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DISTRICT II-ARTESIA O.C.D.

Form 3160-3
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

5. Lease Serial No
NMNM134866

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No

8. Lease Name and Well No.
WRIGHT FED 2524 WC
2H
322746

2. Name of Operator
KAISER FRANCIS OIL COMPANY
12361

9. API Well No.
30-015-45352

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
6733 S. Yale Ave. Tulsa OK 74121	(918)491-0000	LOVING / BRUSHY CANYON

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SWNE / 2490 FSL / 1500 FEL / LAT 32.2766935 / LONG -104.0366126

At proposed prod. zone NENE / 330 FNL / 660 FEL / LAT 32.2971822 / LONG -104.0337837

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 25 / T23S / R28E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
3.5 miles	LEA	NM

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
1500 feet	80	240

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19. Proposed Depth	20. BLM/BIA Bond No. in file
1766 feet	10808 feet / 18178 feet	FED: WYB000055

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
2966 feet	09/06/2018	40 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor
2. A Drilling Plan
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)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Melanie Wilson / Ph: (575)914-1461	06/18/2018

Title
Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	09/26/2018

Title	Office
Assistant Field Manager Lands & Minerals	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)

APPROVED WITH CONDITIONS

Approval Date: 09/26/2018

RP.

10-19-18

*(Instructions on page 2)

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 directionany 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.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

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 wen 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 win 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 conects this information to anow 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWNE / 2490 FSL / 1500 FEL / TWSP: 23S / RANGE: 28E / SECTION: 25 / LAT: 32.2766935 / LONG: -104.0366126 (TVD: 0 feet, MD: 0 feet)
   PPP: SENE / 2640 FNL / 660 FEL / TWSP: 23S / RANGE: 28E / SECTION: 24 / LAT: 32.290771 / LONG: -104.033836 (TVD: 10808 feet, MD: 17848 feet)
   PPP: SENE / 1950 FNL / 660 FEL / TWSP: 23S / RANGE: 28E / SECTION: 25 / LAT: 32.2781491 / LONG: -104.0338942 (TVD: 10808 feet, MD: 11192 feet)
   BHL: NENE / 330 FNL / 660 FEL / TWSP: 23S / RANGE: 28E / SECTION: 24 / LAT: 32.2971822 / LONG: -104.0337837 (TVD: 10808 feet, MD: 18178 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@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.

RECEIVED
OCT 17 2018
DISTRICT II-ARTESIA O.C.D.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Kaiser-Francis Oil Company**
LEASE NO.:	**NMNM-134866**
WELL NAME & NO.:	**Wright Fed 2524 WC 2H**
SURFACE HOLE FOOTAGE:	**2490' FNL & 1500' FEL**
BOTTOM HOLE FOOTAGE	**0330' FNL & 0660' FEL Sec. 24, T. 23 S., R 28 E.**
LOCATION:	**Section 25, T. 23 S., R 28 E., NMPM**
COUNTY:	**County, New Mexico**

Operator to add "COM" to well name

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the**

Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **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.

Medium Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **350** 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. Excess calculates to negative 6% - Additional cement will be required.**

    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.

10-3/4 Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **10-3/4** inch 1st intermediate casing is:

    ☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

7-5/8 Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

3. The minimum required fill of cement behind the **7-5/8** inch 2nd intermediate casing is:

☐ Cement as proposed. Operator shall provide method of verification. **Excess calculates to 24% - Additional cement may be required.**

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

☐ Cement as proposed. Operator shall provide method of verification. **Excess calculates to negative 48% - Additional cement will be required.**

5. 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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi (**Installing 10M BOP with 5M annular, testing to 2,000 psi**).

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **10-3/4** 1st intermediate casing shoe shall be psi (**Installing 10M BOP with 5M annular, testing to 5,000 psi**). **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** 2nd intermediate casing shoe shall be psi. **10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

6. 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 092618

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	KAISER FRANCIS OIL COMPANY
LEASE NO.:	NMNM134866
WELL NAME & NO.:	2H- WRIGHT FED 2524 WC
SURFACE HOLE FOOTAGE:	2490'/N & 1500'/E
BOTTOM HOLE FOOTAGE	330'/S & 660'/E
LOCATION:	Section.25.,T23S., R.28E., NMP
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.

Approval Date: 09/26/2018

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)

Cave and Karst Conditions of Approval for APDs
** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production:
Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:
Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.
Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

FLOWLINES (SURFACE):
- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or

combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

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.

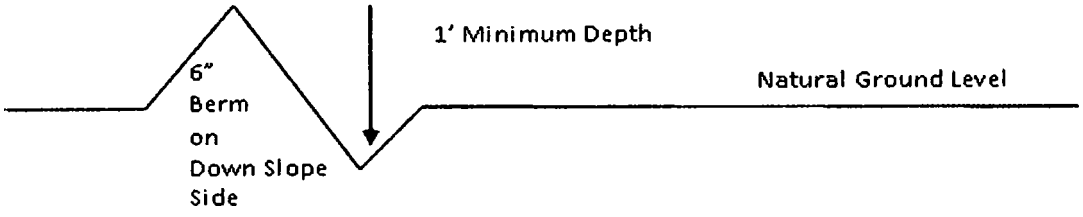
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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

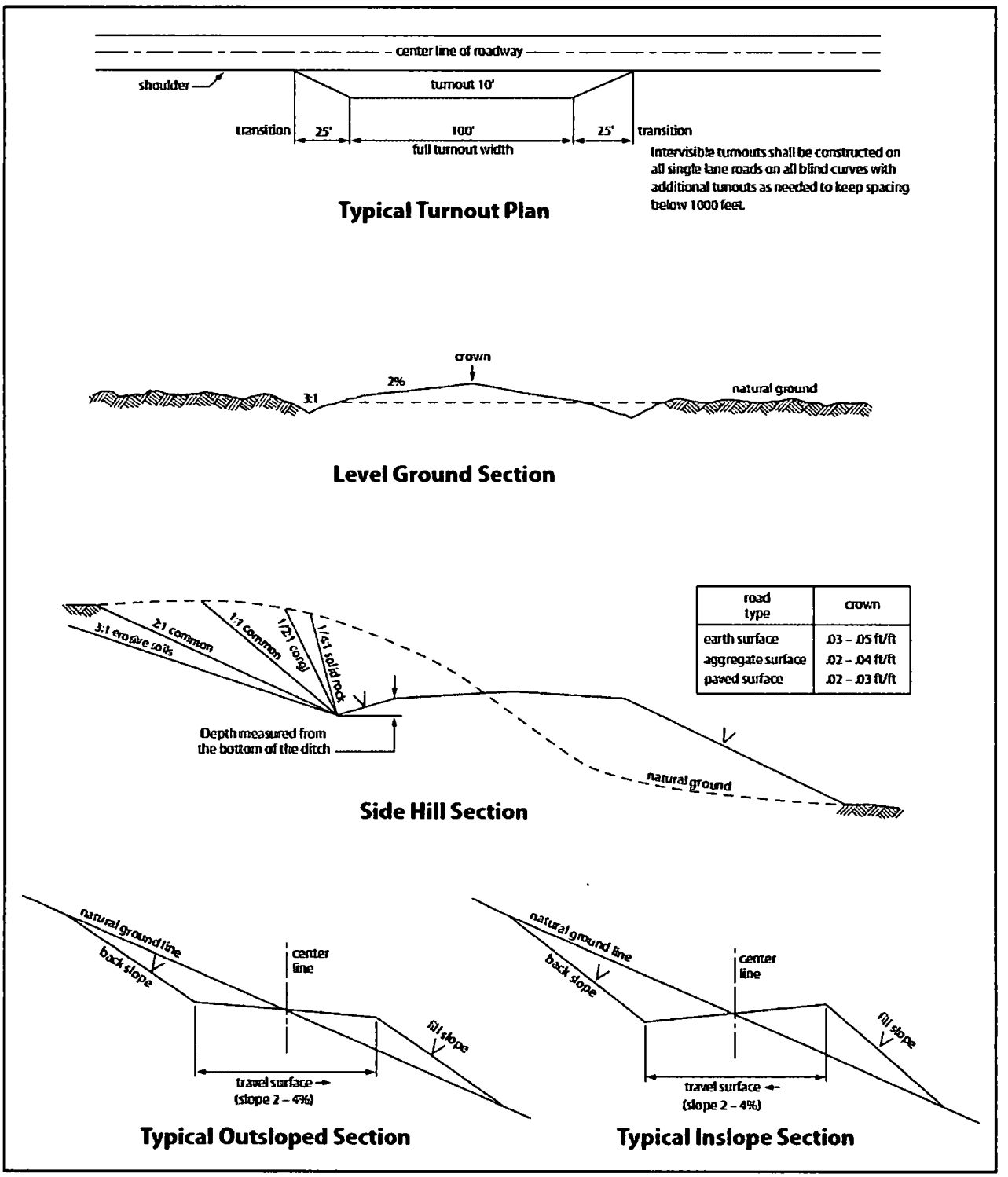


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

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).

Seed Mixture 1 for Loamy 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 shall be tested and the viability testing of seed will 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 shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/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 shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The 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:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

09/27/2018

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: Melanie Wilson **Signed on:** 06/18/2018

Title: Regulatory Analyst

Street Address: 106 W. Riverside Drive

City: Calsbad **State:** NM **Zip:** 88220

Phone: (575)914-1461

Email address: mjp1692@gmail.com

Field Representative

Representative Name: Todd Passmore

Street Address:

City: **State:** **Zip:**

Phone:

Email address: tpassmore@mar-win.com

AFMSS

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

Application Data Report

09/27/2018

APD ID: 10400030878 **Submission Date:** 06/18/2018

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400030878 **Tie to previous NOS?** **Submission Date:** 06/18/2018

BLM Office: CARLSBAD **User:** Melanie Wilson **Title:** Regulatory Analyst

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM134866 **Lease Acres:** 80

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** KAISER FRANCIS OIL COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: KAISER FRANCIS OIL COMPANY

Operator Address: 6733 S. Yale Ave.

Zip: 74121

Operator PO Box: PO Box 21468

Operator City: Tulsa **State:** OK

Operator Phone: (918)491-0000

Operator Internet Address:

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: WRIGHT FED 2524 WC **Well Number:** 2H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** LOVING **Pool Name:** BRUSHY CANYON

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: KAISER FRANC.. OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

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: MULTIPLE WELL **Multiple Well Pad Name:** WRIGHT FED **Number:** 0

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 3.5 Miles **Distance to nearest well:** 1766 FT **Distance to lease line:** 1500 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Wright_Fed_2524_WC_2H__C102_20180613153846.pdf

WRIGHT_FED_2524_WC_2H_Pymt_Receipt_20180618171508.pdf

Well work start Date: 09/06/2018 **Duration:** 40 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD27 **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	2490	FSL	1500	FEL	23S	28E	25	Aliquot SWNE	32.2766935	-104.0366126	LEA	NEW MEXICO	NEW MEXICO	S	STATE	2966	0	0
KOP Leg #1	2593	FSL	662	FEL	23S	28E	25	Aliquot SENE	32.276403	-104.0339	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-7269	10292	10235
PPP Leg #1	1950	FNL	660	FEL	23S	28E	25	Aliquot SENE	32.2781491	-104.0338942	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-7842	11192	10808

Pay.gov

Receipt

Your payment is complete

Pay.gov Tracking ID: 26ADHQGH
Agency Tracking ID: 75511689942
Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee
Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Debit or credit card
Payment Amount: $9,790.00
Transaction Date: 06/18/2018 07:12:53 PM EDT
Payment Date: 06/18/2018
Company: KAISER-FRANCIS OIL COMPANY
APD IDs: 10400030878
Lease Numbers: NMNM134866
Well Numbers: 2H
Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

Account Information

Cardholder Name: GEORGE B KAISER
Card Type: Visa
Card Number: **********0061

Email Confirmation Receipt

Confirmation Receipts have been emailed to:
mjp1692@gmail.com

APD ID: 10400030878 **Submission Date:** 06/18/2018

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	2967	0	0		NONE	No
2	BASE OF SALT	287	2679	2679		NONE	No
3	CHERRY CANYON	-488	3454	3454		NATURAL GAS,OIL	No
4	BRUSHY CANYON	-1818	4784	4784		NATURAL GAS,OIL	No
5	BRUSHY CANYON LOWER	-3063	6029	6029		NATURAL GAS,OIL	No
6	BONE SPRING LIME	-3383	6349	6349		NATURAL GAS,OIL	No
7	2ND BONE SPRING LIME	-4713	7679	7679		NATURAL GAS,OIL	No
8	BONE SPRING 3RD	-6380	9346	9346		NATURAL GAS,OIL	No
9	WOLFCAMP	-6716	9682	9682		NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 18000

Equipment: A 10M system will be installed according to Onshore Order #2 consisting of an Annular Preventer, BOP with two rams and a blind ram. BOP will be equipped with 2 side outlets (choke side shall be a minimum 3" line, and kill side will be a minimum 2" line). Kill line will be installed with (2) valves and a check valve (2" min) of proper pressure rating for the system. Remote kill line (2' min) will be installed and ran to the outer edge of the substructure and be unobstructed. A manual and hydraulic valve (3" min) will be installed on the choke line, 3 chokes will be used with one being remotely controlled. Fill up line will be installed above the uppermost preventer. Pressure gauge of proper pressure rating will be installed on choke manifold. Upper and lower kelly cocks will be utilized with handles readily available in plain sight. A float sub will be available at all times. All connections subject to well pressure will be flanged, welded, or clamped.

Requesting Variance? YES

Variance request: Request variance for use of 5M annular on 10M BOP system. Well Control Plan is attached. Flex Hose Variance

Testing Procedure: BOP and BOPE shall be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe, unless otherwise stated by AFMSS. The Annular shall be functionally operated at least weekly, and pipe and blind rams shall be activated each trip. The surface (13 3/8") BOP/BOPE pressure test will be made to hold 250 psi low, and 2000 psi high. The first intermediate (10 3/4")

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

BOP/BOPE pressure test will be made to 250 psi low, and 5000 psi high, before drilling out the 1st intermediate shoe. The second intermediate (7 5/8") BOP/BOPE pressure test will be made to 250 psi low, and 10,000 psi high (on annular) and 250 low and 5000 psi high on annular, before drilling out the 2nd intermediate shoe, unless otherwise stated by APD.

Choke Diagram Attachment:

Wright_Fed_2524_WC_2H__Choke_Manifold_20180618113956.pdf

BOP Diagram Attachment:

Wright_Fed_2524_WC_2H_BOP_Rev1__20180724112223.pdf

Wright_Fed_2524_WC_2H__Flex_Hose_20180724112239.pdf

Wright_Fed_2524_WC_2H_Well_Ctrl_Plan_20180726111256.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	17.5	13.375	NEW	API	N	0	350	0	350			350	J-55	48	STC	4.5	10.6	DRY	19.2	DRY	32.2
2	OTHER	12.25	10.75	NEW	API	N	0	2700	0	2700			2700	J-55	40.5	BUTT	1.1	2.2	DRY	6.4	DRY	5.8
3	OTHER	9.875	7.625	NEW	API	N	0	10000	0	10000			10000	P-110	29.7	BUTT	1.1	2	DRY	3.2	DRY	3.2
4	PRODUCTION	8.5	5.5	NEW	API	N	0	18178	0	18178			18178	HCP-110	20	OTHER - EAGLE SF	1.7	1.8	DRY	2.9	DRY	3.4

Casing Attachments

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_WC_2H_Csg_Assum_Rev1__20180726110732.pdf

Casing ID: 2 **String Type:** OTHER - 1ST INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_WC_2H_Csg_Assum_Rev1__20180726110748.pdf

Wright_Fed_2524_WC_2H_10.75_csg_specs_20180726112525.pdf

Casing ID: 3 **String Type:** OTHER - 2ND INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_WC_2H_Csg_Assum_Rev1__20180726110756.pdf

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Wright_Fed_2524_WC_2H__Prod_Csg_20180618115511.pdf

Wright_Fed_2524_WC_2H_Csg_Assum_Rev1__20180726110805.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		[redacted]			1.34	14.8	[redacted]		Premium C	[redacted]
OTHER	Lead		[redacted]			2.45	12	[redacted]		Premium C	[redacted]
OTHER	Tail		[redacted]			1.34	14.8	[redacted]	50	Premium C	[redacted]
OTHER	Lead		[redacted]			5.11	10.5	[redacted]		Premium C	[redacted]
OTHER	Tail		[redacted]			1.29	14.2	[redacted]	25	Premium C	[redacted]
PRODUCTION	Lead		[redacted]			1.91	13.2	[redacted]		Premium C	[redacted]

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

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: PVT/Pason/Visual Monitoring

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
350	2700	OTHER : BRINE	9.8	10.2							
2700	10000	OTHER : CUT BRINE	8.8	9.2							
0	350	OTHER : FRESH WATER	8.4	9							
10000	18178	OTHER : OBM	12	14							

Section 6 - Test, Logging, Coring

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

None planned

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

DS,GR,MUDLOG

Coring operation description for the well:

None planned

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7868 **Anticipated Surface Pressure:** 5490.24

Anticipated Bottom Hole Temperature(F): 220

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Wright_Fed_2524_WC_2H__H2S_Plan_20180605183037.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Wright_Fed_2524_WC_2H__Directional_Plan__1_20180605183554.pdf
Wright_Fed_2524_WC_2H_Directional_Plan_dgrm_20180605183555.pdf
Wright_Fed_2524_WC_2H__Directional_Plan_Specs_20180613154154.pdf

Other proposed operations facets description:

Gas Capture Plan attached

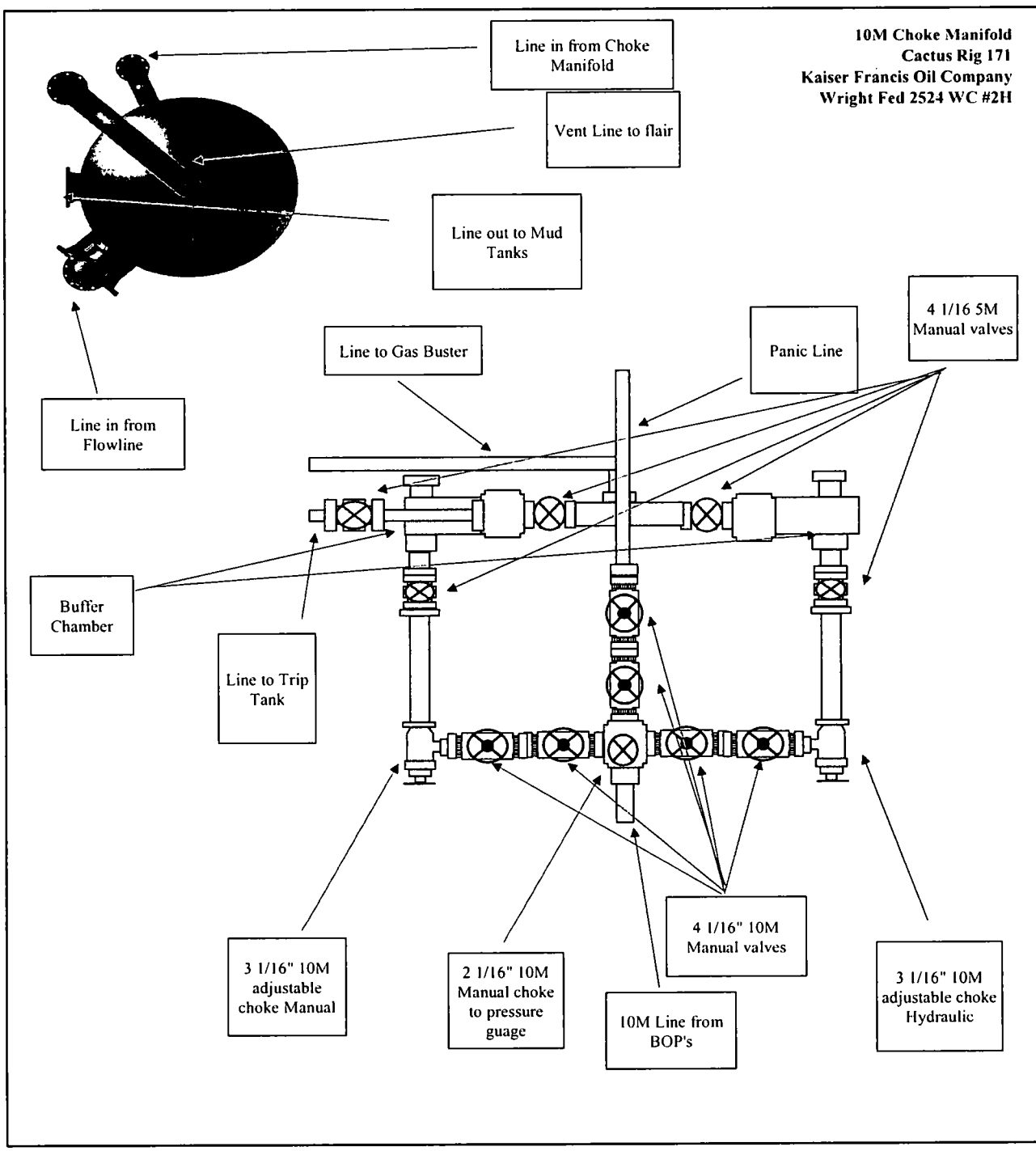
Other proposed operations facets attachment:

Wright_Fed_WC_2524_2H_Gas_Capture_Plan_20180611115851.pdf

Other Variance attachment:

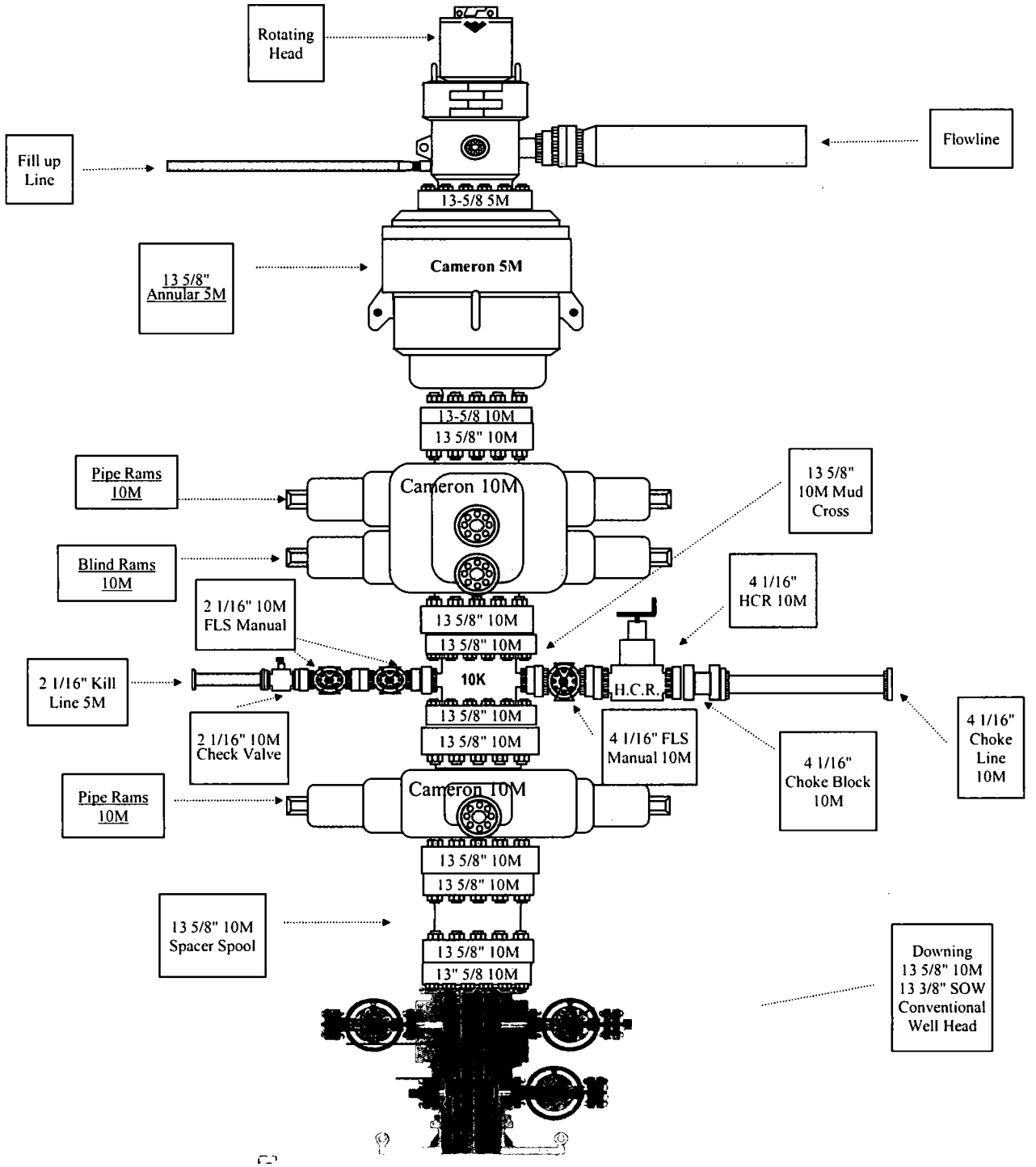
Wright_Fed_2524_WC_2H__Flex_Hose_20180605184514.pdf

10M Choke Manifold
Cactus Rig 171
Kaiser Francis Oil Company
Wright Fed 2524 WC #2H



10M BOP with 5M Annular
Kaiser Francis Oil Company

Hole Sections Utilized
***12 1/4" Hole below Surface Casing**
***9 7/8" Hole below Intermediate casing**
***6 3/4" Hole below 2nd Intermediate casing**



Kaiser-[redacted]ncis Oil Company
Wright Fed 2524 WC 2H
Flex Hose Data

GATES E & S NORTH AMERICA, INC.
7603 Prairie Oak Dr.
Houston, TX 77086

PHONE: 281-602-4119
FAX:
EMAIL: Troy.Schmidt@gat
WEB: www.gates.com

10K ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	A-7 AUSTIN INC DBA AUSTIN HOSE	Test Date:	10/3/2017
Customer Ref. :	4086301	Hose Serial No.:	H-100317-2
Invoice No. :	508588	Created By:	Irene Pizana

Product Description:	10K3.035.0CM4.1/16FLGE/E

End Fitting 1 :	4 -1/16 10K FLANGE - FIXED	End Fitting 2 :	4 -1/16 10K FLANGE - FLOATING
Gates Part No. :	68603010-9710398	Assembly Code :	L39789092117H-100317-2
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Section 9.7.7 and Table 10 of API 7K, Sixth Edition (December 2015).

Quality:	QUALITY	Produciton:	PRODUCTION
Date :	10/3/2017	Date :	10/3/2017
Signature :		Signature :	

Form PTC - 01 Rev.0 2

POWERING PROGRESS®

Gates E&S North America, Inc.
7603 Prairie Oak Dr.
Houston, TX. 77086
PHONE :
FAX:
Troy.Schmidt@gates.com

CERTIFICATE OF CONFORMANCE

This is to verify that all Parts and/or Materials included in this shipment have been manufactured and/or processed in Conformance with applicable drawings and specifications, and that Records of Required Tests are on file and subject to examination. The following items were assembled at **Gates E & S, North America Inc.**, facilities in Houston, TX, USA. This hose assembly was designed and manufactured to meet requirements of API Spec 7K.

CUSTOMER: A-7 AUSTIN INC DBA AUSTIN HOSE
CUSTOMERS P.O.#: 4086301
PART DESCRIPTION: 10K3.035.0CM4.1/16FLGE/E
SALES ORDER #: 508588
QUANTITY: 1
SERIAL #: H-100317-2

SIGNATURE: _____

TITLE: QUALITY ASSURANCE

DATE: 10/3/2017

JOB REPORT

COMPANY DETAILS

Company: Austin
Contact:
Phone:

Email: Irene.pizana@gates.com

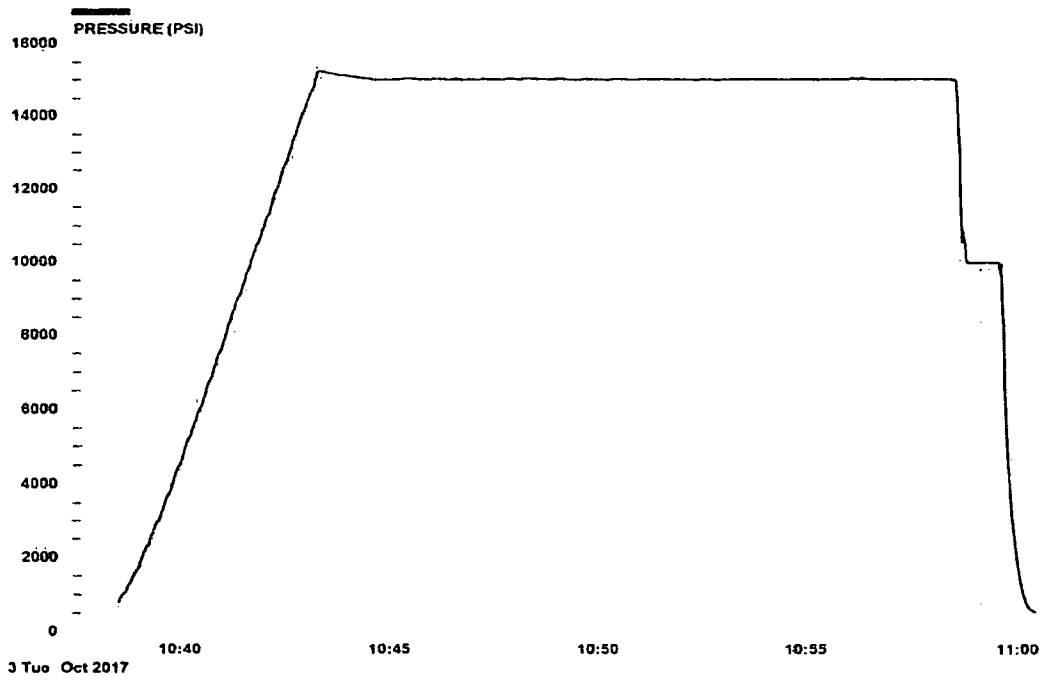
JOB DETAILS

DATE October 03, 2017
START TIME 10:38:29
END TIME 11:00:25
Gates Rep: Chris Olivo
Recommendation: H-100317-2
Working Pressure: 10000
Ext Inspection: Pass
Fitting Inspection: Pass
Test pressure: 15000
Serial No: H-100317-2

Length: 35'
Inner Diameter: 3.0"
Pressure Test: Pass
Internal Inspection: N/A
Fitting Type: 10K Flange ExE

GATES ENGINEERING & SERVICES NA
QA/QC
OCT 03 2017
APPROVED

SUMMARY GRAPH



Report Created: 3-Oct-17

Kaiser-Francis Oil Company
Wright Fed 2524 WC #2H
Casing Assumptions

Formation Name	Formation Top TVD
Base Salt (Top Delaware)	2679
Top Cherry Canyon	3454
Top Brushy Canyon	4784
Top Lower Brushy Canyon	6029
Top Model Sand	6219
Top 1st Bone Spring Lime	6349
1st Bone Spring Sand	7419
2nd Bone Spring Lime	7679
2nd Bone Spring Sand	8189
Mid 2nd Bone Spring Lime	8519
Lower 2nd Bone Spring Sand	8849
3rd Bone Spring Lime	9346
3rd Bone Spring Sand	9712
Top Wolfcamp (Wolfcamp A)	9682
Top Wolfcamp A - Y Sand	9776
Base Wolfcamp A - Y Sand	9814
Base Wolfcamp A	10307
Top Wolfcamp C	10573
Wolfcamp C - Target	10784
Base Wolfcamp C	10844

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120	20				New		120
Surface	350	13 3/8	48	H-40	STC	New	17 1/2	350
Salt Stang	2700	10 3/4	40.5	J-55	BTC SCC	New	12.250	2700
Intermediate	10000	7 5/8	29.7	P-110	BTC	New	9 7/8	10000
Production	18178	5-1/2"	20	P110 HP	Eagle SF	New	6 3/4	10808

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	350	32 - 34	NC
Brine	9.8-10.2	2700	34	NC
Cut Brine	8.8-9.2	10000	32-36	<10
OBM	12.0-14	18178 (MD)	48-53	<11

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	164	740	1730	541000	322000
10.2	1432	1580	3130	629000	700000
9.2	4784	5350	9470	940000	960000
14	7868	13150	14360	729000	629000

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
4.5	10.6	32.2	19.2
1.1	2.2	5.8	6.4
1.1	2.0	3.2	3.2
1.7	1.8	3.4	2.9

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
9.625	40.00	N-80	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,090	916
9.625	43.50	N-80	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	3,810	1,005
9.625	47.00	N-80	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	4,750	1,086
9.625	53.50	N-80	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	6,620	1,244
9.625	58.40	N-80	.595	8.435	8.279	10.625	10.125	—	—	—	7,890	1,350
9.625	40.00	C-90	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,260	1,031
9.625	43.50	C-90	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,010	1,130
9.625	47.00	C-90	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	4,990	1,222
9.625	53.50	C-90	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,110	1,399
9.625	58.40	C-90	.595	8.435	8.279	10.625	10.125	—	—	—	8,570	1,519
9.625	59.40	C-90	.609	8.407	8.251	—	—	—	—	—	8,970	1,552
9.625	64.90	C-90	.672	8.281	8.125	—	—	—	—	—	10,800	1,701
9.625	70.30	C-90	.734	8.157	8.001	—	—	—	—	—	12,600	1,845
9.625	75.60	C-90	.797	8.031	7.875	—	—	—	—	—	13,670	1,989
9.625	40.00	C-95	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,330	1,088
9.625	43.50	C-95	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,130	1,193
9.625	47.00	C-95	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,090	1,289
9.625	53.00	C-95	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,340	1,477
9.625	58.40	C-95	.595	8.435	8.279	10.625	10.125	—	—	—	8,890	1,604
9.625	40.00	T-95	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,330	1,088
9.625	43.50	T-95	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,130	1,193
9.625	47.00	T-95	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,090	1,289
9.625	53.00	T-95	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,340	1,477
9.625	58.40	T-95	.595	8.435	8.279	10.625	10.125	—	—	—	8,890	1,604
9.625	59.40	T-95	.609	8.407	8.251	—	—	—	—	—	9,320	1,639
9.625	64.90	T-95	.672	8.281	8.125	—	—	—	—	—	11,260	1,796
9.625	70.30	T-95	.734	8.157	8.001	—	—	—	—	—	13,170	1,948
9.625	75.60	T-95	.797	8.031	7.875	—	—	—	—	—	14,430	2,100
9.625	43.50	P-110	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,420	1,381
9.625	47.00	P-110	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,300	1,493
9.625	53.50	P-110	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,950	1,710
9.625	58.40	P-110	.595	8.435	8.279	10.625	10.125	—	—	—	9,770	1,857
9.625	47.00	Q-125	.472	8.681	8.525	10.625	—	8.525	10.100	—	5,630	1,697
9.625	53.50	Q-125	.545	8.535	8.379	10.625	—	8.379	10.100	—	8,440	1,943
9.625	58.40	Q-125	.595	8.435	8.279	10.625	—	—	—	—	10,540	2,110
10.750	32.75	H-40	.279	10.192	10.036	11.750	—	—	—	—	840	367
10.750	40.50	H-40	.350	10.050	9.894	11.750	—	—	—	—	1,390	457
10.750	40.50	J-55	.350	10.050	9.894	11.750	11.250	—	—	—	1,580	629
10.750	45.50	J-55	.400	9.950	9.794	11.750	11.250	9.794	11.460	—	2,090	715
10.750	51.00	J-55	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	2,710	801
10.750	40.50	K-55	.350	10.050	9.894	11.750	11.250	—	—	—	1,580	629
10.750	45.50	K-55	.400	9.950	9.794	11.750	11.250	9.794	11.460	—	2,090	715
10.750	51.00	K-55	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	2,710	801

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
5,750	—	5,750	5,750	5,750	5,320	5,750	5,750	—	737	979	979	979	979	1,027	1,027
6,330	—	6,330	6,330	6,330	5,320	6,330	6,330	—	825	1,074	1,074	983	1,074	1,027	1,027
6,870	—	6,870	6,870	6,870	5,320	6,870	6,870	—	905	1,161	1,161	983	1,161	1,086	1,086
7,930	—	7,930	7,930	7,930	5,320	7,310	7,930	—	1,062	1,329	1,329	983	1,228	1,235	1,109
8,650	—	8,650	8,650	8,650	5,320	7,310	—	—	1,167	1,443	1,443	983	1,228	—	—
6,460	—	6,460	6,460	—	5,980	—	6,460	—	804	1,021	—	983	—	1,027	1,027
7,120	—	7,120	7,120	—	5,980	—	7,120	—	899	1,119	—	983	—	1,027	1,027
7,720	—	7,720	7,720	—	5,980	—	7,720	—	987	1,210	—	983	—	1,086	1,086
8,920	—	8,920	8,920	—	5,980	—	8,920	—	1,157	1,386	—	983	—	1,235	1,109
9,740	—	9,740	9,740	—	5,980	—	—	—	1,272	1,504	—	983	—	—	—
9,970	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,010	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13,040	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,820	—	6,820	6,820	—	6,310	—	6,820	—	847	1,074	—	1,032	—	1,078	1,078
7,510	—	7,510	7,510	—	6,310	—	7,510	—	948	1,178	—	1,032	—	1,078	1,078
8,150	—	8,150	8,150	—	6,310	—	8,150	—	1,040	1,273	—	1,032	—	1,141	1,141
9,410	—	9,410	9,410	—	6,310	—	9,410	—	1,220	1,458	—	1,032	—	1,297	1,164
10,280	—	10,280	10,280	—	6,310	—	—	—	1,341	1,583	—	1,032	—	—	—
6,820	—	6,820	6,820	—	6,310	—	6,820	—	847	1,074	—	1,032	—	1,078	1,078
7,510	—	7,510	7,510	—	6,310	—	7,510	—	948	1,178	—	1,032	—	1,078	1,078
8,150	—	8,150	8,150	—	6,310	—	8,150	—	1,040	1,273	—	1,032	—	1,141	1,141
9,410	—	9,410	9,410	—	6,310	—	9,410	—	1,220	1,458	—	1,032	—	1,297	1,164
10,280	—	10,280	10,280	—	6,310	—	—	—	1,341	1,583	—	1,032	—	—	—
10,520	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,610	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,680	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13,770	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,700	—	8,700	8,700	8,700	7,310	8,310	8,700	—	1,105	1,388	1,388	1,228	1,327	1,283	1,283
9,440	—	9,440	9,440	9,440	7,310	8,310	9,440	—	1,213	1,500	1,500	1,228	1,327	1,358	1,358
10,900	—	10,900	10,900	10,900	7,310	8,310	10,900	—	1,422	1,718	1,718	1,228	1,327	1,544	1,386
11,900	—	11,900	11,900	11,900	7,310	8,310	—	—	1,563	1,865	1,865	1,228	1,327	—	—
10,730	—	10,730	10,730	—	—	—	10,730	—	1,360	1,650	—	—	—	1,467	—
12,390	—	12,390	12,390	—	—	—	12,390	—	1,595	1,890	—	—	—	1,667	—
13,520	—	13,520	13,520	—	—	—	—	—	1,754	2,052	—	—	—	—	—
1,820	1,820	—	—	—	—	—	—	205	—	—	—	—	—	—	—
2,280	2,280	—	—	—	—	—	—	314	—	—	—	—	—	—	—
[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
3,580	3,580	—	3,580	3,580	3,290	3,580	3,580	493	—	796	796	796	796	975	—
4,030	4,030	—	4,030	4,030	3,290	4,030	4,030	565	—	891	891	822	891	1,092	—
3,130	3,130	—	3,130	3,130	3,130	3,130	—	450	—	819	819	819	819	—	—
3,580	3,580	—	3,580	3,580	3,290	3,580	3,580	528	—	931	931	931	931	1,236	—
4,030	4,030	—	4,030	4,030	3,290	4,030	4,030	606	—	1,043	1,043	1,041	1,041	1,383	—

Kaiser-Francis Oil Company
Wright Fed 2524 WC #2H
Casing Assumptions

Formation Name	Formation Top TVD
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Top Bonal Sand	6219
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1st Bone Springs Sand	7419
2nd Bone Springs Lime	7679
2nd Bone Springs Sand	8189
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Base Wolfcamp A	10307
Top Wolfcamp C	10573
Wolfcamp C - Target	10784
Base Wolfcamp C	10844

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120	20				New		120
Surface	350	13 3/8	48	H-40	STC	New	17 1/2	350
Salt String	2700	10 3/4	40.5	J-55	BTC SCC	New	12.250	2700
Intermediate	10000	7 5/8	29.7	P-110	BTC	New	9 7/8	10000
Production	18178	5-1/2"	20	P110 HP	Eagle SF	New	6 3/4	10808

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	350	32 - 34	NC
Brine	9.8-10.2	2700	34	NC
Cut Brine	8.8-9.2	10000	32-36	<10
OBM	12.0-14	18178 (MD)	48-53	<11

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	164	740	1730	541000	422000
10.2	1412	1580	3130	629000	700000
9.2	4784	5350	9470	940000	960000
14	7868	13150	14360	729000	629000

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
4.5	10.6	32.2	19.2
1.1	2.2	5.8	6.4
1.1	2.0	3.2	3.2
1.7	1.8	3.4	2.9

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Top Wolfcamp (Wolfcamp A)	9682
Top Wolfcamp A - Y Sand	9776
Base Wolfcamp A - Y Sand	9814
Base Wolfcamp A	10307
Top Wolfcamp C	10573
Wolfcamp C - Target	10784
Base Wolfcamp C	10844

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120	20				New		120
Surface	350	13 3/8	48	H-40	STC	New	17 1/2	350
Salt String	2700	10 3/4	40.5	J-55	BTC SCC	New	12.250	2700
Intermediate	10000	7 5/8	29.7	P-110	BTC	New	9 7/8	10000
Production	18178	5-1/2"	20	P110 HP	Eagle SF	New	6 3/4	10808

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	350	32 - 34	NC
Brine	9.8-10.2	2700	34	NC
Cut Brine	8.8-9.2	10000	32-36	<10
OBM	12.0-14	18178 (MD)	48-53	<11

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	164	740	1730	541000	322000
10.2	1432	1580	3130	629000	700000
9.2	4784	5350	9470	940000	960000
14	7868	13150	14360	729000	629000

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
4.5	10.6	32.2	19.2
1.1	2.2	5.8	6.4
1.1	2.0	3.2	3.2
1.7	1.8	3.4	2.9

U. S. Steel Tubular Products

5 1/2 20.00 lb (0.361) P110 HP — USS-EAGLE SFH™

	PIPE	CONNECTION	
MECHANICAL PROPERTIES			
Minimum Yield Strength	**125,000**		*psi*
Maximum Yield Strength	**140,000**		*psi*
Minimum Tensile Strength	**130,000**		*psi*
DIMENSIONS			
Outside Diameter	**5.500**	**5.830**	*in.*
Wall Thickness	0.361		*in.*
Inside Diameter	4.778	4.693	*in.*
Drift - API	4.653	4.653	*in.*
Nominal Linear Weight, T&C	**20.00**		*lbs/ft*
Plain End Weight	19.83		*lbs/ft*
SECTION AREA			
Cross Sectional Area | Critical Area	5.828	5.027	*sq. in.*
Joint Efficiency		86.25	%
PERFORMANCE			
Minimum Collapse Pressure	13,150	13,150	*psi*
External Pressure Leak Resistance		10,000	*psi*
Minimum Internal Yield Pressure	14,360	14,360	*psi*
Minimum Pipe Body Yield Strength	729,000		*lbs*
Joint Strength		629,000	*lbs*
Compression Rating		629,000	*lbs*
Reference Length		21,146	*ft*
Maximum Uniaxial Bend Rating		89.9	*deg/100 ft*
MAKE-UP DATA			
Minimum Make-Up Torque		14,200	*ft-lbs*
Maximum Make-Up Torque		16,800	*ft-lbs*
Maximum Operating Torque		25,700	*ft-lbs*
Make-Up Loss		5.92	*in.*

Notes:

1) Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
2) Compressive & Tensile Connection Efficiencies are calculated by dividing the connection critical area by the pipe body area.
3) Uniaxial bending rating shown is structural only, and equal to compression efficiency.
4) Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
5) Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.
6) Connection external pressure resistance has been verified to 10,000 psi (Fit-For-Service testing protocol).

U. S. Steel Tubular Products
10343 Sam Houston Park Dr., #120
Houston, TX 77064
1-877-893-9461
connections@uss.com
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Kaiser-Francis Oil Company
Wright Fed 2524 WC #2H
Casing Assumptions

Formation Name	Formation Top TVD
Base Salt (Top Delaware)	2679
Top Cherry Canyon	3454
Top Brushy Canyon	4784
Top Lower Brushy Canyon	6079
Top Model Sand	6219
Top 1st Bone Springs Lime	6349
1st Bone Springs Sand	7419
2nd Bone Springs Lime	7679
2nd Bone Springs Sand	8189
Mid 2nd Bone Springs Lime	8519
Lower 2nd Bone Springs Sand	8849
3rd Bone Springs Lime	9346
3rd Bone Springs Sand	9712
Top Wolfcamp (Wolfcamp A)	9682
Top Wolfcamp A - Y Sand	9776
Base Wolfcamp A - Y Sand	9814
Base Wolfcamp A	10307
Top Wolfcamp C	10573
Wolfcamp C - Target	10784
Base Wolfcamp C	10844

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)
Conductor	120	20				New		120
Surface	350	13 3/8	48	H-40	STC	New	17 1/2	350
Salt String	2700	10 3/4	40.5	J-55	BTC SCC	New	12.250	2700
Intermediate	10000	7 5/8	29.7	P-110	BTC	New	9 7/8	10000
Production	18178	5-1/2"	20	P110 HP	Eagle SF	New	6 3/4	10808

Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss
FW	8.4 - 9.0	350	32 - 34	NC
Brine	9.8-10.2	2700	34	NC
Cut Brine	8.8-9.2	10000	32-36	<10
OBM	12.0-14	18178 (MD)	48-53	<13

Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength
9	164	740	1730	541000	322000
10.2	1432	1580	3130	629000	700000
9.2	4784	5350	9470	940000	960000
14	7868	13150	14360	729000	629000

Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
4.5	10.6	32.2	19.2
1.1	2.2	5.8	6.4
1.1	2.0	3.2	3.2
1.7	1.8	3.4	2.9

KAISER-FRANCIS OIL COMPANY
HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN
FOR DRILLING/COMPLETION WORKOVER/FACILITY

Wright Fed 2524 WC #2H
SECTION 25 -T23S-R28E
EDDY COUNTY, NM

This well/facility is not expected to have H_2S, but due to the sensitive location, the following is submitted as requested.

TABLE OF CONTENTS

EMERGENCY RESPONSE ACTIVATION AND GENERAL RESPONSIBILITIES

Activation of the Emergency Action Plan

In the event of any emergency situation, all personnel on location should first ensure that the following items are initiated. After that, they should refer to the appropriate Specific Emergency Guidance sections below for further responsibilities:

1. Notify the senior ranking contract representative on site.
2. Notify Kaiser-Francis representative in charge.
3. Notify civil authorities if the Kaiser-Francis Representative cannot be contacted and the situation dictates.
4. Perform rescue and first aid as required (without jeopardizing additional personnel).

General Responsibilities

In the event of an H_2S emergency, the following plan will be initiated.

1) All personnel will immediately evacuate to an up-wind and if possible up-hill "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 personnel 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.

INDIVIDUAL RESPONSIBILITIES DURING AN H_2S RELEASE

The following procedures and responsibilities will be implemented on activation of the H_2S siren and lights.

All Personnel:

1. On alarm, don escape unit (if available) and report to upwind briefing area.

Rig Manager/Tool Pusher:

1. Check that all personnel are accounted for and their condition.
2. Administer or arrange for first aid treatment, and/or call EMTs as needed.
3. Identify two people best suited to secure well and perform rescue, and instruct them to don SCBA.
4. Notify Contract management and Kaiser-Francis Representative.
5. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.

Two People Responsible for Shut-in and Rescue:

1. Don SCBA and acquire tools to secure well and perform rescue, i.e., wrenches, retrieval ropes, etc.
2. Utilize the buddy system to secure well and perform rescue(s).
3. Return to the briefing area and stand by for further instructions.

All Other Personnel:

1. Isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

Kaiser-Francis Oil Company Representative:

1. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.
2. Notify company management or Local Incident Commander, and Police, Fire Department, or other local emergency services as required.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police shall be the Incident Command of any major release.

The decision to ignite a well should be a last resort and one if not both of the following pertain.

1) Human life and/or property are in danger.

2) There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTIONS FOR IGNITION:

1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "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 H_2S, Oxygen, & LFL. The other person will be the company supervisor; he is responsible for igniting the well.

3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a +/-500' range to ignite the gas.

4) Prior to ignition, make a final check for combustible gases.

5) Following ignition, continue with the emergency actions & procedures as before.

CONTACTING AUTHORITIES

Kaiser-Francis personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	OFFCE	MOBILE
Kaiser-Francis Oil Co.	918/494-0000	
Bill Wilkinson	580/668-2335	580/221-4637
David Zerger	918/491-4350	918/557-6708
Charles Lock	918/491-4337	918/671-6510
Stuart Blake	918/491-4347	918/510-4126
Robert Sanford	918/491-4201	918/770-2682

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police – Artesia	575/748-9718
State Police – Hobbs	575/392-5580
State Police – Carlsbad	575/885-3138
Lea County Sheriff - Lovington	575/396-3611
Local Emergency Planning Center – Lea County	575/396-8607
Local Emergency Planning Center – Eddy County	575/885-3581
Fire Fighting, Rescue & Ambulance – Carlsbad	911 or 575/885-3125
Fire Fighting, Rescue & Ambulance – Hobbs	911 or 575/397-9308
Fire Fighting – Jal Volunteer Fire Department	911 or 505/395-2221
New Mexico Oil & Gas Commission – Artesia	575/748-1283
New Mexico Oil & Gas Commission – Hobbs	575/393-6161
Air Medical Transport Services – Hobbs	800/550-1025
Med Flight Air Ambulance – Albuquerque	505/842-4433
Angel MedFlight	844/553-9033
DXP	432/580-3770
BJ Services	575/392-5556
Halliburton	575/392-6531 800/844-8451

PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event of a release with a concentration greater than 100 ppm H_2S, the ROE (Radius of Exposure) calculations will be done to determine if the following conditions have been met:

- Does the 100 ppm ROE include any public area (any place not associated with this site)
- Does the 500 ppm ROE include any public road (any road which the general public may travel)
- Is the 100 ppm ROE equal to or greater than 3000 feet

If any one of these conditions have been met then the Contingency Plan will be implemented. The following shows how to calculate the radius of exposure and an example.

Calculation for the 100 ppm ROE:

$X = [(1.589)(concentration)(Q)]^{(0.6258)}$

Calculation for the 500 ppm ROE:

$X+[(0.4546)(concentration)(Q)]^{(.06258)}$

(H2S concentrations in decimal form)
10,000 ppm +=1.+
1,000 ppm +=.1+
100 ppm +=.01+
10 ppm +=.001+

EXAMPLE: If a well/facility has been determined to have 150 ppm H_2S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFPD then:

ROE for 100 PPM $X=[(1.589)(.0150)(200)]^{(0.6258)}$
$X=2.65'$
ROE for 500 PPM $X=[(.4546)(.0150)(200)]^{(0.6258)}$
$X=1.2'$

(These calculations will be forwarded to the appropriate District NMOCD 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 H_2S safety, shall monitor with detection equipment the H_2S Concentration, wind and area of exposure (ROE). 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 will 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 H_2S, 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 supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

CHARACTERISTICS OF H_2S AND SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

TRAINING:

All responders must have training in the detection of H_2S measures for protection against the gas, equipment used for protection and emergency response. Weekly drills by all crews will be conducted and recorded in the IADC daily log. Additionally, responders must be equipped with H_2S monitors at all times.

PUBLIC RELATIONS

Kaiser-Francis recognizes that the news media have a legitimate interest in incidents at Kaiser-Francis facilities that could affect the public. It is to the company's benefit to cooperate with the news media when incidents occur because these media are our best liaison with the public.

Our objective is to see that all reports of any emergency are factual and represent the company's position fairly and accurately. Cooperation with news media representatives is the most reliable guarantee that this objective will be met.

All contract and Kaiser-Francis employees are instructed **NOT** to make any statement to the media concerning the emergency incident. If a media representative contacts any employee, they should refer them to the designated Emergency Command Center where they should contact the Incident Commander or his designated relief for any information concerning the incident.

KAISER-FRANCIS OIL COMPANY

Eddy County, NM (NAD27) NM
Wright Fed 2524 WC
#2H

OH

Plan: Plan #1 - IP

Standard Planning Report

29 November, 2017

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #2H
Company:	KAISER-FRANCIS OIL COMPANY	**TVD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Project:	Eddy County, NM (NAD27) NM	**MD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Project	Eddy County, NM (NAD27) NM		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Wright Fed 2524 WC				
Site Position:		**Northing:**	464,505.67 usft	**Latitude:**	32° 16' 36.100 N
From:	Lat/Long	**Easting:**	591,674.76 usft	**Longitude:**	104° 2' 12.155 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.16 °

Well	#2H					
Well Position	**+N/-S**	-0.28 usft	**Northing:**	464,505.39 usft	**Latitude:**	32° 16' 36.097 N
	+E/-W	29.98 usft	**Easting:**	591,704.74 usft	**Longitude:**	104° 2' 11.805 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	2,966.90 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	11/29/17	7.12	60.03	47,876.60472938

Design	Plan #1 - IP				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	6.53	

Plan Survey Tool Program **Date** 11/29/17

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,178.06	Plan #1 - IP (OH)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,533.33	8.00	97.00	3,531.60	-4.53	36.90	1.50	1.50	0.00	97.00	
9,065.57	8.00	97.00	9,010.00	-98.36	801.10	0.00	0.00	0.00	0.00	
9,598.90	0.00	0.00	9,541.60	-102.89	837.99	1.50	-1.50	0.00	180.00	
10,292.40	0.00	0.00	10,235.10	-102.89	837.99	0.00	0.00	0.00	0.00	
11,192.41	90.00	0.12	10,808.06	470.07	839.17	10.00	10.00	0.01	0.12	
18,178.06	90.00	0.12	10,808.00	7,455.71	853.49	0.00	0.00	0.00	0.00	BHL(WF2524WC#2H

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Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start of Nudge: 8° INC, 97°AZ/@1.5°DLS									
3,100.00	1.50	97.00	3,099.99	-0.16	1.30	-0.01	1.50	1.50	0.00
3,200.00	3.00	97.00	3,199.91	-0.64	5.20	-0.04	1.50	1.50	0.00
3,300.00	4.50	97.00	3,299.69	-1.44	11.69	-0.10	1.50	1.50	0.00
3,400.00	6.00	97.00	3,399.27	-2.55	20.77	-0.17	1.50	1.50	0.00
3,500.00	7.50	97.00	3,498.57	-3.98	32.43	-0.27	1.50	1.50	0.00
3,533.33	8.00	97.00	3,531.60	-4.53	36.90	-0.30	1.50	1.50	0.00
3,600.00	8.00	97.00	3,597.62	-5.66	46.11	-0.38	0.00	0.00	0.00
3,700.00	8.00	97.00	3,696.65	-7.36	59.92	-0.49	0.00	0.00	0.00
3,800.00	8.00	97.00	3,795.67	-9.05	73.73	-0.61	0.00	0.00	0.00
3,900.00	8.00	97.00	3,894.70	-10.75	87.55	-0.72	0.00	0.00	0.00
4,000.00	8.00	97.00	3,993.73	-12.45	101.36	-0.84	0.00	0.00	0.00
4,100.00	8.00	97.00	4,092.75	-14.14	115.17	-0.95	0.00	0.00	0.00
4,200.00	8.00	97.00	4,191.78	-15.84	128.99	-1.06	0.00	0.00	0.00
4,300.00	8.00	97.00	4,290.81	-17.53	142.80	-1.18	0.00	0.00	0.00
4,400.00	8.00	97.00	4,389.83	-19.23	156.61	-1.29	0.00	0.00	0.00
4,500.00	8.00	97.00	4,488.86	-20.93	170.43	-1.41	0.00	0.00	0.00
4,600.00	8.00	97.00	4,587.89	-22.62	184.24	-1.52	0.00	0.00	0.00
4,700.00	8.00	97.00	4,686.91	-24.32	198.05	-1.64	0.00	0.00	0.00
4,800.00	8.00	97.00	4,785.94	-26.01	211.87	-1.75	0.00	0.00	0.00
4,900.00	8.00	97.00	4,884.97	-27.71	225.68	-1.86	0.00	0.00	0.00
5,000.00	8.00	97.00	4,984.00	-29.41	239.50	-1.98	0.00	0.00	0.00
5,100.00	8.00	97.00	5,083.02	-31.10	253.31	-2.09	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #2H
Company:	KAISER-FRANCIS OIL COMPANY	**TVD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Project:	Eddy County, NM (NAD27) NM	**MD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.00	8.00	97.00	5,182.05	-32.80	267.12	-2.21	0.00	0.00	0.00
5,300.00	8.00	97.00	5,281.08	-34.49	280.94	-2.32	0.00	0.00	0.00
5,400.00	8.00	97.00	5,380.10	-36.19	294.75	-2.43	0.00	0.00	0.00
5,500.00	8.00	97.00	5,479.13	-37.89	308.56	-2.55	0.00	0.00	0.00
5,600.00	8.00	97.00	5,578.16	-39.58	322.38	-2.66	0.00	0.00	0.00
5,700.00	8.00	97.00	5,677.18	-41.28	336.19	-2.78	0.00	0.00	0.00
5,800.00	8.00	97.00	5,776.21	-42.98	350.00	-2.89	0.00	0.00	0.00
5,900.00	8.00	97.00	5,875.24	-44.67	363.82	-3.00	0.00	0.00	0.00
6,000.00	8.00	97.00	5,974.26	-46.37	377.63	-3.12	0.00	0.00	0.00
6,100.00	8.00	97.00	6,073.29	-48.06	391.44	-3.23	0.00	0.00	0.00
6,200.00	8.00	97.00	6,172.32	-49.76	405.26	-3.35	0.00	0.00	0.00
6,300.00	8.00	97.00	6,271.34	-51.46	419.07	-3.46	0.00	0.00	0.00
6,400.00	8.00	97.00	6,370.37	-53.15	432.89	-3.57	0.00	0.00	0.00
6,500.00	8.00	97.00	6,469.40	-54.85	446.70	-3.69	0.00	0.00	0.00
6,600.00	8.00	97.00	6,568.42	-56.54	460.51	-3.80	0.00	0.00	0.00
6,700.00	8.00	97.00	6,667.45	-58.24	474.33	-3.92	0.00	0.00	0.00
6,800.00	8.00	97.00	6,766.48	-59.94	488.14	-4.03	0.00	0.00	0.00
6,900.00	8.00	97.00	6,865.50	-61.63	501.95	-4.14	0.00	0.00	0.00
7,000.00	8.00	97.00	6,964.53	-63.33	515.77	-4.26	0.00	0.00	0.00
7,100.00	8.00	97.00	7,063.56	-65.02	529.58	-4.37	0.00	0.00	0.00
7,200.00	8.00	97.00	7,162.59	-66.72	543.39	-4.49	0.00	0.00	0.00
7,300.00	8.00	97.00	7,261.61	-68.42	557.21	-4.60	0.00	0.00	0.00
7,400.00	8.00	97.00	7,360.64	-70.11	571.02	-4.71	0.00	0.00	0.00
7,500.00	8.00	97.00	7,459.67	-71.81	584.83	-4.83	0.00	0.00	0.00
7,600.00	8.00	97.00	7,558.69	-73.50	598.65	-4.94	0.00	0.00	0.00
7,700.00	8.00	97.00	7,657.72	-75.20	612.46	-5.06	0.00	0.00	0.00
7,800.00	8.00	97.00	7,756.75	-76.90	626.28	-5.17	0.00	0.00	0.00
7,900.00	8.00	97.00	7,855.77	-78.59	640.09	-5.28	0.00	0.00	0.00
8,000.00	8.00	97.00	7,954.80	-80.29	653.90	-5.40	0.00	0.00	0.00
8,100.00	8.00	97.00	8,053.83	-81.99	667.72	-5.51	0.00	0.00	0.00
8,200.00	8.00	97.00	8,152.85	-83.68	681.53	-5.63	0.00	0.00	0.00
8,300.00	8.00	97.00	8,251.88	-85.38	695.34	-5.74	0.00	0.00	0.00
8,400.00	8.00	97.00	8,350.91	-87.07	709.16	-5.85	0.00	0.00	0.00
8,500.00	8.00	97.00	8,449.93	-88.77	722.97	-5.97	0.00	0.00	0.00
8,600.00	8.00	97.00	8,548.96	-90.47	736.78	-6.08	0.00	0.00	0.00
8,700.00	8.00	97.00	8,647.99	-92.16	750.60	-6.20	0.00	0.00	0.00
8,800.00	8.00	97.00	8,747.01	-93.86	764.41	-6.31	0.00	0.00	0.00
8,900.00	8.00	97.00	8,846.04	-95.55	778.22	-6.42	0.00	0.00	0.00
9,000.00	8.00	97.00	8,945.07	-97.25	792.04	-6.54	0.00	0.00	0.00
9,065.50	8.00	97.00	9,009.93	-98.36	801.09	-6.61	0.00	0.00	0.00
Drop to Vertical /@1.5°DLS									
9,065.57	8.00	97.00	9,010.00	-98.36	801.10	-6.61	0.00	0.00	0.00
9,100.00	7.48	97.00	9,044.12	-98.93	805.70	-6.65	1.50	-1.50	0.00
9,200.00	5.98	97.00	9,143.42	-100.36	817.34	-6.75	1.50	-1.50	0.00
9,300.00	4.48	97.00	9,243.00	-101.47	826.39	-6.82	1.50	-1.50	0.00
9,400.00	2.98	97.00	9,342.79	-102.26	832.85	-6.88	1.50	-1.50	0.00
9,500.00	1.48	97.00	9,442.71	-102.74	836.72	-6.91	1.50	-1.50	0.00
9,598.90	0.00	0.00	9,541.60	-102.89	837.99	-6.92	1.50	-1.50	0.00
9,600.00	0.00	0.00	9,542.70	-102.89	837.99	-6.92	0.00	0.00	0.00
9,700.00	0.00	0.00	9,642.70	-102.89	837.99	-6.92	0.00	0.00	0.00
9,800.00	0.00	0.00	9,742.70	-102.89	837.99	-6.92	0.00	0.00	0.00
9,900.00	0.00	0.00	9,842.70	-102.89	837.99	-6.92	0.00	0.00	0.00
10,000.00	0.00	0.00	9,942.70	-102.89	837.99	-6.92	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #2H
Company:	KAISER-FRANCIS OIL COMPANY	**TVD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Project:	Eddy County, NM (NAD27) NM	**MD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,100.00	0.00	0.00	10,042.70	-102.89	837.99	-6.92	0.00	0.00	0.00
10,200.00	0.00	0.00	10,142.70	-102.89	837.99	-6.92	0.00	0.00	0.00
10,292.40	0.00	0.00	10,235.10	-102.89	837.99	-6.92	0.00	0.00	0.00
KOP: 10292.40' MD, 10235.10' TVD - Build at 10°/100ft to 90° INC @ 0.12° AZ									
10,300.00	0.76	0.12	10,242.70	-102.84	837.99	-6.87	10.00	10.00	0.00
10,350.00	5.76	0.12	10,292.60	-100.00	838.00	-4.04	10.00	10.00	0.00
10,400.00	10.76	0.12	10,342.07	-92.82	838.01	3.09	10.00	10.00	0.00
10,450.00	15.76	0.12	10,390.72	-81.35	838.04	14.49	10.00	10.00	0.00
10,500.00	20.76	0.12	10,438.19	-65.69	838.07	30.05	10.00	10.00	0.00
10,550.00	25.76	0.12	10,484.11	-45.95	838.11	49.66	10.00	10.00	0.00
10,600.00	30.76	0.12	10,528.13	-22.29	838.16	73.18	10.00	10.00	0.00
10,650.00	35.76	0.12	10,569.93	5.12	838.21	100.42	10.00	10.00	0.00
10,700.00	40.76	0.12	10,609.18	36.08	838.28	131.18	10.00	10.00	0.00
10,750.00	45.76	0.12	10,645.58	70.33	838.35	165.22	10.00	10.00	0.00
10,800.00	50.76	0.12	10,678.86	107.63	838.42	202.28	10.00	10.00	0.00
10,850.00	55.76	0.12	10,708.76	147.68	838.51	242.09	10.00	10.00	0.00
10,900.00	60.76	0.12	10,735.05	190.19	838.59	284.33	10.00	10.00	0.00
10,950.00	65.76	0.12	10,757.54	234.83	838.68	328.69	10.00	10.00	0.00
11,000.00	70.76	0.12	10,776.06	281.26	838.78	374.83	10.00	10.00	0.00
11,050.00	75.76	0.12	10,790.45	329.12	838.88	422.40	10.00	10.00	0.00
11,100.00	80.76	0.12	10,800.62	378.06	838.98	471.03	10.00	10.00	0.00
11,150.00	85.76	0.12	10,806.49	427.70	839.08	520.36	10.00	10.00	0.00
11,192.41	90.00	0.12	10,808.06	470.07	839.17	562.46	10.00	10.00	0.00
EOC: 11192.41' MD, 10808.06' TVD, 90.00° INC, 0.12° AZ, 562.46' VS									
11,200.00	90.00	0.12	10,808.06	477.66	839.18	570.00	0.00	0.00	0.00
11,254.18	90.00	0.12	10,808.06	531.84	839.29	623.85	0.00	0.00	0.00
FTP(WF2524WC#2H)									
11,300.00	90.00	0.12	10,808.06	577.66	839.39	669.38	0.00	0.00	0.00
11,400.00	90.00	0.12	10,808.06	677.66	839.59	768.75	0.00	0.00	0.00
11,500.00	90.00	0.12	10,808.06	777.66	839.80	868.13	0.00	0.00	0.00
11,600.00	90.00	0.12	10,808.05	877.66	840.00	967.50	0.00	0.00	0.00
11,700.00	90.00	0.12	10,808.05	977.66	840.21	1,066.88	0.00	0.00	0.00
11,800.00	90.00	0.12	10,808.05	1,077.66	840.41	1,166.25	0.00	0.00	0.00
11,900.00	90.00	0.12	10,808.05	1,177.66	840.62	1,265.62	0.00	0.00	0.00
12,000.00	90.00	0.12	10,808.05	1,277.66	840.82	1,365.00	0.00	0.00	0.00
12,100.00	90.00	0.12	10,808.05	1,377.66	841.03	1,464.37	0.00	0.00	0.00
12,200.00	90.00	0.12	10,808.05	1,477.66	841.23	1,563.75	0.00	0.00	0.00
12,300.00	90.00	0.12	10,808.05	1,577.66	841.44	1,663.12	0.00	0.00	0.00
12,400.00	90.00	0.12	10,808.05	1,677.66	841.64	1,762.50	0.00	0.00	0.00
12,500.00	90.00	0.12	10,808.05	1,777.66	841.85	1,861.87	0.00	0.00	0.00
12,600.00	90.00	0.12	10,808.05	1,877.66	842.05	1,961.24	0.00	0.00	0.00
12,700.00	90.00	0.12	10,808.05	1,977.66	842.26	2,060.62	0.00	0.00	0.00
12,800.00	90.00	0.12	10,808.04	2,077.66	842.46	2,159.99	0.00	0.00	0.00
12,900.00	90.00	0.12	10,808.04	2,177.66	842.67	2,259.37	0.00	0.00	0.00
13,000.00	90.00	0.12	10,808.04	2,277.66	842.87	2,358.74	0.00	0.00	0.00
13,100.00	90.00	0.12	10,808.04	2,377.66	843.08	2,458.12	0.00	0.00	0.00
13,200.00	90.00	0.12	10,808.04	2,477.66	843.28	2,557.49	0.00	0.00	0.00
13,300.00	90.00	0.12	10,808.04	2,577.66	843.49	2,656.86	0.00	0.00	0.00
13,400.00	90.00	0.12	10,808.04	2,677.66	843.69	2,756.24	0.00	0.00	0.00
13,500.00	90.00	0.12	10,808.04	2,777.66	843.90	2,855.61	0.00	0.00	0.00
13,600.00	90.00	0.12	10,808.04	2,877.66	844.10	2,954.99	0.00	0.00	0.00
13,700.00	90.00	0.12	10,808.04	2,977.66	844.31	3,054.36	0.00	0.00	0.00
13,800.00	90.00	0.12	10,808.04	3,077.66	844.51	3,153.74	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #2H
Company:	KAISER-FRANCIS OIL COMPANY	**TVD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Project:	Eddy County, NM (NAD27) NM	**MD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,900.00	90.00	0.12	10,808.04	3,177.66	844.72	3,253.11	0.00	0.00	0.00
14,000.00	90.00	0.12	10,808.03	3,277.66	844.92	3,352.48	0.00	0.00	0.00
14,100.00	90.00	0.12	10,808.03	3,377.66	845.13	3,451.86	0.00	0.00	0.00
14,200.00	90.00	0.12	10,808.03	3,477.66	845.33	3,551.23	0.00	0.00	0.00
14,300.00	90.00	0.12	10,808.03	3,577.66	845.54	3,650.61	0.00	0.00	0.00
14,400.00	90.00	0.12	10,808.03	3,677.66	845.74	3,749.98	0.00	0.00	0.00
14,500.00	90.00	0.12	10,808.03	3,777.66	845.95	3,849.36	0.00	0.00	0.00
14,600.00	90.00	0.12	10,808.03	3,877.66	846.15	3,948.73	0.00	0.00	0.00
14,700.00	90.00	0.12	10,808.03	3,977.65	846.36	4,048.10	0.00	0.00	0.00
14,800.00	90.00	0.12	10,808.03	4,077.65	846.56	4,147.48	0.00	0.00	0.00
14,900.00	90.00	0.12	10,808.03	4,177.65	846.77	4,246.85	0.00	0.00	0.00
15,000.00	90.00	0.12	10,808.03	4,277.65	846.97	4,346.23	0.00	0.00	0.00
15,100.00	90.00	0.12	10,808.03	4,377.65	847.18	4,445.60	0.00	0.00	0.00
15,200.00	90.00	0.12	10,808.02	4,477.65	847.38	4,544.98	0.00	0.00	0.00
15,300.00	90.00	0.12	10,808.02	4,577.65	847.59	4,644.35	0.00	0.00	0.00
15,400.00	90.00	0.12	10,808.02	4,677.65	847.79	4,743.72	0.00	0.00	0.00
15,500.00	90.00	0.12	10,808.02	4,777.65	848.00	4,843.10	0.00	0.00	0.00
15,600.00	90.00	0.12	10,808.02	4,877.65	848.20	4,942.47	0.00	0.00	0.00
15,700.00	90.00	0.12	10,808.02	4,977.65	848.41	5,041.85	0.00	0.00	0.00
15,800.00	90.00	0.12	10,808.02	5,077.65	848.61	5,141.22	0.00	0.00	0.00
15,900.00	90.00	0.12	10,808.02	5,177.65	848.82	5,240.60	0.00	0.00	0.00
16,000.00	90.00	0.12	10,808.02	5,277.65	849.02	5,339.97	0.00	0.00	0.00
16,100.00	90.00	0.12	10,808.02	5,377.65	849.23	5,439.34	0.00	0.00	0.00
16,200.00	90.00	0.12	10,808.02	5,477.65	849.43	5,538.72	0.00	0.00	0.00
16,300.00	90.00	0.12	10,808.02	5,577.65	849.64	5,638.09	0.00	0.00	0.00
16,400.00	90.00	0.12	10,808.01	5,677.65	849.84	5,737.47	0.00	0.00	0.00
16,500.00	90.00	0.12	10,808.01	5,777.65	850.05	5,836.84	0.00	0.00	0.00
16,600.00	90.00	0.12	10,808.01	5,877.65	850.26	5,936.21	0.00	0.00	0.00
16,700.00	90.00	0.12	10,808.01	5,977.65	850.46	6,035.59	0.00	0.00	0.00
16,800.00	90.00	0.12	10,808.01	6,077.65	850.67	6,134.96	0.00	0.00	0.00
16,900.00	90.00	0.12	10,808.01	6,177.65	850.87	6,234.34	0.00	0.00	0.00
17,000.00	90.00	0.12	10,808.01	6,277.65	851.08	6,333.71	0.00	0.00	0.00
17,100.00	90.00	0.12	10,808.01	6,377.65	851.28	6,433.09	0.00	0.00	0.00
17,200.00	90.00	0.12	10,808.01	6,477.65	851.49	6,532.46	0.00	0.00	0.00
17,300.00	90.00	0.12	10,808.01	6,577.65	851.69	6,631.83	0.00	0.00	0.00
17,400.00	90.00	0.12	10,808.01	6,677.65	851.90	6,731.21	0.00	0.00	0.00
17,500.00	90.00	0.12	10,808.01	6,777.65	852.10	6,830.58	0.00	0.00	0.00
17,600.00	90.00	0.12	10,808.01	6,877.65	852.31	6,929.96	0.00	0.00	0.00
17,700.00	90.00	0.12	10,808.00	6,977.65	852.51	7,029.33	0.00	0.00	0.00
17,800.00	90.00	0.12	10,808.00	7,077.65	852.72	7,128.71	0.00	0.00	0.00
17,900.00	90.00	0.12	10,808.00	7,177.65	852.92	7,228.08	0.00	0.00	0.00
18,000.00	90.00	0.12	10,808.00	7,277.65	853.13	7,327.45	0.00	0.00	0.00
18,100.00	90.00	0.12	10,808.00	7,377.65	853.33	7,426.83	0.00	0.00	0.00
18,178.06	90.00	0.12	10,808.00	7,455.71	853.49	7,504.40	0.00	0.00	0.00

TD: 18178.06' MD, 10808.00' TVD - BHL(WF2524WC#2H)

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #2H
Company:	KAISER-FRANCIS OIL COMPANY	**TVD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Project:	Eddy County, NM (NAD27) NM	**MD Reference:**	RKB @ 2989.90usft (Rig KB = 23')
Site:	Wright Fed 2524 WC	**North Reference:**	Grid
Well:	#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - IP		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL(WF2524WC#2H) - plan hits target center - Point	0.00	0.00	10,808.00	7,455.71	853.49	471,961.10	592,558.23	32° 17' 49.856 N	104° 2' 1.621 W
FTP(WF2524WC#2H) - plan misses target center by 0.62usft at 11254.18usft MD (10808.06 TVD, 531.84 N, 839.29 E) - Point	0.00	0.00	10,808.00	531.84	838.68	465,037.23	592,543.42	32° 16' 41.337 N	104° 2' 2.019 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
3,000.00	3,000.00	0.00	0.00	Start of Nudge: 8° INC, 97°AZ/@1.5°DLS
9,065.50	9,009.93	-98.36	801.09	Drop to Vertical /@1.5°DLS
10,292.40	10,235.10	-102.89	837.99	KOP: 10292.40' MD, 10235.10' TVD
10,292.40	10,235.10	-102.89	837.99	Build at 10°/100ft to 90° INC @ 0.12° AZ
11,192.41	10,808.06	470.07	839.17	EOC: 11192.41' MD, 10808.06' TVD, 90.00° INC, 0.12° AZ, 562.46' VS
18,178.06	10,808.00	7,455.71	853.49	TD: 18178.06' MD, 10808.00' TVD

Kaiser-Francis Oil Company

WELL DETAILS: #2H

Ground Elevation:: 2966.90
RKB Elevation: RKB @ 2989.90usft (Rig KB = 23')
Rig Name: Rig KB = 23'

KAISER-FRANCIS OIL COMPANY
Project: Eddy County, NM (NAD27) NM
Site: Wright Fed 2524 WC
Well: #2H
Wellbore: OH
Plan: Plan #1 - IP (#2H/OH)

Surface Hole Location

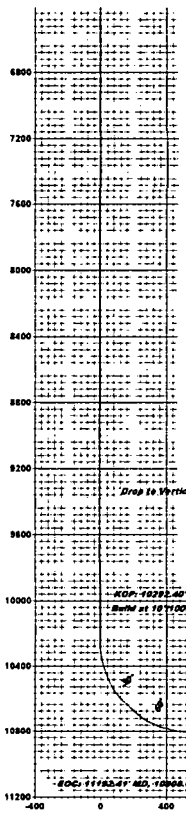
Northing	Easting	Latitude	Longitude
464505.39	591704.74	32° 16' 36.097 N	104° 2' 11.805 W

Azimuths to Grid North
True North: -0.16°
Magnetic North: 6.97°

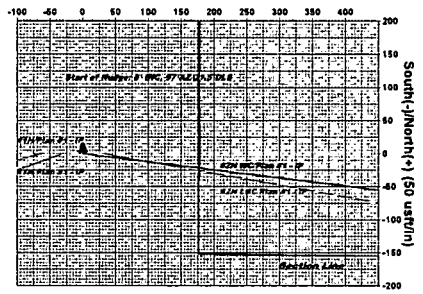
Magnetic Field
Strength: 47876.6snT
Dip Angle: 60.03°
Date: 11/29/2017
Model: IGRF2015

Section Details

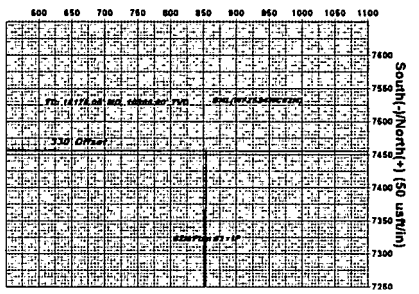
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00
3	3533.33	8.00	97.00	3531.60	-4.53	36.90	1.50	97.00	-0.30
4	9065.57	8.00	97.00	9010.00	-98.36	801.10	0.00	0.00	-6.61
5	9598.90	0.00	0.00	9541.60	-102.89	837.99	1.50	180.00	-6.92
6	10292.40	0.00	0.00	10235.10	-102.89	837.99	0.00	0.00	-6.92
7	11192.41	90.00	0.12	10808.06	470.07	839.17	10.00	0.12	562.46
8	18178.06	90.00	0.12	10808.00	7455.71	853.49	0.00	0.00	7504.40



West(-)/East(+) (50 usft/in)



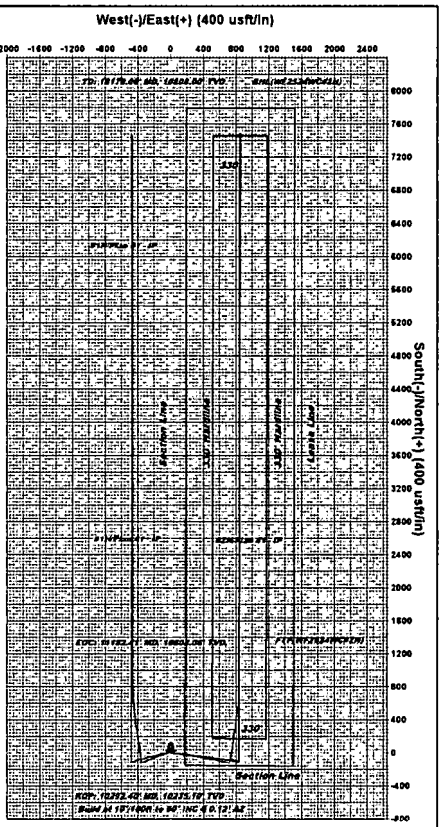
West(-)/East(+) (50 usft/in)



DESIGN TARGET DETAILS					
Name	+N/-S	+E/-W	Northing	Easting	
BHL(WF2524WC#2H)	7455.71	853.49	471961.16	592558.33	
FTP(WF2524WC#2H)	531.84	838.68	465037.33	592543.42	

PROJECT DETAILS: Eddy County, NM (NAD27) NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

West(-)/East(+) (400 usft/in)



Vertical Section at 6.53° (200 usft/in)

VON ENERGY SERVICES, LLC.
VON Directional
2407 E. Murphy St. Bldg. E3 Odessa, TX 79761
Phone: 432-232-8838

Plan: Plan #1 - IP (#2H/OH)
Created By: Gabriel Cruz Date: 9:22, November 29 2017

KAISER-FRANCIS OIL COMPANY
#2H - Plan #1 - IP

Eddy County, NM (NAD27) NM
Wright Fed 2524 WC
Your Ref:

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0	0	0	0	0	0	0	0
100	0	0	100	0	0	0	0
200	0	0	200	0	0	0	0
300	0	0	300	0	0	0	0
400	0	0	400	0	0	0	0
500	0	0	500	0	0	0	0
600	0	0	600	0	0	0	0
700	0	0	700	0	0	0	0
800	0	0	800	0	0	0	0
900	0	0	900	0	0	0	0
1000	0	0	1000	0	0	0	0
1100	0	0	1100	0	0	0	0
1200	0	0	1200	0	0	0	0
1300	0	0	1300	0	0	0	0
1400	0	0	1400	0	0	0	0
1500	0	0	1500	0	0	0	0
1600	0	0	1600	0	0	0	0
1700	0	0	1700	0	0	0	0
1800	0	0	1800	0	0	0	0
1900	0	0	1900	0	0	0	0
2000	0	0	2000	0	0	0	0
2100	0	0	2100	0	0	0	0
2200	0	0	2200	0	0	0	0
2300	0	0	2300	0	0	0	0
2400	0	0	2400	0	0	0	0
2500	0	0	2500	0	0	0	0
2600	0	0	2600	0	0	0	0
2700	0	0	2700	0	0	0	0
2800	0	0	2800	0	0	0	0
2900	0	0	2900	0	0	0	0
3000	0	0	3000	0	0	0	0
3100	1.5	97	3099.99	-0.16	1.3	-0.01	1.5
3200	3	97	3199.91	-0.64	5.2	-0.04	1.5
3300	4.5	97	3299.69	-1.44	11.69	-0.1	1.5
3400	6	97	3399.27	-2.55	20.77	-0.17	1.5
3500	7.5	97	3498.57	-3.98	32.43	-0.27	1.5
3533.33	8	97	3531.6	-4.53	36.9	-0.3	1.5

3600	8	97	3597.62	-5.66	46.11	-0.38	0
3700	8	97	3696.65	-7.36	59.92	-0.49	0
3800	8	97	3795.67	-9.05	73.73	-0.61	0
3900	8	97	3894.7	-10.75	87.55	-0.72	0
4000	8	97	3993.73	-12.45	101.36	-0.84	0
4100	8	97	4092.75	-14.14	115.17	-0.95	0
4200	8	97	4191.78	-15.84	128.99	-1.06	0
4300	8	97	4290.81	-17.53	142.8	-1.18	0
4400	8	97	4389.83	-19.23	156.61	-1.29	0
4500	8	97	4488.86	-20.93	170.43	-1.41	0
4600	8	97	4587.89	-22.62	184.24	-1.52	0
4700	8	97	4686.91	-24.32	198.05	-1.64	0
4800	8	97	4785.94	-26.01	211.87	-1.75	0
4900	8	97	4884.97	-27.71	225.68	-1.86	0
5000	8	97	4984	-29.41	239.5	-1.98	0
5100	8	97	5083.02	-31.1	253.31	-2.09	0
5200	8	97	5182.05	-32.8	267.12	-2.21	0
5300	8	97	5281.08	-34.49	280.94	-2.32	0
5400	8	97	5380.1	-36.19	294.75	-2.43	0
5500	8	97	5479.13	-37.89	308.56	-2.55	0
5600	8	97	5578.16	-39.58	322.38	-2.66	0
5700	8	97	5677.18	-41.28	336.19	-2.78	0
5800	8	97	5776.21	-42.98	350	-2.89	0
5900	8	97	5875.24	-44.67	363.82	-3	0
6000	8	97	5974.26	-46.37	377.63	-3.12	0
6100	8	97	6073.29	-48.06	391.44	-3.23	0
6200	8	97	6172.32	-49.76	405.26	-3.35	0
6300	8	97	6271.34	-51.46	419.07	-3.46	0
6400	8	97	6370.37	-53.15	432.89	-3.57	0
6500	8	97	6469.4	-54.85	446.7	-3.69	0
6600	8	97	6568.42	-56.54	460.51	-3.8	0
6700	8	97	6667.45	-58.24	474.33	-3.92	0
6800	8	97	6766.48	-59.94	488.14	-4.03	0
6900	8	97	6865.5	-61.63	501.95	-4.14	0
7000	8	97	6964.53	-63.33	515.77	-4.26	0
7100	8	97	7063.56	-65.02	529.58	-4.37	0
7200	8	97	7162.59	-66.72	543.39	-4.49	0
7300	8	97	7261.61	-68.42	557.21	-4.6	0
7400	8	97	7360.64	-70.11	571.02	-4.71	0
7500	8	97	7459.67	-71.81	584.83	-4.83	0
7600	8	97	7558.69	-73.5	598.65	-4.94	0
7700	8	97	7657.72	-75.2	612.46	-5.06	0
7800	8	97	7756.75	-76.9	626.28	-5.17	0
7900	8	97	7855.77	-78.59	640.09	-5.28	0
8000	8	97	7954.8	-80.29	653.9	-5.4	0
8100	8	97	8053.83	-81.99	667.72	-5.51	0
8200	8	97	8152.85	-83.68	681.53	-5.63	0
8300	8	97	8251.88	-85.38	695.34	-5.74	0
8400	8	97	8350.91	-87.07	709.16	-5.85	0
8500	8	97	8449.93	-88.77	722.97	-5.97	0
8600	8	97	8548.96	-90.47	736.78	-6.08	0
8700	8	97	8647.99	-92.16	750.6	-6.2	0

8800	8	97	8747.01	-93.86	764.41	-6.31	0
8900	8	97	8846.04	-95.55	778.22	-6.42	0
9000	8	97	8945.07	-97.25	792.04	-6.54	0
9065.57	8	97	9010	-98.36	801.1	-6.61	0
9100	7.484	97	9044.12	-98.93	805.7	-6.65	1.5
9200	5.984	97	9143.42	-100.36	817.34	-6.75	1.5
9300	4.484	97	9243	-101.47	826.39	-6.82	1.5
9400	2.984	97	9342.79	-102.26	832.85	-6.88	1.5
9500	1.484	97	9442.71	-102.74	836.72	-6.91	1.5
9598.9	0	0	9541.6	-102.89	837.99	-6.92	1.5
9600	0	0	9542.7	-102.89	837.99	-6.92	0
9700	0	0	9642.7	-102.89	837.99	-6.92	0
9800	0	0	9742.7	-102.89	837.99	-6.92	0
9900	0	0	9842.7	-102.89	837.99	-6.92	0
10000	0	0	9942.7	-102.89	837.99	-6.92	0
10100	0	0	10042.7	-102.89	837.99	-6.92	0
10200	0	0	10142.7	-102.89	837.99	-6.92	0
10292.4	0	0	10235.1	-102.89	837.99	-6.92	0
10300	0.76	0.117	10242.7	-102.84	837.99	-6.87	10
10350	5.76	0.117	10292.6	-100	838	-4.04	10
10400	10.76	0.117	10342.07	-92.82	838.01	3.09	10
10450	15.76	0.117	10390.72	-81.35	838.04	14.49	10
10500	20.76	0.117	10438.19	-65.69	838.07	30.05	10
10550	25.76	0.117	10484.11	-45.95	838.11	49.66	10
10600	30.76	0.117	10528.13	-22.29	838.16	73.18	10
10650	35.76	0.117	10569.93	5.12	838.21	100.42	10
10700	40.76	0.117	10609.18	36.08	838.28	131.18	10
10750	45.76	0.117	10645.58	70.33	838.35	165.22	10
10800	50.76	0.117	10678.86	107.63	838.42	202.28	10
10850	55.76	0.117	10708.76	147.68	838.51	242.09	10
10900	60.76	0.117	10735.05	190.19	838.59	284.33	10
10950	65.76	0.117	10757.54	234.83	838.68	328.69	10
11000	70.76	0.117	10776.06	281.26	838.78	374.83	10
11050	75.76	0.117	10790.45	329.12	838.88	422.4	10
11100	80.76	0.117	10800.62	378.06	838.98	471.03	10
11150	85.76	0.117	10806.49	427.7	839.08	520.36	10
11192.41	90	0.117	10808.06	470.07	839.17	562.46	10
11200	90	0.117	10808.06	477.66	839.18	570	0
11300	90	0.117	10808.06	577.66	839.39	669.38	0
11400	90	0.117	10808.06	677.66	839.59	768.75	0
11500	90	0.117	10808.06	777.66	839.8	868.13	0
11600	90	0.117	10808.05	877.66	840	967.5	0
11700	90	0.117	10808.05	977.66	840.21	1066.88	0
11800	90	0.117	10808.05	1077.66	840.41	1166.25	0
11900	90	0.117	10808.05	1177.66	840.62	1265.62	0
12000	90	0.117	10808.05	1277.66	840.82	1365	0
12100	90	0.117	10808.05	1377.66	841.03	1464.37	0
12200	90	0.117	10808.05	1477.66	841.23	1563.75	0
12300	90	0.117	10808.05	1577.66	841.44	1663.12	0
12400	90	0.117	10808.05	1677.66	841.64	1762.5	0
12500	90	0.117	10808.05	1777.66	841.85	1861.87	0
12600	90	0.117	10808.05	1877.66	842.05	1961.24	0

12700	90	0.117	10808.05	1977.66	842.26	2060.62	0
12800	90	0.117	10808.04	2077.66	842.46	2159.99	0
12900	90	0.117	10808.04	2177.66	842.67	2259.37	0
13000	90	0.117	10808.04	2277.66	842.87	2358.74	0
13100	90	0.117	10808.04	2377.66	843.08	2458.12	0
13200	90	0.117	10808.04	2477.66	843.28	2557.49	0
13300	90	0.117	10808.04	2577.66	843.49	2656.86	0
13400	90	0.117	10808.04	2677.66	843.69	2756.24	0
13500	90	0.117	10808.04	2777.66	843.9	2855.61	0
13600	90	0.117	10808.04	2877.66	844.1	2954.99	0
13700	90	0.117	10808.04	2977.66	844.31	3054.36	0
13800	90	0.117	10808.04	3077.66	844.51	3153.74	0
13900	90	0.117	10808.04	3177.66	844.72	3253.11	0
14000	90	0.117	10808.03	3277.66	844.92	3352.48	0
14100	90	0.117	10808.03	3377.66	845.13	3451.86	0
14200	90	0.117	10808.03	3477.66	845.33	3551.23	0
14300	90	0.117	10808.03	3577.66	845.54	3650.61	0
14400	90	0.117	10808.03	3677.66	845.74	3749.98	0
14500	90	0.117	10808.03	3777.66	845.95	3849.36	0
14600	90	0.117	10808.03	3877.66	846.15	3948.73	0
14700	90	0.117	10808.03	3977.65	846.36	4048.1	0
14800	90	0.117	10808.03	4077.65	846.56	4147.48	0
14900	90	0.117	10808.03	4177.65	846.77	4246.85	0
15000	90	0.117	10808.03	4277.65	846.97	4346.23	0
15100	90	0.117	10808.03	4377.65	847.18	4445.6	0
15200	90	0.117	10808.02	4477.65	847.38	4544.98	0
15300	90	0.117	10808.02	4577.65	847.59	4644.35	0
15400	90	0.117	10808.02	4677.65	847.79	4743.72	0
15500	90	0.117	10808.02	4777.65	848	4843.1	0
15600	90	0.117	10808.02	4877.65	848.2	4942.47	0
15700	90	0.117	10808.02	4977.65	848.41	5041.85	0
15800	90	0.117	10808.02	5077.65	848.61	5141.22	0
15900	90	0.117	10808.02	5177.65	848.82	5240.59	0
16000	90	0.117	10808.02	5277.65	849.02	5339.97	0
16100	90	0.117	10808.02	5377.65	849.23	5439.34	0
16200	90	0.117	10808.02	5477.65	849.43	5538.72	0
16300	90	0.117	10808.02	5577.65	849.64	5638.09	0
16400	90	0.117	10808.01	5677.65	849.84	5737.47	0
16500	90	0.117	10808.01	5777.65	850.05	5836.84	0
16600	90	0.117	10808.01	5877.65	850.26	5936.21	0
16700	90	0.117	10808.01	5977.65	850.46	6035.59	0
16800	90	0.117	10808.01	6077.65	850.67	6134.96	0
16900	90	0.117	10808.01	6177.65	850.87	6234.34	0
17000	90	0.117	10808.01	6277.65	851.08	6333.71	0
17100	90	0.117	10808.01	6377.65	851.28	6433.09	0
17200	90	0.117	10808.01	6477.65	851.49	6532.46	0
17300	90	0.117	10808.01	6577.65	851.69	6631.83	0
17400	90	0.117	10808.01	6677.65	851.9	6731.21	0
17500	90	0.117	10808.01	6777.65	852.1	6830.58	0
17600	90	0.117	10808	6877.65	852.31	6929.96	0
17700	90	0.117	10808	6977.65	852.51	7029.33	0
17800	90	0.117	10808	7077.65	852.72	7128.71	0

17900	90	0.117	10808	7177.65	852.92	7228.08	0
18000	90	0.117	10808	7277.65	853.13	7327.45	0
18100	90	0.117	10808	7377.65	853.33	7426.83	0
18178.06	90	0.117	10808	7455.71	853.49	7504.4	0

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 6.530° (Grid).

Coordinate System is NAD 1927 (NADCON CONUS) US State Plane 1927 (Exact solution), New Mexico East 3001.
Central meridian is -104.333°.
Grid Convergence at Surface is 0.158°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 18178.06ft.,
the Bottom Hole Displacement is 7504.40ft., in the Direction of 6.530° (Grid).

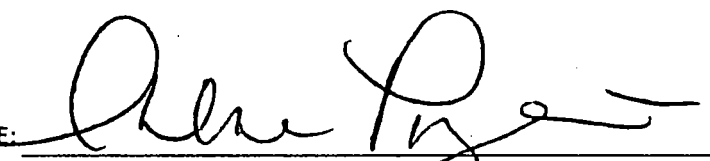
POWERING PROGRESS℠

Gates E&S North America, Inc.
7603 Prairie Oak Dr.
Houston, TX. 77086
PHONE :
FAX:
Troy.Schmidt@gates.com

CERTIFICATE OF CONFORMANCE

This is to verify that all Parts and/or Materials included in this shipment have been manufactured and/or processed in Conformance with applicable drawings and specifications, and that Records of Required Tests are on file and subject to examination. The following items were assembled at **Gates E & S, North America Inc.**, facilities in Houston, TX, USA. This hose assembly was designed and manufactured to meet requirements of API Spec 7K.

