NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 16 2017
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Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM100558

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other OTH ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. TUCKER DRAW 9-4 FED COM 1H 319751

2. Name of Operator RKI EXPLORATION & PRODUCTION LLC 246289

9. API Well No. 30-015-44477

3a. Address 3500 One Williams Center, MD 35 Tulsa OK 7

3b. Phone No. (include area code) (539)573-0212

10. Field and Pool, or Exploratory PURPLE-SAGE WOLFCAMP GAS / PUF

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface NWNE / 250 FNL / 1463 FEL / LAT 32.049211 / LONG -103.882394
At proposed prod. zone NWSE / 2410 FSL / 2310 FEL / LAT 32.071131 / LONG -103.885161

11. Sec., T. R. M. or Blk. and Survey or Area SEC 16 / T26S / R30E / NMP

14. Distance in miles and direction from nearest town or post office* 16.4 miles

12. County or Parish EDDY

13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 230 feet

16. No. of acres in lease 960

17. Spacing Unit dedicated to this well 480

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 25 feet

19. Proposed Depth 11116 feet / 18781 feet

20. BLM/BIA Bond No. on file FED: NMB000396

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3089 feet

22. Approximate date work will start* 09/23/2017

23. Estimated duration 30 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
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 required by the BLM.

25. Signature (Electronic Submission)

Name (Printed/Typed) Justin Barmore / Ph: (539)573-2651

Date 05/30/2017

Title Regulatory Specialist

Approved by (Signature) (Electronic Submission)

Name (Printed/Typed) Christopher Walls / Ph: (575)234-2234

Date 10/05/2017

Title Petroleum Engineer

Office CARLSBAD

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

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

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

NSP Required
Rev. 10-19-17

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**RKI Exploration and ProductionLLC**
LEASE NO.:	**NMNM-100558**
WELL NAME & NO.:	**Tucker Draw 9-4 Fed Com 1H**
SURFACE HOLE FOOTAGE:	**0250' FNL & 1463' FEL**
BOTTOM HOLE FOOTAGE	**2410' FSL & 2310' FEL**
LOCATION:	**Section 16, T. 26 S., R 30 E., NMPM**
COUNTY:	**County, New Mexico**

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.

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

A. **Hydrogen Sulfide**

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. 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.

<u>Wait on cement (WOC) for Water Basin:</u>
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 <u>8 hours</u>. 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 Delaware.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **900** feet (**in a competent bed <u>below the Magenta Dolomite</u>, which is a <u>Member of the Rustler</u>, and if salt is encountered, set casing at least 25 feet 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 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.

Formation below the 13-3/8" 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.

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 13% - Additional cement may be required.**

Formation below the 9-5/8" 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 (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.

Centralizers required through the curve and a minimum of one every other joint.

3. The minimum required fill of cement behind the **7** 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 22% - Additional cement may be required.**

Formation below the 7" 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.

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

   ☐ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to 18% - Additional cement may 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. **Operator has proposed a multi-bowl wellhead assembly that has a weld on head with no o-ring seals. 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 psi.**

    a. **Wellhead manufacturer is supplying the test plug/retrieval tool for the operator's third party tester to use during the BOP/BOPE test. Operator shall use the supplied test plug/retrieval tool.**
    b. **Operator shall install the wear bushing required by the wellhead manufacturer. This wear bushing shall be installed by using the test plug/retrieval tool.**
    c. **Wellhead manufacturer representative shall be on location when the intermediate casing mandrel is landed. Operator shall submit copy of manufacturer's wellsite report with subsequent report.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    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.**

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.

4. 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.

    f. 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.

D. 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.

E. DRILL STEM TEST

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

F. 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 091217

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Exploration & Production LLC
LEASE NO.:	NM100558
WELL NAME & NO.:	Tucker Draw 9-4 Fed Com – 1H
SURFACE HOLE FOOTAGE:	250'/N & 1463'/E
BOTTOM HOLE FOOTAGE	2410'/S & 2310'/E, sec. 4
LOCATION:	Section 16, T. 26 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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

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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)

Phantom Banks/Desert Heronries ACEC
Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both.

Exhaust noise from engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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.)

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 high 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:

Annual pressure monitoring will be performed by the operator 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.

Watersheds/Floodplain:

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.

Surface disturbance will not be allowed within 180 meters of the 100-year floodplain for the Tucker Draw drainage that flows into Red Bluff Reservoir.

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.

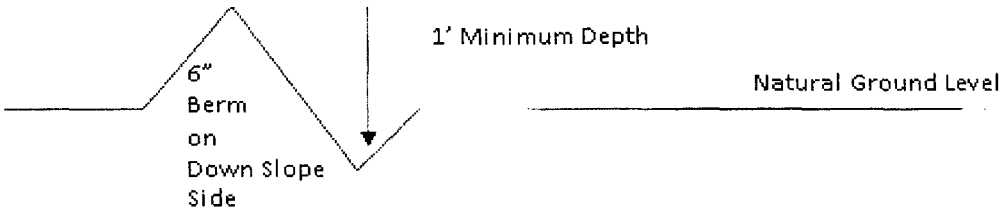
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

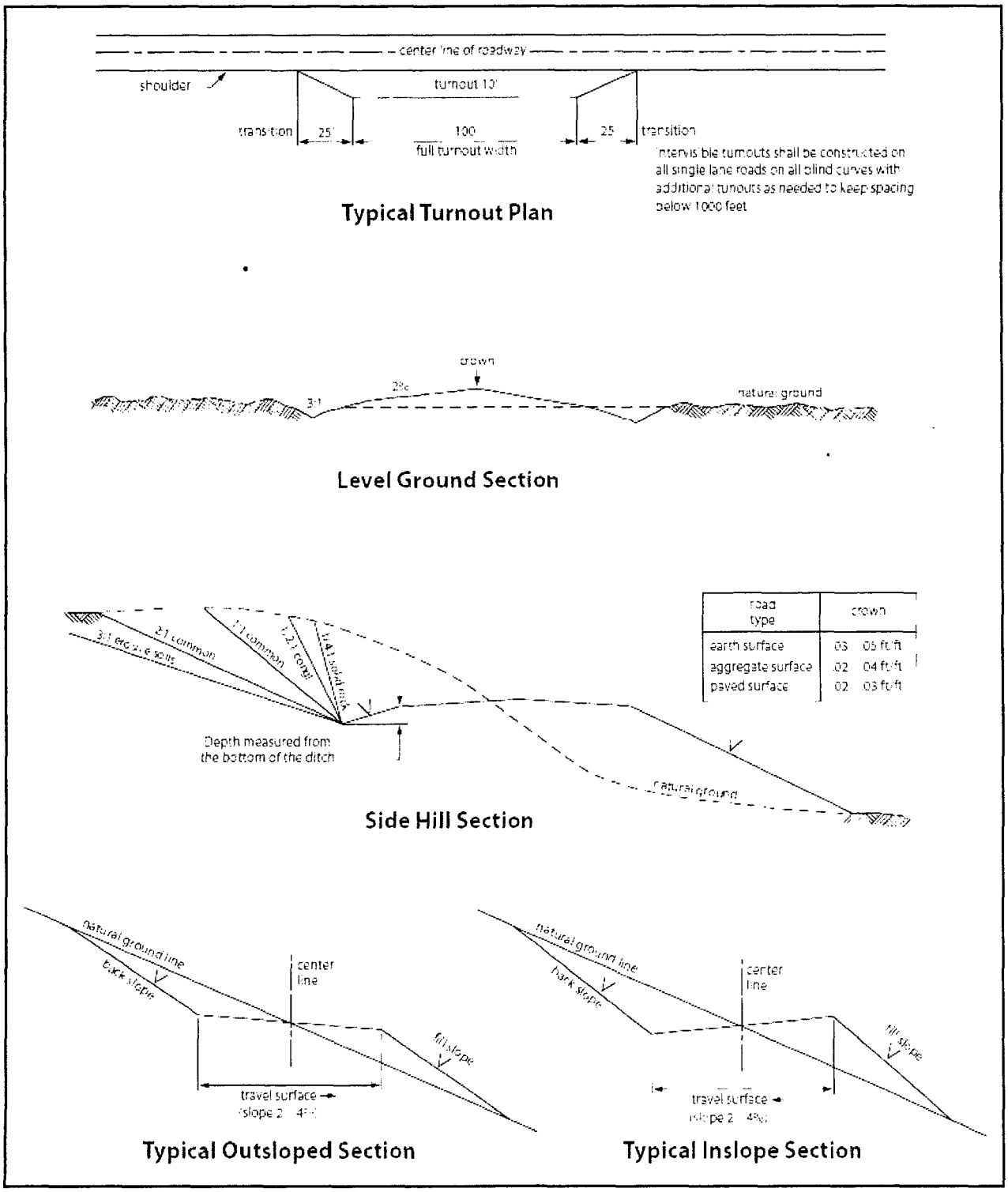


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

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

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

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

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

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of

the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

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

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

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

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

(X) seed mixture 1 ( ) seed mixture 3

() seed mixture 2 ( ) seed mixture 4

( ) seed mixture 2/LPC ( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

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

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

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

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

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

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

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

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

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

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching

deterrence shall be placed on all vertical poles that extend past the cross arms.

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

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

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

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

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

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

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

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.

NAME: Justin Barmore **Signed on:** 05/30/2017

Title: Regulatory Specialist

Street Address: 3500 One Williams Center, MD 35

City: Tulsa **State:** OK **Zip:** 74172

Phone: (539)573-2651

Email address: justin.barmore@wpxenergy.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400013514 **Submission Date:** 05/30/2017

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Well Type: OTHER **Well Work Type:** Drill

Highlighted data reflects the most recent changes
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Section 1 - General

APD ID: 10400013514 **Tie to previous NOS?** **Submission Date:** 05/30/2017

BLM Office: CARLSBAD **User:** Justin Barmore **Title:** Regulatory Specialist

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

Lease number: NMNM100558 **Lease Acres:** 960

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:** RKI EXPLORATION & PRODUCTION LLC

Operator letter of designation:

Operator Info

Operator Organization Name: RKI EXPLORATION & PRODUCTION LLC

Operator Address: 3500 One Williams Center, MD 35

Zip: 74172

Operator PO Box:

Operator City: Tulsa **State:** OK

Operator Phone: (539)573-0212

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: TUCKER DRAW 9-4 FED COM **Well Number:** 1H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PURPLE-SAGE WOLFCAMP GAS **Pool Name:** PURPLE SAGE WOLFCAMP GAS

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

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:** TUCKER DRAW FED COM **Number:** 16-26S30E-B

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

Well Work Type: Drill

Well Type: OTHER

Describe Well Type: Horizontal Gas Well

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 16.4 Miles **Distance to nearest well:** 25 FT **Distance to lease line:** 230 FT

Reservoir well spacing assigned acres Measurement: 480 Acres

Well plat: Well_Plat_04-18-2017.pdf

Tucker_Draw_9_4_Federal_Com_Pad_Plat_05-24-2017.pdf

Well work start Date: 09/23/2017 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

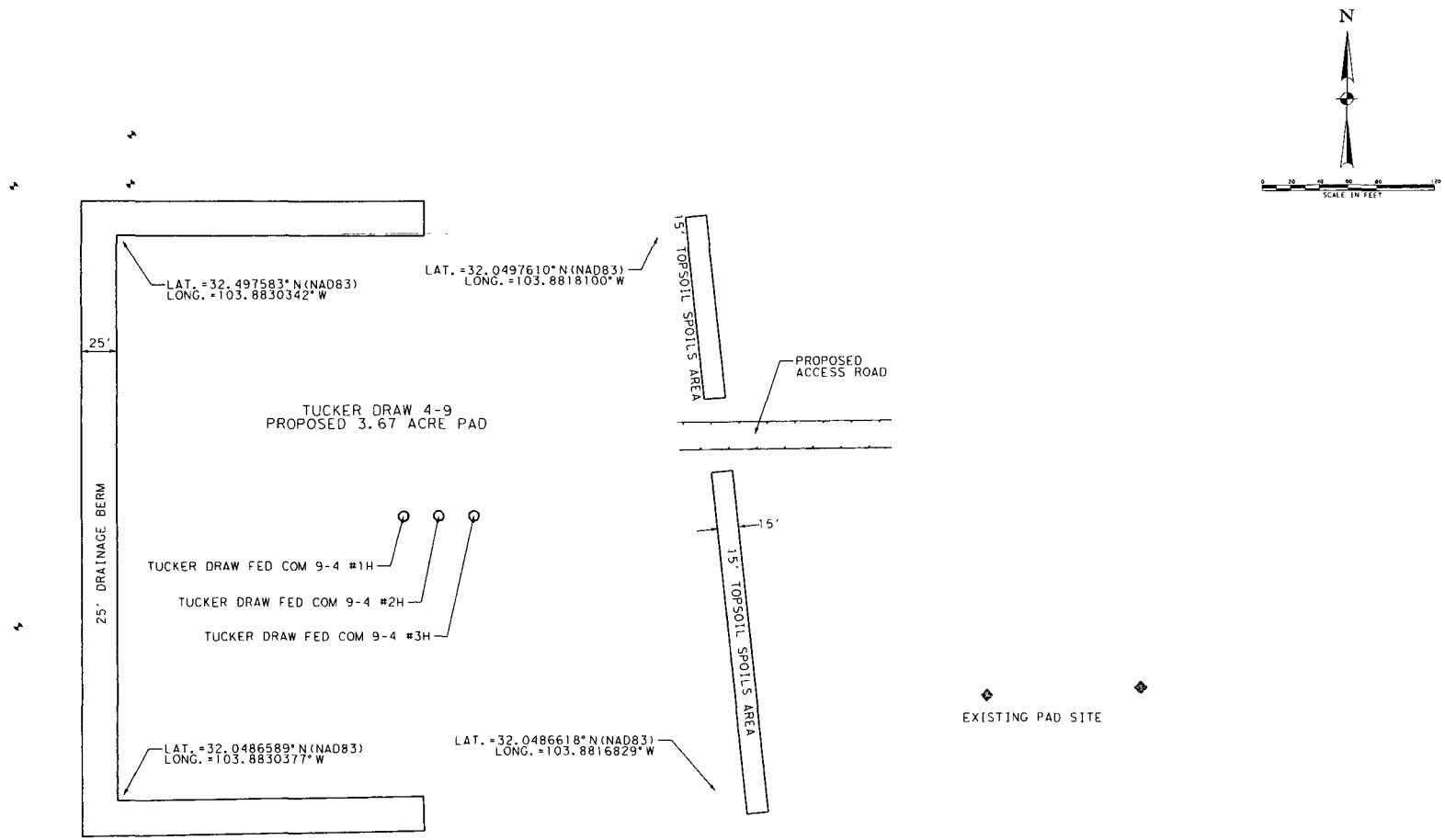
Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
	250	FNL	1463	FEL	26S	30E	16	NWNE	32.049211	-103.882394	EDDY	NEW MEXI	NEW MEXI	S	STATE	3089	0	0
	177	FNL	2309	FEL	26S	30E	16	NWNE	32.049421	-103.885125	EDDY	NEW MEXI	NEW MEXI	S	STATE	-7465	10611	10554
	330	FSL	2310	FEL	26S	30E	9	SWSE	32.050797	-103.885128	EDDY	NEW MEXI	NEW MEXI	F	NMNM 100558	-7943	11355	11032

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

	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
	2310	FSL	2310	FEL	26S	30E	4	NWSE	32.070856	-103.885161	EDDY	NEW MEXI	NEW MEXI	F	NMNM 119275	-8025	18600	11114
	2410	FSL	2310	FEL	26S	30E	4	NWSE	32.071131	-103.885161	EDDY	NEW MEXI	NEW MEXI	F	NMNM 119275	-8027	18781	11116



RKI EXPLORATION & PRODUCTION, LLC
210 PARK AVENUE, STE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

PERMITTING

PERMITTING REVIEW ONLY

THESE DRAWINGS ARE NOT FOR CONSTRUCTION OR RECORD PURPOSES. ONLY WHEN MARKED FURNISHED, ONLY WHEN MARKED BY OR UNDER THE SUPERVISION OF

FIRM E. LEGAL 21927
NAME
DATE 05/22/2021

TUCKER DRAW FED COM 9-4 PAD IMPROVEMENTS PLAN

EDDY COUNTY, NEW MEXICO

TUCKER DRAW 1H, 2H & 3H

BLM EXHIBIT 01 - WELL PLAT

FSC SURVEYORS+ENGINEERS
2205 WALNUT STREET / COLUMBUS, TX 78934
1.855.637.7225 / WWW.FSCINC.NET
TBPE FIRM # 17867 / TBPLS # 10094100

Project No.:	2017020241
Issued:	05/22/17
Drawn By:	FSC
Checked By:	RL

SHEET EX.01

APD ID: 10400013514 **Submission Date:** 05/30/2017

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Well Type: OTHER **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3089	0	0	ALLUVIUM,OTHER : Quaternary	USEABLE WATER	No
2	BELL CANYON	-482	3571	3588	SHALE,SANDSTONE	NATURAL GAS,OIL	No
3	CHERRY CANYON	-1553	4642	4669	SHALE,SANDSTONE	NATURAL GAS,OIL	No
4	BRUSHY CANYON	-2621	5710	5747	SHALE,SANDSTONE	NATURAL GAS,OIL	No
5	AVALON SAND	-4404	7493	7547	SANDSTONE	NATURAL GAS,OIL	No
6	BONE SPRING 1ST	-5208	8297	8353	LIMESTONE,SHALE,SANDSTONE	NATURAL GAS,OIL	No
7	BONE SPRING 2ND	-5933	9022	9078	LIMESTONE,SHALE,SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING 3RD	-7116	10205	10261	LIMESTONE,SHALE,SANDSTONE	NATURAL GAS,OIL	No
9	WOLFCAMP	-7490	10579	10635	LIMESTONE,SHALE,SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 18781

Equipment: The blowout preventer equipment (BOPE) will consist of 3 rams (10,000 psi WP) with 2 pipe rams (one of which may be variable), 1 blind ram and 1 annular preventer (5,000 psi WP) will be installed. The BOPE will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. A rotating head will be installed as needed. Units will be hydraulically operated. An accumulator that meets the requirements of Onshore Order 2 for the pressure rating of the BOP stack will be present. The following BOPE will be installed, tested and operational: • Drilling spool or blowout preventer with two (2) side outlets; Choke line side shall be 3" minimum diameter; Two (2) adjustable chokes with one (1) remotely controlled from the rig floor and pressure gauge. Kill side shall be at least 2" diameter; Two (2) manual valves and one (1) check valve. Auxiliary equipment is as follows: • Upper kelly cock valve with a handle available; • Lower kelly cock valve with a handle available; • A float valve will be used in the drill string, either in a float sub or in the mud motor; • Safety valves and subs with a full opening sized to fit all drill strings and collars will be available on the rig floor in the open position. A mud gas

separator (gas buster) will be in place during drilling.

Requesting Variance? YES

Variance request: RKI Exploration & Production, LLC. requests a variance to drill this well using a co-flex line between the BOP and the choke manifold. Certification for proposed co-flex hose is attached. The hose is required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.
Testing Procedure: BOPE will be inspected and operated as stated in Onshore Order 2. A third party company will test the BOPE. After surface casing is set and the BOPE is nippled up, pressure tests will be conducted to 250 psi low and 5000 psi high (50% of WP) with the annular tested to 250 psi low and 2500 psi high (50% of WP).

Choke Diagram Attachment:

5MChokeManifold_04-18-2017.pdf

BOP Diagram Attachment:

BOP_Diagram_04-18-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing	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	900	0	900	-7465	-8365	900	J-55	54.5	STC	2.85	13.79	DRY	10.48	DRY	10.48
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3588	0	3571	-7465	-11036	3588	J-55	40	LTC	1.64	5.03	DRY	3.62	DRY	3.62
3	INTERMEDIATE	8.75	7.0	NEW	API	N	0	11355	0	11032	-7465	-18497	11355	HCP-110	29	BUTT	1.9	4.62	DRY	2.9	DRY	2.9
4	LINER	6.125	4.5	NEW	NON API	N	10611	18781	10554	11116	-18019	-18581	8170	HCP-110	13.5	OTHER - CDC-HTC	2.18	5.07	DRY	1.75	DRY	1.75

Casing Attachments

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_05-23-2017.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_05-23-2017.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_05-23-2017.pdf

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Casing Attachments

Casing ID: 4 **String Type:** LINER

Inspection Document:

Spec Document:

CDC_HTC_spec_sheet_05-23-2017.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_05-23-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	643	385	1.74	13.5	447	50	Class C	4% Gel + 2% CaCl + 0.4 pps Defoamer + 0.125 pps CelloFlake
SURFACE	Tail		643	900	200	1.34	14.8	134	50	Class C	2% Calcium
INTERMEDIATE	Lead		0	2914	564	1.92	12.9	957	20	Class C / Poz 35/65	5% Salt + 6% Gel + 0.5% Retarder + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps CelloFlake
INTERMEDIATE	Tail		2914	3588	200	1.32	14.8	211	20	Class C	None
INTERMEDIATE	Lead		3088	10611	504	2.67	11.2	1135	20	TXI Lightweight	10% Gel + 8% Plex Crete + 0.9% Retarder + 0.7 pps FL + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps CelloFlake
INTERMEDIATE	Tail		10611	11355	114	1.18	15.6	112	20	Class H	0.3% Retarder
LINER	Lead		10611	18781	483	1.89	13	772	20	Acid Soluble TXI	1.3% Salt + 30% CaCl + 5% Plexaid + 0.7% FL + 0.3% Retarder + 0.1%

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Antisettling + 0.4 pps Defoamer

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: An electronic mud monitoring system satisfying the requirements of Onshore Order 1 will be used. All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.
Describe the mud monitoring system utilized: The following mud system monitoring equipment will be in place during drilling: • Visual pit markers • Pit volume totalizer (PVT) • Stroke counter • Gas detection • Mud-gas separator (gas buster) • Flow sensor

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
3571	11032	OTHER : Cut Brine	8.9	9.4							
11032	11116	OIL-BASED MUD	10.5	12							
900	3571	OTHER : Brine	9.8	10							
0	900	WATER-BASED MUD	8.5	8.9							

Section 6 - Test, Logging, Coring

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

A 2-person mud-logging program will be used from Int_1 9-5/8" casing point to TD.

