



**March 18, 2020**

**New Mexico Department of Energy, Minerals and Natural Resources**

Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

**Attention: Mr. Bradford Billings**

*Transmitted via email: [bradford.billings@state.nm.us](mailto:bradford.billings@state.nm.us)*

**Re: Path Forward on South Hobbs G/SA Unit Operations (Order No. R-4934-F dated July 18, 2013, Case No. 14981) Impacting an Irrigation Well Located in Unit F of Section 5 in Township 19 South, Range 38 East NMPM (Latitude 32.690683, Longitude -103.173158) in Lea County, New Mexico**  
Ensolum Project No. 03B1417002

Dear Mr. Billings:

Ensolum, LLC (Ensolum), submits the following in response to the path forward the New Mexico Oil Conservation Division (OCD) describes in its February 26, 202 letter to Occidental Permian LTD (OXY). Ensolum shall perform environmental consulting services at the South Hobbs G/SA Unit (hereinafter referred to as the "Site") as described below.

**I. SCOPE OF SERVICES**

**A. Approval of Well Locations, Coordination and Notice to OCD**

Proposed monitoring well locations shall be submitted to OCD for approval prior to drilling. Ensolum, on behalf of Oxy, shall coordinate with OCD at least 72 hours before drilling and afford OCD staff notice and opportunity to be on site during drilling and installation of the monitoring wells.

Two (2) soil borings will be converted into monitoring wells in close proximity to the L-1458 well and near the South Hobbs G/SA Unit #183. The soil borings will be advanced to a maximum depth of approximately 110 feet below ground surface (bgs). The depth of 110 feet bgs is consistent with the total depth of the L-1458 (Levy) well. The monitoring well installed near L-1458 will be installed in the approximate location latitude 32.690608, longitude -103.173126. The monitoring well installed near South Hobbs G/SA Unit #183 will be installed in the approximate location latitude 32.689766, longitude -103.174188. The monitoring wells will be set back from a septic tank and/or sewer line a minimum of 50 feet as required.

Sampling and drilling equipment will be decontaminated by high pressure cleaning prior to commencement of the project and between the advancement of each soil boring.

**B. Monitoring Well Installation**

Prior to initiation of drilling activities, an *Application for Permit to Drill a Well with No Consumptive Use of Water (WR-07)* will be submitted to the New Mexico Office of the State Engineer. The monitoring well driller will hold a valid license issued by the New Mexico Office of the State Engineer. It is anticipated that the monitoring wells will be installed utilizing air rotary. The monitoring wells will be properly developed within 24 hours of installation.

The two (2) monitoring wells will presumptively be completed as follows, with OCD approval:

- Installation of 2-inch poly vinyl chloride (PVC) casing to approximately 110 feet bgs with up to 40 feet of machine slotted PVC (including riser);
- Silica sand approximately two (2) feet above machine slotted PVC with bentonite chips to surface; and
- Concrete pad (approximately 2' x 2') with locking vault cover and cap.

### **C. Groundwater Sampling Program**

Ensolum's groundwater sampling program will include the collection of a groundwater sample from each monitoring well within 48 hours of completion and development.

Prior to sample collection, Ensolum will gauge the depth to fluids in each monitoring well utilizing a water level meter and/or interface probe capable of detecting the presence of water and/or PSH up to an accuracy of 0.01 feet.

Groundwater samples will be collected utilizing low-flow minimal drawdown techniques. The monitoring wells will be purged until produced groundwater is consistent in color, clarity, pH, dissolved oxygen (DO), oxidation/reduction potential (ORP), temperature and conductivity.

The groundwater samples will be collected in laboratory prepared glassware and placed on ice in a cooler, which will be secured with a custody seal. The samples will be transported to Xenco Laboratories a third-party laboratory in Midland, TX along with a completed chain-of-custody form.

### **D. Laboratory Analytical Program**

The groundwater samples collected from the monitoring wells will be analyzed for total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO), TPH Diesel Range Organics (DRO) and Oil Range Organics (ORO) utilizing Environmental Protection Agency (EPA) Method 8015M, volatile organic compounds (VOCs) utilizing EPA Method SW-846 #8260 (full list), carbon dioxide utilizing Standard Method 4500 CO<sub>2</sub> C, dissolved sulfide utilizing EPA Method SW-846 #376.2, chloride using EPA Method #846 300 and pH utilizing EPA Method SW-846 #150.1. A summary of the analysis, sample type, and EPA-approved methods are presented below:

Analysis	Sample Type	EPA Method
TPH	Groundwater	SW-846 #8015M
VOCs	Groundwater	SW-846 #8260
Dissolved CO <sub>2</sub>	Groundwater	4500 CO <sub>2</sub> C
Dissolved S <sup>2-</sup>	Groundwater	SW-846 #376.2
Cl	Groundwater	SW-846 #300
pH	Groundwater	SW-846 #150.1

### E. Pressure/Presence Monitoring

Subsequent to the start of injection in South Hobbs G/SA Unit #290, the newly installed monitoring wells and well L-1458 will be monitored at least twice weekly for the development of pressure or the presence of gases (carbon dioxide, hydrogen sulfide and explosivity) using properly calibrated field instruments. If pressure develops or gases appear, OXY will be notified immediately.

### F. Additional Groundwater Monitoring

If pressure or gases do not appear in the newly installed monitoring wells or well L-1458, an additional groundwater monitoring event will be performed within 28 days of resuming injection. The monitoring wells will be sampled as specified in Section D. above.

### G. Reporting

Subsequent to resumption of injection, a weekly report will be provided to OXY for submittal to the OCD which will document field activities and monitoring results. If pressure or presence of gases are noted, OXY will be verbally notified immediately and a follow up report will be submitted.

We appreciate the opportunity to provide this workplan and look forward to working with you on this project. If you should have any questions or comments, please contact either of the undersigned.

Sincerely,  
**Ensolum, LLC**

  
**Liz Scaggs, P.G.**  
Principal  
[lscaggs@ensolum.com](mailto:lscaggs@ensolum.com)

  
**Beaux Jennings**  
Senior Project Manager  
[bjennings@ensolum.com](mailto:bjennings@ensolum.com)

cc: Mr. Dusty Wilson, OXY (electronically)  
Mr. Jim Griswold, NMOCD (electronically)  
Ms. Adrienne Sandoval, NMOCD (electronically)

Attachment – Figure 1



**LEGEND:**  
 ● Proposed Monitoring Well Location  
 ★ Oil/Gas Well Location

0 125 250  
 Feet

**ENSOLUM**  
 Environmental & Hydrogeologic Consultants

**PROPOSED MONITORING WELLS**  
 PERMIAN EOR, INC  
 S HOBBS G/SA UNIT  
 SE ¼ of the NW ¼, Sec 5, T29S, R38E, Hobbs, New Mexico  
 32.690683° N, 103.173158° W  
 PROJECT NUMBER: 03B1417002

**FIGURE**  
**1**

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 284096

**CONDITIONS**

Operator: OCCIDENTAL PERMIAN LTD P.O. Box 4294 Houston, TX 772104294	OGRID: 157984
	Action Number: 284096
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
michael.buchanan	Accepted for the record. Response to the path forward the New Mexico Oil Conservation Division (OCD) describes in its February 26, 2022 letter to Occidental Permian LTD (OXY). Ensolum shall perform environmental consulting services at the South Hobbs G/SA Unit	3/21/2024