BRAVO PIPELINE COMPANY
A subsidiary of Occidental Petroleum Corporation

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Telephone 713-215-7000,

February 25, 2021

**RE: 30-Day Response to PHMSA Notice of Probable Violation, Proposed Civil Penalty, Proposed Compliance Order – CPF 4-2020-5015**

Mary L. McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration
8701 South Gessner Road
Suite 1110
Houston, Texas 77074

Dear Ms. McDaniel:

This response is provided on behalf of Bravo Pipeline Company, a wholly owned subsidiary of Occidental Petroleum Corporation and its subsidiary Occidental Oil & Gas Corp (OXY). OXY, as the Operator of the Bravo Pipeline System.

Oxy is in receipt of a Notice of Probable Violation, Proposed Civil Penalty and Proposed Compliance Order, CPF – 4-2020-5015 (collectively, "NOPV") issued by the Pipeline and Hazardous Materials Safety Administration ("PHMSA") dated October 27, 2020. The NOPV also includes a Warning Item. Subsequent to receiving the NOPV, via correspondence dated December 8, 2020, Oxy requested and PHMSA granted, via correspondence dated December 16, 2020, an extension for a response until February 26, 2020.

In accordance with the process outlined in PHMSA's Response Options for Pipeline Operators in Enforcement Proceedings, Oxy now responds as follows:

1. With respect to the Proposed Civil Penalty and the Proposed Compliance Order, Oxy CONTESTS THE ALLEGATION WITH AN EXPLANATION. An explanation is provided in this letter. Because the Proposed Civil Penalty and Proposed Compliance Order concern the same probable violation, Oxy's provides a single explanation applicable to both.
2. With respect to the Warning Item, Oxy is taking appropriate action to correct the item, an explanation is provided in this letter.

**Oxy's Response to the Proposed Civil Penalty and Proposed Compliance Order**

The NOPV alleges that Oxy committed a probable violation of 49 CFR 195.571 concerning cathodic protection. Oxy contests the allegation and provides an explanation demonstrating that it promptly and diligently worked to take corrective action and that at all times, Oxy maintained adequate cathodic protection in its pipeline system in accordance with 49 CFR 195.571.

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Oxy's Corrosion Technician in charge of the Bravo Pipeline System is highly qualified and has been in his position with Oxy since 2001. He has over 31 years total experience in pipeline corrosion services and is a NACE Level 2 qualified inspector. The event timeline below describes the sequence of events that led to Oxy's identification and eventual correction of the low potentials PHMSA identified during the 2018 PHMSA inspection.

In late November 2015, before PHMSA initiated the inspection that generated the referenced NOPV, while conducting the annual CP survey for the Bravo pipeline system, Oxy's Corrosion Technician observed readings less negative than the -850mV 'on' criteria. In response, Oxy immediately increased the current output from the Bravo Dome rectifier, the dominant rectifier for the pipeline in question, in an attempt to increase potentials.

In early 2016, after allowing for two months of polarization, Oxy again surveyed the pipeline and observed no response to the actions taken to increase the potentials. Oxy's' Corrosion Technician responded by increasing current output from multiple influencing rectifiers - Bravo Dome and MLV3. In addition, because the Bravo Dome rectifier was protecting both the pipelines and Bravo Dome station piping via two negatives from the rectifier, Oxy's Corrosion Technician conducted further diagnostics on the system by electrically isolating the Bravo Dome rectifier current to only the pipelines. This was completed before the annual CP surveys in November of 2016.

After allowing time for polarization, in mid-2017, Oxy again conducted a survey to measure system response and determine whether there was a positive response as a result of electrically isolating the Bravo Dome rectifier. This survey observed increased potentials. However, these increased potentials still did not satisfy the criteria indicating that further investigation was warranted. Oxy's Corrosion Technician now suspected that the existing rectifiers were incapable of meeting the current output requirements and the addition of multiple rectifiers would be required to achieve adequate cathodic protection. Oxy's Corrosion Technician promptly initiated the process for requisition, acquisition, and installation of new rectifiers to be installed at MLV2 on the Bravo Dome pipeline and MP 46.9 for the 8" Anton pipeline.

In the third quarter of 2017, Oxy's Corrosion Technician was able to conduct a depolarization or native potential survey to verify if more than a 100mV of polarization was being achieved between the native readings and rectifier instant-off readings. The 100mV shift criteria is recognized in the NACE SP 0169 as a method of validating adequate cathodic protection. Oxy observed that most native potentials in this area were no greater than -489mV, when compared to the 2016 annual CP surveys, it was evident Oxy was achieving a polarization of 2 to 3 times the requirement of this criteria. This verified that, although the pipelines were below the -850mV 'on' criteria, at no time were the safety and integrity of the pipeline at risk.

In conjunction with the review of these native potentials and cathodic protection operation practices, Oxy also reviewed two inline inspection assessments. One completed in 2012 and the latest in 2017, both assessments relied on a combination of metal loss and deformation tools. The results of both runs found, and have been field verified to confirm, very minor corrosion, not only along the entire pipeline but most importantly in and near where the low CP potentials were observed. Neither run showed any corrosion anomaly significant enough to be qualified as a classified anomaly. In addition, a run-to-run comparison of joint corrosion growth rates, revealed that no area along the assets showed a significant growth between the two runs during this time frame.

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In November 2017, after more than a year of cathodic isolation from the Bravo Dome station piping, annual surveys on all Bravo Pipeline system pipelines displayed more negative than -850mV and met criteria. The adequate polarization to achieve the -850mV 'on' criteria, took more than a year to buildup. However, Oxy observed that the Anton Pipeline system and Bravo Dome Station piping still had not achieved adequate polarization. In response, Oxy maintained the 2018 planned rectifier installations during the 2nd qtr. of 2018 and permanently isolated the existing Bravo Dome rectifier to solely protect the Bravo Dome station. The pipelines were now cathodically protected by the new MLV2, MP 46.9 and existing MLV3 rectifiers only. The 2018, 2019 and 2020 subsequent annual surveys, show that all potentials were more negative than the -850 mV 'on' criteria required by the NACE and Oxy standards.

Oxy's Corrosion Technician suspects that a short somewhere inside the Bravo Dome station, was responsible for drawing down Bravo Dome station and pipeline potentials in 2015 and 2016. Oxy's Bravo Cathodic Protection group has attempted to trouble shoot the potential interference by installing a native test station for monitoring the Bravo Dome station region which is being used to compare the polarization achieved against the region native potentials. This new criterion has been added to the OXY OMER Book #1 Corrosion Control procedure.

Troubleshooting cathodic protection systems can take time, particularly when polarization must be reestablished. Oxy's responses to the observed measurements, although spanning over multiple years, displays adequate and proactive measures in troubleshooting and remediating a real-world cathodic protection system for hazardous liquid pipelines. The system has been remediated and is functioning properly to continue protecting the assets in question and troubleshooting is ongoing with further measures being taken to investigate any issues.

Oxy documented proactive measures it took to address measurements showing low cathodic potentials. These measures confirm, that at all times, the system maintained adequate cathodic protection. The system is functioning properly to continue protecting the assets in question.

**Oxy's Response to the Warning Item:**

The NOPV includes a Warning Item concerning 49 CFR 195.589(c). Although no response is required, Oxy has attached a copy of the new 3-year atmospheric inspection form. The Warning Item describes that Oxy failed to provide documentation substantiating the remediation of issues identified in the atmospheric forms. Subsequent communications between the Oxy and the PHMSA inspector do demonstrate that adequate documentation demonstrating that all issues identified during these inspections had been appropriately remediated have been provided to PHMSA. Oxy has since updated its atmospheric inspection form to include details about remediation activities completed, rectifying any issues, and the signature/date of the approving CP supervisor. Copies of all relevant documents are attached for reference of this response.

**Conclusion:**

Real world cathodic protection issues present themselves when and where they see fit, and unfortunately, for all vested parties, can never be resolved rapidly enough. Oxy respectfully requests that PHMSA review and take into consideration the Explanation provided in this letter and find that they demonstrate that Oxy promptly and diligently pursued a series of actions that diagnosed and corrected the observed cathodic protection readings. Oxy is intent upon improving its process for documenting any future similar events.

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Please feel free to contact me anytime should you require additional information or have any questions. I welcome the opportunity to discuss Oxy's response or other aspects of the NOPV.

Regards,

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