



February 28, 2024

Michael Buchanan  
Environmental Specialist  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Via electronic mail with delivery confirmation to:  
[Michael.Buchanan@state.nm.us](mailto:Michael.Buchanan@state.nm.us)

**Re: Groundwater Monitoring and Sampling Plan  
O-9 Pipeline Release  
NMOCD Order Number: AP-31  
NMOCD Incident Number: NAUTOFWCO00437  
Rio Arriba County, New Mexico**

Dear Mr. Buchanan:

On behalf of the Benson-Montin-Greer Drilling Corporation (BMG), Animas Environmental Services, LLC (AES) has prepared this Groundwater Monitoring and Sampling Plan (Plan) for the O-9 Pipeline Release. This Plan is being prepared in response to direction BMG received from the New Mexico Oil Conservation Division (NMOCD) in a meeting held on December 28, 2023, and in a subsequent email from Michael Buchanan dated January 24, 2024. The purpose of this Plan is to address shortcomings identified by NMOCD in the Abatement Completion Report for this site, which was submitted on December 21, 2022. A topographic site location map and an aerial site location map are included as Figures 1 and 2, respectively.

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## 1.0 Site History

In the summer of 2000, the BMG O-9 pipeline located in Ojito Canyon failed, resulting in the release of approximately 20 barrels (bbls) of unrefined crude oil. This release took place in the Santa Fe National Forest near New Mexico Highway 520 (NM 520). The Canada Ojitos intermittent stream is located to the north of the release location, across NM 520.

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### *1.1 Initial Release and Investigation*

BMG conducted the initial response to the spill in the summer of 2000, excavating approximately 2,800 cubic yards (CY) of hydrocarbon-impacted soils and then backfilling the excavation with clean soil. Ten soil borings were completed on August 29 and 30, 2000 to assess environmental impacts from the O-9 pipeline release. Five of the borings were converted into monitor wells (MW-1 through MW-5). On September 20 and 21, 2001, seven additional soil borings were completed, of which three were converted into monitor wells (MW-6 through MW-8).

### *1.2 Abatement Plan*

BMG submitted a Stage 1 and Stage 2 abatement plan to New Mexico Oil Conservation Division (NMOCD) on November 28, 2001. Public notice requirements were completed by March 11, 2002. Further information required to complete the abatement plan was submitted to NMOCD on August 26, 2002. The 2002 abatement plan stated that BMG would investigate the full extent of groundwater impacts that resulted from the 2000 release from the O-9 pipeline.

### *1.3 Groundwater Monitoring and Sampling, 2019-2021*

AES performed 11 groundwater monitoring and sampling events at the site between April 2019 and December 2021. Results were submitted to NMOCD in reports dated:

- August 7, 2019
- December 6, 2019
- January 28, 2020
- May 22, 2020
- August 27, 2020
- December 1, 2020
- February 5, 2021
- May 3, 2021
- July 8, 2021
- November 30, 2021
- March 5, 2022

For these events, AES monitored the groundwater monitor well network at the site for depth to water and groundwater quality parameters and collected samples for laboratory analysis for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH).

#### 1.4 Soil Boring and Monitor Well Installation, November 2020

On November 4, 2020, AES installed three soil borings (SB-16 through SB-18) at the site to further delineate soil and dissolved-phase contamination at the site. Two of the borings were completed as 2-inch monitor wells (MW-9 and MW-10).

#### 1.5 Abatement Completion Report, December 2022

On July 28, 2022, AES submitted a Request for Variance under Section 19.15.30.9.D of the New Mexico Administrative Code (NMAC). This request asked NMOCD to grant a variance under 20.6.2.1210 NMAC to allow monitor wells MW-4, MW-9, and MW-10 to be plugged and abandoned without having demonstrated eight consecutive quarterly sampling events meeting the abatement standards in 19.15.30.9 NMAC, subsections A through C. This request was granted in correspondence from NMOCD dated October 20, 2022.

On December 21, 2022, AES submitted an Abatement Completion Report for the site. This report was rejected by the NMOCD in correspondence dated October 17, 2023, citing a failure to provide eight consecutive quarters of groundwater analytical data demonstrating that monitor wells MW-1, MW-2, MW-3, MW-5, and MW-8 met the abatement standards in 19.15.30.9 NMAC, subsections A through C. AES then submitted a second Request for Variance on October 23, 2023, requesting NMOCD to grant a variance to allow these five monitor wells to be plugged and abandoned without meeting the requirement for eight consecutive quarterly sampling events. This request was rejected by the NMOCD in correspondence dated November 21, 2023.

#### 1.6 Meeting with NMOCD, December 2023

On December 28, 2023, BMG and AES met with Michael Buchanan, Brandon Powell, and Rosa Romero of NMOCD. In the meeting, NMOCD stated that the presence of a non-aqueous product layer (NAPL) in well MW-5 in September 2020 represented a failure to meet the abatement standards in 19.15.30.9 NMAC, subsections A through C. AES maintained that the extensive sampling history of the monitor wells not covered by the July 2022 Request for Variance (consisting of eight consecutive sampling rounds with no detections of any VOCs or TPH in groundwater), in conjunction with the excavation of the source material, was sufficiently protective of human health and the environment. NMOCD requested additional quarterly sampling rounds for wells MW-1, MW-2, MW-3, MW-5, and MW-8. The history of wells at the site running dry was discussed, with AES expressing concern over how to interpret the requirement of eight *consecutive, quarterly* sampling rounds, if water was not present in a given well every quarter.

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## 2.0 Proposed Groundwater Monitoring and Sampling Plan

On January 24, 2024, AES received an email from Michael Buchanan requesting the preparation of a proposed plan to collect four quarterly rounds of samples.

### 2.1 Quarterly Monitoring and Sampling

AES proposes to perform four quarterly monitoring and sampling events at monitor wells MW-1, MW-2, MW-3, MW-5, and MW-8. Each sampling event will include the following tasks:

- In wells without a history of a residual NAPL sheen, an electronic water level meter will be utilized to record the distance from the top of the well casing to the top of groundwater, with 0.01-foot (ft) accuracy. If NAPL is present, and in wells with a history of NAPL, an electronic oil-water interface probe will be used to measure the depth to the top of product and the depth to the top of water with 0.01-ft accuracy. All fluid measurements will be recorded on a Groundwater Sample Collection Form.
- If NAPL is detected in any well without a previous history of NAPL, AES will notify the NMOCD Project Manager immediately.
- Each well will be purged with a new disposable bailer at approximately 0.5 to 1-gallon purging intervals for a total of at least three well volumes or until water quality measurements stabilize and are within 10 percent of the previously purged readings. Purge volumes will be calculated using the depth to water, total well depth, and well diameter. **Note that in wells with measurable NAPL that cannot be bailed off, no water quality measurements will be taken, and the wells will not be purged or sampled.**
- At each purging interval, water quality data, including pH, temperature, dissolved oxygen, specific conductivity, and oxidation reduction potential, will be measured using a multiparameter water quality meter. Purging and water quality data will be recorded on a Groundwater Sample Collection Form.
- Once a monitor well is determined to be adequately purged, a sample will be collected with a slow-release valve to minimize volatilization and disturbance of the sample. Groundwater will be transferred from the bailer into containers provided by the analytical laboratory.

Samples will be stored in an insulated cooler at less than 6°C until delivered to the analyzing laboratory, Eurofins Environmental Testing South Central, LLC (Eurofins Albuquerque), Albuquerque, New Mexico. One trip blank will be included in the sample cooler for quality control purposes.

## 2.2 Laboratory Analysis

All groundwater samples and trip blanks will be analyzed for volatile organic compounds (VOCs) per U.S. Environmental Protection Agency (USEPA) Method 8260B by Eurofins Albuquerque.

## 2.3 Contingency Plan for Dry Wells

MW-2 and MW-5 were dry in 2021 or did not have enough water present in the well to adequately purge and collect a sample. If any of the five wells is found to be dry, or if insufficient water is present in the well to collect a sample, AES will notify the NMOCD Project Manager immediately. AES will attempt to sample the well approximately 30 days later. If the well is found to be dry again, AES will notify the NMOCD Project Manager. AES proposes that such an occurrence (that is, a well being dry or having insufficient water to sample for two attempts in a row) would warrant the submission and approval of a Request for Variance under 19.15.30.9.D NMAC to allow a gap of longer than one quarter between sampling events.

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## 3.0 Deliverables

AES proposes to submit any necessary Requests for Variance as soon as two unsuccessful sampling attempts are made at any well.

After four consecutive, quarterly rounds of groundwater monitoring and sampling have been completed, AES will submit an Abatement Completion Report (ACR) for the site. This report will update the previously submitted ACR with the new field data and laboratory analytical results. AES anticipates that this will meet the requirements for site closure.

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## 4.0 Conclusions and Recommendations

Based on conversations and correspondence with the NMOCD, AES and BMG understand that the completion of the sampling plan described in Section 2 will be sufficient to demonstrate that this site has achieved abatement completion, provided residual NAPL is not detected, and all analytical results meet the abatement completion requirements given in 19.15.30.9 NMAC. Upon receipt of NMOCD's approval of this Plan, AES will schedule the first of the four planned quarterly sampling events and provide the NMOCD Project Manager with notification of the planned dates for field work.

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If you have any questions about this plan, please feel free to contact Angela Todd at (720) 537-6650 or Beth McNally at (505) 564-2281.

Respectfully Submitted,



Angela Todd  
Senior Project Manager



Elizabeth McNally, P.E.  
Principal

## Figures

1. Topographic Site Location Map
2. Aerial Site Map

## Attachment

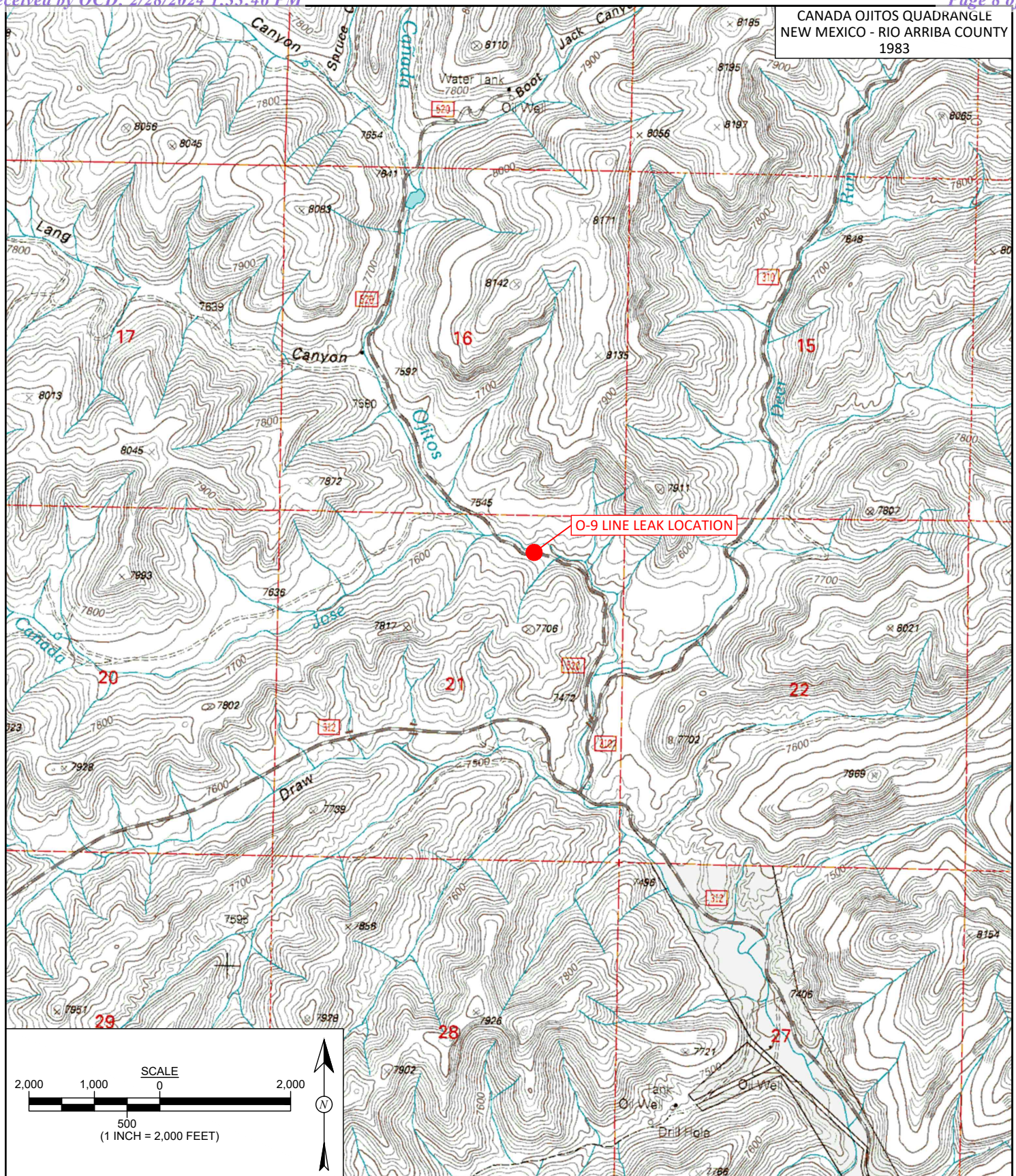
- A. January 24, 2024 email from Michael Buchanan to Angela Todd

Cc: Zach Stradling ([zstradling@bmqdrilling.com](mailto:zstradling@bmqdrilling.com))  
Benson-Montin-Greer Drilling Corporation  
4900 College Boulevard  
Farmington, NM 87402

Joshua Szopinski ([joshua.szopinski@usda.gov](mailto:joshua.szopinski@usda.gov))  
U.S. Forest Service  
Santa Fe National Forest  
P.O. Box 130  
Cuba, NM 87013

# Figures





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**DRAWN BY:**  
C. Lameman

**DATE DRAWN:**  
June 3, 2019

**REVISIONS BY:**  
C. Lameman

**DATE REVISED:**  
December 13, 2022

**CHECKED BY:**  
L. Cupps

**DATE CHECKED:**  
December 13, 2022

**APPROVED BY:**  
E. McNally

**DATE APPROVED:**  
December 13, 2022

## FIGURE 1

**TOPOGRAPHIC SITE LOCATION MAP**  
BENSON-MONTIN-GREER  
O-9 LINE LEAK LOCATION  
N½ OF NE¼, SECTION 21, T26N, R1W  
RIO ARriba COUNTY, NEW MEXICO



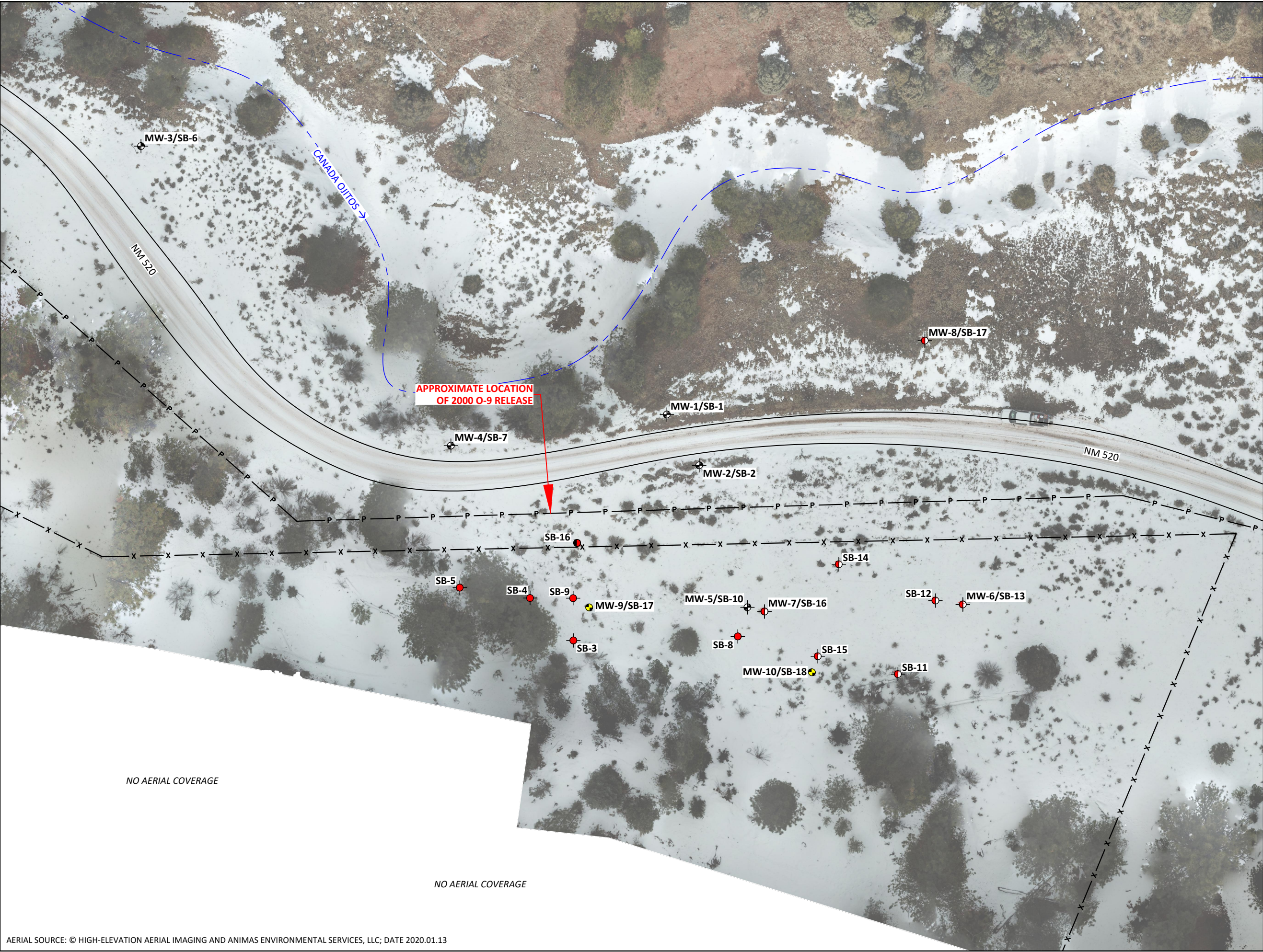


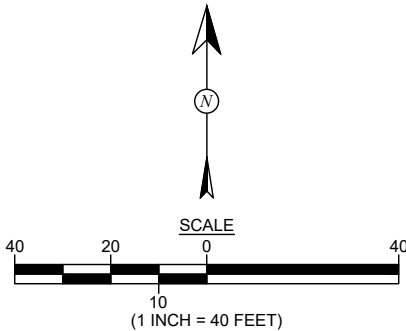
FIGURE 2

**MONITOR WELLS,  
SOIL BORING LOCATIONS  
AND AERIAL SITE LOCATION MAP**  
BENSON-MONTIN-GREER  
O-9 LINE LEAK LOCATION  
N½ OF NE¼, SECTION 21, T26N, R1W  
RIO ARriba COUNTY, NEW MEXICO



|                                     |  |
|-------------------------------------|--|
| <b>DRAWN BY:</b><br>C. Lameman      | <b>DATE DRAWN:</b><br>June 13, 2019        |
| <b>REVISIONS BY:</b><br>C. Lameman  | <b>DATE REVISED:</b><br>December 13, 2022  |
| <b>CHECKED BY:</b><br>A. Legderwood | <b>DATE CHECKED:</b><br>December 13, 2022  |
| <b>APPROVED BY:</b><br>E. McNally   | <b>DATE APPROVED:</b><br>December 13, 2022 |

- LEGEND**
- MONITOR WELL AND SOIL BORING LOCATION (INSTALLED AUGUST 2000)
  - APPROXIMATE SOIL BORING LOCATION (AUGUST 2000)
  - MONITOR WELL AND SOIL BORING LOCATION (INSTALLED SEPTEMBER 2001)
  - APPROXIMATE SOIL BORING LOCATION (SEPTEMBER 2001)
  - MONITOR WELL LOCATION (INSTALLED NOVEMBER 2020)
  - SOIL BORING LOCATION (INSTALLED NOVEMBER 2020)
  - P — APPROXIMATE BURIED PIPELINE
  - X — FENCE LINE





# Attachment

**From:** [Buchanan, Michael, EMNRD](#)  
**To:** [Angela Todd](#)  
**Subject:** Proposal for four (4) sampling events  
**Date:** Wednesday, January 24, 2024 8:46:15 AM

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Good morning, Angela

I hope you're doing well. Upper management on my side went ahead and had a meeting, and they have decided that BMG needs to submit a proposal plan including the contingency portion outlining how BMG will proceed to collect four (4) quarterly samples. For example, if there's insufficient groundwater volume, will go out and attempt again in 30 days, etc. And then please submit. If you have additional questions, please reach out to me.

Thank you,

**Mike Buchanan** • Environmental Specialist  
Environmental Bureau  
EMNRD - Oil Conservation Division  
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State of New Mexico  
Energy, Minerals and Natural Resources Department

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Michelle Lujan Grisham  
Governor

Dylan Fuge  
Deputy Secretary

Dylan Fuge, (Acting) Division Director  
Oil Conservation Division



Zach Stradling  
Benson-Montin-Greer Corporation  
4900 College Boulevard  
Farmington, NM 87402

April 08, 2024

**RE: Determination of Groundwater Monitoring and Sampling Plan Proposal to Satisfy Closure Requirements in 19.15.30.19 NMAC for BMG O-9 Pipeline Release (Incident #nAUTOfWCO00437), AP-31**

Mr. Stradling,

On 02/28/2024, The Oil Conservation Division (OCD) received a proposal for a Groundwater Monitoring and Sampling Plan prepared by Animas Environmental Services, LLC (AES) on behalf of Benson-Montin-Greer Corporation (BMG). OCD has reviewed the plan and determined it to be satisfactory with the following conditions of approval:

The 02/28/2024 submission for a GWM Groundwater Monitoring and Sampling Plan includes a discussion section for contingency in which, after thirty (30) days, if water is still not sufficient to take samples, NMOCD will be notified, and a second attempt will be conducted another thirty (30) days later. BMG has indicated they may submit a request for variance for a longer waiting period if two attempts are made and is still unsuccessful in sample collection. If a Request for Variance under 19.15.29 NMAC is submitted due to the need for an additional time extension for insufficient groundwater volume, and the variance timeframe is still not adequate for collection, the monitoring well(s) in question will be required to be drilled to a deeper depth, or alternative groundwater wells drilled, until groundwater level is sufficient for collection.

Due to the presence of a **NAPL Sheen** demonstrated in Table 2 in the submitted Abatement Completion Report, Polyaromatic Hydrocarbons (PAHs) must be sampled for all five (5) wells by EPA Method 8100 for all four (4) sampling events.

Lastly, following successful completion of all four (4) groundwater sampling events with each sample analysis below the allowable concentrations for all COCs, 19.15.30.9 paragraph D of the NMAC must be fulfilled: "The division shall consider the abatement of water contaminants measured in solid matrix samples of the vadose zone complete after one-time sampling from compliance stations the director approves." This will require a sampling plan to ensure the vadose zone is sampled and in compliance for all constituents.

If you have any questions, please contact Mike Buchanan of the Environmental Incident Group at (505) 490-0798 or by email at [michael.buchanan@emnrd.nm.gov](mailto:michael.buchanan@emnrd.nm.gov).

Respectfully,

Rosa Romero Environmental  
Bureau Chief  
RR/mb



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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**

CONDITIONS  
  
Action 318602

CONDITIONS

|  |  |
|--|--|
| Operator:<br>BENSON-MONTIN-GREER DRILLING CORP<br>4900 College Blvd.<br>Farmington, NM 87402 | OGRID:<br>2096   |
|  | Action Number:<br>318602   |
|  | Action Type:<br>[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT) |

CONDITIONS

| Created By       | Condition  | Condition Date |
|------------------|--|----------------|
| michael.buchanan | Letter of approval determination has been issued to BMG for the Ojito O-9 pipeline release. Attached at the end of this document submission. | 4/12/2024      |