



## Certificate of Analysis

Number: 6030-21080181-009A

Artesia Laboratory

200 E Main St.

Artesia, NM 88210

Phone 575-746-3481

Chandler Montgomery  
Occidental Petroleum  
1502 W Commerce Dr.  
Carlsbad, NM 88220

Aug. 24, 2021

Field: Pure Gold  
Station Name: Sterling Silver 33 FC 8H LG  
Station Number: 173381  
Station Location: Gas Lift  
Sample Point: Well  
Formation: Quarterly  
County: Eddy  
Type of Sample: : Spot-Cylinder  
Heat Trace Used: N/A  
Sampling Method: : Fill and Purge  
Sampling Company: : SPL

Sampled By: James Hill  
Sample Of: Gas Spot  
Sample Date: 08/18/2021 09:52  
Sample Conditions: 1272 psia, @ 95 °F Ambient: 71 °F  
Effective Date: 08/18/2021 09:52  
Method: GPA-2261M  
Cylinder No: 1111-001266  
Instrument: 6030\_GC6 (Inficon GC-3000 Micro)  
Last Inst. Cal.: 08/02/2021 0:00 AM  
Analyzed: 08/24/2021 15:30:21 by KJM

## Analytical Data

| Components       | Un-normalized<br>Mol % | Mol. %  | Wt. %   | GPM at<br>14.65 psia |                |       |
|------------------|------------------------|---------|---------|----------------------|----------------|-------|
| Hydrogen Sulfide | 0.000                  | 0.000   | 0.000   |                      | GPM TOTAL C2+  | 6.276 |
| Nitrogen         | 2.382                  | 2.392   | 3.045   |                      | GPM TOTAL C3+  | 3.014 |
| Methane          | 73.748                 | 74.051  | 53.979  |                      | GPM TOTAL iC5+ | 0.451 |
| Carbon Dioxide   | 1.268                  | 1.273   | 2.546   |                      |                |       |
| Ethane           | 12.169                 | 12.219  | 16.695  | 3.262                |                |       |
| Propane          | 6.198                  | 6.224   | 12.471  | 1.711                |                |       |
| Iso-butane       | 0.791                  | 0.794   | 2.097   | 0.259                |                |       |
| n-Butane         | 1.875                  | 1.883   | 4.973   | 0.593                |                |       |
| Iso-pentane      | 0.376                  | 0.378   | 1.239   | 0.138                |                |       |
| n-Pentane        | 0.389                  | 0.391   | 1.282   | 0.141                |                |       |
| Hexanes Plus     | 0.393                  | 0.395   | 1.673   | 0.172                |                |       |
|                  | 99.589                 | 100.000 | 100.000 | 6.276                |                |       |

## Calculated Physical Properties

|                             |        |        |
|-----------------------------|--------|--------|
| Relative Density Real Gas   | Total  | C6+    |
|                             | 0.7624 | 3.2176 |
| Calculated Molecular Weight | 22.01  | 93.19  |
| Compressibility Factor      | 0.9962 |        |

## GPA 2172 Calculation:

Calculated Gross BTU per ft<sup>3</sup> @ 14.65 psia & 60°F

|                                     |        |        |
|-------------------------------------|--------|--------|
| Real Gas Dry BTU                    | 1260   | 5113   |
| Water Sat. Gas Base BTU             | 1238   | 5024   |
| Ideal, Gross HV - Dry at 14.65 psia | 1255.1 | 5113.2 |
| Ideal, Gross HV - Wet               | 1233.1 | 5023.7 |
| Net BTU Dry Gas - real gas          | 1144   |        |
| Net BTU Wet Gas - real gas          | 1124   |        |

Comments: H2S Field Content 0 ppm  
Mcf/day 1506

Data reviewed by: Eric Ramirez, Analyst

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

**EVENT SPECIFIC JUSTIFICATIONS FORM****Facility:** Sterling Silver MDP1 33-4 0008H Well Pad**Start Date:** 11/02/2021**End Date:** 11/02/2021**Cause:** Underground Injector Line Damage - Malfunction**Duration of event:** 24 hours**MCF Volume Vented:** 74**Method of Vented Gas Measurement:** Allocation

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**1. Reason why this event was beyond Operator's control:**

The leak was caused by a malfunction on the steel piping of the injector gas line which developed a pin sized hole. The type of damage on this type of injector line is not a common occurrence and was not anticipated. We believe the leak was a sudden, unavoidable failure beyond Oxy's reasonable control. While this type of failure is infrequent, Oxy has initiated a root cause analysis to determine why the leak may have occurred and how Oxy can prevent this type of event from happening in the future.

Oxy contracts with third-party aerial survey contractors, and on November 9, 2021 at 5 pm, Oxy became aware of a potential leak detected in the middle of a remote field. Within 2 hours, Oxy's field crew was deployed to the remote area to search for the potential leak and an underground gas leak was discovered on the injector line to the Sterling Silver MDP1 33-4 8H. Upon verification of the leak, Oxy shut-in the well by 7 pm on November 9<sup>th</sup>, 2021 to stop the leak.

Once the leak was verified and stopped, Oxy's Operations group then transitioned its focus on performing an extensive review to determine how long the leak may have gone on for. The group determined that the leak was isolated to the damaged injector gas line, and also identified a period from October 5, 2021 to October 7, 2021 where oil/water/gas (GOR) well tests dropped slightly. This decrease in the GOR led to a slight drop in gas and oil production, providing insight into the potential timing of when the leak first occurred. While not certain, the group used best engineering and operational estimates to determine that, based on the drop in GOR from well tests between October 5, 2021 to October 7, 2021, the leak potentially started on October 5, 2021 and continued until it was discovered by Oxy and stopped on November 9, 2021 at 7pm. Based on the well tests, historical production and pressure records, it is possible that a total of 2,651.7 mscf of gas may have leaked from the underground injector line. This estimated total covers (daily average released is 74 MSCFD) the timeframe from October 5, 2021 until November 9, 2021 when the leak was stopped.

Upon conclusion of the review, when Oxy had an objectively reasonable basis to determine the total and daily amount of gas that potentially was released, Oxy began reporting to the NMOCD using daily C-129's forms.

**2. Steps Taken to limit duration and magnitude of venting or flaring:**

Oxy became aware of a potential leak detected in the middle of a remote field on November 9, 2021 at 5 pm. Within 2 hours, on November 9, 2021, an Oxy field crew was deployed and detected a leak in an underground injector line to the Sterling Silver MDP1 33-4 8H well. Upon verification of the leak, Oxy immediately shut-in the well to stop the leak.

**Corrective Actions taken to eliminate the cause and reoccurrence of venting or flaring:**

The leak was discovered, verified and stopped on November 9, 2021.

The leak was caused by a pin sized hole in the steel piping of an underground injector line. The type of damage on this type of gas line is not a common occurrence and was not anticipated. We believe the leak was a sudden, unavoidable failure beyond Oxy's reasonable control. While this type of failure on this type of line is infrequent, Oxy has initiated a root cause analysis to determine why the leak may have occurred and how Oxy can prevent this type of event from happening in the future.

**District I**

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**District III**

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**District IV**

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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS

Action 63810

**QUESTIONS**

|                                                                    |                                                        |
|--------------------------------------------------------------------|--------------------------------------------------------|
| Operator:<br>OXY USA INC<br>P.O. Box 4294<br>Houston, TX 772104294 | OGRID:<br>16696                                        |
|                                                                    | Action Number:<br>63810                                |
|                                                                    | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

**QUESTIONS****Prerequisites**

Any messages presented in this section, will prevent submission of this application. Please resolve these issues before continuing with the rest of the questions.

|                   |                                                            |
|-------------------|------------------------------------------------------------|
| Incident Well     | [30-015-45387] STERLING SILVER MDP1 33 4 FEDERAL COM #008H |
| Incident Facility | Not answered.                                              |

**Determination of Reporting Requirements**

Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide additional guidance.

|                                                                                                                                                                                                                                                                                              |                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Was or is this venting and/or flaring caused by an emergency or malfunction                                                                                                                                                                                                                  | Yes                                               |
| Did or will this venting and/or flaring last eight hours or more cumulatively within any 24-hour period from a single event                                                                                                                                                                  | Yes                                               |
| Is this considered a submission for a venting and/or flaring event                                                                                                                                                                                                                           | Yes, minor venting and/or flaring of natural gas. |
| An operator shall file a form C-141 instead of a form C-129 for a release that, includes liquid during venting and/or flaring that is or may be a major or minor release under 19.15.29.7 NMAC.                                                                                              |                                                   |
| Was there or will there be at least 50 MCF of natural gas vented and/or flared during this event                                                                                                                                                                                             | Yes                                               |
| Did this venting and/or flaring result in the release of ANY liquids (not fully and/or completely flared) that reached (or has a chance of reaching) the ground, a surface, a watercourse, or otherwise, with reasonable probability, endanger public health, the environment or fresh water | No                                                |
| Was the venting and/or flaring within an incorporated municipal boundary or withing 300 feet from an occupied permanent residence, school, hospital, institution or church in existence                                                                                                      | No                                                |

**Equipment Involved**

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Equipment Involved                                | Flow Line - Injection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Additional details for Equipment Involved. Please specify | The leak was caused by a malfunction on the steel piping of the injector gas line which developed a pin sized hole. The type of damage on this type of injector line is not a common occurrence and was not anticipated. We believe the leak was a sudden, unavoidable failure beyond Oxy's reasonable control. While this type of failure is infrequent, Oxy has initiated a root cause analysis to determine why the leak may have occurred and how Oxy can prevent this type of event from happening in the future. Oxy contracts with third-party aerial survey contractors, and on November 9, 2021 at 5 pm, Oxy became aware of a potential leak detected in the middle of a remote field. Within 2 hours, Oxy's field crew was deployed to the remote area to search for the potential leak and an underground gas leak was discovered on the injector line to the Sterling Silver MDP1 33-4 8H. Upon verification of the leak, Oxy shut-in the well by 7 pm on November 9th, 2021 to stop the leak. |

**Representative Compositional Analysis of Vented or Flared Natural Gas**

Please provide the mole percent for the percentage questions in this group.

|                                                              |    |
|--------------------------------------------------------------|----|
| Methane (CH4) percentage                                     | 74 |
| Nitrogen (N2) percentage, if greater than one percent        | 3  |
| Hydrogen Sulfide (H2S) PPM, rounded up                       | 0  |
| Carbon Dioxide (CO2) percentage, if greater than one percent | 2  |
| Oxygen (O2) percentage, if greater than one percent          | 0  |

If you are venting and/or flaring because of Pipeline Specification, please provide the required specifications for each gas.

|                                                     |               |
|-----------------------------------------------------|---------------|
| Methane (CH4) percentage quality requirement        | Not answered. |
| Nitrogen (N2) percentage quality requirement        | Not answered. |
| Hydrogen Sulfide (H2S) PPM quality requirement      | Not answered. |
| Carbon Dioxide (CO2) percentage quality requirement | Not answered. |
| Oxygen (O2) percentage quality requirement          | Not answered. |

**Date(s) and Time(s)**

|                                                         |            |
|---------------------------------------------------------|------------|
| Date venting and/or flaring was discovered or commenced | 11/02/2021 |
|---------------------------------------------------------|------------|

|                                                         |          |
|---------------------------------------------------------|----------|
| Time venting and/or flaring was discovered or commenced | 12:00 AM |
| Time venting and/or flaring was terminated              | 11:59 PM |
| Cumulative hours during this event                      | 24       |

| Measured or Estimated Volume of Vented or Flared Natural Gas              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural Gas Vented (Mcf) Details                                          | Cause: Equipment Failure   Flow Line - Injection   Natural Gas Vented   Released: 74 Mcf   Recovered: 0 Mcf   Lost: 74 Mcf                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Natural Gas Flared (Mcf) Details                                          | Not answered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Other Released Details                                                    | Not answered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Additional details for Measured or Estimated Volume(s). Please specify    | Oxy contracts with third-party aerial survey contractors, and on November 9, 2021 at 5 pm, Oxy became aware of a potential leak detected in the middle of a remote field. Within 2 hours, Oxy's field crew was deployed to the remote area to search for the potential leak and an underground gas leak was discovered on the injector line to the Sterling Silver MDP1 33-4 8H. Upon verification of the leak, Oxy shut-in the well by 7 pm on November 9th, 2021 to stop the leak. Once the leak was verified and stopped, Oxy's Operations group then transitioned its focus on performing an extensive review to determine how long the leak may have gone on for. The group determined that the leak was isolated to the damaged injector gas line, and also identified a period from October 5, 2021 to October 7, 2021 where oil/water/gas (GOR) well tests dropped slightly. This decrease in the GOR led to a slight drop in gas and oil production, providing insight into the potential timing of when the leak first occurred. While not certain, the group used best engineering and operational estimates to determine that, based on the drop in GOR from well tests between October 5, 2021 to October 7, 2021, the leak potentially started on October 5, 2021 and continued until it was discovered by Oxy and stopped on November 9, 2021 at 7pm. Based on the well tests, historical production and pressure records, it is possible that a total of 2,651.7 mscf of gas may have leaked from the underground injector line. This estimated total covers (daily average released is 74 MSCFD) the timeframe from October 5, 2021 until November 9, 2021 when the leak was stopped. |
| Is this a gas only submission (i.e. only significant Mcf values reported) | Yes, according to supplied volumes this appears to be a "gas only" report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Venting or Flaring Resulting from Downstream Activity                      |               |
|----------------------------------------------------------------------------|---------------|
| Was or is this venting and/or flaring a result of downstream activity      | No            |
| Was notification of downstream activity received by you or your operator   | Not answered. |
| Downstream OGRID that should have notified you or your operator            | Not answered. |
| Date notified of downstream activity requiring this venting and/or flaring | Not answered. |
| Time notified of downstream activity requiring this venting and/or flaring | Not answered. |

| Steps and Actions to Prevent Waste                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For this event, the operator could not have reasonably anticipated the current event and it was beyond the operator's control. | True                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Please explain reason for why this event was beyond your operator's control                                                    | The leak was caused by a malfunction on the steel piping of the injector gas line which developed a pin sized hole. The type of damage on this type of injector line is not a common occurrence and was not anticipated. We believe the leak was a sudden, unavoidable failure beyond Oxy's reasonable control. While this type of failure is infrequent, Oxy has initiated a root cause analysis to determine why the leak may have occurred and how Oxy can prevent this type of event from happening in the future. Oxy contracts with third-party aerial survey contractors, and on November 9, 2021 at 5 pm, Oxy became aware of a potential leak detected in the middle of a remote field. Within 2 hours, Oxy's field crew was deployed to the remote area to search for the potential leak and an underground gas leak was discovered on the injector line to the Sterling Silver MDP1 33-4 8H. Upon verification of the leak, Oxy shut-in the well by 7 pm on November 9th, 2021 to stop the leak. |
| Steps taken to limit the duration and magnitude of venting and/or flaring                                                      | Oxy became aware of a potential leak detected in the middle of a remote field on November 9, 2021 at 5 pm. Within 2 hours, on November 9, 2021, an Oxy field crew was deployed and detected a leak in an underground injector line to the Sterling Silver MDP1 33-4 8H well. Upon verification of the leak, Oxy immediately shut-in the well to stop the leak.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Corrective actions taken to eliminate the cause and reoccurrence of venting and/or flaring                                     | The leak was discovered, verified and stopped on November 9, 2021. The leak was caused by a pin sized hole in the steel piping of an underground injector line. The type of damage on this type of gas line is not a common occurrence and was not anticipated. We believe the leak was a sudden, unavoidable failure beyond Oxy's reasonable control. While this type of failure on this type of line is infrequent, Oxy has initiated a root cause analysis to determine why the leak may have occurred and how Oxy can prevent this type of event from happening in the future.                                                                                                                                                                                                                                                                                                                                                                                                                          |

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CONDITIONS  
  
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|                                                                    |                                                        |
|--------------------------------------------------------------------|--------------------------------------------------------|
| Operator:<br>OXY USA INC<br>P.O. Box 4294<br>Houston, TX 772104294 | OGRID:<br>16696                                        |
|                                                                    | Action Number:<br>63810                                |
|                                                                    | Action Type:<br>[C-129] Venting and/or Flaring (C-129) |

CONDITIONS

| Created By    | Condition                                                                                                                                                                          | Condition Date |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| shelbyschoepf | If the information provided in this report requires an amendment, submit a [C-129] Amend Venting and/or Flaring Incident (C-129A), utilizing your incident number from this event. | 11/28/2021     |