CUSTOMER: A-7 AUSTIN INC DBA AUSTIN HOSE
CUSTOMERS P.O.#: 4086301
PART DESCRIPTION: 10K3.035.0CM4.1/16FLGE/E
SALES ORDER #: 508588
QUANTITY: 1
SERIAL #: H-100317-2

SIGNATURE: 

TITLE: QUALITY ASSURANCE

DATE: 10/3/2017

JOB REPORT

COMPANY DETAILS

Company: Austin
Contact:
Phone:

Email: Irene.pizana@gates.com

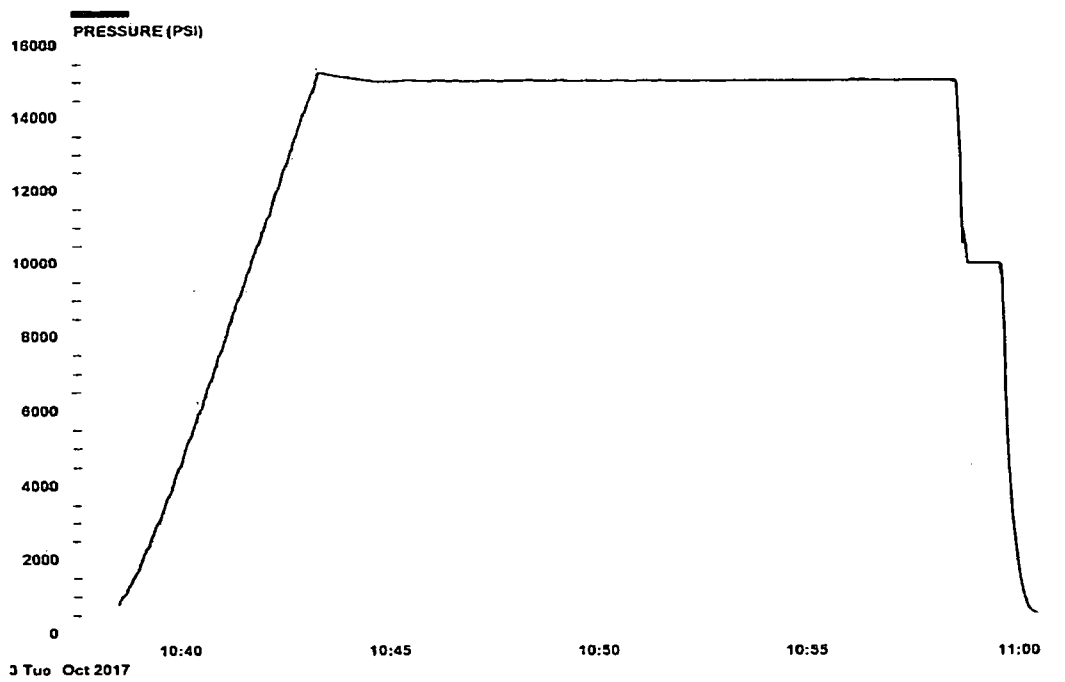
JOB DETAILS

DATE October 03, 2017
START TIME 10:38:29
END TIME 11:00:25
Gates Rep: Chris Olivo
Recommendation: H-100317-2
Working Pressure: 10000
Ext Inspection: Pass
Fitting Inspection: Pass
Test pressure: 15000
Serial No: H-100317-2

Length: 35'
Inner Diameter: 3.0"
Pressure Test: Pass
Internal Inspection: N/A
Fitting Type: 10K Flange ExE

GATES ENGINEERING & SERVICES NA
QA/QC
OCT 03 2017
APPROVED

SUMMARY GRAPH



Report Created: 3-Oct-17

APD ID: 10400030878 **Submission Date:** 06/18/2018

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Wright_Fed_2524_WC_2H__Existing_Roads_20180605185112.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:

Wright_Fed_2524_WC_2H__Access_Road_20180605185140.pdf

New road type: RESOURCE

Length: 1302 Feet **Width (ft.):** 25

Max slope (%): 2 **Max grade (%):** 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 15

New road access erosion control: Road construction requirements and regular maintenance would alleviate potential impacts to the access road from water erosion damage.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: Native caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description: Material will be obtained from BLM caliche pit in Section 34-T23S-R29E or BLM pit in Section 24-T24S-R28E

Onsite topsoil removal process: The top 6 inches of topsoil is pushed off and stockpiled along the side of the location. An approximate 160' X 160' area is used within the proposed well site to remove caliche. Subsoil is removed and stockpiled within the pad site to build the location and road. Then subsoil is pushed back in the hole and caliche is spread accordingly across proposed access road.

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Proposed access road will be crowned and ditched and constructed of 6 inch rolled and compacted caliche. Water will be diverted where necessary to avoid ponding, maintain good drainage, and to be consistent with local drainage patterns.

Road Drainage Control Structures (DCS) description: The ditches will be 3' wide with 3:1 slopes

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:

Wright_Fed_2524_WC_2H__1Mile_Map_20180605185651.PDF

Wright_Fed_2524_WC_2H__1Mile_Data_20180605185701.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Production facilities are planned for the south side of pad. Plan for initial wells: 2-1000 bbl water tanks and 8-1000 bbl oil tanks, a temporary 6X20 horizontal 3-phase sep, a 48" X 10' 3-phase sep, a 8 X 20' heater treater and a 48"X 10' 2-phase sep

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING **Water source type:** OTHER

Describe type: BRINE WATER

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER **Describe transportation land ownership:**

Water source volume (barrels): 20000 **Source volume (acre-feet):** 2.577862

Source volume (gal): 840000

Water source use type: OTHER, STIMULATION, SURFACE CASING **Water source type:** OTHER

Describe type: FRESH WATER

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER **Describe transportation land ownership:**

Water source volume (barrels): 250000 **Source volume (acre-feet):** 32.223274

Source volume (gal): 10500000

Water source and transportation map:

Wright_Fed_2524_WC_2H__Wtr_Source_Map_20180618124817.pdf

Water source comments: Water source transportation land ownership is a mixture of Federal, State and County.

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:**

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: On site caliche will be used for construction if sufficient. In the event insufficient quantities of caliche are available onsite, caliche will be trucked in from BLM's caliche pit in Section 34-T23S-R29E or BLM pit in Section 24-T24S-R28E
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and cuttings

Amount of waste: 3900 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling fluids will be stored safely and disposed of properly

Safe containmant attachment:

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

Disposal location description: Cuttings will be hauled to R360's facility on US 62/180 at Halfway, NM

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste material will be stored safely and disposed of properly

Safe containmant attachment:

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

Disposal location description: Trucked to an approved disposal facility.

Waste type: GARBAGE

Waste content description: Miscellaneous trash

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash produced during drilling and completion operations will be collected in a trash container and disposed of properly
Safe containmant attachment:

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

Disposal location description: Trucked to an approved disposal facility

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 Cuttings will be stored in roll off bins and hauled to R360 on US 62/180 near Halfway.

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?

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:

Wright_Fed_2524_WC__2H_Drilling_Layout_20180611114742.pdf
Wright_Fed_2524_WC_2H__Well_Pad_Layout_20180611114946.pdf
Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** WRIGHT FED

Multiple Well Pad Number: 0

Recontouring attachment:

Wright_Fed_2524_WC_2H__IR_20180618125458.pdf

Drainage/Erosion control construction: During construction proper erosion control methods will be used to control erosion, runoff and siltation of the surrounding area.
Drainage/Erosion control reclamation: Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area

Well pad proposed disturbance (acres): 5.68	**Well pad interim reclamation (acres):** 1.03	**Well pad long term disturbance (acres):** 4.65
Road proposed disturbance (acres): 0.75	**Road interim reclamation (acres):** 0.45	**Road long term disturbance (acres):** 0.3
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 0	**Pipeline interim reclamation (acres):** 0	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 6.43	**Total interim reclamation:** 1.48	**Total long term disturbance:** 4.95

Disturbance Comments:

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during

interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations
Soil treatment: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Existing Vegetation at the well pad: The historic climax plant community is a grassland dominated by black grama, dropseeds, and blue stems with sand sage and shinnery oak distributed evenly throughout. Current landscape displays mesquite, shinnery oak, yucca, desert sage, fourwing saltbush, snakeweed, and bunch grasses
Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: N/A

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

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:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: No invasive species present. Standard regular maintenance to maintain a clear location and road.
Weed treatment plan attachment:

Monitoring plan description: Identify areas supporting weeds prior to construction; prevent the introduction and spread of weeds from construction equipment during construction; and contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas. No invasive species present. Standard regular maintenance to maintain a clear location and road.
Monitoring plan attachment:

Success standards: To maintain all disturbed areas as per Gold Book standards

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

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:**

Fee Owner: John F & Janice L Wright **Fee Owner Address:** 343 Ash Rd Loving, NM 88256

Phone: (575)745-3331 **Email:**

Surface use plan certification: YES

Surface use plan certification document:

Wright_Fed_2524_WC_2H__SUA_Certification_20180618170132.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: A surface use agreement dated 04/06/2018 is in place.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: WRIGHT FED 2524 WC **Well Number:** 2H

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: John F & Janice L Wright **Fee Owner Address:** 343 Ash Rd Loving, NM 88256

Phone: (575)745-3331 **Email:**

Surface use plan certification: YES

Surface use plan certification document:

Wright_Fed_2524_WC_2H__SUA_Certification_20180618170222.pdf

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: A surface use agreement dated 04/06/2018 is in place.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS

ROW Applications

SUPO Additional Information: SUPO will be attached with APD.

Use a previously conducted onsite? YES

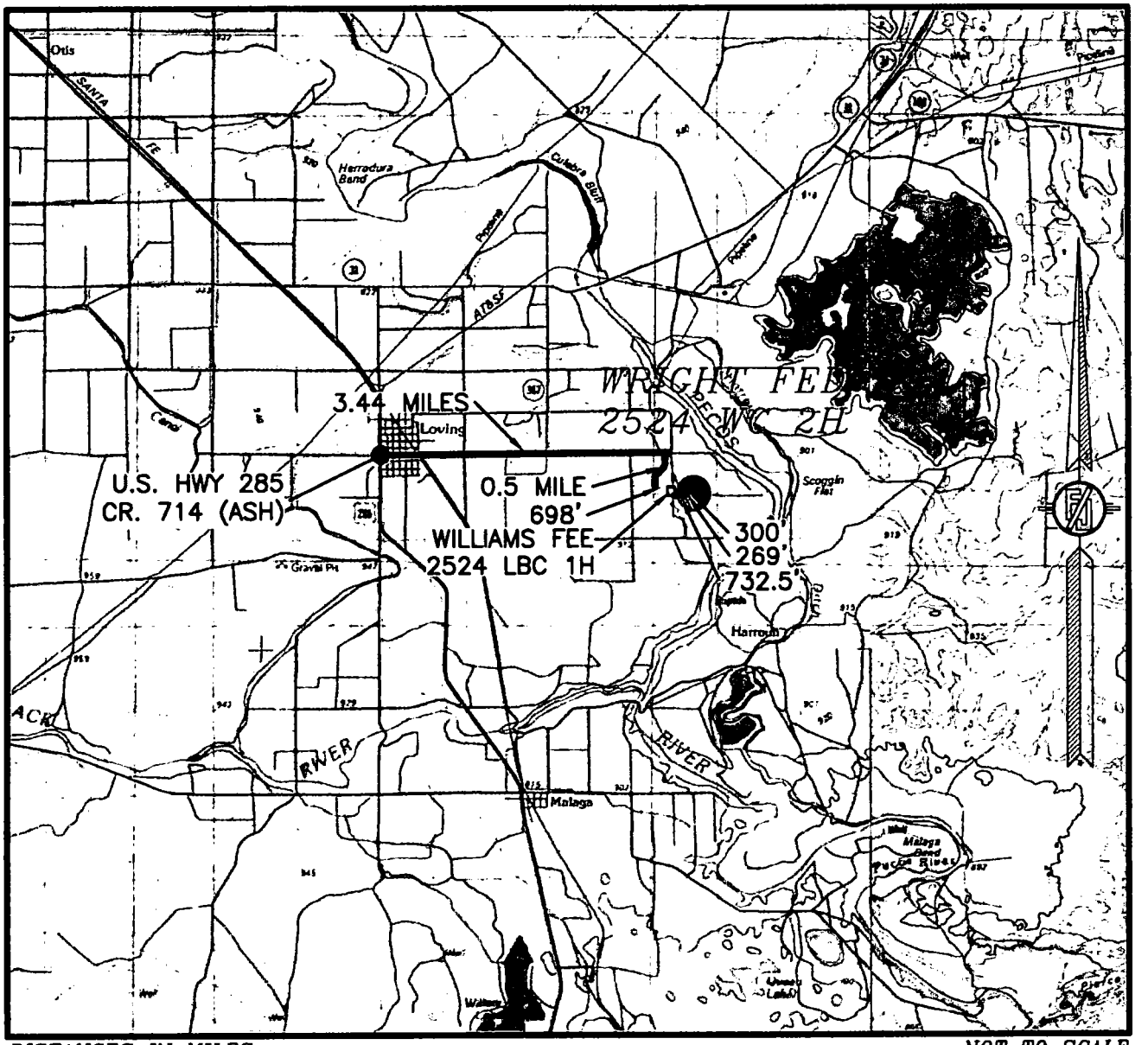
Previous Onsite information: On-site was done by William Degrush (BLM); Matt Warner and Melanie Wilson (Kaiser-Francis), Frank Jaramillo (Madron Surveying)on Mar 22, 2018.

Other SUPO Attachment

Wright_Fed_2524_WC_2H__Well_Pad_Layout_20180611115327.pdf

Wright_Fed_2524_WC_2H__SUP_20180611115520.pdf

SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES *NOT TO SCALE*

DIRECTIONS TO LOCATION
FROM U.S. HWY. 285 AND CR. 714 (ASH) GO EAST ON CR. 714 3.44 MILES, TURN RIGHT ON 10' CALICHE ROAD AND GO SOUTH 0.5 MILE WHERE ROAD ENDS AT FENCE LINE, THE NORTHWEST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H IS EAST-SOUTHEAST 698', FROM THE SOUTHEAST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H FOLLOW ROAD FLAGS EAST 732.5', THEN NORTH 269', THEN EAST 300' TO CENTER OF WEST EDGE OF PAD FOR THIS LOCATION.

KAISER-FRANCIS OIL COMPANY
WRIGHT FED 2524 WC 2H
LOCATED 2490 FT. FROM THE NORTH LINE AND 1500 FT. FROM THE EAST LINE OF SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

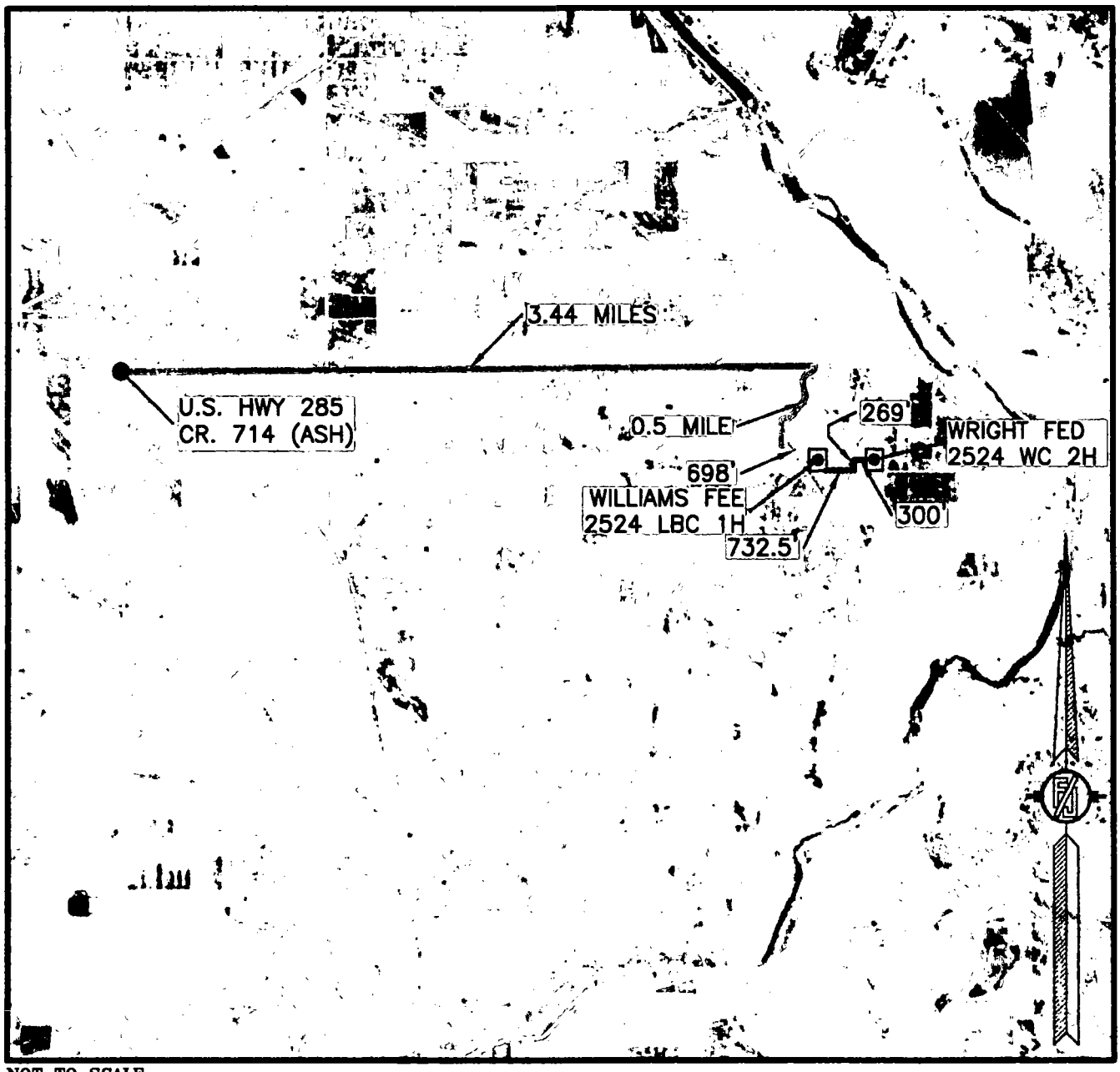
NOVEMBER 9, 2017

SURVEY NO. 5750

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAR. 2016

KAISER-FRANCIS OIL COMPANY

WRIGHT FED 2524 WC 2H

LOCATED 2490 FT. FROM THE NORTH LINE
AND 1500 FT. FROM THE EAST LINE OF
SECTION 25, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

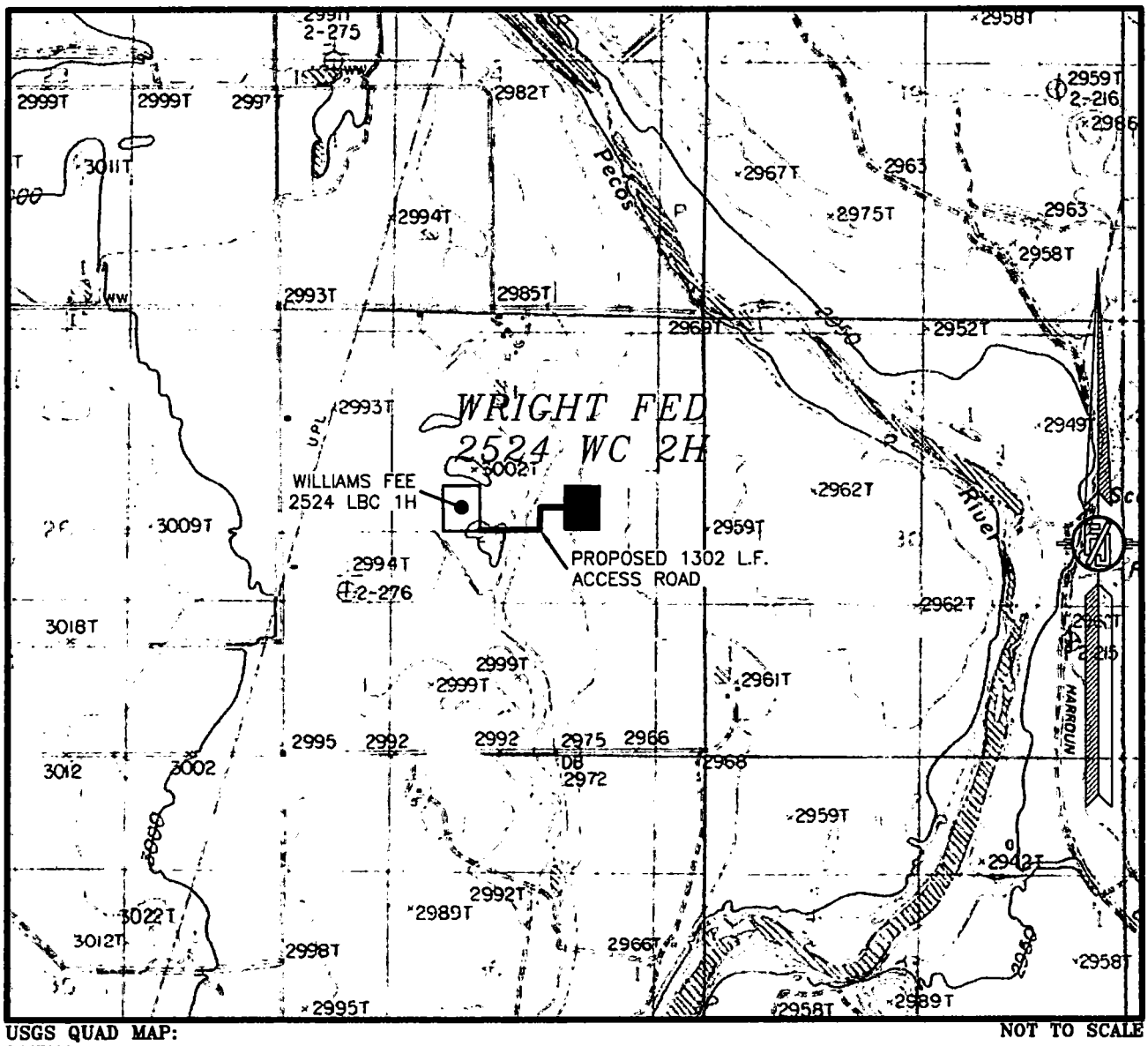
NOVEMBER 9, 2017

SURVEY NO. 5750

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
LOVING

NOT TO SCALE

KAISER-FRANCIS OIL COMPANY

WRIGHT FED 2524 WC 2H

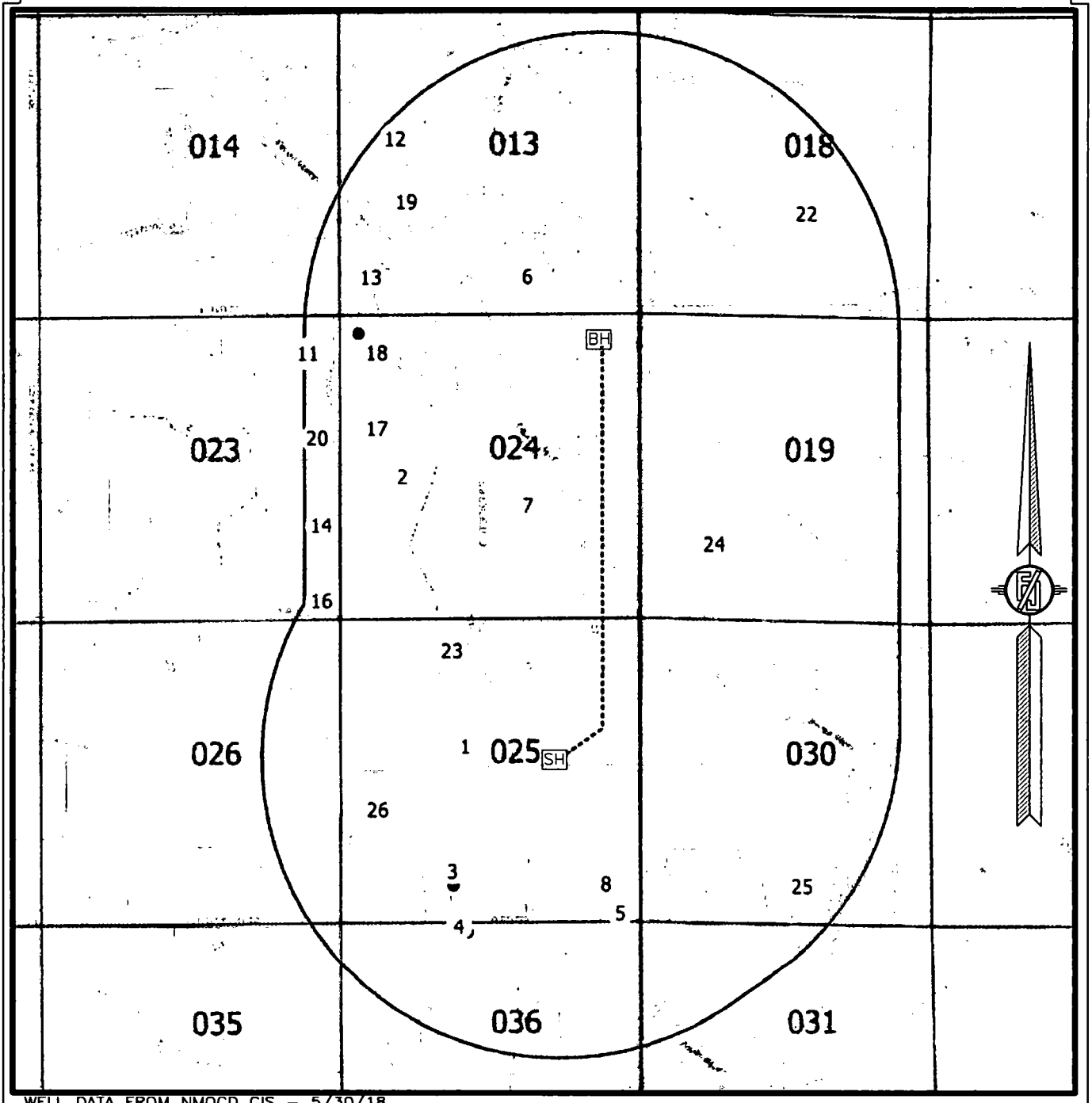
LOCATED 2490 FT. FROM THE NORTH LINE
AND 1500 FT. FROM THE EAST LINE OF
SECTION 25, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 9, 2017

SURVEY NO. 5750

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

1-MILE WELLS



WELL DATA FROM NMOCD GIS - 5/30/18

SH SURFACE LOCATION

BH BOTTOM OF HOLE

XX WELLS WITHIN 1 MILE

WELL PATH

1-MILE BOUNDARY

KAISER-FRANCIS OIL COMPANY

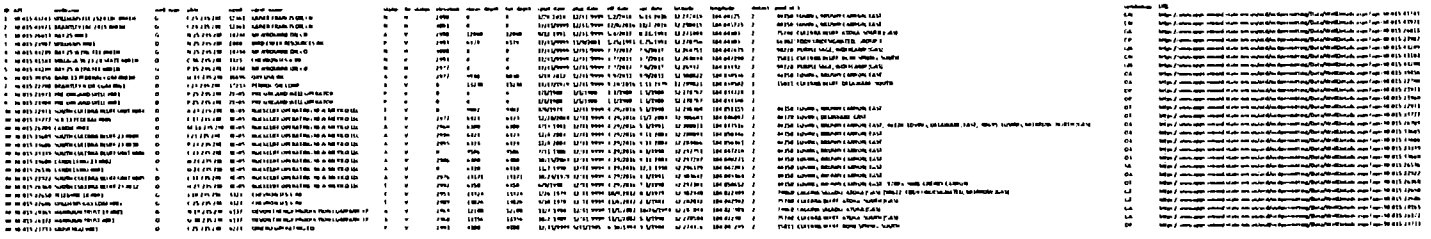
WRIGHT FED 2524 LBC 2H

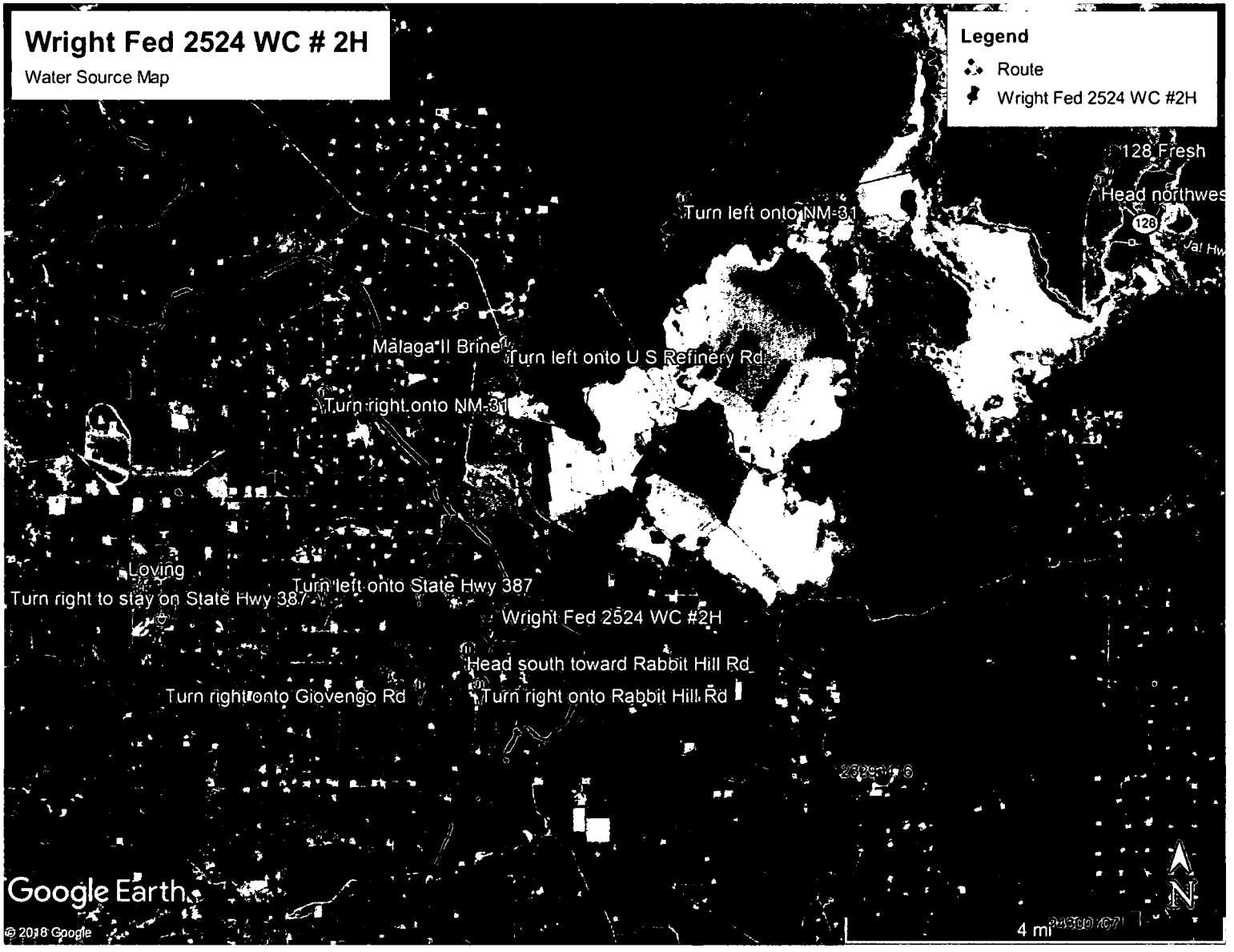
LOCATED 2490 FT. FROM THE NORTH LINE AND 1470 FT. FROM THE EAST LINE OF SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

JUNE 1, 2018

SURVEY NO. 5748

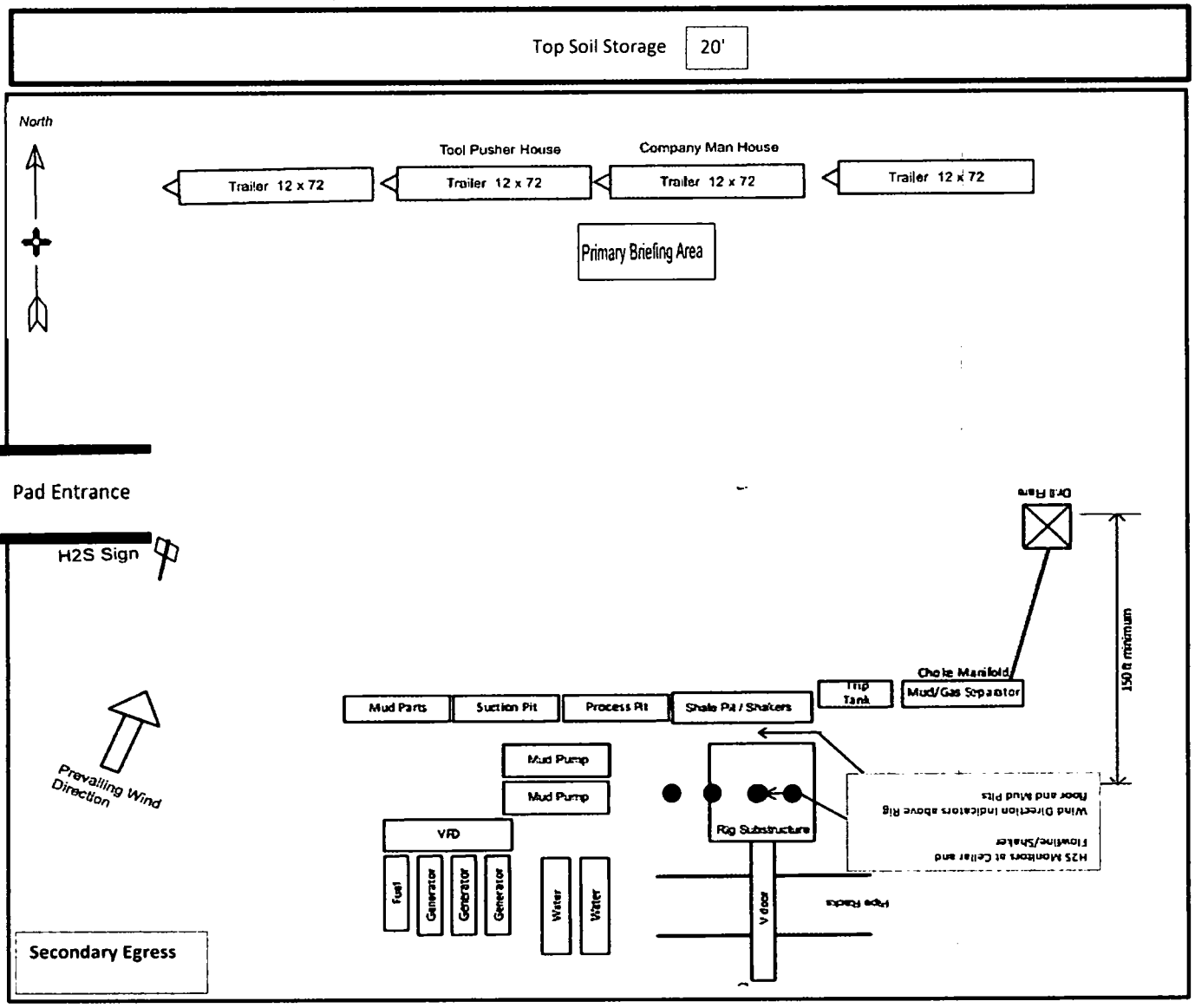
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*



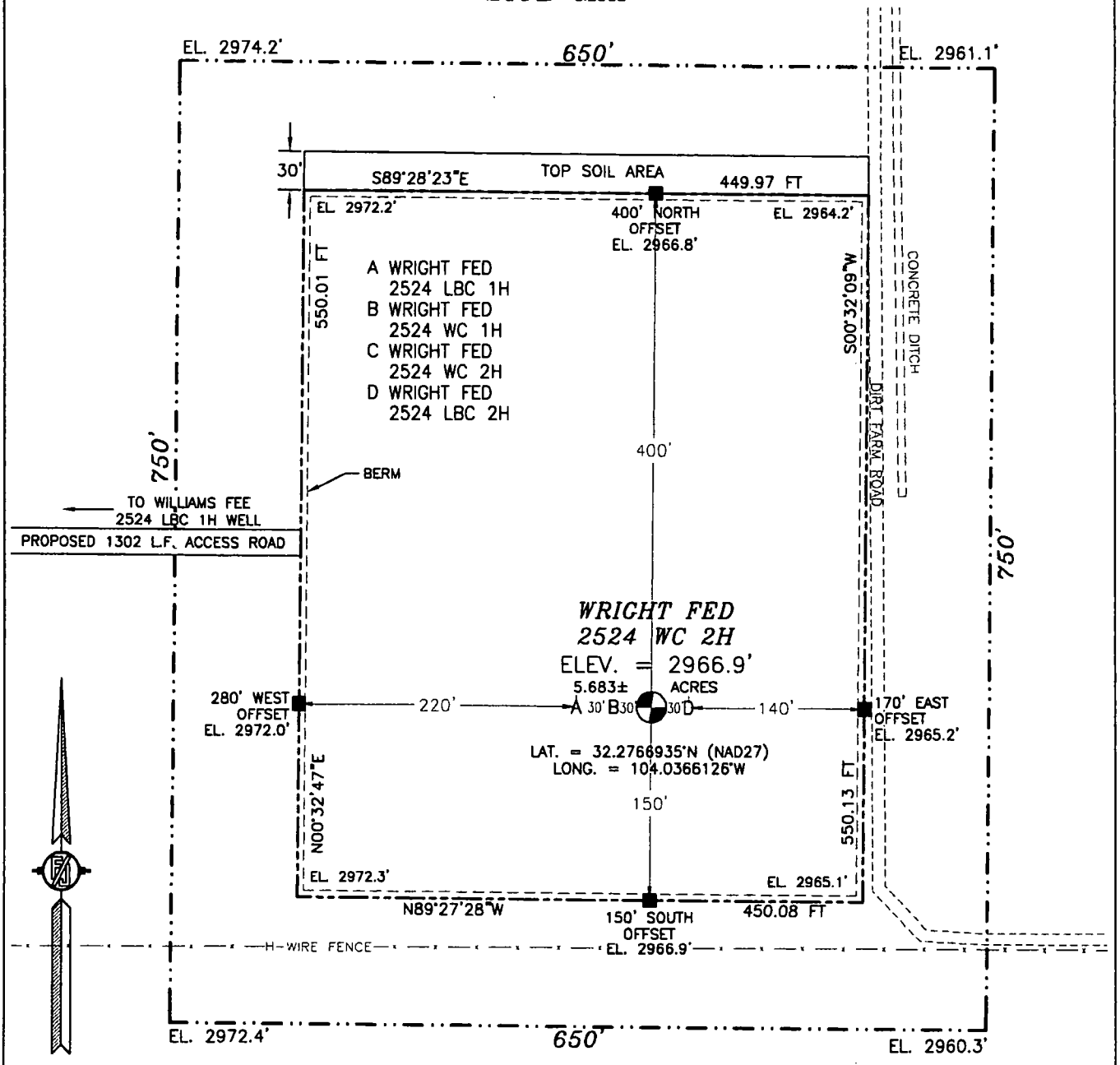

Wright Fed 2524 WC # 2H
Water Source Map
Legend
Route
Wright Fed 2524 WC #2H
128 Fresh
Head northwes
128
Turn left onto NM-31
Malaga II Brine
Turn left onto U S Refinery Rd
Turn right onto NM-31
Loving
Turn left onto State Hwy 387
Turn right to stay on State Hwy 387
Wright Fed 2524 WC #2H
Head south toward Rabbit Hill Rd
Turn right onto Giovengo Rd
Turn right onto Rabbit Hill Rd
Google Earth
© 2018 Google
4 mi
N

General Drill Site Layout
Well Name: Wright Fed 2524 WC #2H
Pad Name: Wright Fed

Pad Dimensions: 450' X 450'
● Well head



SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM U.S. HWY. 285 AND CR. 714 (ASH) GO EAST ON CR. 714 3.44 MILES, TURN RIGHT ON 10' CALICHE ROAD AND GO SOUTH 0.5 MILE WHERE ROAD ENDS AT FENCE LINE, THE NORTHWEST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H IS EAST-SOUTHEAST 698', FROM THE SOUTHEAST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H FOLLOW ROAD FLAGS EAST 732.5', THEN NORTH 269', THEN EAST 300' TO CENTER OF WEST EDGE OF PAD FOR THIS LOCATION.

KAISER-FRANCIS OIL COMPANY

WRIGHT FED 2524 WC 2H

LOCATED 2490 FT. FROM THE NORTH LINE AND 1500 FT. FROM THE EAST LINE OF SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

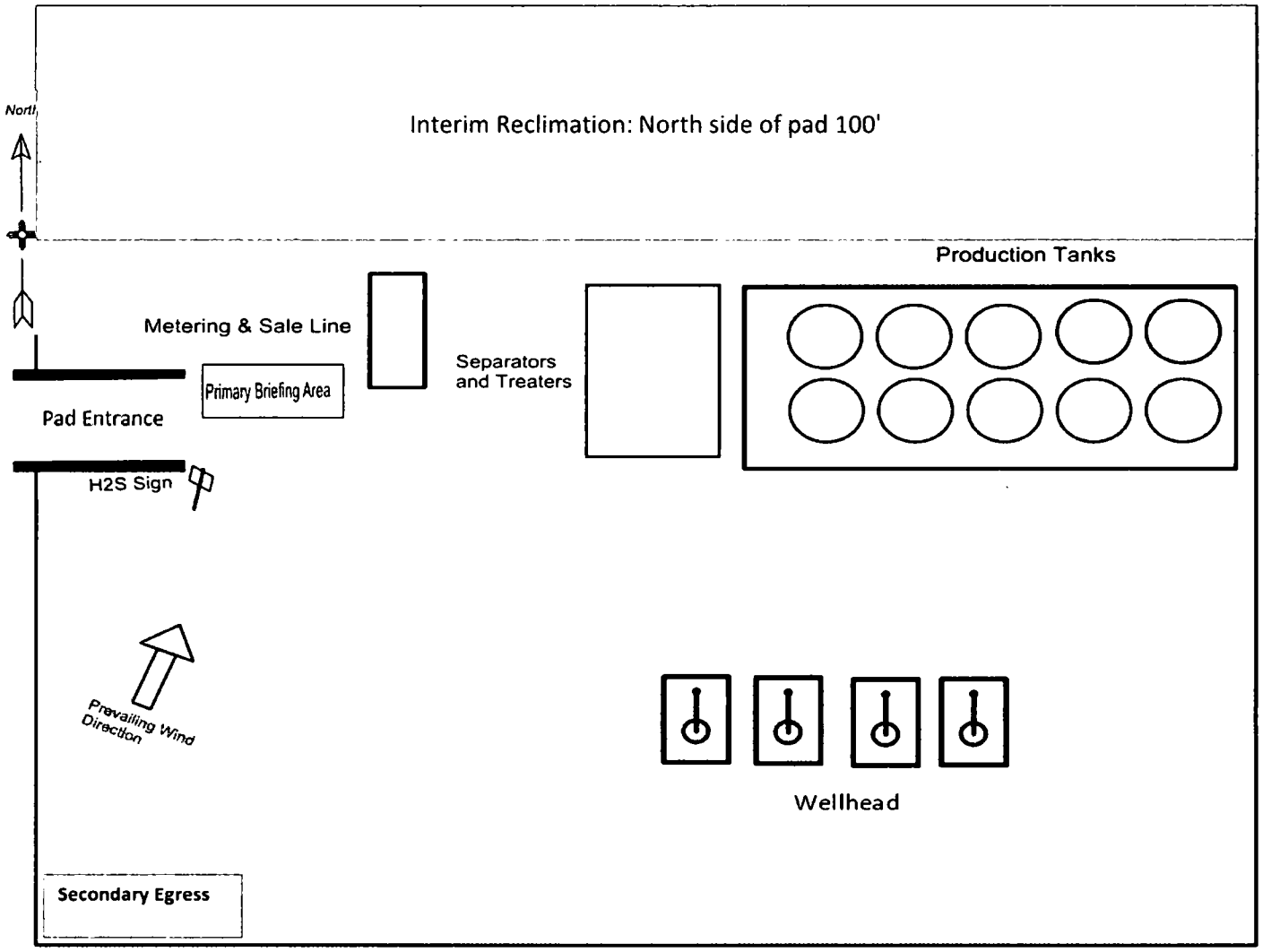
NOVEMBER 9, 2017

SURVEY NO. 5750

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

General Production Layout
Well Name: Wright Fed 2524 WC #2H
Pad Name: Wright Fed

Pad Dimensions: 450' X 450'
● Well head



Kaiser-Francis Oil Company
Wright Federal 2524 WC #2H
2490' FNL & 1500' FEL
Section 25, T23S, R28E
Eddy County, NM

Certification of Surface Use Agreement

I, Matt Warner, Drilling Engineer, Kaiser-Francis Oil Company, do hereby certify that a surface use agreement dated April 6, 2018 does exist between Kaiser-Francis Oil Company and John F. and Janice W. Wright of Loving, New Mexico. This agreement covers the NE/4 of Section 25, T23S, R28E and the W/2 NW/4 and SE/4 NW/4 of Section 30, T23S, R29E, Eddy County, New Mexico.

Matt Warner

6/18/18
Date

Kaiser-Francis Oil Company
Wright Federal 2524 WC #2H
2490' FNL & 1500' FEL
Section 25, T23S, R28E
Eddy County, NM

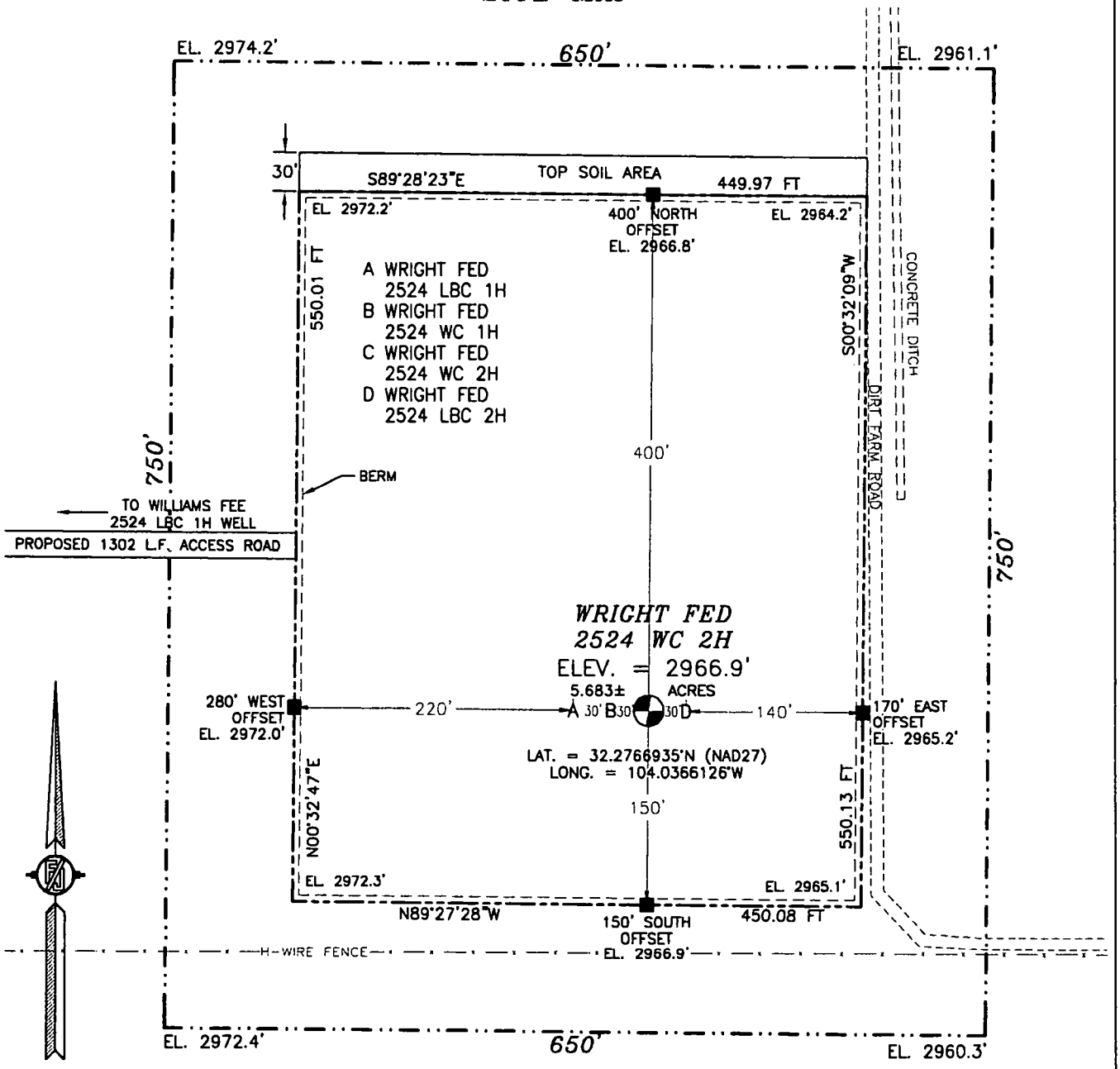
Certification of Surface Use Agreement

I, Matt Warner, Drilling Engineer, Kaiser-Francis Oil Company, do hereby certify that a surface use agreement dated April 6, 2018 does exist between Kaiser-Francis Oil Company and John F. and Janice W. Wright of Loving, New Mexico. This agreement covers the NE/4 of Section 25, T23S, R28E and the W/2 NW/4 and SE/4 NW/4 of Section 30, T23S, R29E, Eddy County, New Mexico.

Matt Warner

6/18/18
Date

SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM U.S. HWY. 285 AND CR. 714 (ASH) GO EAST ON CR. 714 3.44 MILES, TURN RIGHT ON 10' CALICHE ROAD AND GO SOUTH 0.5 MILE WHERE ROAD ENDS AT FENCE LINE, THE NORTHWEST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H IS EAST-SOUTHEAST 698', FROM THE SOUTHEAST PAD CORNER FOR WILLIAMS FEE 2524 LBC 1H FOLLOW ROAD FLAGS EAST 732.5', THEN NORTH 269', THEN EAST 300' TO CENTER OF WEST EDGE OF PAD FOR THIS LOCATION.

KAISER-FRANCIS OIL COMPANY

WRIGHT FED 2524 WC 2H

LOCATED 2490 FT. FROM THE NORTH LINE AND 1500 FT. FROM THE EAST LINE OF SECTION 25, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 9, 2017

SURVEY NO. 5750

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

Surface Use & Operating Plan

Wright Fed 2524 WC #2H

- Surface Owner: John F & Janice L. Wright
- New Road: 1302' of new road
- Facilities: Production facilities will be installed on well pad

- **Well Site Information**
  V Door: South
  Topsoil: North
  Interim Reclamation: Reclaim 150' on the north

Notes

Drilling pad located on private land. SUA with surface owners is executed.

Onsite: On-site was done by William Degrush (BLM); Matt Warner and Melanie Wilson (Kaiser-Francis),Frank Jaramillo (Madron Surveying)on Mar 22, 2018.

NOS #: ***10400025696***

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

A. The well site survey and elevation plat for the proposed well is attached with this application. It was staked by Madron Surveying, Carlsbad, NM.

B. All roads to the location are shown on the Road Map attachment. The existing lease roads are illustrated in red and are adequate for travel during drilling and disposal operations. Upgrading existing roads prior to drilling the well will be done where necessary. Proposed new access road is shown in red dashes on the Road Map attachment and is shown in detail on the Access Road Map attachment.

C. Directions to location: See Wellsite Layout attachment

D. Based on current road maintenance performed on other roads serving existing wells, we anticipate maintaining the lease roads leading to the proposed well pad at least once a year on dry conditions and twice a year in wetter conditions.

2. Proposed Access Road:

The Access Road Map shows that 1302' of new access road will be required for this location. The access road will be constructed as follows:

The maximum width of the running surface will be 15'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 3' feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

A. The average grade will be less than 2%.

B. No turnouts are planned.

C. No cattleguard, culvert, gates, low water crossings or fence cuts are necessary.

D. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from nearby caliche pit on landowner's farm.

3. Location of Existing Well:

The 1-Mile Radius attachment shows existing wells within a one-mile radius of the proposed wellbore.

4. Location of Existing and/or Proposed Facilities:

A. There are currently no production facilities at this well site.

B. Upon successfully completion of this well, we plan to install a production facility initially consisting of 2-1000 bbl water tanks and 5-1000 bbl oil tanks, a temporary 6x20 horizontal 3-phase separator, a 48" x 10' 3-phase separator, a 8 x 20' heater treater and a 48"x 10' 2-phase separator. .

C. Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from the nearest BLM approved caliche pit.

D. No power line to this location is planned at this time.

E. If completion of the well is successful, rehabilitation plans will include the following:

- The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from a private source. Fresh water will come from landowner's water source used to fill KFOC utilized frac pit also located on land owner's surface. Brine water will come from Mesquite SWD, Inc.'s Malaga I Brine Station in Section 12-T23S-R28E and the alternate source is Mesquite SWD, Inc.'s Malaga II Brine Station in Section 20-T24S-R29E.

6. Source of Construction Materials and Location "Turn-Over" Procedure:

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

A. Equipment that is needed to construct the proposed location will be as follows: Two dozers to flip the site for caliche and to move topsoil, one blade to level the surface, one morograder to roll and compact this site, one backhoe to dig the cellar, one water truck to water location and dust abatement and two dump trucks to haul surface material. If caliche is not available onsite and have to haul caliche from a private pit, in addition to equipment mentioned above we will have 10 belly dumps and one front end loader.

B. The time line to complete construction will be approximately 10 days.

C. The top 6 inches of topsoil is pushed off and stockpiled along the south side of the location. Maximum height of the topsoil stock pile will be 3'.

D. An approximate 160' X 160' area is used within the proposed well site to remove caliche.

E. Subsoil is removed and stockpiled within the surveyed well pad.

F. When caliche is found, material will be stock piled within the pad site to build the location and road.

G. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.

H. There will be no interim reclamation. Once well is drilled, the stock piled top soil will be seeded in place.

I. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from the nearest BLM caliche pit

Methods of Handling Water Disposal:

A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

B. Drilling fluids will be contained in steel mud pits and taken to R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility. R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill-Lea Landfill LLC. Located at Mile Marker 64, Highway 62-180 East, P O Box 3247, Carlsbad, NM 88221. No toxic waste or hazardous chemicals will be produced by this operation.

E. Human waste and grey water will need to be properly contained and disposed of. Proper disposal and elimination of waste and grey water may include but are not limited to portable septic systems and/or portable waste gathering systems (i.e. portable toilets).

F. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

7. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

8. Well Site Layout:

A. The drill pad layout, with elevations staked by Madron Surveying, is shown in the Wellsite Layout attachment. Dimensions of the pad and pits are shown on the Drilling Site Layout. V door direction is west. Topsoil, if available, will be stockpiled on the east side of location, per BLM specifications. No major cuts will be required. A berm will be constructed on the east side of the pad.

B. The Drilling Site Layout exhibit shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

9. Plans for Restoration of the Surface:

A. Interim Reclamation will take place within six months after the well has been completed. The pad will be downsized by reclaiming the areas not needed for disposal operations. The portions of the pad that are not needed for disposal operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.

B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recountoured to reflect its surroundings as much as possible within six months. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be re-seeded with a BLM approved mixture and re-vegetated as per BLM orders. When required by BLM, the well pad site will be restored to match pre-construction grades.

10. Surface Ownership:

A. The surface is owned by John F. & Janice L. Wright whose address is 343 Ash RD Loving, NM 88256. SUA is in place between surface owner and Kaiser-Francis Oil Company. (See attachments)

B. The proposed road routes and surface location will be restored as directed by the BLM.

11. Other Information:

A. The area around the well site is private farmland. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.

B. There is no permanent or live water in the immediate area.

C. Land Owner lives approximately ¼ mile from the pad location.

12. Bond Coverage:

Bond Coverage is Statewide Bonds # WY000055.

15. Operator's Representative:

The Kaiser-Francis Oil Company representative responsible for assuring compliance with the surface use plan is as follows:

Robert Sanford
Drilling Manager
Kaiser-Francis Oil Company
PO Box 21468
Tulsa, OK 74121
Office: 918-770-2682

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:

Decribe 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:

Decribe 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: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

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:

AFMSS

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

Bond Info Data Report

09/27/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: WYB000055

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: