

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
CUP CONDITION H5 ANNUAL COMPLIANCE REPORT**

March 30, 2018

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

EXECUTIVE SUMMARY

This Annual Compliance Report provides an update on the status Chevron's compliance with the conditions of approval and mitigation adopted as part of the Chevron Richmond Modernization Project (Project), which was approved by the City of Richmond on July 29, 2014.¹ All litigation concerning the Project was resolved on April 3, 2015. Since that time, Chevron has worked to update and complete design engineering for the Project and commenced Project construction in June 2016. Since approval and commencement of construction, the Project has:

- Spent over \$400 million on wages associated with contractors working on the Project, which equates to almost 2,400 employees, and has worked closely with the City to identify and employ as many local residents as possible.
- Spent more than \$180 million with local companies.
- Invested \$31 million dollars towards funding the Community GHG Reduction Program, the Richmond Promise Scholarship Program, and additional City programs pursuant to the Environmental and Community Investment Agreement (ECIA).
- Entered into a lease with Marin Clean Energy (MCE) pursuant to which MCE has developed a 10.5-megawatt solar project on 60 acres of Chevron land. The MCE Solar One project has been completed and the facility is currently operating.
- Put into service two newly constructed Suez Max ships and one newly constructed tug boat consistent with the project design features included as part of the Project, the effect of which is to lower emissions associated with shipping activity at the Chevron Long Wharf.
- Upgraded 17 piping circuits and four partial piping circuits and valves to 9-Chrome as part of its 2017 No. 4 Crude Unit turnaround, as committed to in the Chevron Modernization Project Reliability Program approved as part of the Project.
- Worked with the City of Richmond and other agencies to implement and monitor the requirements of the conditional use permit, mitigation monitoring and reporting program, and Chevron Richmond Reliability Program. Chevron provides the City with regular reports on its implementation of the Project-related requirements, including quarterly updates on the status of pre-construction and construction-related mitigation measures.

Construction of the Project is continuing, and Chevron anticipates that the new hydrogen plant will commence operations by the end of 2018. The various sulfur removal improvements will commence operations thereafter and into 2019.

¹ A complete set of all quarterly reports, which provide detailed information regarding Chevron's compliance to date, are attached to this Report. See Attachment 1.

BACKGROUND

On July 29, 2014, the City of Richmond approved Conditional Use Permit and Design Review Permit No. PLN11-089 (CUP) authorizing construction and operation of the Project. On February 11, 2015, the Bay Area Air Quality Management District (District) reissued Authority to Construct (ATC) No. 12842 authorizing the same. In approving the CUP and the ATC, the City and the District relied upon the Final Environmental Impact Report (EIR) certified by the City on July 29, 2014, inclusive of the MMRP adopted by the City to mitigate Project-related impacts to less than significant. The EIR analyzed, and the CUP and ATC approved, the Reduced Sulfur Processing/No Increase in Refinery Greenhouse Gas Emissions Alternative, generally referred to as Alternative 11. Alternative 11 includes construction of a new hydrogen plant, various so-called sulfur removal improvements (including modifications to the Refinery's existing sulfur recovery units (SRUs)), and related infrastructure and tie-ins, and requires the Refinery to achieve no net increase (NNI) in criteria air pollutants and health risks from toxic air contaminants (TACs), and no physical increase in greenhouse gas (GHG) emissions.

On April 3, 2015, the Contra Costa Superior Court discharged the writ of administrative mandamus issued in 2009 concerning the prior version of the Project. Starting in second quarter 2015, Chevron began the process for obtaining internal project approval and funding. Once obtained, Chevron undertook a competitive bidding process to identify and select engineering and construction firms to implement the Project. Once those selections were made, Chevron undertook updates to all of its design engineering drawings to ensure compliance with the Project approvals.

This report is submitted pursuant to CUP condition, H5, which provides:

“On or before March 31 of each year beginning after the first full year of Project construction, Chevron shall submit to the City both an annual compliance report, and payment of an amount sufficient to cover staff costs (including time) associated with the compliance review, documenting compliance with the conditions of approval of this Conditional Use Permit and the mitigation measures and improvement measures as shown in the Mitigation Monitoring and Reporting Program, and to cover costs and fees (including time) of third party experts retained by the City pursuant to any mitigation measure of the Project or condition of approval. Chevron shall submit payments to the County and BAAQMD for their respective costs (including County and BAAQMD staff time, and time, costs, and fees of third party experts retained by the County pursuant to any mitigation measure of the Project), in accordance with a payment schedule determined by the County and BAAQMD. Following the first compliance report and payment from Chevron, and prior to March 31 of the next year, the City shall provide Chevron on an annual basis an accounting of the City's expenditure of the compliance review payment, which at a minimum shall include the City staff who worked on the compliance review, the time spent, and a general description of the work performed. The annual compliance reports shall contain supporting information from other regulatory agencies, as applicable. For each condition and mitigation measure, the report shall identify the status of compliance, times and dates of the monitoring and whether further action is required. The Planning Commission will hold hearings at a frequency of once

each year to review Chevron's compliance with the conditions of approval of this Conditional Use Permit, including compliance with the mitigation measures and improvement measures. If, in the opinion of the Planning Commission, Chevron has completed all mitigation measures and improvement measures, and has complied with all conditions of approval, no further reports shall be necessary. The Planning and Building Services Department shall notify Chevron in writing when the Planning Commission has determined that annual reports will no longer be necessary pursuant to this Condition.”

This report is the first Annual Compliance Report (Report) and updates the City concerning status of construction and compliance with the conditions of approval of the CUP and the mitigation measures and improvement measures included in the MMRP for the period beginning in June 2016 and ending December 2017.² The Project has yet to commence operations; therefore, this report does not provide an update on the status of implementation of the various operations-related requirements.

PROJECT STATUS

Construction of the new Hydrogen Plant commenced in June 2016, and construction of the other project components commenced later that year. To date, the Project has spent over \$400 million on wages associated with contractors, including engineers, working on the Project, which equates to approximately 2,400 employees. Chevron works closely with the City to identify and employ as many local residents as possible, though the number fluctuates based on the availability of candidates with the necessary skills to fill positions that may be available at any given time. See Attachment 8. Chevron has spent more than \$180 million with local companies.

Chevron anticipates that the new Hydrogen Plant will be operational by the end of 2018 and that other project components will follow into 2019.

ENVIRONMENTAL & COMMUNITY INVESTMENT AGREEMENT (ECIA)

On July 29, 2014, Chevron and the City of Richmond entered into an Environmental and Community Investment Agreement (ECIA). Pursuant to the ECIA, Chevron agreed to provide the equivalent of \$30 million dollars in funding for local GHG reduction projects, as well as an additional \$60 million in other community programs such as the newly formed Richmond Promise Scholarship Program, over a period of 10 years.

Since 2014, Chevron has invested \$31 million dollars pursuant to the ECIA. Chevron also entered into a 25-year lease with MCE pursuant to which MCE has developed a 10.5-megawatt solar project on 60 acres of Chevron land. Pursuant to the ECIA, Chevron is leasing land valued at approximately \$10 million over the life of the lease for \$1.00 per year. Construction of the MCE Solar One Project has been completed and the facility is currently operating.

² The first full year of project construction was completed in June 2017. This is therefore the first opportunity to submit this report pursuant to CUP condition H5.

PROJECT DESIGN FEATURES & OTHER EMISSION REDUCTION PROJECTS

As part of the Modernization Project, Chevron committed to several emission reduction project design features, which were also incorporated as mitigation measures. Several of these project design features have already been implemented and the emissions reductions are being realized today. Specifically:

- Chevron has put in service two newly built Suez Max ships. The main and auxiliary engines from these ships are required to utilize a level of emission control called Tier 2, pursuant to the International Maritime Organization (IMO) requirements for new engines that have been adopted by US EPA. The two new Chevron ships, names Pegasus Voyager and Polaris Voyager, instead utilize cleaner Tier 3 standard main and auxiliary engines as defined by the IMO. These ships were put into service and engine tests were completed and verified in October 2017.
- Chevron contracted with Foss Tugs to build and put into service a new tugboat utilizing Tier 4 main engines and Tier 3 auxiliary engines, which is more stringent than the Tier 3 main engines required by the current California Air Resources Board rule. Pursuant to Chevron's contract with Foss, this tugboat is prioritized to the Chevron Long Wharf. The new tugboat went into service in July 2017 and the emission reduction benefits are currently being realized.
- Chevron committed to install numerous domes on its storage tanks, including one prior to commencement of Project operations. Permitting for this tank dome has been completed and construction has commenced with a target completion date of second quarter 2018. Two additional domes are required to be installed within three years of commencement of Project operations.
- Chevron committed to installing approximately 6,000 LED lights in its process areas. To date, Chevron has installed approximately 1,600.
- Chevron committed to enroll its commercial electricity accounts with Marin Clean Energy (MCE) and has done so since 2014.

Chevron is continuing to work to implement the remaining project design features.

COMPLIANCE, REPORTING, AND MONITORING

Pursuant to CUP condition A9, Chevron submitted its initial Compliance Plan on October 5, 2015, and provided subsequent updates to that plan on April 10, 2016, October 7, 2016, and November 4, 2016. Chevron reports its implementation of this plan and compliance with the various CUP and MMRP obligations through a reporting database developed jointly by Chevron and the City of Richmond. Pursuant to this tool, referred to as iEHS, Chevron provides quarterly responses to a questionnaire to document compliance with the applicable conditions of approval and mitigation measures, including providing documentation related to Chevron's completion of various pre-construction obligations and implementation of the various construction-related mitigation requirements. A copy of the most recent iEHS report from 4th quarter 2017 is included in Attachment 1.

In addition to the quarterly iEHS report, Chevron prepares periodic communications, reports, and submittals as required by the CUP, MMRP, and Reliability Program. These are summarized in the table below. A copy of the latest versions of these reports are attached to this report for reference. Prior versions of these reports are available at the City Planning Division for review.

ATTACHMENT	REPORT NAME	REQUIRED BY
2	Monthly Safety Training and Implementation Report	MM 4.13-2b
3	Quarterly Crude Fire Corrective Action Status Report	MM 4.13-13d
4	Quarterly Construction Emissions Report	MM 4.3-2a, 2b, 4.8-1
5	Semi-Annual Construction Progress Report	CUP H3
6	Annual Reliability Program Report	MM 4.13-7a, 7i, 7j, 13f, 13h; IV.A, IV.B, IV.H

Further, CUP condition G2 provides:

Chevron shall include in its annual compliance reports (required by Condition H5) to the City information regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including US EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s). These reports shall include a comprehensive list of all findings, and corrective actions identified or requested by the agencies, as well as the status of Chevron's implementation of all such corrective actions. If Chevron determines not to implement any requested corrective action or otherwise not to address an agency finding, it shall explain in detail its rationale and the factual basis for its determination to do so.

Please refer to Attachments 4 and 7, which are the latest versions of reports as required pursuant to mitigation measures 4.13-13a and 13d, which address this obligation.

Pursuant to CUP condition H2 and mitigation measures 4.16-1, 2a, 2b, 4, 7a, 7b, & 7c, Chevron communicates with City staff on at least a quarterly basis, generally via email or telephone conversation, concerning implementation of various traffic-related mitigation measures.

Lastly, pursuant to the ECIA, Chevron submits a Monthly Hires Report. A copy of the most recent available version of this report is included here as Attachment 8.

PUBLIC OUTREACH

Pursuant to condition IV.G of the Reliability Program, Chevron has conducted three annual community and employee town halls discussing addressing the following topics:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.

2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.

A third topic, requiring an update on “the results of the reliability review revalidation and the status of any recommendations made as a result of this review,” has not been triggered because Project operations have not commenced.

Prior town halls were held on March 31, 2016 and March 30, 2017. The most recent community telephone town hall was held on February 22, 2018. Chevron promoted the event via a Facebook marketing campaign which reached 46,614 people; the call was broadcast to 10,679 phone numbers in Richmond, which reached approximately 20,000 residents; and 1,244 total residents accepted the phone call for the event. The next employee town halls are scheduled to occur in April 2018. A copy of the transcript from the February 22, 2018 town hall is included here as Attachment 9. Transcripts from prior meetings are on file with the Planning Division.

CONCLUSION

Chevron continues to work cooperatively with the City to implement the Project and ensure that the various Project benefits are achieved in a safe and timely manner. Construction of the Project is proceeding accordingly, and Chevron looks forward to commencing Project operations late this year. Chevron will continue to provide all reports and complete all compliance actions required by the CUP and MMRP.

ATTACHMENT 1

Chevron Refinery - Chevron Modernization Project Construction Questionnaire 2017

Survey:	Chevron Modernization Project Construction Questionnaire 2017
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEH3.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION. Proceed to 2.01.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GROUND DISTURBING CONSTRUCTION SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	SCREENING QUESTION	4.1.01	Have any ground disturbing construction activities occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.01

Was training regarding discovery of archaeological artifacts/resources provided to workers before ground disturbing activities began? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.9 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. No additional training has been necessary because the trained personnel overseeing excavation activities have not changed. In the event these personnel leave the project, additional training to new personnel will be provided pursuant to the ITC. To date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered.

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.02

Is monitoring being conducted for discovery of archaeological resources during construction? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Monitoring for archaeological resources is being conducted during construction activities. Trained personnel are present during, and monitor, all ground disturbing activities. Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.9 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. No additional training has been necessary because the trained personnel overseeing excavation activities have not changed. In the event these personnel leave the project, additional training to new personnel will be provided pursuant to the ITC. To date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains,

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.03	Have all archaeological resources discovered been managed as required? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	No archaeological resources have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.04

Was training regarding discovery of paleontological resources provided to workers before ground disturbing activities began? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.9 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. No additional training has been necessary because the trained personnel overseeing excavation activities have not changed. In the event these personnel leave the project, additional training to new personnel will be provided pursuant to the ITC. To date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.05	Have excavation plans been submitted, if required for all needed excavations? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.06	Have all paleontological resources discovered been managed as required? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.07	Have any human skeletal remains been discovered? (4.5-3)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.08	If human skeletal remains have been discovered, have they been managed as required? (4.5-3) If No, please explain by entering a comment. If Yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GHG EMISSIONS SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.01	Have GHG emissions from Project construction activities for a year exceeded 10,000 MT CO ₂ e, after accounting for reductions realized from mitigation measures? (4.8-11)	No	The quarterly construction emissions reports include GHG and have been attached to question 19.1.37.

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.02	If yes, has Chevron implemented one or more of the specified measures to reduce GHG emissions to below 10,000 MT CO ₂ e? (4.8-11) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.03	Has Chevron implemented mitigation measures 4.8-2a through 4.8-2c to reduce greenhouse gas emissions? (4.8-2) If no, please explain by entering a comment. If yes, please attach proof	N/A	GHG gas emissions have not exceeded the 10,000 MT threshold. The quarterly construction report is attached to 19.1.37.

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.04	Has Chevron provided its annual contribution to fund the Community Greenhouse Gas Reduction Measures? (4.8-2e) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The CGGRP contribution is included in the funding provided under the ECIA. Chevron made the fourth annual payment on 10/20/2017, with check number 0024206779. A copy of this check is available upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SOLAR PROJECT SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	SCREENING QUESTION	8.1.01	Has construction of the 2MW (or other) solar project commenced?	Yes	Construction of the nominal 10.5MW MCE Solar One has been completed and the facility is currently operating. Chevron did not construct this project as a mitigation measure pursuant to the Modernization Project EIR; rather, MCE, an independent public agency, constructed and is operating the project on Chevron-owned land, as provided for in the Economic and Community Investment Agreement (ECIA) entered into by and between Chevron and the City on July 29, 2014. MCE prepared its own EIR for the Solar One project, which included its own mitigation monitoring and reporting program (MMRP) that incorporated mitigation measures from the Modernization Project EIR (see attached). The City of Richmond reviewed and commented on this EIR. Ultimately, Chevron had no authority to implement mitigation measures on the Solar One project site. Nevertheless, Chevron worked with MCE to help facilitate construction of the Solar One project and is providing this information to the City for informational purposes.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.01	If yes, did Chevron submit to City and RWQCB construction plans for the solar project prior to commencing construction? (CGRP Solar Bio 1,2, and Haz 1,2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.02	Did Chevron update the Facility emergency response and evacuation plans to account for the presence of the solar site? (CGRP Solar Haz-2) If no, please explain by entering a comment. If yes, please attach proof.	No	Information concerning compliance with MM CGRP Solar Haz-2 was submitted to the City of Richmond as Transmittal #7 on February 2, 2016 (copy attached). This transmittal explains that the Landfill 15 and Fertilizer Pond (Solar Project) sites are not included in the Refinery Emergency Response Plan (ERP) because those sites do not include any processes regulated by either CalARP or the RISO. Construction of the MCE Solar Project will not alter this conclusion because the solar PV panels and auxiliary equipment are not processes covered by the CalARP or the RISO. Since the Refinery's existing ERP does not cover the Solar Project site and the Solar Project will not trigger the requirements of CalARP or RISO, and since Chevron is leasing the site to Marin Clean Energy, who will facilitate all emergency activities at the site, the Refinery's ERP does not require updating pursuant to MM CGRP Solar Haz-2.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.03	Have standard construction BMPs and other project design features been implemented to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas during solar site construction? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Standard construction BMPs have been implemented by Marin Clean Energy's contractor, Cenergy, to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas. These BMPs are contained in the Refinery's Storm Water Pollution Prevention Plan. Specific documentation on BMP requirements was provided to Chevron by Cenergy on February 13, 2017 (see attached). The Refinery SWPPP is also attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.04	Have catch basin inlet protection and straw wattles been used throughout the solar project construction site? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof	No	The MCE Solar One Project does not include catch basin inlets that require protection. For more information, see attachment provided in response to question 8.1.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.05	Have all additional BMPs required by RWQCB and BCDC for the solar site been implemented? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	No	The RWQCB has not required any additional BMPs at the Solar Project site.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.06	Has exclusion fencing been placed as required? (CGRP Solar Bio-1 and Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	SATISFIED-NORESPONSED	REQUIRE

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.07	Has awareness training been provided for all construction personnel? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Environmental awareness training was provided for Solar Project site personnel by CH2M, and records of this training are kept onsite at the refinery. See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.08	Has bright-colored fencing and signage been installed to identify and restrict construction within environmentally sensitive areas? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The required bright-colored fencing and signage has been installed by Marin Clean Energy's contractor (Cenergy) around an area of known needle grass. See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.09	Has a construction monitor/environmental inspector confirmed exclusion fence integrity on a daily basis? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Cenergy Power is constructing the Solar Project for Marin Clean Energy (MCE). Cenergy's site manager conducts daily inspections of the small mammal fencing and SWPPP BMPs. See attachment to 8.2.08.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.10	Have all solar project exclusion fencing repairs and reinforcements been completed immediately? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Marin Clean Energy's contractor (Cenergy Power) performs repairs to the exclusionary fencing immediately upon discovering that there is damage. See attachment to 8.2.08.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.11	Was a qualified biological monitor present during clearing and grubbing activities? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The MCE Solar One project was constructed by MCE consistent with the terms of the Final EIR certified by MCE (see attachment to question 8.1.01), and mitigation was implemented and monitored pursuant to that FEIR. The preconstruction report conducted by Barnett Environmental on behalf of MCE, dated June 27, 2017, is attached to question 8.2.12, and states on the second page: “We therefore walked the entire project area on foot, searching for above ground, northern harrier nests, burrowing owl burrows, and small mammals. We found no nesting birds on or within a 500’ radius of the project site, as well as, no small mammals within a 100’ of Herman’s Slough during these surveys. These species have a very low potential to occur on site due to relatively high levels of disturbance from routine refinery operations.” In any event, construction of the MCE Solar One Project is complete, so no additional clearing or grubbing activities will be occurring.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.12	Did a biological monitor pre-survey solar project disturbance areas to confirm absence of special-status small mammals? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	In June 2017, Cenergy contracted with Barnett Environmental to conduct surveys for bird nesting, burrowing owls, and small mammals. A copy is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.13	Has contractor education included species identification and protection information? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The Environmental Awareness training provided to the Solar Project by CH2M-Hill reviewed Project-relevant species issues. Also see response to item 8.2.07.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.14	Is a maximum speed limit of 25 mph imposed on construction and maintenance vehicles for solar site construction? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	SATISFIED-NORESPONSE D	REQUIRE

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CONTAMINATED SOIL SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.1.01	Has Project construction generated any contaminated soil?	Yes	The project has generated contaminated soil. Identification, management, storage, and shipment of this contaminated soil is managed by the Refinery's existing Hazardous Waste Group in accordance with the applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.2.01	If yes, has contaminated soil been handled and disposed of as required including covering with plastic sheeting of any soil stockpiles containing contaminants? (4.9-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an "Instructions to Contractor" document to contractors that specifies the requirements of MM4.13-10a and has reviewed this requirement in the ITC meetings. The Modernization Compliance Team's regular meetings with contractor representatives include a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages soils according to applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.3.01	Has any contaminated soil been discovered during Project construction? (4.13-10a)	No	No contaminated soils requiring agency notifications have been discovered. See also the response to question 19.1.13.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.01	If Yes, did Chevron report the discovery to the City and other agencies? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.02	Did Chevron promptly manage, contain, treat, transport, and dispose of it? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.03	Did Chevron use authorized remediation contractors to manage contaminated media discovered during construction? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR NIGHTTIME CONSTRUCTION SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	SCREENING QUESTION	12.1.01	Has Project construction included any nighttime construction activities?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.01	Have nighttime construction noise mitigation requirements been implemented? (4.11-1) If no, please explain by entering a comment. If yes please attach proof.	No	Nighttime construction activities include bolt-up and welding of pipe and steel, electrical work, and scaffold building. Chevron has not received verified noise complaints from the use of backup alarms.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.02	Has there been a verified complaint regarding backup alarm noise during nighttime construction activities?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.03	If Yes, have administrative controls or different alarms been implemented? (4.11-1b) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SPILLS OR RELEASES SECTION	SINSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	SCREENING QUESTION	14.1.01	Have there been any spills/releases of any hazardous substances?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.01	If Yes, did Chevron report the release within 48 hours to the City? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.02	Did Chevron report the release to all required agencies in accordance with applicable regulatory requirements? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.03	Was a prompt cleanup conducted? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR THIRD PARTY COMPLIANCE AUDIT SECTION	INSTRUCTIONS	15.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 16.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.01	Has the City or CCHS retained a third-party expert to audit compliance at the facility? (4.13-13c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.02	If Yes, Has Chevron reimbursed the City or CCHS for these fees/expenses? (4.13-13c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CRUDE UNIT SECTION	INSTRUCTIONS	17.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 18.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	SCREENING QUESTION	18.1.01	Has the 2017 turnaround of the crude unit occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.01	Has Chevron submitted closed permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40 Reliability Program Annual Report. Final inspection reports have been completed on work permits requiring inspection that were associated with the 4 Crude Unit turnaround piping upgrade project. A final report will be made to the City once permits are closed.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.02	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40 Reliability Program Annual Report. As stated in prior communications to the City, Chevron is in the process of completing its Permasense upgrade project which will be implemented prior to the commencement of the project operations.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.03	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40 Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.01	Did Chevron submit a SWPPP to RWQCB at least 10 days prior to commencing construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	SATISFIED-NO RESPONSE REQUIRED	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.02	Have BMPs from the SWPPP been implemented during construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the "Instructions to Contractor" (ITC) document (attached to 4.2.01) contains the required SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that BMPs are in place and functioning.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.03	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) If no, please explain by entering a comment. If yes please attach proof.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.04	Before December 31, 2015, did Chevron install a test platform and sampling port, consistent with BAAQMDs "Guidance for Construction of Particulate Sampling and Test Facilities" on the FCC to allow for supplemental testing of PM10 and PM2.5 pursuant to USEPA Test Method 201a/202? (COA D3) If no, please explain by entering a comment. If yes please attach proof.	SATISFIED-NO RESPONSE REQUIRED	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.05	Are all required dust control BMPs being implemented consistently? (4.3-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	All required dust control BMPs are being implemented consistently as described in the Instructions to Contractors (ITC) document (attached to question 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.06	Has Chevron implemented the required PM emissions reduction practices for construction activities? (IM 4.3-3) If no, please explain by entering a comment.	Yes	Chevron has implemented improvement measure 4.3-3 through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.07	Have hazardous materials been stored only in City-approved locations? (4.13-2a) If no, please explain by entering a comment.	Yes	Hazardous materials are stored within approved locations as identified within figure 3-1 of the EIR. Small quantities of consumer products that might be classified as hazardous materials are also stored in OSHA regulated storage cabinets located within construction areas where the City approved construction activities are occurring. All construction activities are subject to the requirements of City issued building permits.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.08	Has hazardous waste been stored only in locations approved by the City? (4.13-3a) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that identifies acceptable waste storage locations. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Acceptable waste storage locations are identified in the Plan as referenced under MM 4.13-3a. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.09	Has all hazardous waste been transported off-site to an authorized facility by a licensed transporter within 90 days after the wastes were generated? (4.13-3b) If no, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.10	Has all non-hazardous waste been transported off-site to an authorized facility by a licensed transporter within 180 days after the wastes were generated? (4.13-3c) If no, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.11	Has Chevron reviewed and updated its programs and procedures to incorporate damage mechanism reviews and layers of protection analyses? (4.13-7c) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted its Reliability Program Annual Report in June 2017. Please see question 19.1.40 for attachment. Chevron is in the process of updating its applicable refinery instructions to align with the RISO amendments and new SB1300 standards that have been adopted since project approval. Also, please see Tenth Quarterly MM 4.13-13d Report, attached to question 19.1.35, for updates concerning Chevron's actions to date to implement its corrective actions following the August 6, 2012 fire, which include similar requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.12	Has Chevron reimbursed the City for any 3rd party experts retained by the City or CCHS to review PHAs, ISSAs, or LOPAs? (4.13-7d)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.13	Has Chevron trained construction workers in recognizing contamination and characterizing/managing any contaminated media? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an "Instructions to Contractors" (ITC) document to contractors (attached to 4.2.01) that specifies the requirements of MM4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team's regular meetings with contractor representatives include a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages any contaminated media.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.14	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for the Castro/W-180 westbound ramps? (4.16-1, 3, 6) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/W-580 westbound ramps.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.15	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Richmond Parkway/Gertrude Ave? (4.16-2, 5, 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Richmond Parkway/Gertrude Ave. intersection. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.16	For periods during which there is/will be both Project construction-related traffic combined with Other Project construction-related traffic, has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Castro/Hensley? (4.16-4, 8) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/Hensley intersection.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.17	For periods during which there is/will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for Castro Street/General Chemical Access been implemented? (4.16-7) If no, please explain by entering a comment. If yes please attach proof.	Yes	As with the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction) Chevron will work closely with the City of Richmond Engineering, Police, and Traffic Departments and implement traffic control measures to ensure smooth traffic flow during peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.18	For periods during which there will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for County maintained intersections been implemented by Chevron in coordination with the City and County? (4.16-11) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	As with the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction) Chevron will work closely with the City of Richmond Engineering, Police, and Traffic Departments and implement traffic control measures to ensure smooth traffic flow during peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.19	Has Chevron paid the full costs of modified traffic controls? (4.16-1, 2a, 4, 7, 11) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has paid all invoices to date for St. Francis Electrical, the City of Richmond's traffic management contractor, and is set to pay all future traffic costs.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.20	Has Chevron hired additional security services as necessary for the increase in personnel on-site during construction? (IM 4.14-1) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.21	Has Chevron entered into an agreement with the City fire department to ensure training on new equipment and the acquisition of any necessary heavy equipment? (IM 4.14-2) If No, please explain by entering a comment.	No	No additional equipment or training is required for the Project components. Fire protection systems have been designed taking into account the current equipping of Chevron Fire Department, all regional municipal departments, and all regional Petro-Chemical Association Organization departments.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.22	Has Chevron implemented one or more of the measures specified to further reduce construction traffic impacts by reducing construction-related traffic trips during AM and PM peak hours? (IM 4.16-1 through 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing the measures implemented.	Yes	Chevron and its contractors have implemented Improvement Measure IM 4.16-1 through 9 as follows: IM 9a: Chevron has staggered the hours of operation of the craft labor so that the construction-related traffic is distributed over the peak and nonpeak hours of traffic operation. IM 9b: Chevron and its contractors have promoted the use of car sharing by the craft labor force, including the use of incentives. IM 9c: Chevron has coordinated the schedule among construction of the Modernization project, other projects and major facility turnarounds.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.23	Has Chevron communicated on a weekly basis to site management and City management regarding the week's construction plans and schedule? (4.13-2b) If No, please explain by entering a comment.	Yes	The Modernization Project Director meets weekly with the Refinery Leadership team regarding construction plans and schedule. Chevron's construction plans and permitting teams are in daily contact with the City's building inspection department concerning ongoing permitting and construction activities. In addition, the Refinery General Manager meets with City management monthly to review the Modernization project status and other matters.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.24	Has Chevron submitted monthly reports regarding safety training? (4.13-2b) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.25	Has Chevron implemented the Leak Response Protocol? (4.13-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation.	No	Chevron adopted and implemented its new Leak Response Protocol (LRP) in 2013. The LRP provides guidance to Chevron's employees, including emergency responders and operators, on the appropriate steps to take in the event of a loss of containment. However, LRP training is not being provided to any contractors because the LRP is a Chevron-owned and executed process. The contractors' only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button if they are issued a refinery radio. Other than that, they have no role in the Leak Response Protocol. See attachment to 19.1.24.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.26	Has Chevron implemented one or more of the specified NOx emissions reduction measures for construction activities? (4.3-2a) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measures 4.3-2a through the “Instructions to Contractors” (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.27	Has Chevron implemented one or more of the specified ROG emissions reduction measures for construction activities? (4.3-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measures 4.3-2b through the “Instructions to Contractors” (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.28	Has Chevron implemented the GHG mitigation measures specified for construction activities? (4.8-1a through 4.8-1k) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation efforts.	Yes	Chevron has implemented mitigation measures 4.8-1a through 4.8-1k through the “Instructions to Contractors” (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.29	Have stockpiles of soil containing contaminants been kept covered with plastic sheeting? (4.9-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron has issued an "Instructions to Contractors" (ITC) document to contractors that specifies the requirements of MM 4.9-2 (see section 2.0 of the ITC) including Best Management Practices. Please see attachment to 4.2.01. The Chevron Modernization Compliance Team verifies compliance with these requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.30	Has Chevron secured a permit amendment from BAAQMD reducing the annualized throughput limit of the SDA to 50,000 barrels/day? (4.3-5h) If no, please explain by entering a comment. If yes, please attach proof.	Yes	A permit application to amend the refinery's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels/day annual average was submitted to the BAAQMD on August 16, 2016. As far as Chevron is aware, the BAAQMD is continuing to process the permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.31	Have there been any trees removed between September 1 and March 31 of the current year? (4.4-1c)	No	No trees were removed. A survey by a qualified biologist (Entomological Consulting Services) determined that no monarch butterfly roosting habitat existed, and no mitigations were needed for vegetation removal.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.32	If yes, has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous	Question	19.1.33	Has Chevron updated PHAs (including ISSAs, damage mechanism reviews, and LOPAs) for all new and modified Project components, and notified City and CCHS of their availability for review? (4.13-4a, 4.13-7b) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Pursuant to this requirement, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August 2016.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.34	Has Chevron funded the costs of a qualified expert in refinery safety to be selected and retained by County or City to review ISSAs, PHAs, LOPAs and other safety documentation (until such time as funded via RISO)? (4.13-13b) If no, please explain by entering a comment. If yes, please attach proof.	No	The County has selected the qualified expert. Chevron will pay invoices for this expert upon receipts.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.35	Has Chevron submitted quarterly reports to City (and copies to CCHS) on the status of corrective actions taken to implement agency recommendations resulting from August 2012 fire as well as corrective actions taken by Chevron as a result of its own investigation? (4.13-13d) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The eleventh quarterly 4.13-13d report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.36	Has Chevron funded the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations? (4.13-13e) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron has not been invoiced for, nor notified of, the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.37	Has Chevron submitted its most current quarterly mitigation measure compliance report demonstrating compliance with the required NOx, ROG, and GHG measures? (4.3-2a, 2b, 4.8-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attached report

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.38	Has a third-party retained by Chevron quantified and verified the GHG emissions reductions achieved by the specified mitigation measures for construction activities? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.39	Has Chevron submitted an annual report for the most current reporting period verifying GHG emissions reductions from construction activities, reductions achieved through mitigation, and compliance with mitigation requirements? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.40	Has Chevron submitted an annual Reliability Program report for the most current reporting period? (4.13-7a) If no, please explain by entering a comment. If yes please attach proof.	Yes	The first Reliability Program Annual Report was submitted on June 14, 2017. See Attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.41	Has Chevron submitted annual compliance reports by March 31 of each year (starting after the first full year of construction) to the City regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s), including a comprehensive list of all findings, corrective actions identified/requested by the agencies, and status of implementation by Chevron of the corrective actions? (COA G2, H5) If no, please explain by entering a comment. If yes please attach proof.	N/A	Construction began on June 20, 2016. The first full year of construction will be 2017; therefore, the first report is due by March 31, 2018.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.42	Has Chevron submitted payment to the City to cover all staff/3rd party expert costs and fees for review and verification of compliance with all mitigation measures, improvement measures, and conditions of approval? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.43	Has Chevron submitted payment to the County to cover all County costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the County? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.44	Has Chevron submitted payment to the BAAQMD to cover all BAAQMD costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the BAAQMD? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	20.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Serena Yau for Jeff Hartwig	

Chevron Refinery - Chevron Modernization Project Construction Questionnaire 2017

Survey:	Chevron Modernization Project Construction Questionnaire 2017
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEH3.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION. Proceed to 2.01.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GROUND DISTURBING CONSTRUCTION SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	SCREENING QUESTION	4.1.01	Have any ground disturbing construction activities occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.01

Was training regarding discovery of archaeological artifacts/resources provided to workers before ground disturbing activities began? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "instructions to Contractors" (ITC) document (Rev. 8 attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.02

Is monitoring being conducted for discovery of archaeological resources during construction? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "instructions to Contractors" (ITC) document (Rev. 8 attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.03	Have all archaeological resources discovered been managed as required? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	No archaeological resources have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.04	Was training regarding discovery of paleontological resources provided to workers before ground disturbing activities began? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has issued an "Instructions to Contractors" (ITC) document (attached to 4.2.01) to contractors that specifies the requirements of MM 4.5-2 (see section 2.0 of the ITC). The initial resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained CH2M Hill to provide a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines §15064.5.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.05	Have excavation plans been submitted, if required for all needed excavations? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.06	Have all paleontological resources discovered been managed as required? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.07	Have any human skeletal remains been discovered? (4.5-3)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.08	If human skeletal remains have been discovered, have they been managed as required? (4.5-3) If No, please explain by entering a comment. If Yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GHG EMISSIONS SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.01	Have GHG emissions from Project construction activities for a year exceeded 10,000 MT CO ₂ e, after accounting for reductions realized from mitigation measures? (4.8-1l)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.02	If yes, has Chevron implemented one or more of the specified measures to reduce GHG emissions to below 10,000 MT CO ₂ e? (4.8-1l)If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.03	Has Chevron implemented mitigation measures 4.8-2a through 4.8-2c to reduce greenhouse gas emissions? (4.8-2) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.04	Has Chevron provided its annual contribution to fund the Community Greenhouse Gas Reduction Measures? (4.8-2e) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The CGGRP contribution is included in the funding provided under the ECIA. Chevron made the third annual payment on June 6, 2017, with check number 0024107769. A copy of this check is available upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SOLAR PROJECT SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	SCREENING QUESTION	8.1.01	Has construction of the 2MW (or other) solar project commenced?	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.01	If yes, did Chevron submit to City and RWQCB construction plans for the solar project prior to commencing construction? (CGRP Solar Bio 1,2, and Haz 1,2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.02	Did Chevron update the Facility emergency response and evacuation plans to account for the presence of the solar site? (CGRP Solar Haz-2) If no, please explain by entering a comment. If yes, please attach proof.	No	Information concerning compliance with MM CGRP Solar Haz-2 was submitted to the City of Richmond as Transmittal #7 on February 2, 2016 (copy attached). This transmittal explains that the Landfill 15 and Fertilizer Pond (Solar Project) sites are not included in the Refinery Emergency Response Plan (ERP) because those sites do not include any processes regulated by either CalARP or the RISO. Construction of the MCE Solar Project will not alter this conclusion because the solar PV panels and auxiliary equipment are not processes covered by the CalARP or the RISO. Since the Refinery's existing ERP does not cover the Solar Project site and the Solar Project will not trigger the requirements of CalARP or RISO, and since Chevron is leasing the site to Marin Clean Energy, who will facilitate all emergency activities at the site, the Refinery's ERP does not require updating pursuant to MM CGRP Solar Haz-2.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.03	Have standard construction BMPs and other project design features been implemented to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas during solar site construction? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Standard constructionBMPs have been implemented by Marin Clean Energy's contractor, Cenergy, to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas. These BMPs are contained in the Refinery's Storm Water Pollution Prevention Plan. Specific documentation on BMP requirements was provided to Chevron by Cenergy on February 13, 2017 (see attached). The Refinery SWPPP is also attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.04	Have catch basin inlet protection and straw wattles been used throughout the solar project construction site? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.05	Have all additional BMPs required by RWQCB and BCDC for the solar site been implemented? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	No	The RWQCB has not required any additional BMPs at the Solar Project Site.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.06	Has exclusion fencing been placed as required? (CGRP Solar Bio-1 and Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Exclusionary fencing has been installed along the work site to prevent small mammals from entering the site. A report issued by CH2M-Hill confirming installation of this exclusionary fencing is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.07	Has awareness training been provided for all construction personnel? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Environmental awareness training was provided for Solar Project site personnel by CH2M, and records of this training are kept onsite at the refinery. See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.08	Has bright-colored fencing and signage been installed to identify and restrict construction within environmentally sensitive areas? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The required bright-colored fencing and signage has been installed by Marin Clean Energy's contractor (Cenergy) around an area of known needle grass. See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.09	Has a construction monitor/environmental inspector confirmed exclusion fence integrity on a daily basis? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Cenergy Power is constructing the Solar Project for Marin Clean Energy (MCE). Cenergy's site manager conducts daily inspections of the small mammal fencing and SWPPP BMPs. See attachment to 8.2.08

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.10	Have all solar project exclusion fencing repairs and reinforcements been completed immediately? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Marin Clean Energy's contractor (Cenergy Power) performs repairs to the exclusionary fencing immediately upon discovering that there is damage. See attachment to 8.2.08

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.11	Was a qualified biological monitor present during clearing and grubbing activities? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	N/A	See attachment to 8.2.12.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.12	Did a biological monitor pre-survey solar project disturbance areas to confirm absence of special-status small mammals? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	In June 2017, Cenergy contracted with Barnett Environmental to conduct surveys for bird nesting, burrowing owls, and small mammals. A copy is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.13	Has contractor education included species identification and protection information? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The Environmental Awareness training provided to the Solar Project by CH2M-Hill reviewed Project-relevant species issues. Also see response to item 8.2.07.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.14	Is a maximum speed limit of 25 mph imposed on construction and maintenance vehicles for solar site construction? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The maximum speed limit anywhere in the Refinery is 25 mph and signs are posted in numerous locations. Speed limits are vigorously enforced by the Refinery's Emergency Services Department. The maximum speed limit has been communicated to MCE and their contractor, Cenergy.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CONTAMINATED SOIL SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.1.01	Has Project construction generated any contaminated soil?	Yes	The Project has generated contaminated soil. Identification, management, storage, and shipment of this contaminated soil is managed by the Refinery's existing Hazardous Waste Group in accordance with applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.2.01	If yes, has contaminated soil been handled and disposed of as required including covering with plastic sheeting of any soil stockpiles containing contaminants? (4.9-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an "Instructions to Contractors" document to contractors (attached to 4.2.01) that specifies the requirements of MM4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in the ITC meetings. The Modernization Compliance Team's regular meetings with contractor representatives include a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages soils according to applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.3.01	Has any contaminated soil been discovered during Project construction? (4.13-10a)	No	No contaminated soils requiring agency notifications have been discovered. See also the response to question 19.1.13.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.01	If Yes, did Chevron report the discovery to the City and other agencies? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.02	Did Chevron promptly manage, contain, treat, transport, and dispose of it? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.03	Did Chevron use authorized remediation contractors to manage contaminated media discovered during construction? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR NIGHTTIME CONSTRUCTION SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	SCREENING QUESTION	12.1.01	Has Project construction included any nighttime construction activities?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.01	Have nighttime construction noise mitigation requirements been implemented? (4.11-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	No pile driving has occurred during night work, and since Chevron is not aware that the City of Richmond received any verified noise complaints related to this activity, no additional mitigation obligations were triggered.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.02	Has there been a verified complaint regarding backup alarm noise during nighttime construction activities?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.03	If Yes, have administrative controls or different alarms been implemented? (4.11-1b) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SPILLS OR RELEASES SECTION	SINSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	SCREENING QUESTION	14.1.01	Have there been any spills/releases of any hazardous substances?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.01	If Yes, did Chevron report the release within 48 hours to the City? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.02	Did Chevron report the release to all required agencies in accordance with applicable regulatory requirements? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.03	Was a prompt cleanup conducted? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR THIRD PARTY COMPLIANCE AUDIT SECTION	INSTRUCTIONS	15.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 16.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.01	Has the City or CCHS retained a third-party expert to audit compliance at the facility? (4.13-13c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.02	If Yes, Has Chevron reimbursed the City or CCHS for these fees/expenses? (4.13-13c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CRUDE UNIT SECTION	INSTRUCTIONS	17.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 18.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	SCREENING QUESTION	18.1.01	Has the 2017 turnaround of the crude unit occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.01	Has Chevron submitted closed permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.02	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.03	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.01	Did Chevron submit a SWPPP to RWQCB at least 10 days prior to commencing construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron submitted a SWPPP to the RWQCB as required. See the attached upload confirmation.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.02	Have BMPs from the SWPPP been implemented during construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the "Instructions to Contractor" (ITC) document (attached to 4.2.01) contains therequired SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that BMPs are in place and functioning.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.03	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) If no, please explain by entering a comment. If yes please attach proof.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.04	Before December 31, 2015, did Chevron install a test platform and sampling port, consistent with BAAQMDs "Guidance for Construction of Particulate Sampling and Test Facilities" on the FCC to allow for supplemental testing of PM10 and PM2.5 pursuant to USEPA Test Method 201a/202? (COA D3) If no, please explain by entering a comment. If yes please attach proof.	Yes	On November 20, 2015, the Bay Area Air Quality Management District (BAAQMD) approved the Chevron Richmond Refinery's protocol for the FCC Plant Particulate Source Test Sampling Facility. Installation of the Test Sampling Facility was completed by the end of 2015

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.05	Are all required dust control BMPs being implemented consistently? (4.3-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	All required dust control BMPs are being implemented consistently as described in the Instructions to Contractors (ITC) document (attached for question 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.06	Has Chevron implemented the required PM emissions reduction practices for construction activities? (IM 4.3-3) If no, please explain by entering a comment.	Yes	Chevron has implemented improvement measure 4.3-3 through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.07	Have hazardous materials been stored only in City-approved locations? (4.13-2a) If no, please explain by entering a comment.	Yes	Hazardous materials are only stored in approved locations. This information was communicated to contractors in the "Instructions to Contractors" (ITC) document (see attachment to 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.08	Has hazardous waste been stored only in locations approved by the City? (4.13-3a) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that identifies acceptable waste storage locations. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Acceptable waste storage locations are identified in the Plan as referenced under MM 4.13-3a. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.09	Has all hazardous waste been transported off-site to an authorized facility by a licensed transporter within 90 days after the wastes were generated? (4.13-3b) If no, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.10	Has all non-hazardous waste been transported off-site to an authorized facility by a licensed transporter within 180 days after the wastes were generated? (4.13-3c) If no, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.11	Has Chevron reviewed and updated its programs and procedures to incorporate damage mechanism reviews and layers of protection analyses? (4.13-7c) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted its Reliability Program Annual Report in June 2017. please see question 19.1.40 for attachment. Chevron continues to work to implement its Reliability Program prior to the commencement of project operations. Also, please see Tenth Quarterly MM 4.13-13d Report, attached to question 19.1.35, for updates concerning Chevron's actions-to-date to implement its corrective actions following the August 6, 2012 fire, which include similar requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.12	Has Chevron reimbursed the City for any 3rd party experts retained by the City or CCHS to review PHAs, ISSAs, or LOPAs? (4.13-7d)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.13	Has Chevron trained construction workers in recognizing contamination and characterizing/managing any contaminated media? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an “Instructions to Contractors” (ITC) document to contractors (attached to 4.2.01) that specifies the requirements of MM4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team’s regular meetings with contractor representatives includes a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages and contaminated media.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.14	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for the Castro/W-180 westbound ramps? (4.16-1, 3, 6) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/W-580 westbound ramps.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.15	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Richmond Parkway/Gertrude Ave? (4.16-2, 5, 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Richmond Parkway/Gertrude Ave. intersection. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.16	For periods during which there is/will be both Project construction-related traffic combined with Other Project construction-related traffic, has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Castro/Hensley? (4.16-4, 8) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/Hensley intersection.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.17	For periods during which there is/will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for Castro Street/General Chemical Access been implemented? (4.16-7) If no, please explain by entering a comment. If yes please attach proof.	Yes	As with the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction) Chevron will work closely with the City of Richmond Engineering, Police, and Traffic Departments and implement traffic control measures to ensure smooth traffic flow during peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.18	For periods during which there will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for County maintained intersections been implemented by Chevron in coordination with the City and County? (4.16-11) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	As with the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction) Chevron will work closely with the City of Richmond Engineering, Police, and Traffic Departments and implement traffic control measures to ensure smooth traffic flow during peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.19	Has Chevron paid the full costs of modified traffic controls? (4.16-1, 2a, 4, 7, 11) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has paid all invoices to date for St. Francis Electrical, the City of Richmond's traffic management contractor, and is set to pay all future traffic costs.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.20	Has Chevron hired additional security services as necessary for the increase in personnel on-site during construction? (IM 4.14-1) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.21	Has Chevron entered into an agreement with the City fire department to ensure training on new equipment and the acquisition of any necessary heavy equipment? (IM 4.14-2) If No, please explain by entering a comment.	No	No additional equipment or training is required for the Project components. Fire protection systems have been designed taking into account the current equipping of Chevron Fire Department, all regional municipal departments, and all regional Petro-Chemical Association Organization departments.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.22	Has Chevron implemented one or more of the measures specified to further reduce construction traffic impacts by reducing construction-related traffic trips during AM and PM peak hours? (IM 4.16-1 through 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing the measures implemented.	Yes	Chevron and its contractors have implemented Improvement Measures IM 4.16-1 through 9 as follows: IM 9a: Chevron has staggered the hours of operation of the craft labor so that the construction-related traffic is distributed over the peak and nonpeak hours of traffic operation. IM 9b: Chevron and its contractors have promoted the use of car sharing by the craft labor force, including the use of incentives. IM 9c: Chevron has coordinated the schedule among construction of the Modernization project, other projects and major facility turnarounds

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.23	Has Chevron communicated on a weekly basis to site management and City management regarding the week's construction plans and schedule? (4.13-2b) If No, please explain by entering a comment.	Yes	The Modernization Project Director meets weekly with the Refinery Leadership team regarding construction plans and schedule. Chevron's construction and permitting teams are in daily contact with the City's building inspection department concerning ongoing permitting and construction activities. In addition, the Refinery General Manager meets with City management monthly to review the Modernization project status and other matters.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.24	Has Chevron submitted monthly reports regarding safety training? (4.13-2b) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attached submittal for MM 4.13-2b, which provides an overview of the training provided to contractors during demolition and construction activities. The training obligations have not changed since commencement of construction.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.25	Has Chevron implemented the Leak Response Protocol? (4.13-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation.	No	Chevron adopted and implemented its new Leak Response Protocol (LRP) in 2013. The LRP provides guidance to Chevron's employees, including emergency responders and operators, on the appropriate steps to take in the event of a loss of containment. However, LRP training is not being provided to any contractors because the LRP is a Chevron-owned and -executed process. The contractors' only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button if they are issued a refinery radio. Other than that, they have no role in the Leak Response Protocol. See attachment to 19.1.24.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.26	Has Chevron implemented one or more of the specified NOx emissions reduction measures for construction activities? (4.3-2a) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2a through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.27	Has Chevron implemented one or more of the specified ROG emissions reduction measures for construction activities? (4.3-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2b through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.28	Has Chevron implemented the GHG mitigation measures specified for construction activities? (4.8-1a through 4.8-1k) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation efforts.	Yes	Chevron has implemented mitigation measures 4.8-1a through 4.8-1k through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.29	Have stockpiles of soil containing contaminants been kept covered with plastic sheeting? (4.9-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron has issued an A “Instructions to ContractorsA” (ITC) document to contractors that specifies the requirements of MM 4.9-2 (see section 2.0 of the ITC) including BestManagement Practices. Please see attachment to 4.2.01. The Chevron Modernization Compliance Team verifies compliance with these requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.30	Has Chevron secured a permit amendment from BAAQMD reducing the annualized throughput limit of the SDA to 50,000 barrels/day? (4.3-5h) If no, please explain by entering a comment. If yes, please attach proof.	Yes	A permit application to amend the refinery's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels/day annual average was submitted to the BAAQMD on August 16, 2016. As far as Chevron is aware, the BAAQMD is continuing to process this permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.31	Have there been any trees removed between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.32	If yes, has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous	Question	19.1.33	Has Chevron updated PHAs (including ISSAs, damage mechanism reviews, and LOPAs) for all new and modified Project components, and notified City and CCHS of their availability for review? (4.13-4a, 4.13-7b) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Pursuant to this requirement, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August 2016.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.34	Has Chevron funded the costs of a qualified expert in refinery safety to be selected and retained by County or City to review ISSAs, PHAs, LOPAs and other safety documentation (until such time as funded via RISO)? (4.13-13b) If no, please explain by entering a comment. If yes, please attach proof.	No	The County has selected the qualified expert. Chevron will pay invoices for this expert upon receipt.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.35	Has Chevron submitted quarterly reports to City (and copies to CCHS) on the status of corrective actions taken to implement agency recommendations resulting from August 2012 fire as well as corrective actions taken by Chevron as a result of its own investigation? (4.13-13d) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The tenth quarterly 4.13-13d report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.36	Has Chevron funded the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations? (4.13-13e) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron has not been invoiced for, nor notified of, the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.37	Has Chevron submitted its most current quarterly mitigation measure compliance report demonstrating compliance with the required NOx, ROG, and GHG measures? (4.3-2a, 2b, 4.8-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attached report.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.38	Has a third-party retained by Chevron quantified and verified the GHG emissions reductions achieved by the specified mitigation measures for construction activities? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.39	Has Chevron submitted an annual report for the most current reporting period verifying GHG emissions reductions from construction activities, reductions achieved through mitigation, and compliance with mitigation requirements? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.40	Has Chevron submitted an annual Reliability Program report for the most current reporting period? (4.13-7a) If no, please explain by entering a comment. If yes please attach proof.	Yes	The first Reliability Program Annual Report was submitted on June 14, 2017. See attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.41	Has Chevron submitted annual compliance reports by March 31 of each year (starting after the first full year of construction) to the City regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s), including a comprehensive list of all findings, corrective actions identified/requested by the agencies, and status of implementation by Chevron of the corrective actions? (COA G2, H5) If no, please explain by entering a comment. If yes please attach proof.	N/A	Construction began on June 20, 2016. The first full year of construction will be 2017; therefore, the first report is due by March 31, 2018.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.42	Has Chevron submitted payment to the City to cover all staff/3rd party expert costs and fees for review and verification of compliance with all mitigation measures, improvement measures, and conditions of approval? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.43	Has Chevron submitted payment to the County to cover all County costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the County? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.44	Has Chevron submitted payment to the BAAQMD to cover all BAAQMD costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the BAAQMD? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	20.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz, for Jeff Hartwig	

Chevron Refinery - Chevron Modernization Project Construction Questionnaire 2017

Survey:	Chevron Modernization Project Construction Questionnaire 2017
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEH3.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION. Proceed to 2.01.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GROUND DISTURBING CONSTRUCTION SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	SCREENING QUESTION	4.1.01	Have any ground disturbing construction activities occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.01

Was training regarding discovery of archaeological artifacts/resources provided to workers before ground disturbing activities began? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "instructions to Contractors" (ITC) document (Rev. 8 attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.02

Is monitoring being conducted for discovery of archaeological resources during construction? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.03	Have all archaeological resources discovered been managed as required? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	No archaeological resources have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.04	Was training regarding discovery of paleontological resources provided to workers before ground disturbing activities began? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has issued an "Instructions to Contractors" (ITC) document (attached to 4.2.01) to contractors that specifies the requirements of MM 4.5-2 (see section 2.0 of the ITC). The initial resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary, although to date, no additional sessions have been required. Chevron has also retained CH2M Hill to provide a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines §15064.5.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.05	Have excavation plans been submitted, if required for all needed excavations? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.06	Have all paleontological resources discovered been managed as required? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.07	Have any human skeletal remains been discovered? (4.5-3)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.08	If human skeletal remains have been discovered, have they been managed as required? (4.5-3) If No, please explain by entering a comment. If Yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GHG EMISSIONS SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.01	Have GHG emissions from Project construction activities for a year exceeded 10,000 MT CO ₂ e, after accounting for reductions realized from mitigation measures? (4.8-1l)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.02	If yes, has Chevron implemented one or more of the specified measures to reduce GHG emissions to below 10,000 MT CO ₂ e? (4.8-1l)If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.03	Has Chevron implemented mitigation measures 4.8-2a through 4.8-2c to reduce greenhouse gas emissions? (4.8-2) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.04	Has Chevron provided its annual contribution to fund the Community Greenhouse Gas Reduction Measures? (4.8-2e) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The CGGRP contribution is included in the funding provided under the ECIA. Chevron made the third annual payment on June 6, 2017, with check number 0024107769. A copy of this check is available upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SOLAR PROJECT SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	SCREENING QUESTION	8.1.01	Has construction of the 2MW (or other) solar project commenced?	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.01	If yes, did Chevron submit to City and RWQCB construction plans for the solar project prior to commencing construction? (CGRP Solar Bio 1,2, and Haz 1,2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.02	Did Chevron update the Facility emergency response and evacuation plans to account for the presence of the solar site? (CGRP Solar Haz-2) If no, please explain by entering a comment. If yes, please attach proof.	No	Information concerning compliance with MM CGRP Solar Haz-2 was submitted to the City of Richmond as Transmittal #7 on February 2, 2016 (copy attached). This transmittal explains that the Landfill 15 and Fertilizer Pond (Solar Project) sites are not included in the Refinery Emergency Response Plan (ERP) because those sites do not include any processes regulated by either CalARP or the RISO. Construction of the MCE Solar Project will not alter this conclusion because the solar PV panels and auxiliary equipment are not processes covered by the CalARP or the RISO. Since the Refinery's existing ERP does not cover the Solar Project site and the Solar Project will not trigger the requirements of CalARP or RISO, and since Chevron is leasing the site to Marin Clean Energy, who will facilitate all emergency activities at the site, the Refinery's ERP do not require updating pursuant to MM CGRP Solar Haz-2.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.03	Have standard construction BMPs and other project design features been implemented to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas during solar site construction? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Standard construction BMPs have been implemented by Marin Clean Energy's contractor, Cenergy, to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas. These BMPs are contained in the Refinery's Storm Water Pollution Prevention Plan. Specific documentation on BMP requirements was provided to Chevron by Cenergy on February 13, 2017 (see attached). The Refinery SWPPP is also attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.04	Have catch basin inlet protection and straw wattles been used throughout the solar project construction site? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.05	Have all additional BMPs required by RWQCB and BCDC for the solar site been implemented? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	No	The RWQCB has not required any additional BMPs at the Solar Project Site.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.06	Has exclusion fencing been placed as required? (CGRP Solar Bio-1 and Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Exclusionary fencing has been installed along the work site to prevent small mammals from entering the site. A report issued by CH2M-Hill confirming installation of this exclusionary fencing is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.07	Has awareness training been provided for all construction personnel? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Environmental awareness training was provided for Solar Project site personnel by CH2M-Hill, and records of this training are kept onsite at the refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.08	Has bright-colored fencing and signage been installed to identify and restrict construction within environmentally sensitive areas? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The required bright-colored fencing and signage has been installed by Marin Clean Energy's contractor (Cenergy) around an area of known needle grass.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.09	Has a construction monitor/environmental inspector confirmed exclusion fence integrity on a daily basis? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Cenergy Power is constructing the Solar Project for Marin Clean Energy (MCE). Cenergy's site manager conducts daily inspections of the small mammal fencing and SWPPP BMPs.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.10	Have all solar project exclusion fencing repairs and reinforcements been completed immediately? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Marin Clean Energy's contractor (Cenergy Power) performs repairs to the exclusionary fencing immediately upon discovering that there is damage.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.11	Was a qualified biological monitor present during clearing and grubbing activities? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	N/A	See attachment to 8.2.12

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.12	Did a biological monitor pre-survey solar project disturbance areas to confirm absence of special-status small mammals? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	In June 2017, Cenergy contracted with Barnett Environmental to conduct surveys for bird nesting, burrowing owls, and small mammals. A copy is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.13	Has contractor education included species identification and protection information? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The Environmental Awareness training provided to the Solar Project by CH2M-Hill reviewed Project-relevant species issues. Also see response to item 8.2.07.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.14	Is a maximum speed limit of 25 mph imposed on construction and maintenance vehicles for solar site construction? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The maximum speed limit anywhere in the Refinery is 25 mph and signs are posted in numerous locations. Speed limits are vigorously enforced by the Refinery's Emergency Services Department. The maximum speed limit has been communicated to MCE and their contractor, Cenergy.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CONTAMINATED SOIL SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.1.01	Has Project construction generated any contaminated soil?	Yes	The Project has generated contaminated soil. Identification, management, storage, and shipment of this contaminated soil is managed by the Refinery's existing Hazardous Waste Group in accordance with applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.2.01	If yes, has contaminated soil been handled and disposed of as required including covering with plastic sheeting of any soil stockpiles containing contaminants? (4.9-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an "Instructions to Contractors" document to contractors (attached to 4.2.01) that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in the ITC meetings. The Modernization Compliance Team's regular meetings with contractor representatives include a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages soils according to applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.3.01	Has any contaminated soil been discovered during Project construction? (4.13-10a)	No	No contaminated soils requiring agency notifications have been discovered. See also the response to question 19.1.13.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.01	If Yes, did Chevron report the discovery to the City and other agencies? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.02	Did Chevron promptly manage, contain, treat, transport, and dispose of it? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.03	Did Chevron use authorized remediation contractors to manage contaminated media discovered during construction? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR NIGHTTIME CONSTRUCTION SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	SCREENING QUESTION	12.1.01	Has Project construction included any nighttime construction activities?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.01	Have nighttime construction noise mitigation requirements been implemented? (4.11-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	No pile driving has occurred during night work, and since Chevron is not aware that the City of Richmond received any verified noise complaints related to this activity, no additional mitigation obligations were triggered.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.02	Has there been a verified complaint regarding backup alarm noise during nighttime construction activities?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.03	If Yes, have administrative controls or different alarms been implemented? (4.11-1b) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SPILLS OR RELEASES SECTION	SINSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	SCREENING QUESTION	14.1.01	Have there been any spills/releases of any hazardous substances?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.01	If Yes, did Chevron report the release within 48 hours to the City? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.02	Did Chevron report the release to all required agencies in accordance with applicable regulatory requirements? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.03	Was a prompt cleanup conducted? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR THIRD PARTY COMPLIANCE AUDIT SECTION	INSTRUCTIONS	15.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 16.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.01	Has the City or CCHS retained a third-party expert to audit compliance at the facility? (4.13-13c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.02	If Yes, Has Chevron reimbursed the City or CCHS for these fees/expenses? (4.13-13c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CRUDE UNIT SECTION	INSTRUCTIONS	17.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 18.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	SCREENING QUESTION	18.1.01	Has the 2017 turnaround of the crude unit occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.01	Has Chevron submitted closed permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.02	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.03	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 19.1.40, Reliability Program Annual Report.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.01	Did Chevron submit a SWPPP to RWQCB at least 10 days prior to commencing construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron submitted a SWPPP to the RWQCB as required. See the attached upload confirmation.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.02	Have BMPs from the SWPPP been implemented during construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the "Instructions to Contractor" (ITC) document (attached to 4.2.01) contains the required SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that BMPs are in place and functioning.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.03	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) If no, please explain by entering a comment. If yes please attach proof.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.04	Before December 31, 2015, did Chevron install a test platform and sampling port, consistent with BAAQMDs "Guidance for Construction of Particulate Sampling and Test Facilities" on the FCC to allow for supplemental testing of PM10 and PM2.5 pursuant to USEPA Test Method 201a/202? (COA D3) If no, please explain by entering a comment. If yes please attach proof.	Yes	On November 20, 2015, the Bay Area Air Quality Management District (BAAQMD) approved the Chevron Richmond Refinery's protocol for the FCC Plant Particulate Source Test Sampling Facility. Installation of the Test Sampling Facility was completed by the end of 2015.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.05	Are all required dust control BMPs being implemented consistently? (4.3-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	All required dust control BMPs are being implemented consistently as described in the Instructions to Contractors (ITC) document (attached for question 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.06	Has Chevron implemented the required PM emissions reduction practices for construction activities? (IM 4.3-3) If no, please explain by entering a comment.	Yes	Chevron has implemented improvement measure 4.3-3 through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.07	Have hazardous materials been stored only in City-approved locations? (4.13-2a) If no, please explain by entering a comment.	Yes	Hazardous materials are only stored in approved locations. This information was communicated to contractors in the "Instructions to Contractors" (ITC) document (see attachment to 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.08	Has hazardous waste been stored only in locations approved by the City? (4.13-3a) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that identifies acceptable waste storage locations. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Acceptable waste storage locations are identified in the Plan as referenced under MM 4.13-3a. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.09	Has all hazardous waste been transported off-site to an authorized facility by a licensed transporter within 90 days after the wastes were generated? (4.13-3b) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses hazardous waste shipments. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Hazardous waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3b. In accordance with standard Refinery hazardous waste management procedures, hazardous wastes will be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 90 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.10	Has all non-hazardous waste been transported off-site to an authorized facility by a licensed transporter within 180 days after the wastes were generated? (4.13-3c) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses hazardous waste shipments. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Hazardous waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3b. In accordance with standard Refinery hazardous waste management procedures, hazardous wastes will be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 180 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.11	Has Chevron reviewed and updated its programs and procedures to incorporate damage mechanism reviews and layers of protection analyses? (4.13-7c) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted its Reliability Program Annual Report in June 2017. please see question 19.1.40 for attachment. Chevron continues to work to implement its Reliability Program prior to the commencement of project operations. Also, please see Ninth Quarterly MM 4.13-13d Report, attached to question 19.1.35, for updates concerning Chevron's actions-to-date to implement its corrective actions following the August 6, 2012 fire, which include similar requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.12	Has Chevron reimbursed the City for any 3rd party experts retained by the City or CCHS to review PHAs, ISSAs, or LOPAs? (4.13-7d)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.13	Has Chevron trained construction workers in recognizing contamination and characterizing/managing any contaminated media? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous Waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an “Instructions to Contractors” (ITC) document to contractors (attached to 4.2.01) that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team’s regular meetings with contractor representatives includes a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages and contaminated media.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.14	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for the Castro/W-180 westbound ramps? (4.16-1, 3, 6) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held periodic traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical, which has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/W-580 westbound ramps.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.15	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Richmond Parkway/Gertrude Ave? (4.16-2, 5, 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Richmond Parkway/Gertrude Ave. intersection. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.16	For periods during which there is/will be both Project construction-related traffic combined with Other Project construction-related traffic, has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Castro/Hensley? (4.16-4, 8) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments, and maintains an ongoing dialogue with these Department representatives. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.17	For periods during which there is/will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for Castro Street/General Chemical Access been implemented? (4.16-7) If no, please explain by entering a comment. If yes please attach proof.	Yes	For the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction) Chevron worked closely with the City of Richmond Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.18	For periods during which there will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for County maintained intersections been implemented by Chevron in coordination with the City and County? (4.16-11) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.19	Has Chevron paid the full costs of modified traffic controls? (4.16-1, 2a, 4, 7, 11) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has paid all invoices to date for St. Francis Electrical, the City of Richmond's traffic management contractor, and is set to pay all future traffic costs.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.20	Has Chevron hired additional security services as necessary for the increase in personnel on-site during construction? (IM 4.14-1) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.21	Has Chevron entered into an agreement with the City fire department to ensure training on new equipment and the acquisition of any necessary heavy equipment? (IM 4.14-2) If No, please explain by entering a comment.	No	No additional equipment or training is required for the Project components. Fire protection systems have been designed taking into account the current equipping of Chevron Fire Department, all regional municipal departments, and all regional Petro-Chemical Association Organization departments.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.22	Has Chevron implemented one or more of the measures specified to further reduce construction traffic impacts by reducing construction-related traffic trips during AM and PM peak hours? (IM 4.16-1 through 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing the measures implemented.	Yes	Chevron and its contractors have implemented Improvement Measures IM4.16-1 through 9 as follows: IM 9a: Chevron has staggered the hours of operation of the craft labor so that the construction-related traffic is distributed over the peak and nonpeak hours of traffic operation. IM 9b: Chevron and its contractors have promoted the use of car sharing by the craft labor force. IM 9c: Chevron has coordinated the schedule among construction of the Modernization project, other projects and major facility turnarounds.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.23	Has Chevron communicated on a weekly basis to site management and City management regarding the week's construction plans and schedule? (4.13-2b) If No, please explain by entering a comment.	Yes	The Modernization Project Director meets weekly with the Refinery Leadership team regarding construction plans and schedule. Chevron's construction and permitting teams are in daily contact with the City's building inspection department concerning ongoing permitting and construction activities. In addition, the Refinery General Manager meets with City management monthly to review the Modernization project status and other matters.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.24	Has Chevron submitted monthly reports regarding safety training? (4.13-2b) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attachment MM 4.13-2b, which provides an overview of the training provided to contractors during demolition and construction activities. The training obligations have not changed since commencement of construction.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.25	Has Chevron implemented the Leak Response Protocol? (4.13-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation.	No	Chevron adopted and implemented its new Leak Response Protocol in 2013. The LRP provides guidance to Chevron's employees, including emergency responders and operators, on the appropriate steps to take in the event of a loss of containment. However, Leak Response Protocol training is not being provided to any contractors because the Leak Response Protocol is a Chevron-owned and executed process. The contractors' only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button if they are issued a refinery radio. Other than that they have no role in the Leak Response Protocol. See attachment to 19.1.24.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.26	Has Chevron implemented one or more of the specified NOx emissions reduction measures for construction activities? (4.3-2a) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2a through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.27	Has Chevron implemented one or more of the specified ROG emissions reduction measures for construction activities? (4.3-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2b through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.28	Has Chevron implemented the GHG mitigation measures specified for construction activities? (4.8-1a through 4.8-1k) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation efforts.	Yes	Chevron has implemented mitigation measures 4.8-1a through 4.8-1k through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.29	Have stockpiles of soil containing contaminants been kept covered with plastic sheeting? (4.9-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron has issued an A“Instructions to ContractorsA” (ITC) document to contractors that specifies the requirements of MM 4.9-2 (see section 2.0 of the ITC) including Best Management Practices. The Chevron Modernization Compliance Team verifies compliance with these requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.30	Has Chevron secured a permit amendment from BAAQMD reducing the annualized throughput limit of the SDA to 50,000 barrels/day? (4.3-5h) If no, please explain by entering a comment. If yes, please attach proof.	No	A permit application to amend the refinery's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels/day annual average was submitted on August 16, 2016. As far as Chevron is aware, BAAQMD is continuing to process this permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.31	Have there been any trees removed between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.32	If yes, has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous	Question	19.1.33	Has Chevron updated PHAs (including ISSAs, damage mechanism reviews, and LOPAs) for all new and modified Project components, and notified City and CCHS of their availability for review? (4.13-4a, 4.13-7b) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Pursuant to this requirement, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.34	Has Chevron funded the costs of a qualified expert in refinery safety to be selected and retained by County or City to review ISSAs, PHAs, LOPAs and other safety documentation (until such time as funded via RISO)? (4.13-13b) If no, please explain by entering a comment. If yes, please attach proof.	No	The County has selected the qualified expert. Chevron will pay invoices for this expert upon receipt.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.35	Has Chevron submitted quarterly reports to City (and copies to CCHS) on the status of corrective actions taken to implement agency recommendations resulting from August 2012 fire as well as corrective actions taken by Chevron as a result of its own investigation? (4.13-13d) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The ninth quarterly 4.13-13d report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.36	Has Chevron funded the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations? (4.13-13e) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron has not been invoiced for, nor notified of, the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.37	Has Chevron submitted its most current quarterly mitigation measure compliance report demonstrating compliance with the required NOx, ROG, and GHG measures? (4.3-2a, 2b, 4.8-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attached report

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.38	Has a third-party retained by Chevron quantified and verified the GHG emissions reductions achieved by the specified mitigation measures for construction activities? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.39	Has Chevron submitted an annual report for the most current reporting period verifying GHG emissions reductions from construction activities, reductions achieved through mitigation, and compliance with mitigation requirements? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	Chevron has not exceeded the significance threshold for GHG. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.40	Has Chevron submitted an annual Reliability Program report for the most current reporting period? (4.13-7a) If no, please explain by entering a comment. If yes please attach proof.	Yes	The first Reliability Program Annual Report was submitted on June 14, 2017. See attached

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.41	Has Chevron submitted annual compliance reports by March 31 of each year (starting after the first full year of construction) to the City regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s), including a comprehensive list of all findings, corrective actions identified/requested by the agencies, and status of implementation by Chevron of the corrective actions? (COA G2, H5) If no, please explain by entering a comment. If yes please attach proof.	N/A	Construction began on June 20, 2016. The first full year of construction will be 2017; therefore, the first report is due by March 31, 2018.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.42	Has Chevron submitted payment to the City to cover all staff/3rd party expert costs and fees for review and verification of compliance with all mitigation measures, improvement measures, and conditions of approval? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.43	Has Chevron submitted payment to the County to cover all County costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the County? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.44	Has Chevron submitted payment to the BAAQMD to cover all BAAQMD costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the BAAQMD? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	20.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz, for Jeff Hartwig	

Chevron Refinery - Chevron Modernization Project Construction Questionnaire 2017

Survey:	Chevron Modernization Project Construction Questionnaire 2017
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.40	Has Chevron submitted an annual Reliability Program report for the most current reporting period? (4.13-7a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted the initial MM 4.13-7a Reliability Program Report with the CUP Compliance Plan submittal of June 16, 2016, ahead of the start of construction, and provided an updated plan on October 7, 2016, which is attached. The next MM 4.13-7a Reliability Program Report is due on June 16, 2017.

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.02	Did Chevron report the release to all required agencies in accordance with applicable regulatory requirements? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.04	Have catch basin inlet protection and straw wattles been used throughout the solar project construction site? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.31	Have there been any trees removed between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.30	Has Chevron secured a permit amendment from BAAQMD reducing the annualized throughput limit of the SDA to 50,000 barrels/day? (4.3-5h) If no, please explain by entering a comment. If yes, please attach proof.	No	A permit application to amend the refinery's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels/day annual average was submitted on August 16, 2016. As far as Chevron is aware, BAAQMD is continuing to process this permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.07	Has awareness training been provided for all construction personnel? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Environmental awareness training was provided for Solar Project site personnel by CH2M-Hill, and records of this training are kept onsite at the refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.01	If Yes, did Chevron report the release within 48 hours to the City? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.04	Before December 31, 2015, did Chevron install a test platform and sampling port, consistent with BAAQMDs "Guidance for Construction of Particulate Sampling and Test Facilities" on the FCC to allow for supplemental testing of PM10 and PM2.5 pursuant to USEPA Test Method 201a/202? (COA D3) If no, please explain by entering a comment. If yes please attach proof.	Yes	On November 20, 2015, the Bay Area Air Quality Management District (BAAQMD) approved the Chevron Richmond Refinery's protocol for the FCC Plant Particulate Source Test Sampling Facility. Installation of the Test Sampling Facility was completed by the end of 2015.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR NIGHTTIME CONSTRUCTION SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GROUND DISTURBING CONSTRUCTION SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SOLAR PROJECT SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.32	If yes, has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.03	Has Chevron implemented mitigation measures 4.8-2a through 4.8-2c to reduce greenhouse gas emissions? (4.8-2) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CRUDE UNIT SECTION	INSTRUCTIONS	17.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 18.1.01)		

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.01	Have GHG emissions from Project construction activities for a year exceeded 10,000 MT CO2e, after accounting for reductions realized from mitigation measures? (4.8-1l)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.25	Has Chevron implemented the Leak Response Protocol? (4.13-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation.	No	Chevron adopted and implemented its new Leak Response Protocol in 2013. The LRP provides guidance to Chevron's employees, including emergency responders and operators, on the appropriate steps to take in the event of a loss of containment. However, Leak Response Protocol training is not being provided to any contractors because the Leak Response Protocol is a Chevron-owned and executed process. The contractors' only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button if they are issued a refinery radio. Other than that they have no role in the Leak Response Protocol. See attachment to 19.1.24.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.05	Have all additional BMPs required by RWQCB and BCDC for the solar site been implemented? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	No	The RWQCB has not required any additional BMPs at the Solar Project Site.

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	20.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz for Jeff Hartwig	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.11	Was a qualified biological monitor present during clearing and grubbing activities? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.01	Have nighttime construction noise mitigation requirements been implemented? (4.11-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	For the one night that had a crew performing work, no pile driving occurred, and since Chevron is not aware that the City received any verified noise complaints related to this activity, no additional mitigation obligations were triggered.

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	SCREENING QUESTION	14.1.01	Have there been any spills/releases of any hazardous substances?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.07	Have any human skeletal remains been discovered? (4.5-3)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.01	Did Chevron submit a SWPPP to RWQCB at least 10 days prior to commencing construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron submitted a SWPPP to the RWQCB as required. See the attached upload confirmation.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.27	Has Chevron implemented one or more of the specified ROG emissions reduction measures for construction activities? (4.3-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2b through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.01	Has the City or CCHS retained a third-party expert to audit compliance at the facility? (4.13-13c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.02	Did Chevron promptly manage, contain, treat, transport, and dispose of it? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.28	Has Chevron implemented the GHG mitigation measures specified for construction activities? (4.8-1a through 4.8-1k) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation efforts.	Yes	Chevron has implemented mitigation measures 4.8-1a through 4.8-1k through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.02

Is monitoring being conducted for discovery of archaeological resources during construction? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and are responsible for monitoring ground-disturbing activities.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR THIRD PARTY COMPLIANCE AUDIT SECTION	INSTRUCTIONS	15.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 16.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.13	Has Chevron trained construction workers in recognizing contamination and characterizing/managing any contaminated media? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an “Instructions to Contractors” (ITC) document to contractors (attached to 4.2.01) that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team’s regular meetings with contractor representatives includes a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages and contaminated media.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.03	If Yes, have administrative controls or different alarms been implemented? (4.11-1b) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.03	Have all archaeological resources discovered been managed as required? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	No archaeological resources have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.09	Has all hazardous waste been transported off-site to an authorized facility by a licensed transporter within 90 days after the wastes were generated? (4.13-3b) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses hazardous waste shipments. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Hazardous waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3b. In accordance with standard Refinery hazardous waste management procedures, hazardous wastes will be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 90 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.24	Has Chevron submitted monthly reports regarding safety training? (4.13-2b) If no, please explain by entering a comment. If yes please attach proof.	Yes	See attachment MM 4.13-2b, which provides an overview of the training provided to contractors during demolition and construction activities. The training obligations have not changed since commencement of construction.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.05	Have excavation plans been submitted, if required for all needed excavations? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date, so no excavation plans have been needed.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.03	Have standard construction BMPs and other project design features been implemented to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas during solar site construction? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Standard construction BMPs have been implemented by Marin Clean Energy's contractor, Cenergy, to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas. These BMPs are contained in the Refinery's Storm Water Pollution Prevention Plan. Specific documentation on BMP requirements was provided to Chevron by Cenergy on February 13, 2017 (see attached). The Refinery SWPPP is also attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.44	Has Chevron submitted payment to the BAAQMD to cover all BAAQMD costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the BAAQMD? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.08	Has hazardous waste been stored only in locations approved by the City? (4.13-3a) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that identifies acceptable waste storage locations. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Acceptable waste storage locations are identified in the Plan as referenced under MM 4.13-3a. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.10	Have all solar project exclusion fencing repairs and reinforcements been completed immediately? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Marin Clean Energy's contractor (Cenergy Power) performs repairs to the exclusionary fencing immediately upon discovering that there is damage.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GHG EMISSIONS SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.15	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Richmond Parkway/Gertrude Ave? (4.16-2, 5, 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Richmond Parkway/Gertrude Ave.intersection. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.2.01	If yes, has contaminated soil been handled and disposed of as required including covering with plastic sheeting of any soil stockpiles containing contaminants? (4.9-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an "Instructions to Contractors" document to contractors (attached to 4.2.01) that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in the ITC meetings. The Modernization Compliance Team's regular meetings with contractor representatives include a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages soils according to applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.37	Has Chevron submitted its most current quarterly mitigation measure compliance report demonstrating compliance with the required NOx, ROG, and GHG measures? (4.3-2a, 2b, 4.8-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has reported compliance with MM 4.3-2a, 4.3-2b, and 4.8-1 through the quarterly Antea compliance report. As stated in responses to questions 19.1.26, 19.1.27, and 19.1.28, based on the data to date generated by the Construction Emissions Module, there have been no exceedances of the thresholds of significance for NOx, ROG, or GHGs, respectively. Chevron continues to work with the City's contractor, Ramboll, to refine the Construction Emissions Module to ensure that the data generated is as accurate as possible. The latest update to the Construction Emissions Module was issued to Chevron on January 23, 2017. While Chevron continues to verify the accuracy of the module, the data from the Construction Emissions Module is available for review at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.03	Was a prompt cleanup conducted? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.12	Did a biological monitor pre-survey solar project disturbance areas to confirm absence of special-status small mammals? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	In June 2016, Chevron contracted with CH2M-Hill and H.T. Harvey & Associates to conduct bird nesting and bat habitat assessments. A copy of each report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.18	For periods during which there will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for County maintained intersections been implemented by Chevron in coordination with the City and County? (4.16-11) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.06	Has exclusion fencing been placed as required? (CGRP Solar Bio-1 and Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Exclusionary fencing has been installed along the work site to prevent small mammals from entering the site. A report issued by CH2M-Hill confirming installation of this exclusionary fencing is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.17	For periods during which there is/will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for Castro Street/General Chemical Access been implemented? (4.16-7) If no, please explain by entering a comment. If yes please attach proof.	Yes	For the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction), Chevron worked closely with the City of Richmond, Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.12	Has Chevron reimbursed the City for any 3rd party experts retained by the City or CCHS to review PHAs, ISSAs, or LOPAs? (4.13-7d)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.03	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 18.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.04	Has Chevron provided its annual contribution to fund the Community Greenhouse Gas Reduction Measures? (4.8-2e) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The CGGRP contribution is included in the funding provided under the ECIA. Chevron made the second annual payment on May 19, 2016, with check number 0025621530. A copy of this check is available upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.14	Is a maximum speed limit of 25 mph imposed on construction and maintenance vehicles for solar site construction? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The maximum speed limit anywhere in the Refinery is 25 mph and signs are posted in numerous locations. Speed limits are vigorously enforced by the Refinery's Emergency Services Department. The maximum speed limit has been communicated to MCE and their contractor, Cenergy.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.01	Has Chevron submitted closed permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.43	Has Chevron submitted payment to the County to cover all County costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the County? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.20	Has Chevron hired additional security services as necessary for the increase in personnel on-site during construction? (IM 4.14-1) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.42	Has Chevron submitted payment to the City to cover all staff/3rd party expert costs and fees for review and verification of compliance with all mitigation measures, improvement measures, and conditions of approval? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.21	Has Chevron entered into an agreement with the City fire department to ensure training on new equipment and the acquisition of any necessary heavy equipment? (IM 4.14-2) If No, please explain by entering a comment.	No	No additional equipment or training is required for the Project components. Fire protection systems have been designed taking into account the current equipping of Chevron Fire Department, all regional municipal departments, and all regional Petro-Chemical Association Organization departments.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	SCREENING QUESTION	8.1.01	Has construction of the 2MW (or other) solar project commenced?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.02	If yes, has Chevron implemented one or more of the specified measures to reduce GHG emissions to below 10,000 MT CO ₂ e? (4.8-11)If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.26	Has Chevron implemented one or more of the specified NOx emissions reduction measures for construction activities? (4.3-2a) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.	Yes	Chevron has implemented mitigation measure 4.3-2a through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.08	If human skeletal remains have been discovered, have they been managed as required? (4.5-3) If No, please explain by entering a comment. If Yes, please attach proof.	N/A	No human skeletal remains have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.34	Has Chevron funded the costs of a qualified expert in refinery safety to be selected and retained by County or City to review ISSAs, PHAs, LOPAs and other safety documentation (until such time as funded via RISO)? (4.13-13b) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron will fund this expert as soon as the County implements its resource plan.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.04	Was training regarding discovery of paleontological resources provided to workers before ground disturbing activities began? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has issued an “Instructions to Contractors” (ITC) document (attached to 4.2.01) to contractors that specifies the requirements of MM 4.5-2 (see section 2.0 of the ITC). The initial resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary. Chevron has also retained CH2M Hill to provide a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines §15064.5.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.02	Have BMPs from the SWPPP been implemented during construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the Instructions to Contractor (ITC) document (attached to 4.2.01) contains the required SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that BMPs are in place and functioning. A copy of the current ITC document is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.19	Has Chevron paid the full costs of modified traffic controls? (4.16-1, 2a, 4, 7, 11) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has paid several invoices to St. Francis Electrical, the City of Richmond's traffic management contractor, and is set to pay all future traffic costs. .

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.3.01	Has any contaminated soil been discovered during Project construction? (4.13-10a)	No	No contaminated soils requiring agency reporting have been discovered. See also the response to question 19.1.13.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.07	Have hazardous materials been stored only in City-approved locations? (4.13-2a) If no, please explain by entering a comment.	Yes	Hazardous materials are only stored in approved locations. This information was communicated to contractors in the Instructions to Contractors (ITC) document (see attachment to 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SPILLS OR RELEASES SECTION	INSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.01	If Yes, did Chevron report the discovery to the City and other agencies? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.02	If Yes, Has Chevron reimbursed the City or CCHS for these fees/expenses? (4.13-13c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	SCREENING QUESTION	18.1.01	Has the 2017 turnaround of the crude unit occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.39	Has Chevron submitted an annual report for the most current reporting period verifying GHG emissions reductions from construction activities, reductions achieved through mitigation, and compliance with mitigation requirements? (4.8-11) If no, please explain by entering a comment. If yes please attach proof.	N/A	This obligation is triggered once Chevron has completed a full year of construction, which will be in June 2017. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.29	Have stockpiles of soil containing contaminants been kept covered with plastic sheeting? (4.9-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron has issued an “Instructions to Contractors” (ITC) document to contractors that specifies the requirements of MM 4.9-2 (see section 2.0 of the ITC) including Best Management Practices. The Chevron Modernization Compliance Team verifies compliance with these requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.23	Has Chevron communicated on a weekly basis to site management and City management regarding the week's construction plans and schedule? (4.13-2b) If No, please explain by entering a comment.	Yes	The Modernization Project Director meets weekly with the Refinery Leadership team regarding construction plans and schedule. Chevron's construction and permitting teams are in daily contact with the City's building inspection department concerning ongoing permitting and construction activities. In addition, the Refinery General Manager meets with City management monthly to review the Modernization project status and other matters.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.14	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for the Castro/W-180 westbound ramps? (4.16-1, 3, 6) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meetings with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/W-580 westbound ramps.

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.01

Was training regarding discovery of archaeological artifacts/resources provided to workers before ground disturbing activities began? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 8, 2016. Additional sessions will be held as necessary. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and are responsible for monitoring ground-disturbing activities.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.16	For periods during which there is/will be both Project construction-related traffic combined with Other Project construction-related traffic, has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Castro/Hensley? (4.16-4, 8) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	For the Fall 2016 and Winter 2017 major Refinery turnarounds (which occurred after the start of Modernization Project construction), Chevron worked closely with the City of Richmond, Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.02	Has there been a verified complaint regarding backup alarm noise during nighttime construction activities?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.13	Has contractor education included species identification and protection information? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The Environmental Awareness training provided to the Solar Project by CH2M-Hill reviewed Project-relevant species issues. Also see response to item 8.2.07.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.06	Have all paleontological resources discovered been managed as required? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.02	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 18.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.22	Has Chevron implemented one or more of the measures specified to further reduce construction traffic impacts by reducing construction-related traffic trips during AM and PM peak hours? (IM 4.16-1 through 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing the measures implemented.	Yes	Chevron and its contractors have implemented Improvement Measures IM4.16-1 through 9 as follows: IM 9a: Chevron has staggered the hours of operation of the craft labor so that the construction -related traffic is distributed over the peak and nonpeak hours of traffic operation. IM 9b: Chevron and its contractors have promoted the use of car sharing by the craft labor force. IM 9c: Chevron has coordinated the schedule among construction of the modernization project, other projects and major facility turnarounds.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.02	Did Chevron update the Facility emergency response and evacuation plans to account for the presence of the solar site? (CGRP Solar Haz-2) If no, please explain by entering a comment. If yes, please attach proof.	No	Information concerning compliance with MM CGRP Solar Haz-2 was submitted to the City of Richmond as Transmittal #7 on February 2, 2016 (copy attached). This transmittal explains that the Landfill 15 and Fertilizer Pond (solar project) sites are not included in the Refinery Emergency Response Plan (ERP) because those sites do not include any processes regulated by either CalARP or the RISO. Construction of the MCE Solar Project will not alter this conclusion because the solar PV panels and auxiliary equipment are not processes covered by the CalARP or the RISO. Since the Refinery's existing ERP does not cover the Solar Project site and the Solar Project will not trigger the requirements of CalARP or RISO, and since Chevron is leasing the site to Marin Clean Energy, who will facilitate all emergency activities at the site, the Refinery's EPA do not require updating pursuant to MM CGRP Solar Haz-2.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.03	Did Chevron use authorized remediation contractors to manage contaminated media discovered during construction? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEH3.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION. Proceed to 2.01.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.06	Has Chevron implemented the required PM emissions reduction practices for construction activities? (IM 4.3-3) If no, please explain by entering a comment.	Yes	Chevron has implemented improvement measure 4.3-3 through the "Instructions to Contractors" (ITC) document. Please see attachment to 4.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	SCREENING QUESTION	12.1.01	Has Project construction included any nighttime construction activities?	Yes	A crew worked one night only in order to complete work during closure of a refinery road.

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous	Question	19.1.33	Has Chevron updated PHAs (including ISSAs, damage mechanism reviews, and LOPAs) for all new and modified Project components, and notified City and CCHS of their availability for review? (4.13-4a, 4.13-7b) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Pursuant to this requirement, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CONTAMINATED SOIL SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.09	Has a construction monitor/environmental inspector confirmed exclusion fence integrity on a daily basis? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Cenergy Power is constructing the Solar Project for Marin Clean Energy (MCE). Cenergy's site manager conducts daily inspections of the small mammal fencing and SWPPP BMPs.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.08	Has bright-colored fencing and signage been installed to identify and restrict construction within environmentally sensitive areas? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The required bright-colored fencing and signage has been installed by Marin Clean Energy's contractor (Cenergy) around an area of known needle grass.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.03	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) If no, please explain by entering a comment. If yes please attach proof.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.38	Has a third-party retained by Chevron quantified and verified the GHG emissions reductions achieved by the specified mitigation measures for construction activities? (4.8-11) If no, please explain by entering a comment. If yes please attach proof.	N/A	This obligation is triggered once Chevron has completed a full year of construction, which will be in June 2017. Please see the Attachment to 19.1.37 for an update concerning current construction emissions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.36	Has Chevron funded the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations? (4.13-13e) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron has not been invoiced for, nor notified of, the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.01	If yes, did Chevron submit to City and RWQCB construction plans for the solar project prior to commencing construction? (CGRP Solar Bio 1,2, and Haz 1,2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.05	Are all required dust control BMPs being implemented consistently? (4.3-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	All required dust control BMPs are being implemented consistently as described in the Instructions to Contractors (ITC) document (attached for question 4.2.01).

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.35	Has Chevron submitted quarterly reports to City (and copies to CCHS) on the status of corrective actions taken to implement agency recommendations resulting from August 2012 fire as well as corrective actions taken by Chevron as a result of its own investigation? (4.13-13d) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The eighth quarterly 4.13-13d report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	SCREENING QUESTION	4.1.01	Have any ground disturbing construction activities occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.1.01	Has Project construction generated any contaminated soil?	Yes	The Project has generated contaminated soil. Identification, management, storage, and shipment of this contaminated soil is managed by the Refinery's existing Hazardous Waste Group in accordance with applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.11	Has Chevron reviewed and updated its programs and procedures to incorporate damage mechanism reviews and layers of protection analyses? (4.13-7c) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted its Annual Reliability Program Report in June 2016 with further updates provided in October 2016- please see question 19.1.40 for attachment. Chevron continues to work to implement its Reliability Program prior to the commencement of project operations. Also, please see Eighth Quarterly MM 4.13-13d Report, attached to question 19.1.35, for updates concerning Chevron's actions-to-date to implement its corrective actions following the August 6, 2012 fire, which include similar requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.41	Has Chevron submitted annual compliance reports by March 31 of each year (starting after the first full year of construction) to the City regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s), including a comprehensive list of all findings, corrective actions identified/requested by the agencies, and status of implementation by Chevron of the corrective actions? (COA G2, H5) If no, please explain by entering a comment. If yes please attach proof.	N/A	Construction began on June 20, 2016. The first full year of construction will be 2017; therefore, the first report is due by March 31, 2018.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.10	Has all non-hazardous waste been transported off-site to an authorized facility by a licensed transporter within 180 days after the wastes were generated? (4.13-3c) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses hazardous waste shipments. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document (see 4.2.01). Hazardous waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3b. In accordance with standard Refinery hazardous waste management procedures, hazardous wastes will be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 180 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Chevron Refinery - Chevron Modernization Project Construction Questionnaire 2016

Survey:	Chevron Modernization Project Construction Questionnaire 2016
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR THIRD PARTY COMPLIANCE AUDIT SECTION	INSTRUCTIONS	15.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 16.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.01	Has the City or CCHS retained a third-party expert to audit compliance at the facility? (4.13-13c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Third Party Compliance Audit	Question	16.1.02	If Yes, Has Chevron reimbursed the City or CCHS for these fees/expenses? (4.13-13c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CRUDE UNIT SECTION	INSTRUCTIONS	17.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 18.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	SCREENING QUESTION	18.1.01	Has the 2017 turnaround of the crude unit has occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.01	Has Chevron submitted closed permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.02	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 18.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Crude Unit	Question	18.2.03	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see attachment to 18.2.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.01	Did Chevron submit a SWPPP to RWQCB at least 10 days prior to commencing construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron submitted the Refinery SWPPP to the RWQCB on September 1, 2015 and submitted documentation of that submittal to the City of Richmond on March 25, 2016.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.02	Have BMPs from the SWPPP been implemented during construction? (4.9-1a) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the Instructions to Contractor (ITC) document contains the required SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that BMPs are in place and functioning.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.03	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) If no, please explain by entering a comment. If yes please attach proof.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.04	Before December 31, 2015, did Chevron install a test platform and sampling port, consistent with BAAQMDs "Guidance for Construction of Particulate Sampling and Test Facilities" on the FCC to allow for supplemental testing of PM10 and PM2.5 pursuant to USEPA Test Method 201a/202? (COA D3) If no, please explain by entering a comment. If yes please attach proof.	Yes	On November 20, 2015, the Bay Area Air Quality Management District (BAAQMD) approved the Chevron Richmond Refinery's protocol for the FCC Plant Particulate Source Test Sampling Facility. Installation of the Test Sampling Facility was completed by the end of 2015.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.05	Are all required dust control BMPs being implemented consistently? (4.3-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron issued the BMPs for the Project to contractors on April 10, 2016. Appendix A of the Instructions to Contractor (ITC) document contains the required SWPPP information and BMPs. Contractors have been provided with copies of the Refinery SWPPP. Chevron has conducted regular inspections to ensure that dust control BMPs are in place and functioning. Compliance with MM 4.3-1a, -1b, and 1j are recorded in daily field logs

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.06	Has Chevron implemented the required PM emissions reduction practices for construction activities? (IM 4.3-3) If no, please explain by entering a comment.	Yes	Signage has been posted at construction site entrances and idling limit requirements communicated to contractors in the “Instructions to Contractors” (ITC) document. Chevron has compiled construction equipment data to determine that fleet averages exceed targets for NOx and PM.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.07	Have hazardous materials been stored only in City-approved locations? If no, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.08	Has hazardous waste been stored only in locations approved by the City? (4.13-3a) If no, please explain by entering a comment.	Yes	Chevron has developed a “Waste Diversion Plan/Debris Recovery Plan” (Plan) that identifies acceptable waste storage locations. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the “Instructions to Contractors” document. Acceptable waste storage locations are identified in the Plan as referenced under MM 4.13-3a. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.09	Has all hazardous waste been transported off-site to an authorized facility by a licensed transporter within 90 days after the wastes were generated? (4.13-3b) If no, please explain by entering a comment.	Yes	Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses hazardous waste shipments. The Plan was approved by the City of Richmond on May 17, 2016 and is attached to the "Instructions to Contractors" document. Hazardous waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3b. In accordance with standard Refinery hazardous waste management procedures, hazardous wastes will be transported off-site to an authorized disposal, treatment, or recycling facility by a transportation company with appropriate federal and state transporter licenses within 90 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous

Question

19.1.10

Has all non-hazardous waste been transported off-site to an authorized facility by a licensed transporter within 180 days after the wastes were generated? (4.13-3c) If no, please explain by entering a comment.

Yes

Chevron has developed a "Waste Diversion Plan/Debris Recovery Plan" (Plan) that addresses non-hazardous, demolition, and construction waste shipments. The Plan was approved by the City of Richmond on May 17, 2016, and is attached to the "Instructions to Contractors" document. Non-hazardous demolition and construction waste shipments are managed by the Refinery's Hazardous Waste Group as referenced in the Plan under MM 4.13-3c. In accordance with standard Refinery waste management procedures, modified for purposes of complying with the MM for Project non-hazardous demolition and construction wastes, Chevron will ensure that these wastes will be transported off-site to an authorized disposal, recycling, or reuse facility by a transportation company with required transporter licenses within 180 days after the wastes are generated. Contractors have been trained on the Plan and are responsible for complying with all of its provisions.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.11	Has Chevron reviewed and updated its programs and procedures to incorporate damage mechanism reviews and layers of protection analyses? (4.13-7c) If no, please explain by entering a comment. If yes please attach proof.	Yes	Please see Seventh Quarterly MM 4.13-13d Report and Reliability Program Report, attached to 19.1.35, for an update concerning Chevron's actions-to-date to implement this requirement.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.12	Has Chevron reimbursed the City for any 3rd party experts retained by the City or CCHS to review PHAs, ISSAs, or LOPAs? (4.13-7d)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.13	Has Chevron trained construction workers in recognizing contamination and characterizing/managing any contaminated media? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an “Instructions to Contractors” (ITC) document to contractors that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team’s regular meetings with contractor representatives includes a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages and contaminated media.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.14	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for the Castro/W-180 westbound ramps? (4.16-1, 3, 6) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meeting with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Castro/W-580 westbound ramps.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.15	Has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Richmond Parkway/Gertrude Ave? (4.16-2, 5, 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	Chevron has held several traffic coordination and planning meeting with representatives from the City of Richmond Engineering, Police, and Traffic Departments. The purpose of these meetings has been to plan for implementation of the modified traffic controls. The City has contracted with St. Francis Electrical who has prepared signal timing modifications and other changes to ensure smooth traffic flow for the Richmond Parkway/Gertrude Ave. intersection. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.16	For periods during which there is/will be both Project construction-related traffic combined with Other Project construction-related traffic, has Chevron coordinated with the City and CalTrans to implement modified traffic controls at peak PM hours per the specified methods for Castro/Hensley? (4.16-4, 8) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	For the Fall 2016 major Refinery turnaround (which occurred after the start of Modernization Project construction), Chevron worked closely with the City of Richmond, Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.17	For periods during which there is/will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for Castro Street/General Chemical Access been implemented? (4.16-7) If no, please explain by entering a comment. If yes please attach proof.	Yes	For the Fall 2016 major Refinery turnaround (which occurred after the start of Modernization Project construction), Chevron worked closely with the City of Richmond, Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods. See also attachment to 19.1.22.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.18	For periods during which there will be Project construction-related traffic combined with Other Project construction-related traffic combined with traffic related to a major turnaround, have the traffic measures specified for County maintained intersections been implemented by Chevron in coordination with the City and County? (4.16-11) If No, please explain by entering a comment. If Yes, please enter a comment summarizing coordination.	Yes	For the Fall 2016 major Refinery turnaround (which occurred after the start of Modernization Project construction), Chevron worked closely with the City of Richmond, Engineering, Police, and Traffic Departments and implemented traffic control measures that ensured smooth traffic flow during the peak arrival and departure periods.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.19	Has Chevron paid the full costs of modified traffic controls? (4.16-1, 2a, 4, 7, 11) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has arranged to pay the City of Richmond's traffic consultant, St. Francis Electric, directly for the traffic signal modifications and other changes that were made during the Fal 2016 major turnaround, and is set to pay all future traffic control costs.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.20	Has Chevron hired additional security services as necessary for the increase in personnel on-site during construction? (IM 4.14-1) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.21	Has Chevron entered into an agreement with the City fire department to ensure training on new equipment and the acquisition of any necessary heavy equipment? (IM 4.14-2) If No, please explain by entering a comment.	No	No additional equipment or training is required for the Project components. Fire protection systems have been designed taking into account the current equipping of Chevron Fire Dept., all regional municipal departments, and all regional Petro-Chemical Association Organization departments.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.22	Has Chevron implemented one or more of the measures specified to further reduce construction traffic impacts by reducing construction-related traffic trips during AM and PM peak hours? (IM 4.16-1 through 9) If No, please explain by entering a comment. If Yes, please enter a comment summarizing the measures implemented.	N/A	Construction traffic from the project has yet to reach the level of trips during AM and PM peak hours that trigger this mitigation measure. Chevron has consulted with the City Traffic and Engineering Departments to determine priority for timing of implementation of this measure, once triggered. Please see attached correspondence with the City.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.23	Has Chevron communicated on a weekly basis to site management and City management regarding the week's construction plans and schedule? (4.13-2b) If No, please explain by entering a comment.	Yes	The Modernization Project director meets weekly with the Refinery Leadership team regarding construction plans and schedule. Chevron's construction and permitting teams are in daily contact with the City's building inspection department concerning ongoing permitting and construction activities. In addition, the Refinery Manager meets with City management monthly to review the Modernization projects status, and other matters.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.24	Has Chevron submitted monthly reports regarding safety training? (4.13-2b) If no, please explain by entering a comment. If yes please attach proof.	No	See attachment MM 4.13 2b, which provides an overview of the training provided to contractors during demolition and construction activities. This information has previously been provided to the City as part of Chevron's CUP/MMRP Compliance Plan for Construction, submitted in June 2016 and updated in October 2016. The training obligations have not changed since commencement of construction.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.25	Has Chevron implemented the Leak Response Protocol? (4.13-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation.	No	Chevron adopted and implemented its new Leak Response Protocol in 2013. The LRP provides guidance to Chevron's employees, including emergency responders and operators, on the appropriate steps to take in the event of a loss of containment. However, Leak Response Protocol training is not being provided to any contractors because the Leak Response Protocol is a Chevron-owned and -executed process. The contractors only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button if they are issued a refinery radio. Other than that they have no role in the Leak Response Protocol. See attachment to 19.1.24

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous

Question

19.1.26

Has Chevron implemented one or more of the specified NOx emissions reduction measures for construction activities? (4.3-2a) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.

Yes

NOx emissions are being tracked through the construction period, and based on the construction emissions data generated by the Construction Emissions Module, Chevron has not exceeded the daily average NOx threshold of significance. Mitigations are being implemented as follows-Chevron has issued an "Instructions to Contractors" (ITC) document to contractors that specifies the requirements of MM 4.3-2a (see section 2.0 of the ITC). 1. Contractors have been actively working with Chevron to maintain a list of all construction vehicles and equipment that will be used on the Project, including the use of lower emitting construction equipment. 2. Contractors have encouraged their workforce to carpool or otherwise reduce automobile use in daily commutes. 3. Chevron and its contractors have been actively working to use facility electrical power to minimize the number of portable generators during the construction period. Chevron will consider other mitigation measures to offset construction-period NOx emissions to less-than-significant

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous

Question

19.1.27

Has Chevron implemented one or more of the specified ROG emissions reduction measures for construction activities? (4.3-2b) If No, please explain by entering a comment. If Yes, please enter a comment describing what has been implemented and how.

Yes

ROG emissions are being tracked through the construction period, and based on the construction emissions data generated by the Construction Emissions Module, Chevron has not exceeded the daily average ROG threshold of significance. Mitigations are being implemented as follows-Chevron has issued an "Instructions to Contractors" (ITC) document to contractors that specifies the requirements of MM 4.3-2b (see section 2.0 of the ITC). 1. Contractors have been actively working with Chevron to maintain a list of all construction vehicles and equipment that will be used on the Project, including the use of lower emitting construction equipment. 2. Contractors have encouraged their workforce to carpool or otherwise reduce automobile use in daily commutes. Chevron will consider other mitigation measures to offset construction-period ROG emissions to less-than-significant levels.

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous

Question

19.1.28

Has Chevron implemented the GHG mitigation measures specified for construction activities? (4.8-1a through 4.8-1k) If No, please explain by entering a comment. If Yes, please enter a comment describing implementation efforts.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document to contractors that specifies these requirements with compliance demonstrations. The Chevron Modernization Compliance Team verifies compliance with these requirements, including

- 1. The speed limit in the refinery on paved roads is 15 mph with a few exceptions. This limit is vigorously enforced by the Refinery Emergency Services Department.
2. Chevron has installed signage for construction workers at all access point stating the idling time limits.
3. Contractors provide documentation on construction equipment maintenance and tuning, and on certified visible emissions evaluations.
4. Construction fleets are being managed to achieve 20% NOx and 45% PM reductions.
5. At entry gates to the Refinery, security guards are providing a handout to all commercial, delivery, and construction vehicle drivers entering the Refinery directing drivers to limit idling time to 5 minutes.

Based on the construction emissions data generated to date, Chevron has not exceeded the threshold of significance.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.29	Have stockpiles of soil containing contaminants been kept covered with plastic sheeting? (4.9-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Chevron has issued an A“Instructions to ContractorsA” (ITC) document to contractors that specifies the requirements of MM 4.9-2 (see section 2.0 of the ITC) including Best Management Practices. The Chevron Modernization Compliance Team verifies compliance with these requirements.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.30	Has Chevron secured a permit amendment from BAAQMD reducing the annualized throughput limit of the SDA to 50,000 barrels/day? (4.3-5h) If no, please explain by entering a comment. If yes, please attach proof.	No	A permit application to amend the refinery's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels/day annual average was submitted on August 16. As far as Chevron is aware, BAAQMD is continuing to process this permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.31	Have there been any trees removed between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.32	If yes, has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment

Miscellaneous	Question	19.1.33	Has Chevron updated PHAs (including ISSAs, damage mechanism reviews, and LOPAs) for all new and modified Project components, and notified City and CCHS of their availability for review? (4.13-4a, 4.13-7b) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Pursuant to this requirement, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.34	Has Chevron funded the costs of a qualified expert in refinery safety to be selected and retained by County or City to review ISSAs, PHAs, LOPAs and other safety documentation (until such time as funded via RISO)? (4.13-13b) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron will fund this expert as soon as the County is able to select and retain this person.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.35	Has Chevron submitted quarterly reports to City (and copies to CCHS) on the status of corrective actions taken to implement agency recommendations resulting from August 2012 fire as well as corrective actions taken by Chevron as a result of its own investigation? (4.13-13d) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The seventh quarterly update to the 4.13.-13d report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.36	Has Chevron funded the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations? (4.13-13e) If no, please explain by entering a comment. If yes, please attach proof.	No	Chevron has not been invoiced for, nor notified of, the City's coordination with CSB, CalOSHA, BAAQMD, and EPA on their investigations.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.37	Has Chevron submitted its most current quarterly mitigation measure compliance report demonstrating compliance with the required NOx, ROG, and GHG measures? (4.3-2a, 2b, 4.8-1) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has reported compliance with MM 4.3-2a, 4.3-2b, and 4.8-1 through the quarterly Antea compliance report. As stated in responses to questions 19.1.26, 19.1.27, and 19.1.28, based on the data to date generated by the Construction Emissions Module, there have been no exceedances of the thresholds of significance for NOx, ROG, or GHGs, respectively. Chevron continues to work with the City's contractor, Ramboll, to refine the Construction Emissions Module to ensure that the data generated is as accurate as possible. The latest update to the Construction Emissions Module was issued to Chevron on January 23, 2017. While Chevron continues to verify the accuracy of the module, the data from the Construction Emissions Module is available for review at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.38	Has a third-party retained by Chevron quantified and verified the GHG emissions reductions achieved by the specified mitigation measures for construction activities? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	See response to question 19.1.28 that Chevron did not exceed the threshold of significance for GHG emissions in 2016.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.39	Has Chevron submitted an annual report for the most current reporting period verifying GHG emissions reductions from construction activities, reductions achieved through mitigation, and compliance with mitigation requirements? (4.8-1l) If no, please explain by entering a comment. If yes please attach proof.	N/A	See response to question 19.1.28 that Chevron did not exceed the threshold of significance for GHG emissions in 2016.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.40	Has Chevron submitted an annual Reliability Program report for the most current reporting period? (4.13-7a) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted the initial MM 4.13-7a Reliability Program Report with the CUP Compliance Plan submittal of June 16, 2016, ahead of the start of the start of consutrction, and provided an updated plan on October 7, 2016, which is attached.The next MM 4.13-7a Reliability Program Report is due on June 16, 2017.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.41	Has Chevron submitted annual compliance reports by March 31 of each year (starting after the first full year of construction) to the City regarding the status of any ongoing agency investigations resulting from the August 2012 fire, including EPA, CSB, Cal/OSHA, BAAQMD, and the County, including County safety audit(s) and safety culture audit(s), including a comprehensive list of all findings, corrective actions identified/requested by the agencies, and status of implementation by Chevron of the corrective actions? (COA G2, H5) If no, please explain by entering a comment. If yes please attach proof.	N/A	Construction began on June 20, 2016. The first full year of construction will be 2017; therefore, the first report is due by March 31, 2018.

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.42	Has Chevron submitted payment to the City to cover all staff/3rd party expert costs and fees for review and verification of compliance with all mitigation measures, improvement measures, and conditions of approval? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEHS.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION. Proceed to 2.01.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GROUND DISTURBING CONSTRUCTION SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	SCREENING QUESTION	4.1.01	Have any ground disturbing construction activities occurred?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.01

Was training regarding discovery of archaeological artifacts/resources provided to workers before ground disturbing activities began? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and are responsible for monitoring

Category	Subcategory	Question No.	Question	Answer	Comment

Ground Disturbing
Construction Questions

Question

4.2.02

Is monitoring being conducted for discovery of archaeological resources during construction? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.

Yes

Chevron has issued an "Instructions to Contractors" (ITC) document (attached to 4.2.01) to contractors that specifies the requirements of MM 4.5-1 (see section 2.0 of the ITC). The initial cultural resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary. Chevron has also retained the consulting firm CH2M Hill to provide a qualified archaeologist who will be immediately engaged in the event that any prehistoric or historic subsurface cultural resources, such as structural features or unusual amounts of bone or shell, artifacts, human remains, architectural remains (such as bricks or other foundation elements), or historic archaeological artifacts (such as antique glass bottles, ceramics, horseshoes, etc.) are discovered during ground-disturbing activities. Chevron Construction Representatives serve as the initial point of contact for contractors who encounter any cultural resources and are responsible for monitoring

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.03	Have all archaeological resources discovered been managed as required? (4.5-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	No archaeological resources have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.04	Was training regarding discovery of paleontological resources provided to workers before ground disturbing activities began? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron has issued an “Instructions to Contractors” (ITC) document to contractors that specifies the requirements of MM 4.5-2 (see section 2.0 of the ITC). The initial resources training of contractor supervisors and environmental, health and safety contacts was held on April 18, 2016. Additional sessions will be held as necessary. Chevron has also retained CH2M Hill to provide a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines § 15064.5

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.05	Have excavation plans been submitted, if required for all needed excavations? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date, so no excavation plans have been needed.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.06	Have all paleontological resources discovered been managed as required? (4.5-2) If no, please explain by entering a comment. If yes please attach proof.	N/A	No paleontological discoveries have been made to date.

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.07	Have any human skeletal remains been discovered? (4.5-3)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Ground Disturbing Construction Questions	Question	4.2.08	If human skeletal remains have been discovered, have they been managed as required? (4.5-3) If No, please explain by entering a comment. If Yes, please attach proof.	N/A	No human skeletal remains have been discovered to date.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GHG EMISSIONS SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.01	Have GHG emissions from Project construction activities for a year exceeded 10,000 MT CO ₂ e, after accounting for reductions realized from mitigation measures? (4.8-1l)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.02	If yes, has Chevron implemented one or more of the specified measures to reduce GHG emissions to below 10,000 MT CO ₂ e? (4.8-1l)If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.03	Has Chevron implemented mitigation measures 4.8-2a through 4.8-2c to reduce greenhouse gas emissions? (4.8-2) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GHG Emissions	Question	6.1.04	Has Chevron provided its annual contribution to fund the Community Greenhouse Gas Reduction Measures? (4.8-2e) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The CGGRP contribution is included in the funding provided under the ECIA. Chevron made the initial payment on June, 1, 2015. A second annual payment was made on May 19, 2016, with check number 0025621530. A copy of this check is available upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SOLAR PROJECT SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	SCREENING QUESTION	8.1.01	Has construction of the 2MW (or other) solar project commenced?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.01	If yes, did Chevron submit to City and RWQCB construction plans for the solar project prior to commencing construction? (CGRP Solar Bio 1,2, and Haz 1,2) If no, please explain by entering a comment. If yes please attach proof.	Yes	Chevron submitted plans and information concerning the Solar Project and received approval from the RWQCB on December 3, 2015 (copy of approval letter attached). Under the terms of the lease agreement between Marin Clean Energy (MCE) and Chevron, MCE is responsible for submitting all plans and building permit requests directly to the City of Richmond.

Category	Subcategory	Question No.	Question	Answer	Comment

Solar Project	Question	8.2.02	Did Chevron update the Facility emergency response and evacuation plans to account for the presence of the solar site? (CGRP Solar Haz-2) If no, please explain by entering a comment. If yes, please attach proof.	No	Information concerning compliance with MM CGRP Solar Haz-2 was submitted to the City of Richmond as Transmittal #7 on February 2, 2016 (copy attached). This transmittal explains that the Landfill 15 and Fertilizer Pond (solar project) sites are not included in the Refinery Emergency Response Plan (ERP) because those sites do not include any processes regulated by either CalARP or the RISO. Construction of the MCE Solar Project will not alter this conclusion because the solar PV panels and auxiliary equipment are not processes covered by the CalARP or the RISO. Since the Refinery's existing ERP does not cover the Solar Project site and the Solar Project will not trigger the requirements of CalARP or RISO, and since Chevron is leasing the site to Marin Clean Energy, who will facilitate all emergency activities at the site, the Refinery's EPA do not require updating pursuant to MM CGRP Solar Haz-2.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.03	Have standard construction BMPs and other project design features been implemented to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas during solar site construction? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Standard construction BMPs have been implemented by Marin Clean Energy's contractor, Cenergy, to treat and minimize discharge of soil and other pollutants into the marsh and vegetated areas. These BMPs are contained in the Refinery's Storm Water Pollution Prevention Plan. Specific guidance on BMP requirements was provided to MCE by Chevron on April 4, 2016 (see attached).

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.04	Have catch basin inlet protection and straw wattles been used throughout the solar project construction site? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.05	Have all additional BMPs required by RWQCB and BCDC for the solar site been implemented? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	No	The RWQCB has not required any additional BMPs at the Solar Project Site.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.06	Has exclusion fencing been placed as required? (CGRP Solar Bio-1 and Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Exclusionary fencing has been installed along the work site to prevent small mammals from entering the site. A report issued by CH2M-Hill confirming installation of this exclusionary fencing is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.07	Has awareness training been provided for all construction personnel? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Environmental awareness training was provided for Solar Project site personnel by CH2M-Hill.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.08	Has bright-colored fencing and signage been installed to identify and restrict construction within environmentally sensitive areas? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The required bright-colored fencing and signage has been installed by Marin Clean Energy's contractor (Cenergy) around an area of known needle grass.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.09	Has a construction monitor/environmental inspector confirmed exclusion fence integrity on a daily basis? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Cenergy Power is constructing the Solar Project for Marin Clean Energy (MCE). Cenergy's site manager conducts daily inspections of the small mammal fencing and SWPPP BMPs.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.10	Have all solar project exclusion fencing repairs and reinforcements been completed immediately? (CGRP Solar Bio-1) If no, please explain by entering a comment. If yes, please attach proof.	Yes	Marin Clean Energy's contractor (Cenergy Power) performs repairs to the exclusionary fencing immediately upon discovering that there is damage.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.11	Was a qualified biological monitor present during clearing and grubbing activities? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.12	Did a biological monitor pre-survey solar project disturbance areas to confirm absence of special-status small mammals? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	In June 2016, Chevron contracted with CH2M-Hill and H.T. Harvey & Associates to conduct bird nesting and bat habitat assessments. A copy of each report is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.13	Has contractor education included species identification and protection information? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The Environmental Awareness training provided to the Solar Project by CH2M-Hill reviewed Project-relevant species issues. Also see response to item 8.2.07.

Category	Subcategory	Question No.	Question	Answer	Comment
Solar Project	Question	8.2.14	Is a maximum speed limit of 25 mph imposed on construction and maintenance vehicles for solar site construction? (CGRP Solar Bio-2) If no, please explain by entering a comment. If yes, please attach proof.	Yes	The maximum speed limit anywhere in the Refinery is 25 mph and signs are posted in numerous locations. Speed limits are vigorously enforced by the Refinery's Emergency Services Department. The maximum speed limit has been communicated to MCE and their contractor, Cenergy.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR CONTAMINATED SOIL SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.1.01	Has Project construction generated any contaminated soil?	Yes	The Project has generated contaminated soil. Identification, management, storage, and shipment of this contaminated soil is handled by the Refinery's existing Hazardous Waste Group in accordance with established hazardous waste management procedures.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.2.01	If yes, has contaminated soil been handled and disposed of as required including covering with plastic sheeting of any soil stockpiles containing contaminants? If no, please explain by entering a comment. If yes please attach proof.	Yes	Refinery Instructions 505, Excavation Procedures, and 506, Hazardous waste Management, were included in construction contracts and provide guidance on managing excavations and waste streams. Chevron has issued an “Instructions to Contractors” (ITC) document to contractors that specifies the requirements of MM 4.13-10a (see section 2.0 of the ITC) and has reviewed this requirement in ITC meetings. The Modernization Compliance Team’s regular meetings with contractor representatives includes a representative from the Refinery Hazardous Waste Team to support reporting and waste stream management. The Refinery Hazardous Waste Team characterizes and manages soils according to applicable regulations.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	SCREENING QUESTION	10.3.01	Has any contaminated soil been discovered during Project construction?	No	No contaminated soils requiring agency reporting have been discovered. See also the response to question 19.1.13.

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.01	If Yes, did Chevron report the discovery to the City and other agencies? If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.02	Did Chevron promptly manage, contain, treat, transport, and dispose of it? (4.13-10a) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Contaminated Soil	Question	10.4.03	Did Chevron use authorized remediation contractors to manage contaminated media discovered during construction? If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR NIGHTTIME CONSTRUCTION SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	SCREENING QUESTION	12.1.01	Has Project construction included any nighttime construction activities?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.01	Have nighttime construction noise mitigation requirements been implemented? (4.11-1) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.02	Has there been a verified complaint regarding backup alarm noise during nighttime construction activities?	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Nighttime Construction	Question	12.2.03	If Yes, have administrative controls or different alarms been implemented? (4.11-1b) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR SPILLS OR RELEASES SECTION	SINSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	SCREENING QUESTION	14.1.01	Have there been any spills/releases of any hazardous substances?	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.01	If Yes, did Chevron report the release within 48 hours to the City? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.02	Did Chevron report the release to all required agencies in accordance with applicable regulatory requirements? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Spills or Releases	Question	14.2.03	Was a prompt cleanup conducted? (4.13-5c) If no, please explain by entering a comment. If yes please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.43	Has Chevron submitted payment to the County to cover all County costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the County? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Miscellaneous	Question	19.1.44	Has Chevron submitted payment to the BAAQMD to cover all BAAQMD costs, staff time, and third party fees and costs associated with any mitigation measure in accordance with a payment scheduled determined by the BAAQMD? (COA H5)	01 Have Not Received Invoice	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	20.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz, for Jeff Hartwig	Richard Quiroz for Jeff Hartwig

Chevron Refinery - Chevron Modernization Project Compliance Questionnaire 3Q 2016

Survey:	Chevron Modernization Project Compliance Questionnaire 3Q 2016
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEHS.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION - Proceed to 2.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR PROJECT APPROVAL SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.01	Has Chevron submitted quarterly reports following final project approval regarding corrective actions taken to implement agency and its own internal recommendations resulting from Aug 2012 fire? (4.13-13d) If yes please attach a copy. If No, please explain by entering a comment.	Yes	The sixth quarterly report for MMRP 4.13-13d is attached. The previous quarterly report was attached to the 2Q 2016 submittal. Attachment: Chevron Modernization MMRP 4 13-13d Report.msg

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.02	Has Chevron reimbursed the City for all City costs for coordinating with agency (e.g., CSB, CalOSHA, BAAQMD, EPA) investigations (ongoing) regarding the Facility that have been submitted to Chevron for reimbursement? (4.13-13e)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.03	Within six months after final approval, has Chevron submitted a written plan describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	Chevron submitted the first edition of the COA A9 Compliance Plan to the City on October 5, 2015. See attached: Refinery Modernization Project - Transmittal #4 - CUP Compliance Plan.msg

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.04	Has Chevron submitted an updated plan every six months after initial plan submittal describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If the response is "No" or "N/A" please explain by entering a comment. If the response is Yes please attach a copy of the cover page of most recent report submitted and proof of date of submittal	Yes	Chevron submitted an updated COA A9 compliance plan prior to the start of construction, and submitted an updated version on October 7, 2016. See attached: Chevron Modernization Project- Transmittal #14A- Updates to CUP Compliance Plan .msg

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.05	Has Chevron reimbursed the City for all costs and expenses associated with the review of the plans referred to above in 4.1.04 and 4.1.05 and the auditor or third party review and advice to the City regarding Chevrons written plan that have been submitted to Chevron for reimbursement? (COA A9)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING PERMIT SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	SCREENING QUESTION	6.1.01	Have any grading permits been issued? If No, please explain by entering a comment. If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	No grading permits have been issued. A list of permits issued is attached to 8.1.01.

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	Question	6.2.01	Has all construction near rail track complied with PUC general orders? (4.16-12) Please describe as a comment or attach proof.	N/A	There has been no construction near rail track.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING AND BUILDING PERMITS SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	SCREENING QUESTION	8.1.01	Have any grading or building permits been issued? If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	The list of permit packages issued to date is attached. Attached: Modernization Building Permits Issued.docx

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	Question	8.2.01	Has Chevron incorporated Condition of Approval C1 (use of only low-VOC coatings) and all mitigation measures that pertain to construction equipment and materials handling into all construction bid documents and contracts, as well as grading and building permit plans? (COA C2) If No, Please explain by entering a comment.	Yes	Compliance with COA C2 was incorporated into the Instructions to Contractors document per the attached submittal. Attached: RE Refinery Modernization Project - Transmittal #6 - CUP Conditions C3 (+C2 and C1).msg

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR DEMOLITION AND BUILDING PERMITS SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	SCREENING QUESTION	10.1.01	Have any demolition or building permits been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.01	Has Chevron prepared and submitted a Debris Recovery Plan and has it been approved? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	Yes	Chevron submitted a Debris Recovery Plan to the City on March 25, 2016, and met with the City on April 11, 2016 to review the plan. Transmittal from 03/25/16 attached. Attached: Refinery Modernization Project - Transmittal #9 - Waste Diversion Debris Recovery Plan .msg

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.02	Has Chevron submitted a Debris Recovery Report? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	No	Chevron will submit the Debris Recovery Report when Project construction is complete.

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.03	Has Chevron met with the Planning and Building Services Department to present its plan for the diversion of demolition and construction waste? (COA J1) If No, please explain by entering a comment. If Yes, please provide date of meeting and name of City staff with whom you met.	Yes	Chevron has developed a draft Waste Diversion Plan/Debris Recovery Plan to address this condition and the requirements of MM 4.8-1g, 4.8-1k, and 4.17-1. The Plan was sent to City for review and approval on March 25, 2016. Chevron met with City Planner Ms. Lina Velasco on April 11, 2016 to present the Plan. Chevron has provided construction contractors copies of the approved plan and provided training to contractor personnel. A copy of the follow-up email sent to Ms. Velasco is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR H2 PLANT REPLACEMENT PERMITTING SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	SCREENING QUESTION	12.1.01	Have any building permits for the H2 Replacement Plant been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.01	Within 60 days after issuance of the first building permit for the H2 plant replacement did Chevron file a complete application with BAAQMD to amend the facility's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50K barrels per day annual average? (COA B2) If Yes, please attach proof. If No Please explain by entering a comment.	Yes	Chevron submitted the permit application on August 10, 2016, to amend the Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels per day annual average. The permit application is attached.

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.02	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application has been submitted? (COA B2) Please attach proof or explain by entering a comment.	Yes	Chevron Transmittal #16, attached, is Chevron's permit application submitted on August 10, 2016 to the BAAQMD, to amend the Title V permit to reduce the maximum permitted throughput limits for the SDA to 50,000 barrels per day annual average.

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.03	Has the BAAQMD approved the Title V permit amendment for 50K barrels per day annual average maximum throughput for the SDA? (COA B2) Please attach proof or explain by entering a comment.	No	The BAAQMD is in the process of reviewing the permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.04	Has Chevron reported to the Planning and Building Services Department that BAAQMD has approved the amendment? (COA B2) Please attach proof or explain by entering a comment.	No	The BAAQMD is in the process of reviewing the permit application.

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.05	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted production limit for the hydrogen plant trains to 244 million scfd annual average? (COA B7) Please attach proof or explain by entering a comment.	Yes	See attached transmittal.

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.06	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted sulfur removal capacity from the SRUs to 750 long tons per day annual average? (COA B8) Please attach proof or explain by entering a comment.	Yes	See attachment to 12.2.05

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.07	Has Chevron submitted documentation demonstrating completion of CalOSHA abatement? (4.13-13g) Please attach proof or explain by entering a comment.	Yes	In an Aug. 22, 2016 email from Clyde Trombettas of Cal-OSHA to Lina Velasco of the City of Richmond, Mr. Trombettas confirmed that, “... Chevron has abated both sets of citations, addressed Cal/OSHA’s concerns regarding any related hazards, and that I am satisfied with the proof of abatement.”

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.08	When selecting tanks on which to install tank domes to mitigate emissions, has Chevron prioritized tanks that (1) have the highest emission-reduction potential to help achieve the Projects commitment to no net increase in emissions; and (2) minimize the visual impact of the individual tank domes by, among other things, first considering installing domes on tanks at lower elevations or in locations that are less visible from public roadways? (COA I3) Please attach proof or explain by entering a comment.	Yes	Chevron has assembled a team of subject matter experts from its internal design engineering group, oils and gas planning group, HES, and Blending & Shipping who have a protocol for evaluation of tanks proposed to be domed pursuant to MM 4.3-5f. This evaluation takes into account the criteria established by the FEIR and this condition.

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR FIRE, CONSTRUCTION GRADING OR BUILDING PERMITS SECTION	INSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	SCREENING QUESTION	14.1.01	Has any fire, construction, grading, or building permit been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.01	Has Chevron paid all City costs related to plan review and paid the difference in impact fees between the 2008 Project and the 2014 approved Project? (COA A4)	04 Other, please describe by entering a comment	Invoices for Supplemental Permit services were paid on March 2, and October 3, 2016, and are attached.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.02	Has Chevron demonstrated to the City that it has obtained necessary permits and approvals from reviewing agencies, including ATCs from BAAQMD as amended, if necessary, based on Project changes since the issuance of the ATCs for the 2008 Project? (COA A5) Please attach proof or explain by entering a comment.	Yes	Chevron provided the City with a copy of the BAAQMD ATC on 10/05/15. Attached: Refinery Modernization Project - Transmittal #3 - Compliance with CUP Condition A5.msg

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.03	Has the RWQCB permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.04	Has the BAAQMD permit or approval been obtained?	Required and received	Please see response to 14.2.02.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.05	Has Chevron submitted any application to BAAQMD for a new Authority to Construct or any amendment to an existing Authority to Construct for any part of the Modernization Project? (COA H7)	Yes	Chevron obtained the reissued ATC from the BAAQMD on February 11, 2015. A copy of the reissued ATC has been submitted to the City. Please see response to 14.2.02.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.06	If Yes, has Chevron provided copies of the application(s) to the City Planning and Building Services Department? (COA H7) Please attach proof or explain by entering a comment.	Yes	Please see response to 14.2.02.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.07	Has Chevron applied to BAAQMD to increase the permitted throughput of any Modernization Project equipment or component? (COA H9)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.08	If Yes, has Chevron notified the City Planning and Building Services Department of such application? (COA H9) If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.01	Will there be or have there been any construction activities occurring between January and August of the current year?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.02	If Yes has Chevron submitted a pre-construction survey report for nesting birds? (4.4-1a) Please attach a copy of the report or explain by entering a comment.	No	Chevron has had a qualified biologist conduct the survey within five (5) days prior to the start of construction and a survey report has been generated. Construction activities have not triggered an obligation to submit the report. The report is available for review upon request. No grading has occurred in any nest-setback zone. There is little suitable habitat for birds in the Modernization Project site, which is highly industrialized.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.03	Will there be or have there been any construction activities occurring near roost/bat habitat between September and October of the current year? (4.4-1b)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.04	If Yes has Chevron submitted a pre-construction survey report and acoustic survey report for roost/bat habitat? (4.4-1b) Please attach a copy of the report or explain by entering a comment.	No	Chevron has had a qualified biologist conduct a pre-construction survey, and a survey report has been generated. Construction activities have not triggered an obligation to submit the report. The report is available for review upon request.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.05	Will there be or have there been any tree removal activities occurring between March 31 and August 31 of the current year? (4.4-1c)	No	Chevron does not anticipate the need to remove any trees for construction of the Project. However, if trees need to be removed, Chevron will either conduct tree removal between March 31 and August 31 when Monarch butterflies are not present, or conduct pre-construction Monarch butterfly roost surveys utilizing a City-approved biologist during the period of September 1 through March 30.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.06	If Yes has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) Please attach a copy of the report or explain by entering a comment.	N/A	No tree removal occurred between March 31 and August 31 within 100 feet of the storage tank dome Project Design Feature

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.01	Has Chevron enrolled in MCE? (4.8-2d) Please attach proof or explain by entering a comment.	Yes	As of September 2013, the Richmond Refinery has enrolled its commercial accounts with Marin Clean Energy (MCE). At this time, it does not appear viable to enroll the Refinery's industrial accounts with MCE. Chevron submitted Transmittal #15 to the City Planning Department on June 6, 2016 documenting compliance with this MM.

Category	Subcategory	Question No.	Question	Answer	Comment

Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.02	Has Chevron submitted notification of availability of PHAs that were new or revalidated since Chevrons response to the previous quarterly questionnaire? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	Yes	The Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H2S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the No. 6 H2S Plant during their on-site audit in August.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.03	Has Chevron submitted all required LOPA reports? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	In the updated CUP Compliance Plan submitted on October 7, 2016, an update was provided for MMRP 4.13-4a, -7a, and -7b, which describes Chevron notifications of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), which are available for review at the Refinery. In the update, Chevron states that the LOPA reports contain Confidential Business Information and therefore are available for review at the Refinery consistent with the other PHA documentation.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.04	Has Chevron obtained new/amended fire permits for project components? (4.13-6b) Please attach copies of permits or explain by entering a comment.	Yes	Two fire permits have been issued by the City of Richmond - • F16-10408 Hydrogen service process piping at H2 Plant. • F16-10449 Hydrants and fire water line for H2 Plant.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.05	Has Chevron submitted its Reliability Program report due prior to commencing construction of the hydrogen plant? (4.13-7a) Please attach a copy of the report or explain by entering a comment.	Yes	The initial Reliability Program report, with Appendix C tracking, was included in the in the Conditional Use Compliance Plan submittal prior to the start of construction and updated 10/7/2016 (see 4.1.04).

Category	Subcategory	Question No.	Question	Answer	Comment

Questions Re:
Requirements Applicable
Prior to Commencement
of Construction (all of
the above and in
addition)

Question

16.1.06

Has Chevron reviewed and updated its programs and procedures to reflect damage mechanism reviews and LOPAs? (4.13-7c) If yes, please supply explanation/description by entering a comment.

Yes

A list of programs, procedures, and other Refinery documentation that have been updated to implement the Modernization Reliability Program, including corrective actions, is applicable to evaluating the hazards of planned changes at the Facility, and is included in the Reliability Program Report per MM 4.13-7a, This list includes new Chevron Manufacturing standards for Damage Mechanism Reviews, Fixed Equipment Asset Strategies, Fixed Equipment Integrity Threat Recommendations and Resolutions, a Manufacturing Technical Authority Process for assessing the applicability of advisories and industry standards, a tracking process for turnaround work items, 100% component inspections for carbon steel piping systems, implementation of Integrity Operating Windows, and new PHA-LOPA procedures. See also Reliability Program, Recommendation IV E, attached to 16.1.05.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.07	Has Chevron reimbursed the City and CCHS for any third party expenses incurred by the City and/or CCHS for review of documents such as PHAs, LOPAs, and ISSAs, and for which Chevron has received a reimbursement request from the City or CCHS? (4.13-7d, 13b) If Yes provide dates and amounts of payments, with corresponding invoice numbers by entering a comment.	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.08	If construction will occur in areas subject to RWQCB Order R2-2011-0036, has Chevron submitted conditions of approval ? (4.13-10b) Please attach a copy or explain by entering a comment.	N/A	Chevron would obtain the necessary approval before commencing any work in areas subject to RWQCB Order R2-2011-0036.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.09	Has Chevron submitted the report due prior to commencing construction detailing the status of corrective actions from the August 2012 fire? (4.13-13a) Please attach a copy of the report or explain by entering a comment.	Yes	The report for mitigation measure 4.13-13a was submitted via e-mail on May 4, 2016, and is attached. Attached: FW Chevron Modernization Project MM 4 13-13a Report.msg

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.10	Has Chevron entered into an agreement for rehabilitation/repair of road damage? (4.16-10) Please attach a copy pf the report or explain by entering a comment.	Yes	The report for mitigation measure 4.13-13a was submitted via e-mail on May 4, 2016, and is attached. Attached: Signed Road Rehab MOU.pdf

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.11	Has the 2017 turnaround of the crude unit occurred? (Reliability Program III.A)	Yes	The maintenance turnaround for the Crude Unit scheduled for the fourth quarter of 2016 is in progress.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.12	If Yes, has Chevron received final closed/signed-off permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) Please attach documentation of closed permits or explain by entering a comment.	N/A	The maintenance turnaround for the Crude Unit scheduled for the fourth quarter of 2016 is in progress.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.13	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) Please attach proof or explain by entering a comment.	N/A	The maintenance turnaround for the Crude Unit scheduled for the fourth quarter of 2016 is in progress.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.14	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) Please attach proof or explain by entering a comment.	N/A	The maintenance turnaround for the Crude Unit scheduled for the fourth quarter of 2016 is in progress.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.15	Has a photometric plan or equivalent for existing light and proposed lighting (LED) been submitted to verify that replacement LED lighting will not have a greater illumination output than the lighting being replaced prior to installation of the replacement lights? (COA 15) Please indicate date of submittal or explain by entering a comment.	No	Chevron has prepared a photometric plan that is undergoing internal review to verify that the new replacement LED lighting does not have a greater illumination output than the existing lighting. Chevron will submit the photometric plan to the City for verification prior to installation of the LED lighting.

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.16	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) Please attach proof or explain by entering a comment.	Yes	Tests have been run by Chevron on crude samples and crude blends to improve our understanding of the effects of sulfur species and H2S evolution on sulfidation corrosion. The results of this testing is considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	17.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.Â Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz for Jeff Hartwig	

Chevron Refinery - Chevron Modernization Project Compliance Questionnaire 2Q 2016

Survey:	Chevron Modernization Project Compliance Questionnaire 2Q 2016
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEHS.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION - Proceed to 2.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR PROJECT APPROVAL SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.01	Has Chevron submitted quarterly reports following final project approval regarding corrective actions taken to implement agency and its own internal recommendations resulting from Aug 2012 fire? (4.13-13d) If yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.02	Has Chevron reimbursed the City for all City costs for coordinating with agency (e.g., CSB, CalOSHA, BAAQMD, EPA) investigations (ongoing) regarding the Facility that have been submitted to Chevron for reimbursement? (4.13-13e)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.03	Within six months after final approval, has Chevron submitted a written plan describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.04	Has Chevron submitted an updated plan every six months after initial plan submittal describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If the response is "No" or "N/A" please explain by entering a comment. If the response is Yes please attach a copy of the cover page of most recent report submitted and proof of date of submittal	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.05	Has Chevron reimbursed the City for all costs and expenses associated with the review of the plans referred to above in 4.1.04 and 4.1.05 and the auditor or third party review and advice to the City regarding Chevrons written plan that have been submitted to Chevron for reimbursement? (COA A9)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING PERMIT SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	SCREENING QUESTION	6.1.01	Have any grading permits been issued? If No, please explain by entering a comment. If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	Question	6.2.01	Has all construction near rail track complied with PUC general orders? (4.16-12) Please describe as a comment or attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING AND BUILDING PERMITS SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	SCREENING QUESTION	8.1.01	Have any grading or building permits been issued? If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	Question	8.2.01	Has Chevron incorporated Condition of Approval C1 (use of only low-VOC coatings) and all mitigation measures that pertain to construction equipment and materials handling into all construction bid documents and contracts, as well as grading and building permit plans? (COA C2) If No, Please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR DEMOLITION AND BUILDING PERMITS SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	SCREENING QUESTION	10.1.01	Have any demolition or building permits been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.01	Has Chevron prepared and submitted a Debris Recovery Plan and has it been approved? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.02	Has Chevron submitted a Debris Recovery Report? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.03	Has Chevron met with the Planning and Building Services Department to present its plan for the diversion of demolition and construction waste? (COA J1) If No, please explain by entering a comment. If Yes, please provide date of meeting and name of City staff with whom you met.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR H2 PLANT REPLACEMENT PERMITTING SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	SCREENING QUESTION	12.1.01	Have any building permits for the H2 Replacement Plant been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.01	Within 60 days after issuance of the first building permit for the H2 plant replacement did Chevron file a complete application with BAAQMD to amend the facility's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50K barrels per day annual average? (COA B2) If Yes, please attach proof. If No Please explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.02	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application has been submitted? (COA B2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.03	Has the BAAQMD approved the Title V permit amendment for 50K barrels per day annual average maximum throughput for the SDA? (COA B2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.04	Has Chevron reported to the Planning and Building Services Department that BAAQMD has approved the amendment? (COA B2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.05	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted production limit for the hydrogen plant trains to 244 million scfd annual average? (COA B7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.06	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted sulfur removal capacity from the SRUs to 750 long tons per day annual average? (COA B8) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.07	Has Chevron submitted documentation demonstrating completion of CalOSHA abatement? (4.13-13g) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.08	When selecting tanks on which to install tank domes to mitigate emissions, has Chevron prioritized tanks that (1) have the highest emission-reduction potential to help achieve the Projects commitment to no net increase in emissions; and (2) minimize the visual impact of the individual tank domes by, among other things, first considering installing domes on tanks at lower elevations or in locations that are less visible from public roadways? (COA I3) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR FIRE, CONSTRUCTION GRADING OR BUILDING PERMITS SECTION	INSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	SCREENING QUESTION	14.1.01	Has any fire, construction, grading, or building permit been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.01	Has Chevron paid all City costs related to plan review and paid the difference in impact fees between the 2008 Project and the 2014 approved Project? (COA A4)	04 Other, please describe by entering a comment	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.02	Has Chevron demonstrated to the City that it has obtained necessary permits and approvals from reviewing agencies, including ATCs from BAAQMD as amended, if necessary, based on Project changes since the issuance of the ATCs for the 2008 Project? (COA A5) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.03	Has the RWQCB permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.04	Has the BAAQMD permit or approval been obtained?	Required and received	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.05	Has Chevron submitted any application to BAAQMD for a new Authority to Construct or any amendment to an existing Authority to Construct for any part of the Modernization Project? (COA H7)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.06	If Yes, has Chevron provided copies of the application(s) to the City Planning and Building Services Department? (COA H7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.07	Has Chevron applied to BAAQMD to increase the permitted throughput of any Modernization Project equipment or component? (COA H9)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.08	If Yes, has Chevron notified the City Planning and Building Services Department of such application? (COA H9) If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.01	Will there be or have there been any construction activities occurring between January and August of the current year?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.02	If Yes has Chevron submitted a pre-construction survey report for nesting birds? (4.4-1a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.03	Will there be or have there been any construction activities occurring near roost/bat habitat between September and October of the current year? (4.4-1b)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.04	If Yes has Chevron submitted a pre-construction survey report and acoustic survey report for roost/bat habitat? (4.4-1b) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.05	Will there be or have there been any tree removal activities occurring between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.06	If Yes has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) Please attach a copy of the report or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.01	Has Chevron enrolled in MCE? (4.8-2d) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.02	Has Chevron submitted notification of availability of PHAs that were new or revalidated since Chevrons response to the previous quarterly questionnaire? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.03	Has Chevron submitted all required LOPA reports? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.04	Has Chevron obtained new/amended fire permits for project components? (4.13-6b) Please attach copies of permits or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.05	Has Chevron submitted its Reliability Program report due prior to commencing construction of the hydrogen plant? (4.13-7a) Please attach a copy of the report or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.06	Has Chevron reviewed and updated its programs and procedures to reflect damage mechanism reviews and LOPAs? (4.13-7c) If yes, please supply explanation/description by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.07	Has Chevron reimbursed the City and CCHS for any third party expenses incurred by the City and/or CCHS for review of documents such as PHAs, LOPAs, and ISSAs, and for which Chevron has received a reimbursement request from the City or CCHS? (4.13-7d, 13b) If Yes provide dates and amounts of payments, with corresponding invoice numbers by entering a comment.	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.08	If construction will occur in areas subject to RWQCB Order R2-2011-0036, has Chevron submitted conditions of approval ? (4.13-10b) Please attach a copy or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.09	Has Chevron submitted the report due prior to commencing construction detailing the status of corrective actions from the August 2012 fire? (4.13-13a) Please attach a copy of the report or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.10	Has Chevron entered into an agreement for rehabilitation/repair of road damage? (4.16-10) Please attach a copy pf the report or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.11	Has the 2017 turnaround of the crude unit occurred? (Reliability Program III.A)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.12	If Yes, has Chevron received final closed/signed-off permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) Please attach documentation of closed permits or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.13	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.14	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.15	Has a photometric plan or equivalent for existing light and proposed lighting (LED) been submitted to verify that replacement LED lighting will not have a greater illumination output than the lighting being replaced prior to installation of the replacement lights? (COA 15) Please indicate date of submittal or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.16	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	17.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.Â Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz for Jeff Hartwig	

Chevron Refinery - Chevron Modernization Project Compliance Questionnaire 1Q 2016

Survey:	Chevron Modernization Project Compliance Questionnaire 1Q 2016
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEHS.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION - Proceed to 2.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR PROJECT APPROVAL SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.01	Has Chevron submitted quarterly reports following final project approval regarding corrective actions taken to implement agency and its own internal recommendations resulting from Aug 2012 fire? (4.13-13d) If yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.02	Has Chevron reimbursed the City for all City costs for coordinating with agency (e.g., CSB, CalOSHA, BAAQMD, EPA) investigations (ongoing) regarding the Facility that have been submitted to Chevron for reimbursement? (4.13-13e)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.03	Within six months after final approval, has Chevron submitted a written plan describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.04	Has Chevron submitted an updated plan every six months after initial plan submittal describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If the response is "No" or "N/A" please explain by entering a comment. If the response is Yes please attach a copy of the cover page of most recent report submitted and proof of date of submittal	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.05	Has Chevron reimbursed the City for all costs and expenses associated with the review of the plans referred to above in 4.1.04 and 4.1.05 and the auditor or third party review and advice to the City regarding Chevrons written plan that have been submitted to Chevron for reimbursement? (COA A9)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING PERMIT SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	SCREENING QUESTION	6.1.01	Have any grading permits been issued? If No, please explain by entering a comment. If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	Question	6.2.01	Has all construction near rail track complied with PUC general orders? (4.16-12) Please describe as a comment or attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING AND BUILDING PERMITS SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	SCREENING QUESTION	8.1.01	Have any grading or building permits been issued? If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	Question	8.2.01	Has Chevron incorporated Condition of Approval C1 (use of only low-VOC coatings) and all mitigation measures that pertain to construction equipment and materials handling into all construction bid documents and contracts, as well as grading and building permit plans? (COA C2) If No, Please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR DEMOLITION AND BUILDING PERMITS SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	SCREENING QUESTION	10.1.01	Have any demolition or building permits been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.01	Has Chevron prepared and submitted a Debris Recovery Plan and has it been approved? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.02	Has Chevron submitted a Debris Recovery Report? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.03	Has Chevron met with the Planning and Building Services Department to present its plan for the diversion of demolition and construction waste? (COA J1) If No, please explain by entering a comment. If Yes, please provide date of meeting and name of City staff with whom you met.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR H2 PLANT REPLACEMENT PERMITTING SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	SCREENING QUESTION	12.1.01	Have any building permits for the H2 Replacement Plant been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.01	Within 60 days after issuance of the first building permit for the H2 plant replacement did Chevron file a complete application with BAAQMD to amend the facility's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50K barrels per day annual average? (COA B2) If Yes, please attach proof. If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.02	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application has been submitted? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.03	Has the BAAQMD approved the Title V permit amendment for 50K barrels per day annual average maximum throughput for the SDA? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.04	Has Chevron reported to the Planning and Building Services Department that BAAQMD has approved the amendment? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.05	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted production limit for the hydrogen plant trains to 244 million scfd annual average? (COA B7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.06	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted sulfur removal capacity from the SRUs to 750 long tons per day annual average? (COA B8) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.07	Has Chevron submitted documentation demonstrating completion of CalOSHA abatement? (4.13-13g) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.08	When selecting tanks on which to install tank domes to mitigate emissions, has Chevron prioritized tanks that (1) have the highest emission-reduction potential to help achieve the Projects commitment to no net increase in emissions; and (2) minimize the visual impact of the individual tank domes by, among other things, first considering installing domes on tanks at lower elevations or in locations that are less visible from public roadways? (COA I3) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR FIRE, CONSTRUCTION GRADING OR BUILDING PERMITS SECTION	INSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	SCREENING QUESTION	14.1.01	Has any fire, construction, grading, or building permit been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.01	Has Chevron paid all City costs related to plan review and paid the difference in impact fees between the 2008 Project and the 2014 approved Project? (COA A4)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.02	Has Chevron demonstrated to the City that it has obtained necessary permits and approvals from reviewing agencies, including ATCs from BAAQMD as amended, if necessary, based on Project changes since the issuance of the ATCs for the 2008 Project? (COA A5) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.03	Has the RWQCB permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.04	Has the BAAQMD permit or approval been obtained?	Required and received	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.05	Has Chevron submitted any application to BAAQMD for a new Authority to Construct or any amendment to an existing Authority to Construct for any part of the Modernization Project? (COA H7)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.06	If Yes, has Chevron provided copies of the application(s) to the City Planning and Building Services Department? (COA H7) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.07	Has Chevron applied to BAAQMD to increase the permitted throughput of any Modernization Project equipment or component? (COA H9)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.08	If Yes, has Chevron notified the City Planning and Building Services Department of such application? (COA H9) If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.01	Will there be or have there been any construction activities occurring between January and August of the current year?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.02	If Yes has Chevron submitted a pre-construction survey report for nesting birds? (4.4-1a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.03	Will there be or have there been any construction activities occurring near roost/bat habitat between September and October of the current year? (4.4-1b)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.04	If Yes has Chevron submitted a pre-construction survey report and acoustic survey report for roost/bat habitat? (4.4-1b) Please attach a copy of the report or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.05	Will there be or have there been any tree removal activities occurring between March 31 and August 31 of the current year? (4.4-1c)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.06	If Yes has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) Please attach a copy of the report or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.01	Has Chevron enrolled in MCE? (4.8-2d) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.02	Has Chevron submitted notification of availability of PHAs that were new or revalidated since Chevrons response to the previous quarterly questionnaire? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.03	Has Chevron submitted all required LOPA reports? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.04	Has Chevron obtained new/amended fire permits for project components? (4.13-6b) Please attach copies of permits or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.05	Has Chevron submitted its Reliability Program report due prior to commencing construction of the hydrogen plant? (4.13-7a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.06	Has Chevron reviewed and updated its programs and procedures to reflect damage mechanism reviews and LOPAs? (4.13-7c) If yes, please supply explanation/description by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.07	Has Chevron reimbursed the City and CCHS for any third party expenses incurred by the City and/or CCHS for review of documents such as PHAs, LOPAs, and ISSAs, and for which Chevron has received a reimbursement request from the City or CCHS? (4.13-7d, 13b) If Yes provide dates and amounts of payments, with corresponding invoice numbers by entering a comment.	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.08	If construction will occur in areas subject to RWQCB Order R2-2011-0036, has Chevron submitted conditions of approval ? (4.13-10b) Please attach a copy or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.09	Has Chevron submitted the report due prior to commencing construction detailing the status of corrective actions from the August 2012 fire? (4.13-13a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.10	Has Chevron entered into an agreement for rehabilitation/repair of road damage? (4.16-10) Please attach a copy pf the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.11	Has the 2017 turnaround of the crude unit occurred? (Reliability Program III.A)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.12	If Yes, has Chevron received final closed/signed-off permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) Please attach documentation of closed permits or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.13	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.14	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.15	Has a photometric plan or equivalent for existing light and proposed lighting (LED) been submitted to verify that replacement LED lighting will not have a greater illumination output than the lighting being replaced prior to installation of the replacement lights? (COA 15) Please indicate date of submittal or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.16	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Final Certifications	Attestation	17.1.01	I (Enter name or names in text box to the right) certify that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.Â Based on my inquiry of those who manage the system or who gather the information, I attest on behalf of Chevron that all information provided in this response is, to the best of my knowledge and belief, true, accurate, and complete.	Richard Quiroz,	

Chevron Refinery - Chevron Modernization Project Compliance Questionnaire 2015

Survey:	Chevron Modernization Project Compliance Questionnaire 2015
Facility:	Chevron Refinery
Actual Start Date:	
Actual Complete Date:	

Category	Subcategory	Question No.	Question	Answer	Comment
HAVING PROBLEMS WITH THIS APPLICATION?	PLEASE CONTACT THE HELPDESK	IEH3.1.01	1-855-786-2631 or iehshelpdesk.us@anteagroup.com (No response needed to this INSTRUCTION - Proceed to 2.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
GENERAL INSTRUCTIONS	USE OF THIS TOOL	2.1.01	Click the "i" icon the right to view general instructions for completing this questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 3.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR PROJECT APPROVAL SECTION	INSTRUCTIONS	3.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 4.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.01	Has Chevron submitted quarterly reports following final project approval regarding corrective actions taken to implement agency and its own internal recommendations resulting from Aug 2012 fire? (4.13-13d) If yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.02	Has Chevron reimbursed the City for all City costs for coordinating with agency (e.g., CSB, CalOSHA, BAAQMD, EPA) investigations (ongoing) regarding the Facility that have been submitted to Chevron for reimbursement? (4.13-13e)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.03	Has Chevron filed with the City Planning and Building Services Department an endorsed copy of the County recorded Conditional Use Permit? (COA A6) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.04	Within six months after final approval, has Chevron submitted a written plan describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.05	Has Chevron submitted an updated plan every six months after initial plan submittal describing how it will meet the requirements of each Condition of Approval in the Conditional Use Permit? (COA A9) If the response is "No" or "N/A" please explain by entering a comment. If the response is Yes please attach a copy of the cover page of most recent report submitted and proof of date of submittal	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Final Project Approval	Question	4.1.06	Has Chevron reimbursed the City for all costs and expenses associated with the review of the plans referred to above in 4.1.04 and 4.1.05 and the auditor or third party review and advice to the City regarding Chevrons written plan that have been submitted to Chevron for reimbursement? (COA A9)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING PERMIT SECTION	INSTRUCTIONS	5.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 6.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	SCREENING QUESTION	6.1.01	Have any grading permits been issued? If No, please explain by entering a comment. If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	Question	6.2.01	Has Chevron submitted evidence that correct emergency info has been posted at the rail spur crossing? (MM 4.16-12)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading Permit Questions	Question	6.2.02	Has all construction near rail track complied with PUC general orders? (4.16-12) Please describe as a comment or attach proof.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR GRADING AND BUILDING PERMITS SECTION	INSTRUCTIONS	7.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 8.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	SCREENING QUESTION	8.1.01	Have any grading or building permits been issued? If Yes please attach a copy. (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	Question	8.2.01	Has Chevron incorporated Condition of Approval C1 (use of only low-VOC coatings) and all mitigation measures that pertain to construction equipment and materials handling into all construction bid documents and contracts, as well as grading and building permit plans? (COA C2) If No, Please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Grading and Building Permit Questions	Question	8.2.02	Prior to the issuance of all grading or building permits, did Chevron submit documentation of compliance with Condition of Approval C2 to the Planning & Building Services Department? (COA C3) If Yes please attach a copy. If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR DEMOLITION AND BUILDING PERMITS SECTION	INSTRUCTIONS	9.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 10.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	SCREENING QUESTION	10.1.01	Have any demolition or building permits been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.01	Has Chevron prepared and submitted a Debris Recovery Plan and has it been approved? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.02	Has Chevron submitted a Debris Recovery Report? (IM 4.17-1) If No, Please explain by entering a comment. If Yes, Please attach proof.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Demolition and Building Permits Questions	Question	10.2.03	Has Chevron met with the Planning and Building Services Department to present its plan for the diversion of demolition and construction waste? (COA J1) If No, please explain by entering a comment. If Yes, please provide date of meeting and name of City staff with whom you met.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR H2 PLANT REPLACEMENT PERMITTING SECTION	INSTRUCTIONS	11.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 12.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	SCREENING QUESTION	12.1.01	Have any building permits for the H2 Replacement Plant been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.01	Has Chevron provided the annual funding for the CGRPs? (4.8-2e) If No, please explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.02	Within 60 days after issuance of the first building permit for the H2 plant replacement did Chevron file a complete application with BAAQMD to amend the facility's Title V permit to reduce the maximum permitted throughput limits for the SDA to 50K barrels per day annual average? (COA B2) If Yes, please attach proof. If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.03	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application has been submitted? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.04	Has the BAAQMD approved the Title V permit amendment for 50K barrels per day annual average maximum throughput for the SDA? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.05	Has Chevron reported to the Planning and Building Services Department that BAAQMD has approved the amendment? (COA B2) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.06	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted production limit for the hydrogen plant trains to 244 million scfd annual average? (COA B7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.07	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application above has been submitted? (COA B7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.08	Has the BAAQMD approved the permit amendment reducing the production limit for the hydrogen plant trains to 244 million scfd annual average? Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.09	Has Chevron reported to the Planning and Building Services Department that BAAQMD has approved the amendment? (COA B7) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.10	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to reduce the maximum permitted sulfur removal capacity from the SRUs to 750 long tons per day annual average? (COA B8) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.11	Has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application above has been submitted? (COA B8) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.12	Has the BAAQMD approved the permit amendment reducing the sulfur removal capacity of the SRUs to 750 long tons per day annual average? Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.13	Within 60 days of issuance of the first H2 plant replacement building permit did Chevron file a complete BAAQMD application to amend the Title V permit to increase the maximum throughput of the FCC FHT to 80,000 barrels per day of gas oil on an average annual basis? (COA B9) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.14	If Yes, has Chevron reported to the Planning and Building Services Department that the BAAQMD permit amendment application above has been approved? (COA B9) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.15	Has Chevron submitted documentation demonstrating completion of CalOSHA abatement? (4.13-13g) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.16	Are all conditions of approval printed on the final construction plan set submitted for the building permit(s)? (COA I1) Please attach proof.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.17	Have landscape plans for proposed site and Richmond Parkway/Castro Street landscaping been submitted for review and approval by the Design Review Board prior to issuance of building permits, providing for a minimum of 1.25 acres of landscaping? (COA I2) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
H2 Plant Replacement Permitting Questions	Question	12.2.18	When selecting tanks on which to install tank domes to mitigate emissions, has Chevron prioritized tanks that (1) have the highest emission-reduction potential to help achieve the Projects commitment to no net increase in emissions; and (2) minimize the visual impact of the individual tank domes by, among other things, first considering installing domes on tanks at lower elevations or in locations that are less visible from public roadways? (COA I3) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
INSTRUCTIONS FOR FIRE, CONSTRUCTION GRADING OR BUILDING PERMITS SECTION	INSTRUCTIONS	13.1.01	Click the "i" icon the right to view specific instructions for completing this section of the questionnaire in the "Requirement" box. (No response needed to this INSTRUCTION - Proceed to 14.1.01)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	SCREENING QUESTION	14.1.01	Has any fire, construction, grading, or building permit been issued? (Click the Cloud icon then the Refresh icon at the top right after responding to this Screening Question)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.01	Has Chevron paid all City costs related to plan review and paid the difference in impact fees between the 2008 Project and the 2014 approved Project? (COA A4)	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.02	Has Chevron demonstrated to the City that it has obtained necessary permits and approvals from reviewing agencies, including ATCs from BAAQMD as amended, if necessary, based on Project changes since the issuance of the ATCs for the 2008 Project? (COA A5) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.03	Has the BCDC permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.04	Has the RWQCB permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.05	Has the BAAQMD permit or approval been obtained?	Required and received	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.06	Has the CCHS permit or approval been obtained?	No permit/approval required	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.07	Other Agency permit or approval (Please specify agency in comments section)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.08	Other Agency permit or approval (Please specify agency in comments section)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.09	Other Agency permit or approval (Please specify agency in comments section)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.10	Has Chevron submitted any application to BAAQMD for a new Authority to Construct or any amendment to an existing Authority to Construct for any part of the Modernization Project? (COA H7)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.11	If Yes, has Chevron provided copies of the application(s) to the City Planning and Building Services Department? (COA H7) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.12	Has Chevron applied to BAAQMD to increase the permitted throughput of any Modernization Project equipment or component? (COA H9)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Triggered by Fire, Construction, Grading or Building Permits	Question	14.2.13	If Yes, has Chevron notified the City Planning and Building Services Department of such application? (COA H9) If No Please explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.01	Will there be or have there been any construction activities occurring between January and August of the current year?	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.02	If Yes has Chevron submitted a pre-construction survey report for nesting birds? (4.4-1a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.03	Will there be or have there been any construction activities occurring near roost/bat habitat between September and October of the current year? (4.4-1b)	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.04	If Yes has Chevron submitted a pre-construction survey report and acoustic survey report for roost/bat habitat? (4.4-1b) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.05	Will there be or have there been any tree removal activities occurring between March 31 and August 31 of the current year? (4.4-1c)	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Pertaining to Sensitive Habitats Questions	Question	15.1.06	If Yes has Chevron submitted a pre-construction survey report for Monarch roost habitat? (4.4-1c) Please attach a copy of the report or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.01	Has Chevron enrolled in MCE? (4.8-2d) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.02	Has Chevron submitted a SWPPP to RWQCBs and has it been approved at least 10 days prior to construction commencing? (4.9-1a)(COA F1) Please attach proof or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.03	Has Chevron submitted notification of availability of PHAs that were new or revalidated since Chevrons response to the previous quarterly questionnaire? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.04	Has Chevron submitted all required LOPA reports? (4.13-4a, 7a, 7b) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.05	Has Chevron obtained new/amended fire permits for project components? (4.13-6b) Please attach copies of permits or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.06	Has Chevron submitted its Reliability Program report due prior to commencing construction of the hydrogen plant? (4.13-7a) Please attach a copy of the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.07	Has Chevron reviewed and updated its programs and procedures to reflect damage mechanism reviews and LOPAs? (4.13-7c) If yes, please supply explanation/description by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.08	Has Chevron reimbursed the City and CCHS for any third party expenses incurred by the City and/or CCHS for review of documents such as PHAs, LOPAs, and ISSAs, and for which Chevron has received a reimbursement request from the City or CCHS? (4.13-7d, 13b) If Yes provide dates and amounts of payments, with corresponding invoice numbers by entering a comment.	01 Have not received invoice from City	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.09	If construction will occur in areas subject to RWQCB Order R2-2011-0036, has Chevron submitted conditions of approval ? (4.13-10b) Please attach a copy or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.10	Has Chevron submitted the report due prior to commencing construction detailing the status of corrective actions from the August 2012 fire? (4.13-13a) Please attach a copy of the report or explain by entering a comment.	Yes	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.11	Has Chevron entered into an agreement for rehabilitation/repair of road damage? (4.16-10) Please attach a copy pf the report or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.12	Has Chevron submitted documentation evidencing contractual requirements of Praxair to comply with EIR mitigation measures? (4.13-4f) Please attach proof or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.13	Has the 2017 turnaround of the crude unit occurred? (Reliability Program III.A)	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.14	If Yes, has Chevron received final closed/signed-off permits reflecting replacement of 17 circuits and 4 partial components to 9Cr? (Reliability Program III.A) Please attach documentation of closed permits or explain by entering a comment.	N/A	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.15	Has Chevron either retubed, or inspected/repared/replaced/monitored the F1100 tubes? (Reliability Program III.C.2) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.16	Has Chevron inspected and replaced as needed F-1160? (Reliability Program III.C.3) Please attach proof or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.17	Has a photometric plan or equivalent for existing light and proposed lighting (LED) been submitted to verify that replacement LED lighting will not have a greater illumination output than the lighting being replaced prior to installation of the replacement lights? (COA 15) Please indicate date of submittal or explain by entering a comment.	No	

Category	Subcategory	Question No.	Question	Answer	Comment
Questions Re: Requirements Applicable Prior to Commencement of Construction (all of the above and in addition)	Question	16.1.18	If the 4th quarter of 2015 has occurred, has Chevron conducted lab analyses of crudes/blends and H2S evolution to predict corrosion rates? (Reliability Program III.C.4) Please attach proof or explain by entering a comment.	Yes	

ATTACHMENT 2

Chevron Modernization MM 4.13-2b

January 2018

Introduction

This summary is provided as a monthly update per Mitigation Measure 4.13-2b for training provided to contractors during demolition and construction activities. The training obligations have not changed since commencement of construction.

Summary

In accordance with standard Refinery procedures and requirements, workers are being trained on applicable requirements and Refinery Instructions, including, but not limited to, emergency response, hot work, and contractor refinery instructions.

RI-366 Contractor Safety is the Refinery's guiding document for contractor management. Section 5 describes contractor training requirements. Section 10 describes CHESM audit requirements. The CHESM Database contains audit results. Undocumented audits are conducted regularly by many different parties including Company Reps, Field Safety Coordinators, Supervisors and Management. These audits are intended to insure safe work practices are being executed to Chevron Standards. Documented Field/Site audits (WIP – Work In Progress) are conducted and recorded in the CHESM Database. Appendix IV in RI-366 contains the Field Audit form. Contractor Office HES Audits are conducted at least annually for Medium and High Risk contractors and the results are recorded in the CHESM Database. Appendix VI in RI-366 contains the Office HES Audit form which includes training records. Audit Participants are defined in Section 10 of RI-366, and typically include a Contract Owner and a CVX rep familiar with the work being conducted.

The contractor must complete three training elements for entry. There are two proctored Bay Area Refinery and Richmond Refinery Computer Based Training (CBT) that are delivered through a number of independent companies. The majority of our contractors use OSCA in Martinez. A two-hour instructor led course (IIFI) is conducted at the refinery. To receive a Chevron badge for refinery entry, the three courses must be completed, and they can be found printed on the back of a contractor's badge. These CBTs and the instructor led training focus on Safe Work Practices, Plant Entry, Emergency Response, Refinery Safety Rules, etc.

Each contractor has prepared a Construction Safety, Health, Environmental and Security Plan. These plans are highly detailed and provide specific information on a number of important and relevant topics. These plans are updated as necessary to address new issues and/or incorporate new or revised regulatory or Chevron requirements. Contractor personnel have been and will continue to be trained on standard Chevron procedures and Refinery Instructions, and on Construction Safety, Health, Environmental and Security Plan.

Leak Response Protocol (LRP) training will not be provided to any contractors. The Leak Response Protocol is a Chevron-owned and executed process. The contractors' only connection to the LRP is to act in a HAZWOPER Awareness Level role. They are trained to report any

Chevron Modernization MM 4.13-2b

January 2018

evidence of leaks or spills through their Company Supervision, Chevron contact, Refinery Emergency call numbers, or their orange radio button, if they are issued a refinery radio.

All contractors working on site have received this training. Through February 2, 2018, more than 1,947 contractors have been trained.

ATTACHMENT 3

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM, SECTION 4.13-13d
TWELFTH QUARTERLY REPORT**

MARCH 29, 2018

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

I. INTRODUCTION

Chevron U.S.A. Inc. (“CUSA” or “the Company”) submits this report to comply with Mitigation Measure 4.13-13d, which provides:

Chevron will report to the City quarterly, and shall provide a copy of this report to the County, after Project approval on the status of the corrective actions taken to implement agency recommendations to Chevron resulting from the August 6, 2012 fire, as well as any corrective actions taken by Chevron as a result of its own investigation. To the extent that Chevron elects not to implement a recommendation made by an agency, Chevron shall include in these quarterly reports a detailed explanation of its rationale for doing so.

This is the twelfth report prepared under the quarterly reporting requirement.

II. BACKGROUND

The Richmond Refinery experienced an accidental release from the atmospheric distillation column of the No. 4 Crude Unit on August 6, 2012. The failure involved an 8” carbon-steel piping component in the No. 4 sidecut that carried light gas oil. The approximate duration of the release was 7 hours, 24 minutes.

All required agency notifications were made. Responding agencies included Cal/OSHA, CCHS, Bay Area Air Quality Management District, California Office of Spill Prevention and Response, the U.S. Environmental Protection Agency, the Richmond Police Department, and the U.S. Chemical Safety and Hazard Investigation Board (“CSB”). The CSB conducted an investigation concerning the fire. In April 2013, the CSB issued its Interim Investigation Report: Chevron Richmond Refinery Fire (“Interim Report”), which included two recommendations to CUSA. In January 2015, the CSB issued its Final Investigation Report Chevron Richmond Refinery Pipe Rupture and Fire (“Final Report”), which included three recommendations to CUSA. CUSA conducted its own investigation into the August 6, 2012 incident (“CUSA Investigation”), and identified a series of recommended actions to address what had been identified as causal factors and additional considerations.

III. STATUS OF CORRECTIVE ACTIONS TAKEN TO IMPLEMENT AGENCY RECOMMENDATIONS

The CSB issued two recommendations (2012-03-I-CA-R1 and 2013-03-I-CA-R2) to CUSA in its Interim Report. The CSB issued an additional three recommendations (2012-03-I-CA-R33, 2012-03-I-CA-R34, and 2012-03-I-CA-R35) to CUSA in its Final Report.

Set forth below are the CSB's recommendations from the Interim Report and Final Report, and CUSA's response to each recommendation.

Recommendation No. 2012-03-I-CA-R1: At all Chevron U.S. refineries, engage a diverse team of qualified personnel to perform a documented damage mechanism hazard review. This review shall be an integral part of the Process Hazard Analysis cycle and shall be conducted on all PSM-covered process piping circuits and process equipment. The damage mechanism hazard review shall identify potential process damage mechanisms and consequences of failure, and shall ensure safeguards are in place to control hazards presented by those damage mechanisms. Analyze and incorporate into this review applicable industry best practices, Chevron Energy Technology Company findings and recommendations, and inherently safer systems to the greatest extent feasible.

CUSA's Response: The Richmond Refinery modified and further developed its work processes for the review of damage mechanisms. Specifically, CUSA issued a refinery standard ("Damage Mechanism Review Instruction – Manufacturing 520," or "MFG 520") for conducting a damage mechanism review ("DMR") to assess corrosion threats and other applicable damage mechanisms. MFG 520 sets forth a DMR work process that was designed in accordance with industry practices and recommendations, and American Petroleum Institute ("API") Recommended Practice 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*. CUSA also considered API Recommended Practice 584, *Integrity Operating Windows*, while this recommended practice was in development. MFG 520 requires:

- Completion of a DMR work process for piping circuits and equipment in applicable units so as to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms;
- Development of CUSA standard templates for refinery-common units;
- Creation of a DMR schedule aligned with Process Hazard Analysis ("PHA") schedules for all piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs;
- Establishment of multi-disciplinary DMR teams;
- Evaluation of piping circuits and equipment in applicable units against potential damage mechanisms in connection with assessment triggers;
- Consideration of consequences of failures and safeguards identified by the DMR work process;
- Consideration of CUSA and applicable industry best practices;
- Creation of DMR reports, which includes recommendations as appropriate;
- Development of action plans to address DMR recommendations; and
- Provision of DMR work product to the applicable PHA team for consideration.

Inherently safer systems have been incorporated into the DMR template design and evaluated, as appropriate. For example, there are damage mechanism assessment questions that help determine whether or not a change or upgrade in metallurgy would be recommended to prevent or better manage a particular damage mechanism.

In 2013, the Richmond Refinery took a lead role in piloting DMRs as this work process was developed. In 2014, the Refinery began adopting the DMR program by conducting selected DMRs prior to completing the applicable PHA. The Refinery employed the learnings from these initial DMRs and PHAs, and information from internal and external subject matter experts, to further develop its DMR work processes. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

The Refinery has now completed DMRs for applicable PSM-covered process piping and process equipment.

Additionally, consistent with and building upon MFG 520, CUSA has developed an asset strategy standard (“Fixed Equipment Asset Strategies Standard--Manufacturing Standard 525,” or “MFG 525”). This standard sets expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and describes the process for creating and maintaining these strategies. A project is underway at the Refinery to create asset strategies per MFG 525.

Recommendation 2012-03-I-CA-R2: At all California Chevron U.S. refineries, report leading and lagging process safety indicators, such as the action item completion status of recommendations from damage mechanism hazard reviews, to the federal, state, and local regulatory agencies that have chemical release prevention authority.

CUSA’s Response: The subject of process safety indicators is complex and has been the focus of prior agency recommendations (e.g., Recommendation No. 2005-4-I-TX-6 to the API and United Steelworkers). Despite many years of effort by a diverse group of interested parties, including individual companies, safety and industry groups, organized labor, and regulators, there is no consensus on process safety indicators. The CSB acknowledged this lack of consensus during a Safety Performance Indicators public hearing it held in Houston, Texas on July 23 and 24, 2012. CUSA understands the CSB’s interest in continuing to drive this process forward.

The Refinery already internally tracks numerous leading and lagging indicators through its Operational Excellence and Reliability Intelligence (“OERI”) system. OERI is a reporting system that tracks various metrics, including safety, operations, and reliability metrics, by automatically pulling data from the Refinery’s information management systems. These systems contain information pertaining to (1) reliability, including design safety and inspection schedules and history, and (2) maintenance management data, including the status of preventative

maintenance and safety activities. OERI also tracks the Management of Change process, PHA process recommendations, and regulatory compliance action items.

In addition to other tracking mechanisms, the Refinery uses OERI to provide organizational visibility of the Refinery's maintenance, reliability, and process safety performance, and overdue and upcoming safety, maintenance, and regulatory compliance items. Refinery personnel have ready access to OERI and it is reviewed by the Refinery's management on a routine basis.

OERI also is used during Unit Reliability Briefs ("URBs"), which are cross-functional meetings attended by management, reliability analysts, maintenance, operations, technical, and other relevant internal stakeholders. URBs are regularly conducted by each business area to manage process safety and reliability performance threats in a risk-informed manner. OERI is utilized during URBs to track and prioritize reliability threats.

To further address the CSB's recommendation, however, CUSA played a major role in coordination with multiple interested parties, including the CSB, USW, Contra Costa Health Services ("CCHS"), and others in industry to develop "consensus" process safety indicators during the CCHS Industrial Safety Ordinance ("ISO") and the City of Richmond ISO revision process. As part of these discussions, the parties conferred on the selection of appropriate indicators, potential reporting format, and the frequency of reporting, among other items. These revisions to the ISO and RISO became effective on September 30, 2014.

Consistent with the revised ordinances, the Refinery, along with industry and the County, is tracking process safety indicators in connection with CCHS's annual reporting obligation, which comes due on June 30 of each year. ISO and RISO process safety performance indicator requirements include reporting on overdue inspections for piping and pressure vessels, overdue PHA recommendations, overdue incident investigations recommendations, and overdue API and American Chemistry Counsel Tier I and II incident investigation recommendations.

On July 15, 2016, the Department of Industrial Relations released its proposed new regulation for Process Safety Management for Petroleum Refineries for public review, substantially completing the current work of the California PSM Advisory Committee. CUSA has and will continue to remain involved with other PSM reform groups and will continue to participate in the development of consensus process safety indicators at the state, local, and federal level.

Recommendation No. 2012-03-I-CA-R33: *Develop a method to assign accountability at Chevron to determine whether any new Energy Technology Company (ETC) recommended program or industry best practice, such as API guidance must be followed to ensure process safety or employee personal safety. This method shall include monitoring of these practices and guidance at a refining system level and at the refinery level. Develop a tracking system to monitor the progress of implementing these selected practices and guidance to completion.*

CUSA's Response: CUSA previously recognized the value of providing for the uniform implementation of recommended programs or industry best practices. For this reason, CUSA has developed and implemented a "Manufacturing Technical Authority Process" ("MTA Process") to assess mechanical integrity and other process safety-related ETC advisories, as well as industry standards, guidance, and best practices (collectively, "Advisories and Standards"). The MTA Process is designed to determine which Advisories and Standards are applicable and appropriate for CUSA's Manufacturing facilities to develop those Advisories and Standards into new Manufacturing Standards, and to direct and monitor their subsequent implementation by appropriate personnel. The MTA Process engages senior executives and managers with process safety and operational experience.

A brief overview of the MTA Process is as follows:

- Under the MTA Process, new Advisories and Standards are identified from a wide variety of sources.
- If new Advisories and Standards are applicable to Manufacturing facilities and are not already adequately addressed, the new Advisories and Standards will move forward in the process.
- The MTA Process assigns the new Advisories and Standards to the appropriate Manufacturing organization or SMEs to develop the methods and milestones for implementation, and to track and verify that implementation is completed according to plan.
- The appropriate refinery leadership team (*e.g.*, Operations, Maintenance and Reliability, or Technical) assigns responsibility for executing the Manufacturing Standards.
- For Manufacturing Standards that the MTA Process determines to be critical for the prevention of fatalities and high-consequence loss of containment events, any extensions and exceptions will require approval of the President of Manufacturing.
- The MTA Process also uses a centralized database to track and monitor the development and implementation of Manufacturing Standards developed pursuant to the MTA process.

Recommendation No. 2012-03-I-CA-R34: Develop an auditable process to be available for all recommended turnaround work items necessary to address mechanical integrity deficiencies or inspection recommendations that are denied or deferred. This process shall provide the submitter of the denied or deferred recommendation with the option to seek further review by his or her manager, who can further elevate and discuss the recommendation with higher level management, such as the Area Business Unit Manager. Maintain an auditable log of each of these potential turnaround work items, including the ultimate determination of approval, deferral, or rejection, justification determination, and the person or team responsible for that decision.

CUSA's Response: CUSA's Richmond Refinery has developed and implemented a process for tracking turnaround work items necessary to address inspection recommendations concerning fixed equipment (e.g., process piping) identified by the Company's API certified inspectors, including any turnaround work items that are denied or deferred.

On September 20, 2014, the State of California enacted Senate Bill 1300 that imposes on California refineries certain notification obligations regarding turnaround work. 2014 Cal. Stat. ch. 519 (S.B. 1300) (codified at Cal. Lab. Code § 7872). Among other provisions, S.B. 1300 requires a petroleum refinery employer to make available upon request to Cal/OSHA "[n]otification and description of all repairs, design modifications, or process changes described in a corrosion report, risk-based inspection report, process hazard analysis, boiler permit schedule, management of change record, work order, or other document listed in paragraphs (1) to (6), inclusive, *that the petroleum refinery employer has deferred to a subsequent operational period or turnaround.*" Cal. Lab. Code § 7872(c)(7) (emphasis added).

The Richmond Refinery's turnaround tracking process is consistent with S.B. 1300 and establishes the process by which the Refinery maintains the information required by California law. Among the information that the Refinery maintains is a Turnaround Database of potential turnaround work items that include the ultimate determination of deferral or rejection of the item. The Turnaround Database allows personnel to search the status of any turnaround work item, generate a report that demonstrates the approval status of turnaround work items, and review any denied or deferred work items. Additionally, the Turnaround Database identifies the name of the supervisor and the name of employee(s) who provided comments or made a determination regarding approval status. When action is taken on a Living Worklist ("LWL") item, the originator receives an email notification regarding the change in status. The notification includes the LWL item number, the status change, and a link to the Turnaround Database entry for viewing Decision Notes and Decision Attendees. CUSA encourages employees to raise any concerns about a denial or deferral with their supervisor or their supervisor's manager.

In addition, CUSA has implemented improvements to the Turnaround Database and improvements to guidance materials that further emphasize the ability of the originator to seek additional review of deferred or denied turnaround work items. The updated Turnaround Database Approval Process Flow Chart, which serves as an implementation guidance document for the Turnaround Database, and the revised turnaround work item status change email notification further reiterate and reinforce CUSA's policy that the originator of a work item has the option to seek further review of denied or deferred recommendations with higher level management.

Recommendation No. 2012-03-I-CA-R35: *Develop an approval process that includes a technical review that must be implemented prior to resetting the minimum alert thickness to a lower value in the inspection database.*

CUSA's Response: This recommendation was made in the CSB's final report released January 2015. CUSA developed and distributed a manufacturing instruction ("Manufacturing Instruction for Establishing Piping Minimum Alert Thickness" or "MFG 540") in May 2016 (revised December 2016), which includes a documented technical review and approval process when a piping minimum alert thickness is changed to a lower value within the inspection database.

IV. CORRECTIVE ACTIONS IMPLEMENTED BY CUSA IN RESPONSE TO ITS OWN INVESTIGATION

The Richmond Refinery's own investigation team identified a series of recommended actions to address what had been identified as causal factors and additional considerations. Operational and process changes that resulted from this investigation are set forth below.

A. RECOMMENDATIONS TO ADDRESS CAUSAL FACTORS ("CF")

CF Recommendation 1: *Revise Refinery policies and checklists to ensure appropriate information—including Process Safety and Inspection information—is considered when evaluating leaks and addressing the issue of whether to shut down or continue operation of equipment.*

CUSA's Response: The Refinery has implemented an updated protocol for evaluating process leaks with simple guidance to assist in making necessary and rapid decisions concerning leak response and further enhancing situational awareness skills. This protocol identifies scenarios that trigger the use of the protocol and recognizes that there may be other scenarios in high consequence services where a leak has not yet occurred but has a potential for loss of containment if conditions are not addressed.

Pursuant to the protocol, subject matter experts ("SMEs") from various disciplines, including process safety and inspections, gather to evaluate the leak. The protocol provides discussion questions about process safety information, including information related to past inspections, for the SMEs to consider when determining the response plan. The type of process safety information to consider includes the identity of the leaking material, location, temperature and emergency shutdown procedures, as well as an understanding of the potential damage mechanism involved.

The protocol is published on the Company's internal Manufacturing website under Manufacturing Standards, and a training program has been developed that tracks completion of required training.

The leak response protocol was shared with CCHS, Cal/OSHA, CSB, as well as other refineries and industrial facilities in the County and beyond.

CF Recommendation 2: Enhance the Refinery's Mechanical Integrity program to ensure the Refinery properly identifies and monitors piping circuits for appropriate damage mechanisms using a standardized methodology and documentation system.

CUSA's Response: The Refinery is strengthening its reliability program for piping and equipment in an effort to ensure it covers potential damage mechanisms applicable to those systems. As part of this effort, the Refinery is implementing an enhanced process for regular DMRs of piping circuits in applicable units in order to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms. As discussed in response to CSB Recommendation 2012-03-I-CA-R1, CUSA issued a standard, MFG 520, for conducting DMRs to assess corrosion threats and other applicable damage mechanisms. MFG 520 establishes a DMR work process that will, where appropriate, be completed for piping circuits and equipment in applicable units using the applicable damage mechanism information outlined in the API Recommended Practice 571.

The Refinery modified its PHA procedures to better integrate DMRs into the PHA review process. MFG 520 requires alignment of the DMR schedule with the PHA schedules for piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs. The Refinery took a lead role in piloting DMRs as this work process was developed. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

MFG 520 recognizes that the DMR work process will undergo continuous improvement as internal and external guidance is developed. Concurrent with development of the DMR work process and in response to a corrective action from its own investigation, CUSA has developed an asset strategy standard, MFG 525, which is used where applicable. As described above in CUSA's response to CSB Recommendation 2012-03-I-CA-R1, MFG 525 sets the expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and to describe the process for creating and maintaining these strategies. MFG 525 defines an asset strategy as the documented plan for operating, monitoring, and maintaining fixed equipment so as to preserve its pressure boundary. As part of a living program for continual improvement, an asset strategy identifies damage mechanisms; determines the need for and defines operating limits known as integrity operating windows; and prescribes inspection plans, including tasks and frequencies required to manage identified damage mechanisms.

As described above, the MTA Process prioritizes and acts upon mechanical integrity-related recommendations from internal and external technical experts, including industry standards and alerts. CUSA's response to CSB Recommendation 2012-03-I-CA-R33, describes the MTA Process, which was established for the purpose of assessing new Advisories and Standards, determining which are applicable and appropriate for CUSA's Manufacturing facilities, and monitoring their subsequent implementation.

The Refinery also developed the Fixed Equipment Integrity Manager position, with responsibility for developing, implementing, and stewarding the fixed equipment program.

CF Recommendation 3: Review and enhance the requirements for inspector training and competency.

CUSA's Response: The Refinery is improving its mechanical integrity training as a way to further support our leaders, inspectors, operating groups, and engineers. To that end, the Refinery has developed a standard to guide and promote the establishment of essential training and competencies for individuals who are performing a Fixed Equipment Inspector or Analyst role.

The specific training for each Fixed Equipment Inspector position is defined for that specific position based on a training plan that is developed in an effort to ensure that the needed competencies are developed within an established timeframe per certification or training from start of a new position. The implementation of the training plan is tracked through the individual's annual performance monitoring plan and monitored by the individual's supervisor. Additionally, the Refinery maintains a matrix for each inspector that tracks completion of required certifications and training. Recognizing that Fixed Equipment Inspector training is an ongoing process, and new or updated trainings are regularly required, all personnel in Fixed Equipment Inspector positions are current in the trainings identified for the inspections they perform or perform those inspections under the supervision of someone with the necessary certifications and/or training. The training standard, as well as the compliance matrices, are housed on the Refinery's intranet.

CF Recommendations 4 and 5: Develop and implement a process for additional oversight of mechanical integrity-related recommendations and inspection plans, and the escalation of recommendations. Develop and implement a process to review and act upon mechanical integrity-related recommendations from industry alerts, ETC, and other subject-matter experts.

CUSA's Response: The Refinery is implementing a manufacturing instruction for addressing mechanical integrity-related inspection recommendations, including development of mitigation plans, timelines for completion, and the assignment of roles and responsibilities. MFG 530, Fixed Equipment Integrity Threat Recommendation and Resolution Instruction, establishes a process for identifying integrity threats and issuing recommendations, and developing associated resolution plans designed to prevent and mitigate loss of containment due to fixed equipment degradation. Under MFG 530, a fully developed integrity threat recommendation, among other things:

- Is a high-quality, data-driven recommendation for deficiencies discovered on in-scope fixed equipment.
- Includes a resolution plan with an agreed-upon completion dates.

- Includes a mitigation plan if mitigation is required to enable continued Operation until final resolution can be achieved.
- Defines clear handoffs to work prioritization, planning, and execution processes.
- Verifies and documents completion of resolution and mitigation plans.
- Provides input to maintain evergreen asset strategies for fixed equipment.

MFG 530 is applicable to most types of fixed equipment used in the refinery process, including pressure vessels, boilers, on-plot and off-plot piping, atmospheric storage tanks, and furnaces. The objective is to guide the development of integrity threat recommendations to prevent loss of containment events of higher consequence. The instruction and supporting procedures provide detail to support the mechanical integrity program.

Pursuant to the process established in MFG 530, for integrity threats to fixed equipment, all resolutions and/or mitigation plans, if mitigation is required, and target completion dates, must be approved by both the Operations Management for the affected unit and Fixed Equipment Integrity Lead/Manager (“FEIM”). If the Operations Management and the FEIM do not agree on the resolution/mitigation plan or the target completion date, the FEIM shall escalate the decision to the Refinery General Manager. All open integrity threats are tracked in OERI in an effort to ensure the resolution/mitigation plan are implemented prior to the target completion date. Any employee may raise any concern about the resolution/mitigation plan or the target completion date with their supervisor or their supervisor’s manager, or may use their personal stop work authority.

In addition to the actions CUSA has taken in response to its own investigation, CUSA’s responses to CSB Recommendation 2012-03-I-R34 and CSB Recommendation 2012-03-I-CA-R35, described above, are also enhancing the Refinery’s assessment, decision-making, and oversight of mechanical integrity-related inspection recommendations.

Further, the response to CSB Recommendation 2012-03-I-R33 above describes how new Advisories and Standards are considered, developed into manufacturing instructions as appropriate, implemented, and tracked.

CF Recommendations 6 and 7: Inspect 4CU piping that falls under the ETC Sulfidation Inspection Guidelines criteria for sulfidation corrosion prior to restarting the 4CU. Implement the ETC Sulfidation Inspection Guidelines for the remainder of the Refinery.

CUSA’s Response: The Refinery conducted 100% component inspection of carbon steel piping systems identified as potentially susceptible to sulfidation corrosion. Over 12,000 individual piping components were inspected. As part of these inspections, the Refinery implemented inspections to identify components of carbon steel piping circuits that did not have sufficient thickness to remain in service until the next scheduled turnaround; implemented generally accepted engineering practices with respect to components of insufficient thickness;

documented solutions with respect to components of insufficient thickness; established an inspection frequency for carbon steel piping circuits based upon measured corrosion rates, remaining life calculations, and current process conditions, including sulfur content and temperature; and maintained records of all carbon steel piping circuits potentially susceptible to sulfidation corrosion.

CF Recommendation 8: *Ensure relevant technical studies and inspection data are considered for the Refinery's equipment reliability plans and incorporated into the ROI/IPR [Reliability Opportunity Identification/Intensive Process Review] process.*

CUSA's Response: The ROI/IPR process has been revised to include known failure mechanisms, relevant technical studies and industry incidents in the pre-read for ROI/IPR study. Impacted employees are being trained on these changes.

B. RECOMMENDATIONS TO ADDRESS ADDITIONAL CONSIDERATIONS ("AC")

AC Recommendation 1: *Review the Pre-Fire Plan to ensure sufficient guidance is provided on equipment positioning.*

CUSA's Response: The Refinery reviewed and updated its Pre-Incident Scenario Analysis with apparatus placement modifications and shared the revised plans with CUSA Industrial Fire Chiefs.

AC Recommendation 2: *Review company/industry loss history on large fractionating towers to determine if internal Engineering Standard FRS-DU-5267 (Emergency Isolation and Depressuring Valves) adequately addresses mitigation of accidental releases from these systems. Revise the standard as warranted by the findings of this review.*

CUSA's Response: The Company completed a review of loss history for large fractionating towers. No revisions to FRS-DU-5267 were warranted by this review.

AC Recommendation 3: *Ensure Refinery business plans provide for the appropriate implementation of Process Safety recommendations (such as the ETC Sulfidation Inspection Guidelines).*

CUSA's Response: See the response above to CSB Recommendation No. 2012-03-I-CA-R33, which describes the MTA Process.

AC Recommendation 4: *Ensure sufficient organizational capacity and competency for minimum thickness Fitness for Service determinations.*

CUSA's Response: Manufacturing Instruction for Minimum Required Pipe Wall Thickness ("MFG 510") was revised in April 2016. This instruction "outlines the calculation methods for

determining minimum required pipe wall thickness of ferritic and austenitic steel piping systems within limits set by accepted piping codes and standards.” If thickness is at, or is projected to be, below minimum required thickness, then MFG 510 requires an approved integrity threat mitigation plan to document the technical basis for continued operation to a lower value. MFG 510 also addresses the training, qualification, and documentation requirements for personnel involved in establishing minimum required pipe wall thickness. The Richmond Refinery maintains a record of engineers qualified to execute these calculations.

ETC facilitates an instructor-led course entitled “Fitness for Service – Level 1 Practitioner Training.” The course format is a two-day instruction/workshop followed by an additional day of testing and certification. The course is based on API 579-1/ASME FFS-1 and is structured as a workshop, using example problems to demonstrate FFS procedures using CUSA’s ETC Level 1 software. The training is designed for design engineers. Certifications are issued to those who complete the training course and pass the test. Only certified personnel are authorized to perform a second level review and approve FFS Level 1 assessments, and only ETC is authorized to perform FFS Level 2 and 3 assessments. Richmond Refinery keeps a log of the active personnel certified to perform a second level review and approve FFS Level 1 assessments.

AC Recommendation 5: Consider additional training on expectations under the “Richmond Refinery Piping Inspection Guidelines” and “RFMS Piping Data Entry (Reliability Focused Maintenance System) and ACD (Add/Change/Delete) Guideline.”

CUSA’s Response: See the response above to the third CUSA Investigation CF recommendation, which discusses inspector training and competency.

AC Recommendation 6: Review and modify the PHA procedures to ensure that teams consider known corrosion threats/mechanisms.

CUSA’s Response: See the responses above to CSB Recommendation 2012-03-I-CA-R1 and the second CUSA Investigation CF recommendation, which discuss the DMR work process.

AC Recommendation 7: Consider a project to evaluate the purpose and methods of various project safety management (PSM) reviews (PHA, ROI/IPR, AOA, COA, sRCM, RBI, etc.) to determine if these activities can be combined or better sequenced to improve risk understanding across the various functions and promote better process safety outcomes.

CUSA’s Response: The Refinery has mapped out the work processes under PSM and other safety standards to identify potential efficiencies that can be gained or outcomes enhanced by re-sequencing, combining, or modifying processes.

V. CONCLUSION

Operating safely is one of CUSA's core values. CUSA is also committed to learning from the August 6, 2012 fire to prevent a recurrence. To this end, CUSA has worked closely and cooperatively with local, state, and federal agencies, including the City, to determine the root causes of the fire. CUSA is committed to considering recommendations from all agency investigations, and taking appropriate actions in response.

CUSA's efforts to improve safety and reliability at its refineries are ongoing. CUSA continues to evaluate and undertake efforts to enhance mechanical integrity and safe operations at the Refinery.

APPENDIX A – ACRONYMS

ACC	American Chemistry Counsel
API	American Petroleum Institute
BIN	Business Improvement Network
Cal/OSHA	California Division of Occupational Safety and Health
CCHS	Contra Costa Health Services
CCHMP	Contra Costa County Hazardous Materials Program
CSB	U.S. Chemical Safety Board
CUSA	Chevron U.S.A. Inc.
DMR	Damage Mechanism Review
EIR	Environmental Impact Report
ETC	Energy Technology Company
ISO	Industrial Safety Ordinance
MFG	Manufacturing Standard
MM	Mitigation Measure
MTA	Manufacturing Technical Authority
OERI	Operational Excellence and Reliability Intelligence
PHA	Process Hazard Analysis
PSM	Process Safety Management
RISO	City of Richmond Industrial Safety Ordinance
S.B.	Senate Bill
SME	Subject Matter Expert
URB	Unit Reliability Brief
USW	United Steelworkers

ATTACHMENT 4

CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
Construction Emissions Report
Fourth Quarter 2017

January 31, 2018

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

Pursuant to the Chevron Richmond Refinery Modernization Project (Project) Mitigation Monitoring and Reporting Program (MMRP), Chevron is required to provide quarterly compliance reports for emissions of NO_x (mitigation measure (MM) 4.3-2a), ROG (MM 4.3-2b), and greenhouse gases (GHG) (MM 4.8-1) during Project construction. This is the Construction Emissions Report for construction activity that occurred through the fourth quarter 2017 (4Q2017).¹

Chevron tracks construction emissions using the Construction Emissions Module (Module) developed in conjunction with the City of Richmond's environmental consultant, Ramboll Environ, Inc. (Ramboll). The Module calculates emissions from On-Road Onsite Only vehicle use, On-Road Onsite and Offsite vehicle use, Off-Road Equipment, and Architectural Coating and Paving activities. Chevron worked with Ramboll to refine the Module to ensure that the data generated is accurate. The current version of the Module, version 7.0, was issued to Chevron on January 23, 2017. Data from the Module is available for review at the Refinery.

As explained further below, based on current data and projections, Chevron anticipates that emissions of NO_x and ROG will be significantly lower than projected in the EIR. As the Project is still under construction, Chevron does not have enough data to predict whether the average daily emissions of NO_x and ROG will exceed the thresholds of significance once Project construction is complete.² Therefore, the Project is implementing MM 4.3-2a and MM 4.3-2b, as described below. For GHG emissions, Chevron did not exceed the threshold in 2017. Chevron is nevertheless implementing MM 4.8-1a – 4.8-1k, as described below.

Construction Emissions Summary

Several factors are contributing to actual emissions from Project construction being lower than projected in the EIR.

First, when estimating construction emissions from the Project, the EIR conservatively assumed that all Project components would be constructed during a two-year construction period. (Draft EIR, p. 3-39; see also Table 3-2.) Chevron has elected to defer construction of the FCC FHT improvements (Draft EIR, p. 3-25) and improvements to one of the sulfur recovery units (SRU), resulting in less intensive construction during the initial construction period than was estimated in the EIR.³ Further, the construction schedule for the remaining Project components, exclusive of the dismantling of the existing Hydrogen Plant, is approximately three years from start of construction on June 12, 2016.⁴ This means the total number of days during the construction period by which total emissions of NO_x and ROG will be divided to determine the respective average daily emissions will be greater than used in the EIR.

¹ Pursuant to Impact 4.3-3 of the Environmental Impact Report (EIR) prepared for the Project, emissions of PM₁₀ and PM_{2.5} from construction activities are less than significant without mitigation, though the EIR includes Improvement Measure 4.3-3 requiring certain best practices to be implemented. Further, the EIR did not analyze or require tracking or mitigation of CO during construction activities. However, Chevron uses the Construction Emissions Module to track PM₁₀, PM_{2.5}, and CO emissions, and maintains this data at the Refinery.

² For purposes of assessing potential impacts from the Project's construction-related emissions, the EIR utilized the California Environmental Air Quality Act Air Quality Guidelines promulgated by the Bay Area Air Quality Management District (BAAQMD CEQA Guidelines).

³ Pursuant to Condition A7 of the Condition Use Permit (CUP), Chevron has ten (10) years in which to complete construction of the Project, with one automatic, two-year extension. Chevron has not yet determined when it might pursue construction of the remaining Project components.

⁴ The SRU improvements are the final Project component scheduled to be constructed during the initial construction period, and Chevron anticipates construction of these improvements will be complete by the end of second quarter 2019. Chevron has also yet to determine exactly when it will begin dismantling the existing Hydrogen Plant.

Further, because the EIR did not have specific data concerning the fleet to be used during construction, it made a conservative assumption that the majority of engines were Tier 2 and Tier 3. In the case of off-road equipment, emissions from equipment with higher tier engines (i.e., of equal horsepower) are generally less than emissions from equipment with lower tier engines⁵. Higher tier engines are associated with a lower emission factor, resulting in lower emissions when compared to emissions from lower tier engines. Actual data shows that ~88% of engines in the cumulative fleet since the beginning of project construction are Tier 4 Interim or Tier 4 Final.⁶ Of the remaining ~12% of the engines, 10% are Tier 3, and 1.5% are Tier 2, with a negligible quantity of Tier 1 engines in the fleet (i.e., below 1%). Therefore, the Project's use of Tier 4 Interim and Tier 4 Final engines, where possible, has contributed to actual Project construction emissions that are lower than the emissions projected in the EIR.⁷

Ozone Precursors

Pursuant to the BAAQMD CEQA Guidelines, the potential significance of construction-related emissions of NO_x and ROG is assessed by comparing the total average daily emissions from the Project to the threshold of significance. In order to calculate total average daily emissions, total Project construction-related emissions will be divided by the total number of days during the construction period. The total daily average is then compared to the threshold of significance. Based on current data from the Module, as well as Chevron's projected construction schedule and levels of activity, Chevron believes that emissions of NO_x and ROG will be significantly lower than those projected in the EIR. Nevertheless, as the project is still under construction, it is impossible to predict with certainty whether total emissions of NO_x and ROG over the life of construction will result in the Project exceeding the thresholds of significance. Chevron is therefore implementing MM 4.3-2a and MM 4.3-2b, as follows:

MM 4.3-2a Implementation	
MM 4.3-2a Part(s)	Implementation Status
Chevron shall reduce construction-related NO _x emissions to less-than-significant levels by implementing one or more of the following feasible mitigation measures, all of which have been found to result in emissions reduction for construction projects:	
Using lower emitting construction equipment, increasing carpooling or otherwise reducing construction-worker automobile use in daily commutes, extending the duration of construction by 1 year by delaying the modifications required to increase the throughput capacity of the FCC FHT until after construction of the hydrogen plant and amine contractor, or reducing the hours of use of construction equipment;	- As described above, ~88% of the engines in the cumulative construction fleet since the beginning of project construction are Tier 4 Interim or Tier 4 Final, compared to the EIR, which assumed the majority of the fleet would have engines in Tiers 2 and 3. - Chevron has extended the initial construction period from two years to three years.

⁵ Source: CalEEMod User Guide. OFFROAD Emission Factor Based on Engine Tier. <http://caleemod.com/>

⁶ The calculation for percentage of equipment associated with each engine tier is based on actual weekly contractor equipment counts received from May 9, 2016 through December 31, 2017.

⁷ This likelihood was recognized in the EIR, Appendix 4.3-CST, p. 6, n. 2: "Chevron Data Transmittal #360 (Rev#3), 2014 provides equipment data for eight consecutive quarters. Because the exact start date of future construction is uncertain, the emissions analysis conservatively uses emission factors for 2014 for the first four quarters of construction, and 2015 emission factors for the last four quarters of construction. A construction start date later than January 2014 would lead to lower emissions than predicted here as the emissions profile of the construction fleet is cleaner, due to the implementation of regulations requiring lower emissions engines."

MM 4.3-2a Implementation	
Reducing operations and/or emissions from portable generators at the Facility during the construction period, and thereby reducing NO_x emissions;	The number of portable diesel generators used during construction has been reduced by, for example, utilizing solar-powered light standards for certain work areas. Approximately 5% of the cumulative hours for light plants since the beginning of project construction are attributed to light plants operating on solar power.
Installing the low-NO_x burners included in the Modernization Project in the first 6 months of the construction period, thereby reducing net NO_x emissions from the Facility while construction of the Modernization Project continues;	Chevron has not elected to pursue this option as it does not believe it will be necessary to mitigate NO_x emissions to less-than-significant.
Retiring permanent NO_x emission reduction credits to offset this temporary NO_x construction increase, in an amount sufficient to offset construction period NO_x emissions; or	Chevron is prepared to retire NO_x emissions reduction credits as necessary to mitigate NO_x emissions.
Implementing a combination of two or more of the above measures in an amount sufficient to offset construction-period NO_x emissions to less-than-significant levels.	See above.

MM 4.3-2b Implementation	
MM 4.3-2b Part(s)	Implementation Status
Chevron shall reduce construction-related ROG emissions to less-than-significant levels by implementing one or more of the following feasible mitigation measures, all of which have been found to result in emissions reduction for construction projects:	
Installing the tank dome Project Design Feature, and installing one additional tank dome, in the first 6 months of Project construction, thereby reducing net ROG emissions from the Facility before completing construction of the hydrogen plant or sulfur removal components of the Modernization Project;	Chevron has not elected to pursue this option as it does not believe it will be necessary to mitigate ROG emissions to less-than-significant.
Using lower emitting construction equipment, increasing carpooling or otherwise reducing construction-worker automobile use in daily commutes, extending the duration of construction by 1 year by delaying the modifications required to increase the throughput capacity of the FCC FHT until after construction of the hydrogen plant and amine contractor, or reducing the hours of use of construction equipment;	- As described above, ~88% of the engines in the cumulative construction fleet since the beginning of project construction are Tier 4 Interim or Tier 4 Final, compared to the EIR, which assumed the majority of the fleet would have engines in Tiers 2 and 3. - Chevron has extended the construction period from two years to three years.
Retiring permanent ROG emission reduction credits to offset this temporary ROG construction increase, in an amount sufficient to offset construction-period ROG emissions; or	Chevron is prepared to retire ROG emissions reduction credits as necessary to mitigate ROG emissions to less-than-significant.

MM 4.3-2b Implementation	
Implementing a combination of the above measures, in an amount sufficient to offset construction-period ROG emissions to less-than-significant levels.	See above.

Details concerning implementation of the above measures can be found in Chevron's Compliance Plan, submitted in October 7, 2016, as well as responses to the quarterly ANTEA reports, submitted with this report for fourth quarter 2017.

GHG

Pursuant to the BAAQMD CEQA Guidelines used in the EIR, the potential significance of construction-related emissions of GHG is assessed by comparing total annual emissions of GHG to the threshold of significance (10,000 MTCO₂e per year). Table 4Q2017-GHG shows total construction-related GHG emissions for 2016 and total construction-related GHG emissions for 2017, not including reductions associated with implementation of MM 4.8-1a – 4.8-1k.

Table 4Q2017 – GHG Emissions from Construction		
Year	Cumulative Total (in MT CO ₂ e/yr)	BAAQMD Threshold of Significance (in MT CO ₂ e/yr)
2016 ¹	1,196	10,000
2017	7,638	10,000
¹ Based on data collected beginning May 9, 2016 and ending December 31, 2016		

Total construction-related GHG emissions in 2016 did not exceed the threshold of significance. Because GHGs are tracked on an annual basis, the cumulative total for construction-related GHG emissions reset to zero in January 2017. Cumulative construction-related GHG emissions for 2017 were below the threshold of significance.

While GHG emissions did not exceed the threshold of significance during 2017, Chevron is nevertheless implementing MM 4.8-1, as follows:

MM 4.8-1 Implementation	
MM 4.8.1 Part(s)	Implementation Status ¹
Consistent with air quality mitigation measures for construction activities, Chevron would be required to implement the following mitigation measures to reduce its Project construction emissions. Implementation of the mitigation measures would result in further reductions in greenhouse gas emissions.	
a. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.	Done
b. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxic Control Measure	Done

MM 4.8-1 Implementation	
(Title 13 of California Code of Regulations [CCR], Section 2485). Clear signage shall be provided for construction workers at all access points.	
c. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.	• Done
d. The idling time of diesel-powered construction equipment shall be limited to 2 minutes.	• Done
e. The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in construction (i.e., owned, leased, and subcontractor vehicles) would achieve a Project-wide fleet-average 20% nitrogen oxide reduction and 45% particulate matter reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, Low-emission diesel products, Alternative fuels, Engine retrofit technology, After-treatment products, Add-on devices such as particular filters, and/or Other options as such become available. (Several of these measures would also reduce greenhouse gas emissions.)	• Done
f. All contractors shall be required to use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.	• Done
g. Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).	• Done
h. Enforce and follow limits on idling time for commercial vehicles, including delivery and construction vehicles.	• Done
i. Using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment on at least 15% of the fleet.	• Done
j. Using local building materials of at least 10%.	• Done
k. Recycling or reusing at least 50% of construction waste or demolition materials.	• Done
l. For each year of Project construction, Chevron shall hire, at commercially reasonable rates and at Chevron's expense, a qualified third-party entity reasonably acceptable to the City to quantify and verify in writing whether the reductions achieved from the above described construction greenhouse gas mitigation measures for that year of Project construction adequately mitigated this potentially significant impact, which report shall be subject to City's reasonable approval.	• This obligation has not been triggered.

MM 4.8-1 Implementation

For any year of construction for which construction-related diesel emissions are not reduced to or below the 10,000-MT CO₂e per year significance threshold, Chevron shall implement one or more of the following measures in an amount sufficient to reduce construction period greenhouse gas emissions to less-than-significant levels:

- (i) Reduce diesel emissions from other equipment at the Facility, such as a diesel-powered generator, in an amount equal to the construction-related greenhouse gas emissions in excess of 10,000 MT CO₂e per year for any calendar year of Project construction, which reduced emission level Chevron shall maintain for the following two years.
- (ii) Permanently retire, or retrofit from diesel to electric power, one or more Facility sources that emit more than 300 MT CO₂e per year.

Details concerning implementation of the above measures can be found in Chevron's Compliance Plan, submitted in October 7, 2016, as well as responses to the quarterly ANTEA reports, submitted with this report for fourth quarter 2017.

ATTACHMENT 5

CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
Condition of Approval H3 Semi-Annual Construction Report

March 28, 2018

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

INTRODUCTION

This report is submitted pursuant to the Conditional Use Permit (CUP) for the Chevron Modernization Project, Section H, Monitoring, Record Keeping, Reporting and Public Notification, Condition of Approval H3, which states:

“Chevron shall submit semi-annual construction progress reports to the Planning and Building Services Department on March 31 and October 31 during all phases of project construction.”

This is the fourth semi-annual construction progress report, and provides a general overview on the status of construction for the Modernization Project.

REPORT

Construction Summary

Construction work is progressing on the new Hydrogen Plant, the Sulfur Removal Improvements (including the 6H2S plant and SRUs), and project tie-in components (e.g. pipe racks). A total of 159 building, fire, and significant temporary construction permit packages have been issued by the City of Richmond, and special inspections are ongoing daily. Chevron continues to work with the City to prioritize and coordinate permitting to support construction.

Over 773,000 man-hours have been worked year-to-date. Approximately 2,400 personnel are supporting the Modernization Project, including approximately 2,300 on-site.

As initially reported to the City on June 16, 2016, and quarterly thereafter via the City’s Antea software, Chevron is implementing all construction-related mitigation measures from the Chevron Modernization Project Environmental Impact Report certified by the City on July 29, 2014, with oversight from the City. The Fourth Quarter 2017 Modernization Construction Questionnaire, was submitted to the City via Antea software on January 31, 2017.

More than 50% of total waste project streams are being recycled or reused, as required by Mitigation Measure 4.8-1k. The construction equipment fleet is exceeding targets for reduced emissions of oxides of nitrogen (NOx) and particulate matter (PM) compared to CARB fleet averages, as required by Mitigation Measure 4.8-1e. Chevron continues to track construction emissions using the Construction Emissions module provided by the City’s consultant, Ramboll. Pursuant to the MMRP, a separate quarterly construction emissions report is submitted to the City as part of the ANTEA quarterly update.

Chevron anticipates construction will continue through 2019.

ATTACHMENT 6

CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
Mitigation Measure 4.13-7a Report Regarding Implementation of the Modernization
Project Reliability Program

June 14, 2017

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

INTRODUCTION

This report is submitted pursuant to section IV.H of the Modernization Project Reliability Program (Program), as incorporated by mitigation measure (MM) 4.13-7a of the Modernization Project Mitigation Monitoring and Reporting Program (MMRP). Pursuant to section IV.H:

“As part of its ongoing reporting obligation under the [MMRP] adopted by the City, Chevron shall report on the status of all requirements of this Reliability Program on an annual basis in a form acceptable to the City.”

Pursuant to MM 4.13-7a, “an initial Reliability Program report shall be submitted to the City and County prior to Project construction. Annual reports shall be submitted thereafter...”

Chevron submitted its initial Program report on June 16, 2016, and provided an update to that report on October 7, 2016. This report is the second annual Program report and provides a general overview regarding the status of Chevron’s implementation of Sections II – IV of the Program.¹ A copy of the Program is submitted herewith for purposes of tracking the responses below with the Program commitments. Refer to Attachment 1.

Many of the Program’s obligations are triggered by “commencement [or start] of project operations.” Chevron currently anticipates that the Hydrogen Plant will start commissioning activities in April 2018 and will begin production of hydrogen for the purposes of refinery operations in June 2018. For purposes of the Program obligations requiring monitoring, reporting, and mitigating increased sulfur processing capacity, commencement of Hydrogen Plant operations by itself will not trigger the increase in sulfur processing and removal capacity approved by the City. The “sulfur removal improvements,” as identified in the environmental impact report (EIR) certified by the City for the Project,² are currently projected to be commissioned and operational sometime during 4th quarter 2018 to 1st quarter 2019. Chevron will submit its third annual Program report in June 2018, prior to commencement of operations of the sulfur removal improvements, with additional detail concerning many of these sulfur-related Program obligations. Some requirements are required to be completed prior to the commencement of Hydrogen Plant operations, as noted below.

Chevron also recognizes that there are Reliability Program-related CUP and MMRP obligations which are to be included as part of this Reliability Program report. Attachment 2 includes the status of Chevron’s implementation of these requirements.

REPORT

II. General Recommendations and Refinery Actions to Address

¹ Section I of the Reliability Program is the Introduction and does not contain any recommendations or action items.

² The sulfure removal improvements are described on pp. 3-24 – 3-27 of the Draft EIR. Chevron has elected to defer construction of the FCC FHT improvements (Draft EIR, p. 3-25) and improvements to one of the sulfur recovery units (SRU).

Section II includes five general recommendations and describes the actions the Refinery was taking to address those recommendations at the time the EIR was certified, including steps Chevron was taking to address recommendations and corrective actions from various investigations into the August 6, 2012 fire. Chevron has continued implementation of the various recommendations and corrective actions, as separately reported to the City in its quarterly reports pursuant to mitigation measure (MM) 4.13-13d. Those separate reports are incorporated herein by this reference. Refer to Attachment 3 for the most recently submitted report dated April 3, 2017. Chevron will continue to work the Contra Costa Health Services, the City, and its consultants to ensure that the general recommendations have been addressed.

In response to the general recommendations, Chevron also completed a review of its Positive Material Identification (PMI) Procedure (Refinery Instruction (RI) 642, available on the internal Refinery webpage) for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/dismantling/disassembly.

Revisions have been made to RI 642 to ensure consistency with API 578.

III. Project Recommendations

Section III includes project-specific recommendations that are being implemented as a result of the Reliability Analysis.

A. Schedule and Report on Upgrades to Identified Piping Circuits

Chevron has separately submitted a letter to the City pursuant to this requirement on February 15, 2017. Refer to Attachment 4 of this report. The information presented below updates Table 2 from that letter;

Table 2. Building Permits for Reliability Program III.A

Permit No.	Permit Description	Submitted mechanically complete on	Final special inspection report	Permit closed on
B16-00273	Structural steel modifications and additional bracing	11/28/2016	11/29/2016	4/13/2017
F16-10390	Structural member tie-in location fireproofing	5/25/2017	TBD	Open
B16-00165	Misc structural steel (guides and anchors)	12/7/2016	12/8/2016	3/9/2017
B15-12288	Steel bearing plates under pipe base supports at grade	12/12/2016	12/12/2016	Open
B16-03216	Replace short pipe supports at grade for ¾" piping	12/8/2016	N/A	3/9/2017
B15-11508	7 Sidecut piping upgrade – various structural mods for pipe	12/12/2016	12/13/2016	Open
B16-03477	Relocate two pipe guides for 2" CW lines	12/7/2016	N/A	3/9/2017
B15-11997	8 Sidecut piping upgrade – various pipe supports	12/13/2016	12/14/2016	Open

B. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Chevron has separately submitted a letter to the City pursuant to this requirement on February 15, 2017. Refer to Attachment 4 of this report.

C. Crude Unit Recommendations

The following preventative measures were included in the Program based on the belief that operational and feedstock changes from the Project could result in increased damage mechanism activity in the Crude Unit post-Project:

1. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Program task owners when the crude sulfur trigger of 2.0 wt% is reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM, and will include periodic checks by key

process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when the trigger is anticipated to be reached. Once the trigger is reached, the task owner will schedule a review of the F-1100 crude charge furnace to determine if the radiant tubes are safe to operate until the next scheduled shutdown. Chevron has confirmed that, since Project approval, average sulfur content of crude has been consistent with baseline levels and has not exceeded 2.0 wt%.

2. Chevron has separately submitted a letter to the City pursuant to this requirement on February 15, 2017. Refer to Attachment 4 of this report.
3. Chevron has separately submitted a letter to the City pursuant to this requirement on February 15, 2017. Refer to Attachment 4 of this report.
4. Tests have been run by Chevron on crude samples and crude blends to improve our understanding of the effects of sulfur species and H₂S evolution on sulfidation corrosion. The results of this testing are considered Confidential Business Information, and is therefore available for review by the City with Chevron personnel at the Refinery.
5. The integrity operating window (IOW) program has been implemented for critical Crude Unit parameters per API 584, with IOW table, alarm and alert structure, corrective actions, required bypass mitigations, and training.
6. This obligation requires that, within one year of commencement of Project operations, Crude Splitter software predicted results be verified if identified trigger points (2.25 wt% and 2.75 wt % sulfur) are reached. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability Program task owners when crude sulfur triggers of 2.25 wt% or 2.75% are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM, and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached. This commitment will be implemented following commencement of Project operations, if triggered.
7. Chevron has revised the Asset Integrity Plans for V-1100 Crude Unit Atmospheric Column Reflux Drum, V-1190 Stabilizer Column Reflux Drum, and V-1160 Vacuum Column Overhead Seal Drum, to include inspection for Wet H₂S damage. Chevron will complete an external Automatic Ultrasonic Testing inspection of representative sections of the “water wet” portions of V-1100, V-1160, and V-1190 vessels prior to commencement of Project operations, and again within one year of Project start-up. Further, a one-time internal inspection of these same vessels will be conducted at the first regularly scheduled maintenance turnaround after commencement of Project operations, using approved internal inspection techniques per the Chevron Wet H₂S program.

8. Chevron shall develop a process monitoring plan for the crude unit overhead to confirm any impacts of increased sulfur levels. The plan will be developed prior to commencement of Project operations, and the monitoring plan will be implemented following commencement of Project operations.
9. Chevron is continuing to develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur streams operating >500F are not inadvertently placed into continuous service. These controls shall be finalized and in place prior to commencement of Project operations.
10. Prior to commencement of Project operations, Chevron shall undertake the required historical review of purchased crudes and processed crude blends and use the results of the review to set a flag in the crude and gas oil acceptance procedure.
11. Transfer line dissimilar metal welds between furnace outlet piping and C-1100/C-1160 were inspected during the 4th quarter 2016 Crude Unit turnaround with no corrosion concerns noted. C-1100 Internal Cladding was inspected between tray 15 and 16, with satisfactory results. Condition Monitoring Locations have been updated for C-1100 to guide future inspections.

D. Hydroprocessing Recommendations

1. Chevron has committed to monitoring post-Project sulfur content of crudes being fed to the crude unit and use 2.25% sulfur content of feed as a trigger to conduct a review of “inspections plans for the distillation section of the hydroprocessing units where sulfidation corrosion rates have been ‘erratic’ and uncertain, per API 939-C”. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached. Chevron has confirmed that, since Project approval, average sulfur content of crude has been consistent with baseline levels and has not exceeded 2.25 wt%.
2. Chevron is in progress of completing its project to compare the HP-002 Best Practice Guideline regarding water wash to API 932-B recommendations. Chevron will ensure that the HP-002 document is consistent with 932-B guidelines. The report will be submitted prior to commencement of Project operations.
3. The program including process monitoring and sampling for damage mechanisms associated with H₂S and ammonium bisulfide is currently in place. The program will continue after commencement of Modernization Project operations for all hydroprocessing units. So far, all 8 hydroprocessing plants have completed monitoring, sampling, and inspection strategies.

4. Integrity operating windows (IOWs) for the hydroprocessing units that will see an increase in sulfur content because of the project have been developed. Implementation of IOWs is ongoing and will be completed prior to commencement of Project operations.
5. The REAC Corrosion Control Project was substantially completed during the 2014 TKN turnaround, resulting in extensive metallurgy upgrades. Current operations of certain TKN systems not modified by the Modernization Project are being managed per the HP-002 Reactor Effluent Air Cooler (REAC) Piping and Equipment Corrosion Control Guidelines (i.e., the “REAC best practice guidelines”) through ongoing inspections to help ensure corrosion rates will remain under the REAC best practice guidelines and, if determined to be necessary, targeted upgrades during the next TKN turnaround.

E. SDA Recommendations

1. Chevron is developing its implementation strategy for this SDA recommendation, which matures after commencement of Project operations. A further update will be provided in the next Reliability Program report.
2. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability Program task owners when crude sulfur triggers of 2.25 wt% or 2.75% are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached. This condition requires that a water boot analysis of corrosive constituents be conducted in the SDA upon triggering 2.25 wt% and 2.75 wt% sulfur of crude oil processed at the Refinery.
3. This obligation requires that, within one year of commencement of Project operations, predicted results be verified for the SDA if identified trigger points (2.25 wt% and 2.75 wt % sulfur) are reached. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability Program task owners when crude sulfur triggers of 2.25 wt% or 2.75% are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached.
4. Chevron will schedule a follow-up smart pig inspection of F-100 and F-1200 furnace tubes for the first planned maintenance after the SDA following at least 1 year of post-Modernization Project operating conditions.
5. Chevron has initiated a project to upgrade its existing Permasense[®] monitoring system because Permasense[®] no longer supports the existing hardware. Chevron is developing its

acquisition and installation plan for the upgraded system as well as the 25 probes for the SDA, which will be fully functional by start of Project operations.

6. Integrity operating windows (IOWs) for the SDA unit have been developed. Implementation of IOWs is ongoing and will be completed prior to commencement of Project operations.
7. Process monitoring and sampling for post-Modernization Project operations for the SDA unit will be completed prior to the commencement of Project operations.

F. Amine Systems Recommendation

Chevron currently monitors amine loading and heat stable amine salts (HSAS) in the amine system, and is collecting pre-project data for purposes of comparison. Following commencement of project operations, Chevron will continue to collect sampling data for one year and then will undertake a comparison to the pre-project data set.

G. Sulfur Recovery Unit Recommendation

The liquid oxygen injection facility is partially built from the previous construction phase, and located near the SRU bullpen. Chevron has confirmed from the liquid oxygen vendor that the equipment design utilizes the design and installation best practice details common in industry for oxygen piping systems. The project anticipates that stainless steel piping will have to be cleaned after the time it has been in the field, and has currently engaged the liquid oxygen vendor to assist in conducting an equipment review and developing commissioning activities for this system prior to startup.

H. Sour Gas System Recommendations

1. This obligation requires a review of post-Project assumptions regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping if identified crude trigger points (2.25 wt% and 2.75 wt % average annual sulfur content) are reached. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability Program task owners when crude sulfur triggers of 2.25 wt% or 2.75% are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached.
2. Integrity operating windows (IOWs) for the sour gas system have been developed. Implementation of IOWs is ongoing and will be completed prior to the commencement of Project operations.

I. Sour Water System Recommendations

Chevron is developing its implementation strategy for the sour water system recommendation which matures following commencement of Project operations. A further update shall be provided in the next Reliability Program report.

1. Chevron is in progress of reviewing its sour water piping inspection programs at the P&ID/Inspection Isometric level in order to determine that the programs are sufficient to detect any ammonium bisulfide corrosion in the system. This will be completed prior to the commencement of Project operations.
2. This obligation requires that monitoring and sampling of ammonium bisulfide concentrations and velocities in the sour water piping and H₂S concentrations in the H₂S Stripper and NH₃ Stripper overhead systems be conducted if identified crude trigger points (2.25 wt% and 2.75 wt % average annual sulfur content) are reached. Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability Program task owners when crude sulfur triggers of 2.25 wt% or 2.75% are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached.
3. Chevron is developing its implementation strategy for the sour water system recommendation which matures following commencement of Project operations. A further update shall be provided in the next Reliability Program report.
4. Chevron will continue existing inspection techniques for all the overhead piping from the NH₃ stripper to the reflux drum.
5. Integrity operating windows (IOWs) for the sour water system have been developed. Implementation of IOWs is ongoing and will be completed prior to the commencement of Project operations.

J. Recovered Oil Recommendations

Chevron has placed CMLs at the C-710 injection nozzle and adjacent C-710 tower shell locations, and the CMLs are being used to inform inspections going forward.

IV. ONGOING REGULATORY REVIEW AND REPORTING

A. Re-evaluate and Report Post-Project Operating Assumptions from Reliability Review

Chevron is currently implementing a Crude Sulfur Monitoring process that will monitor the average monthly sulfur content of the crude being fed to the crude unit and alert Reliability

Program task owners when crude sulfur triggers are reached. This process assigns responsibilities across various organizations including Strategic Planning, Oils Planning, Finance, Technical, and OE/PSM and will include periodic checks by key process owners within these organizations. Oils Planning will take a lead role in providing a look ahead for the Refinery to identify when it is anticipated that the trigger will be reached.

B. Report Inspection Results for Identified Circuits in Service Susceptible to High-Temperature Sulfidation Corrosion and other Damage Mechanisms Effectuated by the Project

This obligation will be triggered following commencement of Project operations.

C. Process Hazard Analyses (PHA) Revalidation

Pursuant to this requirement and as referenced in MM 4.13-4a, 7a and 7b, the Refinery has submitted notification, dated September 8, 2016, to Contra Costa Health Services and the City of Richmond, of the availability of updated Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), for the Sulfur Recovery Unit (SRU) modifications, the No. 6 H₂S Plant, and the HYCUP, which are available for review at the Refinery. Previously, the Refinery submitted notifications concerning the availability of PHAs and related materials for the Hydrogen Plant and TKC modifications. Contra Costa Health Services reviewed these materials in August 2016 as part of a site visit to the Refinery. It is Chevron's understanding that Contra Costa Health Services reviewed the materials for the Hydrogen Plant, TKC Modifications, and No. 6 H₂S Plant during their on-site audit in August 2016. After construction but before startup of Hydrogen Plant operations, updated PHAs will be completed for any changes that may have arisen during construction that could affect the earlier PHA.

D. Share Schedule for and Report Results of Process Hazard Analyses (PHAs) Considering Damage Mechanisms

Chevron has separately submitted a report pursuant to this requirement on October 7, 2016. Refer to Attachment 5 of this report.

E. Updated Safety Program List

A list of programs, procedures, and other Refinery documentation used to implement this Reliability Program or the corrective actions described in Section II has been updated. This list includes new Chevron Manufacturing standards for Damage Mechanism Reviews, Fixed Equipment Asset Strategies, Fixed Equipment Integrity Threat Recommendations and Resolutions, a Manufacturing Technical Authority Process for assessing the applicability of advisories and industry standards, a tracking process for turnaround work items, 100% component inspections for carbon steel piping systems, implementation of Integrity Operating Windows, and new PHA-LOPA procedures. Chevron maintains this list at the Refinery and will make it available to the County during audits, inspections, or upon request. Per MM 4.13-7c, Chevron maintains documented review and recertification of these processes which are scheduled and conducted periodically. Implementation of changes to these programs and

procedures is managed by the Refinery Instruction, RI-102 Standards for Refinery, Maintenance, and Engineering Instructions.

F. Other Reporting Obligations

1. Probation Terms Reporting

Chevron shall provide the required status report prior to commencement of Project operations.

2. RISO Audits

Chevron shall provide the required annual report following commencement of Project operations.

G. Community Engagement

Chevron has separately submitted an email to the City pursuant to this requirement on May 12, 2017. Refer to Attachment 6 of this report.

H. Reporting Obligation

This annual Reliability Program Report has been prepared to provide the status of all requirements of this Reliability Program. This report is being submitted to meet the annual reporting obligation. Subsequent reports will continue to be submitted annually, including a report prior to the start of Project operations.

Attachments-

Attachment 1. Modernization Project Reliability Program

Attachment 2. Reliability Program-Related CUP and MMRP Commitments

Attachment 3. MMRP Section 4.13-13d Eighth Quarterly Report dated April 3, 2017

Attachment 4. Reliability Program Update for Conditions III.A, III.C2 and C3 dated February 15, 2017

Attachment 5. Reliability Program Update for Condition IV.D

Attachment 6. Reliability Program Update for Condition IV.G

ATTACHMENT 1
Modernization Project Reliability Program



Modernization Project Reliability Program

Richmond Refinery

2014 Revision

MODERNIZATION PROJECT RELIABILITY PROGRAM

I. INTRODUCTION

Chevron U.S.A. Inc. (“Chevron”) has proposed this Reliability Program (“Program”) to mitigate potentially significant effects to public safety that might arise from implementation of the Modernization Project at Chevron’s Richmond Refinery. Among other things, the Modernization Project would increase the Facility’s sulfur removal capacity from 600 to 900 long tons per day (LT/d), which has the potential to increase the sulfur level of crude oil blends and gas oils processed by the Refinery. Sulfur is a naturally occurring element in crude and must be removed to produce the end-products processed at the Refinery. The processing of sulfur can lead to corrosion (“sulfidation corrosion”) of piping and equipment, and must be effectively monitored and managed. Sulfidation corrosion is identified as a damage mechanism by *American Petroleum Institute (API) Recommended Practice 571 – Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*.

The Project would increase the sulfur content of crude oil blends and gas oils processed at the Refinery. Therefore, the City of Richmond, with technical support from an independent expert retained by the City and Chevron, undertook a Reliability Analysis to assess the potential for increased risk of damage occurring from the physical, operational, and feedstock changes proposed as part of the Project, including from sulfidation corrosion, and makes recommendations on steps to be taken to mitigate the risks from these changes. The results of this Reliability Analysis are presented in the Modernization Project Environmental Impact Report (EIR), *Appendix 4.13 – Reliability Analysis of Modernization Project Changes* (Reliability Analysis).

The Reliability Analysis makes several general observations and recommendations concerning the Refinery’s overall mechanical integrity program, as well as specific recommendations to monitor and address the potential effects of the Project. Section II of this Program generally describes the actions the Refinery is in the process of implementing to enhance its mechanical-integrity program and overall Refinery safety, which Chevron believes address the general recommendations from the Reliability Analysis.¹ Section III of this Program sets forth the Project-specific recommendations that will be implemented as a result of the Reliability Analysis. Section IV of the Program describes the ongoing regulatory review and reporting obligations committed to in this Program that will ensure that the actions identified in this Program is implemented.

II. GENERAL RECOMMENDATIONS AND REFINERY ACTIONS TO ADDRESS

The Reliability Analysis includes the following five general recommendations (*Appendix 4.13, pp. 123-124*):

¹ While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

- **Recommendation:** Chevron should ensure that its organizational communication procedures and work processes incorporate mechanisms by which risk concerns, corrective actions, and recommendations that are identified (e.g., during inspections, turnarounds, audits, PHAs, etc.) by personnel (or contractors) are addressed, reviewed and authorized by management as appropriate, tracked, and closed out, and that the rationale for any decision not to implement a recommendation or corrective action, or otherwise address a risk concern, are clearly documented.
- **Recommendation:** Chevron should further clarify and incorporate into their mechanical integrity program and program documents periodic reviews of work processes, procedures, inspection strategies, etc. to account for physical, operational and organizational changes over time that could affect the assumptions that went into the original decisions. Examples that illustrate this include: (1) periodic reviews of inspection CML densities and placements to ensure that unpredictable damage mechanisms can be detected and (2) reviews of wet H₂S damage risk, based on crude feed constituent changes. Chevron reports that it is developing "asset strategy plans" for each process unit, and that the development of the asset strategy plans will address this recommendation by including review of inspection procedures, working documents, CMLs, and damage mechanisms, and that the asset strategy plans will identify and implement changes needed to each as a result of the review. Whether called an "asset strategy plan" or otherwise included in another safety program (e.g., included as part of the Richmond Industrial Safety Ordinance documentation), Chevron should clarify its implementation tracking process for changes needed as a result of these periodic reviews.
- **Recommendation:** Chevron should leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks, including for example Chevron's current pilot project to implement Integrity Operating Windows per the guidelines of the draft API 584 Recommended Practice for the crude unit. Chevron should extend the pilot project to the remaining operating units.
- **Recommendation:** Chevron should review their Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/ dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.
- **Recommendation:** Chevron should review and modify their Piping Inspection Procedure to incorporate an engineering review of thickness inspection data with near term "Flag" dates for high risk equipment/piping to assure that the actual minimum thickness associated with the Flag date has either been verified through inspection or, alternatively, the inspection data analyzed with techniques such as a statistical analysis (95% CL or extreme value analysis) to evaluate what risk is involved if the actual minimum thickness was not measured.

Regarding the general recommendations, the Refinery is already implementing numerous actions to enhance safety, resulting in new or improved process safety work processes. Changes have

also been made in the reliability organization to provide more mechanical integrity oversight. Chevron believes these and other actions, described in detail in the EIR, *Chapter 4.13 – Public Safety*, § 4.13.2.4.3.2.2², generally address these recommendations.

For example, the first recommendation calls for Chevron to ensure its organizational communication procedures and work processes adequately identify, track, and close out concerns and recommendations regarding risk. The Refinery is already taking the following actions to enhance organizational communication and competency concerning general and specific mechanical-integrity related recommendations:

- Developing and implementing a new process for additional oversight of general mechanical-integrity related recommendations from industry, Chevron’s Energy Technology Company, and other subject matter experts.
- Development and deployment of an Integrity Threat Process to address inspection recommendations for equipment and piping that could significantly impact safety, or environmental or plant operations, including tracking recommendations by target completion date using the refinery’s MERIDIUM and OERI databases until it is resolved.
- Updating its internal work instructions in 2013 to address inspection results that indicate that equipment or piping will reach “flag” or “alert” thickness prior to the next scheduled turnaround and to include immediate notification of any field measures that indicate a remaining life of one year or less. This update also addresses the last general recommendation above to review and modify the piping inspection procedures.
- Enhancing the requirements for training and competency for leadership, inspections, and technical assessments, including specifically training for determining minimum thickness and fitness for service of individual piping components.
- With regard to turnaround planning, tracking and documenting any decision to defer or not to implement a fixed equipment inspection recommendation to approval by the Refinery Business Manager for the process unit for which the recommendation was made.

Further, the second and third general recommendations provide that Chevron should clarify and modify its mechanical integrity program to, among other things, consider physical, operational and organizational changes over time, and to leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks. The Refinery is already implementing enhancements to its mechanical-integrity program. For example:

- The Refinery has added a Fixed Equipment Integrity Manager, who is responsible for developing, implementing, and stewarding the refinery’s Fixed Equipment Integrity program with a goal of achieving zero process safety incidents and improving mechanical availability.
- The Refinery has developed and piloted in its crude unit a Damage Mechanism Review (DMR) process that is consistent with *API 571* and which requires a team of subject

² While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

matter experts to review, analyze, and make recommendations concerning damage mechanisms and how to mitigate the effects of damage mechanisms on each process unit. This process has now been made a required element in the Process Safety Management (PSM) process at the refinery for identified process units, and is being undertaken on an ongoing basis.

- The Refinery has piloted in its crude unit a process to create and utilize asset strategy plans for each process unit at the piping circuit level, which will be integrated into the DMR process and will include, among other things, integrity operating windows consistent with draft *API 584 – Integrity Operating Windows* and consideration of process conditions, inspections techniques and frequency, mixing and injection points, and corrosion monitoring locations (CML). These asset strategy plans will be implemented for all processing units on an ongoing basis.

The Refinery reports the status of the above-identified actions to CalOSHA as part of the August 5, 2013 terms of probation described in *Chapter 4.13 – Public Safety* of the environmental impact report, and has also committed to providing quarterly updates to the City pursuant to Mitigation Measure 4.13-CUM-1d. As part of this process, Chevron will work with the County, the City, and its consultants, to ensure that the above-stated general recommendations from the Reliability Analysis have been addressed.

In addition, Chevron will undertake a review of its Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.

III. PROJECT RECOMMENDATIONS

The enhanced safety measures described above will provide the foundation for the management of damage mechanisms in the refinery, including sulfidation corrosion, on a go-forward basis. In particular, the damage mechanism review process, the updated PHA process, and development and deployment the asset strategy plans, including integrity operating windows, will be used post-Project for all refinery units to manage risks from all damage mechanisms. In addition to this process, which provides for ongoing evaluation of risks and resulting recommendations, the Reliability Analysis has identified numerous Project-specific recommendations, which Chevron is committing to implement as part of this Reliability Program.

In order to identify Project-related recommendations, the Reliability Analysis assumed certain post-Project operating conditions. The assumptions and analytical method are described more fully in the EIR, Appendix 4.13-REL. The recommendations below, including piping circuit upgrades and installation of additional corrosion monitoring equipment, are tiered to this analysis, meaning that these measures will be implemented well before they would be triggered by actual projected post-Project operations.

A. Schedule and Report on Upgrades to Identified Piping Circuits

The Reliability Analysis for the Modernization Project has identified seventeen (17) piping circuits in the Crude Unit that warrant replacement based on the Reliability Analysis. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-002-008	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-014	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-015	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-016	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-017	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-018	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-030	Desalted Crude From E-1165A To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-031	Desalted Crude From E-1165B To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-032	Desalted Crude From E-1116's to E-1165C	CS	9 Chrome	EOY 2017
0955-007-009	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-007-017	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-009-003	C-1100 Bottoms to F-1160	5Cr	9 Chrome	EOY 2017
0955-012-001	C-1160 Outlet #7 Sidecut	CS	9 Chrome	EOY 2017
0955-012-002	#7 Sidecut	CS	9 Chrome	EOY 2017
0955-013-007	C-1160 OUTLET: #8 Sidecut to E-1188	CS	9 Chrome	EOY 2017
0955-013-008	C-1160 Outlet: #8 Sidecut to C-1160	CS	9 Chrome	EOY 2017
0955-013-009	C-1160 Outlet: #8 Sidecut to E-1114	CS	9 Chrome	EOY 2017

The Reliability Analysis for the Modernization Project has also identified four partial piping and valve replacements in the Crude Unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. The Refinery has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-015-002	C-1160 OUTLET to E-1165 A/B/C	9Cr/5Cr/ (2) 10" spool piece and drain valves CS	Replace 5Cr and CS with 9CR; existing 9Cr remains in place	EOY 2017
0955-015-017	K-1165A/B Pump Out	9Cr/5Cr/CS	Replace short 5Cr deadleg immediately off filters with 9 Cr. CS is either free-draining, isolated, or cool wash oil service, so no need to replace because do not see regular service	EOY 2017
0955-019-034	P-1165/A Case Vents to C-1160	SS/CS	CS is downstream of single SS block valve. Upgrade the 3/4" CS pump case vents with SS to double block and bleed design.	EOY 2017
0955-019-017	Pump Vents	9Cr/5Cr/CS	Replace 5Cr with 9Cr and add a second block valve and bleeder. CS component is downstream of 5Cr single block valve; no project impact on CS portion downstream of the valve.	EOY 2017

Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

B. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Since the beginning of 2013, the Refinery has installed a total of 117 Permasense® probes in the Crude Unit on six piping systems consisting of carbon steel, 5 Chrome, and 9 Chrome materials. Permasense® is the trade name of a type of high-temperature ultrasonic device that is mounted on a pipe or vessel, and penetrates through insulation. It has wireless sensors that provide periodic equipment thickness readings (at variable intervals, but currently set to collect thickness data twice a day) to monitor a system. Due to noise and sensitivity, the technology is limited to longer-term trending (days and months vs. hours) which is appropriate for piping subject to sulfidation conditions with its predictable rates.

The six piping circuits on which the sensors were installed were chosen based on past and anticipated projected future operating conditions. The wireless probes collect pipe wall thickness data while the plant is operating, and are used to monitor corrosion rates. This long-term online monitoring program will be part of the reliability program to ensure safe operation of equipment after the Modernization Project commences operations. Thirteen of these piping circuits with Permasense® monitors installed have been identified for replacement and will be upgraded to 9 Chrome pursuant to the piping circuit upgrades planned as a part of this Reliability Program and the Permasense® monitors will not be reinstalled on these circuits. In addition, as part of the Project, the Refinery will install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA). These sensors are being installed to confirm the predictive model results that there will be little-to-no sulfidation corrosion in the SDA post-Project.

Data from the Permasense® monitors will be utilized in the reporting obligations set forth in section IV below.

C. Crude Unit Recommendations

The operational and feedstock changes contemplated by the Modernization Project, specifically increases in sulfur content of feedstocks, increased hydrogen purity produced by the new hydrogen plant, increased H₂S partial pressures in hydroprocessing plants recycle streams, or potentially higher temperatures in the crude unit based on API gravity ratings, could all contribute to increased damage mechanism activity post-Modernization Project, thereby warranting the implementation of the following preventive measures.

1. Based on the marginal results from the F-1100 radiant tube sulfidation analysis, Chevron should monitor the post-Modernization Project sulfur content being fed to the crude unit and use a 2.0 wt.% sulfur content of feed as a trigger to conduct a review of the F-1100 crude charge furnace to study whether the 5 Chrome radiant tubes are safe to operate until the 2017 shutdown.

2. Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:
 - Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
 - Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.
3. The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:
 - Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
 - In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
4. Conduct laboratory analyses to more accurately determine crude and crude blend sulfur speciation and H₂S evolution, which could be used to predict likely crude corrosion rates. Timing: 4Q2015

5. Develop integrity operating windows (IOWs) for critical crude unit operating parameters per the guidelines in the draft version of API 584. 3Q2014
6. The Crude Splitter software is used to predict the distribution of the sulfur in the atmospheric tower sidecut and bottom streams. Verify the Crude Splitter predicted sulfur results with post-Modernization data on the sulfur containing streams within the first year of operation following the implementation of the Modernization project if the trigger points (2.25 wt.% sulfur and 2.75 wt. % sulfur) noted in § IV.A below are reached.
7. Revise the asset integrity plans for the Crude Unit Atmospheric Column Reflux Drum, V-1100, the Stabilizer Column Reflux Drum, V-1190, and the Vacuum Column Overhead Seal Drum, V-1160, to include inspection for Wet H₂S damage. An external Automatic Ultrasonic Testing inspection of representative sections of the "water wet" portions of V-1100, V-1160 and V-1190 vessels should be conducted as a baseline before the start of post-Modernization conditions, then checked externally again approximately one year after the start of the Modernization conditions. In addition, a one-time internal inspection should be conducted of these vessels during the scheduled maintenance turnaround after the start of Modernization conditions, using eddy current or other approved internal inspection techniques per the Chevron Wet H₂S program.
8. Develop a process monitoring plan for the crude unit overhead to confirm any impacts of the increased sulfur levels. The monitoring plan should be implemented post-Modernization and should include:
 - Process sampling of the accumulator for pH, chlorides, iron and H₂S content. Compare to established integrity operating windows (IOWs);
 - Monitor Desalter pH;
 - Analyze the atmospheric tower post-Modernization to quantify if, and how much, increased H₂S is in the overhead system resulting from the increased sulfur feed to the unit;
 - Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Modify asset integrity plans to monitor for potential increased corrosion if higher mercaptan crudes are run compared with current and historical crude and crude blends; and
 - Review the asset integrity plan to ensure that the Permasense continuous ultrasonic monitoring locations are properly placed to ensure early detection should corrosion rates increase significantly beyond expectations per the McConomy curve predicted rates.
9. Develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur streams operating > 500F are not inadvertently placed into continuous (e.g., placement of a warning tag, locked valve, double-block-and-bleed valves or other measures). This should be completed prior to the commencement of Modernization Project operations.
10. Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Conduct a historical review of purchased crudes and processed crude blends for the 90% confidence level of highest mercaptans processed and use

this statistical number to set a review flag in the crude and gas oil acceptance procedure. If higher mercaptans crudes are run at the Richmond Refinery, review the Permasense® corrosion rate data from this time period as part of the crude management of change lookback. This should be completed prior to the commencement of Modernization Project operations.

11. Add corrosion monitoring locations (CMLs) to the crude unit atmospheric column overhead piping (circuit 0955-003-001) at the termination of the Hastelloy internal overlay. This should include the termination of cladding in the vertical section of piping, as well as the termination point at the inlet to the E- 1101's. Review other, similar locations in the crude unit for missing dissimilar metal interface thickness monitoring locations (TMLs). This should be completed prior to the commencement of Modernization Project operations.

D. Hydroprocessing Recommendations

1. At the 2.25% wt. % sulfur in crude feed trigger point, evaluate and modify as warranted, based on any increased sulfur in this section of the unit, inspection plans (what, where and how often) for the distillation section of the hydroprocessing units where sulfidation corrosion rates have been “erratic” and uncertain, per API 939-C.
2. Report on the progress of the project to compare the HP-002 Best Practice Guideline regarding water wash to API 932-B recommendations to ensure that the HP-002 document is consistent with 932-B guidelines. This report should be submitted prior to the commencement of Modernization Project operations.
3. Conduct process monitoring and sampling for post-Modernization Project operations for all hydroprocessing units, to develop process data to confirm assumptions made during the damage mechanism review regarding amounts of H₂S and ammonium bisulfide in the overhead systems. This shall be completed after commencement of Modernization Project operations.
4. Develop integrity operating windows (IOWs) for the hydroprocessing units to incorporate existing critical reliability variables such as the wash water rate for Nh₄HS corrosion control. The IOWs shall be established prior to the startup of Modernization Project operations.
5. If the REAC Corrosion Control Project (TKN) is not completed pre-Modernization Project, conduct a review of current operations to ensure that corrosion rates will remain under REAC best practice guidelines with any increase in sulfur to the unit. This shall be completed prior to the startup of Modernization Project operations.

E. SDA Recommendations

1. Verify post-Modernization Project conditions regarding H₂S content in the SDA overheads and target one or more “water wet” vessels for inspection using internal eddy current, external automatic ultrasonics (AUT) or other non-destructive evaluation (NDE) techniques appropriate for wet H₂S cracking detection within one year of operation under post-Modernization Project conditions.
2. Conduct water boot analysis for corrosive constituents similar to that conducted in the crude unit on the unit overhead accumulator drums, including cyanides. This should

be conducted at the 2.25 wt.% and 2.75 wt. % sulfur trigger points identified in § IV.A below.

3. When the sulfur wt.% of crude oil processed at the Facility reaches 2.25 wt.% sulfur on an annual average, and the again when it reaches 2.75 wt.% sulfur annual average, the Facility shall trigger the same responses for the SDA plant as described in the recommendation section for the crude unit.
4. Conduct a follow-up smart pig inspection of F-100 and F-120 furnace tubes during the first planned maintenance after the unit has seen at least 1 year of post-Modernization Project operating conditions.
5. Install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA) including sulfidation “dead legs,” based on a critical review of historical corrosion rates. These sensors will confirm the predictive model results that there will be little-to-no increase in sulfidation corrosion in the SDA post-Modernization Project. These installations should be completed prior to the commencement of Modernization Project operations.
6. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms in the SDA unit. The IOWs should be established prior to the commencement of Modernization Project operations.
7. Develop process monitoring and sampling plans for post-Modernization Project operating conditions to confirm assumptions made during the damage mechanism review project. The monitoring and sampling plans should be developed prior to the commencement of Modernization Project operations, and should be implemented after commencement of Project operations following an increase in sulfur content to the SDA unit.

F. Amine Systems Recommendations.

It is recommended that Chevron review ongoing sampling results (per Best Practice timing plus vendor sampling and reports) to determine if post-Modernization Project amine loading and heat stable amine salts (HSAS) are impacted by any increase in H₂S to the TKC Unit. This should be done prior to the commencement of Modernization Project operations.

G. Sulfur Recovery Unit Recommendations

Associated with the new liquid oxygen piping, the Facility shall typically design and build new construction in conformance with the special design and installation precautions associated with oxygen piping systems, i.e., design and installation best practice details common in industry for oxygen piping systems, including pre-commissioning cleaning of the piping interior to remove harmful materials such as dirt, debris, iron, grease and other contaminants known to cause ignition of pure liquid and gaseous oxygen.

H. Sour Gas System Recommendations

Based on the potential risk of ammonium bisulfide corrosion in carbon steel due to the possibility of the sour gas condensing at locally cool portions of piping, Chevron should develop and implement a mitigation plan for this eventuality. The mitigation plan is to

include reviewing sour gas P&IDs and isometric drawings to locate low points where water could accumulate, locate dead legs and establish inspection/monitoring plans for verifying if and where water is condensing out of the vapor phase. This should be conducted within 1 year of commencement of Modernization Project start-up.

1. Chevron should conduct a review to confirm their post-Modernization assumptions made during this review regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping, at the 2.25 wt. % and 2.75 wt. % average annual sulfur content trigger points.
2. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour gas system. These IOWs should be established prior to the commencement of Modernization Project operations.

I. Sour Water System Recommendations

1. The block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17 do not include detailed information at the “P&ID” level. Also, information is lacking on the sour gas streams in the overhead of the H₂S and NH₃ strippers in the SWS unit. (However, for purposes of the review the overhead systems of the WWT plants were deemed to be out of scope.) The impact of post-Modernization Project corrosion from sour water corrosion should be minimal, based on the Reviewer’s analysis of the sour water streams. However, based on a lack of detail at the P&ID level Chevron should conduct a review of their sour water piping inspection programs at the P&ID/Inspection Isometric level (including to ensure that low points, galvanic metal couple locations and CMLs are properly captured) to ensure that their program is sufficient to detect any ammonium bisulfide corrosion in the system. This should be completed prior to the commencement of Modernization Project operations.
2. Chevron should be monitoring and sampling to confirm their assumptions regarding the ammonium bisulfide concentrations and velocities in the sour water piping and H₂S concentrations in the H₂S Stripper and NH₃ Stripper overhead systems. This review should be conducted when average annual sulfur content levels reach 2.25 wt. % and again at 2.75 wt. %.
3. The H₂S stripper, NH₃ stripper, ammonia stripper overhead condenser, and ammonia stripper reflux drum are all Category 2 Wet H₂S vessels and therefore are included in Chevron’s wet H₂S program. If a post-Modernization Project review of the assumptions regarding the severity of wet H₂S damage in the overhead systems warrants a change in the categorization of the overhead wet H₂S vessels, then a wet H₂S cracking inspection should be conducted. This should be conducted within one year after the commencement of Modernization Project operations.
4. Continue as with the existing condition inspection, the X-ray and/or close-grid UT inspection techniques for all of the overhead piping from the NH₃ stripper to the reflux drum regardless of metallurgy.
5. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour water system. The IOWs should be established prior to the commencement of Modernization Project operations.

J. Recovered Oil Recommendations

If not already present, add CML locations to the C-710 injection nozzle and adjacent C-710 tower shell so that the assumptions regarding post-Modernization Project corrosion rates not increasing in severity can be verified. Implement prior to the operational startup of the Modernization Project.

IV. ONGOING REGULATORY REVIEW AND REPORTING

In order to demonstrate compliance with the recommendation above, as well as to provide the City regular update concerning the implementation of the corrective actions described in § II above, the Refinery will undertake the following reporting obligations.

A. Re-evaluate and Report on Post-Project Operating Assumptions from Reliability Review

The Reliability Analysis for the Modernization Project assumed certain operating conditions once the Project is implemented, including projected temperatures, sulfur levels, and corrosion rates for various process units and individual piping circuits. These assumptions were based on a conservative 3.3 wt% sulfur case. In order to verify that the assumptions made during the reliability review were accurate, the Refinery will undertake the following actions:

- When the sulfur weight percent of crude oil processed at the Refinery reaches 2.25 wt% sulfur on an annual average, and the again when it reaches 2.75 wt% sulfur annual average, the Refinery shall:
 - Assemble a reliability review team that will be made up of appropriate subject matter experts (SMEs), including a Senior Process Engineer, Senior ETC Materials and Corrosion Engineer, Refinery Materials Engineer and Process Operator.
 - For all damage mechanisms identified as being affected by the Project, and using then-current inspection and/or monitoring data, the reliability review team shall review, analyze, and, as necessary, update, the data and conclusions prepared during the reliability review for the Modernization Project to determine whether the assumptions made and conclusions reached during the reliability review accurately reflect actual post-Project operating conditions.
 - Use the data from the laboratory tests described above to consider any potential post-Project impacts from sulfur speciation.
 - Review any operational or process changes that have occurred post-Project.
 - Make recommendations concerning material upgrades and /or enhanced inspection opportunities as necessary based on the re-evaluation.
 - Report on the results of the this re-evaluation and any resulting recommendation to Contra Costa Health Services, the expert agency charged with implementing the Richmond Industrial Safety Ordinance, as well as one or more Refinery workforce representatives from any process units impacted by the re-evaluation and recommendations and who shall have the necessary subject matter expertise to engage in a Project-level reliability review.

B. Report Inspection Results for Identified Circuits in Service Susceptible to High-Temperature Sulfidation Corrosion and other Damage Mechanisms Effected by the Project

All piping circuits in the Refinery, including the new 9 Chrome circuits being installed pursuant to § III.A of this Reliability Program, are regularly monitored and inspected. Beginning one year from commencement of Project operations, and annually thereafter, the Refinery will provide reports to the City summarizing the monitoring and inspection results for the identified circuits. These reports shall at a minimum include the following information:

- A list of all piping circuits identified as potentially susceptible to sulfidation corrosion, including specifically piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes.
- A list of components identified through the 100% component inspection conducted following the August 6, 2012 incident pursuant to the methodologies set forth in the API 939-C - Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries and Updated Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries (Sept. 30, 2009) that may lack sufficient thickness to remain in service until the next scheduled turnaround.
- A description of the solutions implemented with respect to components of insufficient thickness identified above.
- A description of the current fixed inspection frequency for carbon steel piping circuits identified as potentially susceptible to sulfidation corrosion.
- A description of any findings from inspection and monitoring of the piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes that indicate that any of these circuits lack sufficient thickness to remain in service until the next turnaround and a description of the solution to be implemented with respect to these circuits.
- Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

C. Process Hazard Analyses (PHA) Revalidation

Chevron shall work with Contra Costa Health Services (CCHS) to update and revalidate the process hazard analyses (PHA) prepared for the Project components consistent with the requirements of the Richmond Industrial Safety Ordinance (Richmond Municipal Code Ch. 6.43). This revalidation shall occur prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHA. The PHAs shall include inherently safer

systems analyses (ISSAs), damage mechanism reviews and evaluation of the consequences thereof resulting from the Project, and Layers of Protection Analyses (LOPA).

Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS. The PHAs (initial and updates/revalidations, inherently safer systems analysis, damage mechanisms review, and LOPAs) shall be consistent with proposed amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety (CCPS)) to CCHS for review prior to construction (and post-construction, for those LOPAs warranted based on changes that arise during construction).

D. Share Schedule for and Report Results of Process Hazard Analyses (PHAs) Considering Damage Mechanisms.

Chevron shall provide annual reports to the City summarizing the PHAs/revalidated PHAs completed during the preceding calendar year to account for consideration of damage mechanisms, and shall include a list of fixed equipment inspection recommendations submitted for each turnaround, indicating which recommendations were accepted, and for those that were not accepted, the reason the recommendation was rejected. All PHAs shall be available for agency review pursuant to the terms of the RISO.

E. Updated Safety Program List

Chevron shall maintain a list of programs, procedures, and/or other Refinery documentation that are updated to implement this Reliability Program or the corrective actions described in § II above. Chevron shall maintain this list at the Refinery and make it available to the County during audits, inspections, or upon request.

F. Other Reporting Obligations

1. Probation Terms Reporting

Prior to Project start-up, Chevron shall provide the City a status report on the refinery's compliance with the terms of probation entered into on August 5, 2013, and shall thereafter provide the City reports substantively similar to the reports filed with Cal/OSHA under the terms of probation once per year as necessary until such time as the terms of probation end, including a copy of any response documents provided by CalOSHA, or a detailed summary of any CalOSHA responses if CalOSHA does not approve sharing the response documents with the City. Chevron will work with CalOSHA to pursue their approval to share the Chevron CalOSHA response documents. The original reports and related documents shall be made available at the Refinery upon request by the City or County and during any audits or inspections conducted under the RISO.

2. RISO Audits

Following commencement of Project operations, Chevron shall provide the City an annual report informing the City of any agency-initiated audits performed pursuant to the Richmond Industrial Safety Ordinance during the previous calendar year, and shall update the City concerning the findings from and status of implementation of any recommendation that come out of such audits.

G. Community Engagement

On an annual basis following Project approval until such time as the City determines that such meetings are no longer required, Chevron shall hold town halls for its workforce and for the community to provide updates concerning:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.
2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.
3. When triggered, the results of the reliability review revalidation and the status of any recommendations made as a result of this review.

H. Reporting Obligation

As part of its ongoing reporting obligation under the Mitigation Monitoring and Reporting Program adopted by the City, Chevron shall report on the status of all requirements of this Reliability Program on an annual basis in a form acceptable to the City. All reporting obligations herein shall be subject to the protection for trade secrets provided in Richmond Municipal Code § 6.43.110 and California Health and Safety Code section 25538 incorporated therein.

ATTACHMENT 2
Reliability Program-Related CUP and MMRP Commitments

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
MMRP					
4	13	13f	Operations	Chevron shall designate a Facility Area Business Unit Manager as the management level position bearing responsibility for any and all decisions to not implement a recommendation made during an inspection or turnaround. Chevron shall also designate a Facility Area Business Unit Manager as the management level position bearing responsibility for the establishment of the parameters in the Integrity Operating Window program, as well as for any decisions to override, bypass, or otherwise disregard an alert or flag that arises through the Integrity Operating Window program. The annual Reliability Program reports shall include clear identification of the individuals acting as Area Business Unit Managers to whom these accountabilities have been assigned. If the management position bearing any of these responsibilities changes within Chevron from the Area Business Unit Manager to another management-level job title, Chevron shall notify the City and include an update to this effect in its Reliability Program annual report.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
4	13	13h	Operations	Chevron shall establish Integrity Operating Windows (IOWs) to monitor process temperatures, for purposes of identifying process temperature increases above the baseline period (2008-2010) for any individual circuit affected by the Modernization Project (as indicated in the Reliability Analysis Appendix 4.13-REL). The IOW shall establish temperature "flags" for each temperature monitoring location based on industry-standard damage curves. Prior to implementation of the IOW temperature flags, Chevron shall provide information to the City and County regarding the flag trigger temperature levels and the basis for them, and provide the City and County an opportunity to review and comment on them before they are implemented. The IOW-2 temperature flag shall be triggered if the process temperature exceeds the established temperature for a cumulative 365 days, and shall require Chevron to perform a reliability analysis to evaluate, among other things, existing process conditions, flag dates for wall thickness, monitoring and inspection data, expected corrosion rates, metallurgy, existing damage mechanism reviews, and monitoring and inspection frequency. Chevron shall report the results of these reliability analyses in its annual Reliability Program report, and shall make process temperature data for all temperature monitoring locations within each process unit and circuit included in the Reliability Analysis (Appendix 4.13-REL) available for review by the City or County at the refinery. Chevron also shall include in its annual Reliability Program reports a listing of all events relating to process temperatures reaching levels that triggered an IOW-level 2 (defined by Chevron as a "slower acting event that requires technical evaluation and recommendations within one week") alert during the calendar year that is the subject of the annual report, as well as a description of the resolution of each such event. Chevron shall report to the City and County within one week of any IOW-level 1 (defined by Chevron as a "fast acting event that requires operator action within a shift or two") alert event relating to IOW process temperature parameters for circuits affected by the Modernization Project (as indicated by the Reliability Analysis Appendix 4.13-REL).	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	4a	Operations	Chevron will implement its Modernization Project Reliability Program (Appendix 4.13-PROG) including updating the detailed PHAs prepared for the 2008 Project for all new and modified Modernization Project components, which shall include ISSAs, damage mechanism reviews, and evaluation of the consequences thereof resulting from the Project, and LOPA, as part of these PHAs, prior to recommencement of construction of the Modernization Project, and again post-construction but before startup of Project operations for any changes that arise during construction that may affect the earlier PHAs, ISSAs, and LOPAs. Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS and the City. The PHAs (initial and updates/revalidations), ISSAs, damage mechanisms reviews, and LOPAs shall be consistent with (proposed) amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety) to CCHS and the City for review prior to construction (and post-construction, for those LOPAs warranting changes based on changes that arise during construction). CCHS will work with the City in implementing these and other Public Safety mitigation measures.	See response to IV.C of the Reliability Program Annual Report.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7a	Operations	Chevron shall implement the Modernization Project Reliability Program for all units and processes affected by the Modernization Project, including written reports specified in the Modernization Project Reliability Program. An initial Reliability Program report shall be submitted to the City and County prior to Project construction. Annual reports shall be submitted thereafter, including a report prior to commencement of Project operations. For the PHAs (initial and revalidations) specified in the Modernization Project Reliability Program, Chevron would complete the PHAs prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHAs. Chevron will thereafter update and revalidate PHAs in accordance with the RISO but not less than once every 5 years. As indicated in Mitigation Measure 4.13-4a, the PHAs shall include LOPAs, and written LOPA reports must be submitted to the County prior to construction for review, and Chevron shall submit a copy to the City simultaneously. To the extent that any post-construction PHA revalidations are warranted, Chevron shall submit LOPA reports for the post-construction PHA revalidations to the County for review prior to the startup of Project operations, and Chevron shall submit a copy to the City simultaneously.	See response to IV.C of the Reliability Program Annual Report.
4	13	7b	Operations	Chevron shall complete an ISSA (as defined in the RISO), including review damage mechanisms and evaluation of their consequences, and LOPAs with written LOPA reports submitted by Chevron to the County for review, for new and modified Modernization Project components as part of the PHA revalidation process specified in the Modernization Project Reliability Program and Mitigation Measure 4.13-9a. Chevron will make the ISSA and PHAs available for review by the CCHS and the City, and will submit the LOPA reports to the County prior to construction for review.	See response to IV.C of the Reliability Program Annual Report.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7c	Operations	Chevron will continue to review its procedures and programs for evaluating the hazards of planned changes at the Facility, and update them to incorporate damage mechanism review, including the identification of applicable damage mechanisms as well as the evaluation of the potential impacts of the damage mechanisms in light of the proposed changes, and layers of protection analysis consistent with the Reliability Program. Chevron's review and update of programs and procedures shall include, at a minimum, the Facility's management of change program/procedure and its PHA program/procedure. Chevron shall include, in its annual Modernization Project Reliability Program reports to the City, a description of the status of this documentation review and update process, as well as how the changes to these programs/procedures are being implemented at the Facility.	See response to IV.E of the Reliability Program Annual Report.
4	13	7h	Operations	Chevron will fund the costs of a third-party expert to assist the County and the City with the review of the Reliability Program reports and other submittals required by the Reliability Program and related mitigation measures, as needed. The third-party expert will be selected and retained by the County or the City within the County's or City's discretion. This funding obligation survives any amendment of the RISO that may require funding of an inspector for the Facility.	Chevron continues to work with Contra Costa Health Services pursuant to the terms of the RISO, and will contribute funds when requested per this requirement.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7i	Operations	Chevron shall adhere to the total acid number (TAN) limits of 0.3 mg milligrams potassium hydroxide per gram (KOH/g) for crude, 1.5 mg KOH/g for sidecuts produced from the crude unit, and 1.0 for gas oils and blends processed through the fluid catalytic cracker, fluid catalytic cracker feed hydrotreater, hydrocracker, heavy neutral hydrocracker, and light neutral hydrocracker. If Chevron intends to process a feedstock for a short-term basis (i.e., up to 6 months) that exceeds these TAN limits, it must complete its Management of Change (MOC) process, which shall include a corrosion review, for the proposed deviation, and shall take into account any existing damage mechanism reviews as specified in Mitigation Measure 4.13-7c that have been prepared for the identified units and piping circuits. If Chevron intends to process a feedstock for a longer-term basis (i.e., more than 6 months) that exceeds these TAN limits, it must complete its MOC process for the proposed deviation, and the MOC shall include a reliability analysis to evaluate, among other things, existing process conditions, monitoring and inspection data, expected corrosion rates, metallurgy, existing damage mechanism reviews, and monitoring and inspection frequency. The MOC evaluation, for short or longer duration TAN deviations, shall include an evaluation of the potential hazards that could result from the TAN deviation in all affected units and piping circuits, including naphthenic acid corrosion impacts. Chevron shall designate a Facility Area Business Unit Manager with final decision-making authority to approve any TAN deviation from the TAN limits. Chevron shall provide the results of any TAN deviation MOC evaluation to the City and County before processing the feedstock that deviates from the established TAN limits. Chevron shall include in its annual Reliability Program reports: (a) details regarding the results of its MOC for any TAN deviations; (b) average annual TAN for crudes and gas oils/blends processed at the Facility for each calendar year starting with 2008; and (c) for any feedstock runs with TAN levels higher than established TAN limits, include the actual TAN levels of the deviating feeds and the duration of the deviating feedstock runs.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
4	13	7j	Operations	Chevron shall include in its annual Reliability Program reports the annual average sulfur content of feedstocks, including separate annual averages for crude oils/blends and gas oils/blends, processed at the Facility for each year since and including 2008.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
CUP					
B	10		Operations	Operation of the new hydrogen plant is subject to all mitigation measures, including those specified in the Reliability Program, set forth in the EIR and final Mitigation Monitoring and Reporting Program. For any future hydrogen export project supplied by hydrogen from the Hydrogen Plant Replacement, associated greenhouse gas emissions must be mitigated to a "No Net Increase" level relative to Baseline using the mitigation measures specified in Mitigation Measures 4.8-2 and 4.8-2B.	Chevron will continue to provide updates regarding compliance with this measure in its CUP/MMRP Compliance Plan, the next version of which will be submitted prior to commencement of project operations.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
G	1		Operations	Chevron shall implement the Modernization Project Reliability Program (set forth as Appendix 4.13-PROG of the EIR) in its entirety as a condition of this Conditional Use Permit.	See Annual Reliability Program Report dated June 14, 2017.
G	5		Operations	Within six months prior to commencing Project operations, Chevron shall review the corrosion data and flag dates of fixed equipment and piping in process units susceptible to high-temperature sulfidation identified in the Reliability Analysis (taking into account the most current actual conditions combined with post-Project projected corrosion rates predicted based on McConomy curves) and ensure that enhanced monitoring and inspection measures, including those identified in the Reliability Analysis and Reliability Program, are implemented after commencement of Project operations to periodically verify actual post-Project corrosion rates and adjust any flag dates or replacement plans as warranted. Pursuant to the Richmond Industrial Safety Ordinance, Chevron shall make all information relating to its verification, monitoring, and inspection activities available to the City and County and their respective third-party experts upon request, with review by a committee constituted of the dedicated full-time process safety inspector required by the Richmond Industrial Safety Ordinance and Mitigation Measure 4.13-7d, the Contra Costa County Health Services Chief Environmental Health and Hazardous Materials Officer, and a qualified third-party expert selected by the City.	See response for 4.13-13h.

ATTACHMENT 3

MMRP Section 4.13-13d Eighth Quarterly Report dated April 3, 2017

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM, SECTION 4.13-13d
EIGHTH QUARTERLY REPORT**

April 3, 2017

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

I. INTRODUCTION

Chevron U.S.A. Inc. (“CUSA” or “the Company”) submits this report to comply with Mitigation Measure 4.13-13d, which provides:

Chevron will report to the City quarterly, and shall provide a copy of this report to the County, after Project approval on the status of the corrective actions taken to implement agency recommendations to Chevron resulting from the August 6, 2012 fire, as well as any corrective actions taken by Chevron as a result of its own investigation. To the extent that Chevron elects not to implement a recommendation made by an agency, Chevron shall include in these quarterly reports a detailed explanation of its rationale for doing so.

This is the eighth report prepared under the quarterly reporting requirement.

II. BACKGROUND

The Richmond Refinery experienced an accidental release from the atmospheric distillation column of the No. 4 Crude Unit on August 6, 2012. The failure involved an 8” carbon-steel piping component in the No. 4 sidecut that carried light gas oil. The approximate duration of the release was 7 hours, 24 minutes.

All required agency notifications were made. Responding agencies included Cal/OSHA, CCHS, Bay Area Air Quality Management District, California Office of Spill Prevention and Response, the U.S. Environmental Protection Agency, the Richmond Police Department, and the U.S. Chemical Safety and Hazard Investigation Board (“CSB”). The CSB conducted an investigation concerning the fire. In April 2013, the CSB issued its Interim Investigation Report: Chevron Richmond Refinery Fire (“Interim Report”), which included two recommendations to CUSA. In January 2015, the CSB issued its Final Investigation Report Chevron Richmond Refinery Pipe Rupture and Fire (“Final Report”), which included three recommendations to CUSA. CUSA conducted its own investigation into the August 6, 2012 incident (“CUSA Investigation”), and identified a series of recommended actions to address what had been identified as causal factors and additional considerations.

III. STATUS OF CORRECTIVE ACTIONS TAKEN TO IMPLEMENT AGENCY RECOMMENDATIONS

The CSB issued two recommendations (2012-03-I-CA-R1 and 2013-03-I-CA-R2) to CUSA in its Interim Report. The CSB issued an additional three recommendations (2012-03-I-CA-R33, 2012-03-I-CA-R34, and 2012-03-I-CA-R35) to CUSA in its Final Report.

Set forth below are the CSB's recommendations from the Interim Report and Final Report, and CUSA's response to each recommendation.

Recommendation No. 2012-03-I-CA-R1: At all Chevron U.S. refineries, engage a diverse team of qualified personnel to perform a documented damage mechanism hazard review. This review shall be an integral part of the Process Hazard Analysis cycle and shall be conducted on all PSM-covered process piping circuits and process equipment. The damage mechanism hazard review shall identify potential process damage mechanisms and consequences of failure, and shall ensure safeguards are in place to control hazards presented by those damage mechanisms. Analyze and incorporate into this review applicable industry best practices, Chevron Energy Technology Company findings and recommendations, and inherently safer systems to the greatest extent feasible.

CUSA's Response: The Richmond Refinery modified and further developed its work processes for the review of damage mechanisms. Specifically, CUSA issued a refinery standard ("Damage Mechanism Review Instruction – Manufacturing 520," or "MFG 520") for conducting a damage mechanism review ("DMR") to assess corrosion threats and other applicable damage mechanisms. MFG 520 sets forth a DMR work process that was designed in accordance with industry practices and recommendations, and American Petroleum Institute ("API") Recommended Practice 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*. CUSA also considered API Recommended Practice 584, *Integrity Operating Windows*, while this recommended practice was in development. MFG 520 requires:

- Completion of a DMR work process for piping circuits and equipment in applicable units so as to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms;
- Development of CUSA standard templates for refinery-common units;
- Creation of a DMR schedule aligned with Process Hazard Analysis ("PHA") schedules for all piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs;
- Establishment of multi-disciplinary DMR teams;
- Evaluation of piping circuits and equipment in applicable units against potential damage mechanisms in connection with assessment triggers;
- Consideration of consequences of failures and safeguards identified by the DMR work process;
- Consideration of CUSA and applicable industry best practices;
- Creation of DMR reports, which includes recommendations as appropriate;
- Development of action plans to address DMR recommendations; and
- Provision of DMR work product to the applicable PHA team for consideration.

Inherently safer systems have been incorporated into the DMR template design and evaluated, as appropriate. For example, there are damage mechanism assessment questions that help determine whether or not a change or upgrade in metallurgy would be recommended to prevent or better manage a particular damage mechanism.

In 2013, the Richmond Refinery took a lead role in piloting DMRs as this work process was developed. In 2014, the Refinery began adopting the DMR program by conducting selected DMRs prior to completing the applicable PHA. The Refinery employed the learnings from these initial DMRs and PHAs, and information from internal and external subject matter experts, to further develop its DMR work processes. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

The Refinery has now completed DMRs for applicable PSM-covered process piping and process equipment.

Additionally, consistent with and building upon MFG 520, CUSA has developed an asset strategy standard (“Fixed Equipment Asset Strategies Standard--Manufacturing Standard 525,” or “MFG 525”). This standard sets expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and describes the process for creating and maintaining these strategies. A project is underway at the Refinery to create asset strategies per MFG 525.

Recommendation 2012-03-I-CA-R2: At all California Chevron U.S. refineries, report leading and lagging process safety indicators, such as the action item completion status of recommendations from damage mechanism hazard reviews, to the federal, state, and local regulatory agencies that have chemical release prevention authority.

CUSA’s Response: The subject of process safety indicators is complex and has been the focus of prior agency recommendations (e.g., Recommendation No. 2005-4-I-TX-6 to the API and United Steelworkers). Despite many years of effort by a diverse group of interested parties, including individual companies, safety and industry groups, organized labor, and regulators, there is no consensus on process safety indicators. The CSB acknowledged this lack of consensus during a Safety Performance Indicators public hearing it held in Houston, Texas on July 23 and 24, 2012. CUSA understands the CSB’s interest in continuing to drive this process forward.

The Refinery already internally tracks numerous leading and lagging indicators through its Operational Excellence and Reliability Intelligence (“OERI”) system. OERI is a reporting system that tracks various metrics, including safety, operations, and reliability metrics, by automatically pulling data from the Refinery’s information management systems. These systems contain information pertaining to (1) reliability, including design safety and inspection schedules and history, and (2) maintenance management data, including the status of preventative

maintenance and safety activities. OERI also tracks the Management of Change process, PHA process recommendations, and regulatory compliance action items.

In addition to other tracking mechanisms, the Refinery uses OERI to provide organizational visibility of the Refinery's maintenance, reliability, and process safety performance, and overdue and upcoming safety, maintenance, and regulatory compliance items. Refinery personnel have ready access to OERI and it is reviewed by the Refinery's management on a routine basis.

OERI also is used during Unit Reliability Briefs ("URBs"), which are cross-functional meetings attended by management, reliability analysts, maintenance, operations, technical, and other relevant internal stakeholders. URBs are regularly conducted by each business area to manage process safety and reliability performance threats in a risk-informed manner. OERI is utilized during URBs to track and prioritize reliability threats.

To further address the CSB's recommendation, however, CUSA played a major role in coordination with multiple interested parties, including the CSB, USW, Contra Costa Health Services ("CCHS"), and others in industry to develop "consensus" process safety indicators during the CCHS Industrial Safety Ordinance ("ISO") and the City of Richmond ISO revision process. As part of these discussions, the parties conferred on the selection of appropriate indicators, potential reporting format, and the frequency of reporting, among other items. These revisions to the ISO and RISO became effective on September 30, 2014.

Consistent with the revised ordinances, the Refinery, along with industry and the County, is tracking process safety indicators in connection with CCHS's annual reporting obligation, which comes due on June 30 of each year. ISO and RISO process safety performance indicator requirements include reporting on overdue inspections for piping and pressure vessels, overdue PHA recommendations, overdue incident investigations recommendations, and overdue API and American Chemistry Counsel Tier I and II incident investigation recommendations.

On July 15, 2016, the Department of Industrial Relations released its proposed new regulation for Process Safety Management for Petroleum Refineries for public review, substantially completing the current work of the California PSM Advisory Committee. CUSA has and will continue to remain involved with other PSM reform groups and will continue to participate in the development of consensus process safety indicators at the state, local, and federal level.

Recommendation No. 2012-03-I-CA-R33: *Develop a method to assign accountability at Chevron to determine whether any new Energy Technology Company (ETC) recommended program or industry best practice, such as API guidance must be followed to ensure process safety or employee personal safety. This method shall include monitoring of these practices and guidance at a refining system level and at the refinery level. Develop a tracking system to monitor the progress of implementing these selected practices and guidance to completion.*

CUSA's Response: CUSA previously recognized the value of providing for the uniform implementation of recommended programs or industry best practices. For this reason, CUSA continues to develop and implement a "Manufacturing Technical Authority Process" ("MTA Process") with the role of assessing mechanical integrity-related ETC advisories, as well as industry standards, guidance, and best practices (collectively, "Advisories and Standards"). The MTA Process is designed to determine which Advisories and Standards are applicable and appropriate for CUSA's Manufacturing facilities to develop those Advisories and Standards into new Manufacturing Standards, and to direct and monitor their subsequent implementation by appropriate personnel. The MTA Process engages senior executives and managers with process safety and operational experience.

A brief overview of the MTA Process is as follows:

- Under the MTA Process, new Advisories and Standards are identified from a wide variety of sources.
- If new Advisories and Standards are applicable to Manufacturing facilities and are not already adequately addressed, the new Advisories and Standards will move forward in the process.
- The MTA Process assigns the new Advisories and Standards to the appropriate Manufacturing organization or SMEs to develop the methods and milestones for implementation, and to track and verify that implementation is completed according to plan.
- The appropriate refinery leadership team (e.g., Operations, Maintenance and Reliability, or Technical) assigns responsibility for executing the Manufacturing Standards.
- For Manufacturing Standards that the MTA Process determines to be critical for the prevention of fatalities and high-consequence loss of containment events, any extensions and exceptions will require approval of the President of Manufacturing.
- The MTA Process will track and monitor the development and implementation of Manufacturing Standards in a database.

Recommendation No. 2012-03-I-CA-R34: *Develop an auditable process to be available for all recommended turnaround work items necessary to address mechanical integrity deficiencies or inspection recommendations that are denied or deferred. This process shall provide the submitter of the denied or deferred recommendation with the option to seek further review by his or her manager, who can further elevate and discuss the recommendation with higher level management, such as the Area Business Unit Manager. Maintain an auditable log of each of these potential turnaround work items, including the ultimate determination of approval, deferral, or rejection, justification determination, and the person or team responsible for that decision.*

CUSA's Response: CUSA's Richmond Refinery has developed and implemented a process for tracking turnaround work items necessary to address inspection recommendations concerning fixed equipment (e.g., process piping) identified by the Company's API certified inspectors, including any turnaround work items that are denied or deferred.

On September 20, 2014, the State of California enacted Senate Bill 1300 that imposes on California refineries certain notification obligations regarding turnaround work. 2014 Cal. Stat. ch. 519 (S.B. 1300) (codified at Cal. Lab. Code § 7872). Among other provisions, S.B. 1300 requires a petroleum refinery employer to make available upon request to Cal/OSHA "[n]otification and description of all repairs, design modifications, or process changes described in a corrosion report, risk-based inspection report, process hazard analysis, boiler permit schedule, management of change record, work order, or other document listed in paragraphs (1) to (6), inclusive, *that the petroleum refinery employer has deferred to a subsequent operational period or turnaround.*" Cal. Lab. Code § 7872(c)(7) (emphasis added).

The Richmond Refinery's turnaround tracking process is consistent with S.B. 1300 and establishes the process by which the Refinery maintains the information required by California law. Among the information that the Refinery maintains is a Turnaround Database of potential turnaround work items that include the ultimate determination of deferral or rejection of the item. The Turnaround Database allows personnel to search the status of any turnaround work item, generate a report that demonstrates the approval status of turnaround work items, and review any denied or deferred work items. Additionally, the Turnaround Database identifies the name of the supervisor and the name of employee(s) who provided comments or made a determination regarding approval status. When action is taken on a Living Worklist ("LWL") item, the originator receives an email notification regarding the change in status. The notification includes the LWL item number, the status change, and a link to the Turnaround Database entry for viewing Decision Notes and Decision Attendees. CUSA encourages employees to raise any concerns about a denial or deferral with their supervisor or their supervisor's manager.

In addition, CUSA is in the process of implementing improvements to the Turnaround Database and improvements to guidance materials that further emphasize the ability of the originator to seek additional review of deferred or denied turnaround work items. The enhancements will include a revision to the Turnaround Database Approval Process Flow Chart and to the turnaround work item status change email notification that will reiterate and reinforce CUSA's policy that the originator of a work item has the option to seek further review of denied or deferred recommendations with higher level management.

Recommendation No. 2012-03-I-CA-R35: *Develop an approval process that includes a technical review that must be implemented prior to resetting the minimum alert thickness to a lower value in the inspection database.*

CUSA's Response: This recommendation was made in the CSB's final report released January 2015. CUSA developed and distributed a manufacturing instruction ("Manufacturing Instruction for Establishing Piping Minimum Alert Thickness" or "MFG 540") in May 2016 (revised December 2016), which includes a documented technical review and approval process when a piping minimum alert thickness is changed to a lower value within the inspection database.

IV. CORRECTIVE ACTIONS IMPLEMENTED BY CUSA IN RESPONSE TO ITS OWN INVESTIGATION

The Richmond Refinery's own investigation team identified a series of recommended actions to address what had been identified as causal factors and additional considerations. Operational and process changes that resulted from this investigation are set forth below.

A. RECOMMENDATIONS TO ADDRESS CAUSAL FACTORS ("CF")

CF Recommendation 1: *Revise Refinery policies and checklists to ensure appropriate information—including Process Safety and Inspection information—is considered when evaluating leaks and addressing the issue of whether to shut down or continue operation of equipment.*

CUSA's Response: The Refinery has implemented an updated protocol for evaluating process leaks with simple guidance to assist in making necessary and rapid decisions concerning leak response and further enhancing situational awareness skills. This protocol identifies scenarios that trigger the use of the protocol and recognizes that there may be other scenarios in high consequence services where a leak has not yet occurred but has a potential for loss of containment if conditions are not addressed.

Pursuant to the protocol, subject matter experts ("SMEs") from various disciplines, including process safety and inspections, gather to evaluate the leak. The protocol provides discussion questions about process safety information, including information related to past inspections, for the SMEs to consider when determining the response plan. The type of process safety information to consider includes the identity of the leaking material, location, temperature and emergency shutdown procedures, as well as an understanding of the potential damage mechanism involved.

The protocol is published on the Company's internal Manufacturing website under Manufacturing Standards, and a training program has been developed that tracks completion of required training.

The leak response protocol was shared with CCHS, Cal/OSHA, CSB, as well as other refineries and industrial facilities in the County and beyond.

CF Recommendation 2: *Enhance the Refinery's Mechanical Integrity program to ensure the Refinery properly identifies and monitors piping circuits for appropriate damage mechanisms using a standardized methodology and documentation system.*

CUSA's Response: The Refinery is strengthening its reliability program for piping and equipment in an effort to ensure it covers potential damage mechanisms applicable to those systems. As part of this effort, the Refinery is implementing an enhanced process for regular DMRs of piping circuits in applicable units in order to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms. As discussed in response to CSB Recommendation 2012-03-I-CA-R1, CUSA issued a standard, MFG 520, for conducting DMRs to assess corrosion threats and other applicable damage mechanisms. MFG 520 establishes a DMR work process that will, where appropriate, be completed for piping circuits and equipment in applicable units using the applicable damage mechanism information outlined in the API Recommended Practice 571.

The Refinery modified its PHA procedures to better integrate DMRs into the PHA review process. MFG 520 requires alignment of the DMR schedule with the PHA schedules for piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs. The Refinery took a lead role in piloting DMRs as this work process was developed. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

MFG 520 recognizes that the DMR work process will undergo continuous improvement as internal and external guidance is developed. Concurrent with development of the DMR work process and in response to a corrective action from its own investigation, CUSA has developed an asset strategy standard, MFG 525, which will be used where applicable. As described above in CUSA's response to CSB Recommendation 2012-03-I-CA-R1, MFG 525 sets the expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and to describe the process for creating and maintaining these strategies. MFG 525 defines an asset strategy as the documented plan for operating, monitoring, and maintaining fixed equipment so as to preserve its pressure boundary. As part of a living program for continual improvement, an asset strategy identifies damage mechanisms; determines the need for and defines operating limits known as integrity operating windows; and prescribes inspection plans, including tasks and frequencies required to manage identified damage mechanisms.

As described above, the MTA Process prioritizes and acts upon mechanical integrity-related recommendations from internal and external technical experts, including industry standards and alerts. CUSA's response to CSB Recommendation 2012-03-I-CA-R33, describes the MTA Process, which was established for the purpose of assessing new Advisories and Standards, determining which are applicable and appropriate for CUSA's Manufacturing facilities, and monitoring their subsequent implementation.

The Refinery also developed the Fixed Equipment Integrity Manager position, with responsibility for developing, implementing, and stewarding the fixed equipment program.

CF Recommendation 3: Review and enhance the requirements for inspector training and competency.

CUSA's Response: The Refinery is improving its mechanical integrity training as a way to further support our leaders, inspectors, operating groups, and engineers. To that end, the Refinery has developed a standard to guide and promote the establishment of essential training and competencies for individuals who are performing a Fixed Equipment Inspector or Analyst role.

The specific training for each Fixed Equipment Inspector position is defined for that specific position based on a training plan that is developed in an effort to ensure that the needed competencies are developed within an established timeframe per certification or training from start of a new position. The implementation of the training plan is tracked through the individual's annual performance monitoring plan and monitored by the individual's supervisor. Additionally, the Refinery maintains a matrix for each inspector that tracks completion of required certifications and training. Recognizing that Fixed Equipment Inspector training is an ongoing process, and new or updated trainings are regularly required, all personnel in Fixed Equipment Inspector positions are current in the trainings identified for the inspections they perform or perform those inspections under the supervision of someone with the necessary certifications and/or training. The training standard, as well as the compliance matrices, are housed on the Refinery's intranet.

CF Recommendations 4 and 5: Develop and implement a process for additional oversight of mechanical integrity-related recommendations and inspection plans, and the escalation of recommendations. Develop and implement a process to review and act upon mechanical integrity-related recommendations from industry alerts, ETC, and other subject-matter experts.

CUSA's Response: The Refinery is implementing a manufacturing instruction for addressing mechanical integrity-related inspection recommendations, including development of mitigation plans, timelines for completion, and the assignment of roles and responsibilities. MFG 530, Fixed Equipment Integrity Threat Recommendation and Resolution Instruction, establishes a process for identifying integrity threats and issuing recommendations, and developing associated resolution plans designed to prevent and mitigate loss of containment in fixed equipment. Under MFG 530, a fully developed integrity threat recommendation, among other things:

- Is a high-quality, data-driven recommendation for deficiencies discovered on in-scope fixed equipment.
- Includes a resolution plan with an agreed-upon due dates.

- May include a mitigation plan if mitigation is required to enable continued Operation until final resolution can be achieved.
- Defines clear handoffs to work prioritization, planning, and execution processes.
- Verifies and documents completion of resolution and mitigation plans.

MFG 530 is applicable to most types of fixed equipment used in the refinery process, including pressure vessels, boilers, on-plot and off-plot piping, atmospheric storage tanks, and furnaces. The objective is to guide the development of integrity threat recommendations to prevent loss of containment events of higher consequence. The instruction and supporting procedures provide detail to support the mechanical integrity program.

Pursuant to the process established in MFG 530, for integrity threats to fixed equipment, all resolutions and/or mitigation plans, if mitigation is required, and target due dates, must be approved by both the Refinery Business Manager (“RBM”) for the affected unit and Fixed Equipment Integrity Manager (“FEIM”). If the RBM and FEIM do not agree on the resolution/mitigation plan or the target due date, the decision is escalated to the Refinery General Manager. All open integrity threats are tracked in OERI in an effort to ensure the resolution/mitigation plan are implemented prior to the target due date. Any employee may raise any concern about the resolution/mitigation plan or the target due date with their supervisor or their supervisor’s manager, or may use their personal stop work authority.

In addition to the actions CUSA has taken in response to its own investigation, CUSA’s responses to CSB Recommendation 2012-03-I-R34 and CSB Recommendation 2012-03-I-CA-R35, described above, are also enhancing the Refinery’s assessment, decision-making, and oversight of mechanical integrity-related inspection recommendations.

Further, the response to CSB Recommendation 2012-03-I-R33 above describes how new Advisories and Standards are considered, developed into manufacturing instructions as appropriate, implemented, and tracked.

CF Recommendations 6 and 7: *Inspect 4CU piping that falls under the ETC Sulfidation Inspection Guidelines criteria for sulfidation corrosion prior to restarting the 4CU. Implement the ETC Sulfidation Inspection Guidelines for the remainder of the Refinery.*

CUSA’s Response: The Refinery conducted 100% component inspection of carbon steel piping systems identified as potentially susceptible to sulfidation corrosion. Over 12,000 individual piping components were inspected. As part of these inspections, the Refinery implemented inspections to identify components of carbon steel piping circuits that did not have sufficient thickness to remain in service until the next scheduled turnaround; implemented generally accepted engineering practices with respect to components of insufficient thickness; documented solutions with respect to components of insufficient thickness; established an inspection frequency for carbon steel piping circuits based upon measured corrosion rates,

remaining life calculations, and current process conditions, including sulfur content and temperature; and maintained records of all carbon steel piping circuits potentially susceptible to sulfidation corrosion.

CF Recommendation 8: *Ensure relevant technical studies and inspection data are considered for the Refinery's equipment reliability plans and incorporated into the ROI/IPR [Reliability Opportunity Identification/Intensive Process Review] process.*

CUSA's Response: The ROI/IPR process has been revised to include known failure mechanisms, relevant technical studies and industry incidents in the pre-read for ROI/IPR study. Impacted employees are being trained on these changes.

B. RECOMMENDATIONS TO ADDRESS ADDITIONAL CONSIDERATIONS ("AC")

AC Recommendation 1: *Review the Pre-Fire Plan to ensure sufficient guidance is provided on equipment positioning.*

CUSA's Response: The Refinery reviewed and updated its Pre-Incident Scenario Analysis with apparatus placement modifications and shared the revised plans with CUSA Industrial Fire Chiefs.

AC Recommendation 2: *Review company/industry loss history on large fractionating towers to determine if internal Engineering Standard FRS-DU-5267 (Emergency Isolation and Depressuring Valves) adequately addresses mitigation of accidental releases from these systems. Revise the standard as warranted by the findings of this review.*

CUSA's Response: The Company completed a review of loss history for large fractionating towers. No revisions to FRS-DU-5267 were warranted by this review.

AC Recommendation 3: *Ensure Refinery business plans provide for the appropriate implementation of Process Safety recommendations (such as the ETC Sulfidation Inspection Guidelines).*

CUSA's Response: See the response above to CSB Recommendation No. 2012-03-I-CA-R33, which describes the MTA Process.

AC Recommendation 4: *Ensure sufficient organizational capacity and competency for minimum thickness Fitness for Service determinations.*

CUSA's Response: Manufacturing Instruction for Minimum Required Pipe Wall Thickness ("MFG 510") was revised in April 2016. This instruction "outlines the calculation methods for determining minimum required pipe wall thickness of ferritic and austenitic steel piping systems within limits set by accepted piping codes and standards." If thickness is at, or is

projected to be, below minimum required thickness, then MFG 510 requires an approved integrity threat mitigation plan to document the technical basis for continued operation to a lower value. MFG 510 also addresses the training, qualification, and documentation requirements for personnel involved in establishing minimum required pipe wall thickness. The Richmond Refinery maintains a record of engineers qualified to execute these calculations.

ETC facilitates a course entitled “API 579-1 / ASME FFS-1 Fitness for Service – Level 1.” The course format is a two-day instruction/workshop followed by an additional day of testing and certification. The course is structured as a workshop, using example problems to demonstrate FFS procedures using CUSA’s ETC Level 1 software. The training is designed for design engineers. Certifications are issued to those who complete the training course and pass the test. Only certified personnel are authorized to perform FFS Level 1 assessments, and only ETC is authorized to perform FFS Level 2 and 3 assessments. Richmond Refinery keeps a log of the active personnel certified to review FFS Level 1 assessments.

AC Recommendation 5: Consider additional training on expectations under the “Richmond Refinery Piping Inspection Guidelines” and “RFMS Piping Data Entry (Reliability Focused Maintenance System) and ACD (Add/Change/Delete) Guideline.”

CUSA’s Response: See the response above to the third CUSA Investigation CF recommendation, which discusses inspector training and competency.

AC Recommendation 6: Review and modify the PHA procedures to ensure that teams consider known corrosion threats/mechanisms.

CUSA’s Response: See the responses above to CSB Recommendation 2012-03-I-CA-R1 and the second CUSA Investigation CF recommendation, which discuss the DMR work process.

AC Recommendation 7: Consider a project to evaluate the purpose and methods of various project safety management (PSM) reviews (PHA, ROI/IPR, AOA, COA, sRCM, RBI, etc.) to determine if these activities can be combined or better sequenced to improve risk understanding across the various functions and promote better process safety outcomes.

CUSA’s Response: The Refinery has mapped out the work processes under PSM and other safety standards to identify potential efficiencies that can be gained or outcomes enhanced by re-sequencing, combining, or modifying processes.

V. CONCLUSION

Operating safely is one of CUSA’s core values. CUSA is also committed to learning from the August 6, 2012 fire to prevent a recurrence. To this end, CUSA has worked closely and cooperatively with local, state, and federal agencies, including the City, to determine the root

causes of the fire. CUSA is committed to considering recommendations from all agency investigations, and taking appropriate actions in response.

CUSA's efforts to improve safety and reliability at its refineries are ongoing. CUSA is continues to evaluate and undertake efforts to enhance mechanical integrity and safe operations at the Refinery.

APPENDIX A – ACRONYMS

ACC	American Chemistry Counsel
API	American Petroleum Institute
BIN	Business Improvement Network
Cal/OSHA	California Division of Occupational Safety and Health
CCHS	Contra Costa Health Services
CCHMP	Contra Costa County Hazardous Materials Program
CSB	U.S. Chemical Safety Board
CUSA	Chevron U.S.A. Inc.
DMR	Damage Mechanism Review
EIR	Environmental Impact Report
ETC	Energy Technology Company
ISO	Industrial Safety Ordinance
MFG	Manufacturing Standard
MM	Mitigation Measure
MTA	Manufacturing Technical Authority
OERI	Operational Excellence and Reliability Intelligence
PHA	Process Hazard Analysis
PSM	Process Safety Management
RISO	City of Richmond Industrial Safety Ordinance
S.B.	Senate Bill
SME	Subject Matter Expert
URB	Unit Reliability Brief
USW	United Steelworkers

ATTACHMENT 4

Reliability Program Update for Conditions III.A, III.C2 and C3 dated February 15, 2017



Jeff Hartwig
Director

Modernization Project
Chevron Products Company
P. O. Box 1272
Richmond, CA 94802-0272
Tel 510 242 4435
JWHA @chevron.com

February 15, 2017

Ms. Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Chevron Modernization Project – Transmittal #17
Response to ANTEA Report 4QTR2016, Questions 18.2.01, 02, and 03

Dear Lina:

Chevron is submitting this letter to the City of Richmond Planning and Building Services Department (City) to demonstrate compliance with Conditions II.A, III.C.2, and III.C.3 of the Chevron Modernization Project Reliability Program (“Program”), Appendix 4.13-PROG of the Chevron Modernization Project Environmental Impact Report certified by the City in July 2014. Implementation of the Program is required pursuant to mitigation measure (MM) 4.13-4a and conditional use permit (CU) condition A2.

Condition III.A states the following:

The Reliability Analysis for the Modernization Project has identified seventeen (17) piping circuits in the Crude Unit that warrant replacement based on the Reliability Analysis. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017.

The Reliability Analysis for the Modernization Project has also identified four partial piping and valve replacements in the Crude Unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. The Refinery has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017.

Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of the closed permits to the Planning Department to demonstrate compliance with this commitment.

III.A Response: The Refinery completed its turnaround for the No. 4 Crude Unit (“4CU”) in fourth quarter 2016. This turnaround included replacement of the 17 piping circuits and 4 partial piping and valve replacements identified in the Program. The City authorized the replacement work pursuant to the “Annual

Provisional Construction Permit” (No. F14-06939) (“Annual Permit”), which is issued by the City of Richmond Fire Department (“RFD”) pursuant to §§ 105.1.2.2, 105.1.3, and 105.7.9 of the California Fire Code, as incorporated and amended by Chapter 8.13 of the City’s Municipal Code. In order to obtain approval under the Annual Permit, the Refinery generates turnaround engineering work orders that comply with the terms and conditions of the Annual Permit. Work under the Annual Permit is tracked and, as required by the RFD, inspected pursuant to the turnaround work order number generated by the Refinery. The below table (“Table 1”) includes a list of the 17 piping circuits and 4 partial piping and valve replacements and the corresponding turnaround work order numbers associated with the work completed during the 4th quarter 2016 Crude turnaround.

Table 1. Piping Upgrades for Reliability Program III.A

Equipment number	Equipment description	Turnaround work order number	New Metallurgy	PSSR ¹ Completed
0955-002-008	V-1103 Desalted Crude	451928	9 Chromium	12/10/16
0955-002-014	V-1103 Desalted Crude	451927	9 Chromium	12/10/16
0955-002-015	V-1103 Desalted Crude	451924	9 Chromium	12/10/16
0955-002-016	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-017	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-018	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-030	Desalted Crude From E-1165A To F-1100A/B		9 Chromium	12/10/16
0955-002-031	Desalted Crude From E-1165A To F-1100A/B	451928	9 Chromium	12/10/16
0955-002-032	Desalted Crude From E-1165A To F-1100A/B		9 Chromium	12/10/16
0955-007-009	#4 Sidecut Circ Reflux	451930	9 Chromium	12/9/16
0955-007-017	#4 Sidecut Circ Reflux	451931	9 Chromium	12/9/16
0955-009-003	C-1100 Bottoms to F-1160	451932	9 Chromium	12/7/16
0955-012-001	C-1160 Outlet #7 Sidecut	425623	9 Chromium	12/10/16
0955-012-002	#7 Sidecut		9 Chromium	12/10/16
0955-013-007	C-1160 Outlet #8 Sidecut to E-1188	425623	9 Chromium	12/10/16
0955-013-008	C-1160 Outlet #8 Sidecut to C-1160		9 Chromium	12/10/16
0955-013-009	C-1160 Outlet #8 Sidecut to E-1114		9 Chromium	12/10/16
0955-015-002	C-1160 Outlet to E-1165A/B	451936	9 Chromium	12/9/16
0955-015-017	K-1165A/B Pump Out	451933	9 Chromium	12/10/16
0955-019-034	P-1165/A Case Vents to C-1160	451938	9 Chromium	12/10/16
0955-019-017	Pump Vents	451935	9 Chromium	12/9/16

¹PSSR – pre-startup safety review which includes verification that equipment was installed as designed and permitted.

Following installation, positive material identification (PMI) was conducted to ensure the metallurgy of the pipe installed and material test reports were generated. Pursuant to the work flow process agreed to between the Refinery and RFD, all documentation related to work performed pursuant to Annual Permit, including turnaround work orders, associated design drawings, process and instrument diagrams (P&IDs), and piping isometric drawings, are maintained at the Refinery and are available for inspection upon request.

In addition, the following building and fire permits shown in the below table (“Table 2”) were obtained for the civil/structural work for the pipe supports and fireproofing.

Table 2. Building Permits for Reliability Program III.A

Permit No.	Permit Description	Submitted mechanically complete on	Final special inspection report
B16-00273	Structural steel modifications and additional bracing	11/28/2016	11/29/2016
F16-10390	Structural member tie-in location fireproofing	Open ²	
B16-00165	Misc structural steel (guides and anchors)	12/7/2016	12/8/2016
B15-12288	Steel bearing plates under pipe base supports at grade	12/12/2016	12/12/2016
B16-03216	Replace short pipe supports at grade for ¾" piping	12/8/2016	N/A
B15-11508	7 Sidecut piping upgrade – various structural mods for pipe	12/12/2016	12/13/2016
B16-03477	Relocate two pipe guides for 2" CW lines	12/7/2016	N/A
B15-11997	8 Sidecut piping upgrade – various pipe supports	12/13/2016	12/14/2016

²Final fireproofing requires additional coat of paint that has been delayed due to rain.

Condition III.C.2 states the following:

Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:

- Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
- Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.

III.C.2 Response: The 4CU turnaround completed in fourth quarter 2016 included a full internal tube inspection for F-1100. The full inspection report is stored in the equipment file. No findings warranting tube replacements or specimen removal were noted. Testing on the radiant section tubes from the F-1100 Furnace was completed in 2012. These records and the Omega testing report are available in the equipment file. No findings from the testing indicated that a re-tube, additional samples, or testing was required. Because the Omega testing results did not indicate additional sampling was required, no samples were taken from the F-1100 Furnace during the 4th quarter 2016 turnaround. The intelligent pig inspection completed during the 4th quarter 2016 turnaround did not require any tube replacements per Chevron's replacement criteria for furnace tubes. The minimum thickness on the Fired Heater Data Sheet was compared with the minimum thickness measured during the intelligent pig inspection. Both of which records are available for inspection by the City. Inspection and testing reports for the above work are available for review by the City upon request.

Six Permasense[®] monitors have been installed on the outlet piping of F-1100A/B and C-1100. As part of the work to upgrade the piping circuits described above, which included identification of new locations for Permasense[®] monitors on 4CU piping circuits, Chevron determined that it needed to upgrade the Permasense[®] monitors on the upgraded and existing piping circuits because Permasense[®] no longer supports the existing hardware. Hot work for installation of the upgraded Permasense[®] monitors was completed during the 4CU turnaround. Chevron is developing its acquisition and installation plan for the upgraded system, which will be fully functional by start of project operations. In the interim, monitoring of corrosion data from the outlet piping of F-1100A/B data is not currently available.

Option 2 will not be pursued given that Option 1 was the chosen path.

Condition III.C.3 states the following:

The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:

- Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
- In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.

III.C.3 Response: The recently completed 4CU turnaround included a full internal tube inspection for F-1160. No findings warranting tube replacements or specimen removal were noted. The intelligent pig inspection did not require any tube replacements per Chevron's replacement criteria for furnace tubes. The minimum thickness on the Fired Heater Data Sheet was compared with the minimum thickness measured during the intelligent pig inspection. The inspection reports and related materials are available for review by the City upon request.

Also please feel free to contact me at any time with concerns or questions.

Sincerely,



Jeff Hartwig

ATTACHMENT 5
Reliability Program Update for Condition IV.D

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
RELIABILITY PROGRAM § IV.D REPORT**

October 7, 2016

**LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804**

Chevron U.S.A. Inc. (“CUSA” or “the Company”) submits this report to comply with section IV.D of Appendix 4.13-PROG – Modernization Project Reliability Program, which provides:

Chevron shall provide annual reports to the City summarizing the PHAs/revalidated PHAs completed during the preceding calendar year to account for consideration of damage mechanisms, and shall include a list of fixed equipment inspection recommendations submitted for each turnaround, indicating which recommendations were accepted, and for those that were not accepted, the reason the recommendation was rejected. All PHAs shall be available for agency review pursuant to the terms of the RISO.

As previously reported to the City pursuant to sections 4.13-4a, 4.13-7a, and 4.13-7b of the Monitoring Mitigation and Reporting Program (MMRP) prepared for the Refinery Modernization Project (Project), Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), have been completed or revalidated for the following Project components in 2016:

- New Hydrogen Plant
- Modification to the FCC FHT (also referred to as the TKC)
- Modifications to the Sulfur Recovery Units (SRU)
- New No. 6 H₂S Plant
- Hydrogen Compressor Upgrade project (HYCUP)

The PHAs and related materials from the Hydrogen Plant, TKC modifications, and No. 6 H₂S Plant have been reviewed by Contra Costa Health Services during an on-site visit and review of MMRP and Reliability Program requirements in August 2016. The PHA and related materials for the SRU modifications and HYCUP are available for review by the City and CCHS at the Refinery.

The Project is currently in the ongoing-design and construction phase, and thus the turnaround process, including consideration of fixed equipment inspection recommendations, is not yet applicable to new units. For modified units, no turnarounds have occurred in the preceding year.

ATTACHMENT 6
Reliability Program Update for Condition IV.G

Mitchum, Kristi

From: Hartwig, Jeff
Sent: Friday, May 12, 2017 12:17 PM
To: 'Lina Velasco'
Cc: Quiroz, Richard; Mitchum, Kristi; Todd W. Smith (tsmith@thomaslaw.com)
Subject: 2017 Community Town Hall and Employee Communications Mixer
Attachments: 3-30-17 Tele Town Hall Transcript.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Lina:

Pursuant to Section IV.G of the Modernization Project Reliability Program (Program) and Condition G1 of the Conditional Use Permit PLN-11-089, Chevron committed to hold town halls for its workforce and for the community on an annual basis to provide updates concerning:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.
2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.
3. When triggered, the results of the reliability review revalidation and the status of any recommendations made as a result of this review."

This email provides an update concerning Chevron's compliance with this obligation for 2017.

On Thursday, March 30, 2017, the Refinery held a telephone town hall regarding the Modernization Project and the status of enhanced safety measures and implementation of the Program. Prior to the call, a direct mail postcard advertising the event was distributed to 46,000 households in Richmond (see attached). Chevron Richmond Facebook ads were also delivered to 25,359 people and the Richmond Standard shared the post, which was delivered to 1,300 people. Participants from Chevron included me, Tery Lizarraga (Maintenance & Reliability Manager for the Modernization Project), Akeele Carter (Local Jobs Hiring Coordinator), and Leah Casey (PGPA External Communications Representative). The call initiating the Town Hall was broadcast to 11,070 phone numbers in Richmond, which reached approximately 20,000 residents. 1,971 total residents accepted the phone call for the event, and peak participation was 460 listeners.

Chevron's presentation specifically addressed the status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident. We also provided an updated concerning the status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs. Attached is a copy of the complete transcript of the Town Hall, which is also available through "Chevron Speaks" in the Richmond Standard. Further, here is a link to the audio recording of the call:

<https://www.dropbox.com/s/wa8ewn4xxgxsv5r/Stones%2527%20Phones%20Singer%20Chevron%20TTH%20Recording%203.30.17.mp3?dl=0>.

Additionally, on Thursday, April 6, 2017, the Refinery held a Communications Mixer where employees came to learn about how we are implementing refinery strategies. One of the components of the mixer provided an update on the Modernization Project and the status of enhanced safety measures and implementation of the Program, consistent with the information shared during the Town Hall. Employees also had to opportunity to talk 1-on-1 with experts from the project and ask questions.

Please let me know if you have any questions.

Sincerely,
Jeff Hartwig



Modernization Project Reliability Program

Richmond Refinery

2014 Revision

MODERNIZATION PROJECT RELIABILITY PROGRAM

I. INTRODUCTION

Chevron U.S.A. Inc. (“Chevron”) has proposed this Reliability Program (“Program”) to mitigate potentially significant effects to public safety that might arise from implementation of the Modernization Project at Chevron’s Richmond Refinery. Among other things, the Modernization Project would increase the Facility’s sulfur removal capacity from 600 to 900 long tons per day (LT/d), which has the potential to increase the sulfur level of crude oil blends and gas oils processed by the Refinery. Sulfur is a naturally occurring element in crude and must be removed to produce the end-products processed at the Refinery. The processing of sulfur can lead to corrosion (“sulfidation corrosion”) of piping and equipment, and must be effectively monitored and managed. Sulfidation corrosion is identified as a damage mechanism by *American Petroleum Institute (API) Recommended Practice 571 – Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*.

The Project would increase the sulfur content of crude oil blends and gas oils processed at the Refinery. Therefore, the City of Richmond, with technical support from an independent expert retained by the City and Chevron, undertook a Reliability Analysis to assess the potential for increased risk of damage occurring from the physical, operational, and feedstock changes proposed as part of the Project, including from sulfidation corrosion, and makes recommendations on steps to be taken to mitigate the risks from these changes. The results of this Reliability Analysis are presented in the Modernization Project Environmental Impact Report (EIR), *Appendix 4.13 – Reliability Analysis of Modernization Project Changes* (Reliability Analysis).

The Reliability Analysis makes several general observations and recommendations concerning the Refinery’s overall mechanical integrity program, as well as specific recommendations to monitor and address the potential effects of the Project. Section II of this Program generally describes the actions the Refinery is in the process of implementing to enhance its mechanical-integrity program and overall Refinery safety, which Chevron believes address the general recommendations from the Reliability Analysis.¹ Section III of this Program sets forth the Project-specific recommendations that will be implemented as a result of the Reliability Analysis. Section IV of the Program describes the ongoing regulatory review and reporting obligations committed to in this Program that will ensure that the actions identified in this Program is implemented.

II. GENERAL RECOMMENDATIONS AND REFINERY ACTIONS TO ADDRESS

The Reliability Analysis includes the following five general recommendations (*Appendix 4.13, pp. 123-124*):

¹ While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

- **Recommendation:** Chevron should ensure that its organizational communication procedures and work processes incorporate mechanisms by which risk concerns, corrective actions, and recommendations that are identified (e.g., during inspections, turnarounds, audits, PHAs, etc.) by personnel (or contractors) are addressed, reviewed and authorized by management as appropriate, tracked, and closed out, and that the rationale for any decision not to implement a recommendation or corrective action, or otherwise address a risk concern, are clearly documented.
- **Recommendation:** Chevron should further clarify and incorporate into their mechanical integrity program and program documents periodic reviews of work processes, procedures, inspection strategies, etc. to account for physical, operational and organizational changes over time that could affect the assumptions that went into the original decisions. Examples that illustrate this include: (1) periodic reviews of inspection CML densities and placements to ensure that unpredictable damage mechanisms can be detected and (2) reviews of wet H₂S damage risk, based on crude feed constituent changes. Chevron reports that it is developing "asset strategy plans" for each process unit, and that the development of the asset strategy plans will address this recommendation by including review of inspection procedures, working documents, CMLs, and damage mechanisms, and that the asset strategy plans will identify and implement changes needed to each as a result of the review. Whether called an "asset strategy plan" or otherwise included in another safety program (e.g., included as part of the Richmond Industrial Safety Ordinance documentation), Chevron should clarify its implementation tracking process for changes needed as a result of these periodic reviews.
- **Recommendation:** Chevron should leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks, including for example Chevron's current pilot project to implement Integrity Operating Windows per the guidelines of the draft API 584 Recommended Practice for the crude unit. Chevron should extend the pilot project to the remaining operating units.
- **Recommendation:** Chevron should review their Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/ dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.
- **Recommendation:** Chevron should review and modify their Piping Inspection Procedure to incorporate an engineering review of thickness inspection data with near term "Flag" dates for high risk equipment/piping to assure that the actual minimum thickness associated with the Flag date has either been verified through inspection or, alternatively, the inspection data analyzed with techniques such as a statistical analysis (95% CL or extreme value analysis) to evaluate what risk is involved if the actual minimum thickness was not measured.

Regarding the general recommendations, the Refinery is already implementing numerous actions to enhance safety, resulting in new or improved process safety work processes. Changes have

also been made in the reliability organization to provide more mechanical integrity oversight. Chevron believes these and other actions, described in detail in the EIR, *Chapter 4.13 – Public Safety*, § 4.13.2.4.3.2.2², generally address these recommendations.

For example, the first recommendation calls for Chevron to ensure its organizational communication procedures and work processes adequately identify, track, and close out concerns and recommendations regarding risk. The Refinery is already taking the following actions to enhance organizational communication and competency concerning general and specific mechanical-integrity related recommendations:

- Developing and implementing a new process for additional oversight of general mechanical-integrity related recommendations from industry, Chevron’s Energy Technology Company, and other subject matter experts.
- Development and deployment of an Integrity Threat Process to address inspection recommendations for equipment and piping that could significantly impact safety, or environmental or plant operations, including tracking recommendations by target completion date using the refinery’s MERIDIUM and OERI databases until it is resolved.
- Updating its internal work instructions in 2013 to address inspection results that indicate that equipment or piping will reach “flag” or “alert” thickness prior to the next scheduled turnaround and to include immediate notification of any field measures that indicate a remaining life of one year or less. This update also addresses the last general recommendation above to review and modify the piping inspection procedures.
- Enhancing the requirements for training and competency for leadership, inspections, and technical assessments, including specifically training for determining minimum thickness and fitness for service of individual piping components.
- With regard to turnaround planning, tracking and documenting any decision to defer or not to implement a fixed equipment inspection recommendation to approval by the Refinery Business Manager for the process unit for which the recommendation was made.

Further, the second and third general recommendations provide that Chevron should clarify and modify its mechanical integrity program to, among other things, consider physical, operational and organizational changes over time, and to leverage its existing infrastructure and technology to lessen the reliance on human interaction in responding to potential risks. The Refinery is already implementing enhancements to its mechanical-integrity program. For example:

- The Refinery has added a Fixed Equipment Integrity Manager, who is responsible for developing, implementing, and stewarding the refinery’s Fixed Equipment Integrity program with a goal of achieving zero process safety incidents and improving mechanical availability.
- The Refinery has developed and piloted in its crude unit a Damage Mechanism Review (DMR) process that is consistent with *API 571* and which requires a team of subject

² While these actions are being developed and implemented throughout Chevron U.S.A. Inc.’s refining system, the discussion focuses primarily on development and implementation at the Richmond refinery.

matter experts to review, analyze, and make recommendations concerning damage mechanisms and how to mitigate the effects of damage mechanisms on each process unit. This process has now been made a required element in the Process Safety Management (PSM) process at the refinery for identified process units, and is being undertaken on an ongoing basis.

- The Refinery has piloted in its crude unit a process to create and utilize asset strategy plans for each process unit at the piping circuit level, which will be integrated into the DMR process and will include, among other things, integrity operating windows consistent with draft *API 584 – Integrity Operating Windows* and consideration of process conditions, inspections techniques and frequency, mixing and injection points, and corrosion monitoring locations (CML). These asset strategy plans will be implemented for all processing units on an ongoing basis.

The Refinery reports the status of the above-identified actions to CalOSHA as part of the August 5, 2013 terms of probation described in *Chapter 4.13 – Public Safety* of the environmental impact report, and has also committed to providing quarterly updates to the City pursuant to Mitigation Measure 4.13-CUM-1d. As part of this process, Chevron will work with the County, the City, and its consultants, to ensure that the above-stated general recommendations from the Reliability Analysis have been addressed.

In addition, Chevron will undertake a review of its Positive Material Identification (PMI) Procedure for compliance with API 578, *Material Verification Program for New and Existing Alloy Piping Systems*, based on PMI inspection of equipment and piping during shutdown/dismantling/disassembly, and make revisions, as warranted, to ensure that Chevron's PMI Procedure conforms to API 578.

III. PROJECT RECOMMENDATIONS

The enhanced safety measures described above will provide the foundation for the management of damage mechanisms in the refinery, including sulfidation corrosion, on a go-forward basis. In particular, the damage mechanism review process, the updated PHA process, and development and deployment the asset strategy plans, including integrity operating windows, will be used post-Project for all refinery units to manage risks from all damage mechanisms. In addition to this process, which provides for ongoing evaluation of risks and resulting recommendations, the Reliability Analysis has identified numerous Project-specific recommendations, which Chevron is committing to implement as part of this Reliability Program.

In order to identify Project-related recommendations, the Reliability Analysis assumed certain post-Project operating conditions. The assumptions and analytical method are described more fully in the EIR, Appendix 4.13-REL. The recommendations below, including piping circuit upgrades and installation of additional corrosion monitoring equipment, are tiered to this analysis, meaning that these measures will be implemented well before they would be triggered by actual projected post-Project operations.

A. Schedule and Report on Upgrades to Identified Piping Circuits

The Reliability Analysis for the Modernization Project has identified seventeen (17) piping circuits in the Crude Unit that warrant replacement based on the Reliability Analysis. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-002-008	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-014	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-015	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-016	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-017	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-018	V-1103 Desalted Crude	CS	9 Chrome	EOY 2017
0955-002-030	Desalted Crude From E-1165A To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-031	Desalted Crude From E-1165B To F-1100A/B	CS	9 Chrome	EOY 2017
0955-002-032	Desalted Crude From E-1116's to E-1165C	CS	9 Chrome	EOY 2017
0955-007-009	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-007-017	#4 Sidecut Circ Reflux	CS	9 Chrome	EOY 2017
0955-009-003	C-1100 Bottoms to F-1160	5Cr	9 Chrome	EOY 2017
0955-012-001	C-1160 Outlet #7 Sidecut	CS	9 Chrome	EOY 2017
0955-012-002	#7 Sidecut	CS	9 Chrome	EOY 2017
0955-013-007	C-1160 OUTLET: #8 Sidecut to E-1188	CS	9 Chrome	EOY 2017
0955-013-008	C-1160 Outlet: #8 Sidecut to C-1160	CS	9 Chrome	EOY 2017
0955-013-009	C-1160 Outlet: #8 Sidecut to E-1114	CS	9 Chrome	EOY 2017

The Reliability Analysis for the Modernization Project has also identified four partial piping and valve replacements in the Crude Unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. The Refinery has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017, as follows:

Equipment number	Equipment description	Existing Metallurgy	New Material	Replacement Date
0955-015-002	C-1160 OUTLET to E-1165 A/B/C	9Cr/5Cr/ (2) 10" spool piece and drain valves CS	Replace 5Cr and CS with 9CR; existing 9Cr remains in place	EOY 2017
0955-015-017	K-1165A/B Pump Out	9Cr/5Cr/CS	Replace short 5Cr deadleg immediately off filters with 9 Cr. CS is either free-draining, isolated, or cool wash oil service, so no need to replace because do not see regular service	EOY 2017
0955-019-034	P-1165/A Case Vents to C-1160	SS/CS	CS is downstream of single SS block valve. Upgrade the 3/4" CS pump case vents with SS to double block and bleed design.	EOY 2017
0955-019-017	Pump Vents	9Cr/5Cr/CS	Replace 5Cr with 9Cr and add a second block valve and bleeder. CS component is downstream of 5Cr single block valve; no project impact on CS portion downstream of the valve.	EOY 2017

Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

B. Installation and Monitoring of Additional Permasense® Monitors on Identified Circuits

Since the beginning of 2013, the Refinery has installed a total of 117 Permasense® probes in the Crude Unit on six piping systems consisting of carbon steel, 5 Chrome, and 9 Chrome materials. Permasense® is the trade name of a type of high-temperature ultrasonic device that is mounted on a pipe or vessel, and penetrates through insulation. It has wireless sensors that provide periodic equipment thickness readings (at variable intervals, but currently set to collect thickness data twice a day) to monitor a system. Due to noise and sensitivity, the technology is limited to longer-term trending (days and months vs. hours) which is appropriate for piping subject to sulfidation conditions with its predictable rates.

The six piping circuits on which the sensors were installed were chosen based on past and anticipated projected future operating conditions. The wireless probes collect pipe wall thickness data while the plant is operating, and are used to monitor corrosion rates. This long-term online monitoring program will be part of the reliability program to ensure safe operation of equipment after the Modernization Project commences operations. Thirteen of these piping circuits with Permasense® monitors installed have been identified for replacement and will be upgraded to 9 Chrome pursuant to the piping circuit upgrades planned as a part of this Reliability Program and the Permasense® monitors will not be reinstalled on these circuits. In addition, as part of the Project, the Refinery will install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA). These sensors are being installed to confirm the predictive model results that there will be little-to-no sulfidation corrosion in the SDA post-Project.

Data from the Permasense® monitors will be utilized in the reporting obligations set forth in section IV below.

C. Crude Unit Recommendations

The operational and feedstock changes contemplated by the Modernization Project, specifically increases in sulfur content of feedstocks, increased hydrogen purity produced by the new hydrogen plant, increased H₂S partial pressures in hydroprocessing plants recycle streams, or potentially higher temperatures in the crude unit based on API gravity ratings, could all contribute to increased damage mechanism activity post-Modernization Project, thereby warranting the implementation of the following preventive measures.

1. Based on the marginal results from the F-1100 radiant tube sulfidation analysis, Chevron should monitor the post-Modernization Project sulfur content being fed to the crude unit and use a 2.0 wt.% sulfur content of feed as a trigger to conduct a review of the F-1100 crude charge furnace to study whether the 5 Chrome radiant tubes are safe to operate until the 2017 shutdown.

2. Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:
 - Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
 - Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.
3. The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:
 - Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
 - In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
4. Conduct laboratory analyses to more accurately determine crude and crude blend sulfur speciation and H₂S evolution, which could be used to predict likely crude corrosion rates. Timing: 4Q2015

5. Develop integrity operating windows (IOWs) for critical crude unit operating parameters per the guidelines in the draft version of API 584. 3Q2014
6. The Crude Splitter software is used to predict the distribution of the sulfur in the atmospheric tower sidecut and bottom streams. Verify the Crude Splitter predicted sulfur results with post-Modernization data on the sulfur containing streams within the first year of operation following the implementation of the Modernization project if the trigger points (2.25 wt.% sulfur and 2.75 wt. % sulfur) noted in § IV.A below are reached.
7. Revise the asset integrity plans for the Crude Unit Atmospheric Column Reflux Drum, V-1100, the Stabilizer Column Reflux Drum, V-1190, and the Vacuum Column Overhead Seal Drum, V-1160, to include inspection for Wet H₂S damage. An external Automatic Ultrasonic Testing inspection of representative sections of the "water wet" portions of V-1100, V-1160 and V-1190 vessels should be conducted as a baseline before the start of post-Modernization conditions, then checked externally again approximately one year after the start of the Modernization conditions. In addition, a one-time internal inspection should be conducted of these vessels during the scheduled maintenance turnaround after the start of Modernization conditions, using eddy current or other approved internal inspection techniques per the Chevron Wet H₂S program.
8. Develop a process monitoring plan for the crude unit overhead to confirm any impacts of the increased sulfur levels. The monitoring plan should be implemented post-Modernization and should include:
 - Process sampling of the accumulator for pH, chlorides, iron and H₂S content. Compare to established integrity operating windows (IOWs);
 - Monitor Desalter pH;
 - Analyze the atmospheric tower post-Modernization to quantify if, and how much, increased H₂S is in the overhead system resulting from the increased sulfur feed to the unit;
 - Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Modify asset integrity plans to monitor for potential increased corrosion if higher mercaptan crudes are run compared with current and historical crude and crude blends; and
 - Review the asset integrity plan to ensure that the Permasense continuous ultrasonic monitoring locations are properly placed to ensure early detection should corrosion rates increase significantly beyond expectations per the McConomy curve predicted rates.
9. Develop and implement physical or administrative controls to assure that carbon steel piping components downstream of high sulfur streams operating > 500F are not inadvertently placed into continuous (e.g., placement of a warning tag, locked valve, double-block-and-bleed valves or other measures). This should be completed prior to the commencement of Modernization Project operations.
10. Higher mercaptan crudes could lead to increased sulfidation corrosion rates in the jet or kerosene cuts. Conduct a historical review of purchased crudes and processed crude blends for the 90% confidence level of highest mercaptans processed and use

this statistical number to set a review flag in the crude and gas oil acceptance procedure. If higher mercaptans crudes are run at the Richmond Refinery, review the Permasense® corrosion rate data from this time period as part of the crude management of change lookback. This should be completed prior to the commencement of Modernization Project operations.

11. Add corrosion monitoring locations (CMLs) to the crude unit atmospheric column overhead piping (circuit 0955-003-001) at the termination of the Hastelloy internal overlay. This should include the termination of cladding in the vertical section of piping, as well as the termination point at the inlet to the E- 1101's. Review other, similar locations in the crude unit for missing dissimilar metal interface thickness monitoring locations (TMLs). This should be completed prior to the commencement of Modernization Project operations.

D. Hydroprocessing Recommendations

1. At the 2.25% wt. % sulfur in crude feed trigger point, evaluate and modify as warranted, based on any increased sulfur in this section of the unit, inspection plans (what, where and how often) for the distillation section of the hydroprocessing units where sulfidation corrosion rates have been “erratic” and uncertain, per API 939-C.
2. Report on the progress of the project to compare the HP-002 Best Practice Guideline regarding water wash to API 932-B recommendations to ensure that the HP-002 document is consistent with 932-B guidelines. This report should be submitted prior to the commencement of Modernization Project operations.
3. Conduct process monitoring and sampling for post-Modernization Project operations for all hydroprocessing units, to develop process data to confirm assumptions made during the damage mechanism review regarding amounts of H₂S and ammonium bisulfide in the overhead systems. This shall be completed after commencement of Modernization Project operations.
4. Develop integrity operating windows (IOWs) for the hydroprocessing units to incorporate existing critical reliability variables such as the wash water rate for Nh₄HS corrosion control. The IOWs shall be established prior to the startup of Modernization Project operations.
5. If the REAC Corrosion Control Project (TKN) is not completed pre-Modernization Project, conduct a review of current operations to ensure that corrosion rates will remain under REAC best practice guidelines with any increase in sulfur to the unit. This shall be completed prior to the startup of Modernization Project operations.

E. SDA Recommendations

1. Verify post-Modernization Project conditions regarding H₂S content in the SDA overheads and target one or more “water wet” vessels for inspection using internal eddy current, external automatic ultrasonics (AUT) or other non-destructive evaluation (NDE) techniques appropriate for wet H₂S cracking detection within one year of operation under post-Modernization Project conditions.
2. Conduct water boot analysis for corrosive constituents similar to that conducted in the crude unit on the unit overhead accumulator drums, including cyanides. This should

be conducted at the 2.25 wt.% and 2.75 wt. % sulfur trigger points identified in § IV.A below.

3. When the sulfur wt.% of crude oil processed at the Facility reaches 2.25 wt.% sulfur on an annual average, and the again when it reaches 2.75 wt.% sulfur annual average, the Facility shall trigger the same responses for the SDA plant as described in the recommendation section for the crude unit.
4. Conduct a follow-up smart pig inspection of F-100 and F-120 furnace tubes during the first planned maintenance after the unit has seen at least 1 year of post-Modernization Project operating conditions.
5. Install at least 25 additional Permasense® monitors on carbon steel circuits in the Solvent De-Asphalter (SDA) including sulfidation “dead legs,” based on a critical review of historical corrosion rates. These sensors will confirm the predictive model results that there will be little-to-no increase in sulfidation corrosion in the SDA post-Modernization Project. These installations should be completed prior to the commencement of Modernization Project operations.
6. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms in the SDA unit. The IOWs should be established prior to the commencement of Modernization Project operations.
7. Develop process monitoring and sampling plans for post-Modernization Project operating conditions to confirm assumptions made during the damage mechanism review project. The monitoring and sampling plans should be developed prior to the commencement of Modernization Project operations, and should be implemented after commencement of Project operations following an increase in sulfur content to the SDA unit.

F. Amine Systems Recommendations.

It is recommended that Chevron review ongoing sampling results (per Best Practice timing plus vendor sampling and reports) to determine if post-Modernization Project amine loading and heat stable amine salts (HSAS) are impacted by any increase in H₂S to the TKC Unit. This should be done prior to the commencement of Modernization Project operations.

G. Sulfur Recovery Unit Recommendations

Associated with the new liquid oxygen piping, the Facility shall typically design and build new construction in conformance with the special design and installation precautions associated with oxygen piping systems, i.e., design and installation best practice details common in industry for oxygen piping systems, including pre-commissioning cleaning of the piping interior to remove harmful materials such as dirt, debris, iron, grease and other contaminants known to cause ignition of pure liquid and gaseous oxygen.

H. Sour Gas System Recommendations

Based on the potential risk of ammonium bisulfide corrosion in carbon steel due to the possibility of the sour gas condensing at locally cool portions of piping, Chevron should develop and implement a mitigation plan for this eventuality. The mitigation plan is to

include reviewing sour gas P&IDs and isometric drawings to locate low points where water could accumulate, locate dead legs and establish inspection/monitoring plans for verifying if and where water is condensing out of the vapor phase. This should be conducted within 1 year of commencement of Modernization Project start-up.

1. Chevron should conduct a review to confirm their post-Modernization assumptions made during this review regarding ammonium bisulfide concentrations, dew points and potential for salt condensation in the sour gas piping, at the 2.25 wt. % and 2.75 wt. % average annual sulfur content trigger points.
2. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour gas system. These IOWs should be established prior to the commencement of Modernization Project operations.

I. Sour Water System Recommendations

1. The block diagrams shown in Figure A4.13-REL-16 and Figure A4.13-REL-17 do not include detailed information at the “P&ID” level. Also, information is lacking on the sour gas streams in the overhead of the H₂S and NH₃ strippers in the SWS unit. (However, for purposes of the review the overhead systems of the WWT plants were deemed to be out of scope.) The impact of post-Modernization Project corrosion from sour water corrosion should be minimal, based on the Reviewer’s analysis of the sour water streams. However, based on a lack of detail at the P&ID level Chevron should conduct a review of their sour water piping inspection programs at the P&ID/Inspection Isometric level (including to ensure that low points, galvanic metal couple locations and CMLs are properly captured) to ensure that their program is sufficient to detect any ammonium bisulfide corrosion in the system. This should be completed prior to the commencement of Modernization Project operations.
2. Chevron should be monitoring and sampling to confirm their assumptions regarding the ammonium bisulfide concentrations and velocities in the sour water piping and H₂S concentrations in the H₂S Stripper and NH₃ Stripper overhead systems. This review should be conducted when average annual sulfur content levels reach 2.25 wt. % and again at 2.75 wt. %.
3. The H₂S stripper, NH₃ stripper, ammonia stripper overhead condenser, and ammonia stripper reflux drum are all Category 2 Wet H₂S vessels and therefore are included in Chevron’s wet H₂S program. If a post-Modernization Project review of the assumptions regarding the severity of wet H₂S damage in the overhead systems warrants a change in the categorization of the overhead wet H₂S vessels, then a wet H₂S cracking inspection should be conducted. This should be conducted within one year after the commencement of Modernization Project operations.
4. Continue as with the existing condition inspection, the X-ray and/or close-grid UT inspection techniques for all of the overhead piping from the NH₃ stripper to the reflux drum regardless of metallurgy.
5. Develop integrity operating windows (IOWs) per draft API RP-584 for identified damage mechanisms for the sour water system. The IOWs should be established prior to the commencement of Modernization Project operations.

J. Recovered Oil Recommendations

If not already present, add CML locations to the C-710 injection nozzle and adjacent C-710 tower shell so that the assumptions regarding post-Modernization Project corrosion rates not increasing in severity can be verified. Implement prior to the operational startup of the Modernization Project.

IV. ONGOING REGULATORY REVIEW AND REPORTING

In order to demonstrate compliance with the recommendation above, as well as to provide the City regular update concerning the implementation of the corrective actions described in § II above, the Refinery will undertake the following reporting obligations.

A. Re-evaluate and Report on Post-Project Operating Assumptions from Reliability Review

The Reliability Analysis for the Modernization Project assumed certain operating conditions once the Project is implemented, including projected temperatures, sulfur levels, and corrosion rates for various process units and individual piping circuits. These assumptions were based on a conservative 3.3 wt% sulfur case. In order to verify that the assumptions made during the reliability review were accurate, the Refinery will undertake the following actions:

- When the sulfur weight percent of crude oil processed at the Refinery reaches 2.25 wt% sulfur on an annual average, and the again when it reaches 2.75 wt% sulfur annual average, the Refinery shall:
 - Assemble a reliability review team that will be made up of appropriate subject matter experts (SMEs), including a Senior Process Engineer, Senior ETC Materials and Corrosion Engineer, Refinery Materials Engineer and Process Operator.
 - For all damage mechanisms identified as being affected by the Project, and using then-current inspection and/or monitoring data, the reliability review team shall review, analyze, and, as necessary, update, the data and conclusions prepared during the reliability review for the Modernization Project to determine whether the assumptions made and conclusions reached during the reliability review accurately reflect actual post-Project operating conditions.
 - Use the data from the laboratory tests described above to consider any potential post-Project impacts from sulfur speciation.
 - Review any operational or process changes that have occurred post-Project.
 - Make recommendations concerning material upgrades and /or enhanced inspection opportunities as necessary based on the re-evaluation.
 - Report on the results of the this re-evaluation and any resulting recommendation to Contra Costa Health Services, the expert agency charged with implementing the Richmond Industrial Safety Ordinance, as well as one or more Refinery workforce representatives from any process units impacted by the re-evaluation and recommendations and who shall have the necessary subject matter expertise to engage in a Project-level reliability review.

B. Report Inspection Results for Identified Circuits in Service Susceptible to High-Temperature Sulfidation Corrosion and other Damage Mechanisms Effected by the Project

All piping circuits in the Refinery, including the new 9 Chrome circuits being installed pursuant to § III.A of this Reliability Program, are regularly monitored and inspected. Beginning one year from commencement of Project operations, and annually thereafter, the Refinery will provide reports to the City summarizing the monitoring and inspection results for the identified circuits. These reports shall at a minimum include the following information:

- A list of all piping circuits identified as potentially susceptible to sulfidation corrosion, including specifically piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes.
- A list of components identified through the 100% component inspection conducted following the August 6, 2012 incident pursuant to the methodologies set forth in the API 939-C - Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries and Updated Inspection Strategies for Preventing Sulfidation Corrosion Failures in Chevron Refineries (Sept. 30, 2009) that may lack sufficient thickness to remain in service until the next scheduled turnaround.
- A description of the solutions implemented with respect to components of insufficient thickness identified above.
- A description of the current fixed inspection frequency for carbon steel piping circuits identified as potentially susceptible to sulfidation corrosion.
- A description of any findings from inspection and monitoring of the piping circuits identified during the reliability review for the Modernization Project as being susceptible to sulfidation corrosion and subject to potential process changes that indicate that any of these circuits lack sufficient thickness to remain in service until the next turnaround and a description of the solution to be implemented with respect to these circuits.
- Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of closed permits to the Planning Department to demonstrate compliance with this commitment.

C. Process Hazard Analyses (PHA) Revalidation

Chevron shall work with Contra Costa Health Services (CCHS) to update and revalidate the process hazard analyses (PHA) prepared for the Project components consistent with the requirements of the Richmond Industrial Safety Ordinance (Richmond Municipal Code Ch. 6.43). This revalidation shall occur prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHA. The PHAs shall include inherently safer

systems analyses (ISSAs), damage mechanism reviews and evaluation of the consequences thereof resulting from the Project, and Layers of Protection Analyses (LOPA).

Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS. The PHAs (initial and updates/revalidations, inherently safer systems analysis, damage mechanisms review, and LOPAs) shall be consistent with proposed amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety (CCPS)) to CCHS for review prior to construction (and post-construction, for those LOPAs warranted based on changes that arise during construction).

D. Share Schedule for and Report Results of Process Hazard Analyses (PHAs) Considering Damage Mechanisms.

Chevron shall provide annual reports to the City summarizing the PHAs/revalidated PHAs completed during the preceding calendar year to account for consideration of damage mechanisms, and shall include a list of fixed equipment inspection recommendations submitted for each turnaround, indicating which recommendations were accepted, and for those that were not accepted, the reason the recommendation was rejected. All PHAs shall be available for agency review pursuant to the terms of the RISO.

E. Updated Safety Program List

Chevron shall maintain a list of programs, procedures, and/or other Refinery documentation that are updated to implement this Reliability Program or the corrective actions described in § II above. Chevron shall maintain this list at the Refinery and make it available to the County during audits, inspections, or upon request.

F. Other Reporting Obligations

1. Probation Terms Reporting

Prior to Project start-up, Chevron shall provide the City a status report on the refinery's compliance with the terms of probation entered into on August 5, 2013, and shall thereafter provide the City reports substantively similar to the reports filed with Cal/OSHA under the terms of probation once per year as necessary until such time as the terms of probation end, including a copy of any response documents provided by CalOSHA, or a detailed summary of any CalOSHA responses if CalOSHA does not approve sharing the response documents with the City. Chevron will work with CalOSHA to pursue their approval to share the Chevron CalOSHA response documents. The original reports and related documents shall be made available at the Refinery upon request by the City or County and during any audits or inspections conducted under the RISO.

2. RISO Audits

Following commencement of Project operations, Chevron shall provide the City an annual report informing the City of any agency-initiated audits performed pursuant to the Richmond Industrial Safety Ordinance during the previous calendar year, and shall update the City concerning the findings from and status of implementation of any recommendation that come out of such audits.

G. Community Engagement

On an annual basis following Project approval until such time as the City determines that such meetings are no longer required, Chevron shall hold town halls for its workforce and for the community to provide updates concerning:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.
2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.
3. When triggered, the results of the reliability review revalidation and the status of any recommendations made as a result of this review.

H. Reporting Obligation

As part of its ongoing reporting obligation under the Mitigation Monitoring and Reporting Program adopted by the City, Chevron shall report on the status of all requirements of this Reliability Program on an annual basis in a form acceptable to the City. All reporting obligations herein shall be subject to the protection for trade secrets provided in Richmond Municipal Code § 6.43.110 and California Health and Safety Code section 25538 incorporated therein.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
MMRP					
4	13	13f	Operations	Chevron shall designate a Facility Area Business Unit Manager as the management level position bearing responsibility for any and all decisions to not implement a recommendation made during an inspection or turnaround. Chevron shall also designate a Facility Area Business Unit Manager as the management level position bearing responsibility for the establishment of the parameters in the Integrity Operating Window program, as well as for any decisions to override, bypass, or otherwise disregard an alert or flag that arises through the Integrity Operating Window program. The annual Reliability Program reports shall include clear identification of the individuals acting as Area Business Unit Managers to whom these accountabilities have been assigned. If the management position bearing any of these responsibilities changes within Chevron from the Area Business Unit Manager to another management-level job title, Chevron shall notify the City and include an update to this effect in its Reliability Program annual report.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
4	13	13h	Operations	Chevron shall establish Integrity Operating Windows (IOWs) to monitor process temperatures, for purposes of identifying process temperature increases above the baseline period (2008-2010) for any individual circuit affected by the Modernization Project (as indicated in the Reliability Analysis Appendix 4.13-REL). The IOW shall establish temperature "flags" for each temperature monitoring location based on industry-standard damage curves. Prior to implementation of the IOW temperature flags, Chevron shall provide information to the City and County regarding the flag trigger temperature levels and the basis for them, and provide the City and County an opportunity to review and comment on them before they are implemented. The IOW-2 temperature flag shall be triggered if the process temperature exceeds the established temperature for a cumulative 365 days, and shall require Chevron to perform a reliability analysis to evaluate, among other things, existing process conditions, flag dates for wall thickness, monitoring and inspection data, expected corrosion rates, metallurgy, existing damage mechanism reviews, and monitoring and inspection frequency. Chevron shall report the results of these reliability analyses in its annual Reliability Program report, and shall make process temperature data for all temperature monitoring locations within each process unit and circuit included in the Reliability Analysis (Appendix 4.13-REL) available for review by the City or County at the refinery. Chevron also shall include in its annual Reliability Program reports a listing of all events relating to process temperatures reaching levels that triggered an IOW-level 2 (defined by Chevron as a "slower acting event that requires technical evaluation and recommendations within one week") alert during the calendar year that is the subject of the annual report, as well as a description of the resolution of each such event. Chevron shall report to the City and County within one week of any IOW-level 1 (defined by Chevron as a "fast acting event that requires operator action within a shift or two") alert event relating to IOW process temperature parameters for circuits affected by the Modernization Project (as indicated by the Reliability Analysis Appendix 4.13-REL).	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	4a	Operations	Chevron will implement its Modernization Project Reliability Program (Appendix 4.13-PROG) including updating the detailed PHAs prepared for the 2008 Project for all new and modified Modernization Project components, which shall include ISSAs, damage mechanism reviews, and evaluation of the consequences thereof resulting from the Project, and LOPA, as part of these PHAs, prior to recommencement of construction of the Modernization Project, and again post-construction but before startup of Project operations for any changes that arise during construction that may affect the earlier PHAs, ISSAs, and LOPAs. Chevron will notify CCHS and the City of the availability of these PHAs, and make these PHAs available for review by CCHS and the City. The PHAs (initial and updates/revalidations), ISSAs, damage mechanisms reviews, and LOPAs shall be consistent with (proposed) amendments to the RISO. Chevron shall conduct the LOPAs and submit written LOPA reports, prepared in accordance with industry best practices (such as those issued by the Center for Chemical Process Safety) to CCHS and the City for review prior to construction (and post-construction, for those LOPAs warranting changes based on changes that arise during construction). CCHS will work with the City in implementing these and other Public Safety mitigation measures.	See response to IV.C of the Reliability Program Annual Report.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7a	Operations	Chevron shall implement the Modernization Project Reliability Program for all units and processes affected by the Modernization Project, including written reports specified in the Modernization Project Reliability Program. An initial Reliability Program report shall be submitted to the City and County prior to Project construction. Annual reports shall be submitted thereafter, including a report prior to commencement of Project operations. For the PHAs (initial and revalidations) specified in the Modernization Project Reliability Program, Chevron would complete the PHAs prior to commencement of Project construction, and again after construction but before startup of Project operations for any changes that may have arisen during construction that could affect the earlier PHAs. Chevron will thereafter update and revalidate PHAs in accordance with the RISO but not less than once every 5 years. As indicated in Mitigation Measure 4.13-4a, the PHAs shall include LOPAs, and written LOPA reports must be submitted to the County prior to construction for review, and Chevron shall submit a copy to the City simultaneously. To the extent that any post-construction PHA revalidations are warranted, Chevron shall submit LOPA reports for the post-construction PHA revalidations to the County for review prior to the startup of Project operations, and Chevron shall submit a copy to the City simultaneously.	See response to IV.C of the Reliability Program Annual Report.
4	13	7b	Operations	Chevron shall complete an ISSA (as defined in the RISO), including review damage mechanisms and evaluation of their consequences, and LOPAs with written LOPA reports submitted by Chevron to the County for review, for new and modified Modernization Project components as part of the PHA revalidation process specified in the Modernization Project Reliability Program and Mitigation Measure 4.13-9a. Chevron will make the ISSA and PHAs available for review by the CCHS and the City, and will submit the LOPA reports to the County prior to construction for review.	See response to IV.C of the Reliability Program Annual Report.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7c	Operations	Chevron will continue to review its procedures and programs for evaluating the hazards of planned changes at the Facility, and update them to incorporate damage mechanism review, including the identification of applicable damage mechanisms as well as the evaluation of the potential impacts of the damage mechanisms in light of the proposed changes, and layers of protection analysis consistent with the Reliability Program. Chevron's review and update of programs and procedures shall include, at a minimum, the Facility's management of change program/procedure and its PHA program/procedure. Chevron shall include, in its annual Modernization Project Reliability Program reports to the City, a description of the status of this documentation review and update process, as well as how the changes to these programs/procedures are being implemented at the Facility.	See response to IV.E of the Reliability Program Annual Report.
4	13	7h	Operations	Chevron will fund the costs of a third-party expert to assist the County and the City with the review of the Reliability Program reports and other submittals required by the Reliability Program and related mitigation measures, as needed. The third-party expert will be selected and retained by the County or the City within the County's or City's discretion. This funding obligation survives any amendment of the RISO that may require funding of an inspector for the Facility.	Chevron continues to work with Contra Costa Health Services pursuant to the terms of the RISO, and will contribute funds when requested per this requirement.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
4	13	7i	Operations	Chevron shall adhere to the total acid number (TAN) limits of 0.3 mg milligrams potassium hydroxide per gram (KOH/g) for crude, 1.5 mg KOH/g for sidecuts produced from the crude unit, and 1.0 for gas oils and blends processed through the fluid catalytic cracker, fluid catalytic cracker feed hydrotreater, hydrocracker, heavy neutral hydrocracker, and light neutral hydrocracker. If Chevron intends to process a feedstock for a short-term basis (i.e., up to 6 months) that exceeds these TAN limits, it must complete its Management of Change (MOC) process, which shall include a corrosion review, for the proposed deviation, and shall take into account any existing damage mechanism reviews as specified in Mitigation Measure 4.13-7c that have been prepared for the identified units and piping circuits. If Chevron intends to process a feedstock for a longer-term basis (i.e., more than 6 months) that exceeds these TAN limits, it must complete its MOC process for the proposed deviation, and the MOC shall include a reliability analysis to evaluate, among other things, existing process conditions, monitoring and inspection data, expected corrosion rates, metallurgy, existing damage mechanism reviews, and monitoring and inspection frequency. The MOC evaluation, for short or longer duration TAN deviations, shall include an evaluation of the potential hazards that could result from the TAN deviation in all affected units and piping circuits, including naphthenic acid corrosion impacts. Chevron shall designate a Facility Area Business Unit Manager with final decision-making authority to approve any TAN deviation from the TAN limits. Chevron shall provide the results of any TAN deviation MOC evaluation to the City and County before processing the feedstock that deviates from the established TAN limits. Chevron shall include in its annual Reliability Program reports: (a) details regarding the results of its MOC for any TAN deviations; (b) average annual TAN for crudes and gas oils/blends processed at the Facility for each calendar year starting with 2008; and (c) for any feedstock runs with TAN levels higher than established TAN limits, include the actual TAN levels of the deviating feeds and the duration of the deviating feedstock runs.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
4	13	7j	Operations	Chevron shall include in its annual Reliability Program reports the annual average sulfur content of feedstocks, including separate annual averages for crude oils/blends and gas oils/blends, processed at the Facility for each year since and including 2008.	Chevron is currently developing its implementation strategy for this commitment and will incorporate this reporting requirement within the Reliability Program Annual Report following commencement of Project operations.
CUP					
B	10		Operations	Operation of the new hydrogen plant is subject to all mitigation measures, including those specified in the Reliability Program, set forth in the EIR and final Mitigation Monitoring and Reporting Program. For any future hydrogen export project supplied by hydrogen from the Hydrogen Plant Replacement, associated greenhouse gas emissions must be mitigated to a "No Net Increase" level relative to Baseline using the mitigation measures specified in Mitigation Measures 4.8-2 and 4.8-2B.	Chevron will continue to provide updates regarding compliance with this measure in its CUP/MMRP Compliance Plan, the next version of which will be submitted prior to commencement of project operations.

Attachment 2. Reliability Program-Related CUP and MMRP Commitments, per Project Phase as listed

Section	Sub	Item	Project Phase	Description	Compliance Plan June 2017
G	1		Operations	Chevron shall implement the Modernization Project Reliability Program (set forth as Appendix 4.13-PROG of the EIR) in its entirety as a condition of this Conditional Use Permit.	See Annual Reliability Program Report dated June 14, 2017.
G	5		Operations	Within six months prior to commencing Project operations, Chevron shall review the corrosion data and flag dates of fixed equipment and piping in process units susceptible to high-temperature sulfidation identified in the Reliability Analysis (taking into account the most current actual conditions combined with post-Project projected corrosion rates predicted based on McConomy curves) and ensure that enhanced monitoring and inspection measures, including those identified in the Reliability Analysis and Reliability Program, are implemented after commencement of Project operations to periodically verify actual post-Project corrosion rates and adjust any flag dates or replacement plans as warranted. Pursuant to the Richmond Industrial Safety Ordinance, Chevron shall make all information relating to its verification, monitoring, and inspection activities available to the City and County and their respective third-party experts upon request, with review by a committee constituted of the dedicated full-time process safety inspector required by the Richmond Industrial Safety Ordinance and Mitigation Measure 4.13-7d, the Contra Costa County Health Services Chief Environmental Health and Hazardous Materials Officer, and a qualified third-party expert selected by the City.	See response for 4.13-13h.

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM, SECTION 4.13-13d
EIGHTH QUARTERLY REPORT**

April 3, 2017

LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804

I. INTRODUCTION

Chevron U.S.A. Inc. (“CUSA” or “the Company”) submits this report to comply with Mitigation Measure 4.13-13d, which provides:

Chevron will report to the City quarterly, and shall provide a copy of this report to the County, after Project approval on the status of the corrective actions taken to implement agency recommendations to Chevron resulting from the August 6, 2012 fire, as well as any corrective actions taken by Chevron as a result of its own investigation. To the extent that Chevron elects not to implement a recommendation made by an agency, Chevron shall include in these quarterly reports a detailed explanation of its rationale for doing so.

This is the eighth report prepared under the quarterly reporting requirement.

II. BACKGROUND

The Richmond Refinery experienced an accidental release from the atmospheric distillation column of the No. 4 Crude Unit on August 6, 2012. The failure involved an 8” carbon-steel piping component in the No. 4 sidecut that carried light gas oil. The approximate duration of the release was 7 hours, 24 minutes.

All required agency notifications were made. Responding agencies included Cal/OSHA, CCHS, Bay Area Air Quality Management District, California Office of Spill Prevention and Response, the U.S. Environmental Protection Agency, the Richmond Police Department, and the U.S. Chemical Safety and Hazard Investigation Board (“CSB”). The CSB conducted an investigation concerning the fire. In April 2013, the CSB issued its Interim Investigation Report: Chevron Richmond Refinery Fire (“Interim Report”), which included two recommendations to CUSA. In January 2015, the CSB issued its Final Investigation Report Chevron Richmond Refinery Pipe Rupture and Fire (“Final Report”), which included three recommendations to CUSA. CUSA conducted its own investigation into the August 6, 2012 incident (“CUSA Investigation”), and identified a series of recommended actions to address what had been identified as causal factors and additional considerations.

III. STATUS OF CORRECTIVE ACTIONS TAKEN TO IMPLEMENT AGENCY RECOMMENDATIONS

The CSB issued two recommendations (2012-03-I-CA-R1 and 2013-03-I-CA-R2) to CUSA in its Interim Report. The CSB issued an additional three recommendations (2012-03-I-CA-R33, 2012-03-I-CA-R34, and 2012-03-I-CA-R35) to CUSA in its Final Report.

Set forth below are the CSB's recommendations from the Interim Report and Final Report, and CUSA's response to each recommendation.

Recommendation No. 2012-03-I-CA-R1: At all Chevron U.S. refineries, engage a diverse team of qualified personnel to perform a documented damage mechanism hazard review. This review shall be an integral part of the Process Hazard Analysis cycle and shall be conducted on all PSM-covered process piping circuits and process equipment. The damage mechanism hazard review shall identify potential process damage mechanisms and consequences of failure, and shall ensure safeguards are in place to control hazards presented by those damage mechanisms. Analyze and incorporate into this review applicable industry best practices, Chevron Energy Technology Company findings and recommendations, and inherently safer systems to the greatest extent feasible.

CUSA's Response: The Richmond Refinery modified and further developed its work processes for the review of damage mechanisms. Specifically, CUSA issued a refinery standard ("Damage Mechanism Review Instruction – Manufacturing 520," or "MFG 520") for conducting a damage mechanism review ("DMR") to assess corrosion threats and other applicable damage mechanisms. MFG 520 sets forth a DMR work process that was designed in accordance with industry practices and recommendations, and American Petroleum Institute ("API") Recommended Practice 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*. CUSA also considered API Recommended Practice 584, *Integrity Operating Windows*, while this recommended practice was in development. MFG 520 requires:

- Completion of a DMR work process for piping circuits and equipment in applicable units so as to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms;
- Development of CUSA standard templates for refinery-common units;
- Creation of a DMR schedule aligned with Process Hazard Analysis ("PHA") schedules for all piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs;
- Establishment of multi-disciplinary DMR teams;
- Evaluation of piping circuits and equipment in applicable units against potential damage mechanisms in connection with assessment triggers;
- Consideration of consequences of failures and safeguards identified by the DMR work process;
- Consideration of CUSA and applicable industry best practices;
- Creation of DMR reports, which includes recommendations as appropriate;
- Development of action plans to address DMR recommendations; and
- Provision of DMR work product to the applicable PHA team for consideration.

Inherently safer systems have been incorporated into the DMR template design and evaluated, as appropriate. For example, there are damage mechanism assessment questions that help determine whether or not a change or upgrade in metallurgy would be recommended to prevent or better manage a particular damage mechanism.

In 2013, the Richmond Refinery took a lead role in piloting DMRs as this work process was developed. In 2014, the Refinery began adopting the DMR program by conducting selected DMRs prior to completing the applicable PHA. The Refinery employed the learnings from these initial DMRs and PHAs, and information from internal and external subject matter experts, to further develop its DMR work processes. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

The Refinery has now completed DMRs for applicable PSM-covered process piping and process equipment.

Additionally, consistent with and building upon MFG 520, CUSA has developed an asset strategy standard (“Fixed Equipment Asset Strategies Standard--Manufacturing Standard 525,” or “MFG 525”). This standard sets expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and describes the process for creating and maintaining these strategies. A project is underway at the Refinery to create asset strategies per MFG 525.

Recommendation 2012-03-I-CA-R2: At all California Chevron U.S. refineries, report leading and lagging process safety indicators, such as the action item completion status of recommendations from damage mechanism hazard reviews, to the federal, state, and local regulatory agencies that have chemical release prevention authority.

CUSA’s Response: The subject of process safety indicators is complex and has been the focus of prior agency recommendations (e.g., Recommendation No. 2005-4-I-TX-6 to the API and United Steelworkers). Despite many years of effort by a diverse group of interested parties, including individual companies, safety and industry groups, organized labor, and regulators, there is no consensus on process safety indicators. The CSB acknowledged this lack of consensus during a Safety Performance Indicators public hearing it held in Houston, Texas on July 23 and 24, 2012. CUSA understands the CSB’s interest in continuing to drive this process forward.

The Refinery already internally tracks numerous leading and lagging indicators through its Operational Excellence and Reliability Intelligence (“OERI”) system. OERI is a reporting system that tracks various metrics, including safety, operations, and reliability metrics, by automatically pulling data from the Refinery’s information management systems. These systems contain information pertaining to (1) reliability, including design safety and inspection schedules and history, and (2) maintenance management data, including the status of preventative

maintenance and safety activities. OERI also tracks the Management of Change process, PHA process recommendations, and regulatory compliance action items.

In addition to other tracking mechanisms, the Refinery uses OERI to provide organizational visibility of the Refinery's maintenance, reliability, and process safety performance, and overdue and upcoming safety, maintenance, and regulatory compliance items. Refinery personnel have ready access to OERI and it is reviewed by the Refinery's management on a routine basis.

OERI also is used during Unit Reliability Briefs ("URBs"), which are cross-functional meetings attended by management, reliability analysts, maintenance, operations, technical, and other relevant internal stakeholders. URBs are regularly conducted by each business area to manage process safety and reliability performance threats in a risk-informed manner. OERI is utilized during URBs to track and prioritize reliability threats.

To further address the CSB's recommendation, however, CUSA played a major role in coordination with multiple interested parties, including the CSB, USW, Contra Costa Health Services ("CCHS"), and others in industry to develop "consensus" process safety indicators during the CCHS Industrial Safety Ordinance ("ISO") and the City of Richmond ISO revision process. As part of these discussions, the parties conferred on the selection of appropriate indicators, potential reporting format, and the frequency of reporting, among other items. These revisions to the ISO and RISO became effective on September 30, 2014.

Consistent with the revised ordinances, the Refinery, along with industry and the County, is tracking process safety indicators in connection with CCHS's annual reporting obligation, which comes due on June 30 of each year. ISO and RISO process safety performance indicator requirements include reporting on overdue inspections for piping and pressure vessels, overdue PHA recommendations, overdue incident investigations recommendations, and overdue API and American Chemistry Counsel Tier I and II incident investigation recommendations.

On July 15, 2016, the Department of Industrial Relations released its proposed new regulation for Process Safety Management for Petroleum Refineries for public review, substantially completing the current work of the California PSM Advisory Committee. CUSA has and will continue to remain involved with other PSM reform groups and will continue to participate in the development of consensus process safety indicators at the state, local, and federal level.

Recommendation No. 2012-03-I-CA-R33: *Develop a method to assign accountability at Chevron to determine whether any new Energy Technology Company (ETC) recommended program or industry best practice, such as API guidance must be followed to ensure process safety or employee personal safety. This method shall include monitoring of these practices and guidance at a refining system level and at the refinery level. Develop a tracking system to monitor the progress of implementing these selected practices and guidance to completion.*

CUSA's Response: CUSA previously recognized the value of providing for the uniform implementation of recommended programs or industry best practices. For this reason, CUSA continues to develop and implement a "Manufacturing Technical Authority Process" ("MTA Process") with the role of assessing mechanical integrity-related ETC advisories, as well as industry standards, guidance, and best practices (collectively, "Advisories and Standards"). The MTA Process is designed to determine which Advisories and Standards are applicable and appropriate for CUSA's Manufacturing facilities to develop those Advisories and Standards into new Manufacturing Standards, and to direct and monitor their subsequent implementation by appropriate personnel. The MTA Process engages senior executives and managers with process safety and operational experience.

A brief overview of the MTA Process is as follows:

- Under the MTA Process, new Advisories and Standards are identified from a wide variety of sources.
- If new Advisories and Standards are applicable to Manufacturing facilities and are not already adequately addressed, the new Advisories and Standards will move forward in the process.
- The MTA Process assigns the new Advisories and Standards to the appropriate Manufacturing organization or SMEs to develop the methods and milestones for implementation, and to track and verify that implementation is completed according to plan.
- The appropriate refinery leadership team (e.g., Operations, Maintenance and Reliability, or Technical) assigns responsibility for executing the Manufacturing Standards.
- For Manufacturing Standards that the MTA Process determines to be critical for the prevention of fatalities and high-consequence loss of containment events, any extensions and exceptions will require approval of the President of Manufacturing.
- The MTA Process will track and monitor the development and implementation of Manufacturing Standards in a database.

Recommendation No. 2012-03-I-CA-R34: *Develop an auditable process to be available for all recommended turnaround work items necessary to address mechanical integrity deficiencies or inspection recommendations that are denied or deferred. This process shall provide the submitter of the denied or deferred recommendation with the option to seek further review by his or her manager, who can further elevate and discuss the recommendation with higher level management, such as the Area Business Unit Manager. Maintain an auditable log of each of these potential turnaround work items, including the ultimate determination of approval, deferral, or rejection, justification determination, and the person or team responsible for that decision.*

CUSA's Response: CUSA's Richmond Refinery has developed and implemented a process for tracking turnaround work items necessary to address inspection recommendations concerning fixed equipment (e.g., process piping) identified by the Company's API certified inspectors, including any turnaround work items that are denied or deferred.

On September 20, 2014, the State of California enacted Senate Bill 1300 that imposes on California refineries certain notification obligations regarding turnaround work. 2014 Cal. Stat. ch. 519 (S.B. 1300) (codified at Cal. Lab. Code § 7872). Among other provisions, S.B. 1300 requires a petroleum refinery employer to make available upon request to Cal/OSHA "[n]otification and description of all repairs, design modifications, or process changes described in a corrosion report, risk-based inspection report, process hazard analysis, boiler permit schedule, management of change record, work order, or other document listed in paragraphs (1) to (6), inclusive, *that the petroleum refinery employer has deferred to a subsequent operational period or turnaround.*" Cal. Lab. Code § 7872(c)(7) (emphasis added).

The Richmond Refinery's turnaround tracking process is consistent with S.B. 1300 and establishes the process by which the Refinery maintains the information required by California law. Among the information that the Refinery maintains is a Turnaround Database of potential turnaround work items that include the ultimate determination of deferral or rejection of the item. The Turnaround Database allows personnel to search the status of any turnaround work item, generate a report that demonstrates the approval status of turnaround work items, and review any denied or deferred work items. Additionally, the Turnaround Database identifies the name of the supervisor and the name of employee(s) who provided comments or made a determination regarding approval status. When action is taken on a Living Worklist ("LWL") item, the originator receives an email notification regarding the change in status. The notification includes the LWL item number, the status change, and a link to the Turnaround Database entry for viewing Decision Notes and Decision Attendees. CUSA encourages employees to raise any concerns about a denial or deferral with their supervisor or their supervisor's manager.

In addition, CUSA is in the process of implementing improvements to the Turnaround Database and improvements to guidance materials that further emphasize the ability of the originator to seek additional review of deferred or denied turnaround work items. The enhancements will include a revision to the Turnaround Database Approval Process Flow Chart and to the turnaround work item status change email notification that will reiterate and reinforce CUSA's policy that the originator of a work item has the option to seek further review of denied or deferred recommendations with higher level management.

Recommendation No. 2012-03-I-CA-R35: *Develop an approval process that includes a technical review that must be implemented prior to resetting the minimum alert thickness to a lower value in the inspection database.*

CUSA's Response: This recommendation was made in the CSB's final report released January 2015. CUSA developed and distributed a manufacturing instruction ("Manufacturing Instruction for Establishing Piping Minimum Alert Thickness" or "MFG 540") in May 2016 (revised December 2016), which includes a documented technical review and approval process when a piping minimum alert thickness is changed to a lower value within the inspection database.

IV. CORRECTIVE ACTIONS IMPLEMENTED BY CUSA IN RESPONSE TO ITS OWN INVESTIGATION

The Richmond Refinery's own investigation team identified a series of recommended actions to address what had been identified as causal factors and additional considerations. Operational and process changes that resulted from this investigation are set forth below.

A. RECOMMENDATIONS TO ADDRESS CAUSAL FACTORS ("CF")

CF Recommendation 1: *Revise Refinery policies and checklists to ensure appropriate information—including Process Safety and Inspection information—is considered when evaluating leaks and addressing the issue of whether to shut down or continue operation of equipment.*

CUSA's Response: The Refinery has implemented an updated protocol for evaluating process leaks with simple guidance to assist in making necessary and rapid decisions concerning leak response and further enhancing situational awareness skills. This protocol identifies scenarios that trigger the use of the protocol and recognizes that there may be other scenarios in high consequence services where a leak has not yet occurred but has a potential for loss of containment if conditions are not addressed.

Pursuant to the protocol, subject matter experts ("SMEs") from various disciplines, including process safety and inspections, gather to evaluate the leak. The protocol provides discussion questions about process safety information, including information related to past inspections, for the SMEs to consider when determining the response plan. The type of process safety information to consider includes the identity of the leaking material, location, temperature and emergency shutdown procedures, as well as an understanding of the potential damage mechanism involved.

The protocol is published on the Company's internal Manufacturing website under Manufacturing Standards, and a training program has been developed that tracks completion of required training.

The leak response protocol was shared with CCHS, Cal/OSHA, CSB, as well as other refineries and industrial facilities in the County and beyond.

CF Recommendation 2: Enhance the Refinery's Mechanical Integrity program to ensure the Refinery properly identifies and monitors piping circuits for appropriate damage mechanisms using a standardized methodology and documentation system.

CUSA's Response: The Refinery is strengthening its reliability program for piping and equipment in an effort to ensure it covers potential damage mechanisms applicable to those systems. As part of this effort, the Refinery is implementing an enhanced process for regular DMRs of piping circuits in applicable units in order to formalize the evaluation of known damage mechanisms, the consequences of a failure, and the safeguards necessary to mitigate failures and other potential risks from those damage mechanisms. As discussed in response to CSB Recommendation 2012-03-I-CA-R1, CUSA issued a standard, MFG 520, for conducting DMRs to assess corrosion threats and other applicable damage mechanisms. MFG 520 establishes a DMR work process that will, where appropriate, be completed for piping circuits and equipment in applicable units using the applicable damage mechanism information outlined in the API Recommended Practice 571.

The Refinery modified its PHA procedures to better integrate DMRs into the PHA review process. MFG 520 requires alignment of the DMR schedule with the PHA schedules for piping circuits and equipment in applicable units so that damage mechanisms can be considered during PHAs. The Refinery took a lead role in piloting DMRs as this work process was developed. On January 1, 2014, the Refinery instituted a requirement that all PHA teams consider applicable DMRs when conducting PHAs for covered plants.

MFG 520 recognizes that the DMR work process will undergo continuous improvement as internal and external guidance is developed. Concurrent with development of the DMR work process and in response to a corrective action from its own investigation, CUSA has developed an asset strategy standard, MFG 525, which will be used where applicable. As described above in CUSA's response to CSB Recommendation 2012-03-I-CA-R1, MFG 525 sets the expectations for asset strategies designed to prevent and mitigate losses of containment in fixed equipment and to describe the process for creating and maintaining these strategies. MFG 525 defines an asset strategy as the documented plan for operating, monitoring, and maintaining fixed equipment so as to preserve its pressure boundary. As part of a living program for continual improvement, an asset strategy identifies damage mechanisms; determines the need for and defines operating limits known as integrity operating windows; and prescribes inspection plans, including tasks and frequencies required to manage identified damage mechanisms.

As described above, the MTA Process prioritizes and acts upon mechanical integrity-related recommendations from internal and external technical experts, including industry standards and alerts. CUSA's response to CSB Recommendation 2012-03-I-CA-R33, describes the MTA Process, which was established for the purpose of assessing new Advisories and Standards, determining which are applicable and appropriate for CUSA's Manufacturing facilities, and monitoring their subsequent implementation.

The Refinery also developed the Fixed Equipment Integrity Manager position, with responsibility for developing, implementing, and stewarding the fixed equipment program.

CF Recommendation 3: Review and enhance the requirements for inspector training and competency.

CUSA's Response: The Refinery is improving its mechanical integrity training as a way to further support our leaders, inspectors, operating groups, and engineers. To that end, the Refinery has developed a standard to guide and promote the establishment of essential training and competencies for individuals who are performing a Fixed Equipment Inspector or Analyst role.

The specific training for each Fixed Equipment Inspector position is defined for that specific position based on a training plan that is developed in an effort to ensure that the needed competencies are developed within an established timeframe per certification or training from start of a new position. The implementation of the training plan is tracked through the individual's annual performance monitoring plan and monitored by the individual's supervisor. Additionally, the Refinery maintains a matrix for each inspector that tracks completion of required certifications and training. Recognizing that Fixed Equipment Inspector training is an ongoing process, and new or updated trainings are regularly required, all personnel in Fixed Equipment Inspector positions are current in the trainings identified for the inspections they perform or perform those inspections under the supervision of someone with the necessary certifications and/or training. The training standard, as well as the compliance matrices, are housed on the Refinery's intranet.

CF Recommendations 4 and 5: Develop and implement a process for additional oversight of mechanical integrity-related recommendations and inspection plans, and the escalation of recommendations. Develop and implement a process to review and act upon mechanical integrity-related recommendations from industry alerts, ETC, and other subject-matter experts.

CUSA's Response: The Refinery is implementing a manufacturing instruction for addressing mechanical integrity-related inspection recommendations, including development of mitigation plans, timelines for completion, and the assignment of roles and responsibilities. MFG 530, Fixed Equipment Integrity Threat Recommendation and Resolution Instruction, establishes a process for identifying integrity threats and issuing recommendations, and developing associated resolution plans designed to prevent and mitigate loss of containment in fixed equipment. Under MFG 530, a fully developed integrity threat recommendation, among other things:

- Is a high-quality, data-driven recommendation for deficiencies discovered on in-scope fixed equipment.
- Includes a resolution plan with an agreed-upon due dates.

- May include a mitigation plan if mitigation is required to enable continued Operation until final resolution can be achieved.
- Defines clear handoffs to work prioritization, planning, and execution processes.
- Verifies and documents completion of resolution and mitigation plans.

MFG 530 is applicable to most types of fixed equipment used in the refinery process, including pressure vessels, boilers, on-plot and off-plot piping, atmospheric storage tanks, and furnaces. The objective is to guide the development of integrity threat recommendations to prevent loss of containment events of higher consequence. The instruction and supporting procedures provide detail to support the mechanical integrity program.

Pursuant to the process established in MFG 530, for integrity threats to fixed equipment, all resolutions and/or mitigation plans, if mitigation is required, and target due dates, must be approved by both the Refinery Business Manager (“RBM”) for the affected unit and Fixed Equipment Integrity Manager (“FEIM”). If the RBM and FEIM do not agree on the resolution/mitigation plan or the target due date, the decision is escalated to the Refinery General Manager. All open integrity threats are tracked in OERI in an effort to ensure the resolution/mitigation plan are implemented prior to the target due date. Any employee may raise any concern about the resolution/mitigation plan or the target due date with their supervisor or their supervisor’s manager, or may use their personal stop work authority.

In addition to the actions CUSA has taken in response to its own investigation, CUSA’s responses to CSB Recommendation 2012-03-I-R34 and CSB Recommendation 2012-03-I-CA-R35, described above, are also enhancing the Refinery’s assessment, decision-making, and oversight of mechanical integrity-related inspection recommendations.

Further, the response to CSB Recommendation 2012-03-I-R33 above describes how new Advisories and Standards are considered, developed into manufacturing instructions as appropriate, implemented, and tracked.

CF Recommendations 6 and 7: *Inspect 4CU piping that falls under the ETC Sulfidation Inspection Guidelines criteria for sulfidation corrosion prior to restarting the 4CU. Implement the ETC Sulfidation Inspection Guidelines for the remainder of the Refinery.*

CUSA’s Response: The Refinery conducted 100% component inspection of carbon steel piping systems identified as potentially susceptible to sulfidation corrosion. Over 12,000 individual piping components were inspected. As part of these inspections, the Refinery implemented inspections to identify components of carbon steel piping circuits that did not have sufficient thickness to remain in service until the next scheduled turnaround; implemented generally accepted engineering practices with respect to components of insufficient thickness; documented solutions with respect to components of insufficient thickness; established an inspection frequency for carbon steel piping circuits based upon measured corrosion rates,

remaining life calculations, and current process conditions, including sulfur content and temperature; and maintained records of all carbon steel piping circuits potentially susceptible to sulfidation corrosion.

CF Recommendation 8: *Ensure relevant technical studies and inspection data are considered for the Refinery's equipment reliability plans and incorporated into the ROI/IPR [Reliability Opportunity Identification/Intensive Process Review] process.*

CUSA's Response: The ROI/IPR process has been revised to include known failure mechanisms, relevant technical studies and industry incidents in the pre-read for ROI/IPR study. Impacted employees are being trained on these changes.

B. RECOMMENDATIONS TO ADDRESS ADDITIONAL CONSIDERATIONS ("AC")

AC Recommendation 1: *Review the Pre-Fire Plan to ensure sufficient guidance is provided on equipment positioning.*

CUSA's Response: The Refinery reviewed and updated its Pre-Incident Scenario Analysis with apparatus placement modifications and shared the revised plans with CUSA Industrial Fire Chiefs.

AC Recommendation 2: *Review company/industry loss history on large fractionating towers to determine if internal Engineering Standard FRS-DU-5267 (Emergency Isolation and Depressuring Valves) adequately addresses mitigation of accidental releases from these systems. Revise the standard as warranted by the findings of this review.*

CUSA's Response: The Company completed a review of loss history for large fractionating towers. No revisions to FRS-DU-5267 were warranted by this review.

AC Recommendation 3: *Ensure Refinery business plans provide for the appropriate implementation of Process Safety recommendations (such as the ETC Sulfidation Inspection Guidelines).*

CUSA's Response: See the response above to CSB Recommendation No. 2012-03-I-CA-R33, which describes the MTA Process.

AC Recommendation 4: *Ensure sufficient organizational capacity and competency for minimum thickness Fitness for Service determinations.*

CUSA's Response: Manufacturing Instruction for Minimum Required Pipe Wall Thickness ("MFG 510") was revised in April 2016. This instruction "outlines the calculation methods for determining minimum required pipe wall thickness of ferritic and austenitic steel piping systems within limits set by accepted piping codes and standards." If thickness is at, or is

projected to be, below minimum required thickness, then MFG 510 requires an approved integrity threat mitigation plan to document the technical basis for continued operation to a lower value. MFG 510 also addresses the training, qualification, and documentation requirements for personnel involved in establishing minimum required pipe wall thickness. The Richmond Refinery maintains a record of engineers qualified to execute these calculations.

ETC facilitates a course entitled “API 579-1 / ASME FFS-1 Fitness for Service – Level 1.” The course format is a two-day instruction/workshop followed by an additional day of testing and certification. The course is structured as a workshop, using example problems to demonstrate FFS procedures using CUSA’s ETC Level 1 software. The training is designed for design engineers. Certifications are issued to those who complete the training course and pass the test. Only certified personnel are authorized to perform FFS Level 1 assessments, and only ETC is authorized to perform FFS Level 2 and 3 assessments. Richmond Refinery keeps a log of the active personnel certified to review FFS Level 1 assessments.

AC Recommendation 5: Consider additional training on expectations under the “Richmond Refinery Piping Inspection Guidelines” and “RFMS Piping Data Entry (Reliability Focused Maintenance System) and ACD (Add/Change/Delete) Guideline.”

CUSA’s Response: See the response above to the third CUSA Investigation CF recommendation, which discusses inspector training and competency.

AC Recommendation 6: Review and modify the PHA procedures to ensure that teams consider known corrosion threats/mechanisms.

CUSA’s Response: See the responses above to CSB Recommendation 2012-03-I-CA-R1 and the second CUSA Investigation CF recommendation, which discuss the DMR work process.

AC Recommendation 7: Consider a project to evaluate the purpose and methods of various project safety management (PSM) reviews (PHA, ROI/IPR, AOA, COA, sRCM, RBI, etc.) to determine if these activities can be combined or better sequenced to improve risk understanding across the various functions and promote better process safety outcomes.

CUSA’s Response: The Refinery has mapped out the work processes under PSM and other safety standards to identify potential efficiencies that can be gained or outcomes enhanced by re-sequencing, combining, or modifying processes.

V. CONCLUSION

Operating safely is one of CUSA’s core values. CUSA is also committed to learning from the August 6, 2012 fire to prevent a recurrence. To this end, CUSA has worked closely and cooperatively with local, state, and federal agencies, including the City, to determine the root

causes of the fire. CUSA is committed to considering recommendations from all agency investigations, and taking appropriate actions in response.

CUSA's efforts to improve safety and reliability at its refineries are ongoing. CUSA is continues to evaluate and undertake efforts to enhance mechanical integrity and safe operations at the Refinery.

APPENDIX A – ACRONYMS

ACC	American Chemistry Counsel
API	American Petroleum Institute
BIN	Business Improvement Network
Cal/OSHA	California Division of Occupational Safety and Health
CCHS	Contra Costa Health Services
CCHMP	Contra Costa County Hazardous Materials Program
CSB	U.S. Chemical Safety Board
CUSA	Chevron U.S.A. Inc.
DMR	Damage Mechanism Review
EIR	Environmental Impact Report
ETC	Energy Technology Company
ISO	Industrial Safety Ordinance
MFG	Manufacturing Standard
MM	Mitigation Measure
MTA	Manufacturing Technical Authority
OERI	Operational Excellence and Reliability Intelligence
PHA	Process Hazard Analysis
PSM	Process Safety Management
RISO	City of Richmond Industrial Safety Ordinance
S.B.	Senate Bill
SME	Subject Matter Expert
URB	Unit Reliability Brief
USW	United Steelworkers



Jeff Hartwig
Director

Modernization Project
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February 15, 2017

Ms. Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Chevron Modernization Project – Transmittal #17
Response to ANTEA Report 4QTR2016, Questions 18.2.01, 02, and 03

Dear Lina:

Chevron is submitting this letter to the City of Richmond Planning and Building Services Department (City) to demonstrate compliance with Conditions II.A, III.C.2, and III.C.3 of the Chevron Modernization Project Reliability Program (“Program”), Appendix 4.13-PROG of the Chevron Modernization Project Environmental Impact Report certified by the City in July 2014. Implementation of the Program is required pursuant to mitigation measure (MM) 4.13-4a and conditional use permit (CU) condition A2.

Condition III.A states the following:

The Reliability Analysis for the Modernization Project has identified seventeen (17) piping circuits in the Crude Unit that warrant replacement based on the Reliability Analysis. The Refinery has committed to accelerating the replacement of these circuits during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017.

The Reliability Analysis for the Modernization Project has also identified four partial piping and valve replacements in the Crude Unit that warrant replacement based on reasonably foreseeable post-Project operating conditions. The Refinery has committed to accelerating the replacement of these partial components during the next scheduled turnaround for the Crude Unit, no later than end-of-year (EOY) 2017.

Chevron shall obtain all required permits for replacement of these piping circuits pursuant to the California Building Standards Code, inclusive of the California Fire Code, and, once the piping circuits are replaced, shall submit copies of the closed permits to the Planning Department to demonstrate compliance with this commitment.

III.A Response: The Refinery completed its turnaround for the No. 4 Crude Unit (“4CU”) in fourth quarter 2016. This turnaround included replacement of the 17 piping circuits and 4 partial piping and valve replacements identified in the Program. The City authorized the replacement work pursuant to the “Annual

Provisional Construction Permit” (No. F14-06939) (“Annual Permit”), which is issued by the City of Richmond Fire Department (“RFD”) pursuant to §§ 105.1.2.2, 105.1.3, and 105.7.9 of the California Fire Code, as incorporated and amended by Chapter 8.13 of the City’s Municipal Code. In order to obtain approval under the Annual Permit, the Refinery generates turnaround engineering work orders that comply with the terms and conditions of the Annual Permit. Work under the Annual Permit is tracked and, as required by the RFD, inspected pursuant to the turnaround work order number generated by the Refinery. The below table (“Table 1”) includes a list of the 17 piping circuits and 4 partial piping and valve replacements and the corresponding turnaround work order numbers associated with the work completed during the 4th quarter 2016 Crude turnaround.

Table 1. Piping Upgrades for Reliability Program III.A

Equipment number	Equipment description	Turnaround work order number	New Metallurgy	PSSR ¹ Completed
0955-002-008	V-1103 Desalted Crude	451928	9 Chromium	12/10/16
0955-002-014	V-1103 Desalted Crude	451927	9 Chromium	12/10/16
0955-002-015	V-1103 Desalted Crude	451924	9 Chromium	12/10/16
0955-002-016	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-017	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-018	V-1103 Desalted Crude		9 Chromium	12/10/16
0955-002-030	Desalted Crude From E-1165A To F-1100A/B		9 Chromium	12/10/16
0955-002-031	Desalted Crude From E-1165A To F-1100A/B	451928	9 Chromium	12/10/16
0955-002-032	Desalted Crude From E-1165A To F-1100A/B		9 Chromium	12/10/16
0955-007-009	#4 Sidecut Circ Reflux	451930	9 Chromium	12/9/16
0955-007-017	#4 Sidecut Circ Reflux	451931	9 Chromium	12/9/16
0955-009-003	C-1100 Bottoms to F-1160	451932	9 Chromium	12/7/16
0955-012-001	C-1160 Outlet #7 Sidecut	425623	9 Chromium	12/10/16
0955-012-002	#7 Sidecut		9 Chromium	12/10/16
0955-013-007	C-1160 Outlet #8 Sidecut to E-1188	425623	9 Chromium	12/10/16
0955-013-008	C-1160 Outlet #8 Sidecut to C-1160		9 Chromium	12/10/16
0955-013-009	C-1160 Outlet #8 Sidecut to E-1114		9 Chromium	12/10/16
0955-015-002	C-1160 Outlet to E-1165A/B	451936	9 Chromium	12/9/16
0955-015-017	K-1165A/B Pump Out	451933	9 Chromium	12/10/16
0955-019-034	P-1165/A Case Vents to C-1160	451938	9 Chromium	12/10/16
0955-019-017	Pump Vents	451935	9 Chromium	12/9/16

¹PSSR – pre-startup safety review which includes verification that equipment was installed as designed and permitted.

Following installation, positive material identification (PMI) was conducted to ensure the metallurgy of the pipe installed and material test reports were generated. Pursuant to the work flow process agreed to between the Refinery and RFD, all documentation related to work performed pursuant to Annual Permit, including turnaround work orders, associated design drawings, process and instrument diagrams (P&IDs), and piping isometric drawings, are maintained at the Refinery and are available for inspection upon request.

In addition, the following building and fire permits shown in the below table (“Table 2”) were obtained for the civil/structural work for the pipe supports and fireproofing.

Table 2. Building Permits for Reliability Program III.A

Permit No.	Permit Description	Submitted mechanically complete on	Final special inspection report
B16-00273	Structural steel modifications and additional bracing	11/28/2016	11/29/2016
F16-10390	Structural member tie-in location fireproofing	Open ²	
B16-00165	Misc structural steel (guides and anchors)	12/7/2016	12/8/2016
B15-12288	Steel bearing plates under pipe base supports at grade	12/12/2016	12/12/2016
B16-03216	Replace short pipe supports at grade for ¾" piping	12/8/2016	N/A
B15-11508	7 Sidecut piping upgrade – various structural mods for pipe	12/12/2016	12/13/2016
B16-03477	Relocate two pipe guides for 2" CW lines	12/7/2016	N/A
B15-11997	8 Sidecut piping upgrade – various pipe supports	12/13/2016	12/14/2016

²Final fireproofing requires additional coat of paint that has been delayed due to rain.

Condition III.C.2 states the following:

Chevron's analysis of the atmospheric column furnace F-1100 does not include conclusive evidence as to the present creep/stress-rupture condition of the tubes. Therefore, it is believed that some additional actions are required in order to lower the risk of a creep/stress-rupture or sulfidation failure in a F-1100 tube under post-Modernization Project operating conditions. Acceptable options to lower the risk of heater tube failures include:

- Furnace F-1100: Option 1, complete all of the following actions:
 - Complete a full internal tube inspection for F-1100 during the 4th quarter 2017 crude unit turnaround using intelligent pigs.
 - Conduct testing on the two currently available, radiant section tubes from the F-1100 Furnace to verify their existing metallurgical, physical and mechanical properties, plus remaining creep life using accelerated Omega creep testing as an input to decide whether the F-1100 furnace should be retubed during the 2017 shutdown.
 - Conduct additional metallurgical, physical, mechanical and Omega creep testing on radiant furnace tube samples to be removed during the 2017 shutdown, depending on the results of the Omega testing planned for the 2012 furnace tube samples.
 - In 2017, replace tubes as needed in F-1100, per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.
 - Install at least three Permasense® continuous monitoring ultrasonic thickness gauge monitors in each of the furnace outlet systems. If the monitors indicate an increase in corrosion rates greater than 5 mpy, review the need for additional mitigation actions.
- Furnace F-1100: Option 2:
 - Retube the F-1100A/B furnace during the 2017 turnaround with 9Cr or higher alloy tubes.

III.C.2 Response: The 4CU turnaround completed in fourth quarter 2016 included a full internal tube inspection for F-1100. The full inspection report is stored in the equipment file. No findings warranting tube replacements or specimen removal were noted. Testing on the radiant section tubes from the F-1100 Furnace was completed in 2012. These records and the Omega testing report are available in the equipment file. No findings from the testing indicated that a re-tube, additional samples, or testing was required. Because the Omega testing results did not indicate additional sampling was required, no samples were taken from the F-1100 Furnace during the 4th quarter 2016 turnaround. The intelligent pig inspection completed during the 4th quarter 2016 turnaround did not require any tube replacements per Chevron's replacement criteria for furnace tubes. The minimum thickness on the Fired Heater Data Sheet was compared with the minimum thickness measured during the intelligent pig inspection. Both of which records are available for inspection by the City. Inspection and testing reports for the above work are available for review by the City upon request.

Six Permasense[®] monitors have been installed on the outlet piping of F-1100A/B and C-1100. As part of the work to upgrade the piping circuits described above, which included identification of new locations for Permasense[®] monitors on 4CU piping circuits, Chevron determined that it needed to upgrade the Permasense[®] monitors on the upgraded and existing piping circuits because Permasense[®] no longer supports the existing hardware. Hot work for installation of the upgraded Permasense[®] monitors was completed during the 4CU turnaround. Chevron is developing its acquisition and installation plan for the upgraded system, which will be fully functional by start of project operations. In the interim, monitoring of corrosion data from the outlet piping of F-1100A/B data is not currently available.

Option 2 will not be pursued given that Option 1 was the chosen path.

Condition III.C.3 states the following:

The vacuum column furnace, F-1160, is constructed of 5Cr radiant furnace tubes. The recommended actions for this furnace are as follows:

- Complete a full internal tube inspection for F-1160 during the 2017 crude unit turnaround using intelligent pigs.
- In 2017, replace tubes as needed in F-1160 per Chevron's replacement criteria for furnace tubes. The replacement criteria are based on the minimum furnace tube thickness on the furnace Safety Instruction Sheet and remaining wall thickness collected by intelligent pig data.

III.C.3 Response: The recently completed 4CU turnaround included a full internal tube inspection for F-1160. No findings warranting tube replacements or specimen removal were noted. The intelligent pig inspection did not require any tube replacements per Chevron's replacement criteria for furnace tubes. The minimum thickness on the Fired Heater Data Sheet was compared with the minimum thickness measured during the intelligent pig inspection. The inspection reports and related materials are available for review by the City upon request.

Also please feel free to contact me at any time with concerns or questions.

Sincerely,



Jeff Hartwig

**CHEVRON RICHMOND REFINERY MODERNIZATION PROJECT
RELIABILITY PROGRAM § IV.D REPORT**

October 7, 2016

**LEAD AGENCY
CITY OF RICHMOND
450 CIVIC CENTER PLAZA
RICHMOND, CA 94804**

Chevron U.S.A. Inc. (“CUSA” or “the Company”) submits this report to comply with section IV.D of Appendix 4.13-PROG – Modernization Project Reliability Program, which provides:

Chevron shall provide annual reports to the City summarizing the PHAs/revalidated PHAs completed during the preceding calendar year to account for consideration of damage mechanisms, and shall include a list of fixed equipment inspection recommendations submitted for each turnaround, indicating which recommendations were accepted, and for those that were not accepted, the reason the recommendation was rejected. All PHAs shall be available for agency review pursuant to the terms of the RISO.

As previously reported to the City pursuant to sections 4.13-4a, 4.13-7a, and 4.13-7b of the Monitoring Mitigation and Reporting Program (MMRP) prepared for the Refinery Modernization Project (Project), Process Hazard Analyses (PHAs), inclusive of inherently safer systems analyses (ISSAs), damage mechanism reviews (DMRs) and layers of protection analyses (LOPAs), have been completed or revalidated for the following Project components in 2016:

- New Hydrogen Plant
- Modification to the FCC FHT (also referred to as the TKC)
- Modifications to the Sulfur Recovery Units (SRU)
- New No. 6 H₂S Plant
- Hydrogen Compressor Upgrade project (HYCUP)

The PHAs and related materials from the Hydrogen Plant, TKC modifications, and No. 6 H₂S Plant have been reviewed by Contra Costa Health Services during an on-site visit and review of MMRP and Reliability Program requirements in August 2016. The PHA and related materials for the SRU modifications and HYCUP are available for review by the City and CCHS at the Refinery.

The Project is currently in the ongoing-design and construction phase, and thus the turnaround process, including consideration of fixed equipment inspection recommendations, is not yet applicable to new units. For modified units, no turnarounds have occurred in the preceding year.

Mitchum, Kristi

From: Hartwig, Jeff
Sent: Friday, May 12, 2017 12:17 PM
To: 'Lina Velasco'
Cc: Quiroz, Richard; Mitchum, Kristi; Todd W. Smith (tsmith@thomaslaw.com)
Subject: 2017 Community Town Hall and Employee Communications Mixer
Attachments: 3-30-17 Tele Town Hall Transcript.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Lina:

Pursuant to Section IV.G of the Modernization Project Reliability Program (Program) and Condition G1 of the Conditional Use Permit PLN-11-089, Chevron committed to hold town halls for its workforce and for the community on an annual basis to provide updates concerning:

1. The status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident.
2. The status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs.
3. When triggered, the results of the reliability review revalidation and the status of any recommendations made as a result of this review."

This email provides an update concerning Chevron's compliance with this obligation for 2017.

On Thursday, March 30, 2017, the Refinery held a telephone town hall regarding the Modernization Project and the status of enhanced safety measures and implementation of the Program. Prior to the call, a direct mail postcard advertising the event was distributed to 46,000 households in Richmond (see attached). Chevron Richmond Facebook ads were also delivered to 25,359 people and the Richmond Standard shared the post, which was delivered to 1,300 people. Participants from Chevron included me, Tery Lizarraga (Maintenance & Reliability Manager for the Modernization Project), Akeele Carter (Local Jobs Hiring Coordinator), and Leah Casey (PGPA External Communications Representative). The call initiating the Town Hall was broadcast to 11,070 phone numbers in Richmond, which reached approximately 20,000 residents. 1,971 total residents accepted the phone call for the event, and peak participation was 460 listeners.

Chevron's presentation specifically addressed the status of the enhanced safety measures being implemented by the Refinery following the August 6, 2012 fire, including actions taken to implement the recommendations made by public agencies that investigated the August 6 incident. We also provided an updated concerning the status and/or results of the material upgrades, inspection and monitoring program, and ongoing compliance with the Richmond Industrial Safety Ordinance, including Project-related PHAs, DMRs, LOPAs, and ISSAs. Attached is a copy of the complete transcript of the Town Hall, which is also available through "Chevron Speaks" in the Richmond Standard. Further, here is a link to the audio recording of the call:

<https://www.dropbox.com/s/wa8ewn4xxgxsv5r/Stones%2527%20Phones%20Singer%20Chevron%20TTH%20Recording%203.30.17.mp3?dl=0>.

Additionally, on Thursday, April 6, 2017, the Refinery held a Communications Mixer where employees came to learn about how we are implementing refinery strategies. One of the components of the mixer provided an update on the Modernization Project and the status of enhanced safety measures and implementation of the Program, consistent with the information shared during the Town Hall. Employees also had to opportunity to talk 1-on-1 with experts from the project and ask questions.

Please let me know if you have any questions.

Sincerely,
Jeff Hartwig

ATTACHMENT 7



Jeff Hartwig
Project Director
Richmond Refinery

Richmond Refinery
Chevron Products Company
841 Chevron Way
Richmond, CA 94801

Date May 3, 2016

Lina Velasco, Senior Planner
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

**Re: Richmond Modernization Project Mitigation Monitoring and Reporting Program.
MM 4.13-13a**

Dear Lina:

The Chevron Richmond Refinery ("CUSA") submits this letter to comply with the pre-construction reporting requirement in mitigation measure ("MM") 4.13-13a of the Richmond Modernization Project Mitigation Monitoring and Reporting Program. MM 4.13-13a provides:

Prior to restarting construction of the Modernization Project, and again prior to commencement of Project operations, Chevron shall submit to the City a report describing the status of its compliance with all corrective action measures (including, but not limited to, compliance with probationary terms) imposed or agreed to as a result of the agency proceedings relating to the August 6, 2012 fire. As part of this report, Chevron shall describe its ongoing consultations with the agencies that investigated the August 6, 2012 fire, including Cal/OSHA, the CSB, and Contra Costa County, including any feedback or direction that has been provided by those agencies concerning implementation of the corrective action and agency recommendations and Chevron's response thereto.

CUSA has previously submitted reports to comply with MM 4.13-13d updating the City concerning the corrective actions taken by CUSA to address recommendations from the U.S. Chemical Safety Board ("CSB"), as well as in response to CUSA's own investigation. The most recent report, which was submitted on April 4, 2016 and is attached hereto, describes the status of compliance with corrective actions taken to implement agency recommendations and corrective actions implemented by CUSA in response to its own investigation.

This letter updates the City concerning CUSA's ongoing consultations with the California Department of Industrial Relations, Division of Occupational Safety and Health ("Cal/OSHA"), as well as CUSA's ongoing implementation of the terms and conditions of probation in the case of *People v. Chevron U.S.A. Inc.*, No. 162745-4 (Cal. Sup. Ct, Aug. 5, 2013).

Cal/OSHA

On January 30, 2013, Cal/OSHA issued citations following two inspections at the Refinery.

Cal/OSHA Inspection No. 314331877 resulted in Cal/OSHA issuing 17 citations, which relate to the August 6, 2012 fire. The citations generally fall into four categories: emergency response, process safety documentation, Injury and Illness Prevention Program, and mechanical integrity under the process safety management ("PSM") standards. These citations are currently the subject of an administrative appeal.

Cal/OSHA Inspection No. 314332370 resulted in Cal/OSHA issuing 8 citations, which did not relate to the August 6, 2012 fire. The appeal of these citations was heard by the Administrative Law Judge, who issued an opinion on January 29, 2015, vacating four of the eight citations, and re-classifying the remaining four citations from "serious" and "serious willful" to "general." Penalties were reduced from \$180,500 to \$2,810. The Occupational Safety and Health Appeals Board issued a Decision After Reconsideration ("DAR"), which overturned the Administrative Law Judge's opinion. CUSA has appealed the DAR through a petition for a writ of mandate to the Superior Court, which is currently pending.

People v. Chevron U.S.A. Inc., No. 162745-4 (Cal. Sup. Ct, Aug. 5, 2013)

On August 5, 2013, CUSA entered a *nolo contendere* plea to six misdemeanor counts of violations of the California Labor Code and the California Health and Safety Code in connection with the August 6, 2012 fire. As terms and conditions of probation, CUSA agreed to the implementation of a 100% component inspection of carbon steel piping systems identified as susceptible to sulfidation corrosion; the modification of work processes for the review of damage mechanisms for PSM-covered processes; the tracking of certain fixed equipment recommendations submitted during turnaround planning; and the development and implementation of enhanced training. CUSA also agreed to pay a fine of \$1,280,000, and a total of \$720,000 in restitution payments to Richmond BUILD (\$145,369), the Bay Area Air Quality Management District (\$185,000), Cal/OSHA (\$299,631), and the California Attorney General's Office (\$90,000). To date, the Refinery has met every implementation deadline in the terms and conditions of probation.

Please feel free to contact me with any questions.

Sincerely,


Jeff Hartwig

ATTACHMENT 8



human energy®

modernization project monthly hires report

chevron richmond refinery
<January 1-31, 2018

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1 purpose

In accordance with the Local Content Agreement and Environmental and Community Investment Agreement dated August 4, 2014, for the Richmond Refinery Modernization Project, Chevron U.S.A. Inc. ("CUSA") is providing this monthly update on local hiring.

2 training and workforce readiness programs

Chevron continues to support programs to train residents of Richmond and unincorporated North Richmond for work at the Richmond Refinery and on the Modernization Project.

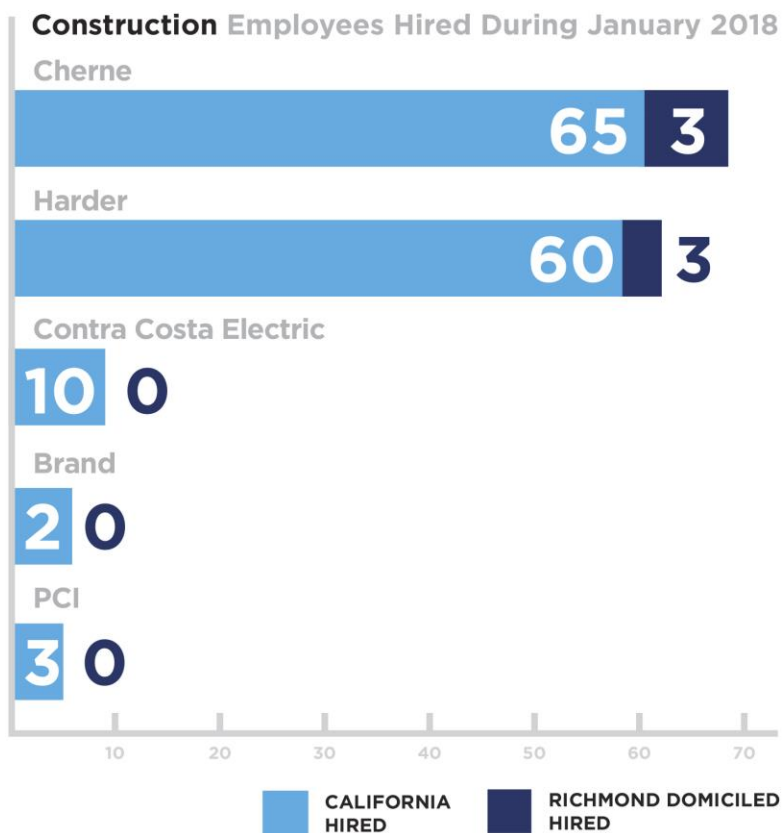
3 local hiring

Chevron continues to work with construction contractors and non-construction suppliers in an attempt to employ Richmond residents on the Modernization Project. Section 4. A. (3) (c) of the ECIA states, "The requirements of sections (a) and (b) shall not apply to hours of work performed by residents of states other than the State of California, and such hours shall not be considered determining satisfaction of percentage requirements described herein." Therefore, the following metrics are for the State of California. The number of Building Trades' members that are Richmond residents and are interested and are capable of working at the refinery, are very low for most trades. Chevron continues to work with local unions in the outreach and recruitment of current and prospective members to increase the number of Richmond residents on the Modernization Project.

3.1 Metrics

Below are the ECIA, Section 4. A. (3) (b) metrics for the State of California.

Table 1: Modernization Hires



Total Modernization Hires

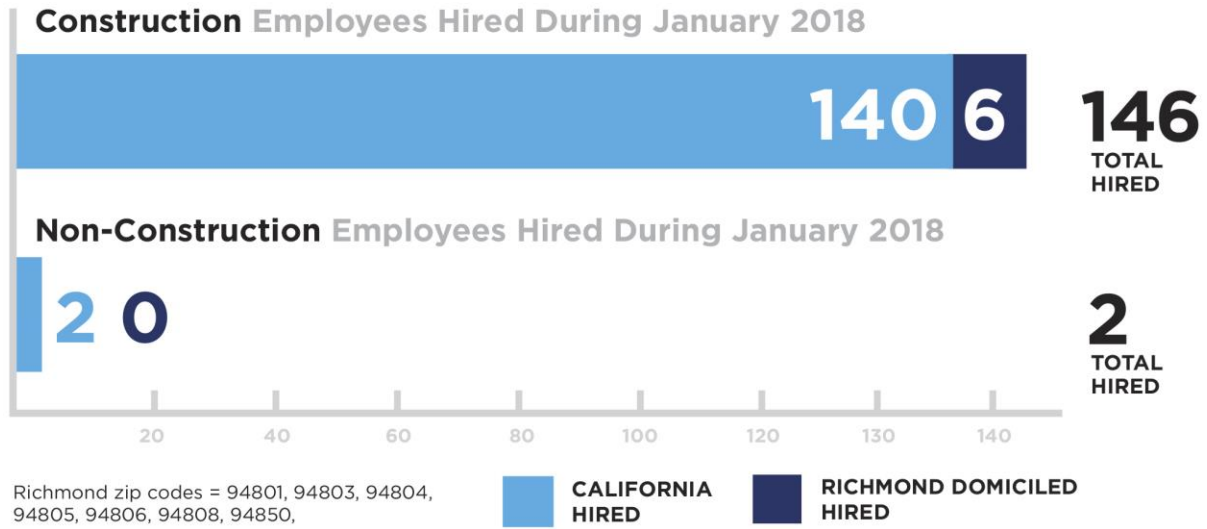


Table 2: Percentage Richmond Domiciled Modernization Hires

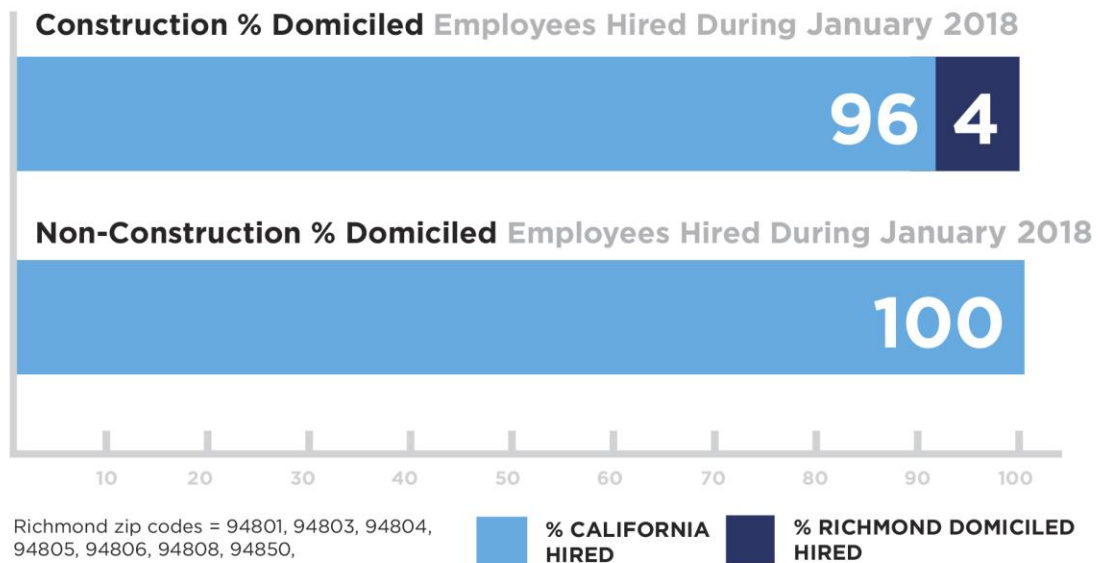
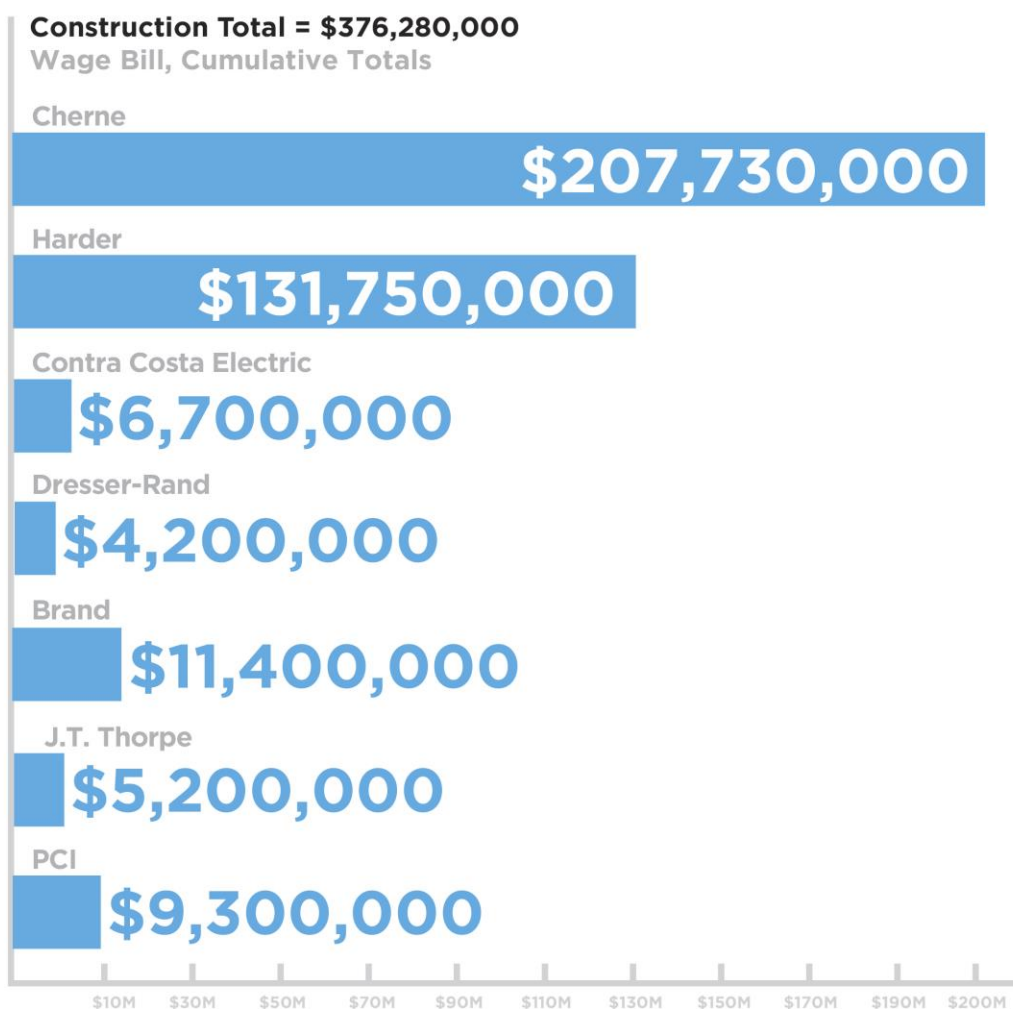


Table 3: Modernization Project Jobs

Modernization Project Job Descriptions

 63 fitters 51 apprentice 12 journeyman	 4 boilermakers 1 journeyman 3 apprentice	 12 carpenters 10 journeyman 2 apprentice	 28 electricians 28 journeyman
 1 instrumentation 1 foreman	 5 operator 4 journeyman 1 apprentice	 14 laborers 14 journeyman	 1 document control
 13 ironworkers 9 journeyman 4 apprentice	 3 teamsters 3 journeyman	 3 insulators 2 journeyman 1 apprentice	 1 engineer

Table 4: Wage Bill



These amounts are for all our core construction contractors, primary subcontractors and non-construction contractors which includes Richmond Domiciled and California hires from June 2016 to the current reporting month.

Table 5: Community Programs

Community Programs

\$19,000,000

Amount invested in 2015 and 2016 (Of \$90 million total investment over 10 years)



richmond promise



solar one



job training



greenhouse gas
reduction



public safety programs



competitive grant
program



free internet access

Table 6: Cumulative Modernization Hires



Table 7: Cumulative Percentage Richmond Domiciled Modernization Hires

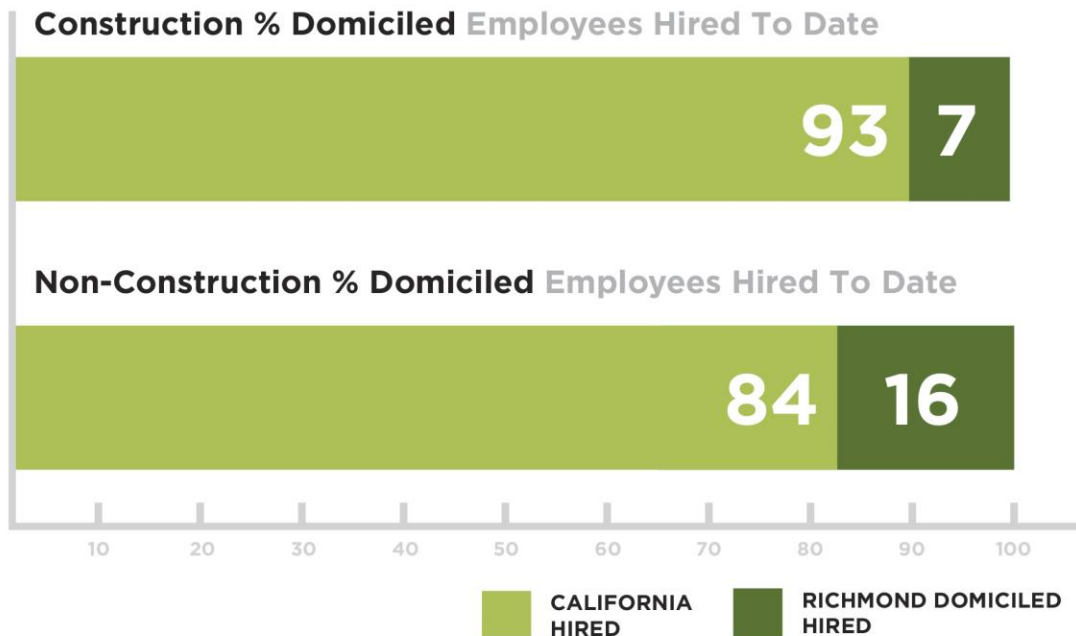
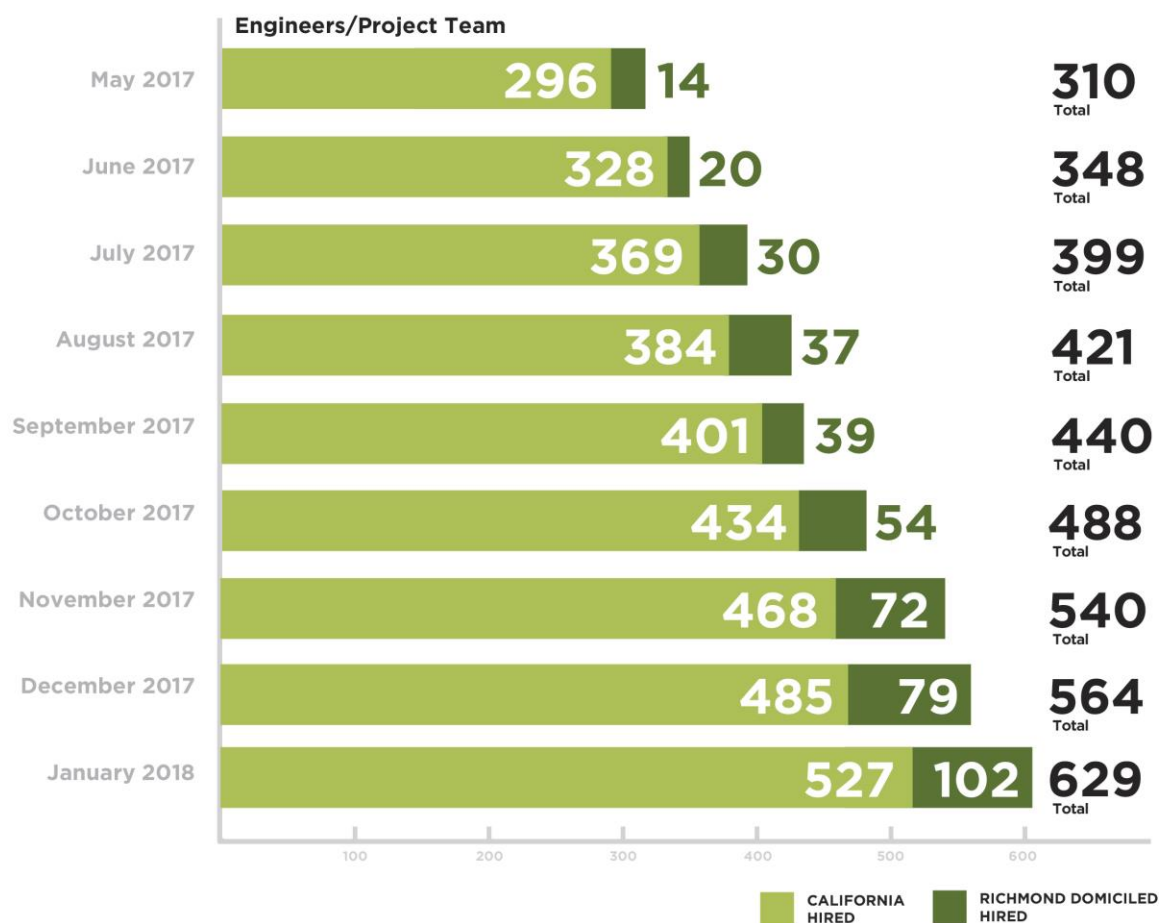


Table 8: Cumulative Engineers/Project Team Modernization Hires



monthly modernization hires report
chevron Richmond refinery, <January> 2018

ATTACHMENT 9



MMRP and Modernization Project Update Telephone Town Hall Transcript

Broadcast Date: 2/22/2018

MODERATOR INTRODUCTION – LEAH CASEY

Welcome to the Chevron Telephone Town Hall. Tonight we'll be discussing the Refinery Modernization Project and how it will help enhance safety at our facility. If you have a question at any time during the event, please press 0.

While we dial out to thousands of our neighbors, I'd like to again welcome everyone that just joined our Telephone Town Hall. Tonight we'll be discussing refinery safety, and we'll provide an update on the modernization project. If you have a question at any time during the event, please press 0.

Trivia Question 1 – LEAH

As we dial out and wait for our neighbors to join us, we'd like to begin with a couple fun trivia questions. This is an engaging event, so here is our first question....

The Richmond Refinery keeps California's economy moving. What percentage of jet fuel used at Northern California airports is provided by the Chevron Richmond Refinery?

Press 1 for 25%
Press 2 for 35%
Press 3 for 65%
Press 4 for 75%

Again, welcome to the Chevron Telephone Town Hall. Tonight we'll be discussing the Refinery Modernization Project and how it will help enhance safety at our facility. If you have a question at any time during the event, please press 0.

We're going to move forward to our second trivia question to open tonight's Town Hall. What year was the refinery first constructed?

Press 1 for 1902
Press 2 for 1932
Press 3 for 1952
Press 4 for 1972

Okay, now let's move forward with our discussion. We'll provide the response after the results are in.



MODERATOR INTRODUCTION – LEAH

Welcome to the Telephone Town Hall. My name is Leah Casey, and I work at the Richmond Refinery.

Tonight, we'll be having a conversation about our Refinery Modernization Project and how it will make the refinery newer, safer, cleaner, and better for our community.

This is an interactive experience and we want to hear from you. If you have a question at any time during the event, please press 0.

Joining me on tonight's call is our Modernization Project Director, David Fowler, and Kristi Mitchum, Compliance Manager for the Modernization Project.

In about 10 minutes we will hear from Kristi Mitchum who will provide an update on the status of enhanced safety measures and reliability program. But first, David – why don't we start with you? Tell us what you do here at the Richmond Refinery and provide us with an update on the Modernization Project.

SPEAKER 1: DAVID FOWLER

Thanks Leah. And hi everyone. I'm David Fowler and it's nice to be here tonight. I am the Modernization Project Director and I am responsible for overseeing the development and execution of the project.

My career started with Chevron after graduating from Mississippi State where I received a bachelor's degree in Electrical Engineering. I have worked for Chevron for 28 years in Engineering, Capital Projects and Reliability and Operations positions at the Pascagoula, Mississippi Refinery and here in Richmond.

The Modernization Project is a \$1 billion investment to replace older equipment with more modern technologies to create a newer, safer, cleaner refinery. The improvements will result in an overall decrease in emissions, as well as safety enhancements that are designed to exceed regulatory requirements.

Construction of the project restarted in June 2016 and since then we have been working hard to execute this major project safely, while continuing to operate the refinery reliably. All major equipment was set in Q4 2017, construction workforce will peak this quarter, mechanical completion will be set next quarter, and we plan to start-up by September 2018.

The project also includes important community benefits, including \$90 million for community programs including college scholarships, grants for nonprofits and funding to fight climate change. To date, the Richmond Promise program has



awarded 600 scholarships, the MCE Solar One has been constructed which is a 10.5 megawatt solar farm on 60 acres of refinery land and Chevron has begun installing 1.25 acres of landscaping along the Richmond Parkway.

We have been working diligently with Building Trades Unions, the City of Richmond and our local hiring job coordinator, to help qualify local residents for these jobs.

As part of the City's approval of the Modernization Project, Chevron committed to implement the Modernization Project Reliability Program to further enhance the reliability and safety of the Refinery's piping and equipment to support post-Project operations.

As one element of that Reliability Program, Chevron committed to hold an annual Town Hall.

This is the third of those Town Halls. Our primary goal this evening is to update you on the work Chevron has been doing to operate safely and to answer questions you may have about that work, or about the Modernization Project more generally.

While our goal is to keep this presentation at a high level some of the information may seem highly technical. If you do not understand something, or have a follow-up question, please do not hesitate to ask.

RESULTS OF TRIVIA QUESTIONS – LEAH

Thank you, David. And now I'd like to provide the results of the trivia questions from the start of our call.

Our first question was what percentage of jet fuel used at Northern California airports is provided by the Chevron Richmond Refinery? For those of you who guessed 65%, you are correct. The jet fuel produced by the Richmond Refinery meets or exceeds the stringent requirements for worldwide fuel handling and product stands.

And for our second question, what year was the Richmond Refinery first constructed, the answer is 1902. At that time, the Refinery had 80 employees and could process 10,000 barrels of crude a day. Today we are the city's largest employer with 1,300 full time employees and we process an average of 247,000 barrels a day.

And before we move on to our next speaker, I want to remind everyone that if you have a question at any time during the call, please press 0 and one of our operators will assist you.

And now, we'll move to our next speaker, Kristi Mitchum.



SPEAKER 2: KRISTI MITCHUM

Good evening. Thank you for having me. My name is Kristi Mitchum and I am the Compliance Manager for the Modernization Project. I've worked for Chevron for 12 years.

My career started after graduation from Auburn University where I received a Bachelor's degree in Chemical Engineering. Since then I have worked for Chevron in various Health and Environmental Safety positions in 3 refineries - Pascagoula, Mississippi, Hawaii and now, Richmond. I am passionate about STEM education (science, technology, engineering and math) and encouraging women to enter STEM fields. In fact, this month I will serve as a judge for the West Contra Costa Unified School District Science Fair.

Safety is a core value for Chevron. Nothing is more important than protecting people and the environment. And it's something that I take very seriously because I'm protecting my colleagues and the Richmond community.

On a daily basis, my team and colleagues are responsible for managing compliance with the reliability and process safety commitments for the Modernization Project. We spend most of our time implementing the Reliability Program, conducting Mechanical integrity, reliability and process safety studies and assisting with implementation of the recommendations of those studies. We are identifying safeguards that need to be in place for future safe and reliable operation.

POLL QUESTION - LEAH

Thank you, Kristi.

We have our first caller on the line with a question. Jase, you are on the line from San Pablo.

Jase was not able to join us on the line, but he had a very good question about jobs. We happen to have Akeele Carter who is our Jobs Coordinator for the Modernization Project with us. Can you take a moment to introduce yourself and for Jase and others who are on the line that are interested in learning about jobs on the Modernization Project and at Chevron in general, can you give us a quick summary of information that would be useful?

JOBS QUESTION - AKEELE CARTER

Akeele Carter: Yes I can, thank you for having me. Hello everyone out there. I am Akeele Carter and I am the Local Hire Coordinator for the Modernization Project.

We have an agreement between the City of Richmond Employment Training Department and the Contra Costa County Building and Construction Trades to offer temporary employment - opportunities to qualify, candidates for construction and



on-construction jobs during the Modernization Project. These jobs are temporary jobs for third-party contractors, not Chevron, but we have been working closely with RichmondBUILD Academy and other nonprofit organizations, and the City, to get local residents into these jobs. And just today, we are accepting applications for the Operator Trainer position at the Refinery. You can apply by going to careers.chevron.com, and search the direct number and get the information.

ROP is a great way for individuals to get a permanent position here at Chevron. And a great opportunity for individuals to get access to other resources as well and RichmondBUILD academy is one way to get to it as well.

There are a lot of opportunities, the project is coming to a close, but we do still have those opportunities available. Be consistent, hang in there, and be able to go through the process.

ENHANCED SAFETY UPDATE INTRO -- LEAH

Leah: Thanks, Akeele, that was really helpful. Now

I now want to turn it back over to Kristi Mitchum, who is going to provide an update on some of the safety measures that have been implemented since the August 2012 fire at the Richmond Refinery.

MMRP UPDATE ENHANCED SAFETY – KRISTI

Thanks, Leah. In last year's townhall, we covered in detail the actions we have taken to enhance the Refinery's mechanical integrity program following the Chemical Safety and Hazard Investigation Board (CSB) report and Chevron's own investigation. Today, I would like to highlight some of Chevron's mechanical integrity standards and training.

Before I do that, I want to acknowledge since our last townhall, California enacted new legislation, SB-1300, which increased existing process safety management standards for refineries.

Chevron has developed a Manufacturing Standard, which we refer to as Manufacturing 520, to guide Damage Mechanism Reviews.

Our Damage Mechanism Review process has been informed by API recommended practices and uses a team of subject matter experts to (1) identify damage mechanisms for piping and equipment, (2) evaluate the existing safeguards and mitigations for those damage mechanisms, and (3) where necessary develop recommendations for improving safeguards or selecting an inherently safer design as guided by the evaluation.



As we committed to in the Modernization Reliability Program, the Refinery has now completed damage mechanism reviews for applicable process piping and equipment.

Chevron has also developed *Manufacturing Instruction 530* for Fixed Equipment Integrity Threat Recommendation and Resolution. This standard establishes a process for identifying integrity threats and issuing recommendations, and developing associated resolution plans designed to prevent and mitigate loss of containment in fixed equipment.

The Richmond Refinery has also developed and implemented a process for tracking maintenance of fixed equipment (such as process piping). The Refinery maintains a Turnaround Database of potential turnaround items in accordance with SB 1300, which allows personnel to search the status of any turnaround work item and view approved, denied and deferred work items.

Another important aspect to Chevron's mechanical integrity program is our commitment to training our personnel in these standards to maintain safe and reliable operations.

The Refinery has developed a standard to guide essential training for individuals who are performing in key mechanical integrity roles, like a Fixed Equipment Inspector or Analyst.

The Refinery tracks numerous leading and lagging indicators through its internal reporting system. Several of these include safety, operations, and reliability metrics, and are automatically pulled from the Refinery's information management systems. These systems contain information pertaining to (1) reliability, including design safety and inspection schedules and history, and (2) maintenance management data, including the status of preventative maintenance and safety activities.

Further, consistent with the requirements of the Richmond Industrial Safety Ordinance, the Refinery is tracking process safety indicators for the County's annual reporting obligation.

Chevron utilizes Manufacturing Instruction 510 for evaluating the Minimum Required Pipe Wall Thickness. If thickness is at, or is projected to be, below minimum required thickness, then the current process includes an approved integrity threat mitigation plan to document the technical basis for continued operation to a lower value. The process also addresses the training, qualification, and documentation requirements for personnel involved.



And finally, Chevron has also put in place a Manufacturing Technical Authority Process to help it assess, direct, track, and monitor the implementation of mechanical integrity-related standards, guidance, and best-practices where applicable and appropriate to Chevron's manufacturing operations. This process helps to timely identify and distribute best practices.

In a few minutes I will provide an update on the Refinery's Reliability program. But first, let's turn it back over to Leah to see if there are any questions

SECOND QUESTION – LEAH

Thank you Kristi. We do have one question from Savannah – you are live on the call, what is your question?

Savannah: How often does Chevron monitor the air quality in Richmond?

SECOND QUESTION ANSWER, AIR MONITORING – DAVID

Thank you for the question, Savannah. This is David Fowler. We know that many residents have questions about air quality. To help residents better understand what is in the air, we partnered with the City of Richmond and Argos Scientific, to create a state-of-the-art air monitoring system to measure and track air quality at our fenceline and in the adjacent neighborhoods. It started five years ago, the Richmond Community Air Monitoring Program, tracks air quality 24 hours a day, 7 days a week, from 3 stations located along the refinery fenceline, and at 3 community locations.

That data is available for anyone to see on a public website, which records, tracks and publishes these readings in real time. For more information about community air monitoring and to see air quality data in real time, visit www.fenceline.org/richmond.

SECOND POLL – LEAH

Leah: Great, thank you David. I just want to remind everyone that if we do not get to your question, we'll be able to provide an opportunity for people to leave a voicemail and we will do our best to get back to you in a timeline manner.

As I mentioned at the beginning of the call, this is an interactive experience, so we want to make sure that we're hearing from you about what is important.

At this time, we'd like to know "What are you hoping to learn from this call"

Press:

- 1: interested in learning more about modern equipment set for the project.
- 2: Interested in learning more about decreased emissions.
- 3: for Community benefits and local jobs
- 4: Enhanced safety improvements since the 2012 fire.



At this time, I'd like to turn it back over to Kristi who will provide an update on the Refinery's Reliability Program:

Continue with MMRP UPDATE RELIABILITY PROGRAM – Kristi

Thank you Leah.

As part of the permitting process with the City of Richmond, the Refinery evaluated potential reliability impacts as a result of operating the Modernization Project on downstream refinery process units. The potential impacts, such as increased corrosion, together with inspection and monitoring plans and mitigations for the impacts were documented in the Refinery's Reliability Program. The Reliability Program was reviewed by the City's expert and later incorporated into the Conditional Use Permit. The Reliability Program is comprised of pre-construction, pre-operation and ongoing requirements.

Today I'll mention requirements that have been completed or those in which we have made significant progress.

Elements include material upgrades, inspection and monitoring programs and Richmond Industrial Safety Ordinance compliance including project related process safety management studies. Another area of the program includes future reliability reviews to be conducted after reaching post project process operating conditions.

We will discuss these triggered reviews in the future, since we have not completed construction or operated with these process conditions.

Last year in the townhall, we provided updates on the mechanical upgrades that had been completed during the No. 4 Crude Unit turnaround in 4th quarter 2016. These upgrades were performed to mitigate potential corrosion impacts from processing crude with more sulfur, which is likely to occur after startup of the project.

Now, I will talk about Richmond Industrial Safety Ordinance or RISO compliance including project related process safety management studies. These studies include: Process Hazard Analysis, Damage Mechanism Reviews, Layer of Protection Analysis and Inherently Safer Systems Analysis. The refinery completed the pre-construction studies for all of the project elements as required and submitted notification to the City. Contra Costa Health Services reviewed some of these studies during their Audit in August 2016. After construction but before startup of Hydrogen Plant operations, updated studies will be completed for any changes that may have arisen during construction

Before I cover the inspection and monitoring program, let's turn it back over to Leah to see if there are any questions.



POLL RESULTS – LEAH

Well before I go to our next question, I would like to reveal the results of our last poll.

The number one response for what folks are most interested in learning about are Decreased Emissions – with 67%. Following decreased emissions, there is a tie between modern equipment and enhanced safety both at 17%. There wasn't a lot of interest around community benefits.

If there are any questions around decreased emissions, it seems there is a lot of interest there, please press 0 at any time during the call or on any topic that you have interest in hearing more about and we will take your questions.

At this time, I would like to turn it over to Kristi.

MMRP UPDATE - RELIABILITY PROGRAM – KRISTI

Thanks Leah. Finally, I'll provide updates on the Inspection and Monitoring Program.

Chevron has piloted the use of Permasense® probes to help gather real time data on piping thickness to monitor the impacts of sulfidation corrosion on susceptible piping circuits. Chevron is implementing a Permasense® probes monitoring upgrade project, which will be operational before starting-up of project operations.

Approximately 100 of the 119 probes located in the Crude Unit have been installed, and we anticipate full implementation next month.

Chevron uses Integrity Operating Windows in an effort to identify where process conditions could have an impact on long term reliable operation. The Integrity Operating Window (IOW) program, which was informed by API 584, has been implemented at the Crude Unit, Hydroprocessing Units and Solvent Deasphalting plant, with IOW table, alarm and alert structure, corrective actions, required bypass mitigations, and training. Chevron is near completion with implementing IOW programs across the refinery and particularly the sour water and sour gas systems prior to the start of the project.

Chevron has updated its management of change process to include a review of feedstocks that it intends to process for adherence to total acid number or TAN limits and sulfur mercaptan concentrations. These constituents could be used as early indicators of processing materials that can impact the reliability of the refinery processing equipment. Chevron will evaluate these feedstocks and their impact on damage mechanisms prior to processing the feedstock.



Process monitoring plans have been updated for the Crude Unit, Hydroprocessing Units, and SDA to confirm any post-project impacts to increased sulfur levels. The sampling and analysis will assist the refinery in evaluating impacts of increased sulfur on damage mechanisms.

THIRD QUESTION - LEAH

Kristi, thank you so much for that review.

I am going to go to our next caller, then you can complete your report-out.

We have a call from William. William, you're live – what is your question?

William: The odor that's in the air, is that due to the Refinery? And the flare ups you have, not on an everyday basis, but every time you have a flare-up, does affect the community?

Leah: Thank you, William. That would be a good question for David. It sounds like you're interested in learning a little bit more about flaring and what is happening at the Refinery when we flare. And your second question is about odors. David, can you address that?

THIRD QUESTION ANSWER - ODORS AND FLARING - DAVID

David: Sure, thanks, Leah. We understand that the sight of flares may cause concern, but we want to assure our neighbors that occasional flaring is an important part of keeping the Refinery running safely. Flares are a safety device used in refineries to relieve pressure during the refining processes and helps keep our equipment and plants operating safely.

Materials that are set to the pressure release system, such as hydrogen and hydrocarbons, usually are recovered and reused during the refining process. However, in some instances, such as during plant maintenance shutdowns and startups, not all of the material is able to be recovered. In such cases, much of the unrecoverable material is safely burned at the flare, whose primary emissions are carbon dioxide and water.

According to the Bay Area Air Quality Management District, BAAQMD, which regulates the use of flares, Chevron's Richmond Refinery is one of the top performers of Bay Area refineries for the lowest flaring. Since the implementation in 2007 of practices outlined in our flare minimization plan, we have reduced the amount of annual flaring emissions by over 86% since the 1970s.

William, I know you had another question about odors.



Odors are a natural part of the substances handled and treated at the Refinery. Odors are typically contained to the Refinery, but occasionally, odors drift from the site depending on weather conditions and wind directions. Nothing is more important to us than protecting our neighbors, our workers, and the environment. We work diligently to achieve our goal of 0 impact on our neighbors. We encourage you to visit www.fenceline.org/richmond to view real time air quality data. Call 510 – 242 – 2127 for any odor concerns and we will investigate. Again, that phone number is 510 – 242 – 2127.

Thank you.

INTRODUCE INSPECTION AND MONITORING PROGRAM – LEAH

Leah: Thanks, William that was a great question. And appreciate your response, David. Now we will move on to Kristi who will continue with her report.

INSPECTION AND MONITORING PROGRAM – KRISTI

Kristi: Thanks, Leah, I would like to continue on providing updates on the inspection and monitoring program.

Chevron completed its review comparing Chevron's Best Practice HP-002 Reactor Effluent Air-Cooler Piping and Equipment Corrosion Control Guidelines ("HP-002") to the API Recommended Practice 932-B Design, Materials, Fabrication, Operation, and Inspection Guidelines for Corrosion Control in Hydroprocessing Reactor Effluent Air Cooler (REAC) Systems ("API 932-B") and has concluded that the HP-002 is consistent with API 932-B.

A review of the HP-002 Reactor Effluent Air Cooler (REAC) Piping and Equipment Corrosion Control Guidelines was completed for TKN processing unit. The review identified and targeted metallurgical upgrades for TKN that were completed during the 2014 turnaround. Any remaining corrosion risk gaps are being managed through inspection per the HP-002 best practice until upgrades are implemented.

Chevron currently monitors amine loading and heat stable amine salts (HSAS) in the amine system, and is collecting pre-project data for purposes of comparison. Following commencement of project operations, Chevron will continue to collect sampling data for one year and then will undertake a comparison to the pre-project data set.

CLOSING REMARKS – LEAH

Thank you Kristi.

It looks like we're about out of time, but before you hang up, I'd like to thank Dave and Kristi and all of you for participating in the telephone town hall this evening.



All of us at Chevron are proud of the significant investment we're making to improve safety at the refinery. Operating safely and responsibly is the most important thing we do here.

I hope you all found the information we've shared this evening interesting and informative, and I look forward to having an ongoing dialogue about how we can be a better neighbor.

If you have any questions or comments that you'd like to share with us, please follow the prompts and leave us a voicemail.

Again, thank you for joining the conversation this evening.