

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	KAISER FRANCIS OIL COMPANY
LEASE NO.:	NMNM015321
WELL NAME & NO.:	RED HILLS 101H
SURFACE HOLE FOOTAGE:	2250'/S & 370'/W
BOTTOM HOLE FOOTAGE:	350'/S & 330'/W
LOCATION:	SECTION 31, T25S, R33E, NMPM
COUNTY:	LEA

Potash	<input checked="" type="radio"/> None	<input checked="" type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input checked="" type="radio"/> Medium	<input checked="" type="radio"/> High
Variance	<input checked="" type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input checked="" type="radio"/> Other
Wellhead	<input checked="" type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

A. Hydrogen Sulfide

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.

B. CASING

1. The 13 3/8 inch surface casing shall be set at approximately **910** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - 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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength,

whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9 5/8** inch 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. Excess calculates to negative 4% - additional cement will be required.**
 - ❖ In **Medium Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5 1/2** inch production casing is:
 - Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 10% - additional cement will be required**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2.
 - Option 1:**
 - i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - Option 2:**
 - i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
- e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

D. SPECIAL REQUIREMENT(S)

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

MHH 10220218

GENERAL 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)

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. 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.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. 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.
2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. 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.
4. 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.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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 RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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.
3. 5M or higher 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.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 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).

- b. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. 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.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. 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.

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

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WELL NAME & NO.:	RED HILLS UNIT 101H
SURFACE HOLE FOOTAGE:	2250'/S & 370'/W
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COUNTY:	LEA

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

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- ☐ **Archaeology, Paleontology, and Historical Sites**
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- ☒ **Special Requirements**
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- ☐ **Construction**
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- ☐ **Production (Post Drilling)**
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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/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, siting valves 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 valves, 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.

Hydrology

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must

be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

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

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

Surfacing

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

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

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

Crowning

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

Ditching

Ditching shall be required on both sides of the road.

Turnouts

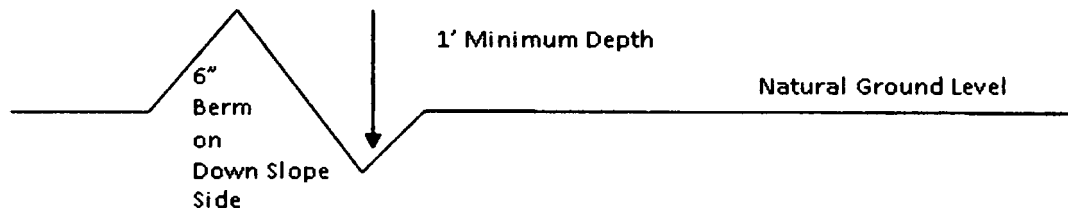
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

