

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 19 2018

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES **RECEIVED**
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM75501	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No. NMNM101360X	
8. Lease Name and Well No. NORTH SQUARE LAKE UNIT 205	
9. API Well No. 30-015-45856	
1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory 57570 SQUARE LAKE / GRAYBURG-SAN ANC
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone	11. Sec., T. R. M. or Blk. and Survey or Area SEC 29 / T16S / R31E / NMP
2. Name of Operator REMNANT OIL OPERATING LLC OGRID #370922	12. County or Parish EDDY
3a. Address 6 Desta Drive, Suite 5100 Midland TX 79705	13. State NM
3b. Phone No. (include area code) (432)695-6997	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface SWNE / 1800 FNL / 1500 FEL / LAT 32.894895 / LONG -103.888245 At proposed prod. zone SWNE / 1800 FNL / 1500 FEL / LAT 32.894895 / LONG -103.888245	
14. Distance in miles and direction from nearest town or post office* 7 miles	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1500 feet	16. No. of acres in lease 240
17. Spacing Unit dedicated to this well 40	
18. Distance from proposed location* to nearest well, drilling, completed, 466 feet applied for, on this lease, ft.	20. BLM/BIA Bond No. on file FED: NMB001311
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3959 feet	22. Approximate date work will start* 09/15/2017
	23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Vicki Johnston / Ph: (830)537-4599	Date 07/31/2017
Title Regulatory Consultant		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/07/2018
Title Supervisor Multiple Resources		
Office CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS
Approval Date: 03/07/2018

Need signed Plat 102.

RW 4-15-19
GAS CAPTURE

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications.

Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Approval Date: 03/07/2018

Additional Operator Remarks

Location of Well

1. SHL: SWNE / 1800 FNL / 1500 FEL / TWSP: 16S / RANGE: 31E / SECTION: 29 / LAT: 32.894895 / LONG: -103.888245 (TVD: 0 feet, MD: 0 feet)
BHL: SWNE / 1800 FNL / 1500 FEL / TWSP: 16S / RANGE: 31E / SECTION: 29 / LAT: 32.894895 / LONG: -103.888245 (TVD: 4700 feet, MD: 4700 feet)

BLM Point of Contact

Name: Sipra Dahal

Title: Legal Instruments Examiner

Phone: 5752345983

Email: sdahal@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Remnant Oil Operating, LLC
LEASE NO.:	NMNM-75501
WELL NAME & NO.:	North Square Lake Unit 205
SURFACE HOLE FOOTAGE:	1800' FNL & 1500' FEL
LOCATION:	Section 29, T. 16 S., R 31 E., NMPM
COUNTY:	County, New Mexico

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers.

1. A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the Grayburg formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of water flows in the Salado and Artesia Group.

Possibility of lost circulation in the Grayburg and San Andres.

1. The 8-5/8 inch surface casing shall be set at approximately 550 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
 3. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. **PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.
3. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

- b. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- c. The results of the test shall be reported to the appropriate BLM office.
- d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 030218

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Remnant Oil Operation LLC
LEASE NO.:	NMNM75501
WELL NAME & NO.:	205-Remnant Oil Operation LLC
SURFACE HOLE FOOTAGE:	1800'/N & 1500'/E
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 29, T16 S, R 31 E. NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Range
- Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- Road Section Diagram**
- Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

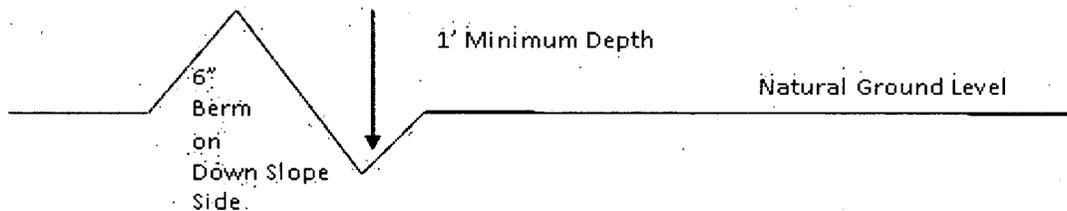
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out-sloping and in-sloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

- Construction Steps**
1. Salvage topsoil
 2. Construct road
 3. Redistribute topsoil
 4. Revegetate slopes

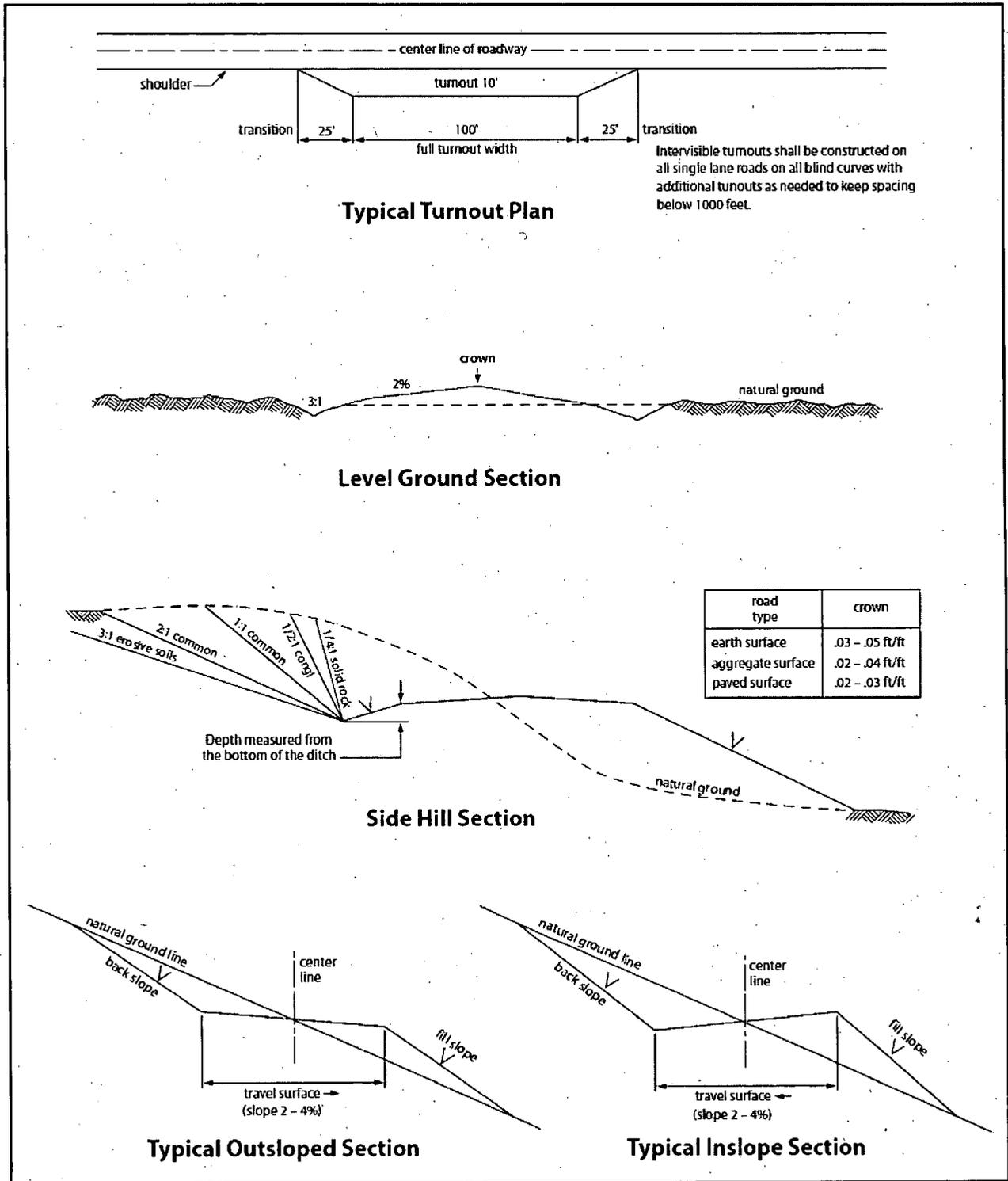


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. *(Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.)* Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in

writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and

any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leaks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 *et seq.* (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine

maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

- a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Remnant Oil Operation LLC
LEASE NO.:	NMNM75501
WELL NAME & NO.:	205-Remnant Oil Operation LLC
SURFACE HOLE FOOTAGE:	1800'N & 1500'E
BOTTOM HOLE FOOTAGE:	
LOCATION:	Section 29, T16 S, R 31 E. NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Range
- Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- Road Section Diagram**
- Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

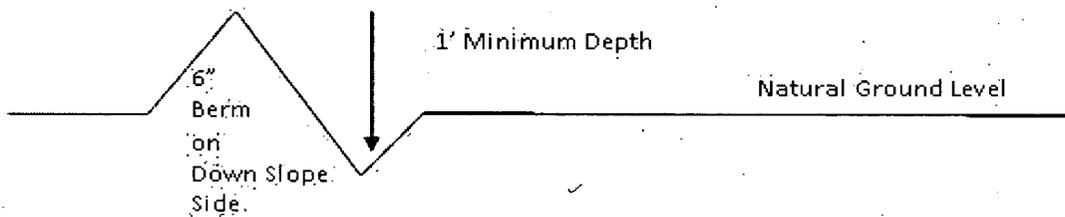
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out sloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

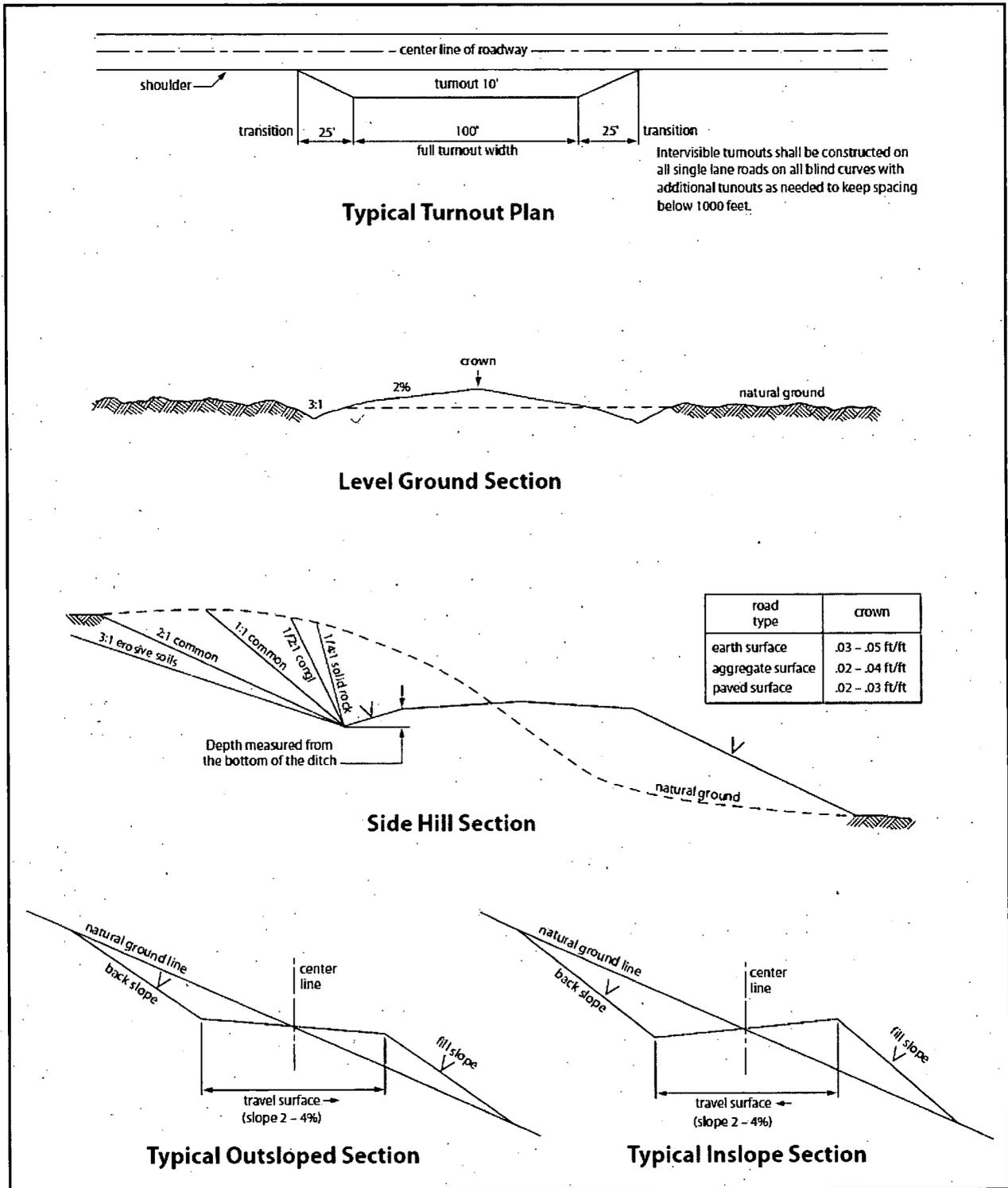


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in

writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and

any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.)

Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b.

A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine

maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

- a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Vicki Johnston

Signed on: 07/31/2017

Title: Regulatory Consultant

Street Address: 116 White Oak Trail

City: Boerne

State: TX

Zip: 78006

Phone: (830)537-4599

Email address: Vjohnston1@gmail.com

Field Representative

Representative Name: Will Gray

Street Address: 6 Desta Drive, Suite 5100

City: Midland

State: TX

Zip: 79705

Phone: (432)695-6997

Email address: will@remnantoil.com



APD ID: 10400013288	Submission Date: 07/31/2017	Highlighted data reflects the most recent changes Show Final Text
Operator Name: REMNANT OIL OPERATING LLC OGRID #370922		
Well Name: NORTH SQUARE LAKE UNIT	Well Number: 205	
Well Type: OIL WELL	Well Work Type: Drill	

Section 1 - General

APD ID: 10400013288	Tie to previous NOS? 10400012994	Submission Date: 07/31/2017
BLM Office: CARLSBAD	User: Vicki Johnston	Title: Regulatory Consultant
Federal/Indian APD: FED	Is the first lease penetrated for production Federal or Indian? FED	
Lease number: NMNM75501	Lease Acres: 240	
Surface access agreement in place?	Allotted?	Reservation:
Agreement in place? YES	Federal or Indian agreement: FEDERAL	
Agreement number: NMNM101360X		
Agreement name: NORTH SQUARE LAKE		
Keep application confidential? NO		
Permitting Agent? YES	APD Operator: REMNANT OIL OPERATING LLC OGRID #370922	
Operator letter of designation:	North_Square_Lake_Unit_205_Letter_of_Designation_05-01-2017.pdf	

Operator Info

Operator Organization Name: REMNANT OIL OPERATING LLC OGRID #370922

Operator Address: 6 Desta Drive, Suite 5100

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)695-6997

Operator Internet Address:

Zip: 79705

Section 2 - Well Information

Well in Master Development Plan? NO	Mater Development Plan name:	
Well in Master SUPO? NO	Master SUPO name:	
Well in Master Drilling Plan? NO	Master Drilling Plan name:	
Well Name: NORTH SQUARE LAKE UNIT	Well Number: 205	Well API Number:
Field/Pool or Exploratory? Field and Pool	Field Name: SQUARE LAKE	Pool Name: GRAYBURG-SAN ANDRES
Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL		

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: SINGLE WELL

Multiple Well Pad Name:

Number:

Well Class: VERTICAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 7 Miles

Distance to nearest well: 466 FT

Distance to lease line: 1500 FT

Reservoir well spacing assigned acres Measurement: 40 Acres

Well plat: North_Square_Lake_Unit_205_C102_20170919141325.pdf

Well work start Date: 09/15/2017

Duration: 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	180 0	FNL	150 0	FEL	16S	31E	29	Aliquot SWNE	32.89489 5	- 103.8882 45	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 75501	395 9	0	0
BHL Leg #1	180 0	FNL	150 0	FEL	16S	31E	29	Aliquot SWNE	32.89489 5	- 103.8882 45	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 75501	-741 0	470 0	470 0



March 24, 2017

DESIGNATION OF AGENT

Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220

Re: Agent Authorization

To Whom It May Concern:

Please be informed that Vicki Johnston is an Agent employed by Gray Surface Specialties. She is authorized to prepare and submit APDs, Sundry Notices, and other BLM-required forms on behalf of Remnant Oil Operating, LLC, OGRID 370922

Vicki can be contacted as follows:

- Telephone: (830) 537-4599 or (281) 468-2448
- Email: vjohnston1@gmail.com
- Mailing Address: 116 White Oak Trail, Boerne, Texas 78006

Sincerely,

A handwritten signature in cursive script that reads 'E. W. Gray II'.

E. W. Gray, II
Chief Executive Officer

Remnant Oil Company
6 Desta Drive, Suite 5100 - Midland, Texas 79705
OFFICE (432) 695-6997 EMAIL info@remnantoil.com
www.remnantoil.com

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) 476-333 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1226 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number	Pool Code 57570	Pool Name SQUARE LAKE; GRAYBURG-SAN ANDRES
Property Code	Property Name NORTH SQUARE LAKE UNIT	Well Number 205
OGRID No. 370922	Operator Name REMNANT OIL OPERATING, LLC	Elevation 3959'

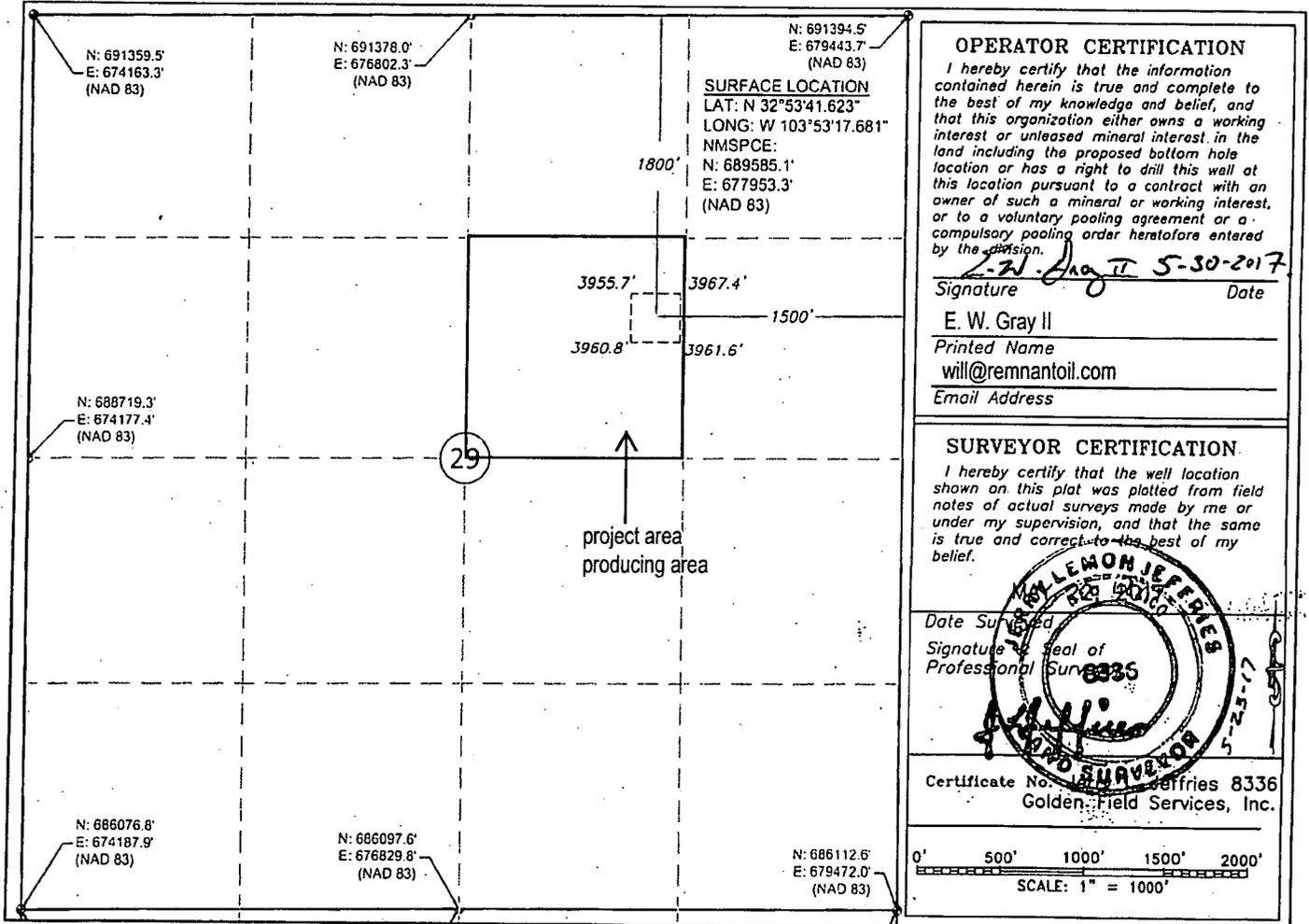
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/North line	Feet from the	West/East line	County
G	29	16 S	31 E		1800	NORTH	1500	EAST	EDDY

Bottom Hole Location If Different From Surface

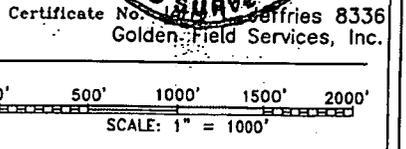
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						
40									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION
 I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
 Signature: E. W. Gray II Date: 5-30-2017
 Printed Name: E. W. Gray II
 Email Address: will@remnantoil.com

SURVEYOR CERTIFICATION
 I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
 Date Surveyed: 5-30-2017
 Signature: [Signature] Seal of Professional Surveyor: 8335
 Certificate No.: Jeffries 8336
 Golden-Field Services, Inc.





APD ID: 10400013288

Submission Date: 07/31/2017

Highlighted data reflects the most recent changes

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3959	0	0	OTHER	NONE	No
2	RUSTLER	3440	519	519	DOLOMITE, ANHYDRITE	NONE	No
3	TOP SALT	3217	742	742	SALT, ANHYDRITE	NONE	No
4	BASE OF SALT	2316	1643	1643	SALT, ANHYDRITE	NONE	No
5	TANSILL	2261	1698	1698	SALT, ANHYDRITE	NONE	No
6	YATES	2159	1800	1800	SANDSTONE, ANHYDRITE	NONE	No
7	SEVEN RIVERS	1869	2090	2090	DOLOMITE, ANHYDRITE	NONE	No
8	BOWERS	1511	2448	2448	SANDSTONE	NONE	No
9	QUEEN	1271	2688	2688	SANDSTONE, DOLOMITE, ANHYDRITE	NONE	No
10	PENROSE	1031	2928	2928	SANDSTONE	NONE	No
11	GRAYBURG	883	3076	3076	LIMESTONE, DOLOMITE	NONE	No
12	LOCO	808	3151	3151	SANDSTONE	NONE	No
13	METEX	716	3243	3243	SANDSTONE	NONE	No
14	PREMIER	623	3336	3336	SANDSTONE	NONE	No
15	SAN ANDRES	545	3414	3414	DOLOMITE	USEABLE WATER, NATURAL GAS, OIL	Yes
16	LOVINGTON	478	3481	3481	SANDSTONE	USEABLE WATER, NATURAL GAS, OIL	Yes
17	JACKSON MIDDLE	-327	4286	4286	LIMESTONE, DOLOMITE	USEABLE WATER, NATURAL GAS, OIL	Yes

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 6000

Equipment: 2K Choke Manifold. Per Onshore Order #2 for 2M psi BOPE, a minimum 2" steel choke line to be used. If a minimum 2" x 2000 psi high pressure flexible choke line is substituted, the spec sheet, visual inspection test, and hydrostatic pressure test certification matching the hose in service will be on location.

Requesting Variance? NO

Variance request:

Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 2000 high per Onshore Order #2. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked each trip out of the hole.

Choke Diagram Attachment:

North_Square_Lake_Unit_205_Choke_Manifold_Diagram_07-07-2017.pdf

BOP Diagram Attachment:

North_Square_Lake_Unit_205_BOP_Diagram_07-07-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	12.25	8.625	NEW	API	N	0	550	0	550	-747	-1297	550	J-55	24	STC	4	2.5	DRY	30	DRY	28
2	PRODUCTION	7.875	5.5	NEW	API	N	0	4700	0	4700	-747	-5447	4700	J-55	15.5	STC	2	1.9	DRY	4	DRY	3.4

Casing Attachments

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

North_Square_Lake_Unit_205_Casing_Assumptions_05-01-2017.pdf

Casing ID: 2 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

North_Square_Lake_Unit_205_Casing_Assumptions_05-02-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	550	350	1.32	14.8	454	200	Class C	2% CaCl

PRODUCTION	Lead		0	4700	450	1.9	12.9	855	130	Class C	6% gel, 5% salt
PRODUCTION	Tail		0	4700	200	1.32	14.8	264	130	Class C	1% CaCl

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: High vis sweeps for cleaning, LCM sweeps to minimize losses, and pit markers used for pit volume balance.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	725	SPUD MUD	8.4	8.8							
725	4000	SALT SATURATED	10	10.2							
4000	4770	SALT SATURATED	10	10.2							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Mud loggers rigged up and operating at 1500', catching 10' samples.

List of open and cased hole logs run in the well:

CALIPER,CBL,CNL,DLL,GR,OTH

Other log type(s):

VDL

Coring operation description for the well:

No coring.

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1800

Anticipated Surface Pressure: 766

Anticipated Bottom Hole Temperature(F): 110

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

North_Square_Lake_Unit_205_H2S_Plan_07-05-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

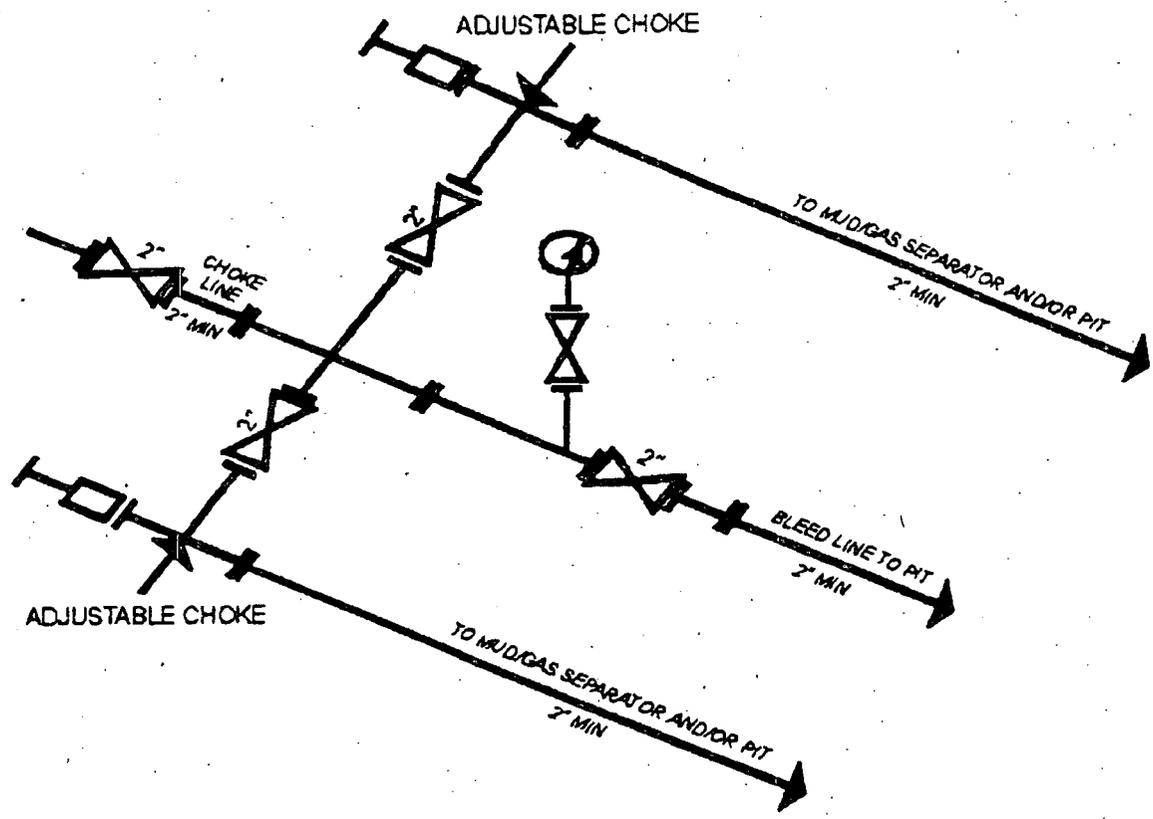
Other proposed operations facets description:

Other proposed operations facets attachment:

North_Square_Lake_Unit_205_Drilling_Plan_Report_07-31-2017.pdf

North_Square_Lake_Unit_205_Gas_Capture_Plan_20171030105630.pdf

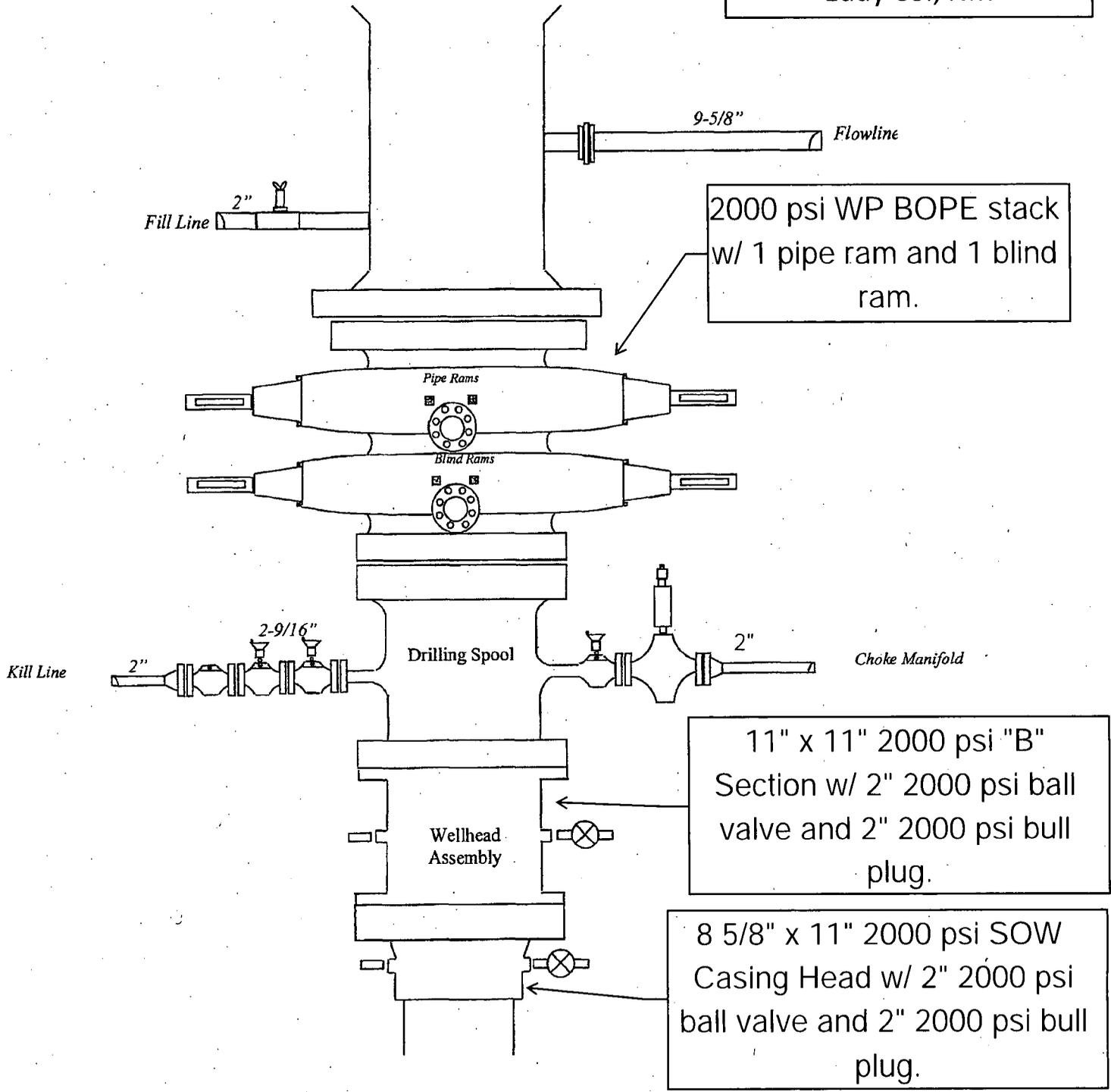
Other Variance attachment:



2M Choke Manifold Equipment

<p>Remnant Oil Company NSLU #205 1800 FNL & 1500 FEL Sec 29 16S 31E Eddy Co., NM</p>
--

Remnant Oil Company
NSLU #205
1800 FNL & 1500 FEL
Sec 29 16S 31E
Eddy Co., NM



REMNANT OIL OPERATING, LLC

**HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN
FOR DRILLING / COMPLETING / WORKOVER / FACILITY
WITH THE EXPECTATION OF H₂S IN EXCESS OF 100 PPM**

**REMNANT OIL OPERATING, LLC
NEW DRILL WELL:**

NORTH SQUARE LAKE UNIT #205

SL: 1800' FNL & 1500' FEL, Unit G

Sec 29, T16S, R31E

BHL: 1800' FNL & 1500' FEL, Unit G

Sec 29, T16S, R31E

Eddy County, New Mexico

This well/facility is not expected to have H₂S, but the following is submitted as requested.

TABLE OF CONTENTS

I.	General Emergency Plan	Page 3
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VI.	Public Evacuation Plan	Page 5
VII.	Procedure for Igniting an Uncontrollable Condition	Page 6
VIII.	Required Emergency Equipment	Page 6
IX.	Using Self-Contained Breathing Air Equipment (SCBA)	Page 7
X.	Rescue & First Aid for Victims of H ₂ S Poisoning	Page 7
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XII.	H ₂ S Physical Properties	Page 9
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XIV.	Vicinity Map	Page 11

GENERAL H2S EMERGENCY ACTIONS

In the event of any evidence of H2S emergency, the following plan will be initiated:

1. All personnel will immediately evacuate to an upwind and if possible uphill "safe area."
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (self-contained breathing apparatus).
3. Always use the "buddy system."
4. Isolate the well/problem if possible.
5. Account for all personnel.
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self-contained breathing apparatus.
2. Remove all personnel to the "safe area" (always use the "buddy system").
3. Contact company representative if not on location.
4. Set in motion the steps to protect and/or remove the general public to any upwind "safe area." Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies:
City Police - City streets
State Police - State Roads
County Sheriff - County Roads
7. Call the NMOCD.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harm's way, he will immediately notify public safety personnel.

EMERGENCY CALL LIST

	<u>Office</u>	<u>Cell</u>
Michael McGraw	(432) 695-6997	(432) 638-0127
Will Gray	(432) 695-6997	(832) 270-6479
Reed Gilmore	(432) 556-8811	
Remnant Oil Operating Emergency Phone	(432) 695-6997 (832) 270-6479	

EMERGENCY RESPONSE NUMBERS

Eddy County, New Mexico

State Police – Carlsbad	575-885-3137
City Police – Carlsbad	575-885-2111
State & City Police - Artesia	575-746-2703
Eddy County Sheriff - Carlsbad	575-887-7551
Fire Department – Carlsbad	575-887-3798
Fire Department – Artesia	575-746-2701
Local Emergency Planning – Carlsbad	575-887-6544
Local Emergency Planning – Artesia	575-746-2122
New Mexico Oil Conservation Division - Carlsbad	575-748-1283
Randy Dade – OCD District Supervisor-Carlsbad	575-626-1372 (cell)
Bureau of Land Management - Carlsbad	575-234-5972
State Emergency Response Center (SERC) – Santa Fe	505-476-9600
24 hour	505-827-9126
NM State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington DC)	800-424-8802
Other:	
Boots & Coots IWC	800-256-9688 or 281-934-8884
Cudd Pressure Control	432-699-0139 or 432-563-3356
Halliburton	575-746-2757
BJ Services	575-746-3569
Flight for Life – 4000 24 th St, Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Ambulance – 2301 Yale Blvd., Albuquerque, NM	505-842-4433
SB Aid Med Serv – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949

PROTECTION OF THE GENERAL (ROE) RADIUS OF EXPOSURE

In the event greater than 100 ppm H₂S is present, the ROE calculations will be done to determine if the following conditions exist and whether the Plan must be activated:

- * 100 ppm at any public area (any place not associated with this site)
- * 500 ppm at any public road (any road which the general public may travel).
- * 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H₂S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE: (H₂S concentrations in decimal form)

$$\text{ROE} = [(1.589)(\text{H}_2\text{S concentration})(Q)]^{(.6258)}$$

10,000 ppm + = .01
1,000 ppm + = .001

Calculation for the 500 ppm ROE: 100 ppm + = .0001
10 ppm + = .00001

$$\text{ROE} = [(0.4546)(\text{H}_2\text{S concentration})(Q)]^{(.6258)}$$

EXAMPLE: If a well/facility has been determined to have 650 ppm H₂S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFD then:

ROE for 100 ppm ROE=[(1.589)(.00065)(200,000)]^{0.6258}

ROE=28.1'

ROE for 500 ppm ROE=[(.4546)(.00065)(200,000)]^{0.6258}

ROE=12.8'

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

PUBLIC EVACUATION PLAN

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
2. A trained person in H₂S safety shall monitor with detection equipment the H₂S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H₂S, oxygen, and flammable values.
3. Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
4. The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the affected area is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION

The decision to ignite a well should be a last resort with one, if not both, of the following conditions:

1. Human life and/or property are endangered.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

Instructions for Igniting the Well:

1. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
2. One of the people will be a qualified safety person who will test the atmosphere for H₂S, oxygen and LFL. The other person will be the designated company representative.
3. Ignite upwind from a distance no closer than necessary. Make sure that the ignition site has the maximum escape avenue available. A 25mm flare gun with a range of approximately +/- 500 feet shall be used to ignite the gas.
4. Before igniting, check for the presence of combustible gases.
5. After igniting, continue emergency actions and procedures as before.

REQUIRED EMERGENCY EQUIPMENT

1. Breathing Apparatus

- Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- Work / Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

2. Signage and Flagging

- One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- A Colored Condition flag will be on display reflecting the condition at the site at that time.

3. Briefing Area

- Two perpendicular areas will be designated by signs and readily accessible.

4. Windsocks

- Two windsocks will be placed in strategic locations, visible from all angles.

5. H₂S Detectors and Alarms

- The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a

minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer):

- Rig Floor
- Bell Nipple
- End of flow line or where well bore fluid is being discharged

6. Auxiliary Rescue Equipment

- Stretcher
- Two OSHA full body harnesses
- 100' of 5/8" OSHA approved rope
- One 20 lb. Class ABC fire extinguisher
- Communication via cell phones on location and vehicles on location

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)

1. SCBA should be worn when any of the following are performed:
 - Working near the top or on top of a tank
 - Disconnecting any line where H₂S can reasonably be expected.
 - Sampling air in the area to determine if toxic concentrations of H₂S exist.
 - Working in areas where over 10 ppm of H₂S has been detected.
 - At any time there is a doubt of the level of H₂S in the area.
2. All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
3. Facial hair and standard eyeglasses are not allowed with SCBA.
4. Contact lenses are never allowed with SCBA.
5. When breaking out any line where H₂S can reasonably be expected.
6. After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
7. All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF H₂S POISONING

- Do not panic.
- Remain calm and think.
- Put on the breathing apparatus.
- Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or crosswind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and/or CPR as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

TOXIC EFFECTS OF H2S POISONING

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. Toxicity table for H2S and physical effects are shown in Table II.

Table 1
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Methane	CH4	.55	4.7% LEL	14% UEL	

Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H2S is 19 PPM.
- C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H2S is 100 PPM.
- D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

TABLE II
Toxicity Table of H2S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes.
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H₂S

The properties of all gases are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

COLOR – TRANSPARENT

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence, a fact that makes the gas extremely dangerous to be around.

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs." For this reason it earned its common name "sour gas." However, H₂S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H₂S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.3% TO 46%

Mixed with the right proportion of air or oxygen, H₂S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO₂), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H₂S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H₂S may release the gas into the air.

BOILING POINT – (-76 degrees Fahrenheit)

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.



APD ID: 10400013288

Submission Date:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17691	UNKNOWN	3959	0	0	OTHER	NONE	No
17746	RUSTLER	3440	519	519	DOLOMITE, ANHYDRITE	NONE	No
17718	TOP SALT	3217	742	742	SALT, ANHYDRITE	NONE	No
17722	BASE OF SALT	2316	1643	1643	SALT, ANHYDRITE	NONE	No
17724	TANSILL	2261	1698	1698	SALT, ANHYDRITE	NONE	No
17694	YATES	2159	1800	1800	SANDSTONE, ANHYDRITE	NONE	No
15319	SEVEN RIVERS	1869	2090	2090	DOLOMITE, ANHYDRITE	NONE	No
17732	BOWERS	1511	2448	2448	SANDSTONE	NONE	No
15318	QUEEN	1271	2688	2688	SANDSTONE, DOLOMITE, ANHYDRITE	NONE	No
15321	PENROSE	1031	2928	2928	SANDSTONE	NONE	No
17683	GRAYBURG	883	3076	3076	LIMESTONE, DOLOMITE	NONE	No
17692	LOCO	808	3151	3151	SANDSTONE	NONE	No
15322	METEX	716	3243	3243	SANDSTONE	NONE	No
17690	PREMIER	623	3336	3336	SANDSTONE	NONE	No
15314	SAN ANDRES	545	3414	3414	DOLOMITE	USEABLE WATER, NATURAL	Yes
17777	LOVINGTON	478	3481	3481	SANDSTONE	USEABLE WATER, NATURAL	Yes
17712	JACKSON MIDDLE	-327	4286	4286	LIMESTONE, DOLOMITE	USEABLE WATER, NATURAL	Yes

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 6000

Equipment: 2K Choke Manifold. Per Onshore Order #2 for 2M psi BOPE, a minimum 2" steel choke line to be used. If a minimum 2" x 2000 psi high pressure flexible choke line is substituted, the spec sheet, visual inspection test, and hydrostatic pressure test certification matching the hose in service will be on location.

Requesting Variance? NO

Variance request:

Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 2000 high per Onshore Order #2. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked each trip out of the hole.

Choke Diagram Attachment:

North_Square_Lake_Unit_205_Choke_Manifold_Diagram_07-07-2017.pdf

BOP Diagram Attachment:

North_Square_Lake_Unit_205_BOP_Diagram_07-07-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	12.25	8.625	NEW	API	N	0	550	0	550	-747	-1297	550	J-55	24	STC	4	2.5	DRY	30	DRY	28
2	PRODUCTI ON	7.875	5.5	NEW	API	N	0	4700	0	4700	-747	-5447	4700	J-55	15.5	STC	2	1.9	DRY	4	DRY	3.4

Casing Attachments

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

North_Square_Lake_Unit_205_Casing_Assumptions_05-01-2017.pdf

Casing ID: 2 String Type: PRODUCTION

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

North_Square_Lake_Unit_205_Casing_Assumptions_05-02-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	550	0	550	350	1.32	14.8	454	200	Class C	2% CaCl
PRODUCTION	Lead	4700	0	4700	450	1.9	12.9	855	130	Class C	6% gel, 5% salt
PRODUCTION	Tail		0	4700	200	1.32	14.8	264	130	Class C	1% CaCl

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: High vis sweeps for cleaning, LCM sweeps to minimize losses, and pit markers used for pit volume balance.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	725	SPUD MUD	8.4	8.8							
725	4000	SALT SATURATED	10	10.2							
4000	4770	SALT SATURATED	10	10.2							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Mud loggers rigged up and operating at 1500', catching 10' samples.

List of open and cased hole logs run in the well:

CALIPER,CBL,CNL,DLL,GR,OTH

Other log type(s):

VDL

Coring operation description for the well:

No coring.

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1800

Anticipated Surface Pressure: 764.68

Anticipated Bottom Hole Temperature(F): 110

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

North_Square_Lake_Unit_205_H2S_Plan_07-05-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Original
to Appropriate
District Office

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

GAS CAPTURE PLAN

Date: October 11, 2017

Original Operator & OGRID No.: Remnant Oil Operating LLC OGRID 370922
 Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API 30-015-xxxxx	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
North Square Lake Unit #205		G-29-16S-31E	1800' FNL 1500' FEL	None	None Planned	APD Submission

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete. This well is not expected to make any gas.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and any gas encountered will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
- Compressed Natural Gas – On lease
- NGL Removal – On lease



APD ID: 10400013288

Submission Date: 07/31/2017

Highlighted data
reflects the most
recent changes

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

North_Square_Lake_Unit_205_Existing_Roads_06-05-2017.pdf

North_Square_Lake_Unit_205_Proposed_Access_Road_06-05-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

North_Square_Lake_Unit_205_Proposed_Access_Road_06-05-2017.pdf

New road type: TWO-TRACK

Length: 28

Feet

Width (ft.): 50

Max slope (%): 2

Max grade (%): 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 30

New road access erosion control: Road will be crowned and ditched to prevent erosion.

New road access plan or profile prepared? NO

New road access plan attachment:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: 6" rolled and compacted caliche.

Access onsite topsoil source depth: 6

Offsite topsoil source description: Surfacing material will consist of native caliche obtained from the well site if possible. Otherwise, caliche will be hauled from nearest caliche pit.

Onsite topsoil removal process: Grading

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage and be consistent with local drainage patterns

Road Drainage Control Structures (DCS) description: No drainage control structures necessary.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

North_Square_Lake_Unit_205_One_Mile_Radius_07-05-2017.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: If well is productive, a flow line (plat attached) will be installed above ground to the existing tank battery in the NWNW of Section 29, Township 16S, Range 29E (see attached diagram of existing tank battery and map showing tank battery location).

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Production Facilities map:

North_Square_Lake_Unit_205_Existing_Production_Facilities_07-05-2017.pdf

North_Square_Lake_Unit_205_Pipeline_to_Tank_Battery_07-05-2017.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: WATER RIGHT

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 0

Source volume (acre-feet): 0

Source volume (gal): 0

Water source and transportation map:

North_Square_Lake_Unit_205_Water_Source_Map_Primary_and_Secondary_07-31-2017.pdf

North_Square_Lake_Unit_205_Water_Source_Tie_In_and_Transfer_07-31-2017.pdf

Water source comments: Primary: Loco Hills Water Solutions for all water used in drilling. Secondary: Grier Battery water station on the NSLU located in the SE4NW4 Sec 31, T16S, R31E Estimated water volume: 1900 acre feet per annum
New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Primary Caliche Pit: NESW, Sec 35, T-16S, R-31E Secondary Caliche Pit: NESE, Sec 31, T-16S, R-31E

Construction Materials source location attachment:

North_Square_Lake_Unit_205_Construction_Materials_Location_Maps_07-31-2017.pdf

Section 7 - Methods for Handling Waste

Waste type: FLOWBACK

Waste content description: Oil

Amount of waste: 500 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** FEDERAL

Disposal type description:

Disposal location description: Tank battery

Waste type: SEWAGE

Waste content description: Human waste

Amount of waste: 50 pounds

Waste disposal frequency : Weekly

Safe containment description: Porta-toilet

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Serviced by toilet rental company

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Waste type: GARBAGE

Waste content description: Trash

Amount of waste: 200 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash trailer

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: COMPLETIONS/STIMULATION

Waste content description: Completion Fluid

Amount of waste: 1000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: DRILLING

Waste content description: Cuttings

Amount of waste: 643 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: DRILLING

Waste content description: Drilling Fluid

Amount of waste: 1200 barrels

Waste disposal frequency : Daily

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: PRODUCED WATER

Waste content description: Produced water

Amount of waste: 5000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Tank battery

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) Reserve pit width (ft.)

Reserve pit depth (ft.) Reserve pit volume (cu. yd.)

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks

Cuttings area length (ft.) Cuttings area width (ft.)

Cuttings area depth (ft.) Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

North_Square_Lake_Unit_205_Well_Site_Layout_Diagram_07-07-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name:

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion.

Drainage/Erosion control reclamation: Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible

Wellpad long term disturbance (acres): 0.51

Wellpad short term disturbance (acres): 2.1

Access road long term disturbance (acres): 0.019

Access road short term disturbance (acres): 0.019

Pipeline long term disturbance (acres): 0.5589566

Pipeline short term disturbance (acres): 0.5589566

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.0879567

Total short term disturbance: 2.6779566

Reconstruction method: No interim reclamation planned. Tank battery already exists for this well. Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible.

Topsoil redistribution: After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible.

Soil treatment: No treatment necessary.

Existing Vegetation at the well pad: Mesquite and shinnery oak.

Existing Vegetation at the well pad attachment:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Existing Vegetation Community at the road: Mesquite and shinnery oak.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Mesquite and shinnery oak.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/Q

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: PERENNIAL GRASS

Seed source: COMMERCIAL

Seed name: LPC-Seed Mix 2

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location: NEW ACCESS ROAD,NEW ACCESS ROAD,WELL PAD,WELL PAD

PLS pounds per acre: 5

Proposed seeding season: SPRING

Seed Summary

Total pounds/Acre: 5

Seed Type	Pounds/Acre
PERENNIAL GRASS	5

Seed reclamation attachment:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Operator Contact/Responsible Official Contact Info

First Name: Michael

Last Name: McGraw

Phone: (432)695-6997

Email: michael@remnantoil.com

Seedbed prep: Rip and add topsoil.

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: All areas will be monitored, and weeds will be treated as necessary.

Weed treatment plan attachment:

Monitoring plan description: Will monitor after final reclaim.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: Utilize closed loop.

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: Remnant Oil Operating, LLC, is a Permian Basin PA participant. Payment to the PB Cultural Resource Mitigation Fund has been submitted via FedEx.

Use a previously conducted onsite? NO

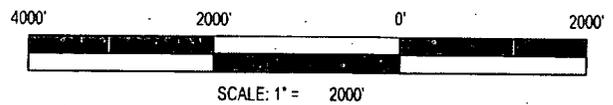
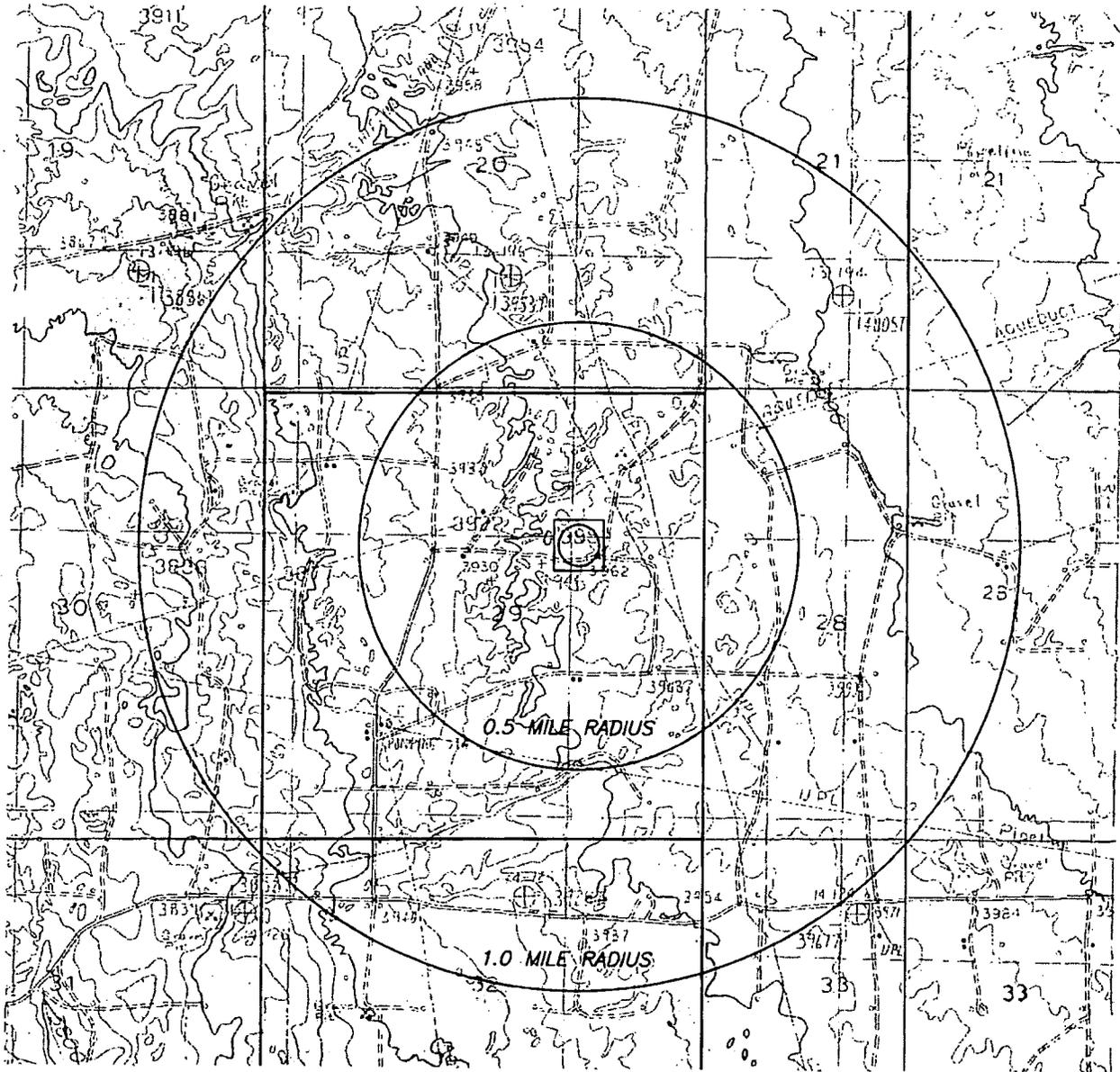
Previous Onsite information:

Other SUPO Attachment

North_Square_Lake_Unit_205_Form_8140_9_07-31-2017.pdf

North_Square_Lake_Unit_205_SUPO_Report_07-31-2017.pdf

SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM,
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REMNANT OIL OPERATING, LLC

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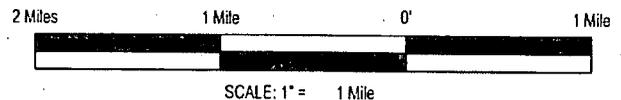
NSLU 205

NORTH SQUARE LAKE UNIT 205
LOCATED 1800' FNL AND 1500' FEL
SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM,
EDDY COUNTY, NEW MEXICO



Directions of Location:
From Highway 31 on Supee Road Northwest for 3.6 miles to East Square Lake Road. Then West 3.3 miles on East Square Lake to Lease Road. Then North on lease road 0.8 miles. Then East on lease road 0.3 miles to location.



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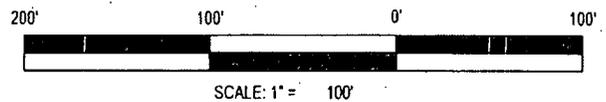
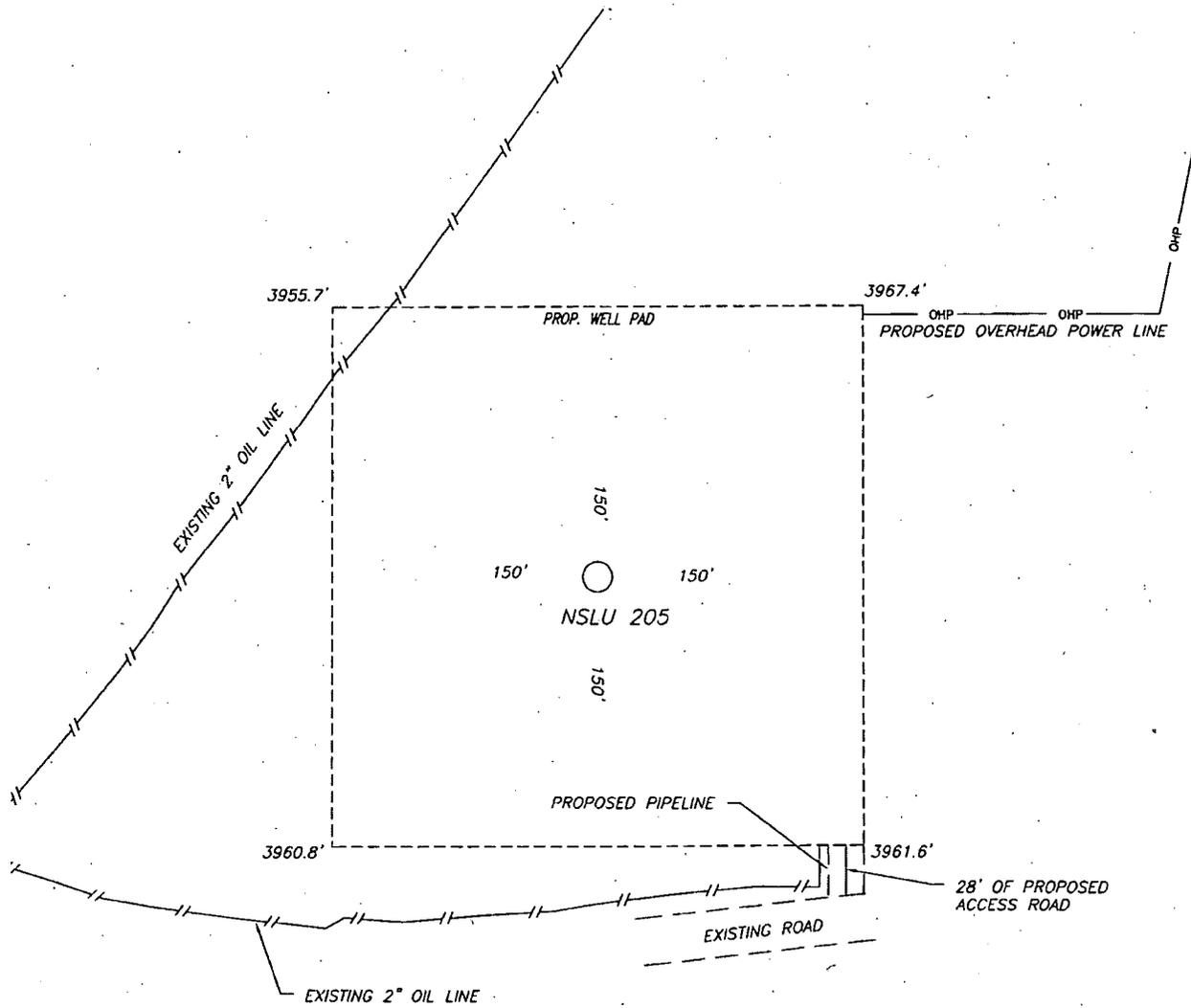
NORTH SQUARE LAKE UNIT 205
LOCATED 1800' FNL AND 1500' FEL
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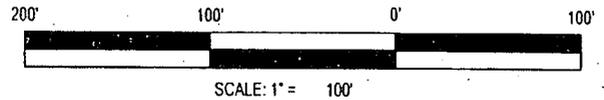
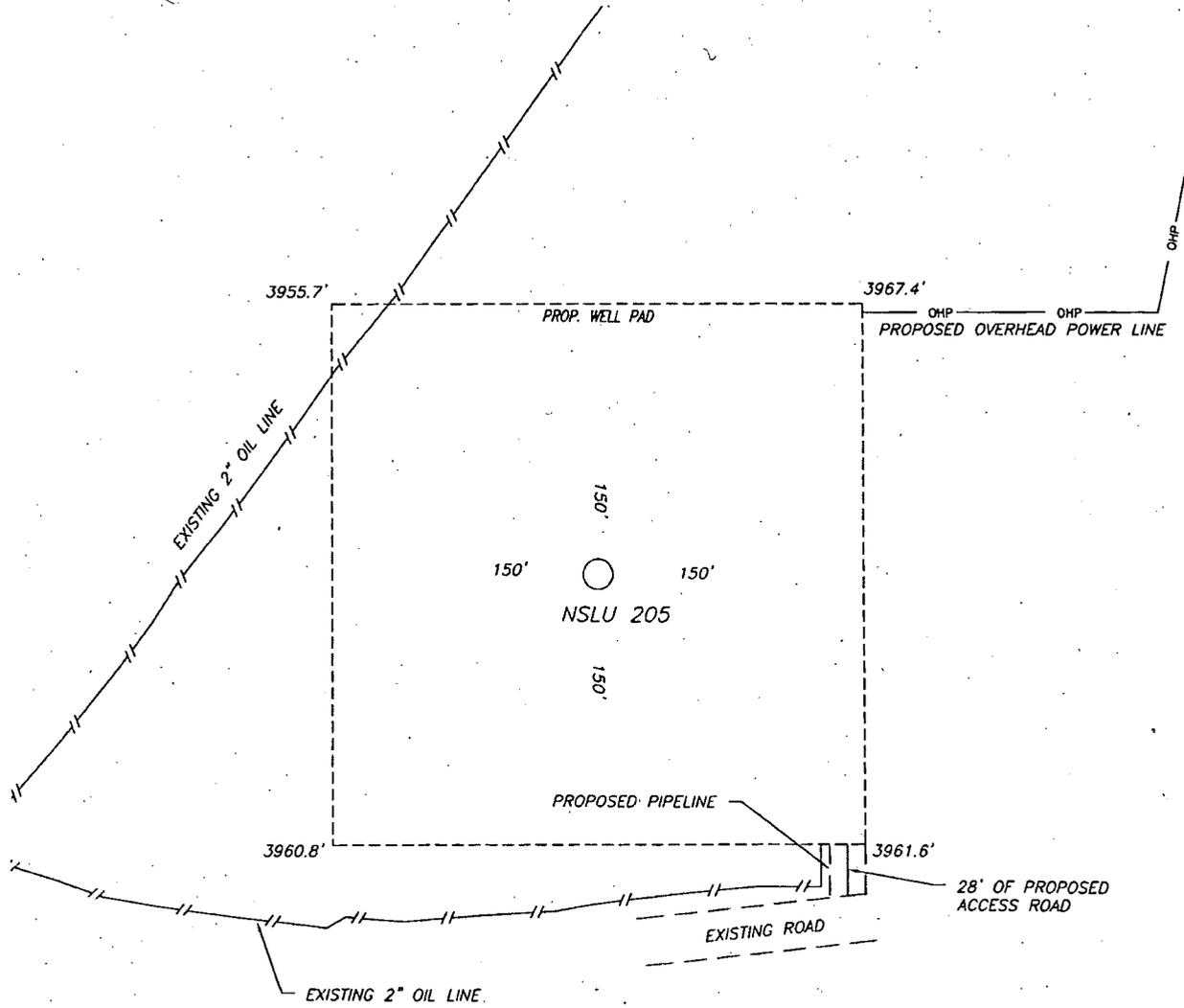
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LOCATED 1800' FNL AND 1500' FEL
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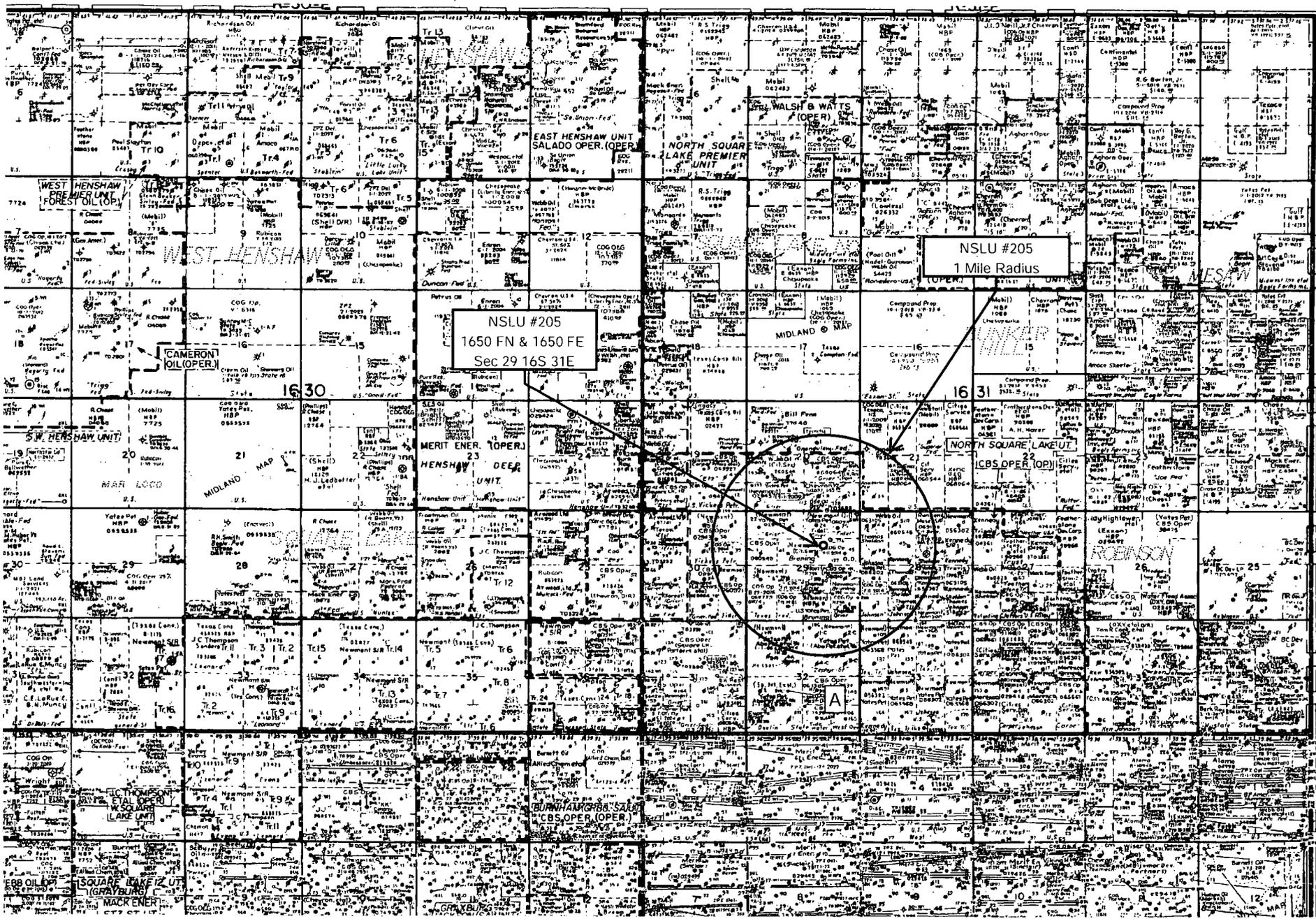
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<p>REMNANT OIL OPERATING, LLC</p>	AFE NUMBER
	DRAWING NAME NSLU 205
<p>NORTH SQUARE LAKE UNIT 205 LOCATED 1800' FNL AND 1500' FEL SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO</p>	

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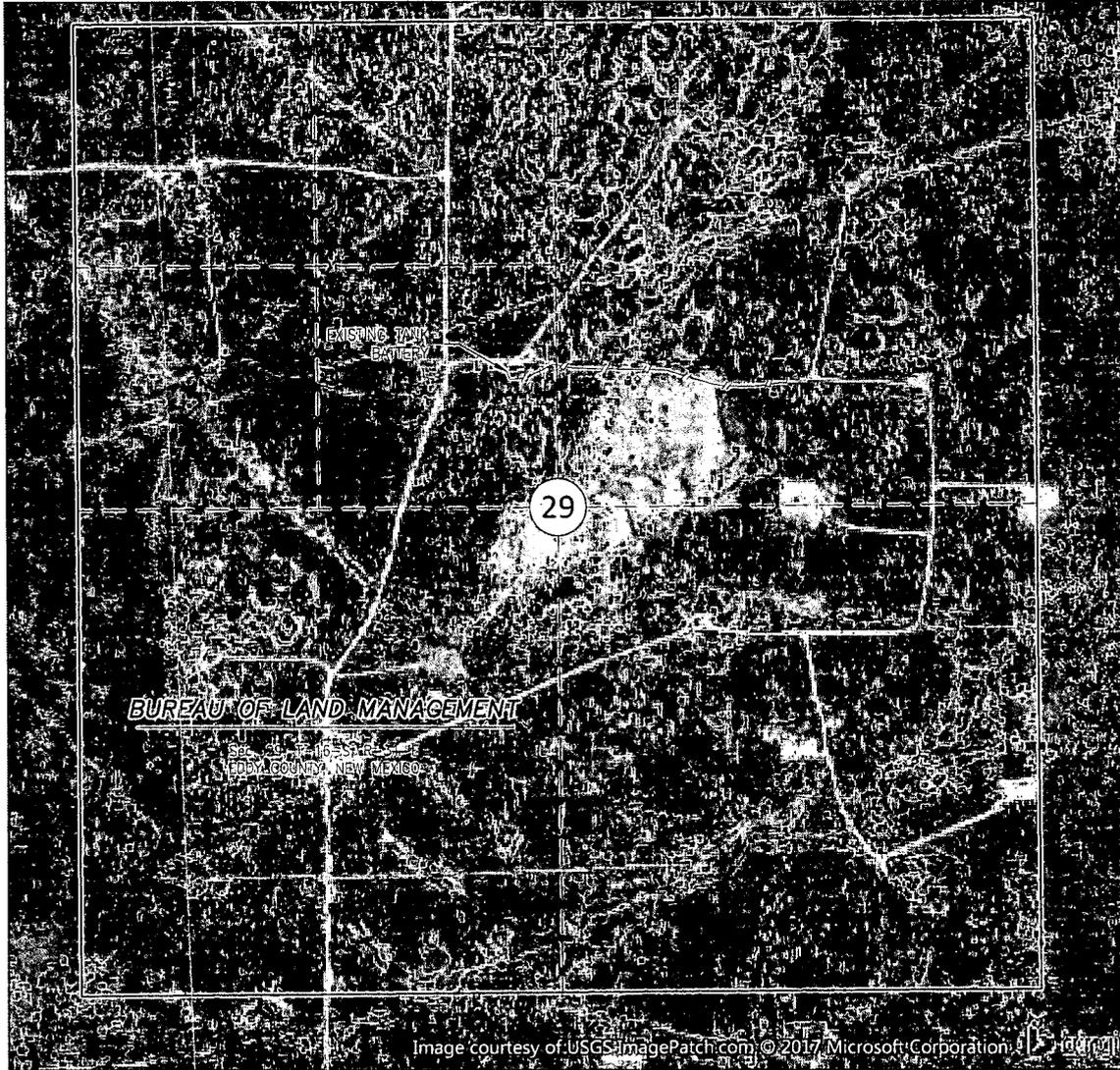
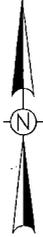
NSLU #205
1650 FN & 1650 FE
Sec 29 16S 31E

NSLU #205
1 Mile Radius

T 16 S

A

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NORTH SQUARE LAKE UNIT 205
EXISTING TANK BATTERY LOCATION
SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

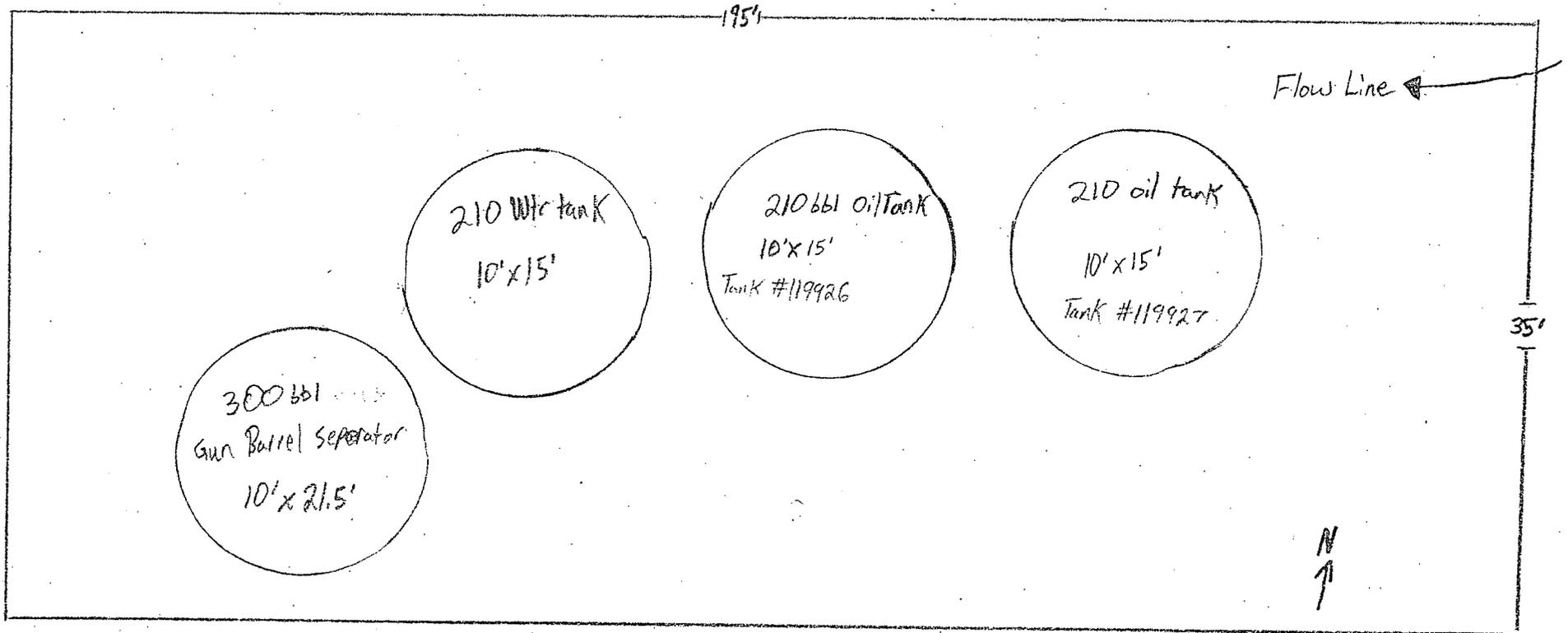
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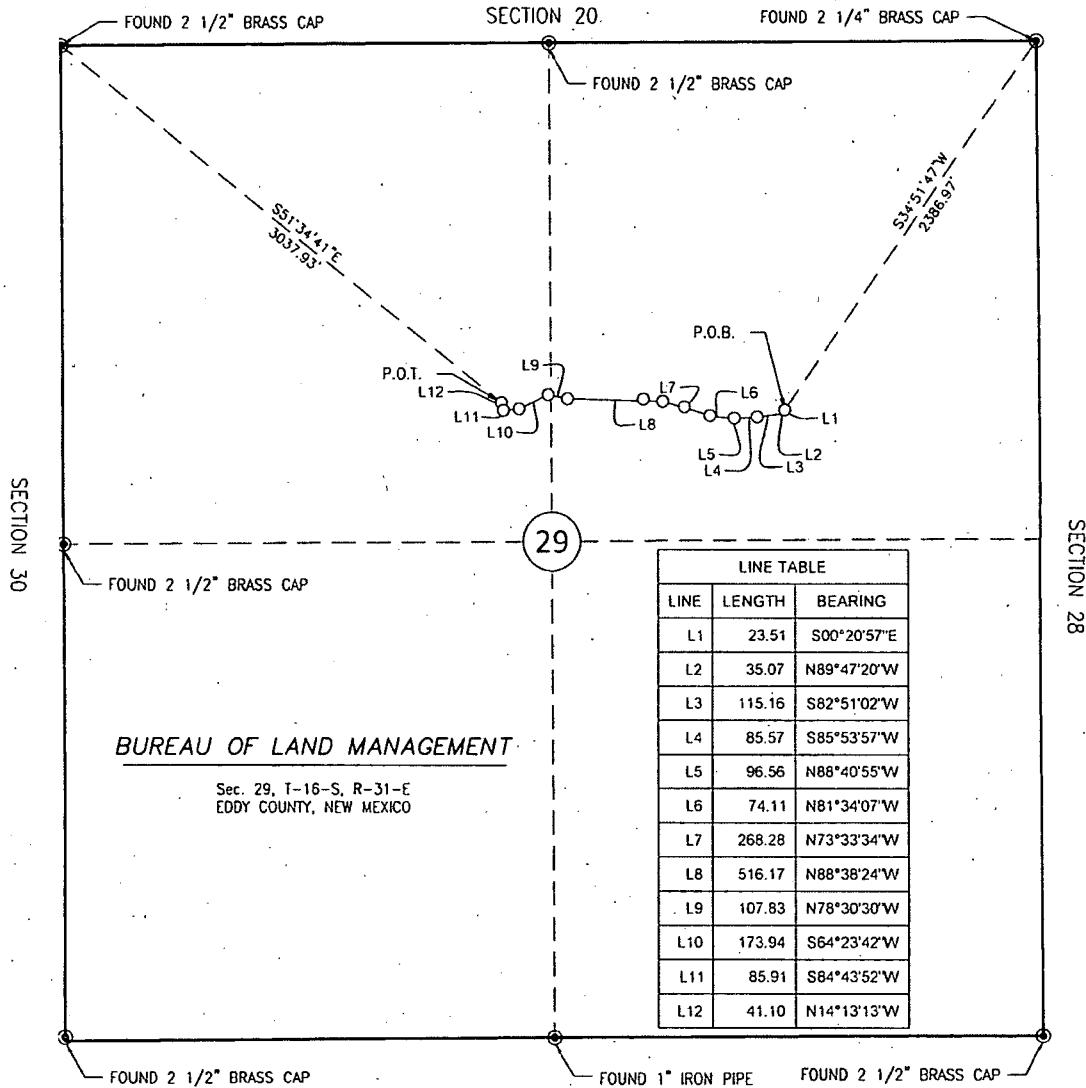
DATE: 04/11/17

NSLU # 205 Production Facilities Diagram

North Square Lake Unit "Brinning Battery"



SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM,
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LINE TABLE		
LINE	LENGTH	BEARING
L1	23.51	S00°20'57"E
L2	35.07	N89°47'20"W
L3	115.16	S82°51'02"W
L4	85.57	S85°53'57"W
L5	96.56	N88°40'55"W
L6	74.11	N81°34'07"W
L7	268.28	N73°33'34"W
L8	516.17	N88°38'24"W
L9	107.83	N78°30'30"W
L10	173.94	S64°23'42"W
L11	85.91	S84°43'52"W
L12	41.10	N14°13'13"W

BUREAU OF LAND MANAGEMENT

Sec. 29, T-16-S, R-31-E
EDDY COUNTY, NEW MEXICO

Notes:

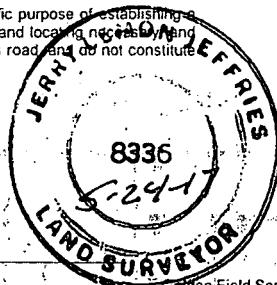
- This plat was prepared without the benefit of a current Title Report. All deeds were provided by the client and may not reflect current ownership. No record of easements or right of ways were provided except as shown. No other research was performed by the undersigned surveyor.
- All bearings and distances contained herein are grid, based on the New Mexico State Plane Coordinate System, East Zone (3001), US Survey feet, North American Datum of 1983, (NAD83) and derived from an on-the-ground survey.
- This survey was performed for the specific purpose of establishing a CENTERLINE, mapping selected features, and locating necessary boundary lines for easement acquisition for an access road and do not constitute the results of a full boundary survey.

SECTION 32



A PROPOSED 3" POLY PIPELINE

A 3" POLY PIPELINE BEING 1,623.21 FEET, 0.31 MILES OR 98.38 RODS IN LENGTH, SITUATED IN SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AS SHOWN HEREON.



Jerry L. Jeffries, Data
Registered Professional Land Surveyor
New Mexico Registration No. 8336
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AFE NUMBER

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NORTH SQUARE LAKE UNIT 205

3" POLY PIPELINE

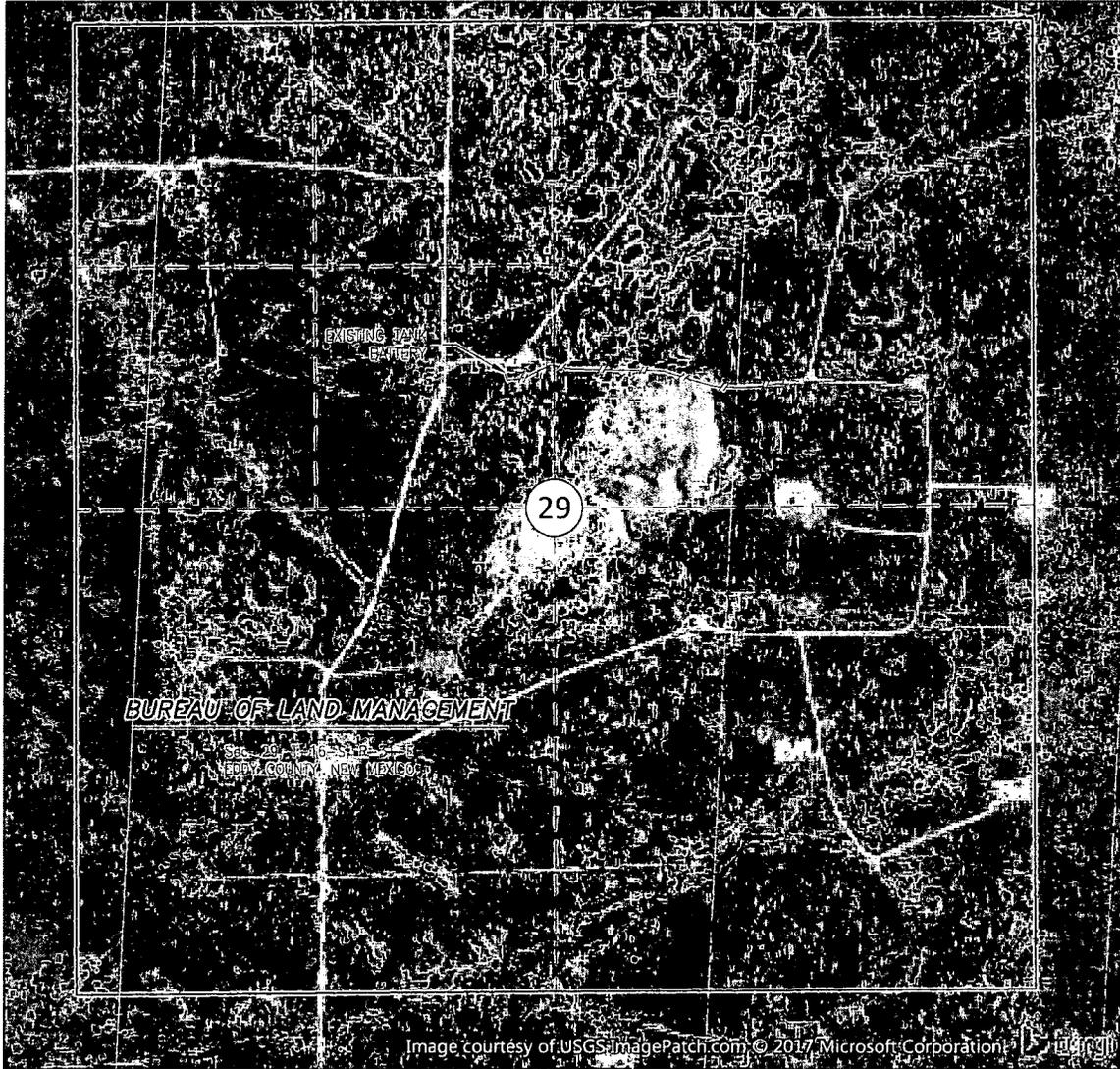
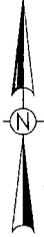
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REMNANT OIL OPERATING, LLC	SHEET NUMBER
	DRAWING NAME NSLU 205-PL
NORTH SQUARE LAKE UNIT 205 EXISTING TANK BATTERY LOCATION SECTION 29, TOWNSHIP 16 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO	



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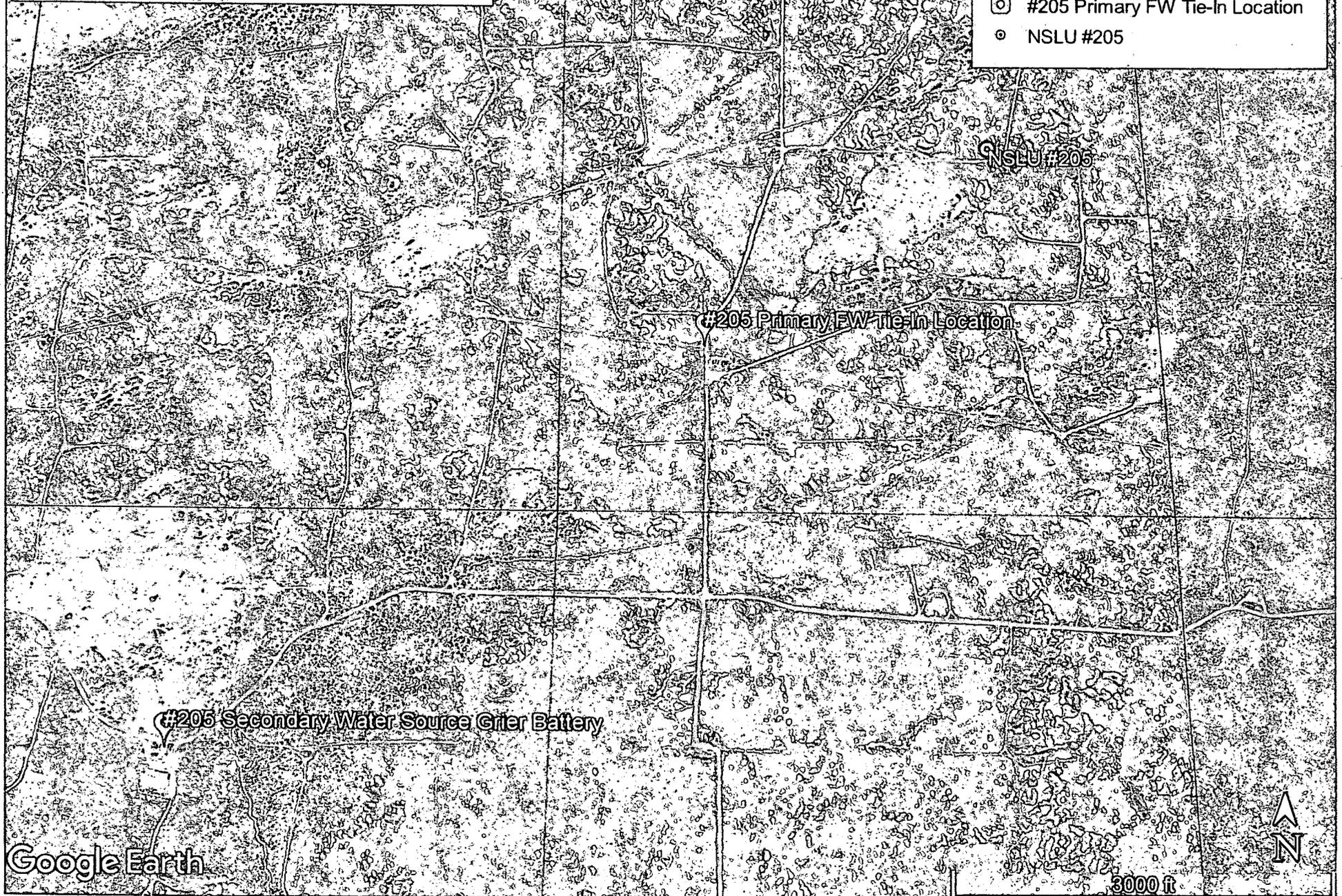
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NSLU #205 Water Source Map