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

CBL,DS,MWD

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6884 **Anticipated Surface Pressure:** 4438.47

Anticipated Bottom Hole Temperature(F): 200

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:

RKI_H2S_Plan_Tucker_Draw_Fed_Com_26S_30E_B_3_30_17_04-18-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Tucker_DF_9_4_1H_Plan__1_05-24-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Tucker_Draw_Fed_COM_9_4_1H___BLM_Drilling_Plan__05_15_17__05-24-2017.pdf

Other Variance attachment:

5M Choke Manifold

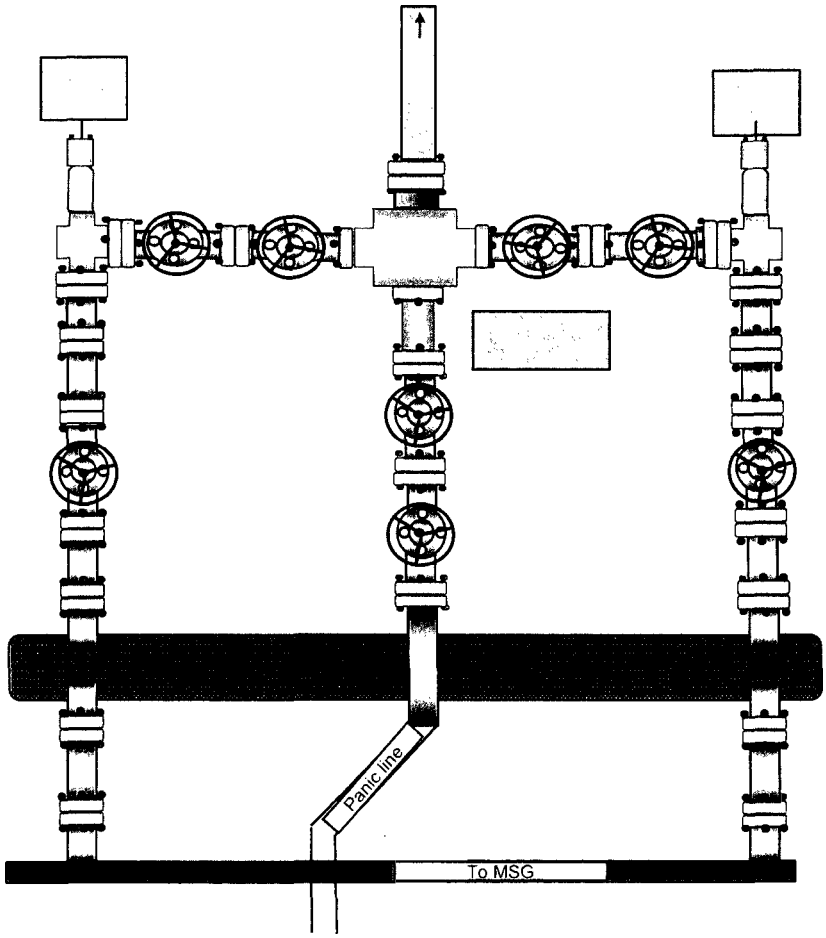
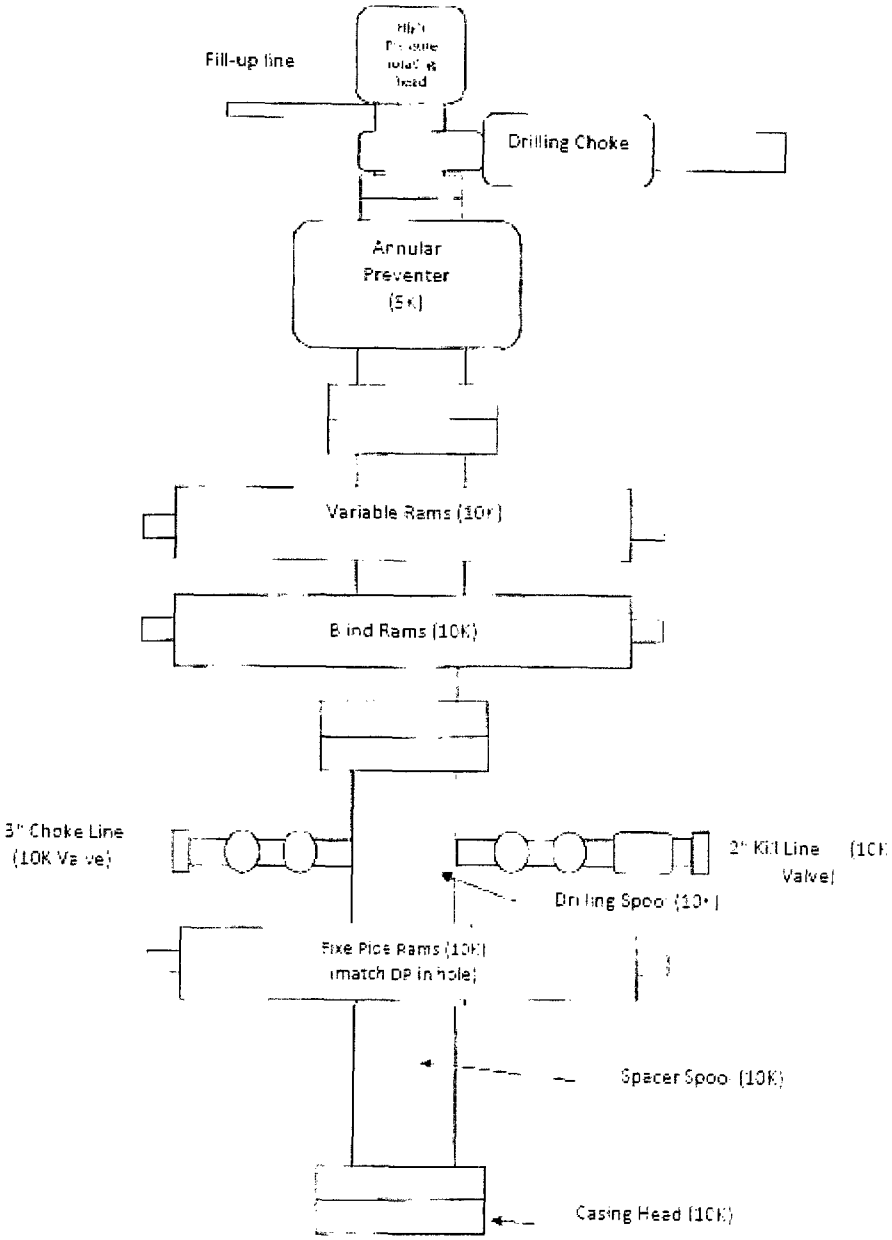


Exhibit #1:

13" 10K psi BOP



U. S. Steel Tubular Products

4 1/2 13.50 lb (0.29) P110 HC

USS-CDC HTQ™

	PIPE	CONNECTION	
MECHANICAL PROPERTIES			
Minimum Yield Strength	**110,000**		*psi*
Maximum Yield Strength	**140,000**		*psi*
Minimum Tensile Strength	**125,000**		*psi*
DIMENSIONS			
Outside Diameter	**4.500**	5.250	*in.*
Wall Thickness	0.290		*in.*
Inside Diameter	3.920	3.920	*in.*
Drift - API	3.795	3.795	*in.*
Nominal Linear Weight, T&C	**13.50**		*lbs/ft*
Plain End Weight	13.05		*lbs/ft*
SECTION AREA			
Cross Sectional Area | Critical Area	3.836	3.836	*sq. in.*
Joint Efficiency		100.0	*%*
PERFORMANCE			
Minimum Collapse Pressure	11,810	11,810	*psi*
External Pressure Leak Resistance		9,450	*psi*
Minimum Internal Yield Pressure	12,420	12,420	*psi*
Minimum Pipe Body Yield Strength	422,000		*lbs*
Joint Strength		443,000	*lbs*
Compression Rating		266,000	*lbs*
Reference Length		21,877	*ft*
Maximum Uniaxial Bend Rating		70.6	*deg/100 ft*
MAKE-UP DATA			
Make Up Loss		4.44	*in.*
Minimum Make-Up Torque		7,000	*ft-lbs*
Maximum Make-Up Torque		10,000	*ft-lbs*
Connection Yield Torque		12,400	*ft-lbs*
Verification of connection shoulder required. Typical shoulder range		1,500 - 6,500	*ft-lbs*

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) Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3) 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.).
4) Reference length is calculated by joint strength divided by nominal T&C weight with 1.5 safety factor.
5) Connection external pressure resistance has been verified to 80% API pipe body collapse pressure (API 5C5 Ca-11 testing protocol).

Legal Notice: USS-CDC HTQ™ (High Torque Casing Drilling Connection) is a trademark of U.S. Steel Tubular. This product is a premium API Buttress threaded and coupled connection designed for drilling with casing applications. All material contained in this publication is for general information only. The material should not therefore be used or relied upon for any specific application without independent, competent professional examination and verification of accuracy, suitability, and applicability. Anyone making use of this material does so at their own risk and assumes any and all liability resulting from such use. U.S. Steel disclaims any and all expressed or implied warranties of fitness for any general or particular application.
USS Product Data Sheet 2016 rev22 (Sept)

U. S. Steel Tubular Products
10343 Sam Houston Park Dr., #120
Houston, TX 77064

1-877-893-9461
connections@uss.com
www.usstubular.com

4) Casing Program:

Section	Hole Size	Top (MD)	Bottom (MD)	Bottom (TVD)	Casing OD	Weight (ppf)	Grade	Threads
Surf	17-1/2"	0	900	900	13-3/8"	54.5	J-55	ST&C
Int_1	12-1/4"	0	3,588	3,571	9-5/8"	40.0	J-55	LT&C
Int_2	8-3/4"	0	11,355	11,032	7"	29.0	HCP-110	BT&C
Prod	6-1/8"	10,611	18,781	11,116	4-1/2"	13.5	HCP-110	CDC-HTC

Safety Factors	
Collapse	1.125
Burst	1.000
Tension	1.600

Design Factors			
Section	Collapse	Burst	Tension
Surf	2.85	13.79	10.48
Int_1	1.64	5.03	3.62
Int_2	1.90	4.62	2.90
Prod	2.18	5.07	1.75

RKI Exploration & Production

Tucker Draw Fed Com 26S-30E-B

1. H2S Safety Training

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

- Hazards and characteristics of Hydrogen Sulfide (H_2S).
- Physicals effects of Hydrogen Sulfide on the human body.
- Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
- H_2S detection, Emergency alarm and sensor location.
- Emergency rescue.
- Resuscitators.
- First aid and artificial resuscitation.
- The effects of Hydrogen Sulfide on metals.
- Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

2. H2S detection and Alarm Systems

- Four channel H_2S monitor with alarms.
- Three (3) sensors located as follows: #1 – Rig Floor, #2 – Shale Shaker, #3 – Cellar.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

3. Windsocks and / Wind Streamers

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

4. Condition Flags and Signs

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

- GREEN – Normal Operating Conditions
- YELLOW – Potential Danger
- RED – Danger, H_2S Gas Present

5. Well Control Equipment

- **See APD**

6. Communications

- Proper communication equipment such as cell phones or 2-way radios should be available at the rig.

- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

7. Drilling Stem Testing

Not Applicable

8. Drilling Fluids

The primary control to avoid H_2S problems in a drilling operation is to keep it retained in the formation. A slight over balance in drilling fluid density is required. It must be enough to overcome any swabbing effects on connections and trips. Ample pit volume will be provided to contain an adequate supply of drilling mud.

- Drilling Fluid Monitoring – On Any Hazardous H_2S gas well, the earlier the warning of danger the better chance to control operations. Mud Company will be in daily contact with a RKI Representative. The Mud Engineer will take samples of the mud, analyze these samples, and make necessary recommendations to prevent H_2S gas from the formation, the pH will be increased as necessary for corrosion control.
- pH Control – For normal drilling, pH of 10.5 – 11.5. Would be sufficient for corrosion protection. If there is an influx of H_2S gas from the formation, the pH will be increased as necessary for corrosion control.
- H_2S Scavengers – If necessary H_2S scavengers will be added to the drilling mud.
- Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

9. Emergency Contacts:

Local Contacts

Operations Senior Foreman	
Danny Emerson	(505) 614-4867
Production Superintendent	
Justin Warren	(701) 421-7324
Production Foreman	
Kipper Folmar	(575) 644-2008
Gary Moreau	(575) 200-4278
Kurt Heckman	(505) 333-1809
Operation Foreman	
Filip Avila	(505) 692-5467
Completions Superintendent	
Kent Hejl	(575) 885-7539
Jim Auld	(539) 573-7508
Drilling Superintendent	
Lance Vaughn	(325) 647-8148
	(575) 200-4160
Deck Travis	(713) 805-6739
Environmental Specialist	
Karolina Blaney	(970) 589-0743

Safety Specialist	
Stephan Holloway	(361) 436-6290
EH&S Contractor	
Randall Moreland	(318) 458-1537

Regional Contacts

Production Manager	
Bobby Goodwin	(918) 642-3688
Drilling Engineer	
Preston Wray	(539) 573-7604
Completions Engineer	
Jay Brenner	(918) 289-9252

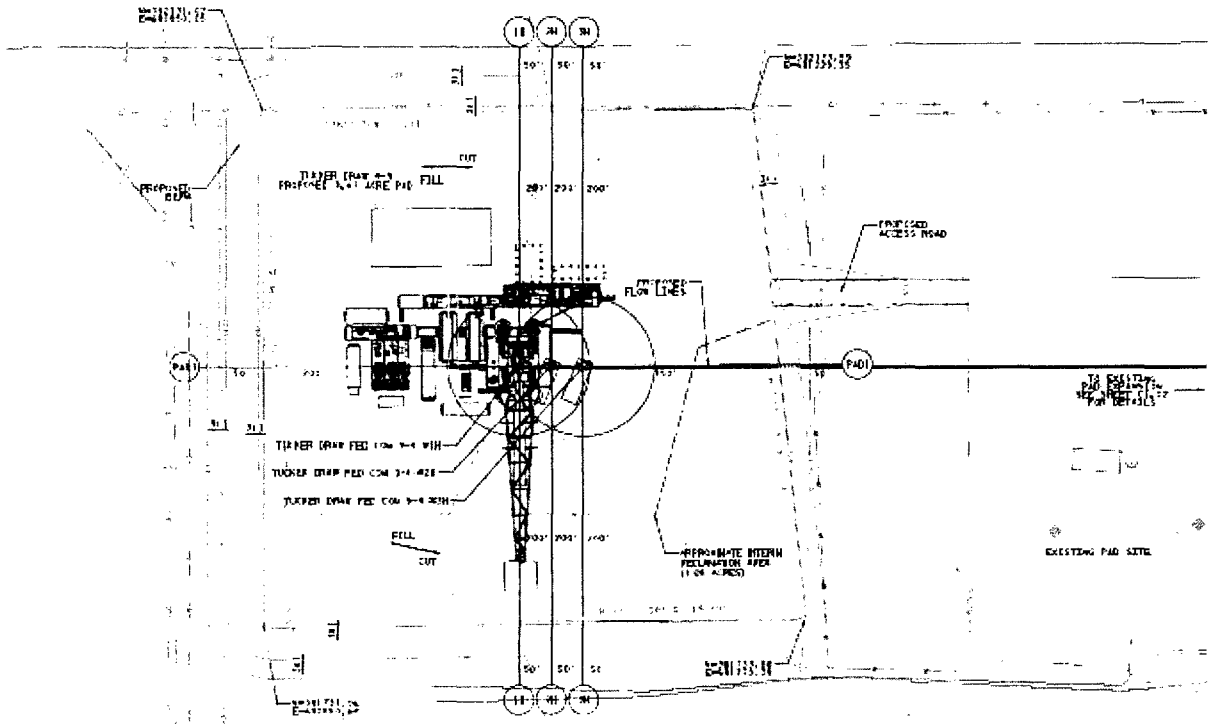
Corporate Contacts

VP Asset Team	
Matt Hinson	(539) 573-0170
Drilling Manager	
Jeff Cutler	(539) 573-2772
EHS Manager	
Lucas Smith	(817) 727-9716
Legal Liaison	
Kevin Mathews	(918) 606-6356
RMID Liaison	
Scott Davenport	(918) 573-5917
Communications Liaison	
Kelly Swan	(918) 629-1037

Emergency Response Contacts	**911 or**
Ambulance Service:	
Carlsbad Fire Department	(575) 885-3125
Hospitals:	
Carlsbad Medical Center (Carlsbad)	(575) 557-4100
University Medical Center (El Paso)	(915) 577-1200
University Medical Center (Lubbock)	(806) 775-8200
Fire Department:	
Carlsbad Fire Department	(575) 885-3125
Pecos VFD	(432) 445-3519
Law Enforcement:	
Carlsbad Police Department	(575) 885-6547
Pecos Police Department	(432) 445-4911
Eddy County Sherriff's Department	(575) 887-7551
Loving County Sherriff's Department	(432) 337-2411
Reeves County Sherriff's Office	(432) 445-4901
New Mexico State Police – District 3	(575) 885-3138
Homeland Security (Federal)	(202) 282-8000
Homeland Security (New Mexico)	(505) 476-9600

Regulatory Contacts

Local Emergency Planning Committee (LEPC)	
Eddy County, Carlsbad, NM	(575) 885-3581
Lea County, Lovington, NM	(575) 396-8607
Chaves County, Roswell, NM	(575) 624-6140
Reeves County, Pecos, TX	(432) 447-3542
Loving County, Mentone, TX	(915) 377-2362
Winkler County, Kermit, TX	(432) 586-6658
Wheeler County, Wheeler, TX	(806) 826-3777
Texas Railroad Commission – District 8	(432) 684-5581
New Mexico Oil Conservation Division	(505) 476-3440
New Mexico Occupational Safety and Health Bureau (NM OSHA)	(505) 476-8700
Federal OSHA: Lubbock area office	(806) 472-7681
US BLM: Carlsbad, NM field office	(575) 234-5972
Federal Environmental Protection Agency: National Response Center (NRC)	(800) 424-8802



N

SCALE IN FEET

LEGEND

EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
PROPOSED WATER
PROPOSED GAS
PROPOSED OVERHEAD ELECTRIC

NOTES

1. LOCATION OF EXISTING SITE ELEMENTS IS APPROXIMATE.
2. EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING UTILITIES PRIOR TO START OF ANY WORK. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITIES DUE TO WORK PERFORMED UNDER THIS CONTRACT.
3. ALL COORDINATES ARE IN GRID USING NAD 83 NEW MEXICO STATE PLANE, EAST ZONE, US FT.

BENCHMARKS

FOUND BRASS DISK MONUMENT IN ROCK MOUND FOR COMMON CORNER OF SECTION 9, 10, 15 AND 16
N: 383,191.36
E: 683,512.39

External Light & Siren - Dog House
Monitor - In Dog House
Escape - In Dog House
Windsock - opposite corner of Dog House on floor
Windsock - End of mud pits
#1 Detector - Dog House
#2 Detector - Near BOP
#3 Detector - Shaker
#1 Breathing Area W/ 30 BA - Accompany mud - Loader
#2 Breathing Area W/ 30 BA - Behind Hoods
Condition Sign - At Entrance W/ Strobe Red - Yellow - Green

RKI EXPLORATION & PRODUCTION

TUCKER DRAW FED COM 9-4
PAD IMPROVEMENTS PLAN
DRILLING FACILITY LAYOUT

FBC SURVEYORS ENGINEERS

C-1.01

WPX Energy

Eddy County, New Mexico NAD 83
Tucker Draw Fed 9-4 Pad
Tucker Draw Fed 9-4 1H
API: ???
Wellbore #1

Plan: Plan #1

Standard Planning Report

30 March, 2017

Scientific Drilling

WPX ENERGY

Tucker Draw Fed 9-4 1H
Eddy County, New Mexico NAD
Northing: 381932.50
Easting: 681049.30
Plan #1

Scientific Drilling

RKB @ 3112.00usft (Orion Aires)
3089.00

Azimuths to Grid North
True North: -0.24°
Magnetic North: 6.69°

Magnetic Field
Strength: 48029.7snT
Dip Angle: 59.78°
Date: 3/27/2017
Model: HDGM

To convert Magnetic North to Grid, Add 6.69°
To convert True North to Grid, Subtract 0.24°

WELL DETAILS Tucker Draw Fed 9-4 1H

Ground Level: 3089.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	381932.50	681049.30	32° 2' 57.157 N	103° 52' 56.618 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
1600.00	3.00	276.93	1599.73	1.89	-15.59	0.50	276.93	1.98
2084.77	7.84	274.86	2082.18	6.23	-61.17	1.00	-3.35	6.57
7663.79	7.84	274.86	7609.00	70.73	-819.89	0.00	0.00	75.31
8056.02	0.00	0.00	8000.00	73.00	-846.60	2.00	180.00	77.73
10610.56	0.00	0.00	10554.54	73.00	-846.60	0.00	0.00	77.73
11355.16	89.35	359.68	11031.97	545.06	-849.24	12.00	359.68	549.79
18781.29	89.35	359.68	11116.00	7970.60	-890.70	0.00	0.00	7975.45

FORMATION TOP DETAILS

TVDPath	Formation
3571.00	Bell Canyon (Base of Salt)
4642.00	Cherry Canyon
5710.00	Brushy Canyon
7370.00	Bone Spring
7493.00	Avalon
8297.00	1st Bone Spring Sand
8850.00	2nd Bone Spring Lime
9022.00	2nd Bone Spring Sand
9481.00	3rd Bone Spring Lime
10205.00	3rd Bone Spring Sand
10579.00	Wolfcamp Top
10604.00	Wolfcamp X Sand
10699.00	Wolfcamp Y Sand
10725.00	Wolfcamp A
10853.00	Wolfcamp A2
11012.00	Upper WFCMP A Top Target
11032.00	Upper WFCMP A Landing Pt
11052.00	Upper WFCMP A Base Target

SITE DETAILS: Tucker Draw Fed 9-4 Pad

Site Centre Northing: 381932.50
Easting: 681049.30

Positional Uncertainity: 0.00
Convergence: 0.24
Local North: Grid

PROJECT DETAILS: Eddy County, New Mexico NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

DESIGN TARGET DETAILS

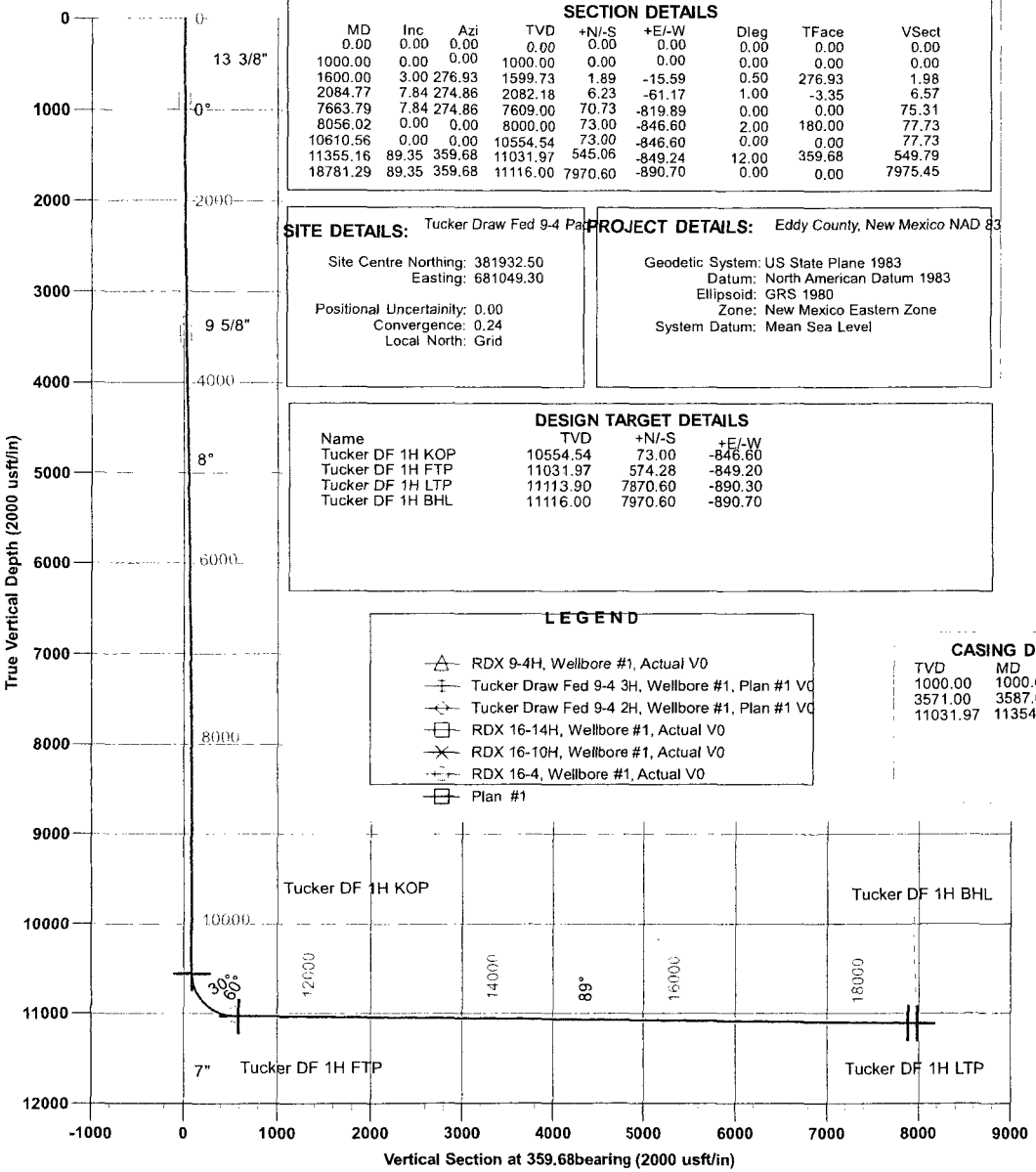
Name	TVD	+N/-S	+E/-W
Tucker DF 1H KOP	10554.54	73.00	-846.60
Tucker DF 1H FTP	11031.97	574.28	-849.20
Tucker DF 1H LTP	11113.90	7870.60	-890.30
Tucker DF 1H BHL	11116.00	7970.60	-890.70

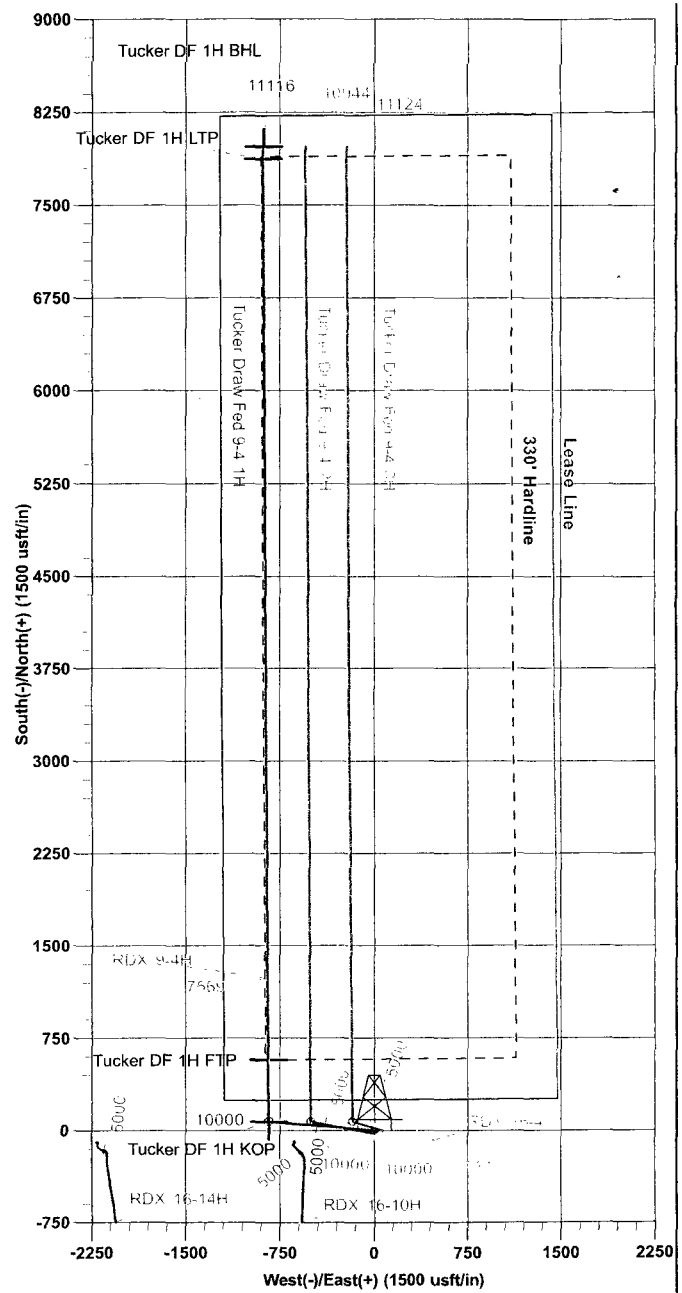
LEGEND

- RDX 9-4H, Wellbore #1, Actual V0
- Tucker Draw Fed 9-4 3H, Wellbore #1, Plan #1 V0
- Tucker Draw Fed 9-4 2H, Wellbore #1, Plan #1 V0
- RDX 16-14H, Wellbore #1, Actual V0
- RDX 16-10H, Wellbore #1, Actual V0
- RDX 16-4, Wellbore #1, Actual V0
- Plan #1

CASING DETAILS

TVD	MD	Size
1000.00	1000.00	13-3/8
3571.00	3587.65	9-5/8
11031.97	11354.79	7





Bailey Fellows
Scientific Drilling
325 S. Faudree Rd
Odessa, TX 79765

19:22, March 30 2017

Scientific Drilling Int.

Planning Report

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Eddy County, New Mexico NAD 83

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site *Tucker Draw Fed 9-4 Pad*

Site Position:		**Northing:**	381,932.50 usft	**Latitude:**	32° 2' 57.157 N
From:	Map	**Easting:**	681,049.30 usft	**Longitude:**	103° 52' 56.618 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.24 °

Well Tucker Draw Fed 9-4 1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	381,932.50 usft	**Latitude:**	32° 2' 57.157 N
	+E/-W	0.00 usft	**Easting:**	681,049.30 usft	**Longitude:**	103° 52' 56.618 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,089.00 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	3/27/2017	6.93	59.78	48,030

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (bearing)**
	0.00	0.00	0.00	359.68

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	3.00	276.93	1,599.73	1.89	-15.59	0.50	0.50	0.00	276.93	
2,084.77	7.84	274.86	2,082.18	6.23	-61.17	1.00	1.00	-0.43	-3.35	
7,663.79	7.84	274.86	7,609.00	70.73	-819.89	0.00	0.00	0.00	0.00	
8,056.02	0.00	0.00	8,000.00	73.00	-846.60	2.00	-2.00	0.00	180.00	
10,610.56	0.00	0.00	10,554.54	73.00	-846.60	0.00	0.00	0.00	0.00	Tucker DF 1H KOP
11,355.16	89.35	359.68	11,031.97	545.06	-849.24	12.00	12.00	-0.04	359.68	
18,781.29	89.35	359.68	11,116.00	7,970.60	-890.70	0.00	0.00	0.00	0.00	Tucker DF 1H BHL

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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
Start Build 0.50 - 13 3/8"									
1,100.00	0.50	276.93	1,100.00	0.05	-0.43	0.06	0.50	0.50	0.00
1,200.00	1.00	276.93	1,199.99	0.21	-1.73	0.22	0.50	0.50	0.00
1,300.00	1.50	276.93	1,299.97	0.47	-3.90	0.50	0.50	0.50	0.00
1,400.00	2.00	276.93	1,399.92	0.84	-6.93	0.88	0.50	0.50	0.00
1,500.00	2.50	276.93	1,499.84	1.32	-10.83	1.38	0.50	0.50	0.00
1,600.00	3.00	276.93	1,599.73	1.89	-15.59	1.98	0.50	0.50	0.00
Start DLS 1.00 TFO 0.01									
1,700.00	4.00	276.09	1,699.54	2.58	-21.65	2.70	1.00	1.00	-0.84
1,800.00	5.00	275.59	1,799.23	3.38	-29.46	3.54	1.00	1.00	-0.50
1,900.00	6.00	275.25	1,898.77	4.28	-38.99	4.50	1.00	1.00	-0.34
2,000.00	7.00	275.01	1,998.12	5.29	-50.26	5.57	1.00	1.00	-0.24
2,084.77	7.84	274.86	2,082.18	6.23	-61.17	6.57	1.00	1.00	-0.18
2,087.57	7.84	274.86	2,084.96	6.26	-61.55	6.61	0.00	0.00	0.00
Start 5575.1 hold at 2087.6 MD									
2,100.00	7.84	274.86	2,097.27	6.41	-63.24	6.76	0.00	0.00	0.00
2,200.00	7.84	274.86	2,196.34	7.56	-76.84	7.99	0.00	0.00	0.00
2,300.00	7.84	274.86	2,295.40	8.72	-90.44	9.22	0.00	0.00	0.00
2,400.00	7.84	274.86	2,394.46	9.87	-104.04	10.46	0.00	0.00	0.00
2,500.00	7.84	274.86	2,493.53	11.03	-117.64	11.69	0.00	0.00	0.00
2,600.00	7.84	274.86	2,592.59	12.19	-131.24	12.92	0.00	0.00	0.00
2,700.00	7.84	274.86	2,691.66	13.34	-144.84	14.15	0.00	0.00	0.00
2,800.00	7.84	274.86	2,790.72	14.50	-158.44	15.38	0.00	0.00	0.00
2,900.00	7.84	274.86	2,889.78	15.66	-172.04	16.62	0.00	0.00	0.00
3,000.00	7.84	274.86	2,988.85	16.81	-185.64	17.85	0.00	0.00	0.00
3,100.00	7.84	274.86	3,087.91	17.97	-199.24	19.08	0.00	0.00	0.00
3,200.00	7.84	274.86	3,186.98	19.12	-212.84	20.31	0.00	0.00	0.00
3,300.00	7.84	274.86	3,286.04	20.28	-226.44	21.54	0.00	0.00	0.00
3,400.00	7.84	274.86	3,385.11	21.44	-240.04	22.78	0.00	0.00	0.00
3,500.00	7.84	274.86	3,484.17	22.59	-253.64	24.01	0.00	0.00	0.00
3,587.65	7.84	274.86	3,571.00	23.60	-265.56	25.09	0.00	0.00	0.00
Bell Canyon (Base of Salt) - 9 5/8"									
3,600.00	7.84	274.86	3,583.23	23.75	-267.24	25.24	0.00	0.00	0.00
3,700.00	7.84	274.86	3,682.30	24.90	-280.83	26.47	0.00	0.00	0.00
3,800.00	7.84	274.86	3,781.36	26.06	-294.43	27.70	0.00	0.00	0.00
3,900.00	7.84	274.86	3,880.43	27.22	-308.03	28.94	0.00	0.00	0.00
4,000.00	7.84	274.86	3,979.49	28.37	-321.63	30.17	0.00	0.00	0.00
4,100.00	7.84	274.86	4,078.56	29.53	-335.23	31.40	0.00	0.00	0.00
4,200.00	7.84	274.86	4,177.62	30.68	-348.83	32.63	0.00	0.00	0.00
4,300.00	7.84	274.86	4,276.68	31.84	-362.43	33.86	0.00	0.00	0.00
4,400.00	7.84	274.86	4,375.75	33.00	-376.03	35.10	0.00	0.00	0.00
4,500.00	7.84	274.86	4,474.81	34.15	-389.63	36.33	0.00	0.00	0.00
4,600.00	7.84	274.86	4,573.88	35.31	-403.23	37.56	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,668.77	7.84	274.86	4,642.00	36.10	-412.58	38.41	0.00	0.00	0.00
Cherry Canyon									
4,700.00	7.84	274.86	4,672.94	36.46	-416.83	38.79	0.00	0.00	0.00
4,800.00	7.84	274.86	4,772.00	37.62	-430.43	40.02	0.00	0.00	0.00
4,900.00	7.84	274.86	4,871.07	38.78	-444.03	41.26	0.00	0.00	0.00
5,000.00	7.84	274.86	4,970.13	39.93	-457.63	42.49	0.00	0.00	0.00
5,100.00	7.84	274.86	5,069.20	41.09	-471.23	43.72	0.00	0.00	0.00
5,200.00	7.84	274.86	5,168.26	42.25	-484.83	44.95	0.00	0.00	0.00
5,300.00	7.84	274.86	5,267.33	43.40	-498.43	46.18	0.00	0.00	0.00
5,400.00	7.84	274.86	5,366.39	44.56	-512.03	47.42	0.00	0.00	0.00
5,500.00	7.84	274.86	5,465.45	45.71	-525.62	48.65	0.00	0.00	0.00
5,600.00	7.84	274.86	5,564.52	46.87	-539.22	49.88	0.00	0.00	0.00
5,700.00	7.84	274.86	5,663.58	48.03	-552.82	51.11	0.00	0.00	0.00
5,746.86	7.84	274.86	5,710.00	48.57	-559.20	51.69	0.00	0.00	0.00
Brushy Canyon									
5,800.00	7.84	274.86	5,762.65	49.18	-566.42	52.34	0.00	0.00	0.00
5,900.00	7.84	274.86	5,861.71	50.34	-580.02	53.58	0.00	0.00	0.00
6,000.00	7.84	274.86	5,960.78	51.49	-593.62	54.81	0.00	0.00	0.00
6,100.00	7.84	274.86	6,059.84	52.65	-607.22	56.04	0.00	0.00	0.00
6,200.00	7.84	274.86	6,158.90	53.81	-620.82	57.27	0.00	0.00	0.00
6,300.00	7.84	274.86	6,257.97	54.96	-634.42	58.50	0.00	0.00	0.00
6,400.00	7.84	274.86	6,357.03	56.12	-648.02	59.74	0.00	0.00	0.00
6,500.00	7.84	274.86	6,456.10	57.27	-661.62	60.97	0.00	0.00	0.00
6,600.00	7.84	274.86	6,555.16	58.43	-675.22	62.20	0.00	0.00	0.00
6,700.00	7.84	274.86	6,654.22	59.59	-688.82	63.43	0.00	0.00	0.00
6,800.00	7.84	274.86	6,753.29	60.74	-702.42	64.66	0.00	0.00	0.00
6,900.00	7.84	274.86	6,852.35	61.90	-716.02	65.90	0.00	0.00	0.00
7,000.00	7.84	274.86	6,951.42	63.06	-729.62	67.13	0.00	0.00	0.00
7,100.00	7.84	274.86	7,050.48	64.21	-743.22	68.36	0.00	0.00	0.00
7,200.00	7.84	274.86	7,149.55	65.37	-756.81	69.59	0.00	0.00	0.00
7,300.00	7.84	274.86	7,248.61	66.52	-770.41	70.83	0.00	0.00	0.00
7,400.00	7.84	274.86	7,347.67	67.68	-784.01	72.06	0.00	0.00	0.00
7,422.54	7.84	274.86	7,370.00	67.94	-787.08	72.33	0.00	0.00	0.00
Bone Spring									
7,500.00	7.84	274.86	7,446.74	68.84	-797.61	73.29	0.00	0.00	0.00
7,546.70	7.84	274.86	7,493.00	69.38	-803.96	73.86	0.00	0.00	0.00
Avalon									
7,600.00	7.84	274.86	7,545.80	69.99	-811.21	74.52	0.00	0.00	0.00
7,662.65	7.84	274.86	7,607.87	70.72	-819.73	75.29	0.00	0.00	0.00
Start Drop -2.00									
7,663.79	7.84	274.86	7,609.00	70.73	-819.89	75.31	0.00	0.00	0.00
7,700.00	7.12	274.86	7,644.90	71.13	-824.59	75.73	2.00	-2.00	0.00
7,800.00	5.12	274.86	7,744.32	72.03	-835.21	76.70	2.00	-2.00	0.00
7,900.00	3.12	274.86	7,844.06	72.64	-842.37	77.34	2.00	-2.00	0.00
8,000.00	1.12	274.86	7,943.99	72.95	-846.05	77.68	2.00	-2.00	0.00
8,056.02	0.00	0.00	8,000.00	73.00	-846.60	77.73	2.00	-2.00	0.00
8,056.44	0.00	0.00	8,000.42	73.00	-846.60	77.73	0.00	0.00	0.00
Start 2638.5 hold at 8056.4 MD									
8,100.00	0.00	0.00	8,043.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,200.00	0.00	0.00	8,143.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,300.00	0.00	0.00	8,243.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,353.02	0.00	0.00	8,297.00	73.00	-846.60	77.73	0.00	0.00	0.00
1st Bone Spring Sand									

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,400.00	0.00	0.00	8,343.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,500.00	0.00	0.00	8,443.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,600.00	0.00	0.00	8,543.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,700.00	0.00	0.00	8,643.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,800.00	0.00	0.00	8,743.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,900.00	0.00	0.00	8,843.98	73.00	-846.60	77.73	0.00	0.00	0.00
8,906.02	0.00	0.00	8,850.00	73.00	-846.60	77.73	0.00	0.00	0.00
2nd Bone Spring Lime									
9,000.00	0.00	0.00	8,943.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,078.02	0.00	0.00	9,022.00	73.00	-846.60	77.73	0.00	0.00	0.00
2nd Bone Spring Sand									
9,100.00	0.00	0.00	9,043.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,200.00	0.00	0.00	9,143.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,300.00	0.00	0.00	9,243.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,400.00	0.00	0.00	9,343.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,500.00	0.00	0.00	9,443.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,537.02	0.00	0.00	9,481.00	73.00	-846.60	77.73	0.00	0.00	0.00
3rd Bone Spring Lime									
9,600.00	0.00	0.00	9,543.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,700.00	0.00	0.00	9,643.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,800.00	0.00	0.00	9,743.98	73.00	-846.60	77.73	0.00	0.00	0.00
9,900.00	0.00	0.00	9,843.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,000.00	0.00	0.00	9,943.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,100.00	0.00	0.00	10,043.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,200.00	0.00	0.00	10,143.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,261.02	0.00	0.00	10,205.00	73.00	-846.60	77.73	0.00	0.00	0.00
3rd Bone Spring Sand									
10,300.00	0.00	0.00	10,243.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,400.00	0.00	0.00	10,343.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,500.00	0.00	0.00	10,443.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,600.00	0.00	0.00	10,543.98	73.00	-846.60	77.73	0.00	0.00	0.00
10,610.56	0.00	0.00	10,554.54	73.00	-846.60	77.73	0.00	0.00	0.00
10,625.00	1.73	359.68	10,568.98	73.22	-846.60	77.95	12.00	12.00	0.00
10,635.03	2.94	359.68	10,579.00	73.63	-846.60	78.35	12.00	12.00	0.00
Wolfcamp Top									
10,650.00	4.73	359.68	10,593.94	74.63	-846.61	79.36	12.00	12.00	0.00
10,660.11	5.95	359.68	10,604.00	75.57	-846.61	80.30	12.00	12.00	0.00
Wolfcamp X Sand									
10,675.00	7.73	359.68	10,618.79	77.34	-846.62	82.07	12.00	12.00	0.00
10,694.98	10.13	359.68	10,638.52	80.44	-846.64	85.17	12.00	12.00	0.00
Start Build 12.00									
10,700.00	10.73	359.68	10,643.46	81.35	-846.65	86.08	12.00	12.00	0.00
10,725.00	13.73	359.68	10,667.89	86.65	-846.68	91.38	12.00	12.00	0.00
10,750.00	16.73	359.68	10,692.01	93.22	-846.71	97.94	12.00	12.00	0.00
10,757.32	17.61	359.68	10,699.00	95.38	-846.72	100.11	12.00	12.00	0.00
Wolfcamp Y Sand									
10,775.00	19.73	359.68	10,715.75	101.04	-846.76	105.77	12.00	12.00	0.00
10,784.86	20.92	359.68	10,725.00	104.46	-846.78	109.19	12.00	12.00	0.00
Wolfcamp A									
10,800.00	22.73	359.68	10,739.05	110.09	-846.81	114.82	12.00	12.00	0.00
10,825.00	25.73	359.68	10,761.84	120.35	-846.86	125.08	12.00	12.00	0.00
10,850.00	28.73	359.68	10,784.07	131.79	-846.93	136.52	12.00	12.00	0.00
10,875.00	31.73	359.68	10,805.67	144.38	-847.00	149.10	12.00	12.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,900.00	34.73	359.68	10,826.58	158.08	-847.08	162.80	12.00	12.00	0.00
10,925.00	37.73	359.68	10,846.74	172.85	-847.16	177.58	12.00	12.00	0.00
10,932.97	38.69	359.68	10,853.00	177.78	-847.19	182.51	12.00	12.00	0.00
Wolfcamp A2									
10,950.00	40.73	359.68	10,866.10	188.66	-847.25	193.39	12.00	12.00	0.00
10,975.00	43.73	359.68	10,884.61	205.46	-847.34	210.19	12.00	12.00	0.00
11,000.00	46.73	359.68	10,902.21	223.21	-847.44	227.94	12.00	12.00	0.00
11,025.00	49.73	359.68	10,918.87	241.85	-847.54	246.58	12.00	12.00	0.00
11,050.00	52.73	359.68	10,934.52	261.34	-847.65	266.07	12.00	12.00	0.00
11,075.00	55.73	359.68	10,949.13	281.62	-847.76	286.36	12.00	12.00	0.00
11,100.00	58.73	359.68	10,962.66	302.64	-847.88	307.37	12.00	12.00	0.00
11,125.00	61.73	359.68	10,975.07	324.34	-848.00	329.07	12.00	12.00	0.00
11,150.00	64.73	359.68	10,986.33	346.66	-848.13	351.39	12.00	12.00	0.00
11,175.00	67.73	359.68	10,996.40	369.54	-848.26	374.27	12.00	12.00	0.00
11,200.00	70.73	359.68	11,005.26	392.91	-848.39	397.64	12.00	12.00	0.00
11,221.86	73.36	359.68	11,012.00	413.70	-848.50	418.43	12.00	12.00	0.00
Lower WFCMP A Top Target									
11,225.00	73.73	359.68	11,012.89	416.71	-848.52	421.45	12.00	12.00	0.00
11,250.00	76.73	359.68	11,019.26	440.89	-848.65	445.62	12.00	12.00	0.00
11,275.00	79.73	359.68	11,024.36	465.36	-848.79	470.09	12.00	12.00	0.00
11,300.00	82.73	359.68	11,028.17	490.06	-848.93	494.80	12.00	12.00	0.00
11,325.00	85.73	359.68	11,030.68	514.93	-849.07	519.67	12.00	12.00	0.00
11,350.00	88.73	359.68	11,031.89	539.90	-849.21	544.63	12.00	12.00	0.00
11,354.79	89.31	359.68	11,031.97	544.69	-849.23	549.42	12.00	12.00	0.00
7"									
11,355.16	89.35	359.68	11,031.97	545.06	-849.24	549.79	12.00	12.00	0.00
11,357.43	89.35	359.68	11,032.00	547.33	-849.25	552.06	0.00	0.00	0.00
Lower WFCMP A Landing Pt									
11,400.00	89.35	359.68	11,032.48	589.90	-849.49	594.63	0.00	0.00	0.00
11,444.98	89.35	359.68	11,032.99	634.87	-849.74	639.60	0.00	0.00	0.00
Start 7390.3 hold at 11445.0 MD									
11,500.00	89.35	359.68	11,033.61	689.89	-850.04	694.62	0.00	0.00	0.00
11,600.00	89.35	359.68	11,034.74	789.88	-850.60	794.62	0.00	0.00	0.00
11,700.00	89.35	359.68	11,035.88	889.87	-851.16	894.61	0.00	0.00	0.00
11,800.00	89.35	359.68	11,037.01	989.86	-851.72	994.61	0.00	0.00	0.00
11,900.00	89.35	359.68	11,038.14	1,089.86	-852.28	1,094.60	0.00	0.00	0.00
12,000.00	89.35	359.68	11,039.27	1,189.85	-852.84	1,194.59	0.00	0.00	0.00
12,100.00	89.35	359.68	11,040.40	1,289.84	-853.39	1,294.59	0.00	0.00	0.00
12,200.00	89.35	359.68	11,041.53	1,389.83	-853.95	1,394.58	0.00	0.00	0.00
12,300.00	89.35	359.68	11,042.67	1,489.82	-854.51	1,494.57	0.00	0.00	0.00
12,400.00	89.35	359.68	11,043.80	1,589.82	-855.07	1,594.57	0.00	0.00	0.00
12,500.00	89.35	359.68	11,044.93	1,689.81	-855.63	1,694.56	0.00	0.00	0.00
12,600.00	89.35	359.68	11,046.06	1,789.80	-856.19	1,794.55	0.00	0.00	0.00
12,700.00	89.35	359.68	11,047.19	1,889.79	-856.74	1,894.55	0.00	0.00	0.00
12,800.00	89.35	359.68	11,048.32	1,989.78	-857.30	1,994.54	0.00	0.00	0.00
12,900.00	89.35	359.68	11,049.45	2,089.78	-857.86	2,094.53	0.00	0.00	0.00
13,000.00	89.35	359.68	11,050.59	2,189.77	-858.42	2,194.53	0.00	0.00	0.00
13,100.00	89.35	359.68	11,051.72	2,289.76	-858.98	2,294.52	0.00	0.00	0.00
13,125.02	89.35	359.68	11,052.00	2,314.77	-859.12	2,319.54	0.00	0.00	0.00
Lower WFCMP A Base Target									
13,200.00	89.35	359.68	11,052.85	2,389.75	-859.54	2,394.52	0.00	0.00	0.00
13,300.00	89.35	359.68	11,053.98	2,489.74	-860.10	2,494.51	0.00	0.00	0.00
13,400.00	89.35	359.68	11,055.11	2,589.74	-860.65	2,594.50	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,500.00	89.35	359.68	11,056.24	2,689.73	-861.21	2,694.50	0.00	0.00	0.00
13,600.00	89.35	359.68	11,057.37	2,789.72	-861.77	2,794.49	0.00	0.00	0.00
13,700.00	89.35	359.68	11,058.51	2,889.71	-862.33	2,894.48	0.00	0.00	0.00
13,800.00	89.35	359.68	11,059.64	2,989.70	-862.89	2,994.48	0.00	0.00	0.00
13,900.00	89.35	359.68	11,060.77	3,089.70	-863.45	3,094.47	0.00	0.00	0.00
14,000.00	89.35	359.68	11,061.90	3,189.69	-864.00	3,194.46	0.00	0.00	0.00
14,100.00	89.35	359.68	11,063.03	3,289.68	-864.56	3,294.46	0.00	0.00	0.00
14,200.00	89.35	359.68	11,064.16	3,389.67	-865.12	3,394.45	0.00	0.00	0.00
14,300.00	89.35	359.68	11,065.30	3,489.66	-865.68	3,494.45	0.00	0.00	0.00
14,400.00	89.35	359.68	11,066.43	3,589.66	-866.24	3,594.44	0.00	0.00	0.00
14,500.00	89.35	359.68	11,067.56	3,689.65	-866.80	3,694.43	0.00	0.00	0.00
14,600.00	89.35	359.68	11,068.69	3,789.64	-867.35	3,794.43	0.00	0.00	0.00
14,700.00	89.35	359.68	11,069.82	3,889.63	-867.91	3,894.42	0.00	0.00	0.00
14,800.00	89.35	359.68	11,070.95	3,989.62	-868.47	3,994.41	0.00	0.00	0.00
14,900.00	89.35	359.68	11,072.08	4,089.62	-869.03	4,094.41	0.00	0.00	0.00
15,000.00	89.35	359.68	11,073.22	4,189.61	-869.59	4,194.40	0.00	0.00	0.00
15,100.00	89.35	359.68	11,074.35	4,289.60	-870.15	4,294.39	0.00	0.00	0.00
15,200.00	89.35	359.68	11,075.48	4,389.59	-870.70	4,394.39	0.00	0.00	0.00
15,300.00	89.35	359.68	11,076.61	4,489.59	-871.26	4,494.38	0.00	0.00	0.00
15,400.00	89.35	359.68	11,077.74	4,589.58	-871.82	4,594.37	0.00	0.00	0.00
15,500.00	89.35	359.68	11,078.87	4,689.57	-872.38	4,694.37	0.00	0.00	0.00
15,600.00	89.35	359.68	11,080.00	4,789.56	-872.94	4,794.36	0.00	0.00	0.00
15,700.00	89.35	359.68	11,081.14	4,889.55	-873.50	4,894.36	0.00	0.00	0.00
15,800.00	89.35	359.68	11,082.27	4,989.55	-874.05	4,994.35	0.00	0.00	0.00
15,900.00	89.35	359.68	11,083.40	5,089.54	-874.61	5,094.34	0.00	0.00	0.00
16,000.00	89.35	359.68	11,084.53	5,189.53	-875.17	5,194.34	0.00	0.00	0.00
16,100.00	89.35	359.68	11,085.66	5,289.52	-875.73	5,294.33	0.00	0.00	0.00
16,200.00	89.35	359.68	11,086.79	5,389.51	-876.29	5,394.32	0.00	0.00	0.00
16,300.00	89.35	359.68	11,087.92	5,489.51	-876.85	5,494.32	0.00	0.00	0.00
16,400.00	89.35	359.68	11,089.06	5,589.50	-877.40	5,594.31	0.00	0.00	0.00
16,500.00	89.35	359.68	11,090.19	5,689.49	-877.96	5,694.30	0.00	0.00	0.00
16,600.00	89.35	359.68	11,091.32	5,789.48	-878.52	5,794.30	0.00	0.00	0.00
16,700.00	89.35	359.68	11,092.45	5,889.47	-879.08	5,894.29	0.00	0.00	0.00
16,800.00	89.35	359.68	11,093.58	5,989.47	-879.64	5,994.29	0.00	0.00	0.00
16,900.00	89.35	359.68	11,094.71	6,089.46	-880.20	6,094.28	0.00	0.00	0.00
17,000.00	89.35	359.68	11,095.85	6,189.45	-880.75	6,194.27	0.00	0.00	0.00
17,100.00	89.35	359.68	11,096.98	6,289.44	-881.31	6,294.27	0.00	0.00	0.00
17,200.00	89.35	359.68	11,098.11	6,389.43	-881.87	6,394.26	0.00	0.00	0.00
17,300.00	89.35	359.68	11,099.24	6,489.43	-882.43	6,494.25	0.00	0.00	0.00
17,400.00	89.35	359.68	11,100.37	6,589.42	-882.99	6,594.25	0.00	0.00	0.00
17,500.00	89.35	359.68	11,101.50	6,689.41	-883.55	6,694.24	0.00	0.00	0.00
17,600.00	89.35	359.68	11,102.63	6,789.40	-884.10	6,794.23	0.00	0.00	0.00
17,700.00	89.35	359.68	11,103.77	6,889.39	-884.66	6,894.23	0.00	0.00	0.00
17,800.00	89.35	359.68	11,104.90	6,989.39	-885.22	6,994.22	0.00	0.00	0.00
17,900.00	89.35	359.68	11,106.03	7,089.38	-885.78	7,094.21	0.00	0.00	0.00
18,000.00	89.35	359.68	11,107.16	7,189.37	-886.34	7,194.21	0.00	0.00	0.00
18,100.00	89.35	359.68	11,108.29	7,289.36	-886.90	7,294.20	0.00	0.00	0.00
18,200.00	89.35	359.68	11,109.42	7,389.35	-887.45	7,394.20	0.00	0.00	0.00
18,300.00	89.35	359.68	11,110.55	7,489.35	-888.01	7,494.19	0.00	0.00	0.00
18,400.00	89.35	359.68	11,111.69	7,589.34	-888.57	7,594.18	0.00	0.00	0.00
18,500.00	89.35	359.68	11,112.82	7,689.33	-889.13	7,694.18	0.00	0.00	0.00
18,600.00	89.35	359.68	11,113.95	7,789.32	-889.69	7,794.17	0.00	0.00	0.00
18,700.00	89.35	359.68	11,115.08	7,889.31	-890.25	7,894.16	0.00	0.00	0.00
18,781.29	89.35	359.68	11,116.00	7,970.60	-890.70	7,975.45	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD at 18835.2									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Tucker DF 1H KOP - plan hits target center - Point	0.00	0.00	10,554.54	73.00	-846.60	382,005.50	680,202.70	32° 2' 57.915 N	103° 53' 6.451 W
Tucker DF 1H FTP - plan misses target center by 0.39usft at 11384.38usft MD (11032.30 TVD, 574.28 N, -849.40 E) - Point	0.00	0.00	11,031.97	574.28	-849.20	382,506.78	680,200.10	32° 3' 2.875 N	103° 53' 6.457 W
Tucker DF 1H LTP - plan misses target center by 0.98usft at 18681.27usft MD (11114.87 TVD, 7870.59 N, -890.14 E) - Point	0.00	0.00	11,113.90	7,870.60	-890.30	389,803.10	680,159.00	32° 4' 15.081 N	103° 53' 6.583 W
Tucker DF 1H BHL - plan hits target center - Point	0.00	0.00	11,116.00	7,970.60	-890.70	389,903.10	680,158.60	32° 4' 16.071 N	103° 53' 6.582 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.00	1,000.00	13 3/8"	13-3/8	17-1/2
3,587.65	3,571.00	9 5/8"	9-5/8	12-1/4
11,354.79	11,031.97	7"	7	8-3/4

Database:	Midland District	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Company:	WPX Energy	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site:	Tucker Draw Fed 9-4 Pad	**North Reference:**	Grid
Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)
3,587.65	3,571.00	Bell Canyon (Base of Salt)			
4,668.77	4,642.00	Cherry Canyon			
5,746.86	5,710.00	Brushy Canyon			
7,422.54	7,370.00	Bone Spring			
7,546.70	7,493.00	Avalon			
8,353.02	8,297.00	1st Bone Spring Sand			
8,906.02	8,850.00	2nd Bone Spring Lime			
9,078.02	9,022.00	2nd Bone Spring Sand			
9,537.02	9,481.00	3rd Bone Spring Lime			
10,261.02	10,205.00	3rd Bone Spring Sand			
10,635.03	10,579.00	Wolfcamp Top			
10,660.11	10,604.00	Wolfcamp X Sand			
10,757.32	10,699.00	Wolfcamp Y Sand			
10,784.86	10,725.00	Wolfcamp A			
10,932.97	10,853.00	Wolfcamp A2			
11,221.86	11,012.00	Lower WFCMP A Top Target			
11,357.43	11,032.00	Lower WFCMP A Landing Pt			
13,125.02	11,052.00	Lower WFCMP A Base Target			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,000.00	1,000.00	0.00	0.00	Start Build 0.50
1,600.00	1,599.73	1.89	-15.59	Start DLS 1.00 TFO 0.01
2,087.57	2,084.96	6.26	-61.55	Start 5575.1 hold at 2087.6 MD
7,662.65	7,607.87	70.72	-819.73	Start Drop -2.00
8,056.44	8,000.42	73.00	-846.60	Start 2638.5 hold at 8056.4 MD
10,694.98	10,638.52	80.44	-846.64	Start Build 12.00
11,444.98	11,032.99	634.87	-849.74	Start 7390.3 hold at 11445.0 MD
18,781.29	11,116.00	7,970.60	-890.70	TD at 18835.2

WPX Energy

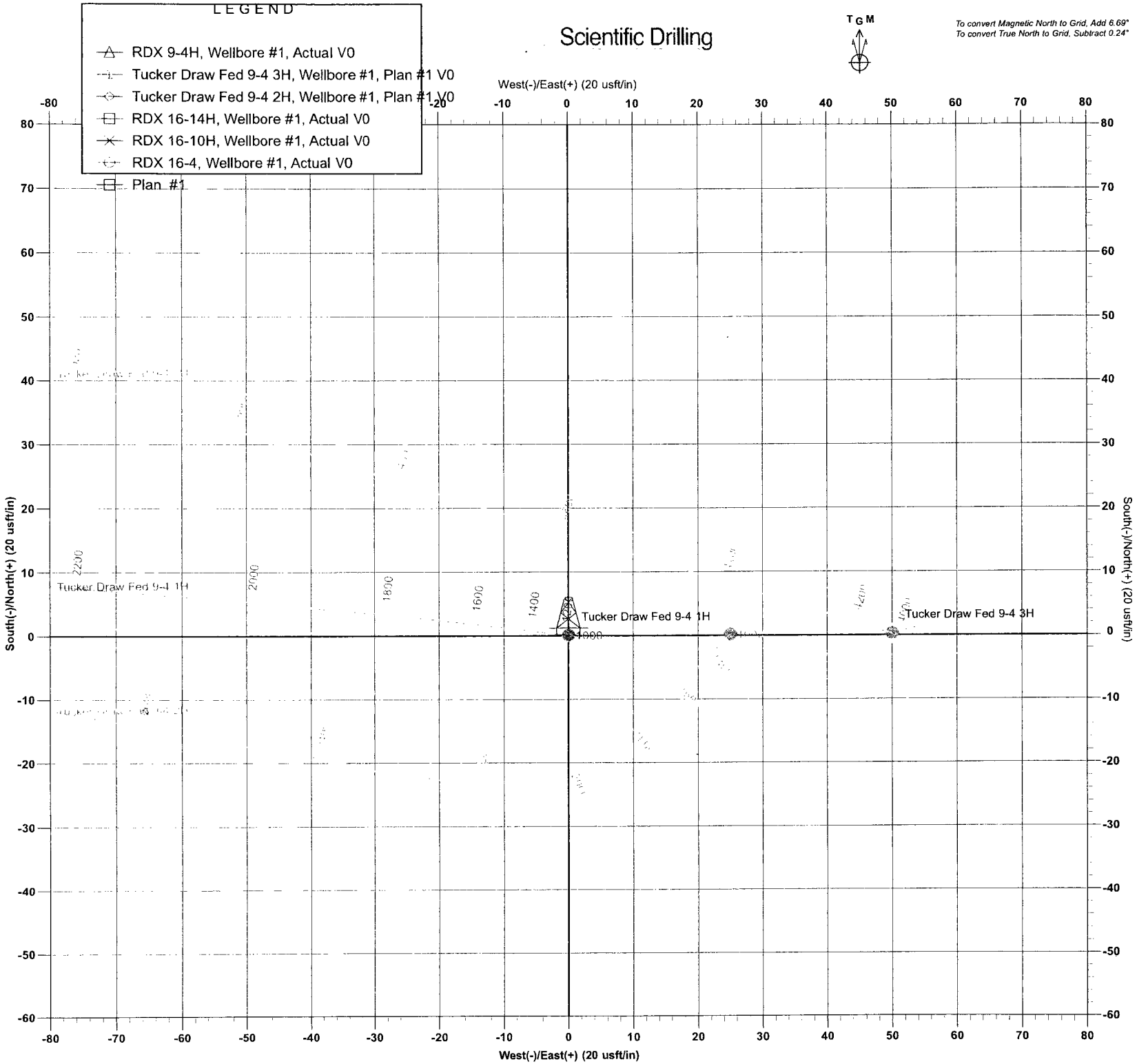
Eddy County, New Mexico NAD 83
Tucker Draw Fed 9-4 Pad
Tucker Draw Fed 9-4 1H
API: ???
Wellbore #1
Plan #1

Anticollision Report

30 March, 2017

Scientific Drilling

Scientific Drilling



Azimuths to Grid North
True North: -0.24°
Magnetic North: 6.69°

Magnetic Field
Strength: 48029.7snT
Dip Angle: 59.78°
Date: 3/27/2017
Model: HDGM

Scientific Drilling Int.

Anticollision Report

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Project:	Eddy County, New Mexico NAD 83	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Reference Site:	Tucker Draw Fed 9-4 Pad	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Midland District
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/30/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,781.29	Plan #1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Tucker Draw Fed 9-4 Pad						
RDX 16-10H - Wellbore #1 - Actual	5,669.77	5,615.19	239.77	198.60	5.824	CC
RDX 16-10H - Wellbore #1 - Actual	5,700.00	5,644.90	239.82	198.42	5.793	ES
RDX 16-10H - Wellbore #1 - Actual	6,000.00	5,940.35	246.14	202.48	5.638	SF
RDX 16-14H - Wellbore #1 - Actual	7,660.84	7,440.83	1,369.22	1,315.20	25.345	CC
RDX 16-14H - Wellbore #1 - Actual	7,700.00	7,466.00	1,369.30	1,315.00	25.214	ES
RDX 16-14H - Wellbore #1 - Actual	7,900.00	7,561.00	1,389.33	1,333.69	24.970	SF
RDX 16-4 - Wellbore #1 - Actual	1,000.00	985.00	479.54	456.47	20.791	CC
RDX 16-4 - Wellbore #1 - Actual	1,300.00	1,284.97	483.46	453.37	16.064	ES
RDX 16-4 - Wellbore #1 - Actual	7,600.00	7,524.00	1,292.92	1,116.43	7.325	SF
RDX 9-4H - Wellbore #1 - Actual	7,641.42	7,550.00	1,164.53	984.19	6.458	CC, ES
RDX 9-4H - Wellbore #1 - Actual	7,700.00	7,550.00	1,165.98	985.40	6.457	SF
Tucker Draw Fed 9-4 2H - Wellbore #1 - Plan #1	1,000.00	1,001.00	25.00	18.27	3.714	CC
Tucker Draw Fed 9-4 2H - Wellbore #1 - Plan #1	1,100.00	1,101.00	25.43	17.99	3.418	ES
Tucker Draw Fed 9-4 2H - Wellbore #1 - Plan #1	5,800.00	5,806.20	70.16	28.56	1.686	SF
Tucker Draw Fed 9-4 3H - Wellbore #1 - Plan #1	1,000.00	1,002.00	50.00	43.26	7.423	CC
Tucker Draw Fed 9-4 3H - Wellbore #1 - Plan #1	1,100.00	1,102.00	50.43	42.99	6.774	ES
Tucker Draw Fed 9-4 3H - Wellbore #1 - Plan #1	18,781.29	18,779.30	660.07	417.42	2.720	SF

Offset Design Tucker Draw Fed 9-4 Pad - RDX 16-10H - Wellbore #1 - Actual

Survey Program: 100-MWD

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-97.41	-84.09	-646.14	651.84				
100.00	100.00	78.26	78.26	0.14	0.14	-97.41	-84.11	-646.36	651.82	651.55	0.28	2,340.960	
200.00	200.00	176.98	176.98	0.50	0.46	-97.42	-84.22	-647.08	652.55	651.60	0.95	685.464	
300.00	300.00	279.35	279.34	0.85	0.82	-97.45	-84.64	-647.68	653.19	651.51	1.67	390.221	
400.00	400.00	383.46	383.45	1.21	1.18	-97.55	-85.80	-647.63	653.30	650.90	2.40	272.470	
500.00	500.00	485.55	485.52	1.57	1.54	-97.69	-87.36	-647.01	652.89	649.77	3.11	209.682	
600.00	600.00	586.67	586.63	1.93	1.90	-97.83	-88.84	-646.16	652.26	648.43	3.83	170.402	
700.00	700.00	688.87	688.81	2.29	2.26	-97.96	-90.23	-645.08	651.39	646.84	4.55	143.273	
800.00	800.00	795.22	795.14	2.65	2.64	-98.11	-91.65	-643.26	649.89	644.61	5.28	123.092	
900.00	900.00	897.61	897.49	3.01	3.00	-98.26	-92.97	-640.77	647.67	641.67	6.00	107.964	
1,000.00	1,000.00	989.81	989.66	3.36	3.33	-98.38	-94.07	-638.93	645.86	639.18	6.68	96.626	

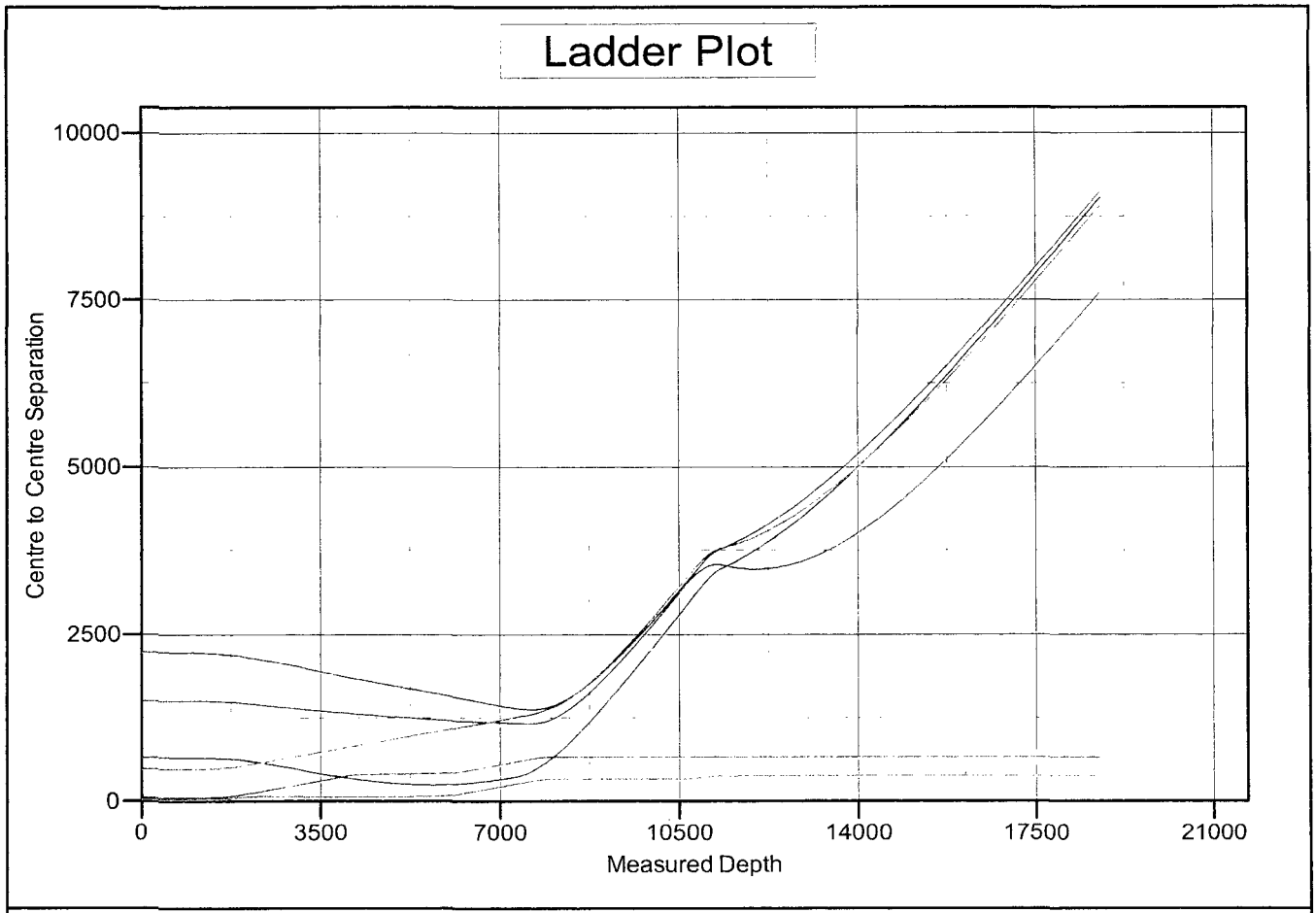
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Scientific Drilling Int.

Anticollision Report

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Project:	Eddy County, New Mexico NAD 83	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Reference Site:	Tucker Draw Fed 9-4 Pad	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Midland District
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3112.00usft (Orion Aires)	Coordinates are relative to: Tucker Draw Fed 9-4 1H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.24°



LEGEND

RDX 9-4H, Wellbore #1, Actual V0
Tucker Draw Fed 9-4 2H, Wellbore #1, Plan #1 V0
RDX 16-10H, Wellbore #1, Actual V0
Tucker Draw Fed 9-4 3H, Wellbore #1, Plan #1 V0
RDX 16-14H, Wellbore #1, Actual V0
RDX 16-4, Wellbore #1, Actual V0

Scientific Drilling Int.

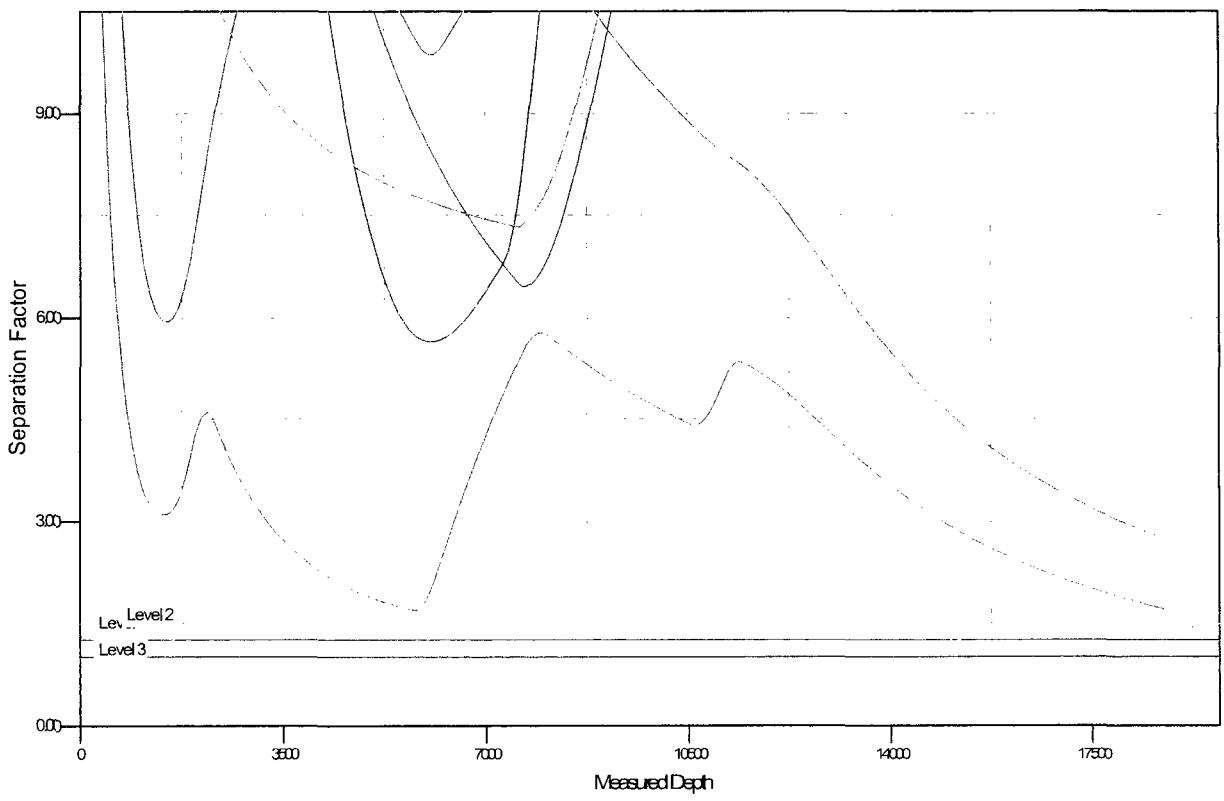
Anticollision Report

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well Tucker Draw Fed 9-4 1H
Project:	Eddy County, New Mexico NAD 83	**TVD Reference:**	RKB @ 3112.00usft (Orion Aires)
Reference Site:	Tucker Draw Fed 9-4 Pad	**MD Reference:**	RKB @ 3112.00usft (Orion Aires)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Tucker Draw Fed 9-4 1H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Midland District
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3112.00usft (Orion Aires)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Tucker Draw Fed 9-4 1H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.24°

Separation Factor Plot



LEGEND

RDX 9-4H, Wellbore #1, Actual V0
Tucker Draw Fed 9-4 2H, Wellbore #1, Plan #1 V0
RDX 16-10H, Wellbore #1, Actual V0
Tucker Draw Fed 9-4 3H, Wellbore #1, Plan #1 V0
RDX 16-14H, Wellbore #1, Actual V0
RDX 16-4, Wellbore #1, Actual V0

RKI Exploration & Production, LLC.

Drilling Plan

Well Tucker Draw Fed COM 9-4 1H
Location **Surface:** 250 FNL 1463 FEL, Sec 16 T26S R30E S16
Bottom Hole: 2410 FSL 2310 FEL Sec 4 T26S R30E S04
County/State Eddy, NM

The elevation of the unprepared ground is 3,089 feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium

A rotary rig will be utilized to drill the well to 18781' MD, then will be cased and cemented. This equipment will then be rigged down and the well will be completed with a workover rig.

Proposed depth is 18,781 feet MD.

1) Estimated Tops:

Formation Name	MD	TVD	Bearing	BHP (psi)	MASP (psi)
Quaternary - Alluvium	GL	GL	Water		
Bell Canyon Sand (Base Salt)	3,588	3,571	Oil/Gas		
Cherry Canyon Sand	4,669	4,642	Oil/Gas		
Brushy Canyon Sand	5,747	5,710	Oil/Gas		
1st Bone Spring Sand	8,353	8,297	Oil/Gas		
2nd Bone Spring Sand	9,078	9,022	Oil/Gas		
3rd Bone Spring Sand	10,261	10,205	Oil/Gas		
KOP	10,611	10,555			
Wolfcamp	10,635	10,579	Oil/Gas		
Landing Point (Wolfcamp)	11,355	11,032	Target Frm		
TD	18,781	11,116	Oil/Gas	6,884	4,438

2) Notable Formations:

Any usable fresh water zones encountered will be adequately protected and reported. All usable water zones, potential hydrocarbon zones, and valuable mineral zones will be isolated.

Useable water will be protected by surface casing set and cemented to surface.

3) Pressure Control Equipment:

The blowout preventer equipment (BOPE) will consist of 3 rams (10,000 psi WP) with 2 pipe rams (one of which may be variable), 1 blind ram and 1 annular preventer (5,000 psi WP) will be installed. The BOPE will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. A rotating head will be installed as needed. Units will be hydraulically operated.

An accumulator that meets the requirements of Onshore Order 2 for the pressure rating of the BOP stack will be present.

BOPE will be inspected and operated as recommended in Onshore Order 2. A third party company will test the BOPE. After surface casing is set and the BOPE is nippled up, pressure tests will be conducted to 250 psi low and 5000 psi high (50% of WP) with the annular tested to 250 psi low and 2500 psi high (50% of WP).

A 20" x 13-3/8" x 9-5/8" x 7" 10M multi-bowl wellhead w/ 9-5/8" and 7" mandrel hangers will be install after setting surface casing and utilized until total depth is reached. The 9-5/8" and 7" casings will be set using a mandrel in the casing head and the stack will not be retested at these casing points.

The following BOPE will be installed, tested and operational:

- Drilling spool or blowout preventer with two (2) side outlets;
  - *Choke line side shall be 3" minimum diameter;*
    - Two (2) adjustable chokes with one (1) remotely controlled from the rig floor and pressure gauge.
  - Kill side shall be at least 2" diameter;
    - Two (2) manual valves and one (1) check valve.

Auxiliary equipment is as follows:

- Upper kelly cock valve with a handle available;
- Lower kelly cock valve with a handle available;
- A float valve will be used in the drill string, either in a float sub or in the mud motor;

• Safety valves and subs with a full opening sized to fit all drill strings and collars will be available on the rig floor in the open position.

RKI Exploration & Production, LLC. requests a variance to drill this well using a co-flex line between the BOP and the choke manifold. Certification for proposed co-flex hose is attached. The hose is required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be

4) Casing Program:

Section	Hole Size	Top (MD)	Bottom (MD)	Bottom (TVD)	Casing OD	Weight (ppf)	Grade	Threads
Surf	17-1/2"	0	900	900	13-3/8"	54.5	J-55	ST&C
Int_1	12-1/4"	0	3,588	3,571	9-5/8"	40.0	J-55	LT&C
Int_2	8-3/4"	0	11,355	11,032	7"	29.0	HCP-110	BT&C
Prod	6-1/8"	10,611	18,781	11,116	4-1/2"	13.5	HCP-110	CDC-HTC

Safety Factors	
Collapse	1.125
Burst	1.000
Tension	1.600

Design Factors			
Section	Collapse	Burst	Tension
Surf	2.85	13.79	10.48
Int_1	1.64	5.03	3.62
Int_2	1.90	4.62	2.90
Prod	2.18	5.07	1.75

Centralizers will be run as follows:
• One (1) centralizer on each of the bottom three jts of casing beginning with the shoe jt;
• One (1) centralizer every third jt from above bottom three jts to planned top of cement (TOC).

5) Cement Program:

Section	Hole Size	Casing OD	Cap_{Ann} (cuft/ft)
Surf	17.50	13.375	0.6946

Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	643	0	447	1.74	50%	385	13.5	Class C + 4% Gel + 2% CaCl + 0.4 pps Defoamer + 0.125 pps CelloFlake
Tail	900	643	134	1.34	50%	200	14.8	Class C + 2% Calcium

Section	Hole Size	Casing OD	Cap_{Ann} (cuft/ft)	Prev Csg ID	$Cap_{Csg-Csg}$ (cuft/ft)
Int_1	12.25	9.625	0.3132	12.615	0.3627

Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	900	0	326	1.92	0%	564	12.9	Class C/Poz 35/65 + 5% Salt + 6% Gel + 0.5% Retarder + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps CelloFlake
	2914	900	631		20%			
Tail	3588	2914	211	1.32	20%	200	14.8	Class C

Section	Hole Size	Casing OD	Cap_{Ann} (cuft/ft)	Prev Csg ID	$Cap_{Csg-Csg}$ (cuft/ft)
Int_2	8.75	7.00	0.1503	8.835	0.1585

Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	3588	3088	79	2.67	0%	504	11.2	TXI Lightweight + 10% Gel + 8% Plex Crete + 0.9% Retarder + 0.7 pps FL + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps CelloFlake
	10611	3588	1056		20%			
Tail	11355	10611	112	1.18	20%	114	15.6	Class H + 0.3% Retarder

Section	Hole Size	Casing OD	Cap_{Ann} (cuft/ft)	Prev Csg ID	$Cap_{Csg-Csg}$ (cuft/ft)
Prod	6.125	4.50	0.0942	6.184	0.0981

Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Tail	11355	10611	73	1.89	0%	483	13.0	Acid Soluble TXI + 1.3% Salt + 30% CaCl + 5% Plexaid + 0.7% FL + 0.3% Retarder + 0.1% Antisettling + 0.4 pps Defoamer
	18781	11355	699		20%			

6) Drilling Fluids Program:

An electronic mud monitoring system satisfying the requirements of Onshore Order 1 will be used. All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

Section	Hole Size	TMD	Mud Wt.	Vis	PV	YP	Fluid Loss	Type
Surf	17-1/2"	900	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Wtr
Int_1	12-1/4"	3,588	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
Int_2	8-3/4"	11,355	8.9 to 9.4	28 to 36	1 - 3	1 - 3	NC	Cut Brine
Prod	6-1/8"	18,781	10.5 to 12.0	50 to 55	20-22	8 - 10	8 - 10	OBM

Mud checks will be performed every 24 hours.

The following mud system monitoring equipment will be in place during drilling:

- Visual pit markers
- Pit volume totalizer (PVT)
- Stroke counter
- Gas detection
- Mud-gas separator (gas buster)
- Flow sensor

A closed-loop system will be in place during all phases of drilling. Cuttings disposal will be at an off-site disposal facility.

7) Formation Evaluation Program:

No core or drill stem test is planned.

A 2-person mud-logging program will be used from Int_1 9-5/8" casing point to TD.

No electronic logs are planned.

8) Abnormal Conditions:

No abnormal pressure or temperature is expected.

Maximum expected bottom hole pressure is 6884 psi at 11116' TVD. Expected bottom hole temperature is <200°F.

In accordance with Onshore Order 6, RKI Exploration & Production, LLC does not anticipate that there will be enough H2S to meet the BLM's minimum requirements for the submission of an "H2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. However, since RKI Exploration & Production, LLC has an H2S safety package on all wells, an "H2S Drilling Operations Plan" is attached.

Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

All personnel will be familiar with all aspects of safe operation of equipment being used.

9) Other Information

The anticipated spud date is upon approval. Expected duration is 30 days to drill the well.

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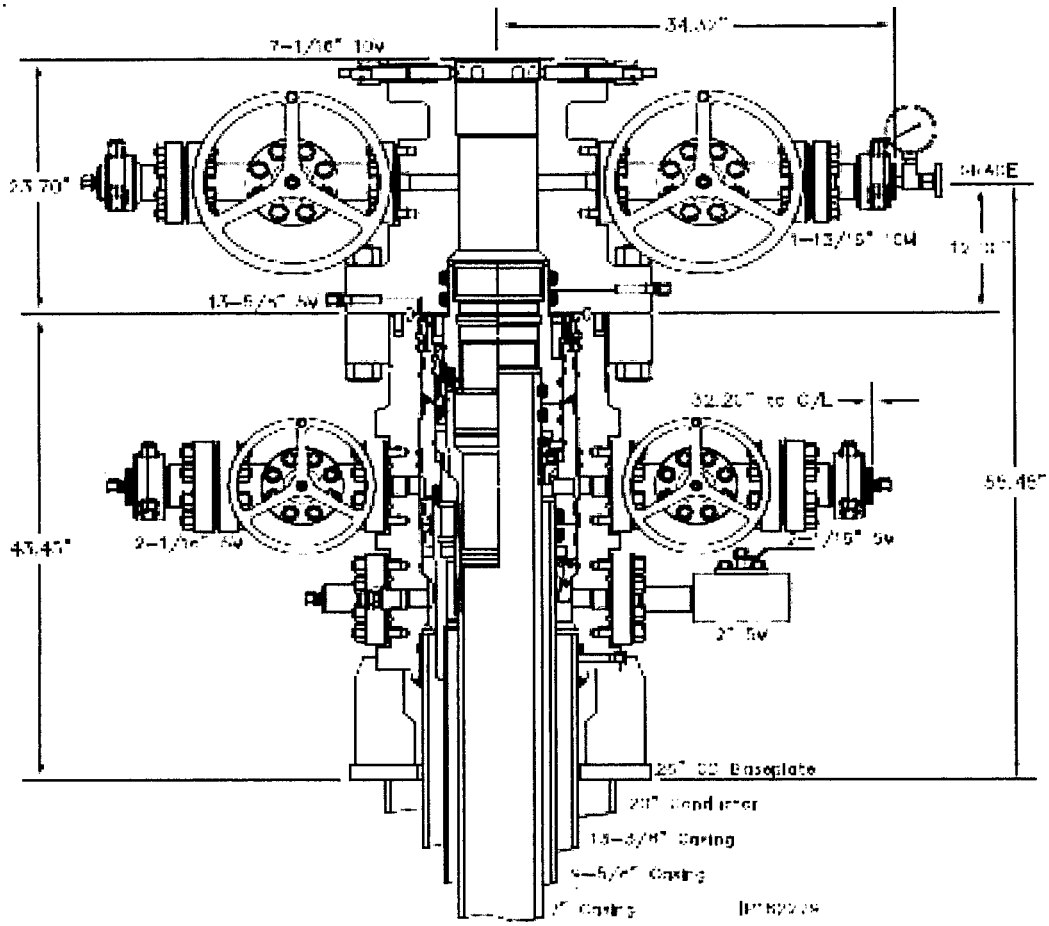
System Drawing



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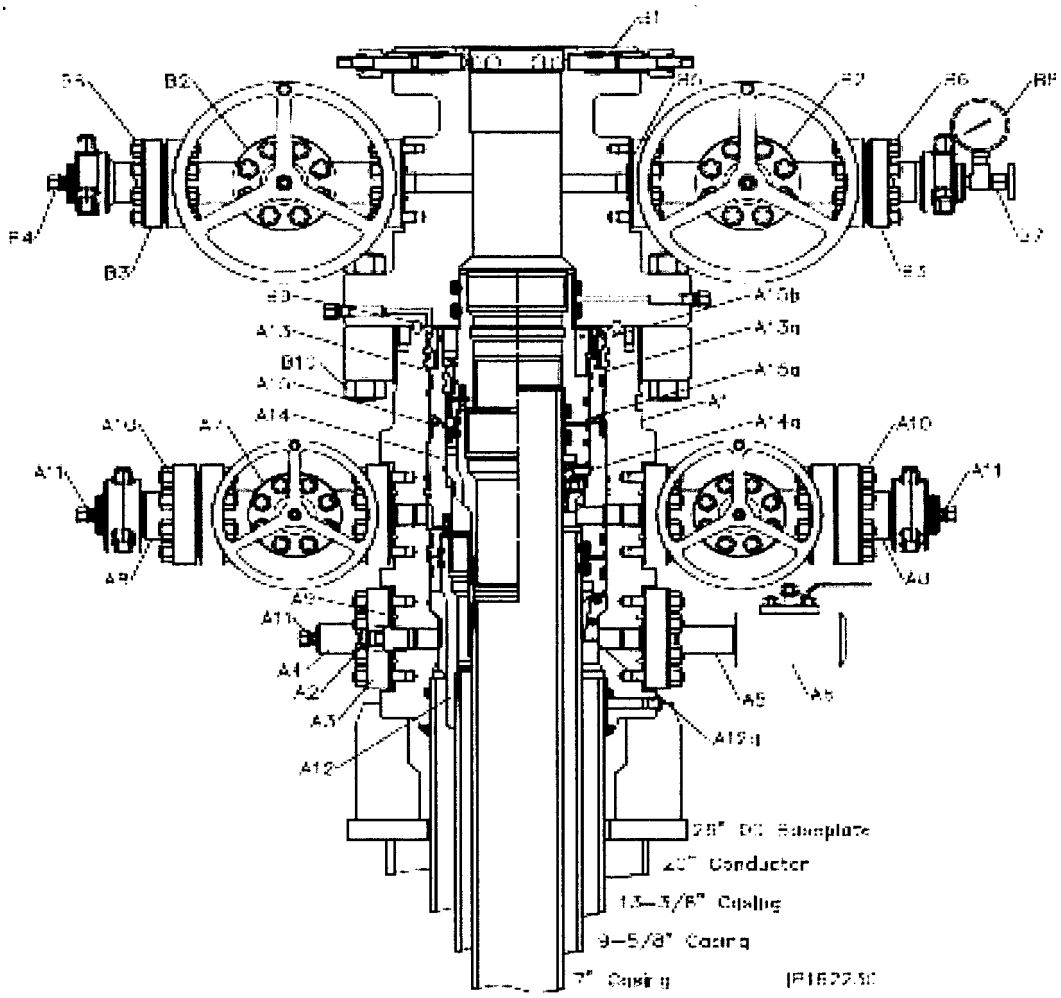
Bill of Materials



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MBU-3T HOUSING ASSEMBLY

Item No.	Qty	Description
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[illegible]	[illegible]	[illegible]
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MBU-3T HOUSING ASSEMBLY

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TUBING HEAD ASSEMBLY

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DRILLING HOUSING ASSEMBLY		
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RECOMMENDED SERVICE TOOLS	
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WPX Energy
20" x 13-3/8" x 9-5/8" x 7" 10M MBU-3T Wellhead With
7" Mandrel Hanger & CTH-DBLHPS Tubing Head

Cactus Wellhead

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EMERGENCY EQUIPMENT

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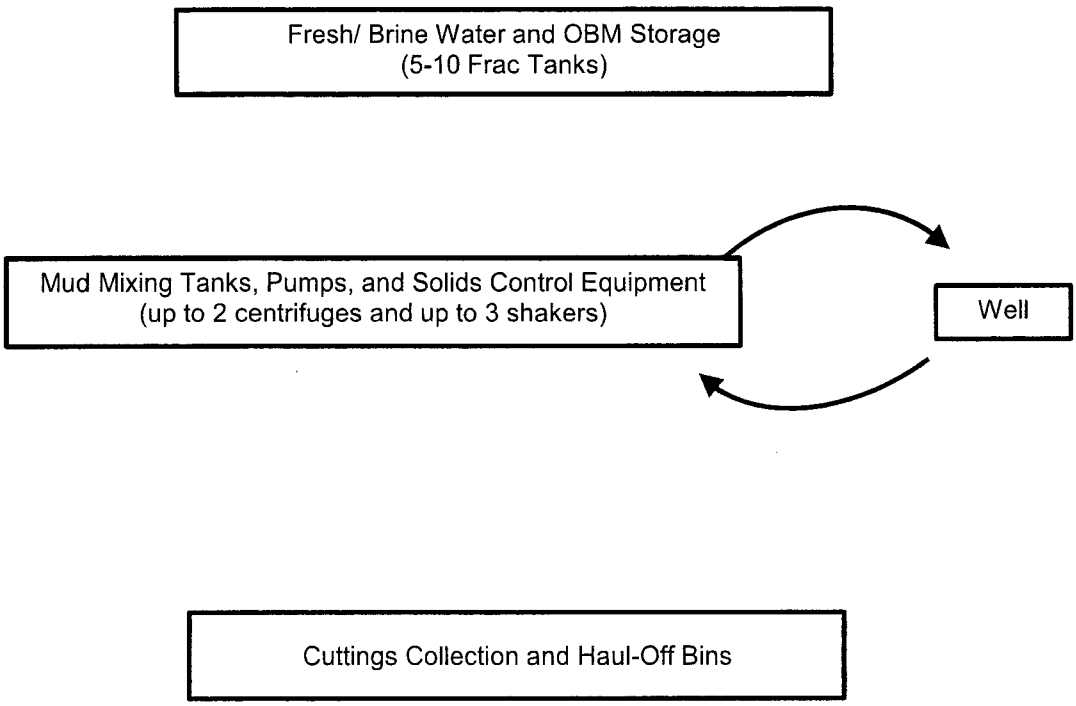
Closed Loop System

RKI Exploration & Production, LLC.
Tucker Draw Fed COM 9-4 1H
Eddy, NM



Operating and Maintenance Plan:
During drilling operations, third party services companies will utilize solids control euipment to remove cuttings from drilling fluids and collect it in haul-off bins. Euipment will be closely monitored at all times while drilling by the derrick man and the service company empolyees.

Closure Plan:
During the drilling operations, third party service companies will haul off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL:
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

Customer:	ORION DRILLING COMPANY	Test Date:	9/2/2014
Customer Ref.	PENDING	Hose Serial No.	D-090214-4
Invoice No.	203500	Created By:	JUSTIN CROPPER

Product Description:	10K3.025.00C4.1/16(10K)FLGE/E

End Fitting 1	4 1/16 10K FLG	End Fitting 2	4 1/16 10K FLG
Gates Part No.	4773-4291	Assembly Code	L3307B040913D-090214-4
Working Pressure:	10,000 PSI	Test Pressure	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager	QUALITY	Technical Supervisor	PRODUCTION
Date:	9/2/2014	Date	9/2/2014
Signature		Signature	

Form PTC 01 Rev.0 2

Gates E&S North America
134 - 44th St.
CORPUS CHRISTI, TEXAS 78405
PHONE : (361) 887-9807
FAX: (361) 887-0812

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, Inc. (formerly Dutex, Inc.), facilities in Corpus Christi, TX, USA. This hose assembly was designed and manufactured to meet all the requirements of API Spec 7K.

CUSTOMER: ORION DRILLING COMPANY
CUSTOMERS P.O.#: PENDING
PART DESCRIPTION: 10K3.025.0CK4.1/1610KFLGE/E
SALES ORDER #: 203508
QUANTITY: 1
SERIAL #: D-090214-4

SIGNATURE: _____
TITLE: QUALITY
DATE: 9/2/2014

HOSE I.D. 3 in LENGTH 2 ft END 4 1/16 END 2 4 1/16

GRADE 10 K WORKING PRESSURE 10,000 PSI.

TEST PRESSURE 15,000 PSI. ASSEMBLY DATE 9-2-11

TEST DATE 9-2-11 SERIAL # 1320720440UD-0404-11

VALVE CR # 6554

U. S. Steel Tubular Products

[illegible] 4.000 in 0.290 [illegible] HC

USS-CDC HTQ

	PIPE	CONNECTION	
MECHANICAL PROPERTIES			
Minimum Yield Strength	110,000		psi
Maximum Yield Strength	140,000		psi
Minimum Tensile Strength	125,000		psi
DIMENSIONS			
Outside Diameter	4.000	5.250	in
Wall Thickness	0.290		in
Nominal Inside Diameter	3.920	3.920	in
Drift API	3.795	3.795	in
Nominal Linear Weight, T&C	13.50		lbs/ft
Plain End Weight	13.05		lbs/ft
SECTION AREA			
Cross Sectional Area Critical Area	3.836	3.836	sq. in
Tension Efficiency		100.0	%
PERFORMANCE			
Minimum Internal Yield Pressure	11,810	11,810	psi
Compressive Resistance		9,450	psi
Minimum Uniaxial Yield Point	12,420	12,420	
Minimum Pipe Body Yield Strength	422,000		lbs
Joint Strength		[illegible]	lbs
Compression Rating		[illegible]	lbs
Reference Length		11,877	ft
Maximum Uniaxial Bending		[illegible]	[illegible]
MAKE-UP DATA			
Make Up Loss		4.44	in
Minimum Make Up Torque		7,000	ft-lbs
Maximum Make Up Torque		13,000	ft-lbs
Minimum Yield Torque		[illegible]	ft-lbs

NOTE

[illegible]

U. S. Steel Tubular Products
10343 Sam Houston Park Dr. #120
Houston TX 77064
[illegible]
connections@uss.com
www.[illegible]

GAS CAPTURE PLAN, Cont.

RKI Exploration and Production, LLC:

Gas Capture Plan: DBM / ETC / Medallion / Enlink Processing Plant Information
RKI Exploration and Production, LLC has the ability to deliver to the below listed Gas Processing Plants.

DBM / ETC / Medallion / Enlink

Block 58-T1-Section 36
Reeves County, Texas

APD ID: 10400013514 **Submission Date:** 05/30/2017

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Well Type: OTHER **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:

Road_Map_05-24-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Road_Map_05-24-2017.pdf

Existing Road Purpose: **Row(s) Exist?**

ROW ID(s)

ID:

Do the existing roads need to be improved?

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Road_Map_05-24-2017.pdf

New road type: COLLECTOR

Length: 152.35 Feet **Width (ft.):** 30

Max slope (%): 2 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: The access road and associated drainage structures will be constructed and maintained in accordance with the road guidelines in the current BLM Gold Book standards and Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Edition – Revised 2007. Continuous inspection will be performed and preventive maintenance measures will be taken as needed. These measures may include: grading, cleaning of drainage structures, erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

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: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Top 4-6 inches of topsoil will be removed and spread along the edge of the road and within the ditch.

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: The access road and associated drainage structures will be constructed and maintained in accordance with the road guidelines in the current BLM Gold Book standards and Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Edition – Revised 2007. Continuous inspection will be performed and preventive maintenance measures will be taken as needed. These measures may include: grading, cleaning of drainage structures,

erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

Road Drainage Control Structures (DCS) description: The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.
Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Road_Map_05-24-2017.pdf

New road type: COLLECTOR

Length: 1388.18 Feet **Width (ft.):** 40

Max slope (%): 2 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control:

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: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth:

Offsite topsoil source description:

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing:

Drainage Control comments: The road will be crowned and ditched with water turnouts installed if necessary to provide for proper drainage along the access road route.

Road Drainage Control Structures (DCS) description:

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:

Existing_Well_Map_05-26-2017.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description:

Production Facilities map:

Tucker_Draw_9_4_Federal_Com_IR_Plat_05-24-2017.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 10000

Source volume (acre-feet): 1.288931

Source volume (gal): 420000

Water source and transportation map:

Tucker_Draw_APD_plan_for_Waterlines_05-24-2017.pdf

Water source comments:

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: Caliche will be hauled from existing caliche pits located in Sec. 24 T26S R29E and Sec. 2 T26S R31E. The Bureau of Land Management is the surface management agency for the caliche pit located in Sec. 24 T26S R29E. The State of New Mexico is the surface management agency for the caliche pit located in Sec. 2 T26S R31E. No construction materials will be removed from Federal lands without prior approval form the appropriate surface management agency.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: Garbage produced on-site during drilling operations (not including materials used in the drilling process) including non-flammable solid waste materials.
Amount of waste: 100 gallons

Waste disposal frequency : Daily

Safe containment description: Will be contained in a portable trash cage.

Safe containmant attachment:

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

Disposal location description: Accumulated trash will be hauled off to a local and state authorized disposal site. All debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the location. No burning will be allowed.

Waste type: SEWAGE

Waste content description: Sewage from trailers and outbuildings will be contained in portable self-contained chemical toilets provided for human waste disposal.
Amount of waste: 1000 gallons

Waste disposal frequency : Monthly

Safe containment description: Will be contained in portable self-contained chemical toilets provided for human waste disposal
Safe containmant attachment:

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

Disposal location description: Upon completion of operations, or as required, the toilet holdings will be pumped and hauled by a licensed contractor for disposal in an approved sewage 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 held in roll-off style mud boxes and taken to NMOCD approved disposal sites via third party contractors.

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:

Tucker_Draw_9_4_Federal_Com_Rig_Layout_05-24-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Drainage/Erosion control construction: Continuous inspection will be performed and preventive maintenance measures will be taken as needed. These measures may include: grading, cleaning of drainage structures, erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

Drainage/Erosion control reclamation: The original stockpiled topsoil will be returned to the pad and re-contoured per original pad topography. The surface will be ripped, barricaded and seeded per NMSLO and BLM requirements

Wellpad long term disturbance (acres): 7.72

Wellpad short term disturbance (acres): 10.3

Access road long term disturbance (acres): 0.05

Access road short term disturbance (acres): 0.1

Pipeline long term disturbance (acres): 0.18663912

Pipeline short term disturbance (acres): 0.3110652

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

Total long term disturbance: 7.9566393 **Total short term disturbance:** 10.711065

Reconstruction method: The surface caliche will be removed from the well pad and road and will be transported to the original caliche pit or used for other roads. The original stockpiled topsoil will be returned to the pad and re-contoured per original pad topography. The pad and access road will be ripped, barricaded and seeded per NMSLO and BLM requirements. Noxious, invasive, and non-native weeds will be controlled.

Topsoil redistribution: The original stockpiled topsoil will be returned to the pad and re-contoured per original pad topography.

Soil treatment: The pad and access road will be ripped, barricaded and seeded per NMSLO and BLM requirements.

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used?

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project?

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation?

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:**

Seed Summary

Total pounds/Acre:

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: The pad and access road will be ripped, barricaded and seeded per NMSLO and BLM requirements. Noxious, invasive, and non-native weeds will be controlled.
Weed treatment plan attachment:

Monitoring plan description: Noxious, invasive, and non-native weeds will be controlled. Periodic inspections will take place until full reclamation according to NMSLO and BLM standards is achieved.
Monitoring plan attachment:

Success standards: RKI will reclaim all disturbed areas according to NMSLO and BLM standards.

Pit closure description: Not applicable

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: PIPELINE

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

Operator Name: RKI EXPLORATION & PRODUCTION LLC

Well Name: TUCKER DRAW 9-4 FED COM **Well Number:** 1H

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: A cultural resource survey was conducted in this project area on April 5, 2017.

Use a previously conducted onsite? YES

Previous Onsite information: Onsite was performed with BLM on February 21, 2017. New road east connecting to existing pad, V-door south, production facilities located on pad to east, and top soil stockpile south of pad. Three phase flow lines and gas lift injection tie-in to production facilities located on eastern pad. Right-of-way will be filed for this project with New Mexico State Land Office.

Other SUPO Attachment

BLM_SUPO_Tucker_Draw_9_4_Fed_Com_05-30-2017.pdf

LEGEND

- SECTION LINE
- EXISTING PIPELINE (AS NOTED HEREON)
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING SWD LINE
- EXISTING GAS LINE
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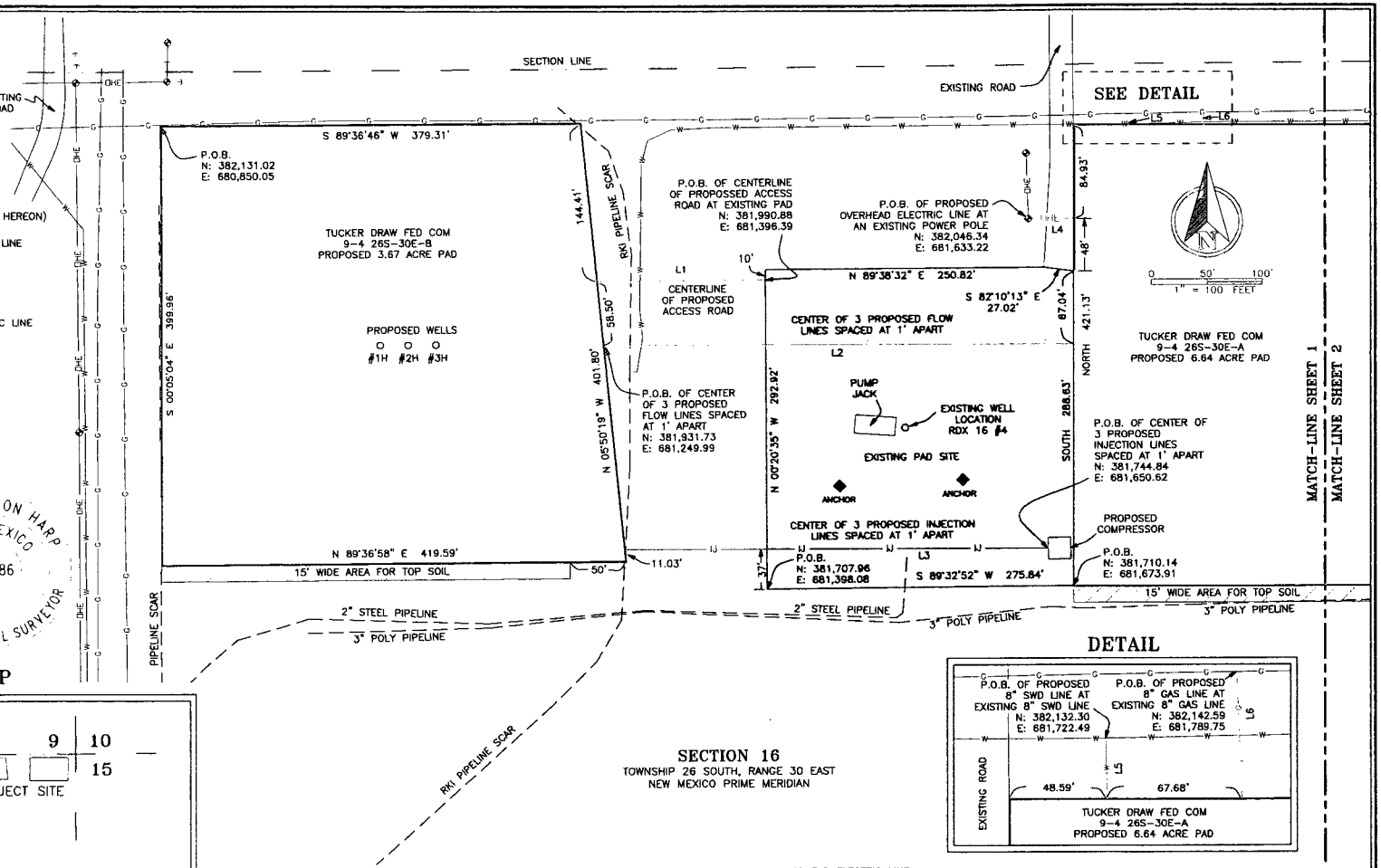
- PROPOSED INJECTION LINE
- P.O.B. POINT OF BEGINNING
- POWER POLE
- GUY ANCHOR

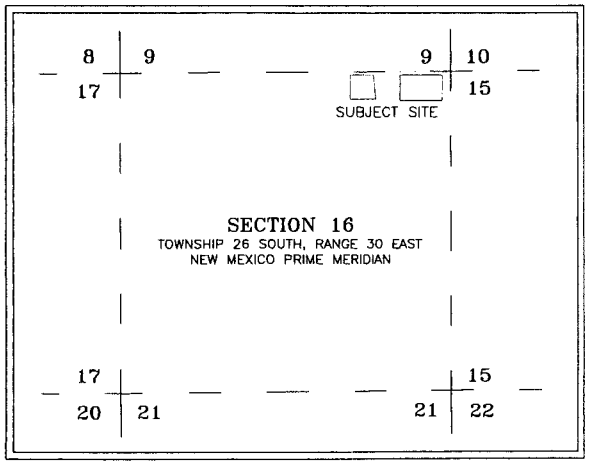
I, MARK DILLON HARP, DO HEREBY STATE THAT THE ABOVE AND FOREGOING SURVEY PLAT WAS PREPARED FROM A SURVEY MADE ON THE GROUND, UNDER MY DIRECTION AND SUPERVISION DURING THE MONTH OF MARCH, 2017.

MARK DILLON HARP
NEW MEXICO
23786
PROFESSIONAL SURVEYOR

MARK DILLON HARP
PROFESSIONAL LAND SURVEYOR
STATE OF NEW MEXICO NO. 23786



VICINITY MAP



DETAIL

SECTION 16
TOWNSHIP 26 SOUTH, RANGE 30 EAST
NEW MEXICO PRIME MERIDIAN

GENERAL NOTES

1. COORDINATES SHOWN ARE BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF NAD 83 (HARN), EAST ZONE.
2. VERTICAL DATUM IS NAVD 88.
3. LATITUDE AND LONGITUDE ARE NAD 83 AS SHOWN.
4. AREA, DISTANCES, AND COORDINATES ARE "GRID".
5. UNITS ARE UNITED STATES SURVEY FOOT.
6. ALL LEASE AND TRACT INFORMATION SHOWN HERE ON IS DONE SO BY LIMITED DEED RECORD INFORMATION ONLY. ALL ACREAGES SHOWN ARE BY DEED AND LEASE CALL. EXCEPT WHERE NOTED. THIS IS NOT IN ANY WAY A "BOUNDARY SURVEY".

PROPOSED CENTERLINE OF ACCESS ROAD
TOTAL LENGTH OF LINE = 152.35'

LINE	BEARING	DISTANCE
L1	N 89°38'19" E	152.35'

PROPOSED CENTERLINE OF 3 SEPARATE FLOW LINES SPACED AT 1' APART
TOTAL LENGTH OF LINE = 423.93'

LINE	BEARING	DISTANCE
L2	EAST	423.93'

PROPOSED CENTERLINE OF 3 SEPARATE INJECTION LINES SPACED AT 1' APART
TOTAL LENGTH OF LINE = 381.52'

LINE	BEARING	DISTANCE
L3	WEST	381.52'

PROPOSED OVERHEAD ELECTRIC LINE
TOTAL LENGTH OF LINE = 40.69'

LINE	BEARING	DISTANCE
L4	EAST	40.69'

PROPOSED 8" SWD LINE
TOTAL LENGTH OF LINE = 1.03'

LINE	BEARING	DISTANCE
L5	S 00°34'21" E	1.03'

PROPOSED 8" GAS LINE
TOTAL LENGTH OF LINE = 11.33'

LINE	BEARING	DISTANCE
L6	S 02°12'35" E	11.33'

RIGHT OF WAY PLAT FOR:

RKI EXPLORATION & PRODUCTION, LLC

TUCKER DRAW FED COM 9-4

SITUATED IN SECTION 16, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M., AND BEING LOCATED APPROXIMATELY 32.6 MILES SOUTHEAST OF CARLSBAD, IN EDDY COUNTY, NEW MEXICO.

FSC INC
SURVEYORS+ENGINEERS
550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
www.fscinc.net

DATE:	03-17-2017
DRAWN BY:	DH
CHECKED BY:	DH
FIELD CREW:	RE/PD
PROJECT NO:	2017020241
SCALE:	1" = 100'
SHEET:	1 OF 2
REVISION:	NONE

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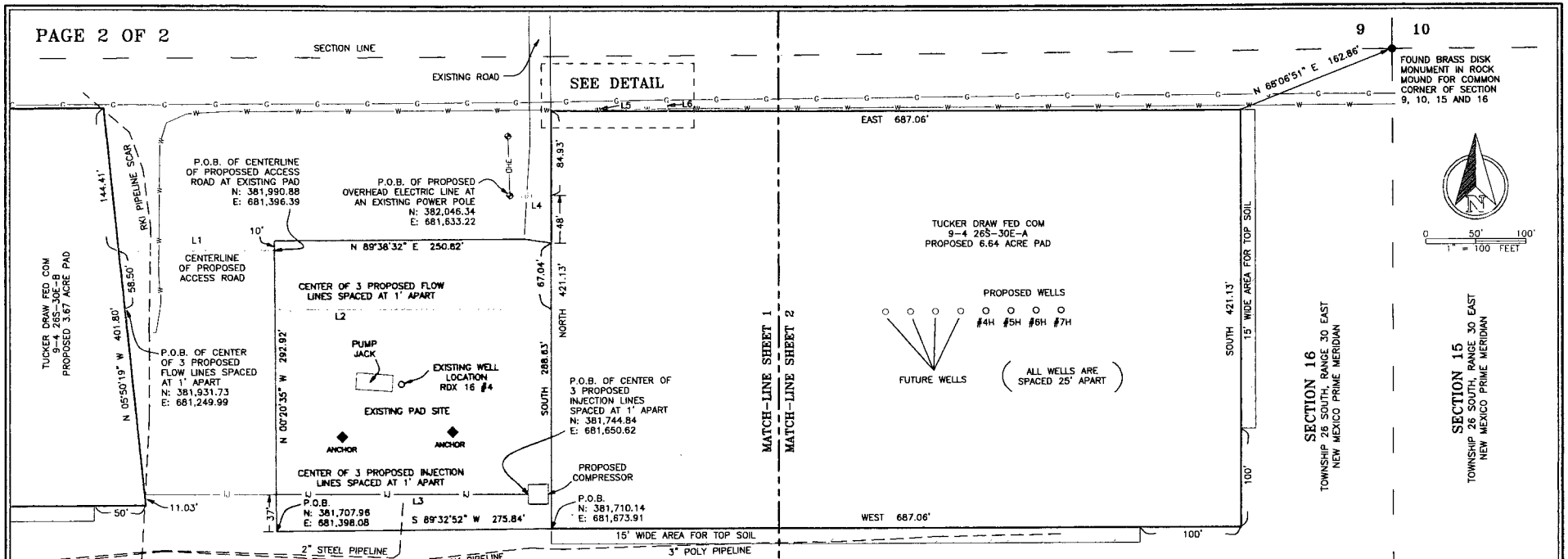
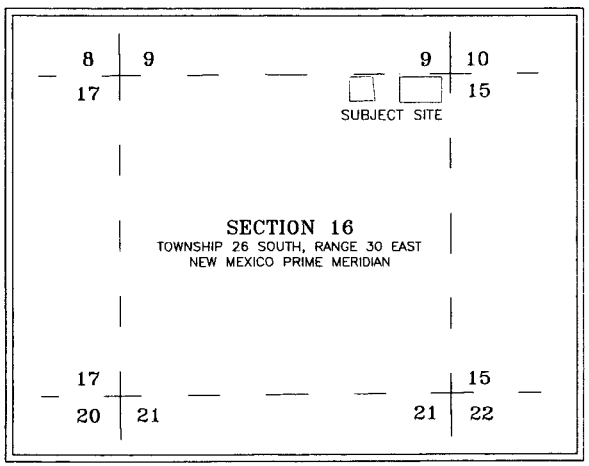


VICINITY MAP



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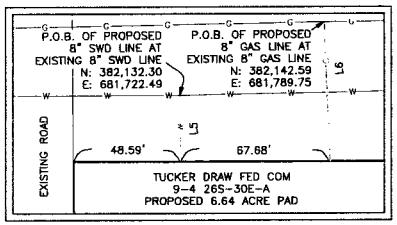
DETAIL



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PROFESSIONAL LAND SURVEYOR
STATE OF NEW MEXICO NO. 23786

MARK DILLON HARP
NEW MEXICO
23786
PROFESSIONAL SURVEYOR

RIGHT OF WAY PLAT FOR:

RKI EXPLORATION & PRODUCTION, LLC

TUCKER DRAW FED COM 9-4

SITUATED IN SECTION 16, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M., AND BEING LOCATED APPROXIMATELY 32.6 MILES SOUTHEAST OF CARLSBAD, IN EDDY COUNTY, NEW MEXICO.

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SCALE:	1" = 100'
SHEET:	2 OF 2
REVISION:	1

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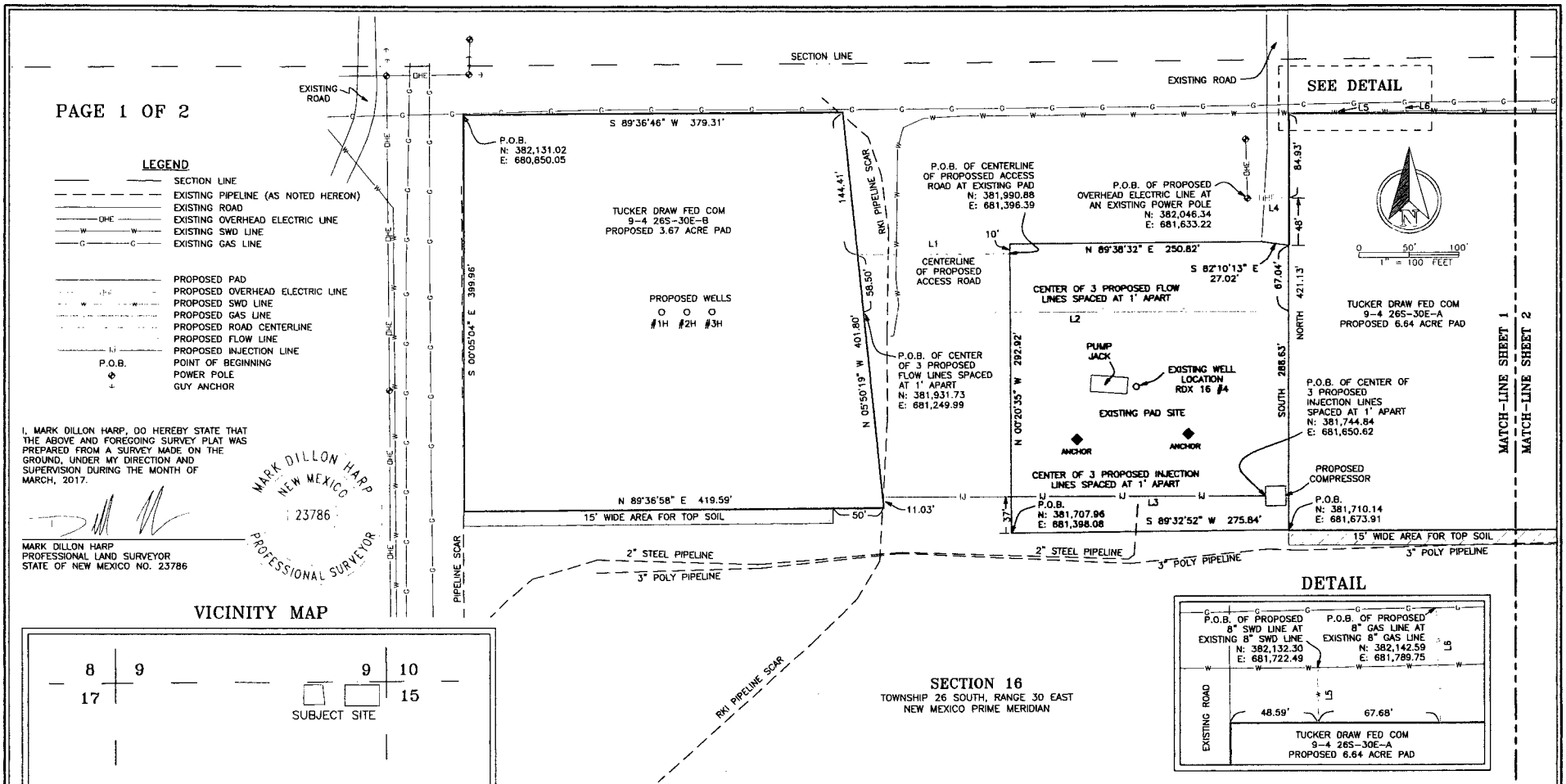
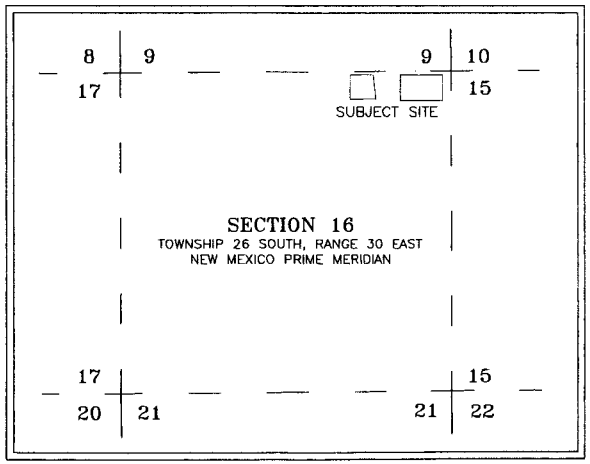
23786
PROFESSIONAL SURVEYOR



DETAIL

VICINITY MAP



SECTION 16
TOWNSHIP 26 SOUTH, RANGE 30 EAST
NEW MEXICO PRIME MERIDIAN

GENERAL NOTES

1. COORDINATES SHOWN ARE BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF NAD 83 (HARN), EAST ZONE.
2. VERTICAL DATUM IS NAVD 88.
3. LATITUDE AND LONGITUDE ARE NAD 83 AS SHOWN.
4. AREA, DISTANCES, AND COORDINATES ARE "GRID".
5. UNITS ARE UNITED STATES SURVEY FOOT.
6. ALL LEASE AND TRACT INFORMATION SHOWN HERE ON IS DONE SO BY LIMITED DEED RECORD INFORMATION ONLY. ALL ACREAGES SHOWN ARE BY DEED AND LEASE CALL, EXCEPT WHERE NOTED. THIS IS NOT IN ANY WAY A "BOUNDARY SURVEY".

PROPOSED CENTERLINE OF ACCESS ROAD
TOTAL LENGTH OF LINE = 152.35'

LINE	BEARING	DISTANCE
L1	N 89°38'19" E	152.35'

PROPOSED CENTERLINE OF 3 SEPARATE FLOW LINES SPACED AT 1' APART
TOTAL LENGTH OF LINE = 423.93'

LINE	BEARING	DISTANCE
L2	EAST	423.93'

PROPOSED CENTERLINE OF 3 SEPARATE INJECTION LINES SPACED AT 1' APART
TOTAL LENGTH OF LINE = 381.52'

LINE	BEARING	DISTANCE
L3	WEST	381.52'

PROPOSED OVERHEAD ELECTRIC LINE
TOTAL LENGTH OF LINE = 40.69'

LINE	BEARING	DISTANCE
L4	EAST	40.69'

PROPOSED 8" SWD LINE
TOTAL LENGTH OF LINE = 1.03'

LINE	BEARING	DISTANCE
L5	S 00°34'21" E	1.03'

PROPOSED 8" GAS LINE
TOTAL LENGTH OF LINE = 11.33'

LINE	BEARING	DISTANCE
L6	S 02°12'35" E	11.33'

RIGHT OF WAY PLAT FOR:

RKI EXPLORATION & PRODUCTION, LLC

TUCKER DRAW FED COM 9-4

SITUATED IN SECTION 16, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M., AND BEING LOCATED APPROXIMATELY 32.6 MILES SOUTHEAST OF CARLSBAD, IN EDDY COUNTY, NEW MEXICO.

FSC INC
SURVEYORS & ENGINEERS
550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
www.fscinc.net

DATE:	03-17-2017
DRAWN BY:	DH
CHECKED BY:	DH
FIELD CREW:	RE/PD
PROJECT NO:	2017020241
SCALE:	1" = 100'
SHEET:	1 OF 2
REVISION:	NONE

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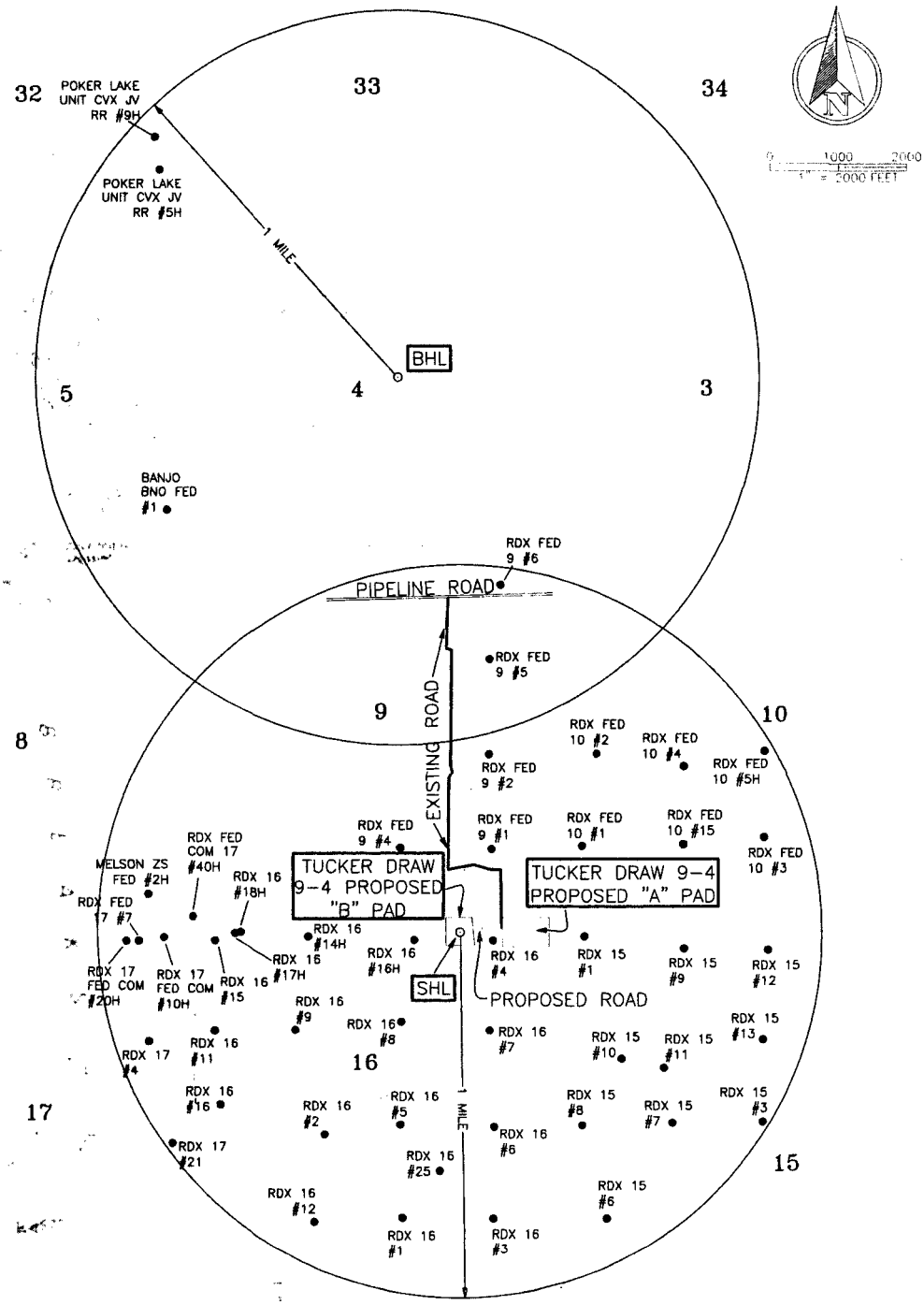

DRIVING DIRECTIONS FROM MALAGA, NEW MEXICO:

HEAD SOUTH ON US HIGHWAY 285 S FOR 12.5 MILES. TURN LEFT ON WHITEHORN RD FOR 3.5 MILES PAST A CURVE FOR AN ADDITIONAL 0.6 MILES. TURN LEFT ON PIPELINE ROAD AND HEAD EAST FOR 2.8 MILES. TURN RIGHT ON TARBRUSH ROAD AND HEAD SOUTH FOR 0.3 MILES. TURN LEFT ON LEASE ROAD AND HEAD EAST FOR 0.5 MILES. TURN RIGHT ON LEASE ROAD AND HEAD SOUTHEAST 0.6 MILES. TURN LEFT ON LEASE ROAD AND HEAD EAST 0.7 MILES. STAY LEFT ON LEASE ROAD AND CONTINUE EAST 2.8 MILES. TURN RIGHT ON LEASE ROAD AND HEAD SOUTH 0.1 MILES AND LOCATION IS TO THE EAST.

FSC INC
SURVEYORS+ENGINEERS
550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
www.fscinc.net
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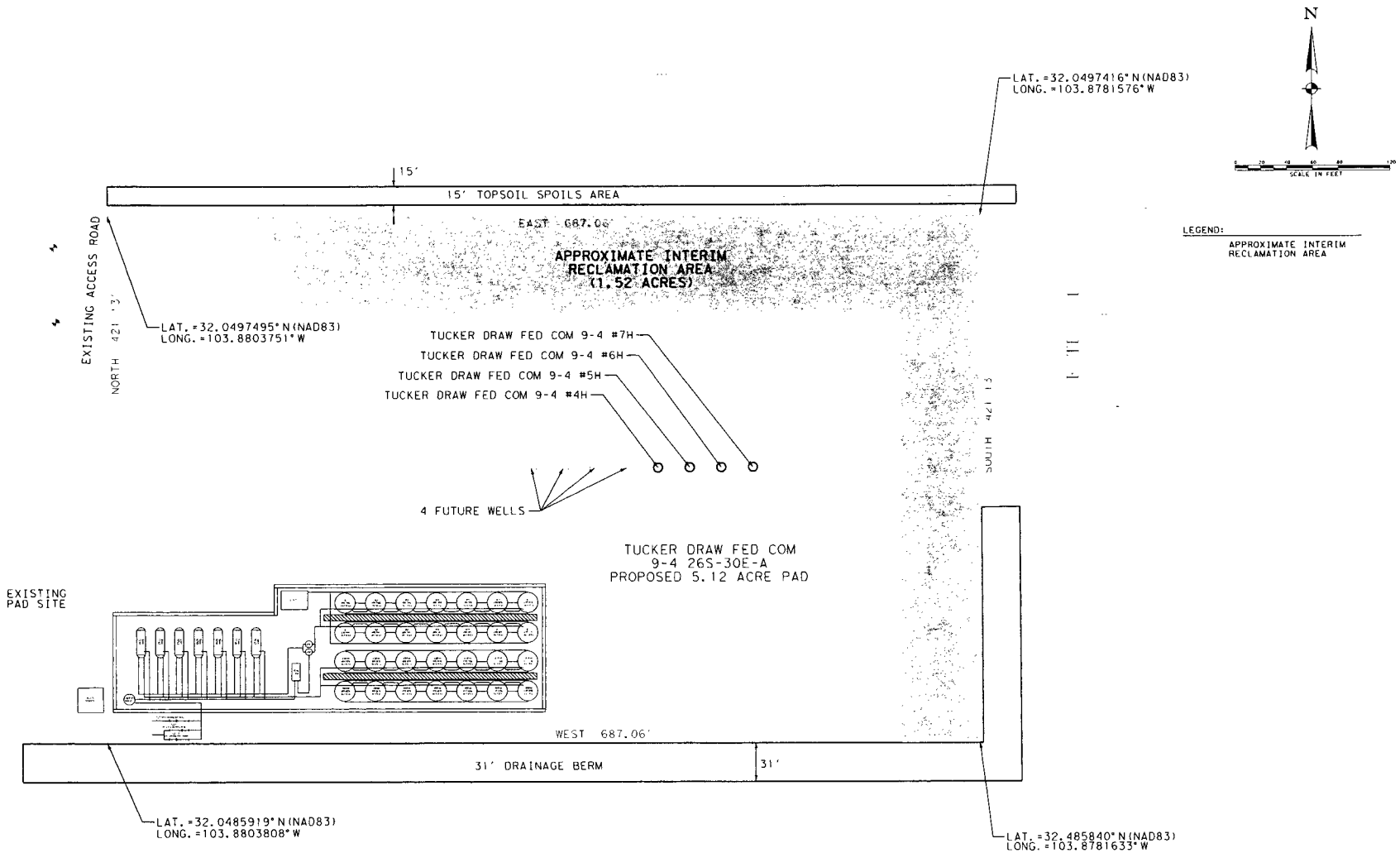
EXISTING WELL MAP FOR:
RKI EXPLORATION & PRODUCTION, LLC
TUCKER DRAW FEDERAL COM 9-4 #1H
SITUATED IN SECTIONS 16, 9, AND 4, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M., AND BEING LOCATED APPROXIMATELY 16.4 MILES SOUTHEAST OF MALAGA, IN EDDY COUNTY, NEW MEXICO.

DATE:	3-28-2017
DRAWN BY:	AI
CHECKED BY:	DH
FIELD CREW:	
PROJECT NO:	2017020244
SCALE:	1" = 2000'
SHEET:	1 OF 1
REVISION:	NO



RKI EXPLORATION
& PRODUCTION, LLC
210 PARK AVENUE, STE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

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PERMITTING REVIEW ONLY

TUCKER DRAW FED COM 9-4 PAD IMPROVEMENTS PLAN

EDDY COUNTY, NEW MEXICO

TUCKER DRAW 4H, 5H, 6H & 7H

BLM EXHIBIT 03 - INTERIM RECLAMATION PLAT

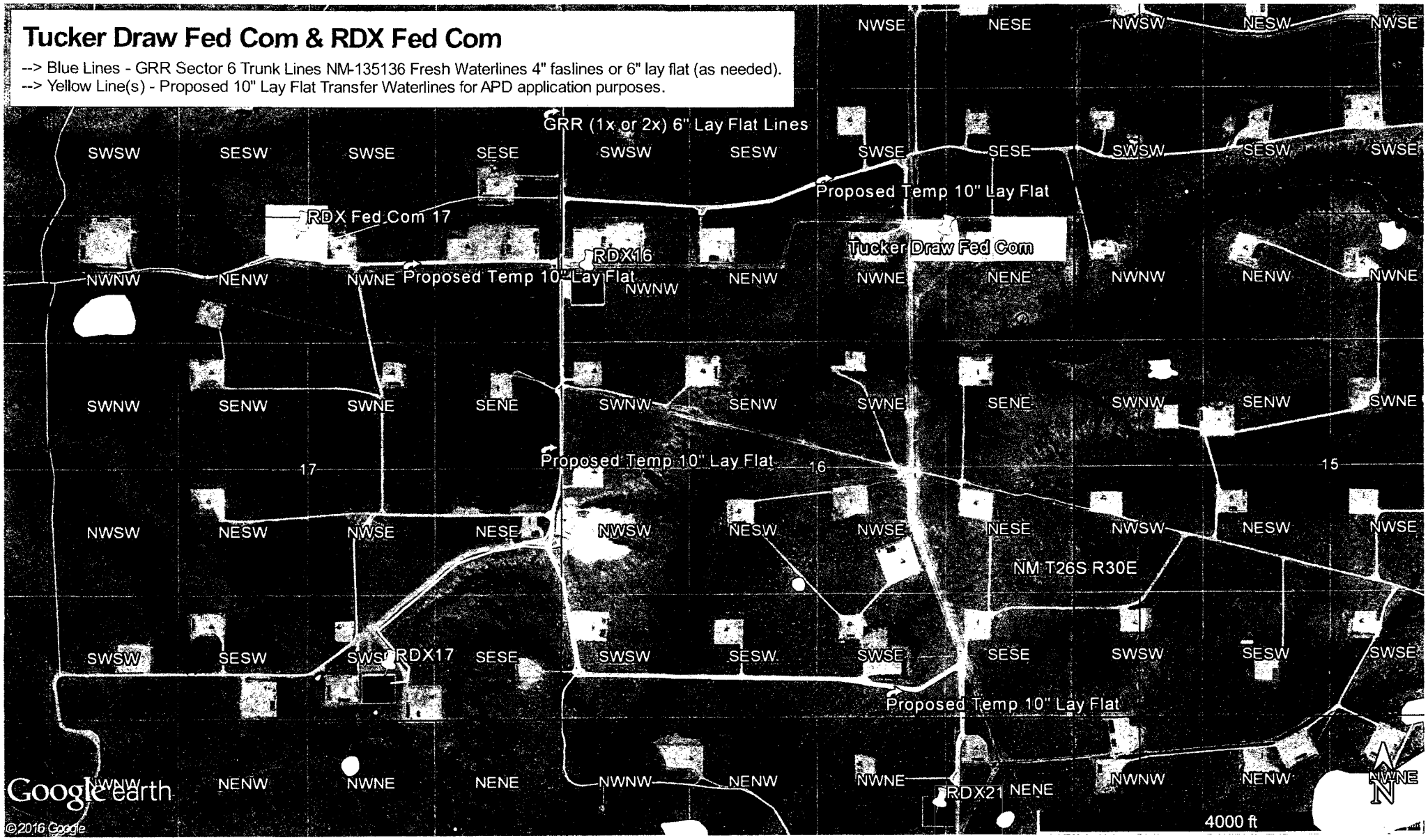
FSC SURVEYORS+ENGINEERS
2205 WALNUT STREET / COLUMBUS, TX 78934
1.855.637.5725 / WWW.FSCINC.NET
TBPE FIRM # 17557 / TBPLS # 10006100

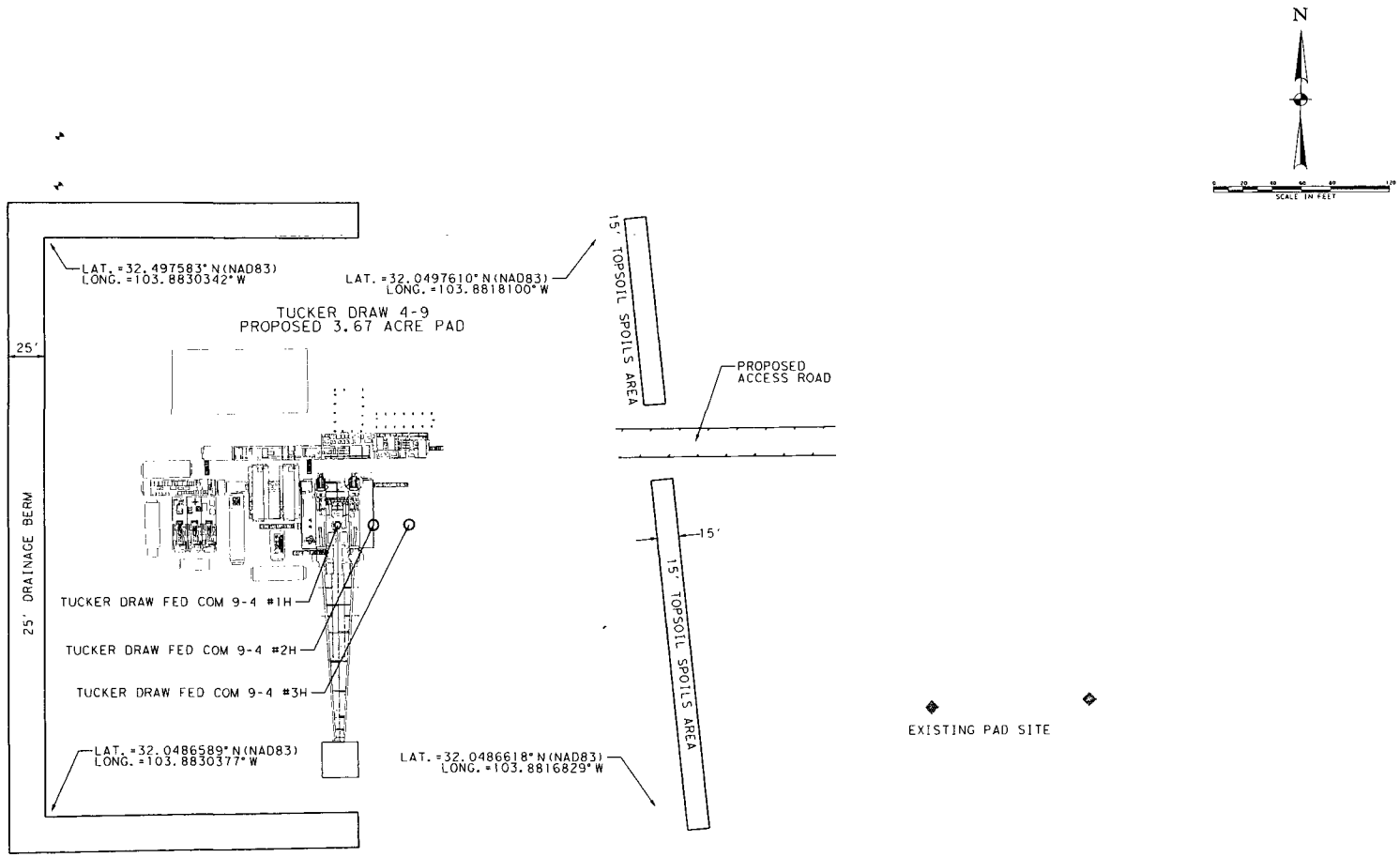
Project No.:	2017020241
Issued:	03/22/17
Drawn By:	FSC
Checked By:	KL

SHEET EX.03

Tucker Draw Fed Com & RDX Fed Com

--> Blue Lines - GRR Sector 6 Trunk Lines NM-135136 Fresh Waterlines 4" faslines or 6" lay flat (as needed).
--> Yellow Line(s) - Proposed 10" Lay Flat Transfer Waterlines for APD application purposes.





RKI EXPLORATION
& PRODUCTION, LLC
210 PARK AVENUE, SITE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

PERMITTING

PERMITTING REVIEW ONLY

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KEITH L. LOVE, CHIEF
NAME PE NO
DATE 05/22/2017

TUCKER DRAW FED COM 9-4 PAD IMPROVEMENTS PLAN

EDDY COUNTY, NEW MEXICO

TUCKER DRAW 1H, 2H & 3H

BLM EXHIBIT 02 - RIG PLAT

FSC SURVEYORS+ENGINEERS
2205 WALNUT STREET / COLUMBUS, TX 78934
1.855.637.5725 / WWW.FSCINC.NET
TBPE FIRM # 17957 / TBPLS # 10000100

Project No.:	20170J0241
Issued:	05/22/17
Drawn By:	FSC
Checked By:	KL

SHEET EX.02

SURFACE USE PLAN OF OPERATIONS

RKI EXPLORATION & PRODUCTION, LLC.
Tucker Draw 9-4 Fed Com
EDDY COUNTY, NEW MEXICO
LEASE NO. NMNM 100558

1. Existing Roads

a. Directions to location: From Malaga, NM: Head south on Highway 285 S for 12.5 miles. Turn left on Whitehorn Rd for 3.5 miles past a curve for an additional 0.6 miles. Turn left on Pipeline Rd and head east for 2.8 miles. Turn right on Tarbrush road and head south for 0.3 miles. Turn left on lease road and head east 0.5 miles. Turn right on lease road and head southeast for 0.6 miles. Turn left on lease road and head east for 0.7 miles. Stay left on lease road and continue east 2.8 miles. Turn right on lease road and south 0.1 miles. Location is to the east.

b. All non-county roads used to access the wells will be maintained in their current condition or better than before operations began and will be maintained in accordance with current BLM Gold Book standards and Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Edition – Revised 2007. Continuous inspection will be performed and preventive maintenance measures will be taken as needed. These measures may include: grading, cleaning of drainage structures, erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

c. Please see attached exhibit for existing access road to be used for proposed project.

2. Planned Access Road

a. Access Road: A new access road will need to be constructed for this pad and will be 152.35 feet long, 14 feet driving surface, have a maximum slope of 2%, and a maximum grade of 3%. Surfacing material will be caliche. There will be no cattle guards installed on this site.

b. Please see attached exhibit for new access road to be used for proposed project.

3. Existing Wells

Please see attached exhibit showing the location of all existing wells within a one-mile radius of the proposed location.

4. Proposed Production Facilities

a. No production facilities will be constructed on this pad. Production facilities for these wells will be located on the new pad approximately 425 feet to the east. Please see attached exhibit for proposed production facilities layout.

b. Pipelines: A 8-inch buried gas line 11.33' in length will be laid north from the eastern pad containing the production facilities to an existing tie-in. An 8-inch buried saltwater disposal line (SWD) 1.03' in length will be laid north from the eastern pad containing the production facilities to an existing tie-in. Three three-phase flow lines and three gas-lift injection lines will be laid from this pad to the production facilities located on the eastern pad. See attached exhibit for line routes and tie-in location.

c. Electrical: Electric service will be installed to this pad from an existing overhead power pole located within the proposed disturbance on the northwest corner of the pad.

5. Location and Type of Water Supply

Water will be piped via a 10-inch O.D. temporary surface line from existing completion ponds located in the NWNW of Sec. 16 T26S R30E, SWSE of Sec. 17 T26S R30E, and the NWNE of Sec. 21 T26S R30E. See attached map for line route and completion pond locations.

6. Source of Construction Materials

a. NM One Call (811) will be notified before construction starts.

b. Top 4-6 inches of topsoil will be stockpiled along the side of location as shown in attached drawing.

c. Caliche will be hauled from existing caliche pits located in Sec. 24 T26S R29E and Sec. 2 T26S R31E. The Bureau of Land Management is the surface management agency for the caliche pit located in Sec. 24 T26S R29E. The State of New Mexico is the surface management agency for the caliche pit located in Sec. 2 T26S R31E. No construction materials will be removed from Federal lands without prior approval from the appropriate surface management agency

7. Methods for Handling Waste Disposal

a. Drilling: Drilling fluids, including cuttings and mud, will be self-contained and recycled via a closed loop system. Cuttings will be held in roll-off style mud boxes and taken to NMOCD approved disposal sites via third party contractors.

b. Sewage: Sewage from trailers and outbuildings will be contained in portable self-contained chemical toilets provided for human waste disposal. Upon completion of operations, or as required, the toilet holdings will be pumped and hauled by a licensed contractor for disposal in an approved sewage disposal facility.

c. Garbage: Garbage produced on-site during drilling operations (not including materials used in the drilling process) including non-flammable solid waste materials will be contained in a portable trash cage. Upon completion of operations, or as needed, the accumulated trash will be hauled off to a local and state authorized disposal site. All debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the location. No burning will be allowed.

8. Ancillary Facilities

No additional facilities will be utilized.

9. Wellsite Layout

d. Please see attached exhibits for proposed drilling and production facilities layout.

e. All equipment and vehicles will be confined to the access road, pad, and area specified in this APD.

10. Surface Reclamation Plan

a. Interim reclamation will be completed within 6 months of completing the last well on the pad. The surface caliche will be removed from the part of the well pad no longer in use and will be transported to the original caliche pit or used for other roads. Some of the original stockpiled topsoil will be returned to the pad and re-contoured per original pad topography. The surface will be ripped, barricaded and seeded per NMSLO and BLM requirements. Please see attached exhibit for proposed interim reclamation area.

b. Once the last well on the pad is plugged, all equipment will be removed and the remainder of the pad will be reclaimed within 6 months of plugging. The surface caliche will be removed from the well pad and road and will be transported to the original caliche pit or used for other roads. The original stockpiled topsoil will be returned to the pad and re-contoured per original pad topography. The pad and access road will be ripped, barricaded and seeded per NMSLO and BLM requirements. Noxious, invasive, and non-native weeds will be controlled.

11. Surface Ownership

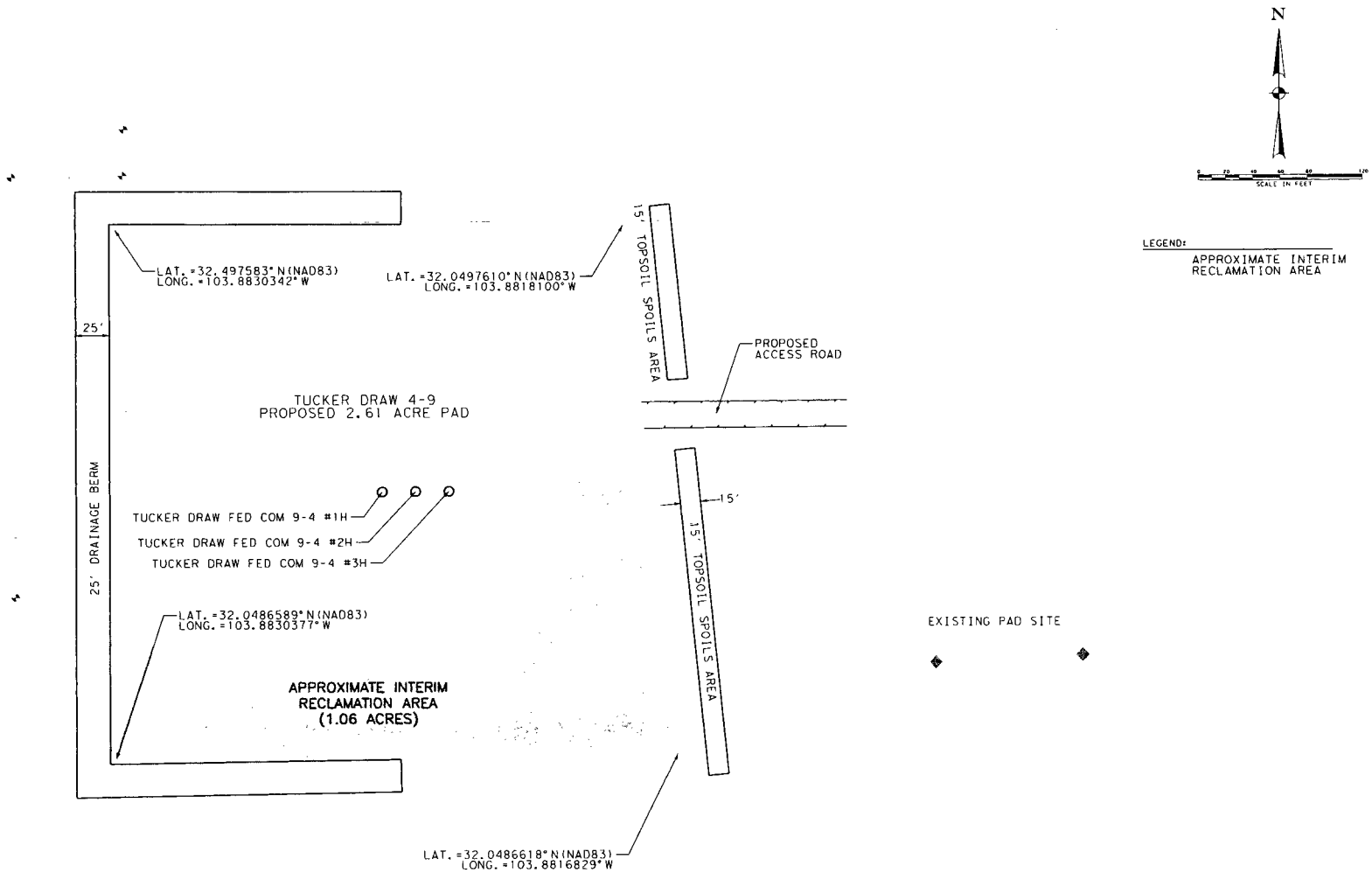
a. The surface is administered by the New Mexico State Land Office.

b. The surface is multiple use with the primary uses of the region being grazing for livestock and production of oil and gas.

12. Other information

c. Onsite was performed with BLM on February 21, 2017. New road east connecting to existing pad, V-door south, production facilities located on pad to east, and top soil stockpile south of pad. Three phase flow lines and gas lift injection tie-in to production facilities located on eastern pad. Right-of-way will be filed for this project with New Mexico State Land Office.

d. A cultural resource survey was conducted in this project area on April 5, 2017.



RKI EXPLORATION & PRODUCTION, LLC
210 PARK AVENUE, STE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

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PERMITTING REVIEW ONLY

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NAME L. LUNA, JR. | CHIEF
REVIEW | P.E. NO.
DATE | 05.22.2017

TUCKER DRAW FED COM 9-4 PAD IMPROVEMENTS PLAN

EDDY COUNTY, NEW MEXICO

TUCKER DRAW 1H, 2H & 3H

BLM EXHIBIT 03 - INTERIM RECLAMATION PLAT

FSC SURVEYORS+ENGINEERS
2205 WALNUT STREET / COLUMBUS, TX 78934
1.855.637.5725 / WWW.FSCINC.NET
TBPE FIRM # 17967 / TBPLS # 10060700

Project No.	2017020241
Issued:	05/22/17
Drawn By:	FSC
Checked By:	KL

SHEET EX.03

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? NO

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

10/05/2017

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000396

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: