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March 31, 1993

**Proposed Revision to the Approved
Development and Production Plan,
Santa Clara Unit -
Platform Grace, Lease OCS-P-0217,
Platform Gail Lease OCS-P-0205
SULFEROX Unit Installation**

Office of Field Operations
Minerals Management Service
770 Paseo Camarillo
Camarillo, California 93010

Attention: Mr. Thomas W. Dunaway
Regional Supervisor

Enclosures
4/1/93
Copy to DSR
OLE (EOPS)
C/P & D
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Gentlemen:

This letter is in response to your January 27, 1993 letter asking for additional information/clarification in order to approve our requested revision to the previously approved Santa Clara Unit Development and Production Plan (DPP) and the Platform Gail Supplement to the Santa Clara Unit DPP (Supplement). This revision outlines our plan to install a SULFEROX gas processing unit on Gail and decommission the Stretford processing unit on Grace

The enclosure to your letter listed nine areas that required clarification. Our response is included as Attachment 1. We have also incorporated these clarifications into Revision 1 of our proposal dated March 23, 1993. As requested, four copies of this proposal are enclosed for your review and nine are included for distribution to other agencies. Piping and Instrument Diagrams and Safety Analysis Function Evaluation Charts were not included in the copies for public review because we consider that these attachments contain proprietary information.

All changes relative to proposed modifications on Platforms Gail and Grace are being submitted in this revised proposal. Discussion of future work referenced on page 6 of our initial proposal, specifically dealing with trace H₂S removal equipment on Platform Grace, is not being proposed at this time. Reference to the Ferricat process was mentioned only as a point of clarification in the event of future development on Platform Grace.

I would like to thank you for meeting with me on such short notice on February 25, 1993. This meeting, and subsequent meetings and discussions between our staffs, have given me encouragement that by working together we will be able to obtain the necessary approvals to proceed in a timely fashion. I am particularly interested in maintaining direct, face-to-face


communication with both MMS staff and the staffs of the various agencies that will be commenting to MMS on our proposal. We are available to provide whatever additional information might be required directly to the commenting agency.

We continue to believe that the proposed installation of the SULFEROX facility on Gail and the decommissioning of the Stretford facility on Grace are consistent with the Santa Clara Unit Agreement, the DPP, and the Supplement. The proposed changes do not result in a significant change in the impacts previously identified and evaluated, do not require additional permits, and do not propose activities not previously identified and evaluated in the DPP and Supplement. We have been in contact with the Ventura County Air Pollution Control District (VCAPCD) and the Environmental Protection Agency (EPA) and have received concurrence that the proposed modifications do not require a permit to construct under 49 CFR 55 (Part 55). We also have verbal concurrence from the EPA to incorporate the permit for SULFEROX waste water discharge into our existing Platform Gail NPDES permit during the ongoing permit renewal process.

Chevron respectfully requests that you approve this revision as one which meets all the criteria for approval set forth in 30 CFR 250.34 (q) (3) it is consistent with the protection of the marine, coastal, and human environments and will lead to greater recovery of oil and natural gas; it will improve the efficiency, safety, and environmental protection of the recovery operation; it is the only means available to avoid substantial economic hardship to the lessee; and it is not inconsistent with the provisions of the OCS Lands Act, as amended (43 U.S.C. 1331 et seq)

Please contact Mike Light at (805) 658-4423 if further information is required. In addition, I would appreciate if you copy Mr. Light when you correspond with the various agencies regarding this proposal. We look forward to working with MMS to obtain the necessary approvals to proceed.

Very truly yours,

Handwritten signature of Mike Light in black ink.

Attachments

RESPONSE TO REVIEW COMMENTS CONTAINED IN MMS 1-27-1993 LETTER

1. The proposed Gail SULFEROX Unit is an integral part of the production strategy conceptually approved by the MMS in the Sockeye Field 1992/1993 Annual Plan of Operations. In summary, Chevron proposes the installation of a sulfur removal process employing the DOW SULFEROX process on Gail to replace the Grace Stretford Unit which has been used to sweeten Gail sour gas. The SULFEROX Unit will be installed on deck space dedicated previously to an amine unit that was part of the original Gail design. The amine unit was never commissioned and was removed in 1990.

As described in our original proposal, SULFEROX technology offers a more environmentally friendly chemistry and avoids generating a hazardous sulfur byproduct. Power requirements for the process will be provided by existing onboard power generation and are within the permitted limits approved by the EPA and Ventura APCD. As mentioned in the cover letter, both agencies have concurred that this facility is within permitted conditions.

The installation of the Unit will be accomplished using existing crew boats, work boats and platform cranes. There will be no impact on the sea floor as no mooring of barges or non-routine transportation equipment will be required. There will be no significant impact on fisheries or water quality. Chevron is in the process of working with the EPA on the modification of the existing Platform Gail NPDES permit. The revised permit will allow for the ocean discharge of waste water associated with the SULFEROX Unit. Notification of EPA approval will be provided to MMS as soon as it becomes available.

2. Minor structural modification will be required to the deck area directly beneath where the SULFEROX Unit will be installed. This modification will consist of installation of two deck support girders and two knee braces. Structural analyses of both the Unit and the overall structure have been performed and were forwarded to the MMS on March 1, 1993.
3. Structural modification and Unit installation will be accomplished in two phases, the first being deck modification and preparation of interconnecting piping tie-ins, followed by installation of the Unit. Installation date is currently scheduled for early 3rd quarter 1993 and will follow completion of drilling. The overall duration of construction period is approximately 4 to 6 weeks.

Deck modifications will be accomplished under "simultaneous operations" as much as possible to minimize downtime and loss of production. A short shut-down will be required to make

necessary interconnecting piping connections and to perform hot work which cannot be accomplished during an operating mode. Girder and knee brace supports will be lifted directly off the boat and will be pulled into position underneath the deck area. All welding, torching and grinding will be accomplished in compliance with operating procedures and safety regulations. Existing crew/work boats and platform cranes will be used for all transportation requirements. There will not be any anchoring requirements.

4. Following completion of deck modifications, the SULFEROX Unit will be transported to the platform in skid sections which were designed to allow for land/ocean transportation and to allow use of platform crane capacity. Each skid section will be transported and lifted onto the platform in a horizontal orientation, then righted into a vertical orientation prior to being lifted into position and attached to the structure. A second shut-down window will be required during the lifting, installation and connection operations.

All major structural and equipment lifts will be performed using a platform crane with a maximum lifting capacity of 75 tons. 14 major lifts with a maximum weight of 40 tons will be required. In addition, approximately 15-20 small lifts will be required to bring random piping spools, installation equipment, etc. on/off-board.

Modifications on Grace will be limited to rerouting piping to allow sweet gas to be transported around Grace through both 8" gas pipelines. The Stretford Unit will be by passed/decommissioned as soon as the Gail SULFEROX Unit is operational and lined-out. No equipment will be removed from or added to Grace.

5. Discussion of the Ferricat process on Grace was included as potential future H₂S removal in the event that new production is developed on Grace. Chevron has no plans for installation of this process for existing Grace production. Following commissioning of the Gail SULFEROX Unit and decommissioning of the Grace Stretford Unit, Grace production, which contains only trace H₂S, will be "blended" with gas from Gail and sent on to the Carpinteria Gas Plant where three existing Ferricat H₂S removal towers are in operation. Chevron has placed a self-imposed limit of 100 ppm leaving Grace to insure compliance with permit conditions (maximum 200 ppm H₂S at Carpinteria plant inlet) and will continue to monitor combined Gail/Grace sales gas H₂S levels.

Grace fuel gas will be metered out of the Gail sales gas upstream of where Grace production enters the pipeline to insure that only sweet fuel gas is burned for power generation. This gas will be accounted for in the Gail/Grace gas allocation system.

6. The sulfur created by the SULFEROX process has some potential as a saleable by-product and is a significant improvement compared with disposing Stretford process sulfur as a hazardous waste. Chevron is in the process of discussing potential options for disposal of the sulfur by-product with several independent jobbers of SULFEROX sulfur. At present, we do not feel that we will find an outlet where actual revenue will be generated.

Any potential purchaser/recycler of the sulfur will have to successfully pass an environmental audit to insure that handling and use of the sulfur complies with environmental standards. Should Chevron develop a revenue generating outlet for disposal of the sulfur by-product, we will report the disposition to the MMS pursuant to 30 CFR requirements and develop the appropriate accounting system for royalty payments. (NOTE: This information should also serve to answer MMS's January 29, 1993 letter regarding royalty payments on sulfur.)

7. The subsea pipeline currently used to transport Platform Gail sour gas to Platform Grace will not require modifications. Piping modifications upstream of Gail's M-30 Pig Launcher and downstream of Grace's M-49 Pig Receiver will be required to allow Gail sweet gas to flow in parallel with the existing 8" sweet gas pipeline between Gail and Grace. This work is consistent with the Supplement to the Santa Clara Unit DPP which describes the use of the third, spare pipeline. The operating pressure of 500 psig will be well below the allowable operating pressure of 1480 psig.

The Gail/Grace gas sales meters will not require any physical modifications; however, the accounting system will necessitate some description modifications to reflect the new services. Sales meter tube verification/routine calibration will be undertaken in accordance with existing routine procedures. Should any additional meter calibrations be required, Chevron will insure that the MMS is notified.

8. A complete analysis was performed on the Gail flare systems. This analysis showed the Gail High Pressure flare system to be limited at a 240 MMSCFD instantaneous rate. Existing platform operations can contribute only about 200 MMSCFD instantaneous and in actuality contribute somewhat less due to staging of blowdowns into the flare system. Under worst case conditions of a continued release from the SULFEROX Unit, a maximum contribution of 18-25 MMSCFD would be added to the existing flare rate and is well within the limit of the flare design.

A complete flare staging review will be undertaken following start-up of the unit to insure that blowdown rates are maintained and that flare metering equipment accurately measures flaring incidents. In addition to royalty issues, flare volume measurement is a parameter which is monitored by the Ventura APCD.

9. Attached are gas analyses of the existing Gail sweet and sour Sales gas as measured at GL-61 and GL-62, respectively. In addition, Grace Sales gas as measured at GR-63 is included.

Actual H₂S content of the Gail sour gas feed is not accurately obtainable at this time since all sour wells have not been completed. However, historically, H₂S content from Monterey formation wells on Gail has ranged between 5000 to 30000 ppm H₂S. Information on upper Topanga formation gas is limited, but believed to be somewhere in this range as well. Gas lifting with sweet gas directionally dilutes these levels down to the 5000-10000 ppm H₂S range.

The Gail SULFEROX Unit is designed to remove 7.5 Ltons/day of sulfur. This design limit spans the range of 6.5 MMSCFD at 30000 ppm H₂S to 18 MMSCFD at 11100 ppm H₂S. Based on a predicted H₂S concentration of 10000 ppm H₂S and gas volume of 6 MMSCFD, the initial start-up load on the unit will be approximately 2.25 Ltons/day of sulfur. As the sour wells mature, additional gas lift volumes will dilute the inlet H₂S content while increasing the gas volume. The SULFEROX Unit is designed to manufacture < 4 ppm H₂S gas and will be monitored to insure that only sales quality gas is allowed to leave Gail.