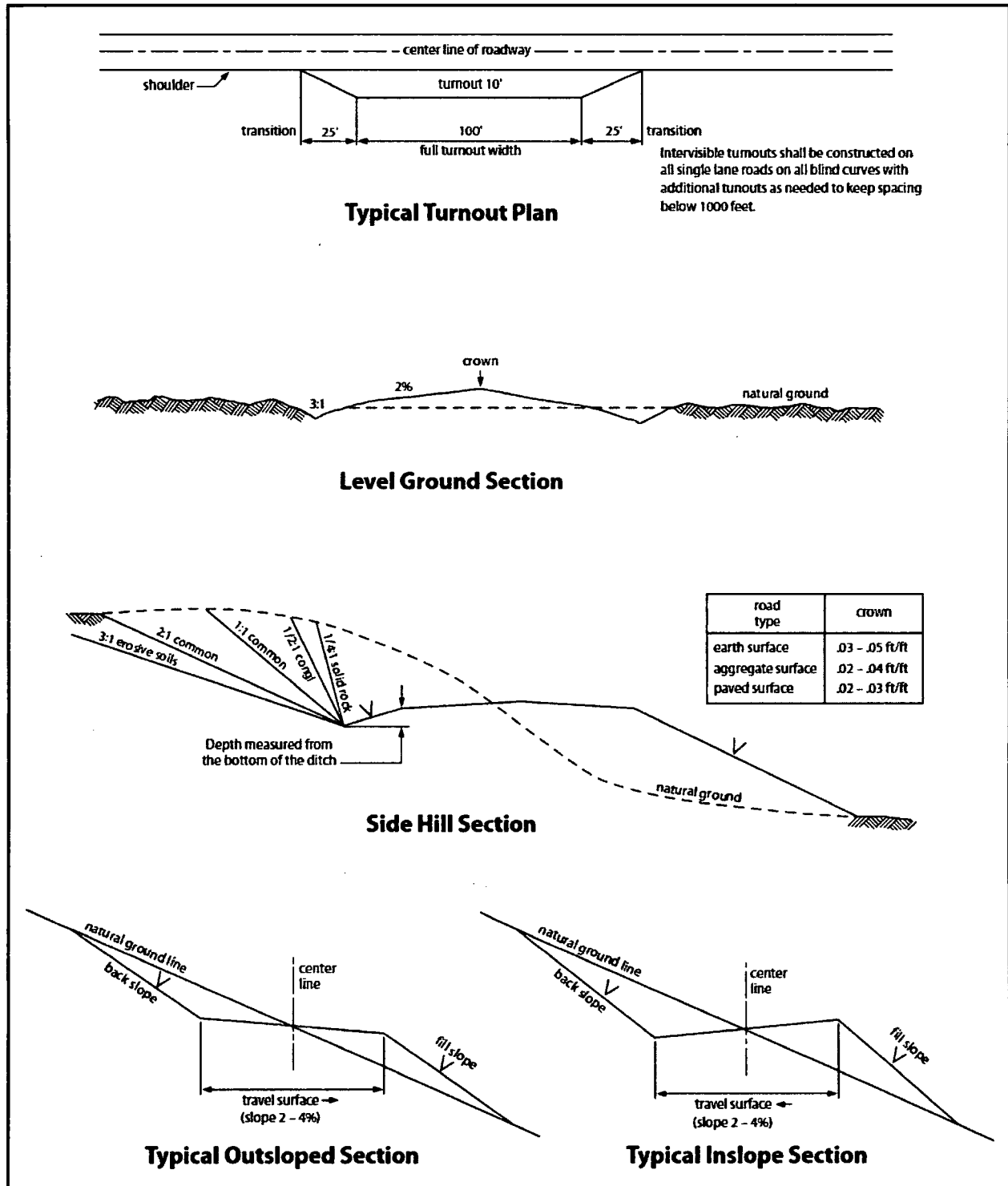


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

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

Painting Requirement

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

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:

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

*Pounds of pure live seed:

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

**KAISER-FRANCIS OIL COMPANY
HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN
FOR DRILLING/COMPLETION WORKOVER/FACILITY**

**Red Hills 101H
SECTION 31 -T25S-R33E
LEA COUNTY, NM**

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

Worksheet for determining GB Connection Running Torque at the beginning of a Casing Run

Ignore joints that are assembled with threadlock compounds. See "Addendum Procedure for GB Connections Assembled with Threadlocking Compounds" available at www.gbtubulars.com.

Pertinent Excerpt from GB Running Procedure

5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus delta torque $\geq 10\%$ of the shoulder torque without exceeding the Maximum Makeup Torque. Record the shoulder torque observed for the first 10 joints (excluding threadlocked accessory joints). The Running Torque is (a) the Minimum Makeup Torque shown on the GB Connection Performance Property Sheets or (b) the Maximum Shoulder Torque recorded from the first 10 makeups + 10%, whichever is higher (rounded to the next highest 500 ft.-lbs.) When making up the initial joints for establishing the Running Torque carefully watch the torque gauge for the shoulder torque and try to manually shut down the tongs before reaching Maximum Makeup Torque shown on the GB Connection Performance Property Sheets. Alternately, the dump valve should be set to the Maximum Makeup Torque during this initial process.
6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the "Running Torque" established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established Running Torque is achieved.

Casing Data		Comment
OD (in)		See GB Connection Data Sheet
Weight (ppf)		See GB Connection Data Sheet
Grade		See GB Connection Data Sheet
Min MU Torque (ft-lbs)		See GB Connection Data Sheet
Max MU Torque (ft-lbs)		(2 X Min MU Tq)
Max Operating Torque (ft-lbs)		The Maximum Operating Torque is NOT the Maximum Makeup Torque and is NOT a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time will likely damage the connection.

Notes	Joint No.	Shoulder Torque (ft-lbs)	Final Torque (ft-lbs)	Triangle Stamp Position Sketch (\triangle)
Required	1			
Required	2			
Required	3			
Required	4			
Required	5			
Required	6			
Required	7			
Required	8			
Required	9			
Required	10			
Optional	11			
Optional	12			
Optional	13			
Optional	14			
Optional	15			
Max. Shoulder Torque				
A Max. Shoulder Torque + 10%				
B Min. Makeup Torque (from GB Conn. Data Sheet)				
Running Torque (ft-lbs)			A or B, whichever is greater.	

Optional joints should be added if there is wide variability in shoulder torques recorded during the initial 10 joints. Judgement should be used to determine if more than 10 joints are needed for the purpose of establishing the Running Torque and, if so, how many more should be added.

Wide variations in Shoulder Torque during the first ten (10) joints suggest other issues requiring attention such as poor alignment, improper amount and distribution of thread compound, etc. Refer to 2nd paragraph of GB Running Procedure for possible contributing factors to aid troubleshooting.