Primary and Secondary Sources

Legend

-  #205 FW Transfer Line
-  #205 Primary FW Tie-In Location
-  NSLU #205



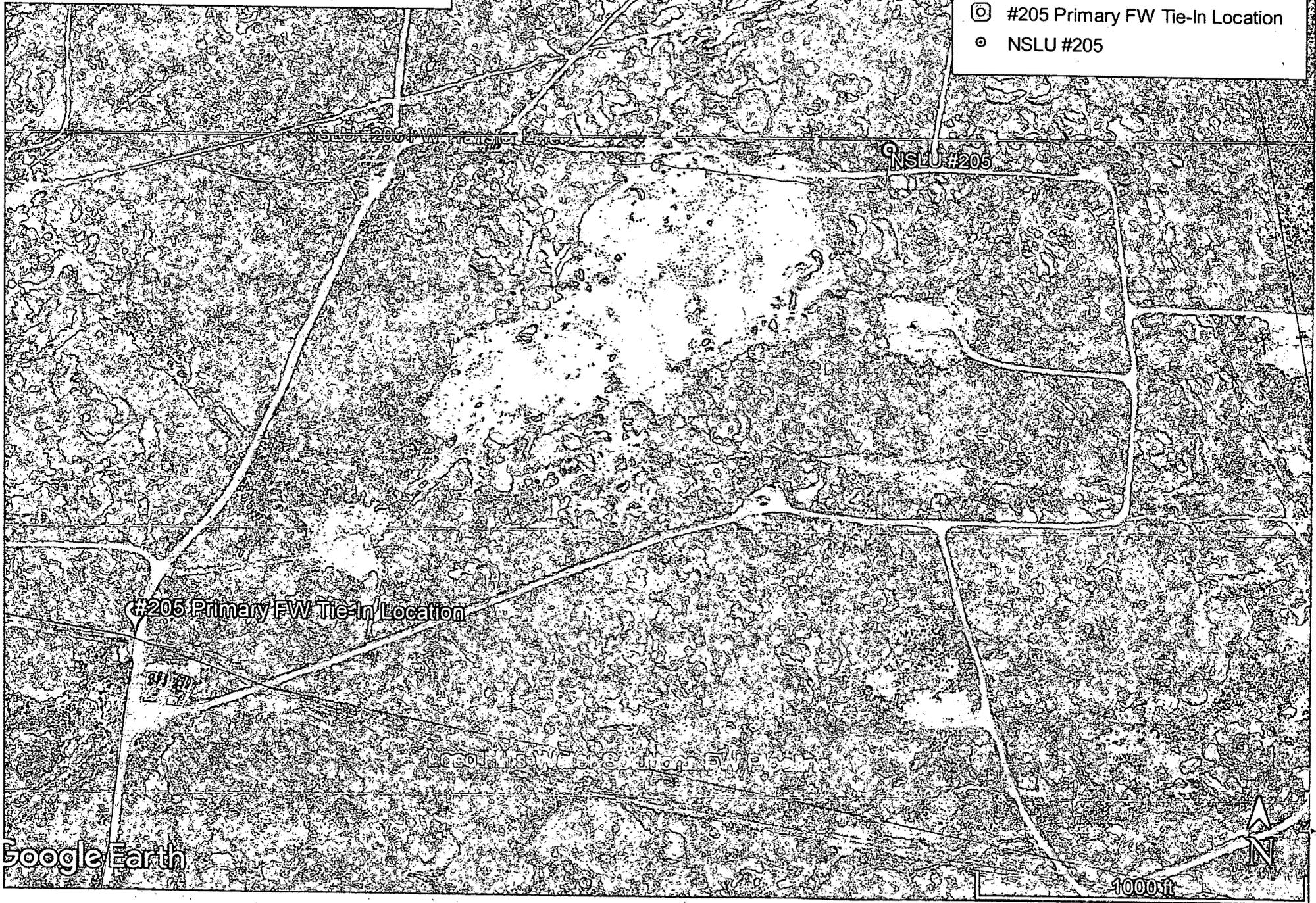
Google Earth

NSLU #205 Primary FW Map

Transfer Line and Tie-In Location

Legend

-  #205 FW Transfer Line
-  #205 Primary FW Tie-In Location
-  NSLU #205



Google Earth

1000ft

A Unnamed Road
Artesia, NM 88210

B E Square Lake Rd
Artesia, NM 88210



Suggested routes

E Square Lake Rd

3.7 miles, 9 min

E Square Lake Rd

4.7 miles, 14 min

A Unnamed Road *NSLU # 205*

1. Head **east**

0.4 mi

2. Turn **left**

0.5 mi

3. Turn **right**

0.5 mi

4. Turn **left** onto **E Square Lake Rd**

2.3 mi

5. Turn **right**

0.1 mi

B E Square Lake Rd *Primary Caliche Source*



Google Earth



Primary Caliche Pit Location: NESW, Sec 35, T-16S, R-31E

A Unnamed Road
Artesia, NM 88210

B E Square Lake Rd
Artesia, NM 88210

Suggested routes

E Square Lake Rd

2.3 miles, 8 min

E Square Lake Rd

2.3 miles, 42 min

A Unnamed Road *NSLU # 205*

1. Head **west**

0.3 mi

2. Turn **left**

0.8 mi

3. Turn **right** onto **E Square Lake Rd**

0.9 mi

4. Turn **left**

0.2 mi

5. Turn **left**

102 ft

B E Square Lake Rd *Secondary Caliche Source*



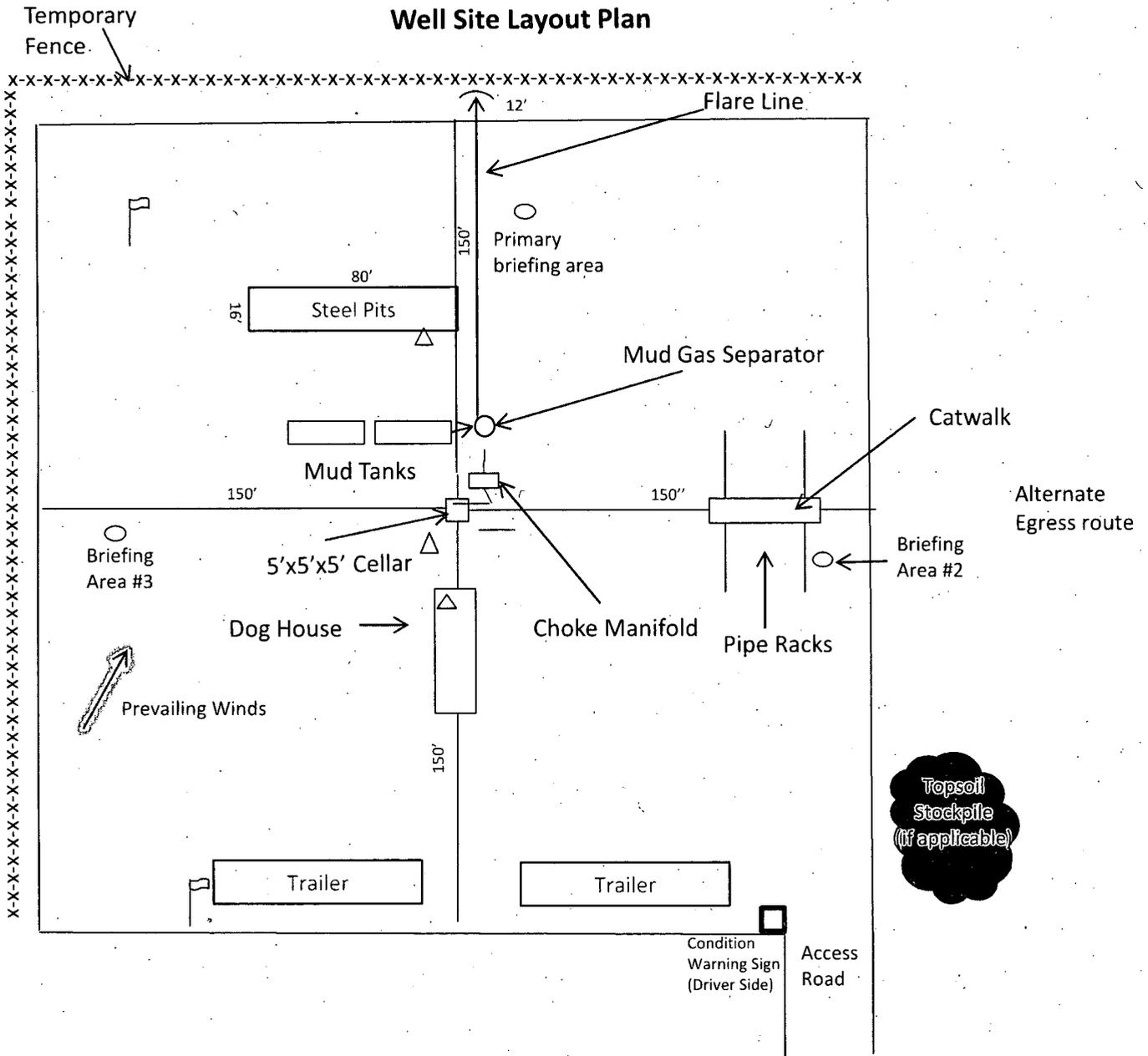
Google Earth

miles
km



Secondary Caliche Pit Location: NESE, Sec 31, T-16S, R-31E

NSLU #205 Well Site Layout Plan



-  Wind Direction Indicators (wind sock or streamers)
-  H2S Monitors (alarms at bell nipple and shale shaker)
-  Briefing Areas



Well Site Layout Diagram
North Square Lake Unit #205
 Remnant Oil Operating, LLC
 1800' FNL and 1500' FEL
 Sec 29, T-16S, R29E
 Eddy County, NM

Confirmation of Payment

Form NM 8140-9

(March 2008)

United States Department of the Interior
Bureau of Land Management
New Mexico State Office

Permian Basin Cultural Resource Mitigation Fund

The company shown below has agreed to contribute funding to the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III survey for cultural resources associated with their project. This form verifies that the company has elected to have the Bureau of Land Management (BLM) follow the procedures specified within the Programmatic Agreement (PA) concerning improved strategies for managing historic properties within the Permian Basin, New Mexico, for the undertaking rather than the Protocol to meet the agency's Section 106 obligations.

Company Name: Remnant Oil Operating, LLC

Address: 6 Desta Drive, Suite 5100

Midland, TX 79705

Project description: North Square Lake Unit #205 well pad located 1800' FNL and 1500'

FEL, and approximately 28' of proposed access road.

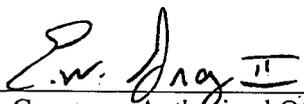
T. 16S, R. 31E, Section 29 NMPM, Eddy County, New Mexico

Amount of contribution: \$ 1,550.00

Confirmation of Payment Page 2

Provisions of the PA:

- A. No new Class III inventories are required of industry within the project area for those projects where industry elects to contribute to the mitigation fund.
- B. The amount of funds contributed was derived from the rate schedule established within Appendix B of the PA. The amount of the funding contribution acknowledged on this form reflects those rates.
- C. The BLM will utilize the funding to carry out a program of mitigation at high-priority sites whose study is needed to answer key questions identified within the Regional Research Design.
- D. Donating to the fund is voluntary. Industry acknowledges that it is aware it has the right to pay for a Class III survey rather than contributing to the mitigation fund. Industry must avoid or fund data recovery at those sites already recorded that are eligible for nomination to the National Register or whose eligibility is unknown. Any such payments are independent of the mitigation funds established by this PA.
- E. Previously recorded archaeological sites determined eligible for nomination to the National Register, or whose eligibility remains undetermined, must be avoided or mitigated.
- F. If any skeletal remains that might be human or funerary objects are discovered by any activities, the land-use applicant will cease activities in the area of discovery, protect the remains, and notify the BLM within 24 hours. The BLM will determine the appropriate treatment of the remains in consultation with culturally-affiliated Indian Tribe(s) and lineal descendants. Applicants will be required to pay for treatment of the cultural items, independent and outside of the mitigation fund.



Company-Authorized Officer

6-5-2017

Date

BLM-Authorized Officer

Date



APD ID: 10400013288

Submission Date:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

North_Square_Lake_Unit_205_Existing_Roads_06-05-2017.pdf

North_Square_Lake_Unit_205_Proposed_Access_Road_06-05-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

North_Square_Lake_Unit_205_Proposed_Access_Road_06-05-2017.pdf

New road type: TWO-TRACK

Length: 28 Feet

Width (ft.): 50

Max slope (%): 2

Max grade (%): 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 30

New road access erosion control: Road will be crowned and ditched to prevent erosion.

New road access plan or profile prepared? NO

New road access plan attachment:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: 6" rolled and compacted caliche.

Access onsite topsoil source depth: 6

Offsite topsoil source description: Surfacing material will consist of native caliche obtained from the well site if possible. Otherwise, caliche will be hauled from nearest caliche pit.

Onsite topsoil removal process: Grading

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage and be consistent with local drainage patterns

Road Drainage Control Structures (DCS) description: No drainage control structures necessary.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

North_Square_Lake_Unit_205_One_Mile_Radius_07-05-2017.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: If well is productive, a flow line (plat attached) will be installed above ground to the existing tank battery in the NWNW of Section 29, Township 16S, Range 29E (see attached diagram of existing tank battery and map showing tank battery location).

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Production Facilities map:

North_Square_Lake_Unit_205_Existing_Production_Facilities_07-05-2017.pdf

North_Square_Lake_Unit_205_Pipeline_to_Tank_Battery_07-05-2017.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL,
INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE
CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: WATER RIGHT

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 0

Source volume (acre-feet): 0

Source volume (gal): 0

Water source and transportation map:

North_Square_Lake_Unit_205_Water_Source_Map_Primary_and_Secondary_07-31-2017.pdf

North_Square_Lake_Unit_205_Water_Source_Tie_In_and_Transfer_07-31-2017.pdf

Water source comments: Primary: Loco Hills Water Solutions for all water used in drilling. Secondary: Grier Battery water station on the NSLU located in the SE4NW4 Sec 31, T16S, R31E Estimated water volume: 1900 acre feet per annum

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Primary Caliche Pit: NESW, Sec 35, T-16S, R-31E Secondary Caliche Pit: NESE, Sec 31, T-16S, R-31E

Construction Materials source location attachment:

North_Square_Lake_Unit_205_Construction_Materials_Location_Maps_07-31-2017.pdf

Section 7 - Methods for Handling Waste

Waste type: FLOWBACK

Waste content description: Oil

Amount of waste: 500 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** FEDERAL

Disposal type description:

Disposal location description: Tank battery

Waste type: SEWAGE

Waste content description: Human waste

Amount of waste: 50 pounds

Waste disposal frequency : Weekly

Safe containment description: Porta-toilet

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Serviced by toilet rental company

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Waste type: GARBAGE

Waste content description: Trash

Amount of waste: 200 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash trailer

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: COMPLETIONS/STIMULATION

Waste content description: Completion Fluid

Amount of waste: 1000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: DRILLING

Waste content description: Cuttings

Amount of waste: 643 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: DRILLING

Waste content description: Drilling Fluid

Amount of waste: 1200 barrels

Waste disposal frequency : Daily

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Approved industry waste disposal facility

Waste type: PRODUCED WATER

Waste content description: Produced water

Amount of waste: 5000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tank

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Tank battery

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

North_Square_Lake_Unit_205_Well_Site_Layout_Diagram_07-07-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Drainage/Erosion control construction: Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion.

Drainage/Erosion control reclamation: Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible

Wellpad long term disturbance (acres): 0.51

Wellpad short term disturbance (acres): 2.1

Access road long term disturbance (acres): 0.019

Access road short term disturbance (acres): 0.019

Pipeline long term disturbance (acres): 0.5589566

Pipeline short term disturbance (acres): 0.5589566

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.0879567

Total short term disturbance: 2.6779566

Reconstruction method: No interim reclamation planned. Tank battery already exists for this well. Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible.

Topsoil redistribution: After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible.

Soil treatment: No treatment necessary.

Existing Vegetation at the well pad: Mesquite and shinnery oak.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Mesquite and shinnery oak.

Existing Vegetation Community at the road attachment:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Existing Vegetation Community at the pipeline: Mesquite and shinnery oak.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/Q

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: PERENNIAL GRASS

Seed source: COMMERCIAL

Seed name: LPC-Seed Mix 2

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location: NEW ACCESS ROAD, WELL PAD

PLS pounds per acre: 5

Proposed seeding season: SPRING

Seed Summary

Total pounds/Acre: 5

Seed Type	Pounds/Acre
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PERENNIAL GRASS 5

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Michael

Last Name: McGraw

Phone: (432)695-6997

Email: michael@remnantoil.com

Seedbed prep: Rip and add topsoil.

Seed BMP:

Seed method:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: All areas will be monitored, and weeds will be treated as necessary.

Weed treatment plan attachment:

Monitoring plan description: Will monitor after final reclaim.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: Utilize closed loop.

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Operator Name: REMNANT OIL OPERATING LLC OGRID #370922

Well Name: NORTH SQUARE LAKE UNIT

Well Number: 205

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: Remnant Oil Operating, LLC, is a Permian Basin PA participant. Payment to the PB Cultural Resource Mitigation Fund has been submitted via FedEx.

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

North_Square_Lake_Unit_205_Form_8140_9_07-31-2017.pdf



Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001311

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: