/warmup, and Commissioning unless otherwise specified: 10 ppmv of ammonia, dry, corrected to 3% oxygen, as verified by District approved source test method, not to exceed three hours averaging time. The owner/operator shall maintain the catalyst bed above 500 degrees at all times of operation of S-4471 and S-4472, except during startup, shutdown, or dryout/warmup of S-4471 or S-4472 as specified in part 13. [Basis: Toxics, BACT]
- a) The Owner/Operator shall not inject ammonia into the SCR units (A0302, A-0303) until the catalyst bed reaches 500 degrees Fahrenheit. During startup, the owner/operator shall start injecting ammonia as soon as practicable, but under no circumstances later than the lesser of either: 30 minutes from when the catalyst bed reaches 500 degrees Fahrenheit or the catalyst bed reaching a temperature of 562 degrees F. During shutdown, the owner/operator shall stop injecting ammonia when the catalyst bed reaches 500 degrees Fahrenheit. The Owner/Operator shall properly install and operate a control valve that automatically shuts off the ammonia injection when the catalyst bed reaches 500 degrees Fahrenheit during shutdown. The Owner/Operator shall maintain records that demonstrate the temperature during all times of operation of S-4471 and/or S-4472 and the times that the ammonia injection to the SCR unit(s) (A-302/303) begins and ends.
- 17) The Owner/Operator of S-4471 and S-4472 shall conduct a District-approved source test within 120 days of the initial startup date of each plant to demonstrate compliance with the limits in parts 9, 14 and 16 for POC, PM10, SO2, and ammonia slip. The Owner/Operator shall conduct the District-approved source tests in accordance with parts 18, and with the applicable parts of 109 through 117. The Owner/Operator shall

submit the District approved source test results to the District no later than 60 days from the date of the source test. [Basis: BACT, Cumulative Increase, Offsets]

- 18) The Owner/Operator of S-4471 and S-4472 shall follow either (a) or (b) below to demonstrate subsequent compliance with the POC, PM10, and SO2 mass emission rates specified in parts 9 and 14 and the ammonia slip limit in part 16:
- a) The Owner/Operator shall install, calibrate, and maintain a District approved continuous emission monitor and recorder for ammonia slip to demonstrate subsequent compliance with the ammonia slip limit in part 16. The Owner/Operator shall conduct one reference test or use the test from part 17 to demonstrate accuracy of the continuous emission monitor. After the initial source test, the Owner/Operator shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the POC, and PM10 mass emission rates specified in parts 9 and 14 and the ammonia slip limit in part 16. After the additional source tests specified in this part 18.a. have been completed, the Owner/Operator shall conduct a district approved source test in each subsequent calendar year to demonstrate compliance with the POC and PM10 mass emission rates specified in parts 9 and 14. Each subsequent calendar year source test shall be at least nine months apart, but not more than 15 months apart. The Owner/Operator may conduct less frequent source tests upon approval by the District. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate POC, SO2, and/or PM10 emissions are either within 90% of a limit or exceeding a limit specified in parts 9 and/or 14. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 through 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test; or
 - b) After the initial source test specified in part 17 has been completed, the Owner/Operator of S-4471 and S-4472 shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the POC, and PM10 mass emission rates specified in part 14 and the ammonia slip limit in part 16. After the additional source tests specified in this part 18.b. have been completed, the Owner/Operator shall conduct a source test in each subsequent calendar year. Each subsequent calendar year source test shall be at least nine months apart. The Owner/Operator may conduct less frequent source tests upon approval by the District. The owner/operator may be required by the APCO to conduct more frequent source tests

if source test results indicate POC, PM10, SO2, and/or ammonia slip emissions are within 90% of an emissions limit or exceeding an emissions limit specified in parts 9, 14 and/or 16. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 through 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Periodic Monitoring, cumulative increase]

- 19) The Owner/Operator of S-4471 and S-4472 shall not exceed the following emission limits: [Basis: Rule 2-5]

S-4471 Train 1 Hydrogen Furnace

Arsenic	13.8 lb/yr
Cadmium	9.82 lb/yr
Nickel	81.4 lb/yr

S-4472 Train 2 Hydrogen Furnace

Arsenic	13.8 lb/yr
Cadmium	9.82 lb/yr
Nickel	81.4 lb/yr

If source test results indicate that other toxic air contaminants not identified above are emitted at rates greater than evaluated prior to the issuance of the Authority to Construct, then the owner/operator shall re-run the HRSA to determine compliance with Regulation 2, Rule 5 and potentially add these compounds to the lists above.

- 20) The Owner/Operator of S-4471 and S-4472 shall conduct District approved source tests in accordance with part 109 through 117 to demonstrate compliance with the limits in part 19. The Owner/Operator may conduct less frequent source tests upon approval by the District. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are either within 90% of any part 19 emissions limit or exceeds any part 19 emissions limit. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 through 117. [Basis: Rule 2-5, Source Tests]

Hydrogen Plant Cooling Water Tower (S-4465)

- 21) The Owner/Operator of S-4465 shall not exceed 51,840,000 gallons per calendar day of cooling water tower recirculation rate through the process equipment system. The owner/operator shall maintain a District-approved daily log of the total throughput (including cooling water tower recirculation rate) at S-4465. This log shall be kept on site for at least 5 years from the date of entry and be made available to District staff upon request.

[Basis: Cumulative Increase, Offsets]

22) The Owner/Operator of S-4465 shall conduct a District approved flow determination within 60 days of initial startup to demonstrate compliance with part 21 using the cooling tower water pump curves or other method approved by the APCO.
[Basis: Cumulative Increase, Offsets]

23) The Owner/Operator of S-4465 shall not exceed 5000 milligrams per liter total dissolved solids in the cooling tower. The Owner/Operator shall sample the cooling tower water on a monthly basis to determine total dissolved solids (TDS) content. The owner/operator shall calculate TDS from the result of a conductivity measurement in units of micromhos per centimeter ($\mu\text{mhos/cm}$) multiplied by 0.62 or other District-approved method. The PM10 emissions from the cooling tower drift shall not exceed 10.8 pounds per day or 1.97 tons per year, based on a 51,840,000 gallons per day recirculation rate, 5000 milligrams per liter of TDS, and a drift factor of 0.0005 percent. [Basis: Cumulative Increase, Offsets]

24) The Owner/Operator shall not emit VOC from S-4465, except as allowed in part 25.
[Basis: Cumulative Increase, Offsets]

25) The Owner/Operator of S-4465 shall inspect the riser chamber in the cooling water return line to the cooling tower on a daily basis for a hydrocarbon leak using a District-approved method. If a leak is detected, the owner/operator shall both identify and repair the leak within 15 days. As part of the Renewal Project, POC emission reduction credits (ERCs) were provided to the District to cover 15 days (360 hours) of hydrocarbon leakage over any consecutive 12-month period. The Owner/Operator of S-4465 shall not exceed a POC emissions limit of either 36.0 lb/day or 0.27 tons/year. Should any leak occur for more than 360 hours in any consecutive 12-month period, the owner/operator shall submit to the District a permit application for a change of condition containing both an emissions estimate to be approved by the APCO and POC emission reduction credits (ERCs) to offset emissions from the leak of any hydrocarbon leakage in excess of 360 hours over any consecutive 12-month period at a ratio specified in Regulation 2, Rule 2. ERCs will be calculated as part of the permit application process. [Basis: Cumulative Increase, BACT, Offsets]

Hydrogen Plant Flare (S-6021/A-6021)

26) The Owner/Operator of the hydrogen plant flare S-6021 shall design S-6021 to maintain a hydrocarbon and carbon monoxide destruction efficiency of at least 98%, on a mass basis when the gases vented to the flare have a minimum lower heating value (LHV) greater than or equal to 300 BTU/scf, or at least 93%, on

a mass basis when the gases vented to the flare have a minimum LHV below 300 BTU/scf. [Basis: Rule 12-11-401.9]

27) The Owner/Operator shall calculate S-6021 flare emissions for compliance with part 9a annual limits by using the following emission factors (including flare pilot and vented gas emissions):

- a) NOx emissions - 0.068 lb/MMBtu for each combustible to be flared
- b) CO emissions - 0.37 lb/MMBtu for flaring of natural gas, RPG, and methane. CO emissions for flaring will be calculated as 2.0% of CO concentration multiplied by the flow rate when fuel has lower heating value (LHV) greater than or equal to 300 BTU/scf and 7.0% of CO concentration multiplied by the flow rate when fuel has lower heating value less than 300 BTU/scf, unless both of the following parameters are satisfied:
 - i) The owner/operator may assume 98% destruction efficiency during flaring events when the LHV is less than 300 BTU/scf provided that the flare tip velocity does not exceed 122 feet/second. The owner/operator shall continuously monitor and record the flare tip velocity during all events, and
 - ii) The hydrogen content of the vent gas to the flare shall be maintained at a minimum of 15.5% by volume on a wet basis. The hydrogen content of the vent gas to the flared shall be continuously monitored and recorded during all events.

If both of the above parameters are satisfied, then 2.0% of CO shall be used in the flare emissions estimate for purposes of BACT, not for Rule 12-11 purposes. If either of the above parameters is not satisfied or if information is not available, then 7.0% of the CO shall be used in the flare emissions estimate. [Basis: BACT]

- c) POC emissions - 0.14 lb/MMBtu for flaring of natural gas, RPG and methane. POC emissions for flaring will be calculated as 2.0% of POC concentration multiplied by the flow rate when fuel has lower heating value (LHV) greater than or equal to 300 BTU/scf and 7.0% of POC concentration multiplied by the flow rate when fuel has lower heating value less than 300 BTU/scf, unless both of the following parameters are satisfied:
 - i) The owner/operator may assume 98% destruction efficiency during flaring events when the LHV is less than 300 BTU/scf provided that the flare tip velocity does not exceed 122 feet/second. The owner/operator shall

continuously monitor and record the flare tip velocity during all events, and

- ii) The hydrogen content of the vent gas to the flare shall be maintained at a minimum of 15.5% by volume on a wet basis. The hydrogen content of the vent gas to the flared shall be continuously monitored and recorded during all events.

If both of the above parameters are satisfied, then 2.0% of POC shall be used in the flare emissions estimate for purposes of BACT, not for Rule 12-11 purposes. If either of the above parameters is not satisfied or if information is not available, then 7.0% of the POC shall be used in the flare emissions estimate. [Basis: BACT]

- d) PM10 emissions - 0.00745 lb/MMBtu for flaring of natural gas, RPG, CO and methane.
- e) SO2 emissions - Calculated from both the fuel usage and total sulfur in the fuel to the flare pilot (burner) and the flow rate and total sulfur content of the vent gas to be flared assuming 100% conversion of total sulfur to SO2.

[Basis: Cumulative Increase]

- 28) The owner/operator shall fire S-6021 flare pilots continuously with only natural gas. When flaring gas containing refinery process gas (RPG) and/or refinery fuel gas (RFG), the owner/operator of S-6021 flare shall only operate the flare during periods of planned startup, planned shutdown, emergency upset and breakdown. When flaring gas containing no RPG or RFG, the owner/operator of S-6021 flare shall only operate the flare in accordance with the District-approved Flare Minimization Plan (FMP) for the Chevron Richmond Refinery. The owner/operator of S-6021 shall not exceed the maximum design capacity of 217,000 lb/hour of vent gas to the flare as defined in Regulation 12-11-210. The owner/operator of S-6021 shall use steam assist at S-6021 during all times that vent gas is being sent to S-6021. [Basis: BACT]
- 29) For the purposes of these conditions, a flaring event is defined as a flow rate of vent gas flared in any consecutive 15-minute period that continuously exceeds 330 standard cubic feet per minute (scfm). If during a flaring event, the vent gas flow rate drops below 330 scfm and then increases above 330 scfm within 30 minutes, that shall still be considered a single flaring event, rather than two separate events. For each flaring event during daylight hours (between sunrise and sunset), the Owner/Operator shall inspect the flare within 15 minutes of determining the flaring event, and within 30 minutes of the last inspection thereafter, using District-approved video monitoring or District-approved visible inspection following the procedure described in part 30b.

[Basis: Regulation 12-12]

30) The Owner/Operator shall use the following procedure for the initial inspection and each subsequent 30-minute inspection of a flaring event.

a) If the Owner/Operator can determine that there are no visible emissions using District-approved video monitoring, then no further monitoring is necessary for that particular inspection.

b) If the Owner/Operator cannot determine that there are no visible emissions using video monitoring, the Owner/Operator shall conduct a visual inspection outdoors using either:

i) EPA Reference Method 9, or

ii) Survey the flare by selecting a position that enables a clear view of the flare at least 15 feet, but not more than 0.25 miles, from the emission source, where the sun is not directly in the observer's eyes.

c) If a visible emission is observed, the Owner/Operator shall continue to monitor the flare for at least 3 minutes, or until there are no visible emissions, whichever is shorter.

d) The Owner/Operator shall repeat the inspection procedure for the duration of the flaring event, or until a violation is documented in accordance with part 31. After a violation is documented, no further inspections are required until the beginning of a new calendar day.

[Basis: Regulation 6-301, 2-1-403]

31) The Owner/Operator of S-6021 shall comply with one of the following requirements if visual inspection is used:

a) If EPA Method 9 is used, the Owner/Operator shall comply with Regulation 6-301 when operating the flare.

b) If the procedure of part 30.b.ii is used, the Owner/Operator shall not operate a flare that has visible emissions for three consecutive minutes.

[Basis: Regulation 2-6-403]

32) The Owner/Operator of S-6021 shall maintain records of all flaring events, as defined in part 29 for a period of five years from the date of entry. These records shall be kept onsite and made available to District staff upon request. The Owner/Operator shall include in the records the name of the person performing the visible emissions check, whether video inspection or visual monitoring (EPA Method 9 or visual inspection procedure of part 30) was used, the results of each inspection, and whether any violation of this condition (using visual inspection procedure in part 30) or Regulation 6-301 (using EPA method 9) occurred. [Basis: Regulation 2-6-501; 2-6-409.2]

33) The owner/operator of S-6021 shall comply with the monitoring, recordkeeping and reporting requirements for the flare as outlined in Regulation 12-11. The owner/operator of S-6021 shall properly install, maintain, and operate a District-approved total sulfur monitor in the flare gas. In order to demonstrate compliance with Parts 9a, 27, 28, the owner/operator shall maintain records of the lower heating value (BTU/scf) of the vented gas for each flaring event and if the flare vent gas contained any RPG or RFG. The owner/operator of S-6021 shall properly install and operate the pilot and purge monitoring as required in Sections 12-11-503 and 12-11-504. [Basis: Regulation 12-11]

34) The Owner/Operator of S-6021 shall operate the flare in accordance with the District-approved Flare Minimization Plan (FMP) for the Chevron Richmond Refinery. [Basis: Regulation 12-12]

Hydrogen Plant Fugitives

35)

Fugitive Equipment

a) The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall install only the following types of valves in RPG, RFG and/or natural gas service (1) bellows sealed, (2) live loaded, (3) graphitic packed, (4) Teflon packed, (5) quarter-turn (e.g., ball valves or plug valves), or equivalent as determined by the APCO. [Basis: Cumulative Increase, BACT, Offsets, 8-18]

b)

The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valve installed as part of the Hydrogen Plant in RPG, RFG, natural gas, methane, and/or process gas service unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. Valves that are not of a type listed in part 35(a) and for which a leak greater than 100 ppm (measured as C1) has been determined, shall become subject to the inspection provisions contained in Regulation 8-18-401 unless the component is already subject to the Part 36 inspection frequency. If the leak remains greater than 100 ppm (measured as C1) after repair, or if the valve is determined to have a leak greater than 100 ppm (measured as C1) a second time within a 5-year period, the Owner/Operator shall replace the valve with a type listed in part 35(a) within 5 years or at the next scheduled turnaround, whichever is sooner. Methane service shall be any stream that contains any methane. For the purposes of these permit conditions, RPG is refinery process gas and RFG is refinery fuel gas. [Basis: BACT,

Regulation 8 Rule 18]

- c) The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall install as part of this project graphitic-based gaskets on all flanges or connectors (gasketed) installed in natural gas, process gas, RPG and/or RFG service unless the Owner/Operator demonstrates to the satisfaction of the APCO that the service requirements prevent this material from being used. [Basis: BACT]
- d) The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges/connectors installed as part of the Hydrogen Plant in RPG, RFG, methane, and/or natural gas service unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT, Regulation 8 Rule 18]
- e) The owner/operator shall install liquid seals with non-VOC purge fluid (gas or liquid) or dual dry gas mechanical seals with inert/non-VOC purge gas or dual dry gas mechanical seals with venting to an approved recovery/abatement device or other BAAQMD Approved control device or technology on all compressors installed in TOC service as part of the Renewal Project or other BAAQMD Approved control device or technology. [Waiting for Praxair information on proposed seals.] [Basis: BACT]
- f) The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any pumps and/or compressors installed in RPG, RFG, and/or natural gas service as part of the Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT]
- g) The Owner/Operator shall install dual mechanical seals, vented to a District approved abatement device that achieves a minimum of 95% VOC destruction efficiency or District approved equivalent technology as determined by the APCO on all pumps in RPG, RFG, and/or natural gas service installed as part of the Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021). [Basis: BACT]
- h)

The Owner/Operator shall vent all pressure relief valves in hydrocarbon service subject to Rule 8-28 to a furnace or flare with a destruction efficiency of at least 98% by weight. Hydrocarbon service as defined in Part 2 of these conditions.

- i) The Owner/Operator shall identify all new valves, pressure relief devices, flanges, connectors, process drains, pumps, and compressors installed in RPG, natural gas, methane,

and/or RFG service as part of the Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) with a unique permanent identification code. This identification code does not apply to quarter-inch or less tubing and connectors associated with analytical sampling systems. The owner/operator shall clearly identify the fugitive components listed above that are in methane service only. The Owner/Operator shall include all new fugitive equipment in the fugitive equipment monitoring and repair program. [Basis: Rule 8-18 (includes methane), cumulative increase, offsets, BACT]

j) The owner/operator of all fugitive components at the Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall handle only RPG, RFG, natural gas, and methane. [basis: BACT, 8-18, 2-5]

36) The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall conduct inspections of all Hydrogen Plant sources fugitive components in RPG, RFG, and/or natural gas service based on the frequency below:

Pumps:	Quarterly
Compressors:	Quarterly
Valves:	Quarterly
Pressure Relief Devices:	Quarterly
Connectors (No Flanges):	Biannual
Flanges:	Biannual
Process Drains:	Quarterly

The Owner/Operator of all Hydrogen Plant sources (S-4449, S-4450, S-4451, S-4471, S-4472, and S-6021) shall conduct inspections of all Hydrogen Plant sources' fugitive components exclusively in methane service in accordance with the frequencies specified in Rule 8-18.

[Basis: BACT, Regulation 8-18]

Hydrogen Plant General Recordkeeping

37) The Owner/Operator of S-4449, S-4450, S-4451, S-4471, S-4465, S-4472, S-6021, A-302, A-303, A-6021 shall maintain all CEM and all source testing records and the following associated records (i.e. fuel usage rates, HHV heat content of fuel, hours of operation, flow rates used for emissions calculations, daily, monthly, and annual mass emissions estimates, etc.) for the last 5 years of operation to verify compliance with Renewal Project permit conditions. [Basis: Recordkeeping]

a) For part 11, continuous fuel flow and gas component analysis records and calculations of combustion stack flow.

- b) For part 12, daily, monthly, and consecutive 12 month heat input (HHV) to each furnace (S-4471, S-4472).
- c) For part 13)c)i, firing hours, fuel flow rates, and stack gas concentrations.
- d) For part 13)c)i, 14, and part 15, the CEMS records for each furnace (S-4471, S-4472).
- e) For part 13)c)ii, all furnace firing hours without the SCR in place and operational.
- f) Throughput for parts 5,6, 21
- g) Emissions data for parts 9, 14,15, 16, 18, 19, 23, 25, 27, all source test results required within parts 5- 36 [BAAQMD recordkeeping]

38) The Owner/Operator shall maintain the following in a District-approved daily log and shall keep these records on site for a period of at least 5 years from date of entry and make the records available to District staff upon request. [Basis: Regulation 2-1-301, Recordkeeping]

In order to demonstrate compliance with part 5, the Owner/Operator shall maintain the daily, monthly, and consecutive 365-day total record of hydrogen production (MMSCF of H2 per day) for each new Hydrogen Plant Train (S-4449, S-4450);

In order to demonstrate compliance with part 6, the owner/operator shall maintain daily, monthly, and consecutive 365-day total record of hydrogen production at S-4451; and

In order to demonstrate compliance with part 7, the owner/operator shall maintain daily, monthly, and consecutive 365-day total record of all fuel usage at S-4471 and S-4472.

~~POWER PLANT REPLACEMENT S 4473 S 4474 (Conditions 39 through 76 deleted)~~

Comment [RLJL4]: Sources removed from project scope of work.

~~Third Cogen Gas Turbine and Duct Burner~~

~~39) The Owner/Operator of S 4473 gas turbine shall only fire the gas turbine on natural gas (including medium BTU natural gas) and/or LPG (including pentanes). The Owner/Operator of the S 4474 HRSG duct burner shall only fire the duct burner on natural gas (including medium BTU natural gas) and/or refinery fuel gas. [Basis: BACT, cumulative increase]~~

~~40) The Owner/Operator of the S 4474 duct burner shall only operate the duct burner while the gas turbine is firing fuel. [Basis: BACT]~~

~~41) The Owner/Operator shall abate the S 4473 gas turbine and S 4474 duct burner at all times of operation except startup, shutdown, dryout/warmup, and commissioning periods by both the~~

~~properly operated and properly maintained SCR unit A-0074 and A-0075 Oxidation Catalyst. [Basis: BACT]~~

- ~~42) The Owner/Operator of the S-4473 gas turbine and S-4474 duct burner shall not exceed the following combined emission limits as measured at the common emission point of S-4473 and S-4474 in any consecutive 12-month period:
[Basis: Cumulative Increase, Offsets, BACT]~~

Pollutant	Annual (tons/year)
NOx	33.91 (See part 105)
CO	49.49
SO2	11.52 (See parts 98 and 99)
PM10	21.12
POC	9.44
Sulfuric Acid Mist	15.09

~~The Owner/Operator shall demonstrate compliance with part 42 using District approved CEM system data for NOx, CO, and O2 and using District approved fuel consumption data and the District approved emission factors verified through District approved source tests stated in parts 40, 52, and 53 for Sulfuric Acid Mist, PM10 and POC. The owner/operator shall determine SO2 emissions through the use of fuel usage and fuel sulfur content assuming 100% conversion of total sulfur to SO2 as described in part 99. [Basis: BACT/offsets]~~

- ~~43) The Owner/Operator shall properly install, calibrate, maintain, and operate a District approved continuous emissions monitors and recorder for NOx, CO, and O2 at the S-4473/S-4474 emission point (P-0306). [Basis: Regulation 1-523]~~
- ~~44) The Owner/Operator of S-4473 gas turbine and S-4474 duct burner shall properly install, calibrate, maintain, and operate a District approved continuous fuel flow monitors and recorders in order to determine both fuel consumption and exhaust gas flowrate for mass emissions.
[Basis: Cumulative Increase, Offsets]~~
- ~~45) The Owner/Operator shall not exceed 550 MMBtu/hr averaged over any calendar day and 520 MMBtu/hr averaged over any consecutive 12-month period for the S-4473 gas turbine, 350 MMBtu/hr averaged over any calendar day and 320 MMBtu/hr averaged over any consecutive 12-month period for the S-4474 duct burner, and 860 MMBtu/hr averaged over any calendar day for both S-4473 and S-4474 combined. [Basis: Offsets, Cumulative Increase, Rule 2-5]~~
- ~~46) Startup and Shutdown Modes for S-4473 and S-4474. The Owner/Operator shall limit startup of the S-4473 gas turbine and S-4474 HRSG duct burner to the lesser of the first 256 minutes of continuous fuel flow to the gas turbine/duct burner after fuel flow is initiated or the period of time from fuel flow initiation until the gas turbine/duct burner achieves 60 consecutive minutes of CEM data points in compliance with the~~

~~NOx and CO emission concentration limits. The Owner/Operator shall limit shutdown of the S-4473 gas turbine and S-4474 duct burner to the lesser of 30-minute period immediately prior to the termination of fuel flow to S-4473 or the period of time from non-compliance with the NOx or CO emission concentration limits until termination of fuel flow to the Gas Turbine/HRSG. Startup and shutdown emissions shall accrue toward the consecutive twelve-month emission limitations specified in part 42. [Basis: Time allowances for startup and shutdown periods]~~

~~47) Commissioning Period. A one-time occurrence that shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed. The Commissioning Period shall terminate when the gas turbine and duct burner have completed performance testing and are available for operation. In no event shall the Commissioning Period exceed 90 days unless the applicant has made a written request for an extension and the District has granted the extension in writing. The commencement of the Commissioning Period shall be considered the date of initial operation for the Authority to Construct. The final startup conducted at the end of the Commissioning Period shall be considered the initial startup. [Basis: Definition, cumulative increase]~~

~~48) Commissioning Activities. All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and construction contractor to ensure safe and reliable steady-state operation of the S-4473 gas turbine, S-4474 duct burner/HRSG, and associated electrical delivery systems. Commissioning Activities are considered to be a one-time occurrence.~~

~~a) The Owner/Operator of S-4473 and 4474 shall submit a District-approved commissioning plan that includes all commissioning activities and corresponding commissioning emissions estimates and monitoring within 60 days prior to any commissioning activities. [Basis: Cumulative Increase]
[Basis: Definition, cumulative increase]~~

~~49) The Owner/Operator shall not exceed the following emission limits from the combined firing of S-4473 gas turbine and S-4474 duct burner except during startup and shutdown, and commissioning periods.~~

~~NOx — 2.0 ppmv, dry, corrected to 15% oxygen, averaged over any 3 consecutive hours; and
— 2.5 ppmv, dry, corrected to 15% oxygen, averaged over any 1 hour;~~

~~CO emissions — 6.0 ppmv, dry, corrected to 15% oxygen, averaged over any 3 consecutive hours;~~

~~POC emissions—2.0 ppmv, dry, corrected to 15% oxygen, averaged over any District approved compliance source test not to exceed 3 hours; and~~

~~PM10 emissions—0.00574 lb/MMBtu, averaged over any District approved compliance source test not to exceed 3 hours.~~

~~Should PM10 emissions exceed the above emission limit, the Owner/Operator may submit a change of conditions application for amendment of the limit upon District approval. Such application shall include a demonstration that the S-4473 gas turbine and S-4474 duct burner are properly designed and properly operating with good combustion practices that satisfy the BACT requirement and that Renewal Project components remain below PSD and CEQA significance thresholds. The application shall also provide emission reduction credits (ERCs) as needed to offset the higher PM10 limits and specify a sulfur limit for the refinery fuel gas combusted in the S-4474 duct burner.~~

~~{Basis: BACT, cumulative increase}~~

~~50) The Owner/Operator of S-4473 and S-4474 shall monitor compliance with parts 42 and 49 by using a District approved CEMS system for NOx, CO, and O2, and by District approved emissions factors verified through district approved source tests and District approved fuel consumption data for POC and PM10 as specified in parts 52 and 53. The owner/operator of S-4473 and S-4474 shall determine SO2 emissions as specified in part 99 in order to demonstrate compliance with both parts 42 and 98. {Basis: BACT}~~

~~51) The Owner/Operator of S-4473 and/or S-4474 shall abate at all times of operation S-4473 and/or S-4474 by the properly maintained and operated A-0074 SCR Unit when the catalyst bed is equal to or greater than 550 degrees F. The owner/operator shall maintain the catalyst bed above 500 degrees at all times of operation of S-4473 and S-4474, except during startup or shutdown, or the first 300 hours of operation during the Commissioning Period of S-4473 or S-4474 as specified in part 46. The owner/operator shall not exceed the following ammonia emissions (ammonia slip) concentration except during periods of startup, shutdown, and commissioning: 10 ppmv of ammonia, dry, corrected to 15% oxygen, as verified by District approved source test method, not to exceed three hours averaging time. {Basis: Toxios}~~

~~a) The owner/operator of S-4473 and S-4474 shall not inject ammonia into the SCR unit (A-0074) until the catalyst bed reaches 500 degrees Fahrenheit. During startup, the owner/operator shall start injecting ammonia as soon as practicable, but under no circumstances later than the lesser of either: 30 minutes from when the catalyst bed reaches 500 degrees Fahrenheit or the catalyst bed reaching a temperature~~

~~of 562 degrees F. During shutdown, the owner/operator shall stop injecting ammonia as soon as practicable, but under no circumstances later than either 10 minutes from when the catalyst bed reaches 562 degrees Fahrenheit or when the catalyst bed reaches 500 degrees Fahrenheit. The Owner/Operator shall maintain records that demonstrate the temperature during all times of operation of S 4473 and S 4474 and the times that the ammonia injection to the SCR unit (A 0074) begins and ends.~~

~~52) No later than 120 days from the date of initial startup of the S 4473 gas turbine and S 4474 duct burner, the Owner/Operator shall conduct a District approved source test to determine initial compliance with the limits in parts 42, 49 and 51 for SO₂, POC, PM₁₀, Sulfuric Acid Mist, and ammonia slip. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Cumulative Increase, Offsets]~~

~~53) The Owner/Operator S 4473 gas turbine and S 4474 duct burner shall follow either (a) or (b) below to demonstrate subsequent compliance with the Sulfuric Acid Mist, POC and PM₁₀ mass emission rates specified in parts 42, 49 and the ammonia slip limit in part 51:~~

~~a) The Owner/Operator of S 4473 and S 4474 shall properly install, calibrate, and maintain a District approved continuous emission monitor and recorder for ammonia slip to demonstrate subsequent compliance with the ammonia slip limit in part 51. The Owner/Operator shall conduct one reference test or use the test results from part 52 to demonstrate accuracy of the ammonia slip continuous emission monitor. The Owner/Operator shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the Sulfuric Acid Mist, POC and PM₁₀ mass emission rates specified in parts 42, 49, and 51 and the ammonia slip limit in part 51, and one District approved source test in each subsequent calendar year to demonstrate subsequent compliance with the Sulfuric Acid Mist, POC and PM₁₀ mass emission rates specified in parts 42, 49, and 51. The owner/operator of S 4473 and S 4474 shall conduct the calendar year emissions source tests at least 9 months apart. The owner/operator may be required to conduct more frequent source tests if source test results indicate POC and/or PM₁₀ emissions are within 90% of a limit or exceeding the limit specified in parts 42, 49 and/or 51. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test; or~~

~~b) After the initial source test, the Owner/Operator shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the Sulfuric Acid Mist, POC and PM10 mass emission rates specified in parts 42, 49, and 51 and the ammonia slip limit in part 51. After the additional source tests specified in this part 53.b. have been completed, the Owner/Operator shall conduct one District approved source test in each subsequent calendar year. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate Sulfuric Acid Mist, POC, PM10 and/or ammonia slip emissions are within 90% of a limit or exceeding the limit specified in parts 42, 49 and/or 51. The owner/operator of S 4473 and S 4474 shall conduct the calendar year emissions source tests at least 9 months apart. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. {Basis: Cumulative Increase, Periodic Monitoring}~~

~~54) The Owner/Operator of S 4473 and S 4474 shall not exceed the following emission limits:~~

~~{Basis: Rule 2-5}~~

~~Nickel _____ 2090 lb/yr
Cadmium _____ 55.7 lb/yr
Sulfuric Acid Mist _____ 30,172 lb/yr~~

~~55) The Owner/Operator of S 4473 and S 4474 shall conduct District approved source tests in accordance with all applicable parts of 109 through 117 in order to demonstrate compliance with the limits in part 54. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% of any part 54 emissions limit or exceeds any part 54 emissions limit. {Basis: Rule 2-5, Source Tests}~~

~~CONTINUOUS CATALYST REGENERATION REFORMER (CCRR) S 4452,
4477, 4478, 4479, 4480~~

~~56) The Owner/Operator of S 4452 CCRR shall not exceed the following throughput limits: {Basis: Cumulative Increase}~~

~~25,075.5 kbbl fresh feed, any consecutive 12 month period; and
71.3 kbbl fresh feed, maximum per calendar day~~

~~57) The Owner/Operator of the S 4452 CCRR vent shall not exceed the following emission limits in any consecutive 12 month period:
{Basis: Cumulative Increase, Offsets}~~

Comment [RLJL5]: Sources removed from project scope of work.

Pollutant	Annual (tons/yr)
NOx	0.96
CO	6.98
SO2	1.00
PM10	0.23
POC	0.98

~~The Owner/Operator shall demonstrate compliance with this part 57 using the higher of either: the following concentration limits listed below or the concentration measured by District approved source test, and flow rate as determined by a District approved flow meter or calculated from a District approved method based on one or more of the following: catalyst circulation rate; carbon on spent catalyst; vent gas molecular weight; burn zone inlet O2 concentration; or nitrogen make-up to regeneration loop.~~

~~NOx 42 ppmv, dry, corrected to 1% oxygen, averaged over any District approved compliance source test~~
~~CO 500 ppmv, dry, corrected to 1% oxygen, averaged over any District approved compliance source test~~
~~SO2 31 ppmv, dry, corrected to 1% oxygen, averaged over any District approved compliance source test~~
~~PM10 0.0083 grains/DSCF, averaged over any District approved compliance source test~~
~~POC (as methane) 123 ppmv, dry, corrected to 1% oxygen, averaged over any District approved compliance source test~~

~~The Owner/Operator of the S 4452 GCRR vent shall not exceed the following flow rate limits:
44,045 scf/hour, averaged over any consecutive 12-month period, corrected to 1% oxygen; and
79,835 scf/hour, averaged over any calendar day, corrected to 1% oxygen~~

~~In order to demonstrate compliance with this condition, the owner/operator shall maintain in a District approved log a daily emissions estimate including a District approved flowrate calculation, and monthly and annual totals.
{Basis: Cumulative Increase, Offsets}~~

~~58) The Owner/Operator of the S 4452 GCRR shall conduct a District approved source test within 120 days of the date of initial startup to determine initial compliance with the limits in part 57 for NOx, CO, POC, PM10, and SO2, and to verify the accuracy of the flowrate calculated or measured in part 57. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test.
{Basis: Cumulative Increase, Offsets}~~

~~59) After the initial source test specified in part 58 has been completed, the Owner/Operator of S 4452 CGRR shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the mass emission rates, concentration limits, and flowrate measurements specified in part 57. After the additional source tests specified in this part 59 have been completed, the Owner/Operator shall conduct one District approved source test in each subsequent calendar year. The owner/operator shall conduct the calendar year emissions source tests at least 9 months apart. The owner/operator may be required by the APCO to conduct more frequent source tests if the source test results are within 90% of any emissions or concentration limits or exceeds any emissions or concentration limit specified in part 57. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of part 100 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Periodic Monitoring, cumulative increase, offsets]~~

~~60) The Owner/Operator of CGRR Furnaces S 4477, S 4478, S 4479, and S 4480 shall only fire these units on natural gas (including medium BTU natural gas) and/or refinery fuel gas. [Basis: BACT, Regulation 2-5, cumulative increase]~~

~~61) The Owner/Operator of CGRR Furnaces S 4477, S 4478, S 4479, and S 4480 shall abate the CGRR Furnaces (S 4477, S 4478, S 4479, S 4480) at all times of operation except for startup, shutdown, and CGRR commissioning by the properly operated and properly maintained SCR unit A-0309. [Basis: BACT]~~

~~62) The Owner/Operator of S 4477, S 4478, S 4479, and S 4480 shall not exceed the following combined emission limits for all four furnaces, in any consecutive 12-month period. [Basis: Cumulative Increase, Offsets]~~

Pollutant	Annual (tons/yr) unless otherwise specified
NOx	13.29
CO	16.20 (See part 105)
SO2	11.65 (See Parts 98 and 99)
PM10	16.32
POC	11.81
Sulfuric Acid Mist	1784 lb/yr, 2.6 lb/hr

~~63) The Owner/Operator of S 4477, S 4478, S 4479, and S 4480 shall demonstrate compliance with part 62 using a District approved CEMs Systems for NOx, CO, and O2 and District approved using fuel consumption and the District approved emission factors verified through district approved source tests for PM10 and POC~~

~~stated in parts 71 and 72. The owner/operator of S-4477, S-4478, S-4479, and S-4480 shall calculate SO2 emissions using fuel usage and fuel sulfur content assuming 100% conversion of total sulfur to SO2. [Basis: BACT]~~

~~64) The Owner/Operator shall properly install, calibrate, maintain, and operate a District approved continuous emission monitor and recorder for NOx, CO and O2 at the emission point (P-0300) of furnaces S-4477, S-4478, S-4479, and S-4480. [Basis: Regulation 1-523, BACT, cumulative increase, offsets]~~

~~65) The Owner/Operator of S-4477, S-4478, S-4479, and S-4480 shall install a District approved continuous fuel flow monitor and recorder on each unit in order to determine fuel consumption. [Basis: Cumulative Increase, Offsets]~~

~~66) The Owner/Operator of S-4477, S-4478, S-4479, and S-4480 shall not exceed a combined total of 4,380,000 MMBtu per any consecutive 12 month period. The Owner/Operator of S-4477, S-4478, S-4479, and S-4480 shall not exceed the following heat input limits for each furnace:~~

~~— S-4477 — 201 million BTUs (HHV)/hr averaged over any calendar day.~~

~~— S-4478 — 402 million BTUs (HHV)/hr averaged over any calendar day.~~

~~— S-4479 — 201 million BTUs (HHV)/hr averaged over any calendar day.~~

~~— S-4480 — 201 million BTUs (HHV)/hr averaged over any calendar day.
[Basis: Cumulative Increase, Offsets]~~

~~67) This part defines startup, shutdown, and commissioning period for the CCRR unit and furnaces (S-4452, S-4477, S-4478, S-4479, S-4480).~~

~~a) The following definitions apply for the startup, shutdown, and CCRR commissioning of S-4452, S-4477, S-4478, S-4479, and S-4480:~~

~~i) "Startup" is that period of time not to exceed the lesser of either: (1) twenty four (24) hours during which a unit is brought up to its normal operating temperature from a cold start, initially at zero fuel flow, by following a prescribed series of separate steps, or (2) operations until it achieves compliance with the NOx and CO emission concentration limits of part 68.~~

~~ii) "Shutdown" is that period of time, not to exceed the lesser of either: (1) nine (9) hours during which a unit is taken out of service from a normal operating mode to an~~

~~inactive status following a prescribed series of separate steps, or (2) operations, commencing with the first of the shutdown prescribed series of separate steps per manufacturer's specifications and ending with the termination of fuel flow to the unit.~~

- ~~iii) "Refractory dryout" shall mean an event that occurs whenever new furnace refractory has been installed. When this new refractory is heated for the first time, the furnace is brought gradually to operating temperature through a series of prescribed steps designed to ensure safe operation of the furnace. The owner/operator shall maintain records in a District-approved log documenting that refractory has been installed and the date of installation.~~
 - ~~iv) "Unit warm up" shall mean an event that occurs whenever startup is commencing when the reactor inlet temperature is below 700 degrees Fahrenheit.~~
 - ~~v) "Catalyst dryout" shall mean an event that occurs following a shutdown of the S-4452 reactor where the S-4452 reactor has been opened to the atmosphere. Following the "unit warm up" step, catalyst dryout gradually increases system temperature through a series of prescribed steps designed to remove excess water from the catalyst to ensure safe operation of the S-4452 reactor prior to reaching operating temperature.~~
 - ~~vi) "CCRR commissioning" is a one-time occurrence for each CCRR furnace that shall commence when all mechanical, electrical, and control systems are installed and individual system start up has been completed for that furnace.~~
- ~~b) The Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed 24 consecutive hours for startup. Additional time shall be allotted for each of the circumstances listed in parts 67b(i), (ii), or (iii). The Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed any of the time allowances specified in part 67b unless the Owner/Operator has received approval from the District for an extended period. During this startup period, the Owner/Operator shall operate the SCR and ammonia injection in accordance with Part 70.~~
- ~~i) For refractory dryout, the Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed an additional 24 consecutive hours.~~
 - ~~ii) For unit warm up, the Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed an additional 24 consecutive hours.~~

~~iii) For catalyst dryout, the Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed an additional 48 consecutive hours.~~

~~e) CGRR Commissioning includes startup (not to exceed 24 consecutive hours) plus all three circumstances of parts 67b(i), (ii), and (iii). The Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed the sum of these components during CGRR Commissioning, or a total of 120 consecutive hours.~~

~~d) The Owner/Operator of S-4477, S-4478, S-4479, or S-4480 shall not exceed 0 consecutive hours for any shutdown.~~

~~{Basis: Cumulative Increase, Offsets, Rule 9-10-218}~~

~~68) The Owner/Operator of S-4477, S-4478, S-4479 and S-4480 shall not exceed the following emission limits except during the Commissioning Period and periods of startup and shutdown and/or dryout/warmup periods unless specifically noted below:~~

~~— NOx emissions — 5.0 ppmv, dry, corrected to 3% oxygen, averaged over any consecutive 3-hour period. Note: This NOx emissions limit applies at times of operation of A-309 as required in Part 70 of these conditions, when the catalyst bed is equal to or greater than 562 degrees F. {Basis: BACT};~~

~~— CO emissions — 10.0 ppmv, dry, corrected to 3% oxygen, averaged over any consecutive 3-hour period {Basis: BACT};~~

~~SO2 emissions — 11.65 tpy (see Part 62) {Basis: Cumulative Increase, 2-2-303, BACT}~~

~~— PM10 emissions — 0.00745 lb/MMBtu averaged over any consecutive 3-hour period as determined using District approved source test method. {Basis: Offsets, Cumulative Increase};~~

~~— POC emissions — 0.00539 lb/MMBtu averaged over any consecutive 3-hour period as determined using District approved source test method.~~

~~{Basis: Offsets, Cumulative Increase}~~

~~69) The Owner/Operator shall monitor compliance with part 68 by using District approved CEM Systems for NOx, CO, and O2 and District approved emission factors in part 68 verified through District approved source tests and District approved fuel consumption data for PM10 and POC. The owner/operator of S-4477, S-4478, S-4479, and S-4480 shall calculate SO2 emissions using District approved fuel usage and District approved fuel sulfur content assuming 100% conversion of total sulfur to SO2. {Basis: BACT}~~

~~70) The Owner/Operator of A-0309 shall operate A-0309 at all times of operation of S-4477, S-4478, S-4479 and/or S-4480 operation when the catalyst bed is equal to or greater than 562 degrees F. The owner/operator shall not exceed the following ammonia concentration limit except during periods of startup unless otherwise specified in Part 67, shutdown, and commissioning: 10.0 ppmv of ammonia, dry, corrected to 3% oxygen, as verified by District approved source test method, not to exceed three hours averaging time. [Basis: BACT, cumulative increase, Rule 2-5]~~

~~a) The Owner/Operator shall not inject Ammonia into the SCR unit (A-0309) until the catalyst bed reaches 500 degrees Fahrenheit. During startup, the owner/operator shall start injecting ammonia as soon as practicable, but under no circumstances later than the lesser of either: 30 minutes from when the catalyst bed reaches 500 degrees Fahrenheit or the catalyst bed reaching a temperature of 562 degrees F. During shutdown, the owner/operator shall stop injecting ammonia as soon as practicable, but under no circumstances later than either 10 minutes from when the catalyst bed reaches 562 degrees Fahrenheit or when the catalyst bed reaches 500 degrees Fahrenheit. The Owner/Operator shall maintain records that demonstrate the temperature during all times of operation of S-4477, S-4478, S-4479 and S-4480 and the times that the ammonia injection to the SCR unit (A-0309) begins and ends.~~

~~71) The Owner/Operator of furnaces S-4477, S-4478, S-4479, and S-4480 shall conduct a District approved source test within 120 days of the date of initial startup to determine compliance with the limits in parts 62, 68 and 70 for SO₂, POC, PM₁₀, Sulfuric Acid Mist, and ammonia slip. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Cumulative Increase, Offsets, BACT]~~

~~72) The Owner/Operator of sources S-4477, S-4478, S-4479, and S-4480 shall follow either (a) or (b) below to demonstrate subsequent compliance with the POC and PM₁₀ District approved emission factors in parts 62, 68 and the ammonia slip limit in part 70:~~

~~a) The Owner/Operator shall install, calibrate, and maintain a District approved continuous emission monitor and recorder for ammonia slip to demonstrate subsequent compliance with the ammonia slip limit in part 70. The Owner/Operator shall conduct one reference source test or use the source test results from part 71 to demonstrate accuracy of the continuous emission monitor. After the initial source test specified in part 71 has been completed, the Owner/Operator shall conduct three quarterly District approved source~~

~~tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the POC and PM10 District approved emission factors specified in part 68 and the ammonia slip limit in part 70. After the additional source tests specified in this part 72.a. have been completed, the Owner/Operator shall conduct one District approved source test in each subsequent calendar year to demonstrate subsequent compliance with the POC and PM10 District approved emission factors specified in part 68. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% or exceeds any emissions or concentrations limit specified in parts 62, 68, and 70 or any emissions limit associated with any of these sources. The owner/operator shall conduct the calendar year emissions source tests at least 9 months apart. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test.; or~~

~~b) After the initial source test specified in part 71 has been completed, the Owner/Operator shall conduct three quarterly District approved source tests, followed by two semi-annual District approved source tests to demonstrate subsequent compliance with the POC and PM10 District approved emission factors specified in part 68 and the ammonia slip limit in part 70. After the additional source tests specified in this part 72.b. have been completed, the Owner/Operator shall conduct one District approved source test in each subsequent calendar year. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% or exceeds any emissions or concentrations limit specified in parts 62, 68, and 70 or any emissions limit associated with any of these sources. The owner/operator shall conduct the calendar year emissions source tests at least 9 months apart. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Periodic Monitoring]~~

~~73) The Owner/Operator of the S-4452 GCRR shall not exceed the following emission limits:
[Basis: Toxics, 2-5]~~

~~S-4452 GCRR~~

~~Benzene 378 lb/yr (fugitive)
Chlorine (vent) 1,420 lb/yr
HCl (vent) 9,880 lb/yr~~

~~Dioxins/furans (vent) 4.82E-05 lb/yr~~

~~74) Deleted.~~

~~75) Except for the part 73 fugitive benzene emissions, the Owner/Operator of S-4452, S-4477, S-4478, S-4479 and S-4480 shall conduct District approved source tests in accordance with the applicable parts of 109 through 117 and to demonstrate compliance with the limits in part 73. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% or exceeds any emissions or concentrations limit specified in part 73 of any emissions limit associated with any of these sources. The owner/operator shall conduct the calendar year emissions source tests at least 9 months apart. [Basis: Rule 2-5, Source Tests, Cumulative Increase]~~

~~76) The Owner/Operator of S-4452 shall determine compliance with the part 73 benzene fugitives by using the maximum weight percent benzene in the S-4452 streams multiplied by the total corresponding POC emissions estimate for those streams as determined using Parts 1, 2, 3, and 4. The owner/operator shall maintain records in a District approved log of the benzene concentrations within the streams used for this calculation and the corresponding POC emissions estimates from each stream. The records shall be retained for five years from date of entry and shall be made available to District staff upon request. [Basis: Toxics 2-5, NSPS Subpart VVV]~~

HYDROGEN PURITY IMPROVEMENTS

77) The Owner/Operator of S-4454 No. 6 H2S Plant (Recycle Amine Regenerator) shall not exceed the following limits:
[Basis: Cumulative Increase]

3358 MMSCF H2S produced, any consecutive 12-month period
11 MMSCF H2S produced, maximum per calendar day

78) The Owner/Operator of Sulfur Loading Rack S-4490 shall abate this source by a properly maintained and properly operated A-0310 Sulfur Loading Rack Caustic Scrubber at all times of operation of S-4490. The Owner/Operator of A-310 shall abate only S-4490 with A-310.
[Basis: Cumulative Increase, Rule 2-5]

a) The Owner/Operator of S-4490 shall install and maintain a safety interlock that prevents the operation of S-4490 without the A-310 scrubber properly operating in order to demonstrate compliance with Part 78.

79) The Owner/Operator of S-4490 Sulfur Loading Rack shall not exceed any of the following limits:

328,500 long tons during any consecutive 12-month period
900 long tons per calendar day.

[Basis: Cumulative Increase]

- 80) The Owner/Operator of S-4253 TKC/FCC Feed Hydrotreater shall not exceed the following throughput limitations:

[Basis: Cumulative Increase]

29,200 kbbbl feed material, over any consecutive 12-month period
96,000 bbl feed material, calendar day

Sulfur Recovery Units S-4227 through S-4229:

- 81) The Owner/Operator of A-0020, A-0021 and A-0022 Tail Gas Units abating the S-4227, S-4228, and S-4229 Claus Plants (SRUs), respectively, shall each maintain a minimum oxidization temperature of 1400 degrees Fahrenheit.

[Basis: BACT]

The owner/operator shall comply with the temperature limit of 1400F in Part 81 at all times, except during an "Allowable Temperature Excursion" as specified below, provided that the temperature controller setpoint remains at a minimum of 1400 degrees Fahrenheit. An Allowable Temperature Excursion is one of the following:

- a. A temperature excursion not exceeding 20 degrees F; or
- b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
- c. A temperature excursion for a period or periods which when combined is more than 15 minutes in any hour, provided that all three of the following criteria are met.
 - i. the excursion does not exceed 50 degrees F;
 - ii. the duration of the excursion does not exceed 24 hours; and
 - iii. the total number of such excursions does not exceed 12 per calendar year (or any consecutive 12 month period).

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

For each Temperature Excursion below 1400 degrees Fahrenheit, the owner/operator shall keep all records to the satisfaction of the APCO in order to demonstrate compliance with the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:

- a. Temperature controller setpoint;
 - b. Starting date and time, and duration of each Allowable Temperature Excursion;
 - c. Measured temperature during each Allowable Temperature Excursion;
 - d. Number of both Temperature Excursions and Allowable Temperature Excursions per month, and total number for the current consecutive 12-month period; and
 - e. All strip charts or other temperature records.
- (Basis: Regulation 2-1-403)

82)

The owner/operator of S-4227, 4228 and 4229 shall abate each at all times of operation of S-4227, S-4228, and S-4229 by the properly maintained and properly operated A-20, A-21, and A-22 tail gas units, respectively. The owner/operator shall also install and maintain an acid gas scrubber (A-4450) to prevent the release of acid gas during an unscheduled loss of SRU capacity. The owner/operator of S-4227, 4228, and 4229 shall not exceed a combined acid gas feed rate to the three SRUs of 24.5 MMscf/day averaged over any consecutive 3-hour period plus an additional 3 MMscf/day from sour water sources, which can be shut down immediately. Prior to exceeding the emergency scrubber capacity of A-4450 and/or A-4451, the owner/operator shall shut down refinery acid gas generating sources including the 3 MMscf/day from sour water sources, and cease acid gas generation at the refinery to reduce the acid gas feed rate below the capacity of the two remaining SRUs ("Load Shed Procedures"). (Basis: BACT)

83)

The owner/operator of S-4227, S-4228, and S-4229 shall abate each by the properly installed, properly maintained, and properly operated A-120, A-121, and A-122 Wet Electrostatic Precipitators (Wet ESPs), respectively, at all times of operation of S-4227, S-4228, and/or S-4229. [Basis: BACT, Rule 2-5].

84) The Owner/Operator of S-4227, S-4228, and S-4229 shall not exceed the following limits at the emission point of each A-0020, A-0021, and A-0022 except during periods of startup, shutdown, and refractory dryout as defined below, as demonstrated by a District-approved source test method, CEM, or other District-approved method:

- a) NO_x emissions of 50.0 ppm, dry, corrected to 0% O₂, 3-hour average
- b) SO₂ emissions of 50.0 ppm, dry, corrected to 0% oxygen, averaged over any calendar day
- c) H₂S emissions of 4.0 ppm, dry, corrected to 0% O₂, averaging time based on district approved source test method
- d) PM₁₀ emissions: *short-term limit as specified in part 88.*
- e) Sulfuric Acid Mist emissions: See part 95

- f) 15,000 dscfm, corrected to 0% O₂, exhaust flow rate averaged over any 1 hour period at each S-4227 and S-4228.
- g) 30,000 dscfm, corrected to 0% O₂, exhaust flow rate averaged over any 1 hour period at S-4229.

For the purposes of complying with this part, the following definitions and limits apply for the startup, shutdown, and refractory dryout periods of S-4227, S-4228, and/or S-4229:

"Startup" begins with startup of the main air blower and ends when operation is stable and the Air-to-H₂S ratio controller is placed in the automatic control mode.

"Refractory dryout" shall mean an event that occurs whenever new refractory has been installed. When this new refractory is heated for the first time, the unit is brought gradually to operating temperature through a prescribed series of steps designed to ensure safe operation.

The owner/operator of S-4227, S-4228, or S-4229 shall not exceed 12 consecutive hours for startup or 24 hours for startups involving refractory dryout.

"Shutdown" begins after acid gas feed has been replaced with natural gas purge and, following the sequence to remove residual sulfur compounds from the unit, the Main Reaction Furnace firing rate is reduced while increasing excess O₂ to check for residual reactions. The shutdown period ends when the main air blower is shut down.

The owner/operator of S-4227, S-4228, or S-4229 shall not exceed 9 consecutive hours for any shutdown.

[Basis: BACT, cumulative increase, Rule 2-5]

- 85) The Owner/Operator of S-4227, S-4228, and S-4229 shall comply with parts 84, 86, 87, 90, and 92. These conditions supersede Condition 19063, after modification of each SRU S-4227, S-4228, and S-4229, respectively. [Basis: BACT, Rule 2-5, Cumulative Increase]
- 86) The Owner/Operator of S-4227, S-4228, and S-4229 Sulfur Recovery Units (SRUs) shall perform all of the following:
 - a. In order to reduce H₂S bypassing at the thermal oxidizers, the owner/operator shall modify each SRU's thermal oxidizer internals for better mixing, improve the control of excess oxygen, and relocate the sulfur pit vent line to the tail gas inlet line unless studies required below demonstrates that there is no beneficial effect. Within 60 days of the issuance of the Authority to Construct for this project, the owner/operator shall both conduct and submit studies in order to indicate whether the relocation of the sulfur pit vent line to the tail gas inlet line would have any beneficial effect, subject to District approval. If the study

demonstrates to the satisfaction of the District that there is a beneficial effect, then the owner/operator shall relocate the sulfur pit vent line to the tail gas inlet line. Within 60 days of the issuance of the Authority to Construct for this project, the owner/operator shall submit the thermal oxidizer engineering design drawings or other equivalent drawings, and a written explanation of all design features that demonstrate that the thermal oxidizer internals will improve mixing and detailed description of measures taken to improve the control of excess oxygen.

b. The owner/operator shall install ultra low-NOx burners equipped with fuel induced recirculation (FIR) on each thermal oxidizer of each SRU. Within 30 days of an ultra low-NOx burner vendor or design selection, the owner/operator shall submit for District approval the design drawings and explain the design features that will result in the NOx reductions.

c. The owner/operator shall install ultra low-NOx burners equipped with FIR on each stack gas heater of each SRU. Stack gas source numbers are S-4436, S-4437, and S-4438. Within 30 days of an ultra low-NOx burner vendor or design selection, the owner/operator shall submit for District approval the design drawings and explain the design features that will result in the NOx reductions.

d. The owner/operator shall not exceed the following maximum firing rates: (Basis: Cumulative Increase)

No. 1 SRU Stack Gas Heater	S-4436	765.60 MMBTU/day HHV
No. 2 SRU Stack Gas Heater	S-4437	765.60 MMBTU/day HHV
No. 3 SRU Stack Gas Heater	S-4438	1,346.0 MMBTU/day HHV

No. 1 SRU Thermal Oxidizer burner	S-4227/A-20	739.0 MMBTU/day HHV
No. 2 SRU Thermal Oxidizer burner	S-4228/A-21	739.0 MMBTU/day HHV
No. 3 SRU Thermal Oxidizer burner	S-4229/A-22	1,080.0 MMBTU/day HHV

e. The owner/operator shall perform District-approved computational fluid dynamic analysis (flow modeling) of the thermal oxidizers to assist in optimizing the performance. The results shall be submitted to the District for review and approval.

f. The owner/operator shall improve the scrubbing of SO2 by the SRU SO2 Absorbers by increasing the makeup sodium sulfite rate, and upgrading the piping and controls to meet the SO2 concentration limit in Part 84c. The controls for caustic makeup will also be upgraded for more stable operation. Within 60 days of the issuance of the Authority to Construct for this project, the owner/operator shall submit for District review and approval the pre-project and post-project engineering design drawings or other equivalent drawings that demonstrate, which may include the following to meet the SO2 concentration limit in Part 84c:

1. the makeup sodium sulfite rate for each SRU to improve the scrubbing of SO₂ by the SO₂ Absorbers,
2. the piping and control upgrades, and
3. the caustic makeup control upgrades.

g. On S-4454 #6 H₂S Recovery Unit, the owner/operator shall install carbon filtration of the amine, optimize sizing and internal design of the amine flash drum, and follow Best Practice design guidelines for hydrocarbon removal including District-approved monitoring and carbon change-out procedures.

h. Within 60 days of the issuance of the Authority to Construct for this project, the owner/operator shall complete design development and submit the design for District review in order to identify whether an alternative design will achieve or accomplish the same objective to the satisfaction of the District, which is to reduce C3 and C4 carryover into the vent gas and acid gas by adding/upgrading coolers in at least three locations.

i. The owner/operator shall reroute the PSA tail gas, which currently goes to the RLOP Gas Recovery Unit to the Hydrogen Plant (S-4449 through S-4450) feed or to the refinery fuel gas system in order to reduce the GRU feedrate and improve cooling and separation at the RLOP GRU.

j. The owner/operator of S-4227, S-4228, and S-4229 shall properly install and properly operate a Medium Oxygen Enrichment System (up to 50%) in order to comply with parts 84, 87, 90, and 92.

(Basis for parts a through j, not including d: Cumulative Increase, BACT)

87) The Owner/Operator of S-4227, S-4228, and S-4229 shall abate the S-4227, S-4228, and S-4229 SRUs at all times of operation by the properly installed, properly maintained, and properly operated A-20, A-21, and A-22 Tail Gas Units, respectively, and the properly installed, properly maintained, and properly operated A-120, A-121, A-122 Wet Electrostatic Precipitators (Wet ESPs), respectively. The owner/operator of each SRU S-4227 through S-4229 shall not exceed the following total sulfur production levels [Basis: cumulative increase, offsets, Rule 2-5]:

a) S-4227 abated by A-20 and A-120:

- i) The lesser of either: 345 Long Tons in any calendar day, or the throughput level determined through District-approved source testing to be maximum calendar day throughput achievable while complying with all emissions limitations. Annual throughput values will be determined either through District-approved source testing and/or the use of the District-approved CEMs and District-approved flowmeters in order to determine the maximum annual throughput that corresponds to compliance with all annual emissions limits.

- b) S-4228 abated by A-21 and A-121:
- i) The lesser of either: 345 Long Tons in any calendar day or the throughput level determined through District-approved source testing to be maximum calendar day throughput achievable while complying with all emissions limitations. Annual throughput values will be determined either through District-approved source testing and/or the use of the District-approved CEMs and District-approved flowmeters in order to determine the maximum annual throughput that corresponds to compliance with all annual emissions limits.
- c) S-4229 abated by A-22 and A-122:
- i) The lesser of either: 570 Long Tons in any calendar day, or the throughput level determined through District-approved source testing to be maximum calendar day throughput achievable while complying with all emissions limitations. Annual throughput values will be determined either through District-approved source testing and/or the use of the District-approved CEMs and District-approved flowmeters in order to determine the maximum annual throughput that corresponds to compliance with all annual emissions limits.
- d) The total combined calendar day throughput from S-4227, S-4228, and S-4229 combined shall not exceed 900 Long Tons in any calendar day.
- e) The owner/operator of S-4227, S-4228, and S-4229 may exceed the throughput levels established through District-approved source testing per Parts 87a, b, and/or c and the next paragraph, upon receipt of written approval by the APCO of a source test plan for demonstrating compliance with all concentration and mass limits at a higher throughput level. During the source test, the throughput level may not exceed the maximum level stated in Parts 87a, b, and/or c and all emissions measured by CEMs shall remain in compliance with the permitted concentration and/or permitted mass levels to be averaged over the source test. Exceedance of emission levels determined by source testing that occur during the source test shall not be considered a violation as long as Chevron follows the source test plan pre-approved by the APCO. Until January 1, 2012, the owner/operator may conduct source tests, pursuant to this part, to establish the throughput levels not to exceed the maximum throughput levels specified in Part 87 for each SRU. During this time period, consistent with both Regulation 2-1-234 and Regulation 2-5-214, an increase in throughput up to the maximum throughput levels as specified in Part 87 shall not be considered a modification for purposes of Regulation 2 provided that there is no increase in any permitted emission levels from these SRUs. For the purposes of Regulation 2, Rule 6, changes made as a result of this part shall be considered either Minor or Administrative as determined by the APCO.

The owner/operator of S-4227, S-4228, and S-4229 shall conduct a district pre-approved source test within 120 days of modification of each unit, on each unit operating at maximum throughput levels listed above in order to demonstrate compliance with all emissions limits (NOx, CO, SO2, PM10, POC, H2S, and H2SO4) at maximum throughput levels. The 120-day deadline for this testing may be extended upon written approval of the APCO. The source test shall also note all operating parameters determined by the District as part of the source test pre-approval, which may become enforceable permit conditions if the district determines that the parameters are required in order to comply with all emissions limits. The throughput levels above may be adjusted based on the District-approved results of the District-approved source test. The throughput levels may be subsequently adjusted up to the maximum levels listed in Parts 87a, b, and/or c based on the results of the subsequent source testing through the submittal of a District permit application. The results of these source tests shall be submitted to the district for approval no later than 60 days from the test date.

The owner/operator of each S-4227, S-4228, and S-4229 shall use oxygen enrichment (up to a maximum of 50% oxygen enrichment) at all times of operation above the following throughput levels of each SRU: S-4227 and S-4228 at 150 long tons per day, and S-4229 at 300 long tons per day. The owner/operator of each SRU may use oxygen enrichment at lower throughput levels.

88) The Owner/Operator of A-120, A-121, and A-122 shall achieve a minimum abatement efficiency of 90% by weight of both PM10 and Sulfuric Acid Mist. The owner/operator shall demonstrate continuous compliance with this abatement efficiency through the use of the following parametric monitoring parameters (Basis: Offsets, cumulative increase):

The owner/operator of A-120, A-121, and A-122 shall not exceed any of the following PM10 and Sulfuric Acid Mist limits as specified in parts 84, 90, 92, and 95 from each Wet ESP (A-120, A-121, and A-122):

The owner/operator of A-120 shall not exceed:

- a. PM10 Limit 0.504 lb averaged over one hour as demonstrated using District approved source test method.

The owner/operator of A-121 shall not exceed:

- b. PM10 Limit 0.450 lb averaged over one hour as demonstrated using District approved source test method.

The owner/operator of A-122 shall not exceed:

- c. PM10 Limit 0.884 lb averaged over one hour as demonstrated using District approved source test method.

The owner/operator of Wet Electrostatic Precipitators (A-120, A-121, and A-122) shall abate at all times of operation of the SRUs (S-4227, S-4228, and S-4229) respectively with the properly maintained, properly operated, fully charged Wet Electrostatic Precipitators (A-120, A-121, and A-122). This shall include the following:

- 1). Continuously monitor and record the inlet water flow rate (in gallons per minute) to each scrubber and maintain a minimum inlet water flow rate of [TBD] in (gallons per minute).
- 2). Monitor and record Transformer Rectifier (TR) set secondary current readings on a daily basis.
- 3). Install a temperature monitor and recorder at the inlet of the Wet ESP. The inlet temperature of each Wet ESP shall be maintained at a maximum of [TBD] degrees F. An alarm shall be set in such a manner to indicate temperature excursions above [90% of TBD] degrees F.
- 4). The secondary current of any TR set shall not be less than [TBD] milliamps averaged over any three hour period, or the secondary current of up to two TR sets may be less than [TBD] milliamps, averaged over any three hour period, as long as the remaining TR sets maintain an average secondary current above [TBD] milliamps, averaged over any three hour period. An alarm shall be set in such a manner to indicate secondary current excursions below [TBD] milliamps.

The parametric conditions in this part may be re-evaluated or adjusted, if District-approved source test data demonstrate to the satisfaction of the APCO that alternate parametric conditions are necessary for or capable of maintaining compliance with an emission limit of PM10 and/or Sulfuric Acid Mist as determined by District-approved source test methods.

The annual PM10 and Sulfuric Acid Mist emissions rate shall be determined by District approved source test methods. The owner/operator shall hire a third-party source test firm to perform at least four source tests per calendar year to determine the hourly PM10 and Sulfuric Acid Mist emission rates. The results of each quarterly source test shall be used to estimate the emissions for that calendar quarter. The four quarterly mass emissions estimates shall be added together to determine compliance with the annual emissions limits of these permit conditions. Each source test shall be performed in accordance with the District's Manual of Procedures. The owner/operator shall notify the District Source Test Manager and the Engineering Division at least seven (7) days prior to the test, to provide the District staff the option of observing the test. Within 60 days of the test date, the owner/operator shall submit a comprehensive report of the test results to the District's Source Test Manager for review and approval.

The owner/operator of S-4227, S-4228, and S-4229 shall conduct at least one source test every quarter in order to demonstrate compliance with all emissions limits not covered by CEMs. If this source test window partially or completely overlaps a plant shutdown and its 7-day startup period, the owner/operator shall conduct a source test within 14 days of the date of the plant or source startup.

The Owner/Operator Of S-4227, S-4228, and S-4229 shall continue to conduct quarterly source tests for at least two years after the date of issuance of the Permit to Operate for the last Renewal Project source (excluding the Cogen and CCRR Plants). After the quarterly source tests specified above in this part, the Owner/Operator may submit an application for District approval to request to change the frequency to semi-annual or bi-annual provided that all District-approved source test results demonstrate that the emissions are less than 90% of any PM10 or sulfuric acid mist emissions limit.

The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the source test date. [Basis: Periodic Monitoring, cumulative increase, Regulation 1-523]

In order to demonstrate compliance with this part and part 84, 90, 92, and 95, the owner/operator shall maintain in a District-approved log, updated monthly, all of the following:

- 1). PM10 and Sulfuric Acid Mist emissions source test results, lb/hour.
- 2). Daily inlet water flowrate inspection records indicating working condition and repairs.
- 3). pH of water system
- 4). Daily ESP Transformer Rectifier (TR) set secondary current readings; and
- 5). Wet ESP inlet temperature records.

These records shall be retained for at least five years from date of entry and be made available to the BAAQMD upon request.

- a) (Placeholder) Install a temperature monitor and recorder at the inlets of each Wet ESP (A-120, A-121, and A-122). The inlet temperature of each Wet ESP shall be maintained at a maximum of 170 degrees F/TBD degrees Fahrenheit averaged over any one hour period. An alarm shall be set in such a manner as to indicate temperature excursions above 153 F.)
- b) (Placeholder) Monitoring and recordkeeping provisions to insure appropriate electric field strength.
- c) (Placeholder) Condition(s) to insure proper water flow.
- d) (Placeholder) pH of water system.

For each above "placeholder" or "TBD", the owner/operator shall provide the above vendor-supplied information within 60 days of the selection of the vendor.

89) The Owner/Operator of S-4227, S-4228, and S-4229 shall maintain a District-approved daily log with monthly summaries of all sulfur production, acid gas feedrate (in MMSCF/day), maximum hourly flow rate (in scfm), all CEM data, daily H2S data and source test data at each S-4227, S-4228, and S-4229 to demonstrate compliance with parts 82, 84, 90, 92, and 95 and all Wet ESP parametric measurements to demonstrate compliance with parts 84, 90, 92, and 95. This log shall be kept on site for 5 years from the date of entry and be made available to District staff upon request.

90) The Owner/Operator of the S-4227, S-4228, and S-4229 Claus Plants (SRUs), S-4436, S-4437 and S-4438 (stack heaters), A-20, A-21, and A-22 (Tail Gas Units), and A-120, A-121, A-122 (Wet ESP's) shall not exceed the following combined emission limits in any consecutive 12-month period:

[Basis: Cumulative Increase, Offsets]

Pollutant	Annual (tons/yr)
NOx	62.33
CO	113.80
S02	86.70
PM10	5.34
POC	2.84

H2S 4.0 ppm, dry, corrected to 0% O2,
averaging time based on District-approved source test
Method

Sulfuric Acid Mist 1.856 lb/hour

The Owner/Operator of the S-4227, S-4228, and S-4229 shall each demonstrate compliance with parts 84, 90, 92, and 95 using District-approved CEMs Systems for NOx, CO, S02, O2, and either exhaust gas flow meters (S-4229) or duct flow meters combined with a District approved flow calculation method and using District approved source testing and/or District-approved flow measurement and/or calculation method in order to demonstrate compliance with parts 84, 90, 92, and 95 for PM10, POC, H2S, and Sulfuric Acid Mist.

[Basis: Monitoring]

91) The Owner/Operator of the S-4227, S-4228, and S-4229 Claus Plants (SRUs) and S-4436, S-4437 and S-4438 (stack heaters) shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder at each emission point (P-0151, P-0152, and P-0153) for NOx, CO, S02, O2, and District-approved exhaust gas flow rate (in scfm).

[Basis: BACT, offsets, Rule 2-5]

- a. The Owner/Operator of the S-4227, S-4228, and S-4229 Claus Plants (SRUs) and S-4436, S-4437 and S-4438 (stack heaters) shall conduct District-approved monitoring and recording on a monthly basis at each emission point (P-0151, P-0152, and P-0153) for hydrogen sulfide (H₂S) (in ppmv and lb/day) in order to demonstrate compliance with the concentration and mass emission limits specified in parts 84, 90, 92, and 95. If the monthly monitoring window partially or completely overlaps a plant shutdown and its 7-day startup period, the owner/operator shall conduct monitoring within 14 days of the date of the plant or source startup. [Basis: BACT, Rule 2-5]

92)

The Owner/Operator of the S-4227, S-4228, and S-4229 Claus Plants (SRUs) and S-4436, S-4437 and S-4438 (stack heaters) shall not exceed the following emission limits at each emission point (P-0151, P-0152, and P-0153) except during startup and shutdown:

The Owner/Operator of the S-4227 Claus Plant (SRU) and S-4436, (stack heater) shall not exceed the following emission limits in any consecutive 12 month period for the tons/year limits, any calendar day for the daily limits and the averaging time as specified for the remaining limits:

Pollutant	(tons/yr)	(lb/day)
NOx	15.38	
CO	28.08	222.72
SO ₂	21.39	
PM ₁₀	1.44	9.8
POC	0.76	9.8

H₂S 4.0 ppm averaging time based on District-approved source test method
Sulfuric Acid Mist 0.673 lb/hour

The Owner/Operator of S-4227 shall not exceed a maximum exhaust gas flowrate of 15,000 dry scfm, corrected to 0% O₂, averaged over any one hour period. [Basis: Rule 2-5, BACT]

The Owner/Operator of the S-4228 Claus Plant (SRU) and S-4437, (stack heater) shall not exceed the following emission limits in any consecutive 12 month period for the tons/year limits, any calendar day for the daily limits and the averaging time as specified for the remaining limits:

Pollutant	Annual (tons/yr)	(lb/day)
NOx	15.38	
CO	28.08	173.52
SO ₂	21.39	
PM ₁₀	1.30	9.8
POC	0.76	9.8

H2S 4.0 ppm averaging time based on
District-approved source test Method
Sulfuric Acid Mist 0.425 lb/hour

The Owner/Operator of S-4228 shall not exceed a maximum exhaust gas flowrate of 15,000 dry scfm, corrected to 0% O2, averaged over any one hour period. [Basis: Rule 2-5, BACT]

The Owner/Operator of the S-4229 Claus Plant (SRU) and S-4438, (stack heater) shall not exceed the following emission limits in any consecutive 12 month period for the tons/year limits, any calendar day for the daily limits and the averaging time as specified for the remaining limits:

Pollutant	Annual (tons/yr)	(lb/day)
NOx	31.57	
CO	57.64	325.44
SO2	43.92	
PM10	2.60	9.8
POC	1.32	9.8

H2S 4.0 ppm averaging time based on
District-approved source test Method
Sulfuric Acid Mist 0.758 lb/hour

The Owner/Operator of S-4229 shall not exceed a maximum exhaust gas flowrate of 30,000 dry scfm, corrected to 0% O2, averaged over any one hour period. [Basis: Rule 2-5, BACT]

[Basis: BACT, Cumulative Increase, Offsets]

93) The Owner/Operator of S-4227, S-4228, and S-4229 shall conduct a District-approved source test within 120 days of the date of initial startup of each unit to determine initial compliance with the limits in parts 84, 90, 92, and 95 for POC, H2S, PM10, Sulfuric Acid Mist, and ammonia and including the District-approved exhaust gas flowrates (measurement or combined measurement and calculation). The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Cumulative Increase, Offsets, BACT, Regulation 7]

94) After the initial source test specified in part 93 has been completed, the Owner/Operator of S-4227, S-4228, and S-4229 shall conduct quarterly District approved source tests to demonstrate compliance with the limits in parts 84, 90, 92, and 95 for POC, H2S, PM10, and Sulfuric Acid Mist, and District-approved exhaust gas flowrates (measurement or combined measurement and calculation). The Owner/Operator of S-4227, S-4228, and S-4229 shall continue to conduct quarterly source tests for at least two years after the date of issuance of the Permit to Operate for the last Renewal Project source (excluding

the Power Plant Replacement Project). After the quarterly source tests specified above in this part, the Owner/Operator may submit an application for District approval to request to change the frequency to semi-annual source testing. The owner/operator of S-4227, 4228, and 4229 shall conduct the quarterly emissions source tests at least 2 months apart and not more than 4 months apart. The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% of any emissions limit associated with any of these sources or exceeding any emissions limits associated with any of these sources. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109-to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Periodic Monitoring, cumulative increase]

- 95) The Owner/Operator of S-4227, S-4228, and S-4229 shall not exceed the following emission limits:
[Basis: Toxics]

S-4227 SRU 1		
Sulfuric Acid Mist (stack)		0.673 lb/hr
H2S (stack)	0.323 lb/hr	

S-4228 SRU 2		
Sulfuric Acid Mist (stack)		0.425 lb/hr
H2S (stack)	0.323 lb/hr	

S-4229 SRU 3		
Sulfuric Acid Mist (stack)		0.758 lb/hr
H2S (stack)	0.646 lb/hr	

H2S (fugitive) from Renewal Project components at S-4227, S-4228, and S-4229

H2S (fugitive)	0.0994 lb/hr	
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- 96) Deleted.

FUEL GAS SYSTEM

- 97) The Owner/Operator of the three Fuel Gas Mix Drums V-475, V-870, and V-701 shall install and operate a District-approved continuous gaseous fuel monitors and recorder(s) in order to demonstrate compliance with both the H2S limit and total sulfur limit of the refinery fuel gas at the outlets of each of the three fuel gas mix drums. The Owner/Operator shall calculate and record the following for each fuel gas mix drum of the refinery fuel gas system in order to demonstrate compliance with parts 98 and 99:

- a) Each calendar day, the Owner/Operator of the three Refinery Fuel Gas Mix Drums shall record the following for each refinery fuel gas mix drum: daily fuel gas flow as measured by a District-approved fuel gas flowmeter at each drum, daily averaged calendar day H₂S content (in ppmv) of the refinery fuel gas, any consecutive 365 day average of H₂S concentration (ppmv), hourly maximum total sulfur content (in ppmv), daily averaged calendar day total sulfur content (in ppmv), any consecutive 365 day average of total sulfur content (in ppmv), and daily averaged HHV heat capacity as Btu/scf;
- b) The owner/operator of the three refinery fuel gas mix drums shall calculate using District-approved methodology the total sulfur dioxide emissions in tons per year from the refinery fuel gas system for each calendar day with monthly totals. The owner/operator shall record the sulfur dioxide emissions in a District-approved log for at least five years from the date of entry and shall be made available to District staff upon request.
[Basis: BACT, cumulative increase, offsets, Regulations 1-522, 1-523]

- 98) The Owner/Operator of the three Refinery Fuel Gas Mix Drums shall not exceed the following limits at the outlet of each of the refinery fuel gas mix drums [Basis: BACT, cumulative increase, offsets, Regulations 1-522, 1-523]:
- a) 50 ppmv H₂S (at each drum), averaged over a calendar day;
 - b) 18.83 ppmv H₂S (flow-weighted average of all three drums), averaged over any consecutive 12 month period;
 - c) 100 ppmv total sulfur concentration (at each drum), averaged over a calendar day;
 - d) 200 ppmv total sulfur (at each drum), averaged over any hour;
 - e) 30.85 ppmv total sulfur concentration (flow-weighted average of all three drums) any consecutive 12-month period.
 - f) The owner/operator of the three Refinery Fuel Gas Mix Drums and S-4473 and S-4474 Cogeneration and Heat Recovery Steam Generator shall not exceed a combined total of 53.15 tons per year SO₂ from all refinery sources fired on refinery fuel gas (as measured at the outlet of each of the three drums using total sulfur in ppmv and District-approved measured fuel flow of each drum assuming 100% conversion of total sulfur to SO₂) using a District-approved calculation method and from the Cogeneration Sources (S-4473 and S-4474) natural gas and liquefied petroleum gas (LPG) assuming 100% conversion of total sulfur to SO₂ using a District-approved calculation method.

Comment [R1JL6]: Limits to be recalculated and confirmed with District.

99) -CONDITION 99 DELETED

Comment [R1JL7]: Sources removed from project scope of work. Chevron to submit proposed revised limit.

- a) ~~The owner/operator shall determine the total sulfur dioxide emissions in tons per year from the S-4473 gas turbine, from the sum of the total sulfur in the natural gas fuel stream and the total sulfur in the LPG stream. The sulfur in the~~

Comment [R1JL8]: Source removed from project scope of work.

~~natural gas fuel stream shall be calculated as the concentration of total sulfur in the incoming natural gas supply, as measured daily multiplied by the District approved measured flow of the natural gas used as fuel assuming 100% total sulfur conversion to SO2 using a District approved method. The total sulfur in the LPG stream shall be calculated from District approved flow meter measurements of the LPG going to the S 4473 gas turbine multiplied by the LPG total sulfur content assuming 100% total sulfur conversion to SO2 using a District approved method.~~

~~b) Total sulfur dioxide emissions in tons per year from the S-4474 duct burner, assuming 100% total sulfur conversion to SO2 using a District approved method. The owner/operator shall calculate the total sulfur in the natural gas fuel stream as the concentration of sulfur in the incoming natural gas supply, as measured daily by District approved total sulfur monitor, multiplied by the measured fuel flow at S-4474 when fired exclusively on natural gas. When firing on either RFG or a combination of natural gas and RFG, the owner/operator shall use the District approved measured total sulfur and the District approved fuel flow assuming 100% total sulfur conversion to SO2 using a District approved method.~~

Comment [RL19]: Sources removed from project scope of work.

~~c) The owner/operator shall maintain records in a District approved daily log of the amount and type of fuel usage (i.e. natural gas, LPG, and refinery fuel gas), total sulfur content of each fuel used, and SO2 emissions estimates in tons per calendar day, per consecutive 365 day totals, and monthly summaries in tons per month. The owner/operator shall retain this log onsite for at least five years from the date of entry and shall be made available upon request to District staff.~~

~~[Basis: BACT, cumulative increase, offsets, Regulations 1-522, 1-523]~~

For the purposes of compliance with the SO2 bubble or any of its related parts, the owner/operator shall use only District pre-approved methods and calculation procedures.

RENEWAL PROJECT COMMISSIONING PERIOD

100) The owner/operator of all sources of the Renewal Project shall comply with Parts 100 through 108 during the Renewal Project Commissioning Period. The Renewal Project Commissioning Period is defined as the period that begins when the first new or modified Renewal Project source commences operations, and terminates 180 calendar days after the last Renewal Project new or modified source commences operations.

[Basis: Cumulative Increase, PSD]

101) CONDITION 101 DELETED

~~During the Renewal Project Commissioning Period, the Owner/Operator shall only operate the existing steam boilers (S-~~

~~4120, S-4131, S-4132, S-4133, S-4135) and the new cogeneration plant (S-4473 and S-4474) simultaneously for up to a maximum of 90 days as long as the combined firing rate for all these units remains less than or equal to 860 MMBTU/hr on a calendar day average.~~

~~{Basis: Cumulative Increase, Rule 2-2-410, PSD}~~

Comment [RLJL10]: Sources removed from project scope of work.

102) CONDITION 102 DELETED

~~During the Renewal Project Commissioning Period, the Owner/Operator shall operate the existing #4 Rheiniformer (S-4283), the existing #5 Rheiniformer (S-4237), and the new GCRR and associated furnaces (S-4452, S-4477, S-4478, S-4479, S-4480) simultaneously for up to a maximum of 90 days within a 180 calendar day period as long as the combined feeds to the three reformer units (S-4237, S-4283, and S-4452) remain below 71.3 kbbbl per calendar day.~~

~~{Basis: Cumulative Increase, Rule 2-2-410, PSD}~~

Comment [RLJL11]: Sources removed from project scope of work.

103) During the Renewal Project Commissioning Period, the Owner/Operator shall operate the first existing Hydrogen Train to be shut down (either S-4250 Train A or S-4250 Train B), its associated reaction furnace (either S-4170 or S-4171), the first new Hydrogen Plant (Either S-4449 or S-4450), and its associated reaction furnace (S-4471 or S-4472) simultaneously for up to a maximum of 90 days as long as the combined production rate of all operating hydrogen manufacturing plants remains below 181.1 million standard cubic feet per day.

The Owner/Operator shall operate the other existing Hydrogen Train, its associated reaction furnace, the other new Hydrogen Plant, and its reaction furnace simultaneously for up to a maximum of 90 days as long as the combined production rate of all operating hydrogen manufacturing plants remains below 181.1 million standard cubic feet per day.

{Basis: Cumulative Increase, Rule 2-2-410, PSD}

104) The Owner/Operator of S-4227, S-4228, and S-4229 Claus Plants (SRUs) shall not exceed any of the following total sulfur production levels until both of the following are met:

- a) At least one of the new hydrogen plant trains (S-4471 or S-4472) has started to use refinery fuel gas or process gas as a feedstock, and
- b) At least one of the SRUs has been modified or has completed its modification to satisfy BACT per this Authority to Construct.
 - S-4227: 189.6 long tons in any calendar day and 150 long tons per day averaged over any consecutive 12-month period.
 - S-4228: 179.0 long tons in any calendar day and 150 long tons per day averaged over any consecutive 12-month period.
 - S-4229: 336.0 long tons in any calendar day and 292.7 long tons per day averaged over any consecutive 12-month period.

After each of the SRUs (S-4227, S-4228, and S-4229) is modified, the Owner/Operator shall operate only the modified SRU up to the maximum new total sulfur production limit specified in Part 87.

[Basis: Cumulative Increase, PSD]

105) CONDITION 105 DELETED

~~During the Renewal Project Power Plant Replacement Commissioning Period (as defined in Part 47):~~

- ~~The owner/operator of S-4473 gas turbine and S-4474 duct burner combined shall not exceed 63.37 tons in any consecutive 12-month period of NOx emissions during the commissioning period. Except during the commissioning period, the owner/operator of S-4473 and S-4474 shall comply with the NOx emissions limit specified in part 42. The owner/operator shall comply with all other emissions limits in part 42.~~

Comment [RLJL12]: Sources removed from project scope of work.

~~During the Renewal Project GCRR Commissioning Period (as defined in Part 67):~~

- ~~The owner/operator of S-4477, S-4478, S-4479, S-4480 GCRR furnaces combined shall not exceed 21.35 ton in any consecutive 12-month period of CO emissions during the commissioning period. Except during the commissioning period, the owner/operator of S-4478 and S-4479 shall comply with the CO emissions limit specified in part 62. The owner/operator shall comply with all other emissions limits in part 62.~~

Comment [RLJL13]: Sources removed from project scope of work.

Prior to the commencement of the Renewal Project Commissioning Period, the Owner/Operator shall provide on-site emission reduction credits (ERCs) for 29.46 tons/year NOx and 5.15 tons/year CO. The Owner/Operator may submit a banking application for any surplus NOx and CO ERCs in accordance with Regulation 2, Rule 4 provisions after the Renewal Project Commissioning Period terminates. [Basis: Cumulative Increase, Offsets, PSD]

Comment [RLJL14]: Chevron to submit revised ERC balance and banking application for District conformation.

106) The owner/operator of all sources covered by this permit application (A/N 12842) shall determine the Renewal Project net emissions increase for PSD purposes using the District-approved calculation method specified in the federal PSD regulations at 40 CFR 52.21. The owner/operator shall ensure that the Renewal Project net emissions increase does not exceed any of the following PSD net emissions increase thresholds:

- NOx 40 tons/year
- CO 100 tons/year
- SOx 40 tons/year
- PM10 15 tons/year
- Hydrogen Sulfide 10 tons/year

- Total Reduced Sulfur 10 tons/year
- Reduced Sulfur Compounds 10 tons/year
- Sulfuric Acid Mist 7 tons/year

[Basis: Cumulative Increase, Rule 2-2-306, federal PSD regulations at 40 CFR 52.21]

107) The Owner/Operator of the sources listed in this part shall use the following District-approved data in order to demonstrate that the total Renewal Project net emissions increases do not exceed the PSD thresholds listed in part 106:

- a) NOx and O2: District-approved continuous emissions monitors (CEMs) data and District-approved flow rate data for S-4471, S-4472, ~~S-4473/S-4474, S-4477, S-4478, S-4479, and S-4480, S-4436/S-4227, S-4437/S-4228, and S-4438/S-4229~~, or the permitted emissions rate, whichever is greater. Part 27 emission factor for S-6021 multiplied by flare gas flow. ~~Part 57 stack concentration of 42 ppm NOx, dry, corrected to 1% oxygen (as NO2) unless District approved source test results demonstrate a higher NOx concentration in which case the higher NOx concentration shall be used multiplied by the higher of either the maximum permitted flowrate or the measured flowrate in order to determine mass emissions for S-4452 GCRR Vent.~~
- b) CO and O2: District-approved continuous emissions monitors (CEMs) data and District-approved flow rate data for S-4471, S-4472, ~~S-4473/S-4474, S-4477, S-4478, S-4479, S-4480, S-4436/S-4227, S-4437/S-4228, and S-4438/S-4229~~, or the permitted emissions rate, whichever is greater. Part 27 emission factor for S-6021 multiplied by flare gas flow. ~~Part 57 stack concentration of 500 ppm CO dry, corrected to 1% oxygen, unless District approved source test results demonstrate a higher CO concentration in which case the higher CO concentration shall be used multiplied by the higher of either the maximum permitted flowrate or the measured flowrate in order to determine mass emissions for S-4452 GCRR Vent.~~
- c) SO2 (as SO2) and O2: District-approved continuous emissions monitors (CEMs) data and District-approved flow rate data for S-4436/S-4227, S-4437/S-4228, and S-4438/S-4229, or the permitted emissions rate, whichever is greater. Calculated per part 9c for S-4471 and S-4472. Part 27 emission calculation method (total sulfur in the vent gas multiplied by the flare gas flow assuming 100% conversion of TS to SO2 plus the flare pilot TS to SO2). ~~Part 57 either: the permitted stack concentration of 31 ppm dry, corrected to 1% oxygen, unless source test results demonstrate a higher SO2 concentration in which case the higher SO2 concentration shall be used multiplied by the higher of the permitted or measured District approved flow rate in order to determine mass emissions for S-4452. Calculated per Part 63 for S-4477, S-4478, S-4479, and S-4480 or the permitted level whichever~~

Comment [RLJL15]: Sources removed from project scope of work.

Comment [RLJL16]: Sources removed from project scope of work.

~~is greater. Calculated per part 95 for S-4473/S-4474 or the permitted level whichever is greater.~~

- d) PM10: The owner/operator shall perform District-approved source tests for S-4471, S-4472, ~~S-4473/S-4474, S-4477, S-4478, S-4479, S-4480, S-4436/S-4227, S-4437/S-4228, and S-4438/S-4229~~ under variable load conditions in order to demonstrate compliance with the permitted emissions rates and levels. The source test procedures including loads run per source shall be pre-approved by the District in accordance with the applicable parts of 109 through 117. In addition, for S-6021, PM10 emissions shall be calculated using the Part 27 emissions factors multiplied by District-approved flare gas flow, and for ~~S-4452, the Part 57 stack concentration of 0.0083 grains/dscf unless District-approved source test results demonstrate a higher PM10 concentration in which case the higher PM10 concentration shall be used, multiplied by the higher of the permitted or measured District-approved flow rate for S-4452 shall be used to calculate PM10.~~

Comment [RLJL17]: Sources removed from project scope of work.

Comment [RLJL18]: Sources removed from project scope of work.

Comment [RLJL19]: Source removed from project scope of work.

For Sulfuric Acid Mist, Hydrogen Sulfide, Total Sulfur, the Renewal Project will result in a net emission reductions from pre-project baseline. [Basis: Cumulative Increase, PSD]

- 108) The Owner/Operator of all of the Renewal Project sources shall submit a report to the District no later than 30 days from the end of each calendar month that demonstrates that the higher of either the permitted or actual total Renewal Project source net emissions increases do not exceed the PSD thresholds specified in part 106.
[Basis: Reporting Requirements, PSD]

GENERAL RECORDKEEPING CONDITIONS

- 109) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall maintain a District-approved log that contains all CEM and source test records and all records of fuel usage rates, fuel types, quantity of each type of fuel used at each source, heat content HHV of fuel (in Btu/scf), TS levels in fuels used, hours of operation (including each mode (dryout/warmup, commissioning, startup, shutdown), District-approved flow rate used in emissions estimates (scf/hour), hourly, daily and annual emissions estimates, and other records as specified by the APCO for the last 5 years of operation to verify compliance with Renewal Project permit conditions.
[Basis: Recordkeeping]
- 110) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall maintain the following in a District-approved log and shall keep these records on site for a period of at least 5 years from date of entry and make the records available to District staff upon request (note the Hydrogen Plant Replacement Project is covered by similar

conditions in parts 37 and 38). [Basis: Regulation 2-1-301, Recordkeeping]

~~In order to demonstrate compliance with part 56, the Owner/Operator of S-4452 CCRR, S-4477 through S-4480 CCRR Furnaces, shall maintain calendar day, monthly, and consecutive 12-month total material feed throughputs for the S-4452 CCRR and total fuel usage for S-4477 through S-4480 CCRR Furnaces, and the owner/operator shall maintain District approved method and results for demonstrating compliance with parts 57, 60, 61, 62, 63, 65, 66, 67, 68, 69, 70, 73, and 76;~~

Comment [RLJL20]: Sources removed from project scope of work.

In order to demonstrate compliance with part 77, the Owner/Operator of S-4454 #6H2S Plant Recycle Amine Regenerator shall maintain calendar day, monthly, and consecutive 12-month total H2S produced, in MMSCF, for the S-4454 Plant/Recycle Amine Regenerator;

In order to demonstrate compliance with part 80, the Owner/Operator of S-4253 shall maintain calendar day, monthly, and consecutive 12-month total material feed throughputs for the S-4253 TKC/FCC Feed Hydrotreater; and

In order to demonstrate compliance with part 78, the Owner/Operator of S-4490 shall maintain calendar day, monthly, and consecutive 12-month total sulfur loaded, in long tons, at the S-4490 Sulfur Loading Rack, Abated by A-310 Scrubber.

In order to demonstrate compliance with parts 81 through 95, the Owner/Operator of each Sulfur Recovery Units S-4227 through S-4229 shall maintain calendar day, monthly, and consecutive 12-month total material throughputs (in long tons) for each SRU, acid gas feed rates (MMscf), CEM data, H2S emissions, PM10 Sulfuric Acid Mist, records for work performed in part 86, source test results, combined annual emissions for part 90, the individual emissions limits for part 92, sulfuric acid mist from each stack for part 95, and fugitive H2S for part 95 for the S-4227 through S-4229

In order to demonstrate compliance with part 80, the Owner/Operator of S-4253 shall maintain calendar day, monthly, and consecutive 12-month total material feed throughputs for the S-4253 TKC/FCC Feed Hydrotreater; and

~~In order to demonstrate compliance with part 42, the Owner/Operator of S-4473 and S-4474 Gas Turbine and Dual Burner shall maintain calendar day, monthly, and consecutive 12-month for all records for demonstrating compliance with parts 42, 45, 46, 49, 51, 53, and 54;~~

Comment [RLJL21]: Sources removed from project scope of work.

111) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall submit a quarterly report to both the Compliance and Enforcement Division and Engineering Division no later than 60 days following the end of each calendar quarter

addressing compliance with parts 9, ~~42, 57, 62~~, 90, 92, and 95. Each quarterly report shall include for each source the source test dates in which limits of these conditions were exceeded. The District shall use this information to determine any periods of non-compliance with the emission limits. [Basis: Reporting Requirements]

Comment [RLJL22]: Associated sources removed from project scope of work.

112) In the absence of any specific permit condition, the owner/operator of all sources covered by this permit application (A/N 12842) shall maintain adequate records in order to demonstrate compliance with all parts of these conditions.

GENERAL SOURCE TESTING CONDITIONS

113) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall provide District pre-approved stack sampling ports and platforms, the locations of which shall be subject to the pre-approval of the District. The owner/operator shall conduct only District pre-approved source tests using District pre-approved methods for all source tests to be approved by the District. [Basis: Regulation 1-501]

114) Upon successful completion of the requirements of parts 109 through 111, the owner/operator of sources subject to parts 19, ~~54, 73~~, 90, 91, and 92 shall satisfy the TAC source test requirements by compliance with part 112. [Basis: Rule 2-5]

Comment [RLJL23]: Associated sources removed from project scope of work.

TAC/HAP SOURCE TESTING CONDITIONS

115) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall conduct initial District-approved source tests to demonstrate compliance with the TAC mass emissions rates (including a full metals test) specified in parts 19, ~~54, 73 (not including benzene fugitives)~~, and 95 (not including H2S fugitives). Each initial test shall be taken no later than 120 days from the date of initial startup of each source. The Owner/Operator shall conduct the District approved source tests in accordance with the applicable parts of 109 to 117. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. [Basis: Rule 2-5, Source Tests]

Comment [RLJL24]: Associated sources removed from project scope of work.

116) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall conduct a District-approved source test annually following completion of each initial source test in part 115 to demonstrate compliance with the emission limits (including a full metals test) specified in parts 19, ~~54, 73 (not including benzene fugitives)~~, and 95 (not including H2S fugitives). The owner/operator may be required by the APCO to conduct more frequent source tests if source test results indicate emissions are within 90% or exceeds any emissions or concentrations limits or any emissions limit associated with any of these sources. The Owner/Operator shall conduct the District

Comment [RLJL25]: Associated sources removed from project scope of work.

approved source tests in accordance with the applicable parts of 109 to 117. The owner/operator shall conduct the annual emissions source tests at least 9 months apart. The owner/operator shall use maximum permitted annual throughput rates and the source test results in order to demonstrate compliance with annual limits, and maximum hourly throughput rates and the source test results in order to demonstrate compliance with hourly limits subject to District approval. The Owner/Operator shall submit the source test results to the District staff no later than 60 days from the date of the source test. Should any of these values exceed a part 19, ~~54, 73 (not including benzene fugitives)~~, or 95 (not including H2S fugitives) emission limit, the current health risk screening assessment (HRSA) on file with the District for the Renewal Project demonstrating compliance that each source remains less than or equal to 0.20 chronic non-cancer hazard index and that each source's cancer risk remains less than or equal to 1.0 in a million, the owner/operator shall re-run the HRSA subject to District approval in order to determine compliance that each source remains less than or equal to 0.20 chronic non-cancer hazard index and that each source's cancer risk remains less than or equal to 1.0 in a million.

Comment [RLJL26]: Associated sources removed from project scope of work.

Within 60 calendar days from the date of the source test results, the owner/operator shall submit the results of the re-run HRSA to the District for approval. If the results of the re-run HRSA demonstrate non-compliance with the originally approved Rule 2-5 HRSA (which did not require TBACT and that each source remains less than or equal to 0.20 chronic non-cancer hazard index and that each source's cancer risk remains less than or equal to 1.0 in a million) on file at the District for the Renewal Project, then the owner/operator shall be considered to be in violation of both Rule 2-5 and 2-1-307 back to the date of the test.

If the results of the re-run HRSA demonstrate compliance that each source remains less than or equal to 0.20 chronic non-cancer hazard index and that each source's cancer risk remains less than or equal to 1.0 in a million, then the owner/operator shall submit a permit application to the District in order to change the TAC emission limit permit conditions, within 30 calendar days from the date of the re-run submittal. .

[Basis: Rule 2-5, Source Tests]

- 117) The Owner/Operator of all sources covered by this permit application (A/N 12842) shall submit source test procedures to the District's Source Test Section at least 14 calendar days prior to conducting any source test required by these conditions. The Owner/Operator shall comply with all applicable testing requirements for continuous emissions monitors. The Owner/Operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test

dates at least 7 days prior to testing. [Basis: cumulative
increase, Rule 2-5]

END OF CONDITIONS

ATTACHMENT 3

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-3227 Lean Amine Storage Tank	T-2420	Amine Storage Tank	Received	15021228	11031000-0019
S-3328 Caustic Storage Tank	T-2440	Fresh Caustic Tank	Received	15021228	11031000-0019
S-3329 Spent Caustic Storage Tank	T-2445	Spent Caustic Tank	Received	15021228	11031000-0019
S-4253 TKC/FCC Feed Hydrotreater	C-430	H2S Absorber	Received	15016268	11031000-0014
S-4253 TKC/FCC Feed Hydrotreater	E-430A	H2S Absorber Feed Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-430B	H2S Absorber Feed Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-460	Cold MP Separator Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-707	Degassed Sour Water Cooler	Received	15013428	11031000-0002
S-4253 TKC/FCC Feed Hydrotreater	E-711A	Fractionator Reflux Drum Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-711B	Fractionator Reflux Drum Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-711C	Fractionator Reflux Drum Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-711D	Fractionator Reflux Drum Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	E-714	Cold LP Separator Vapor Air Cooler	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	K-430	Rich Amine Power Recovery Turbine	Received	15013318	11031000-0013
S-4253 TKC/FCC Feed Hydrotreater	K-712	Duplex Strainer	Received	15035504	11031000-0367
S-4253 TKC/FCC Feed Hydrotreater	K-712A	Duplex Strainer	Received	15035504	11031000-0367
S-4253 TKC/FCC Feed Hydrotreater	P-430	HP Lean Amine Pumps	Received	15013318	11031000-0013
S-4253 TKC/FCC Feed Hydrotreater	P-430A	HP Lean Amine Pumps	Received	15013318	11031000-0013
S-4253 TKC/FCC Feed Hydrotreater	P-707	Sour Water Degasser Pumps	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	P-707A	Sour Water Degasser Pumps	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	P-712	V-711 Recycle Water Pumps	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	P-712A	V-711 Recycle Water Pumps	Received	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	V-430	CHP Centrifugal Separator	Received	15016268	11031000-0014

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4253 TKC/FCC Feed Hydrotreater	V-431	Recycle Gas Compressor KO Drum	Received	15015843	11031000-0100
S-4253 TKC/FCC Feed Hydrotreater	V-432	Rich Amine Degasser	Received	15015535	11031000-0017
S-4253 TKC/FCC Feed Hydrotreater	V-707	TKC Sour Water Degasser	Received	15015535	11031000-0017
S-4253 TKC/FCC Feed Hydrotreater	V-711	Fractionator Product Drum	Received	15015846	11031000-0093
S-4253 TKC/FCC Feed Hydrotreater	F-510	TKN Reactor Furnace	Received	15030838	11031000-0202
S-4253 TKC/FCC Feed Hydrotreater	F-520	TKN Reactor Furnace	Received	15030838	11031000-0202
S-4253 TKC/FCC Feed Hydrotreater	F-530	TKN Reactor Furnace	Received	15030838	11031000-0202
S-4253 TKC/FCC Feed Hydrotreater	F-651	Stabilizer Reboiler	Document search in progress	Document search in progress	Document search in progress
S-4253 TKC/FCC Feed Hydrotreater	K-519	TKN Coalescent Filter	Received	15029525	11031000-0198
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	C-2150	Quench Column	Received	15013994 15038665	11031100-0056 & 11031400-1005
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	E-2101	Sulfur Condenser No. 1 (Train 1)	Received	15036795	11031000-0004
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	E-2180	Cooler - Quench Water	Received	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	E-2183	Heater - Purge Air	Received	15031738	11021480-0591
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	E-2184	Heater - Purge Air	Received	15031738	11021480-0591
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	FB-2101	Acid Gas Burner Train 1	Received	15013994	11031100-0056
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2102	Vent Educator	Received	15029190	11031000-0196
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2150	Strainer - Main Weak Acid Circ Pump Suction	Received	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2150A	Strainer - Siby Weak Acid Circ Pump Suction	Received	15029190	11031000-0196
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2181/A	Strainer - Fogging Water - Duplex	Received	15029190	11031000-0196
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2182/A	Strainer - WESP Wash Water - Duplex	Received	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2183	Purge Air, WESP	Received	15031738	11021480-0591
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2184	Purge Air, WESP	Received	15031738	11021480-0591
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2186	Wet Electro-Static Precipitator	Received	15031738	11021480-0591

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2187	Eductor - Therm. Oxidizer Recirculation	Received	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	K-2188	Eductor - Stack Heater Recirculation	Received	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	P-2111	Sulfur Degassing Pump	Received	15016520	11031400-0026
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	P-2150	Quench Water Circulation	Received	No related service order.	10023325
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	P-2150A	Quench Water Circulation - Stand-by	Received	No related service order.	10023325
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	P-2160 B	Absorber Circulation Pump -- Top Bed	Document search in progress	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	P-2161	Absorber Circulation Pump -- StandBy	Document search in progress	Document search in progress	Document search in progress
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	V-2101	Steam Drum	Received	15036795	11031000-0004
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020	V-2102	Steam Separator	Received	15035507	11031000-0816
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4429 SRU #3 w/TGU A-0022	P-3100	HP Boiler Feedwater Pumps	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4429 SRU #3 w/TGU A-0022	P-3100A	HP Boiler Feedwater Pumps	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4429 SRU #3 w/TGU A-0022	P-3101	LP Boiler Feedwater Pumps	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4429 SRU #3 w/TGU A-0022	P-3101A	LP Boiler Feedwater Pumps	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4429 SRU #3 w/TGU A-0022	P-3102	Condensate Pumps	Received	15026943	11031000-0072

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-3102A	Condensate Pumps	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-3110C	Eliminor Injection Pump	Received	1527295	11031000-0073
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-3111C	TP+ Injection Pump	Received	1527295	11031000-0073
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-3112C	Amine Injection Pump	Received	1527295	11031000-0073
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	TP-3100A	HP Boiler Feedwater Pump Turbine	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	TP-3101A	LP Boiler Feedwater Pump Turbine	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	TP-3102A	Condensate Pump Turbine	Received	15026943	11031000-0072
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	V-3101	LP Boiler Feed Water Deaerator Surge Drum	Received	15020347	11031000-0056

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4428 SRU #3 w/TGU A-0022	V-3101A	LP Boiler Feed Water Deaerator	Received	15020347	11031000-0066
S-4436 F-2170 Stack Gas Heater No. 1 SRU S-4227 SRU #1 w/TGU A-0020 S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021 S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	V-3102	Condensate Drum	Received	15017959 / 15017961	11031000-0095
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	C-2250	Quench Column	Received	15013994 15038665	11031100-0056 & 11031400-1005
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	E-2201	Sulfur Condenser No. 1 (Train 2)	Received	15036795	11031000-0004
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	E-2280	Cooler - Quench Water	Received	Document search in progress	Document search in progress
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	E-2283	Heater - Purge Air	Received	15031738	11021480-0591
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	E-2284	Heater - Purge Air	Received	15031738	11021480-0591
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	FB-2201	Acid Gas Burner Train 2	Received	15013994	11031100-0056
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2202	Vent Eductor	Received	15020346	11031000-0027
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2250	Strainer - Main Weak Acid Circ Pump Suction	Received	Document search in progress	Document search in progress
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2250A	Strainer - Stby Weak Acid Circ Pump Suction	Received	No related service order.	10024351
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2281/A	Strainer - Fogging Water - Duplex	Received	No related service order.	10024351
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2282/A	Strainer - WESP Wash Water - Duplex	Received	No related service order.	10024351
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2283	Purge Air, WESP	Received	15031738	11021480-0591
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2284	Purge Air, WESP	Received	15031738	11021480-0591
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2286	Wet Electro-Static Precipitator	Received	15031738	11021480-0591
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2287	Eductor - Therm. Oxidizer Recirculation	Document search in progress	Document search in progress	Document search in progress
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	K-2288	Eductor - Stack Heater Recirculation	Document search in progress	Document search in progress	Document search in progress
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	P-2211	Sulfur Degassing Pump	Received	15016520	11031400-0026
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	P-2250	Quench Water Circulation	Received	No related service order.	10023325

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	P-2250A	Quench Water Circulation - Stand-by	Received	No related service order.	10023325
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	P-2260 B	Absorber Circulation Pump - Top Bed	Received	No related service order.	10023325
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	P-2261	Absorber Circulation Pump - StandBy	Received	No related service order.	10023325
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	V-2201	Steam Drum	Received	15036785	11031000-0004
S-4437 F-2270 Stack Gas Heater No. 2 SRU S-428 SRU#2 w/TGU A-0021	V-2202	Steam Separator	Received	15035507	1103100-0816
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	C-2350	Quench Column	Received	15013994 15038665	11031100-0056 & 11031400-1005
S-4429 SRU #3 w/TGU A-0022	E-2380	Cooler - Quench Water	Received	Document search in progress	Document search in progress
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	E-2380A	Cooler - Quench Water - Standby	Received	Document search in progress	Document search in progress
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	E-2383	Heater - Purge Air	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	E-2383A	Heater - Purge Air - Standby	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	E-2384	Heater - Purge Air	Received	15031738	11021480-0591
S-4429 SRU #3 w/TGU A-0022	E-2384A	Heater - Purge Air - Standby	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	FB-2301	Acid Gas Burner Train 3	Received	15013994	11031100-0056
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2304	Vent Eductor	Received	15020346	11031000-0027
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2350	Strainer - Main Weak Acid Circ Pump Suction	Received	No related service order.	10024351
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2350A	Strainer - Sloby Weak Acid Circ Pump Suction	Received	No related service order.	10024351
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2381/A	Strainer - Fogging Water - Duplex	Received	No related service order.	10024351
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2382/A	Strainer - WESP Wash Water - Duplex	Received	15031738	11021480-0591
S-4429 SRU #3 w/TGU A-0022	K-2383	Purge Air, WESP	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2383A	Purge Air, WESP - Standby	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2384	Purge Air, WESP	Received	15031738	11021480-0591
S-4429 SRU #3 w/TGU A-0022	K-2384A	Purge Air, WESP - Standby	Received	15031738	11021480-0591
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2386	Wet Electro-Static Precipitator	Received	15031738	11021480-0591

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2387	Eductor - Therm. Oxidizer Recirculation	Document search in progress	Document search in progress	Document search in progress
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	K-2388	Eductor - Stack Heater Recirculation	Document search in progress	Document search in progress	Document search in progress
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2310	Sulfur Degassing Pumps	Received	15016520	11031400-0026
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2311	Sulfur Degassing Pump	Received	15016520	11031400-0026
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2350	Quench Water Circulation	Received	No related service order.	10023325
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2350A	Quench Water Circulation - Stand-by	Received	No related service order.	10023325
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2360 B	Absorber Circulation Pump -- Top Bed	Received	No related service order.	10023325
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	P-2361	Absorber Circulation Pump -- StandBy	Received	No related service order.	10023325
S-4438 F-2370 Stack Gas Heater No. 3 SRU S-4429 SRU #3 w/TGU A-0022	V-2302	Steam Separator	Received	15035507	1103100-0816
S-4454 #6 H2S Plant Recycle Amine Generator	C-2420	Amine Regenerator	Received	Document search in progress	Document search in progress
S-4454 #6 H2S Plant Recycle Amine Generator	C-2440	Emergency Caustic Scrubber	Received	15017494	11031000-0015
S-4454 #6 H2S Plant Recycle Amine Generator	E-2030	Lean DEA Trim Cooler	Received	*0015013429; 0015013428	11031000-0002
S-4454 #6 H2S Plant Recycle Amine Generator	E-2420 A	Regenerator Overhead Condensers	Received	0015015888	11031000-0003
S-4454 #6 H2S Plant Recycle Amine Generator	E-2420 B	Regenerator Overhead Condensers	Received	0015015888	11031000-0003
S-4454 #6 H2S Plant Recycle Amine Generator	E-2420 C	Regenerator Overhead Condensers	Received	0015015888	11031000-0003
S-4454 #6 H2S Plant Recycle Amine Generator	E-2420 D	Regenerator Overhead Condensers	Received	0015015888	11031000-0003
S-4454 #6 H2S Plant Recycle Amine Generator	E-2425 A	Lean/Rich Amine Exchanger	Received	15015845	11031000-0006
S-4454 #6 H2S Plant Recycle Amine Generator	E-2425 B	Lean/Rich Amine Exchanger	Received	15015845	11031000-0006
S-4454 #6 H2S Plant Recycle Amine Generator	E-2426 A	Lean Amine Coolers	Received	11031000-0003	0015015888
S-4454 #6 H2S Plant Recycle Amine Generator	E-2426 B	Lean Amine Coolers	Received	11031000-0003	0015015888
S-4454 #6 H2S Plant Recycle Amine Generator	E-2426 C	Lean Amine Coolers	Received	11031000-0003	0015015888
S-4454 #6 H2S Plant Recycle Amine Generator	E-2426 D	Lean Amine Coolers	Received	11031000-0003	0015015888
S-4454 #6 H2S Plant Recycle Amine Generator	E-2427 A	Regenerator Reboilers	Received	*0015013429; 0015013428	11031000-0002

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4454 #6 H2S Plant Recycle Amine Generator	E-2427 B	Regenerator Reboilers	Received	*0015013429; 0015013428	11031000-0002
S-4454 #6 H2S Plant Recycle Amine Generator	E-2445	Spent Caustic Tank Heater	Received	*0015013429; 0015013428	11031000-0002
S-4454 #6 H2S Plant Recycle Amine Generator	E-2470	Acid Gas Heater	Received	*0015013429; 0015013428	11031000-0002
S-4454 #6 H2S Plant Recycle Amine Generator	K-2429	Amine Collector Filter	Received	15020415	11031000-0012
S-4454 #6 H2S Plant Recycle Amine Generator	K-2450	Cartridge Filter	Received	15020415	11031000-0012
S-4454 #6 H2S Plant Recycle Amine Generator	K-2451	Cartridge Filter	Received	15020415	11031000-0012
S-4454 #6 H2S Plant Recycle Amine Generator	P-2429	Amine Collector Pump	Received	15026943	11031000-0072
S-4454 #6 H2S Plant Recycle Amine Generator	P-2440	Caustic Pumps	Received	15026941	11031000-0334
S-4454 #6 H2S Plant Recycle Amine Generator	P-2440A	Caustic Pumps	Received	15026941	11031000-0334
S-4454 #6 H2S Plant Recycle Amine Generator	P-2445	Spent Caustic Loading Pump	Received	15026943	11031000-0072
S-4454 #6 H2S Plant Recycle Amine Generator	P-2470	Sour Water Pumps	Received	15026943	11031000-0072
S-4454 #6 H2S Plant Recycle Amine Generator	P-2470A	Sour Water Pumps	Received	15026943	11031000-0072
S-4454 #6 H2S Plant Recycle Amine Generator	V-2415	Rich Amine Flash Drum	Received	15018088	11031000-0102
S-4454 #6 H2S Plant Recycle Amine Generator	V-2415A	Flash Drum Scrubber	Received	Document search in progress	Document search in progress
S-4454 #6 H2S Plant Recycle Amine Generator	V-2420	Regen Reflux Drum	Received	15015846	11031000-0093
S-4454 #6 H2S Plant Recycle Amine Generator	V-2427 A	Reboiler Condensate K.O. Drums	Received	15015535	11031000-0017
S-4454 #6 H2S Plant Recycle Amine Generator	V-2427 B	Reboiler Condensate K.O. Drums	Received	15015535	11031000-0017
S-4454 #6 H2S Plant Recycle Amine Generator	V-2428	Oil Skim Drum	Received	15015535	11031000-0017
S-4454 #6 H2S Plant Recycle Amine Generator	V-2429	Amine Collector	Received	15015535	11031000-0017
S-4454 #6 H2S Plant Recycle Amine Generator	V-2452	Activated Carbon Bed	Received	15018199	11031000-0074
S-4454 #6 H2S Plant Recycle Amine Generator	V-2470	Acid Gas K.O. Drum	Received	15017959 / 15017961	11031000-0095
S-4454 #6 H2S Plant Recycle Amine Generator	C-2510T	Sour Water Concentrator - Trays	Received	15024275	11031800-0208
S-4454 #6 H2S Plant Recycle Amine Generator	E-2518A	Stripped Water Air Cooler	Received	15029190 15023530	11031000-0196 11031000-0197

Chevron Energy Hydrogen Renewal Project - Hydrogen Purity Element Equipment Status List - July 13, 2011

Associated Sources	Equipment Tag #	Equipment Name	Purchase Status	Service Order #	Purchase Order
S-4454 #6 H2S Plant Recycle Amine Generator	E-2518B	Stripped Water Air Cooler	Received	15029190 15023530	11031000-0196 11031000-0197
S-4454 #6 H2S Plant Recycle Amine Generator	E-2518C	Stripped Water Air Cooler	Received	15029190 15023530	11031000-0196 11031000-0197
S-4454 #6 H2S Plant Recycle Amine Generator	P-2511	Concentrator Feed Pumps	Received	15029190	11031000-0196
S-4454 #6 H2S Plant Recycle Amine Generator	P-2511A	Concentrator Feed Pumps	Received	15029190	11031000-0196
S-4454 #6 H2S Plant Recycle Amine Generator	P-2515	Concentrator Bottoms Pumps	Received	15029190	11031000-0196
S-4454 #6 H2S Plant Recycle Amine Generator	P-2515A	Concentrator Bottoms Pumps	Received	15029190	11031000-0196
S-4456 Fresh Amine Storage Tank	T-2421 (T-2400)	Fresh Amine Tank	Document search in progress	Document search in progress	Document search in progress
S-4490 Sulfur Loading Rack	C-2911	Water Scrubber	Received	15030202	11031700-0203
S-4490 Sulfur Loading Rack	C-2921	Caustic Scrubber	Received	15030202	11031700-0203
S-4490 Sulfur Loading Rack	K-2950	Vent Gas Blower	Received	15031104	11031000-0205
S-4490 Sulfur Loading Rack	K-3160/A	Loading Rack + 2 Arms	Received	Document search in progress	Document search in progress
S-4490 Sulfur Loading Rack	P-2650C	SBS Loading Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-2650D	SBS Loading Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-2921	Caustic Scrubber Bottom Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-2942	Caustic Feed Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-311	Fresh Caustic Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-311A	Fresh Caustic Pump	Received	15029190	11031000-0196
S-4490 Sulfur Loading Rack	P-3150	Sulfur Loading Pump	Received	15023529	11031700-0206
S-4490 Sulfur Loading Rack	P-3150A	Sulfur Loading Pump	Received	15023529	11031700-0206
S-4490 Sulfur Loading Rack	T-2942	Recir. Caustic Tank	Received	15027461	11031000-0200

ATTACHMENT 4

Chevron Energy & Hydrogen Renewal Project Authority to Construct Renewal Fee Estimate

Revised

July 13, 2011

Source No.	Unit	ATC Status	Reg. 3	Reg. 3-330	
			Schedule	Initial Fee	ATC Renewal Fee
S-4449	H2 Plant #1	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4450	H2 Plant #2	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4451	H2 Recovery Unit	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4471	H2 Plt Reformer Furnace #1	Substantial Use	B	\$ 42,237.00	\$ 21,118.50
S-4472	H2 Plt Reformer Furnace #2	Substantial Use	B	\$ 42,237.00	\$ 21,118.50
S-4465	H2 Plt Cooling Tower	Substantial Use	F	\$ 344.00	\$ 172.00
S-6021/A-6021	H2 Plt. Flare	Substantial Use	G-5	\$ 39,136.00	\$ 19,568.00
S-4452	CCRR	Removed from project scope	G-1	\$ -	\$ -
S-4477	Reformer Furnace #1	Removed from project scope	B	\$ -	\$ -
S-4478	Reformer Furnace #2	Removed from project scope	B	\$ -	\$ -
S-4479	Reformer Furnace #3	Removed from project scope	B	\$ -	\$ -
S-4480	Reformer Furnace #4	Removed from project scope	B	\$ -	\$ -
S-4473	3rd Cogen Gas Turbine	Removed from project scope	B	\$ -	\$ -
S-4474	3rd Cogen HRSG	Removed from project scope	B	\$ -	\$ -
S-4454	#6 H2S Plant Recycle Amine Generator	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4490	Sulfur Loading Rack	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4456	Fresh Amine Storage Tank	Substantial Use	C	\$ 121.10	\$ 60.55
S-3227	Lean Amine Storage Tank	Substantial Use	C	\$ 224.90	\$ 112.45
S-3328	Caustic Storage Tank	Substantial Use	C	\$ 346.00	\$ 173.00
S-3229	Spent Caustic Storage Tank	Substantial Use	C	\$ 692.00	\$ 346.00
S-4436	F-2170 Stack Gas Heater No. 1 SRU	Substantial Use	B	\$ 1,418.27	\$ 709.14
S-4437	F-2270 Stack Gas Heater No. 2 SRU	Substantial Use	B	\$ 1,418.27	\$ 709.14
S-4438	F-2370 Stack Gas Heater No. 3 SRU	Substantial Use	B	\$ 2,494.21	\$ 1,247.10
S-4253	TKC/FCC Feed Hydrotreater	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4435	No. 5 H2S Plant	Substantial Use	G-1	\$ 2,120.00	\$ 1,060.00
S-4227	SRU #1 w/TGU A-0020	Substantial Use	G-4	\$ 49,702.00	\$ 24,851.00
S-4228	SRU#2 w/TGU A-0021	Substantial Use	G-4	\$ 49,702.00	\$ 24,851.00
S-4229	SRU #3 w/TGU A-0022	Substantial Use	G-4	\$ 49,702.00	\$ 24,851.00
				Total:	\$ 147,307.38
				Paid to Date:	\$ 190,715.53
				Amount to credit to annual PTO:	\$ 43,408.15