GB Tubulars

950 Threadneedle, Suite 130
Houston TX 77079
Toll Free: 1-888-245-3848
Main: 713-465-3585
Fax: 713-984-1529

For Technical Information, contact:

Gene Mannella
genem@gbtubulars.com
Qing Lu
qingl@gbtubulars.com

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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 H₂S 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 H₂S RELEASE

The following procedures and responsibilities will be implemented on activation of the H₂S 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 (SO₂). 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 H₂S, 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)

	<u>OFFICE</u>	<u>MOBILE</u>
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
Matt Warner	918/491-4379	720/556-2313

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 H₂S, 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:

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

(H₂S concentrations in decimal form)

10,000 ppm +=1.+

1,000 ppm +=.1+

100 ppm +=.01+

10 ppm +=.001+

Calculation for the 500 ppm ROE:

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

EXAMPLE: If a well/facility has been determined to have 150 ppm H₂S 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 H₂S safety, shall monitor with detection equipment the H₂S 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 H₂S, oxygen, and flammable values.)**
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company 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 H₂S AND SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	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 H₂S 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 H₂S 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.

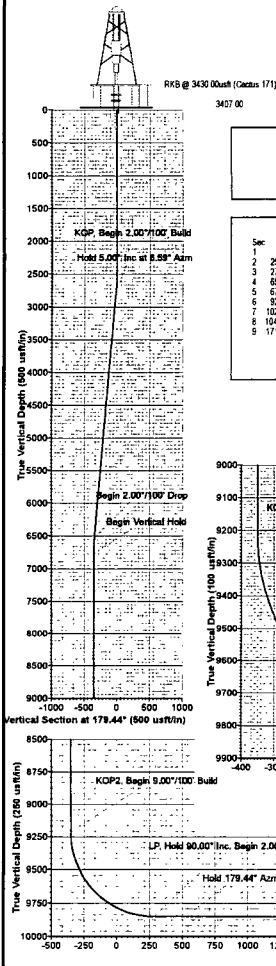
All contract and Kaiser-Francis employees are instructed **NOT** to make any statement to the media concerning the emergency incident. If a media representative contacts any employee, they should refer them to the designated Emergency Command Center where they should contact the Incident Commander or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

Kaiser-Francis Oil Company

Project: Lea County, NM (NAD27)
Site: Red Hill
Well: 101H
Wellbore: OH
Design: Plan 2 05-11-18
Rig: Cactus 171



True North: 4.38°
Magnetic North: 6.36°
Magnetic Field Strength: 47851.7 nT
Dip Angle: 68.78°
Date: 7/8/2018
Model: MVHD

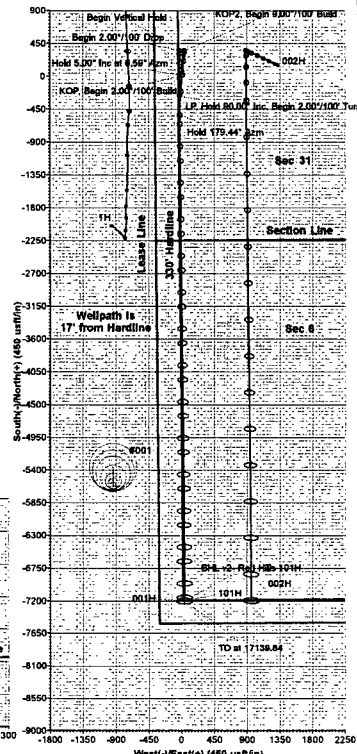
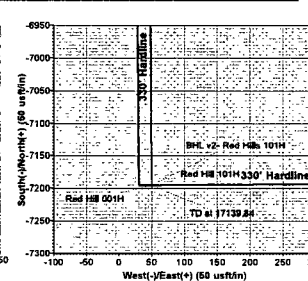
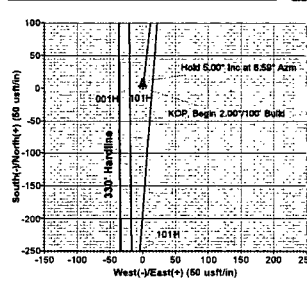
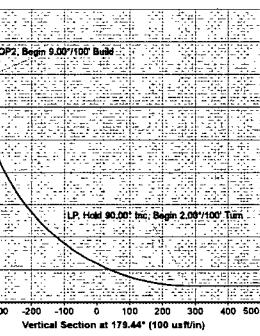


DESIGN TARGET DETAILS									
Name	TVD	+N/S	+E/W	North	East	Latitude	Longitude		
BHL v2- Red Hills 101H	9850.00	-7195.94	50.32	388496.70	721517.47	32° 3' 57.87101 N	103° 37' 5.67850 W		
WELL DETAILS									
+N/S	+E/W	North	East	Latitude	Longitude				
0.00	0.00	395632.64	721467.15	32° 3' 9.08417 N	103° 37' 5.70700 W				
SECTION DETAILS									
Sec	MD	Inc	Ap	TVD	+N/S	+E/W	Depth	True	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00
3	2748.87	5.00	6.59	2748.66	10.83	1.25	2.30	6.59	-10.81
4	8540.06	5.00	6.59	8525.34	328.94	39.14	0.20	0.00	-338.54
5	6730.06	0.00	0.00	6730.06	348.77	40.39	2.00	160.00	-340.36
6	9228.43	0.00	0.00	9213.38	349.77	40.39	0.00	0.00	-340.36
7	10228.43	90.00	184.30	9850.00	-285.06	-7.34	9.03	184.30	284.97
8	10471.61	90.00	179.44	9850.00	-529.03	-15.27	2.30	-50.00	527.66
9	17139.84	90.00	179.44	9850.00	-7196.94	50.32	0.00	0.00	7196.08
BHL v2- Red Hills 101H									
TD at 17139.84									

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well 101H, Grid North
Latitude: 32° 3' 9.08417 N
Longitude: 103° 37' 5.70700 W
Grid East: 721467.15
Grid North: 395632.64
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 08-Jul-18
Magnetic Declination: 6.74°
Dip Angle from Horizontal: 68.78°
Magnetic Field Strength: 47851.7441134 nT
To convert a Magnetic Direction to a Grid Direction, Add 6.38°
To convert a Magnetic Direction to a True Direction, Add 6.74° East
To convert a True Direction to a Grid Direction, Subtract 0.38°

FORMATION TOP DETAILS
No formation data is available

LEGEND
— 1H, OH, Surveys VO
— 001H, OH, Surveys VO
— 001H, OH, Plan 1 05-02-18 VO
— 002H, OH, Plan 1 05-07-18 VO
— Plan 2 05-11-18



Kaiser-Francis Oil Company

Lea County, NM (NAD27)

Red Hill

101H

OH

Plan: Plan 2 05-11-18

Standard Planning Report

11 May, 2018



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 101H
Company:	Kaiser-Francis Oil Company	TVD Reference:	RKB @ 3430.00usft (Cactus 171)
Project:	Lea County, NM (NAD27)	MD Reference:	RKB @ 3430.00usft (Cactus 171)
Site:	Red Hill	North Reference:	Grid
Well:	101H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 05-11-18		

Project	Lea County, NM (NAD27)		
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	Red Hill		
Site Position:		Northing:	395,692.47 usft
From:	Map	Easting:	721,447.16 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 9.08384 N
		Longitude:	103° 37' 5.93936 W
		Grid Convergence:	0.38 °

Well	101H		
Well Position	+N/-S	0.17 usft	Northing: 395,692.64 usft
	+E/-W	19.99 usft	Easting: 721,467.15 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Latitude: 32° 5' 9.08417 N
			Longitude: 103° 37' 5.70700 W
			Ground Level: 3,407.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	7/8/2018	6.74
			Dip Angle (°) 59.76
			Field Strength (nT) 47,851.74411134

Design	Plan 2 05-11-18		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 179.44

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,749.97	5.00	6.59	2,749.66	10.83	1.25	2.00	2.00	0.00	6.59	
6,540.08	5.00	6.59	6,525.34	338.94	39.14	0.00	0.00	0.00	0.00	
6,790.05	0.00	0.00	6,775.00	349.77	40.39	2.00	-2.00	0.00	180.00	
9,228.43	0.00	0.00	9,213.38	349.77	40.39	0.00	0.00	0.00	0.00	
10,228.43	90.00	184.30	9,850.00	-285.06	-7.34	9.00	9.00	0.00	184.30	
10,471.61	90.00	179.44	9,850.00	-528.03	-15.27	2.00	0.00	-2.00	-90.00	
17,139.84	90.00	179.44	9,850.00	-7,195.94	50.32	0.00	0.00	0.00	0.00	BHL v2- Red Hills 1

Planning Report



Database: USA Compass
Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD27)
Site: Red Hill
Well: 101H
Wellbore: OH
Design: Plan 2 05-11-18

Local Co-ordinate Reference: Well 101H
TVD Reference: RKB @ 3430.00usft (Cactus 171)
MD Reference: RKB @ 3430.00usft (Cactus 171)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
2,600.00	2.00	6.59	2,599.98	1.73	0.20	-1.73	2.00	2.00	0.00
2,700.00	4.00	6.59	2,699.84	6.93	0.80	-6.92	2.00	2.00	0.00
2,749.97	5.00	6.59	2,749.66	10.83	1.25	-10.81	2.00	2.00	0.00
Hold 5.00° Inc at 6.59° Azm									
2,800.00	5.00	6.59	2,799.49	15.16	1.75	-15.14	0.00	0.00	0.00
2,900.00	5.00	6.59	2,899.11	23.82	2.75	-23.79	0.00	0.00	0.00
3,000.00	5.00	6.59	2,998.73	32.47	3.75	-32.43	0.00	0.00	0.00
3,100.00	5.00	6.59	3,098.35	41.13	4.75	-41.08	0.00	0.00	0.00
3,200.00	5.00	6.59	3,197.97	49.79	5.75	-49.73	0.00	0.00	0.00
3,300.00	5.00	6.59	3,297.59	58.44	6.75	-58.38	0.00	0.00	0.00
3,400.00	5.00	6.59	3,397.21	67.10	7.75	-67.02	0.00	0.00	0.00
3,500.00	5.00	6.59	3,496.83	75.76	8.75	-75.67	0.00	0.00	0.00
3,600.00	5.00	6.59	3,596.45	84.42	9.75	-84.32	0.00	0.00	0.00
3,700.00	5.00	6.59	3,696.07	93.07	10.75	-92.96	0.00	0.00	0.00
3,800.00	5.00	6.59	3,795.69	101.73	11.75	-101.61	0.00	0.00	0.00
3,900.00	5.00	6.59	3,895.31	110.39	12.75	-110.26	0.00	0.00	0.00
4,000.00	5.00	6.59	3,994.93	119.04	13.75	-118.90	0.00	0.00	0.00
4,100.00	5.00	6.59	4,094.55	127.70	14.75	-127.55	0.00	0.00	0.00
4,200.00	5.00	6.59	4,194.17	136.36	15.75	-136.20	0.00	0.00	0.00
4,300.00	5.00	6.59	4,293.79	145.02	16.75	-144.84	0.00	0.00	0.00
4,400.00	5.00	6.59	4,393.41	153.67	17.75	-153.49	0.00	0.00	0.00
4,500.00	5.00	6.59	4,493.02	162.33	18.75	-162.14	0.00	0.00	0.00
4,600.00	5.00	6.59	4,592.64	170.99	19.74	-170.79	0.00	0.00	0.00
4,700.00	5.00	6.59	4,692.26	179.64	20.74	-179.43	0.00	0.00	0.00
4,800.00	5.00	6.59	4,791.88	188.30	21.74	-188.08	0.00	0.00	0.00
4,900.00	5.00	6.59	4,891.50	196.96	22.74	-196.73	0.00	0.00	0.00
5,000.00	5.00	6.59	4,991.12	205.62	23.74	-205.37	0.00	0.00	0.00
5,100.00	5.00	6.59	5,090.74	214.27	24.74	-214.02	0.00	0.00	0.00
5,200.00	5.00	6.59	5,190.36	222.93	25.74	-222.67	0.00	0.00	0.00
5,300.00	5.00	6.59	5,289.98	231.59	26.74	-231.31	0.00	0.00	0.00
5,400.00	5.00	6.59	5,389.60	240.24	27.74	-239.96	0.00	0.00	0.00
5,500.00	5.00	6.59	5,489.22	248.90	28.74	-248.61	0.00	0.00	0.00
5,600.00	5.00	6.59	5,588.84	257.56	29.74	-257.26	0.00	0.00	0.00
5,700.00	5.00	6.59	5,688.46	266.22	30.74	-265.90	0.00	0.00	0.00
5,800.00	5.00	6.59	5,788.08	274.87	31.74	-274.55	0.00	0.00	0.00
5,900.00	5.00	6.59	5,887.70	283.53	32.74	-283.20	0.00	0.00	0.00
6,000.00	5.00	6.59	5,987.32	292.19	33.74	-291.84	0.00	0.00	0.00
6,100.00	5.00	6.59	6,086.94	300.84	34.74	-300.49	0.00	0.00	0.00
6,200.00	5.00	6.59	6,186.56	309.50	35.74	-309.14	0.00	0.00	0.00
6,300.00	5.00	6.59	6,286.18	318.16	36.74	-317.78	0.00	0.00	0.00
6,400.00	5.00	6.59	6,385.80	326.82	37.74	-326.43	0.00	0.00	0.00
6,500.00	5.00	6.59	6,485.42	335.47	38.74	-335.08	0.00	0.00	0.00
6,540.08	5.00	6.59	6,525.34	338.94	39.14	-338.54	0.00	0.00	0.00
Begin 2.00°/100' Drop									
6,600.00	3.80	6.59	6,585.09	343.51	39.67	-343.11	2.00	-2.00	0.00
6,700.00	1.80	6.59	6,684.96	348.36	40.23	-347.95	2.00	-2.00	0.00
6,790.05	0.00	0.00	6,775.00	349.77	40.39	-349.36	2.00	-2.00	0.00
Begin Vertical Hold									
9,228.43	0.00	0.00	9,213.38	349.77	40.39	-349.36	0.00	0.00	0.00
KOP2, Begin 9.00°/100' Build									
9,300.00	6.44	184.30	9,284.80	345.76	40.09	-345.35	9.00	9.00	0.00

Planning Report



Database: USA Compass
Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD27)
Site: Red Hill
Well: 101H
Wellbore: OH
Design: Plan 2 05-11-18

Local Co-ordinate Reference: Well 101H
TVD Reference: RKB @ 3430.00usft (Cactus 171)
MD Reference: RKB @ 3430.00usft (Cactus 171)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
9,400.00	15.44	184.30	9,382.88	326.86	38.67	-326.46	9.00	9.00	0.00
9,500.00	24.44	184.30	9,476.79	292.88	36.11	-292.51	9.00	9.00	0.00
9,600.00	33.44	184.30	9,564.21	244.68	32.49	-244.35	9.00	9.00	0.00
9,700.00	42.44	184.30	9,642.99	183.43	27.88	-183.15	9.00	9.00	0.00
9,800.00	51.44	184.30	9,711.20	110.64	22.41	-110.42	9.00	9.00	0.00
9,900.00	60.44	184.30	9,767.14	28.12	16.20	-27.96	9.00	9.00	0.00
10,000.00	69.44	184.30	9,809.45	-62.12	9.42	62.21	9.00	9.00	0.00
10,100.00	78.44	184.30	9,837.09	-157.85	2.22	157.87	9.00	9.00	0.00
10,200.00	87.44	184.30	9,849.37	-256.71	-5.21	256.65	9.00	9.00	0.00
10,228.43	90.00	184.30	9,850.00	-285.06	-7.34	284.97	9.00	9.00	0.00
LP, Hold 90.00° Inc, Begin 2.00°/100' Turn									
10,300.00	90.00	182.87	9,850.00	-356.48	-11.82	356.35	2.00	0.00	-2.00
10,400.00	90.00	180.87	9,850.00	-456.42	-15.08	456.25	2.00	0.00	-2.00
10,471.61	90.00	179.44	9,850.00	-528.03	-15.27	527.86	2.00	0.00	-2.00
Hold 179.44° Azm									
10,500.00	90.00	179.44	9,850.00	-556.42	-14.99	556.25	0.00	0.00	0.00
10,600.00	90.00	179.44	9,850.00	-656.42	-14.01	656.25	0.00	0.00	0.00
10,700.00	90.00	179.44	9,850.00	-756.41	-13.02	756.25	0.00	0.00	0.00
10,800.00	90.00	179.44	9,850.00	-856.41	-12.04	856.25	0.00	0.00	0.00
10,900.00	90.00	179.44	9,850.00	-956.40	-11.05	956.25	0.00	0.00	0.00
11,000.00	90.00	179.44	9,850.00	-1,056.40	-10.07	1,056.25	0.00	0.00	0.00
11,100.00	90.00	179.44	9,850.00	-1,156.39	-9.09	1,156.25	0.00	0.00	0.00
11,200.00	90.00	179.44	9,850.00	-1,256.39	-8.10	1,256.25	0.00	0.00	0.00
11,300.00	90.00	179.44	9,850.00	-1,356.38	-7.12	1,356.25	0.00	0.00	0.00
11,400.00	90.00	179.44	9,850.00	-1,456.38	-6.14	1,456.25	0.00	0.00	0.00
11,500.00	90.00	179.44	9,850.00	-1,556.37	-5.15	1,556.25	0.00	0.00	0.00
11,600.00	90.00	179.44	9,850.00	-1,656.37	-4.17	1,656.25	0.00	0.00	0.00
11,700.00	90.00	179.44	9,850.00	-1,756.36	-3.19	1,756.25	0.00	0.00	0.00
11,800.00	90.00	179.44	9,850.00	-1,856.36	-2.20	1,856.25	0.00	0.00	0.00
11,900.00	90.00	179.44	9,850.00	-1,956.35	-1.22	1,956.25	0.00	0.00	0.00
12,000.00	90.00	179.44	9,850.00	-2,056.35	-0.24	2,056.25	0.00	0.00	0.00
12,100.00	90.00	179.44	9,850.00	-2,156.34	0.75	2,156.25	0.00	0.00	0.00
12,200.00	90.00	179.44	9,850.00	-2,256.34	1.73	2,256.25	0.00	0.00	0.00
12,300.00	90.00	179.44	9,850.00	-2,356.33	2.72	2,356.25	0.00	0.00	0.00
12,400.00	90.00	179.44	9,850.00	-2,456.33	3.70	2,456.25	0.00	0.00	0.00
12,500.00	90.00	179.44	9,850.00	-2,556.32	4.68	2,556.25	0.00	0.00	0.00
12,600.00	90.00	179.44	9,850.00	-2,656.32	5.67	2,656.25	0.00	0.00	0.00
12,700.00	90.00	179.44	9,850.00	-2,756.31	6.65	2,756.25	0.00	0.00	0.00
12,800.00	90.00	179.44	9,850.00	-2,856.31	7.63	2,856.25	0.00	0.00	0.00
12,900.00	90.00	179.44	9,850.00	-2,956.30	8.62	2,956.25	0.00	0.00	0.00
13,000.00	90.00	179.44	9,850.00	-3,056.30	9.60	3,056.25	0.00	0.00	0.00
13,100.00	90.00	179.44	9,850.00	-3,156.29	10.58	3,156.25	0.00	0.00	0.00
13,200.00	90.00	179.44	9,850.00	-3,256.29	11.57	3,256.25	0.00	0.00	0.00
13,300.00	90.00	179.44	9,850.00	-3,356.29	12.55	3,356.25	0.00	0.00	0.00
13,400.00	90.00	179.44	9,850.00	-3,456.28	13.54	3,456.25	0.00	0.00	0.00
13,500.00	90.00	179.44	9,850.00	-3,556.28	14.52	3,556.25	0.00	0.00	0.00
13,600.00	90.00	179.44	9,850.00	-3,656.27	15.50	3,656.25	0.00	0.00	0.00
13,700.00	90.00	179.44	9,850.00	-3,756.27	16.49	3,756.25	0.00	0.00	0.00
13,800.00	90.00	179.44	9,850.00	-3,856.26	17.47	3,856.25	0.00	0.00	0.00
13,900.00	90.00	179.44	9,850.00	-3,956.26	18.45	3,956.25	0.00	0.00	0.00
14,000.00	90.00	179.44	9,850.00	-4,056.25	19.44	4,056.25	0.00	0.00	0.00
14,100.00	90.00	179.44	9,850.00	-4,156.25	20.42	4,156.25	0.00	0.00	0.00
14,200.00	90.00	179.44	9,850.00	-4,256.24	21.40	4,256.25	0.00	0.00	0.00

Planning Report



Database: USA Compass
Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD27)
Site: Red Hill
Well: 101H
Wellbore: OH
Design: Plan 2 05-11-18

Local Co-ordinate Reference: Well 101H
TVD Reference: RKB @ 3430.00usft (Cactus 171)
MD Reference: RKB @ 3430.00usft (Cactus 171)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
14,300.00	90.00	179.44	9,850.00	-4,356.24	22.39	4,356.25	0.00	0.00	0.00
14,400.00	90.00	179.44	9,850.00	-4,456.23	23.37	4,456.25	0.00	0.00	0.00
14,500.00	90.00	179.44	9,850.00	-4,556.23	24.35	4,556.25	0.00	0.00	0.00
14,600.00	90.00	179.44	9,850.00	-4,656.22	25.34	4,656.25	0.00	0.00	0.00
14,700.00	90.00	179.44	9,850.00	-4,756.22	26.32	4,756.25	0.00	0.00	0.00
14,800.00	90.00	179.44	9,850.00	-4,856.21	27.31	4,856.25	0.00	0.00	0.00
14,900.00	90.00	179.44	9,850.00	-4,956.21	28.29	4,956.25	0.00	0.00	0.00
15,000.00	90.00	179.44	9,850.00	-5,056.20	29.27	5,056.25	0.00	0.00	0.00
15,100.00	90.00	179.44	9,850.00	-5,156.20	30.26	5,156.25	0.00	0.00	0.00
15,200.00	90.00	179.44	9,850.00	-5,256.19	31.24	5,256.25	0.00	0.00	0.00
15,300.00	90.00	179.44	9,850.00	-5,356.19	32.22	5,356.25	0.00	0.00	0.00
15,400.00	90.00	179.44	9,850.00	-5,456.18	33.21	5,456.25	0.00	0.00	0.00
15,500.00	90.00	179.44	9,850.00	-5,556.18	34.19	5,556.25	0.00	0.00	0.00
15,600.00	90.00	179.44	9,850.00	-5,656.17	35.17	5,656.25	0.00	0.00	0.00
15,700.00	90.00	179.44	9,850.00	-5,756.17	36.16	5,756.25	0.00	0.00	0.00
15,800.00	90.00	179.44	9,850.00	-5,856.16	37.14	5,856.25	0.00	0.00	0.00
15,900.00	90.00	179.44	9,850.00	-5,956.16	38.13	5,956.25	0.00	0.00	0.00
16,000.00	90.00	179.44	9,850.00	-6,056.15	39.11	6,056.25	0.00	0.00	0.00
16,100.00	90.00	179.44	9,850.00	-6,156.15	40.09	6,156.25	0.00	0.00	0.00
16,200.00	90.00	179.44	9,850.00	-6,256.14	41.08	6,256.25	0.00	0.00	0.00
16,300.00	90.00	179.44	9,850.00	-6,356.14	42.06	6,356.25	0.00	0.00	0.00
16,400.00	90.00	179.44	9,850.00	-6,456.14	43.04	6,456.25	0.00	0.00	0.00
16,500.00	90.00	179.44	9,850.00	-6,556.13	44.03	6,556.25	0.00	0.00	0.00
16,600.00	90.00	179.44	9,850.00	-6,656.13	45.01	6,656.25	0.00	0.00	0.00
16,700.00	90.00	179.44	9,850.00	-6,756.12	45.99	6,756.25	0.00	0.00	0.00
16,800.00	90.00	179.44	9,850.00	-6,856.12	46.98	6,856.25	0.00	0.00	0.00
16,900.00	90.00	179.44	9,850.00	-6,956.11	47.96	6,956.25	0.00	0.00	0.00
17,000.00	90.00	179.44	9,850.00	-7,056.11	48.94	7,056.25	0.00	0.00	0.00
17,100.00	90.00	179.44	9,850.00	-7,156.10	49.93	7,156.25	0.00	0.00	0.00
17,139.84	90.00	179.44	9,850.00	-7,195.94	50.32	7,196.08	0.00	0.00	0.00
TD at 17139.84									

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 v2- Red Hills 101 - plan hits target center - Point	0.00	0.00	9,850.00	-7,195.94	50.32	388,496.70	721,517.47	32° 3' 57.87101 N	103° 37' 5.67650 W

Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 101H
Company:	Kaiser-Francis Oil Company	TVD Reference:	RKB @ 3430.00usft (Cactus 171)
Project:	Lea County, NM (NAD27)	MD Reference:	RKB @ 3430.00usft (Cactus 171)
Site:	Red Hill	North Reference:	Grid
Well:	101H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 05-11-18		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.00	2,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2,749.97	2,749.66	10.83	1.25	Hold 5.00° Inc at 6.59° Azm
6,540.08	6,525.34	338.94	39.14	Begin 2.00°/100' Drop
6,790.05	6,775.00	349.77	40.39	Begin Vertical Hold
9,228.43	9,213.38	349.77	40.39	KOP2, Begin 9.00°/100' Build
10,228.43	9,850.00	-285.06	-7.34	LP, Hold 90.00° Inc, Begin 2.00°/100' Turn
10,471.61	9,850.00	-528.03	-15.27	Hold 179.44° Azm
17,139.84	9,850.00	-7,195.94	50.32	TD at 17139.84

Surface Use & Operating Plan

Red Hills 101H

- Surface Owner: Bureau of Land Management
- Grazing Tenant: Jeff Robbins
- New Road: 1121' of new road
- Facilities: Production facilities will be installed on well pad
- **Well Site Information**
 - V Door: North
 - Topsoil: East
 - Interim Reclamation: Reclaim 100' on the south side of location.

Notes

Onsite: On-site was done by William DeGrush (BLM); Matt Warner (Kaiser-Francis), Frank Jaramillo (Madron Surveying) and Jeff (APAC Archaeology) on April 19, 2018.

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, New Mexico.
- B. All roads to the location are shown on the Existing Road Map attachment. The existing lease roads are illustrated in red and blue 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 on the Road Map attachment and is shown in detail on the Access Road Map attachment.
- C. Directions to location: See Existing Road Map 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 1121' 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 BLM caliche pit in NWNW Section 23-T25S-R33E or BLM caliche pit in NWNW Section 1-T25S-R33E.

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 8-1000 bbl oil tanks, a temporary 6x20 horizontal 3-phase separator, a 48" x 10' 3-phase separator, an 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 in NWNW Section 23-T25S-R33E. Alternate source will be the BLM caliche pit in NWNW Section 1-T25S-R33E. Any additional construction materials will be purchased from contractors.
- 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 Mesquite SWD, Inc.'s Outlaw Fresh water source in Texas and the alternate source is Mesquite SWD, Inc.'s Pulley Fresh water well in Section 26-T24S-R28E. Brine water will come from Mesquite SWD, Inc.'s Loving County Brine Station in Texas and the alternate source is Mesquite SWD, Inc.'s Malaga II Brine Station in Section 20-T24S-R29E. No water well will be drilled on the location.

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 BLM caliche pit in NWNW Section 23-T25S-R33E or BLM caliche pit in NWNW Section 1-T25S-R33E.

7. 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. It is anticipated that the disposal of produced water will be trucked to Kaiser-Francis Oil Company's North Bell Lake Unit 4-15 SWD located in Section 8 T23S R34E.

- E. 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.
- F. 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).
- G. 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.

8. Ancillary Facilities:

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

9. Well Site Layout:

- A. The drill pad layout, with elevations staked by Madron Surveying, is shown in the Well Pad Layout attachment. Dimensions of the pad and pits are shown on the Drilling Layout. V door direction is north. 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 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.

10. Plans for Restoration of the Surface:

- A. Interim Reclamation will take place within six months after the last well on this multi-well pad has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production 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.

11. Surface Ownership:

- A. The surface is owned by the Bureau of Land Management. Grazing tenant is Jeff Robbins, 301 Orla Rd., Jal, NM 88252. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.
- B. The proposed road routes and surface location will be restored as directed by the BLM.

12. Other Information:

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite. 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. There are no dwellings within 2 miles of this location.
- D. A Cultural Resources Examination is being prepared by APAC, PO Box 1982, Carlsbad, New Mexico 88221-1982, phone 575-200-7099, and the results will be forwarded to your office in the near future.

13. Bond Coverage:

Bond Coverage is Statewide Bonds # WYB000055.

15. Operator's Representative:

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

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