API Well Number: 43047522990000

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT ☐

## APPLICATION FOR PERMIT TO DRILL

**1. WELL NAME and NUMBER**
NBU 1022-25F2AS

**2. TYPE OF WORK**
DRILL NEW WELL ■ REENTER P&A WELL ☐ DEEPEN WELL ☐

**3. FIELD OR WILDCAT**
NATURAL BUTTES

**4. TYPE OF WELL**
Gas Well Coalbed Methane Well: NO

**5. UNIT or COMMUNITIZATION AGREEMENT NAME**
NATURAL BUTTES

**6. NAME OF OPERATOR**
KERR-MCGEE OIL & GAS ONSHORE, L.P.

**7. OPERATOR PHONE**
720 929-6515

**8. ADDRESS OF OPERATOR**
P.O. Box 173779, Denver, CO, 80217

**9. OPERATOR E-MAIL**
julie.jacobson@anadarko.com

**10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)**
UT ST ML 22447

**11. MINERAL OWNERSHIP**
FEDERAL ☐ INDIAN ☐ STATE ■ FEE ☐

**12. SURFACE OWNERSHIP**
FEDERAL ☐ INDIAN ☐ STATE ■ FEE ☐

**13. NAME OF SURFACE OWNER (if box 12 = 'fee')**

**14. SURFACE OWNER PHONE (if box 12 = 'fee')**

**15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')**

**16. SURFACE OWNER E-MAIL (if box 12 = 'fee')**

**17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')**

**18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS**
YES ■ (Submit Commingling Application) NO ☐

**19. SLANT**
VERTICAL ☐ DIRECTIONAL ■ HORIZONTAL ☐

| 20. LOCATION OF WELL | FOOTAGES | QTR-QTR | SECTION | TOWNSHIP | RANGE | MERIDIAN |
|---|---|---|---|---|---|---|
| LOCATION AT SURFACE | 652 FNL 329 FWL | NWNW | 25 | 10.0 S | 22.0 E | S |
| Top of Uppermost Producing Zone | 1482 FNL 1955 FWL | SENW | 25 | 10.0 S | 22.0 E | S |
| At Total Depth | 1482 FNL 1955 FWL | SENW | 25 | 10.0 S | 22.0 E | S |

**21. COUNTY**
UINTAH

**22. DISTANCE TO NEAREST LEASE LINE (Feet)**
1482

**23. NUMBER OF ACRES IN DRILLING UNIT**
640

**25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)**
1951

**26. PROPOSED DEPTH**
MD: 8448 TVD: 8148

**27. ELEVATION - GROUND LEVEL**
5481

**28. BOND NUMBER**
22013542

**29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE**
43-8496

### Hole, Casing, and Cement Information

| String | Hole Size | Casing Size | Length | Weight | Grade & Thread | Max Mud Wt. | Cement | Sacks | Yield | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| Surf | 12.25 | 8.625 | 0 - 2110 | 28.0 | J-55 LT&C | 0.2 | Type V | 180 | 1.15 | 15.8 |
| | | | | | | | Class G | 270 | 1.15 | 15.8 |
| Prod | 7.875 | 4.5 | 0 - 8448 | 11.6 | I-80 LT&C | 12.5 | Premium Lite High Strength | 270 | 3.38 | 12.0 |
| | | | | | | | 50/50 Poz | 1190 | 1.31 | 14.3 |

### ATTACHMENTS

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES**

- ✔ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- ✔ COMPLETE DRILLING PLAN
- ☐ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)
- ☐ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER
- ✔ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)
- ✔ TOPOGRAPHICAL MAP

**NAME** Danielle Piernot | **TITLE** Regulatory Analyst | **PHONE** 720 929-6156

**SIGNATURE** | **DATE** 01/27/2012 | **EMAIL** danielle.piernot@anadarko.com

**API NUMBER ASSIGNED**
43047522990000

**APPROVAL**

Permit Manager

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# Kerr-McGee Oil & Gas Onshore. L.P.

**NBU 1022-25F2AS**

| | | |
|---|---|---|
| Surface: | 652 FNL / 329 FWL | NWNW |
| BHL: | 1482 FNL / 1955 FWL | SENW |

Section 25 T10S R22E

Uintah County, Utah
Mineral Lease: UT ST ML 22447

**ONSHORE ORDER NO. 1**

**DRILLING PROGRAM**

**1. & 2.** **Estimated Tops of Important Geologic Markers:**
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

| Formation | Depth | Resource |
|---|---|---|
| Uinta | 0 - Surface | |
| Green River | 975' | |
| Birds Nest | 1,234' | Water |
| Mahogany | 1,662' | Water |
| Wasatch | 3,904' | Gas |
| Mesaverde | 6,038' | Gas |
| TVD | 8,148' | |
| TD | 8,448' | |

**3.** **Pressure Control Equipment** (Schematic Attached)

Please refer to the attached Drilling Program

**4.** **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

**5.** **Drilling Fluids Program:**

Please refer to the attached Drilling Program

**6.** **Evaluation Program:**

Please refer to the attached Drilling Program

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**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 8148' TVD, approximately equals 5,215 psi 0.64 psi/ft = actual bottomhole gradient

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 3,411 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-
(0.22 psi/ft-partial evac gradient x TVD of next csg point))

**8. Anticipated Starting Dates:**

Drilling is planned to commence immediately upon approval of this application.

**9. Variances:**

Please refer to the attached Drilling Program.
Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

**Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

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Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill a 11inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

**Variance for BOPE Requirements**
The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

**Variance for Mud Material Requirements**
Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

**Variance for Special Drilling Operation (surface equipment placement) Requirements**
Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and

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on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

**Variance for FIT Requirements**
KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

**Conclusion**
The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

## 10. Other Information:

Please refer to the attached Drilling Program.

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# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | |
|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | DATE | January 20, 2012 |
| WELL NAME | **NBU 1022-25F2AS** | TD | 8,148' TVD 8,448' MD |
| FIELD | Natural Buttes | COUNTY Uintah STATE Utah | FINISHED ELEVATION 5,479' |
| SURFACE LOCATION | NWNW 652 FNL 329 FWL Sec 25 T 10S R 22E | | |
| | Latitude: 39.925327 Longitude: -109.395856 | | NAD 27 |
| BTM HOLE LOCATION | SENW 1482 FNL 1955 FWL Sec 25 T 10S R 22E | | |
| | Latitude: 39.923049 Longitude: -109.390057 | | NAD 27 |
| OBJECTIVE ZONE(S) | Wasatch/Mesaverde | | |
| ADDITIONAL INFO | Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept. | | |

| GEOLOGICAL | | | MECHANICAL | | |
|---|---|---|---|---|---|
| LOGS | FORMATION TOPS | DEPTH | HOLE SIZE | CASING SIZE | MUD WEIGHT |
| | | 40' | | 14" | |
| | | 200' | 12-1/4 | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | | 2,110' TVD | 11' | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | | 8,448' MD | 7-7/8" | 4-1/2" 11.6# I-80 Ultra DQX/LTC csg | Water / Fresh Water Mud 8.3-12.5 ppg |

**All water flows encountered while drilling will be reported to the appropriate agencies.**

**Green River @ 975'**

**Top of Birds Nest @ 1,234'**

**Mahogany @ 1,662'**

**Preset f/ GL @ 2,110' TVD**

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

**Wasatch @ 3,904'**

Mud logging program TBD

Cased hole logging program from TD - surf csg

**Mverde @ 6,038' TVD**

Max anticipated Mud required 12.5 ppg

**TD @ 8,148' TVD 8,448' MD**

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# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

### CASING PROGRAM

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | LTC | DQX TENSION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | | |
| | | | | | | | | 3,390 | 1,880 | 348,000 | N/A |
| SURFACE | 8-5/8" | 0 | to | 2,110 | 28.00 | IJ-55 | LTC | 2.56 | 1.90 | 6.73 | N/A |
| | | | | | | | | 7,780 | 6,350 | 223,000 | 267,035 |
| PRODUCTION | 4-1/2" | 0 | to | 5,000 | 11.60 | I-80 | DQX | 1.11 | 1.20 | | 3.37 |
| | 4-1/2" | 5,000 | to | 8,448' | 11.60 | I-80 | LTC | 1.11 | 1.20 | 6.89 | |

**Surface Casing:**

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.64 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

### CEMENT PROGRAM

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | | YIELD |
|---|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500' | Premium cmt + 2% CaCl | 180 | 60% | 15.80 | | 1.15 |
| **Option 1** | | | + 0.25 pps flocele | | | | | |
| | TOP OUT CMT (6 jobs) | 1,200' | 20 gals sodium silicate + Premium cmt | 270 | 0% | 15.80 | | 1.15 |
| | | | + 2% CaCl + 0.25 pps flocele | | | | | |
| SURFACE | | | **NOTE: If well will circulate water to surface, option 2 will be utilized** | | | | | |
| **Option 2** | LEAD | 1,610' | 65/35 Poz + 6% Gel + 10 pps gilsonite | 150 | 35% | 11.00 | | 3.82 |
| | | | + 0.25 pps Flocele + 3% salt BWOW | | | | | |
| | TAIL | 500' | Premium cmt + 2% CaCl | 150 | 35% | 15.80 | | 1.15 |
| | | | + 0.25 pps flocele | | | | | |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.80 | | 1.15 |
| PRODUCTION | LEAD | 3,398' | Premium Lite II +0.25 pps | 270 | 35% | 12.00 | | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | | |
| | | | + 0.5% extender | | | | | |
| | TAIL | 5,050' | 50/50 Poz/G + 10% salt + 2% gel | 1,190 | 35% | 14.30 | | 1.31 |
| | | | + 0.1% R-3 | | | | | |

*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

### FLOAT EQUIPMENT & CENTRALIZERS

| | |
|---|---|
| SURFACE | Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe |
| | |
| PRODUCTION | Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well. 1 centralizer on the first 3 joints and one every third joint thereafter. |
| | |

### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

**DRILLING ENGINEER:** _____ **DATE:** _____

Nick Spence / Danny Showers / Chad Loesel

**DRILLING SUPERINTENDENT:** _____ **DATE:** _____

Kenny Gathings / Lovel Young

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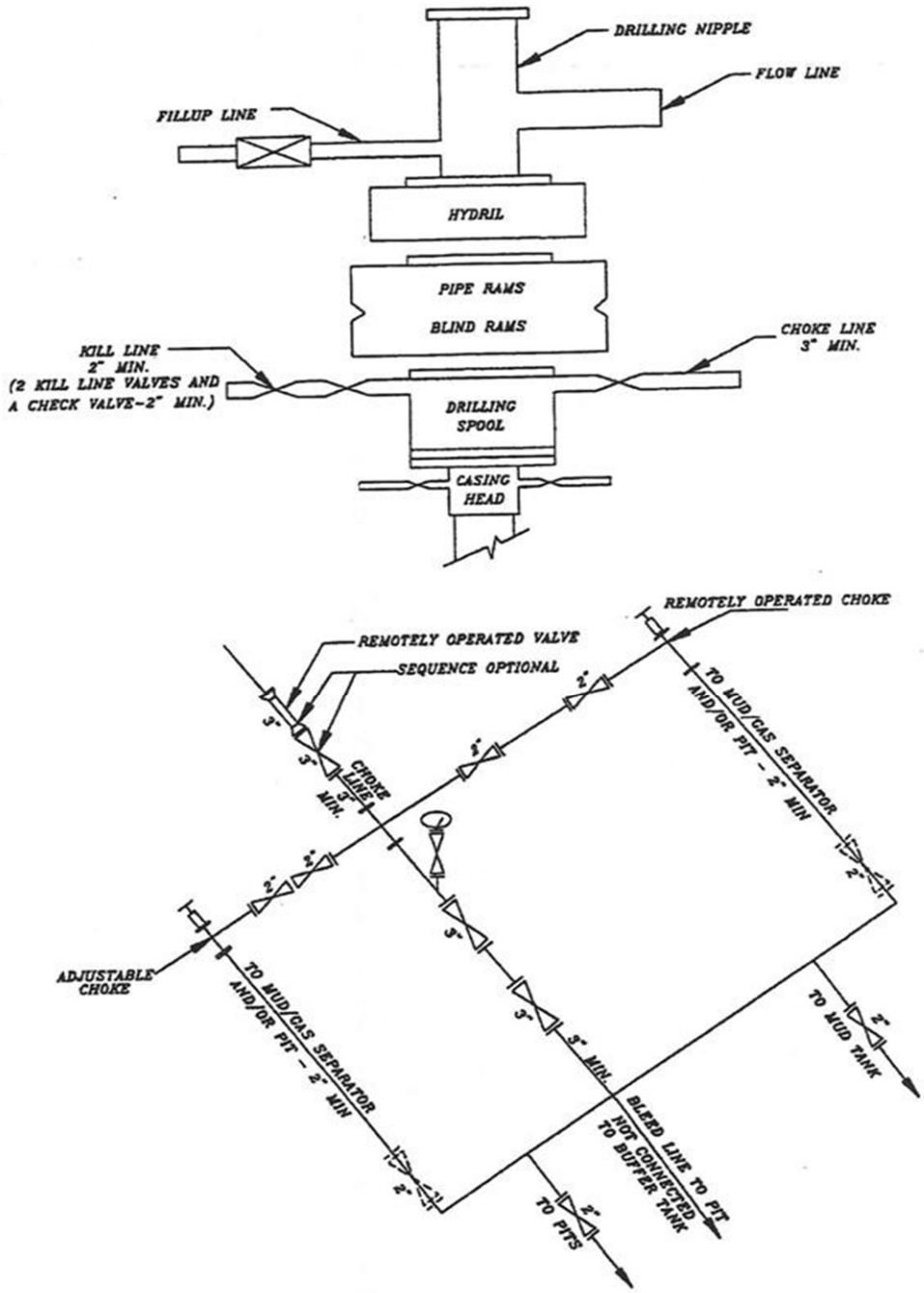
**EXHIBIT A**
**NBU 1022-25F2AS**




**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

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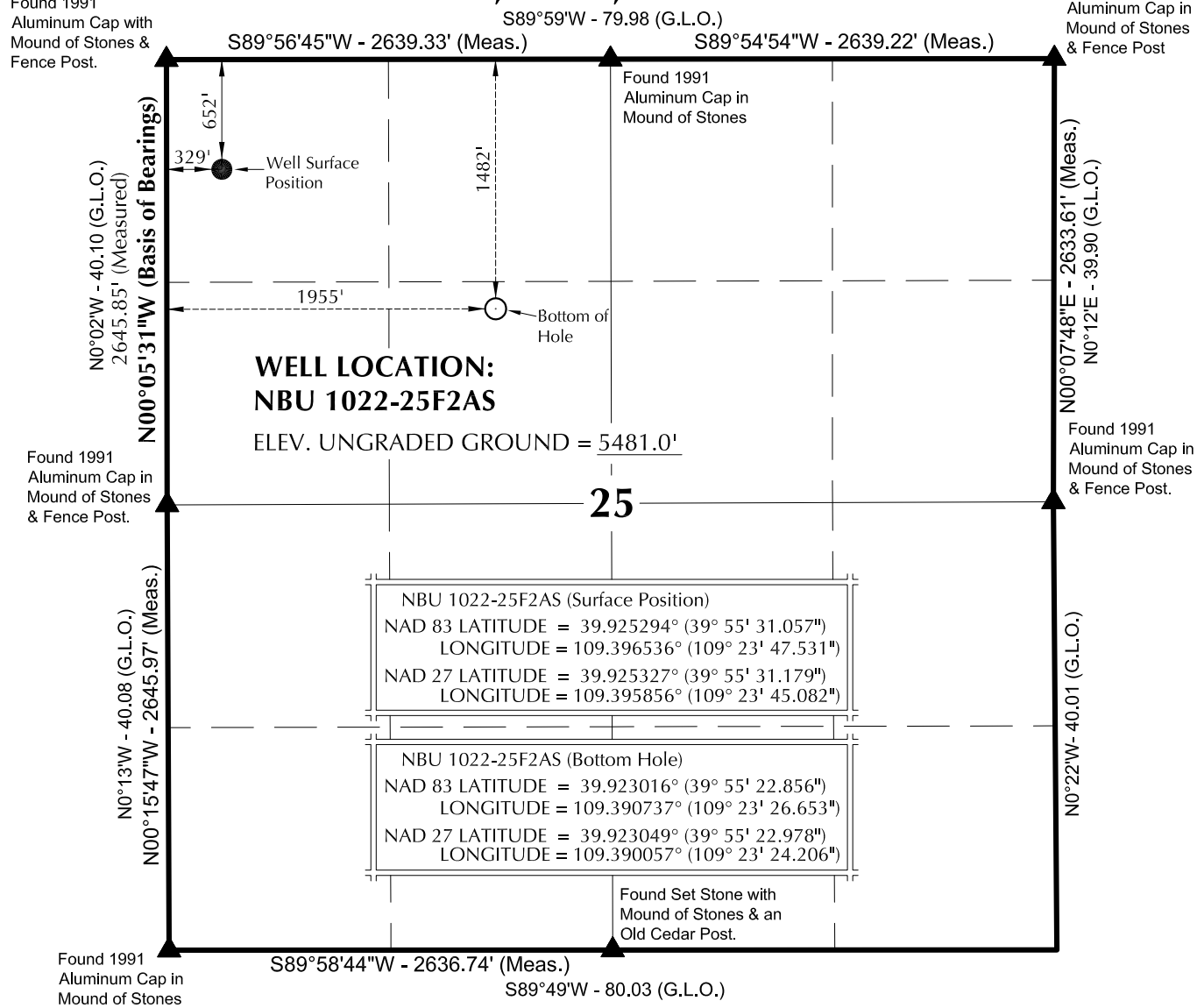
# T10S, R22E, S.L.B.&M.




NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
3. The Bottom of hole bears S63°00'56"E 1826.42' from the Surface Position.
4. Bearings are based on Global Positioning Satellite observations.
5. Basis of elevation is Tri-Sta "Two Water" located in the NW $\frac{1}{4}$ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.

N

1000' 500' 0' 1000'

SCALE

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PROFESSIONAL LAND SURVEYOR No.6028691 JOHN R STAUGH STATE OF UTAH

PROFESSIONAL LAND SURVEYOR
REGISTRATION No. 6028691
STATE OF UTAH 2-25-11

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD: NBU 1022-25D**

**NBU 1022-25F2AS**
**WELL PLAT**
**1482' FNL, 1955' FWL (Bottom Hole)**
**SE $\frac{1}{4}$ NW $\frac{1}{4}$ OF SECTION 25, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.**

609 CONSULTING, LLC
2155 North Main Street
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

**TIMBERLINE** (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE SURVEYED: 02-18-11 | SURVEYED BY: M.S.B. | SHEET NO: 3 |
| DATE DRAWN: 02-22-11 | DRAWN BY: M.W.W. | 3 OF 20 |
| SCALE: 1" = 1000' | Date Last Revised: | |

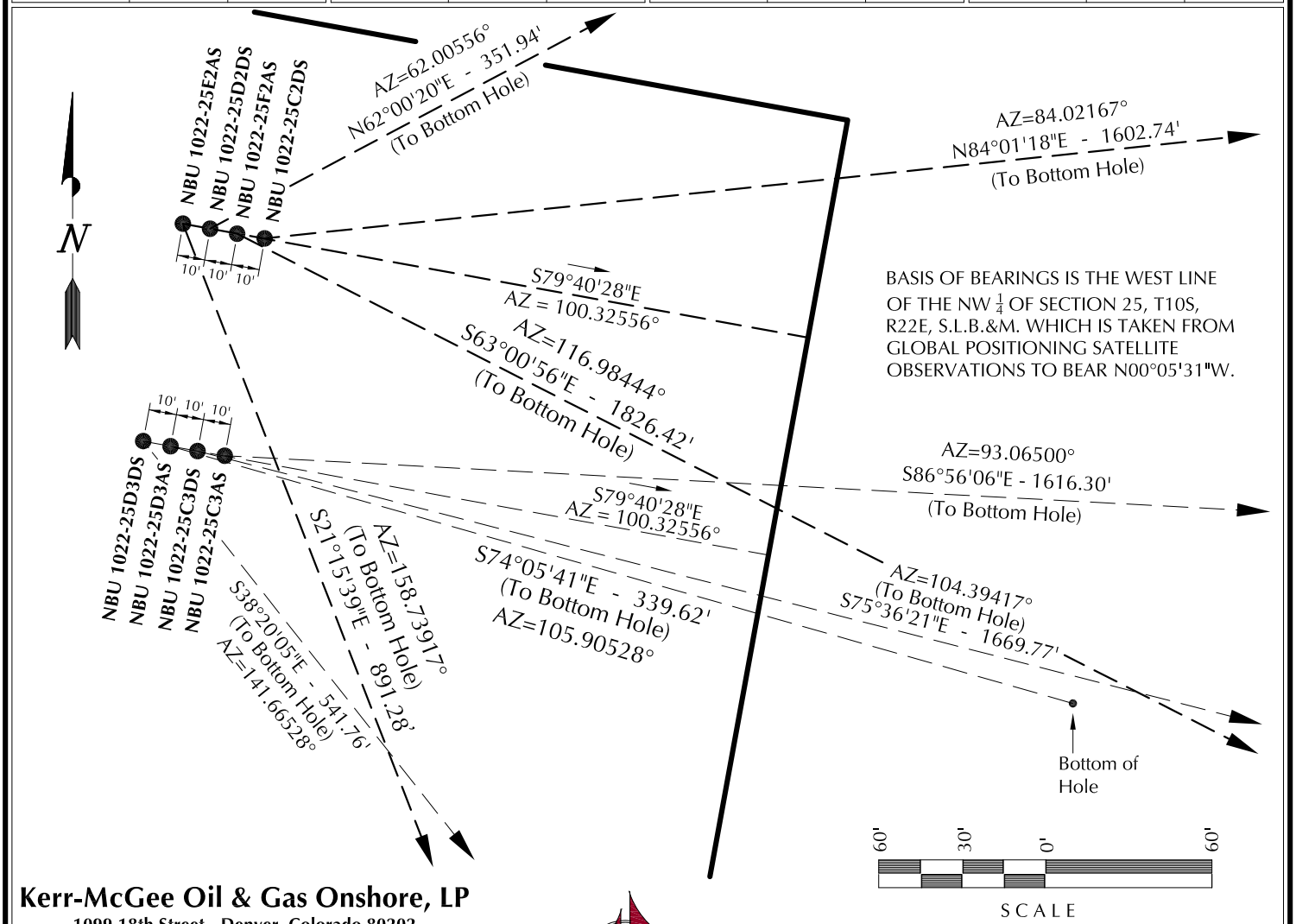
RECEIVED: January 23, 2012

API Well Number: 43047522990000

| WELL NAME | SURFACE POSITION | | | | | BOTTOM HOLE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NAD83 | | NAD27 | | | NAD83 | | NAD27 | | |
| | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES |
| NBU 1022-25E2AS | 39°55'31.093"<br>39.925304° | 109°23'47.782"<br>109.396606° | 39°55'31.215"<br>39.925337° | 109°23'45.334"<br>109.395926° | 648' FNL<br>309' FWL | 39°55'22.884"<br>39.923023° | 109°23'43.643"<br>109.395456° | 39°55'23.006"<br>39.923057° | 109°23'41.195"<br>109.394776° | 1479' FNL<br>631' FWL |
| NBU 1022-25D2DS | 39°55'31.075"<br>39.925299° | 109°23'47.656"<br>109.396571° | 39°55'31.197"<br>39.925332° | 109°23'45.208"<br>109.395891° | 650' FNL<br>319' FWL | 39°55'32.705"<br>39.925751° | 109°23'43.667"<br>109.395463° | 39°55'32.827"<br>39.925785° | 109°23'41.219"<br>109.394783° | 485' FNL<br>630' FWL |
| NBU 1022-25F2AS | 39°55'31.057"<br>39.925294° | 109°23'47.531"<br>109.396536° | 39°55'31.179"<br>39.925327° | 109°23'45.082"<br>109.395856° | 652' FNL<br>329' FWL | 39°55'22.856"<br>39.923016° | 109°23'26.653"<br>109.390737° | 39°55'22.978"<br>39.923049° | 109°23'24.206"<br>109.390057° | 1482' FNL<br>1955' FWL |
| NBU 1022-25C2DS | 39°55'31.040"<br>39.925289° | 109°23'47.403"<br>109.396501° | 39°55'31.162"<br>39.925323° | 109°23'44.955"<br>109.395821° | 653' FNL<br>339' FWL | 39°55'32.677"<br>39.925744° | 109°23'26.946"<br>109.390818° | 39°55'32.799"<br>39.925777° | 109°23'24.499"<br>109.390139° | 488' FNL<br>1933' FWL |
| NBU 1022-25D3DS | 39°55'30.316"<br>39.925088° | 109°23'47.967"<br>109.396658° | 39°55'30.438"<br>39.925122° | 109°23'45.519"<br>109.395978° | 727' FNL<br>295' FWL | 39°55'26.115"<br>39.923921° | 109°23'43.659"<br>109.395461° | 39°55'26.237"<br>39.923955° | 109°23'41.212"<br>109.394781° | 1152' FNL<br>630' FWL |
| NBU 1022-25D3AS | 39°55'30.297"<br>39.925083° | 109°23'47.840"<br>109.396622° | 39°55'30.419"<br>39.925116° | 109°23'45.392"<br>109.395942° | 729' FNL<br>305' FWL | 39°55'29.375"<br>39.924826° | 109°23'43.650"<br>109.395458° | 39°55'29.497"<br>39.924860° | 109°23'41.202"<br>109.394778° | 822' FNL<br>631' FWL |
| NBU 1022-25C3DS | 39°55'30.280"<br>39.925078° | 109°23'47.715"<br>109.396587° | 39°55'30.402"<br>39.925112° | 109°23'45.267"<br>109.395907° | 730' FNL<br>314' FWL | 39°55'26.166"<br>39.923935° | 109°23'26.965"<br>109.390824° | 39°55'26.288"<br>39.923969° | 109°23'24.518"<br>109.390144° | 1147' FNL<br>1931' FWL |
| NBU 1022-25C3AS | 39°55'30.263"<br>39.925073° | 109°23'47.589"<br>109.396552° | 39°55'30.385"<br>39.925107° | 109°23'45.141"<br>109.395872° | 732' FNL<br>324' FWL | 39°55'29.397"<br>39.924832° | 109°23'26.878"<br>109.390800° | 39°55'29.519"<br>39.924866° | 109°23'24.431"<br>109.390120° | 820' FNL<br>1938' FWL |

**RELATIVE COORDINATES** - From Surface Position to Bottom Hole

| WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NBU 1022-25E2AS | -830.6' | 323.2' | NBU 1022-25D2DS | 165.2' | 310.8' | NBU 1022-25F2AS | -828.7' | 1,627.6' | NBU 1022-25C2DS | 166.9' | 1,594.0' |
| **WELL NAME** | **NORTH** | **EAST** | **WELL NAME** | **NORTH** | **EAST** | **WELL NAME** | **NORTH** | **EAST** | **WELL NAME** | **NORTH** | **EAST** |
| NBU 1022-25D3DS | -425.0' | 336.0' | NBU 1022-25D3AS | -93.1' | 326.6' | NBU 1022-25C3DS | -415.1' | 1,617.4' | NBU 1022-25C3AS | -86.4' | 1,614.0' |




**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

## WELL PAD - NBU 1022-25D

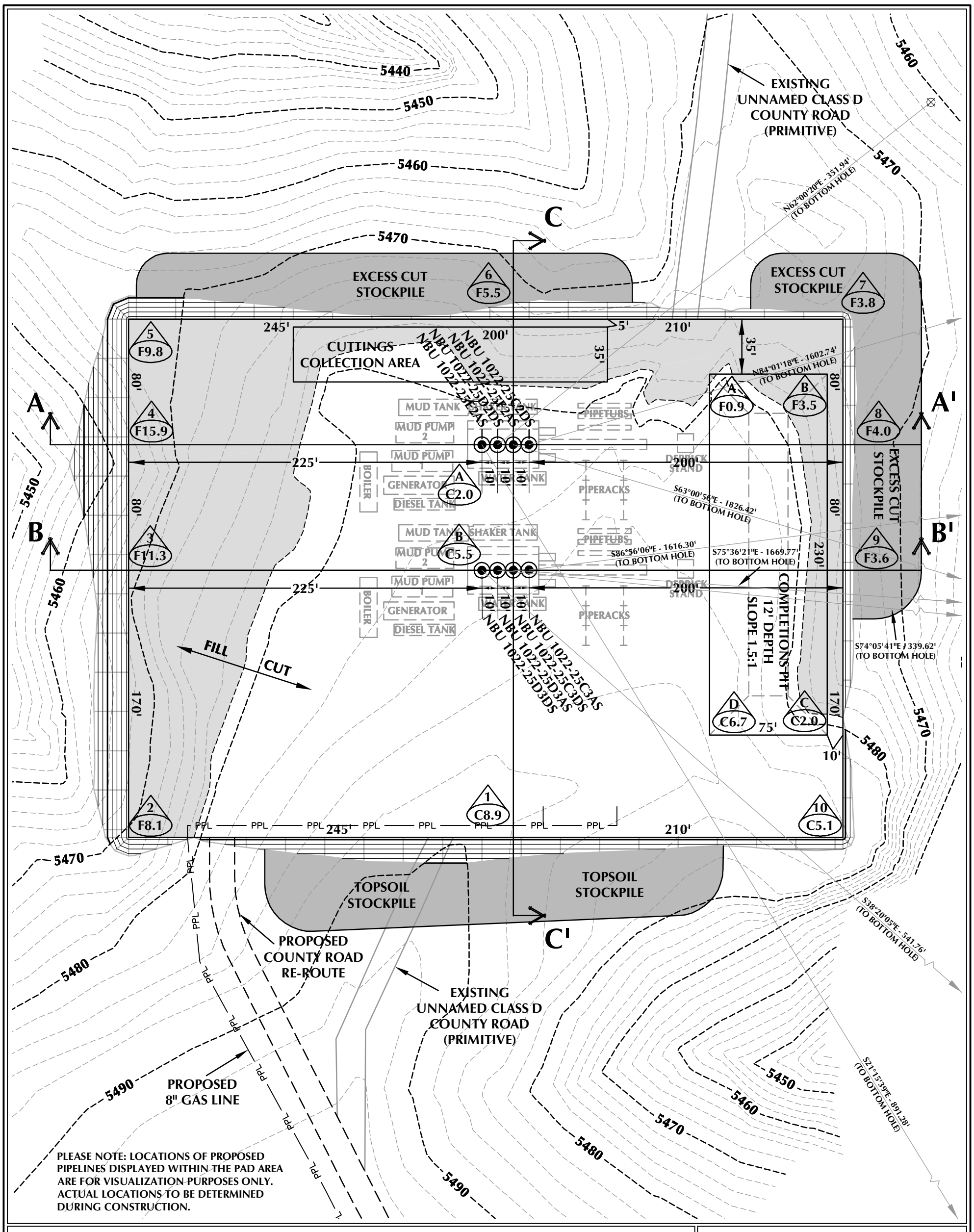
**WELL PAD INTERFERENCE PLAT**
WELLS - NBU 1022-25E2AS, NBU 1022-25D2DS, NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS, NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

609 CONSULTING, LLC
2155 North Main Street
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

**TIMBERLINE** (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE SURVEYED: 02-18-11 | SURVEYED BY: M.S.B. | SHEET NO: |
| DATE DRAWN: 02-22-11 | DRAWN BY: M.W.W. | 9 |
| SCALE: 1" = 60' | Date Last Revised: | 9 OF 20 |

RECEIVED: January 23, 2012




## WELL PAD - NBU 1022-25D DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5484.5'
FINISHED GRADE ELEVATION = 5479.0'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.87 ACRES
TOTAL DISTURBANCE AREA = 4.67 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD QUANTITIES**
TOTAL CUT FOR WELL PAD = 14,767 C.Y.
TOTAL FILL FOR WELL PAD = 11,806 C.Y.
TOPSOIL @ 6" DEPTH = 3,123 C.Y.
EXCESS MATERIAL = 2,961 C.Y.

**COMPLETIONS PIT QUANTITIES**
TOTAL CUT FOR COMPLETIONS PIT
+/- 5,420 C.Y.
COMPLETIONS PIT CAPACITY (2' OF FREEBOARD)
+/- 20,250 BARRELS

**CUTTINGS COLLECTION AREA QUANTITIES**
TOTAL CUT FOR CUTTINGS COLLECTION AREA
+/- 745 C.Y.

**WELL PAD LEGEND**
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE

HORIZONTAL 0 30' 60' 1" = 60'
2' CONTOURS

WELL PAD - NBU 1022-25D

WELL PAD - LOCATION LAYOUT
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS,
NBU 1022-25D3DS, NBU 1022-25D3AS,
NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
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| SCALE: 1"=60' | DATE: 3/9/11 | SHEET NO: |
|---|---|---|
| REVISED: | GRB 11/11/11 | 10 10 OF 20 |

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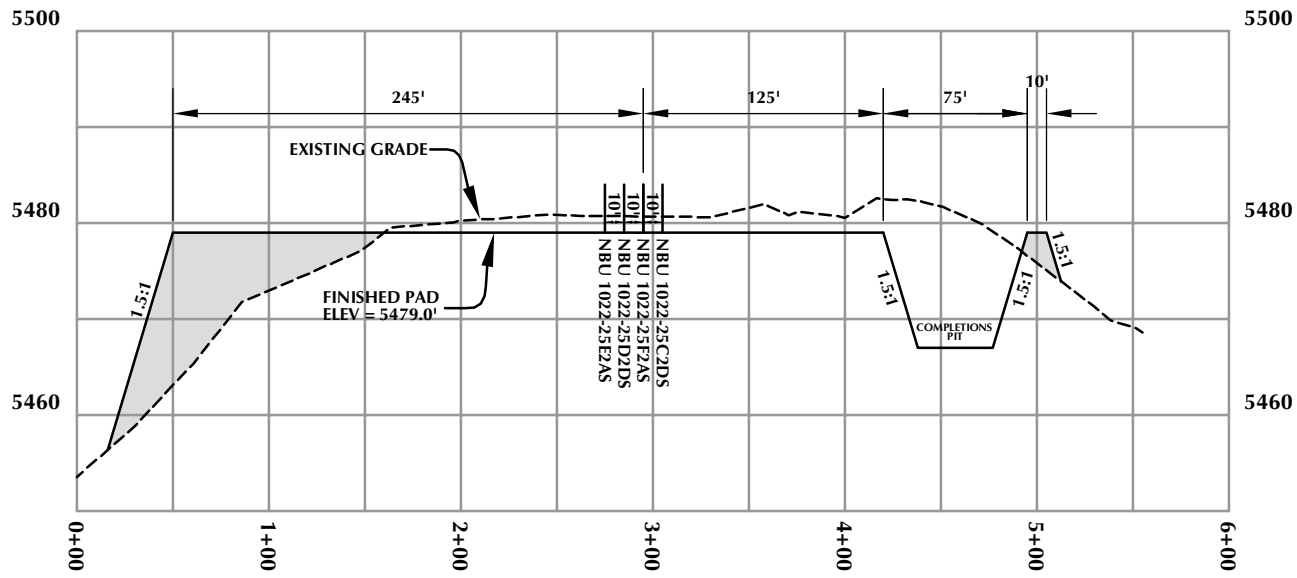
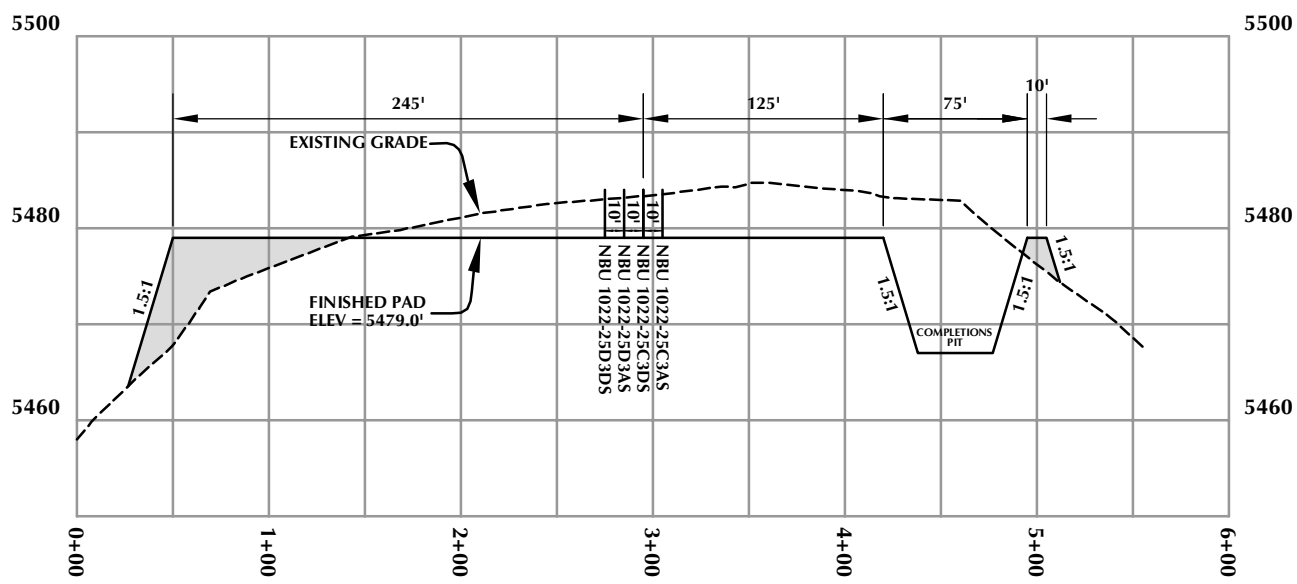
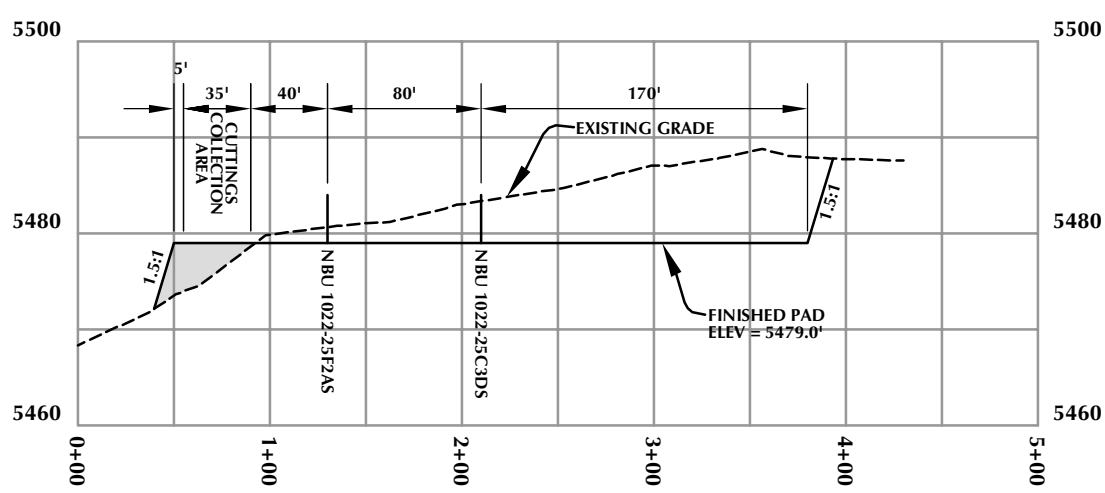



## CROSS SECTION A-A'




## CROSS SECTION B-B'




## CROSS SECTION C-C'

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-25D

WELL PAD - CROSS SECTIONS
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS,
NBU 1022-25D3DS, NBU 1022-25D3AS,
NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

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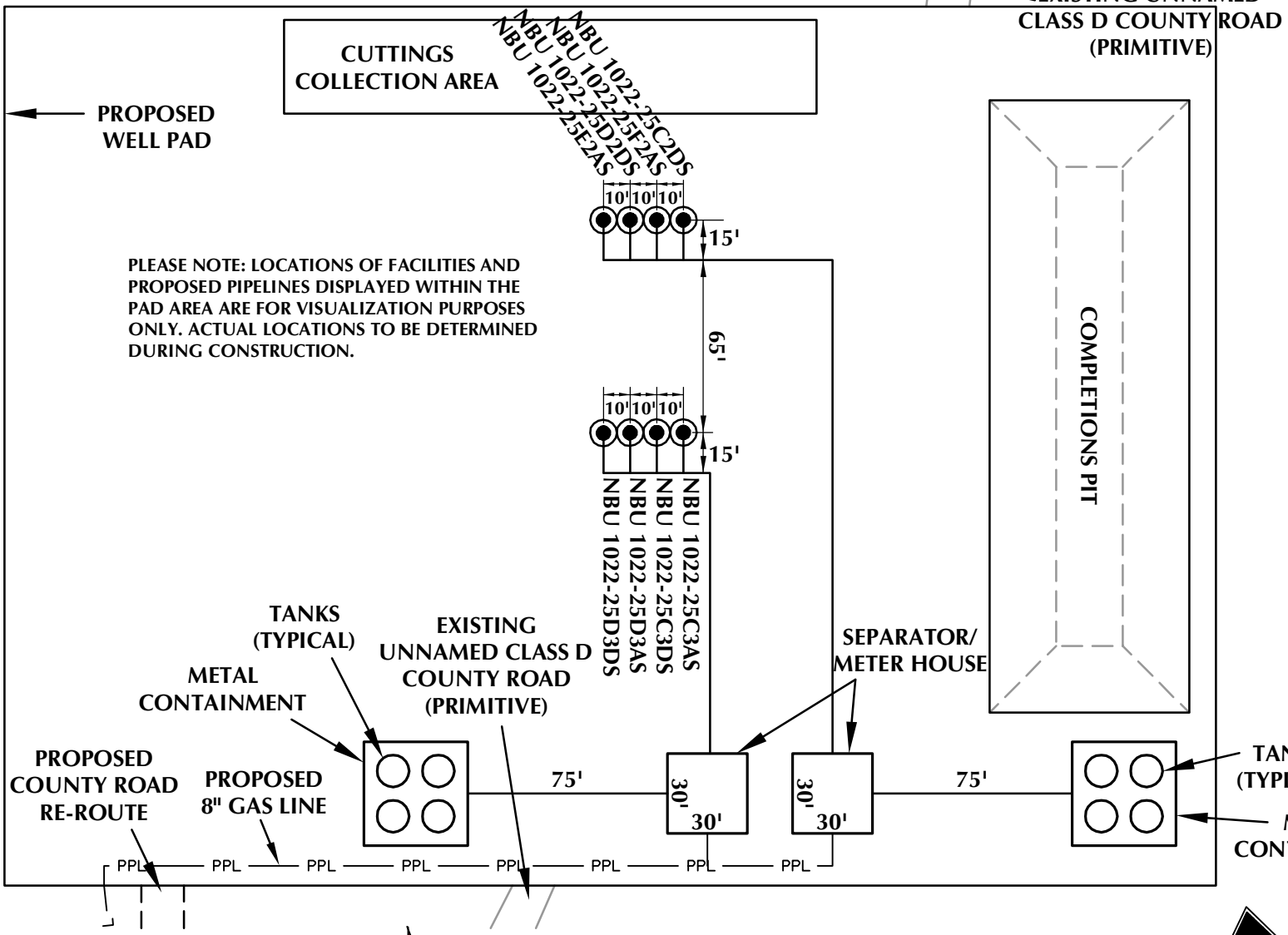
HORIZONTAL 0 50' 100' 1" = 100'
VERTICAL 0 10' 20' 1" = 20'

| Scale: 1"=100' | Date: 3/4/11 | SHEET NO: |
|---|---|---|
| REVISED: | GRB 11/11/11 | 11 11 OF 20 |

K:\ANADARKO\2010\2010_58_NBU_1022-25D\DWG\NBU 1022-25D PAD\NBU_1022-25D_2-RIG_LAYOUT_20110217.dwg, 11/11/2013 3:24:38 PM, andy

RECEIVED: January 23, 2012




**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

**WELL PAD - FACILITIES DIAGRAM**
**NBU 1022-25E2AS, NBU 1022-25D2DS,**
**NBU 1022-25F2AS, NBU 1022-25C2DS,**
**NBU 1022-25D3DS, NBU 1022-25D3AS,**
**NBU 1022-25C3DS & NBU 1022-25C3AS**
**LOCATED IN SECTION 25, T10S, R22E**
**S.L.B.&M., UINTAH COUNTY, UTAH**

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2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE

HORIZONTAL 0 30' 60' 1" = 60'

TIMBERLINE (435) 789-1365
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| | | |
|---|---|---|
| Scale: 1"=60' | Date: 3/9/11 | SHEET NO: |
| REVISED: | GRB 11/11/11 | 12 12 OF 20 |

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RECEIVED: January 23, 2012

API Well Number: 43047522990000

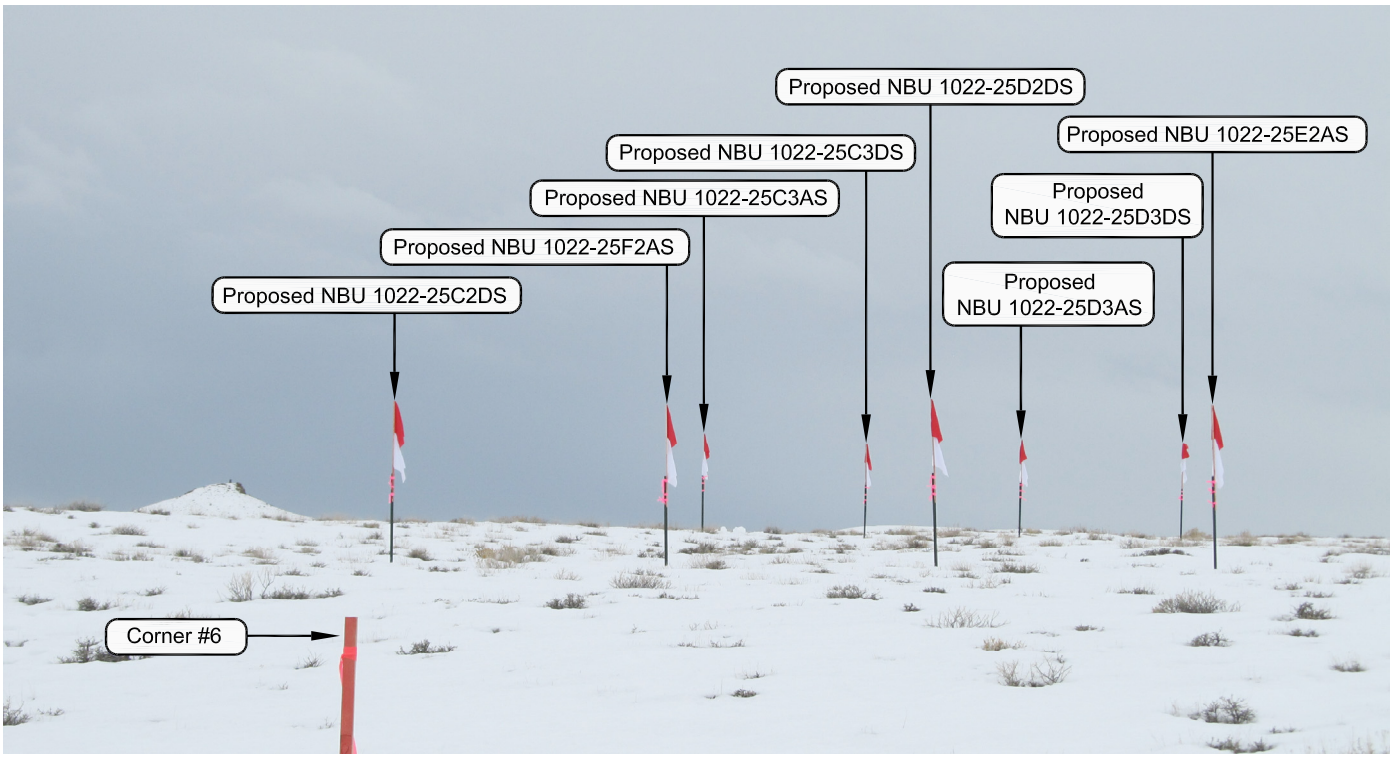


**PHOTO VIEW: FROM CORNER #6 TO LOCATION STAKE** **CAMERA ANGLE: SOUTHERLY**

**PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD** **CAMERA ANGLE: NORTHWESTERLY**

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

LOCATION PHOTOS
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS,
NBU 1022-25D3DS, NBU 1022-25D3AS,
NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH.

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CONSULTING, LLC
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Sheridan WY 82801
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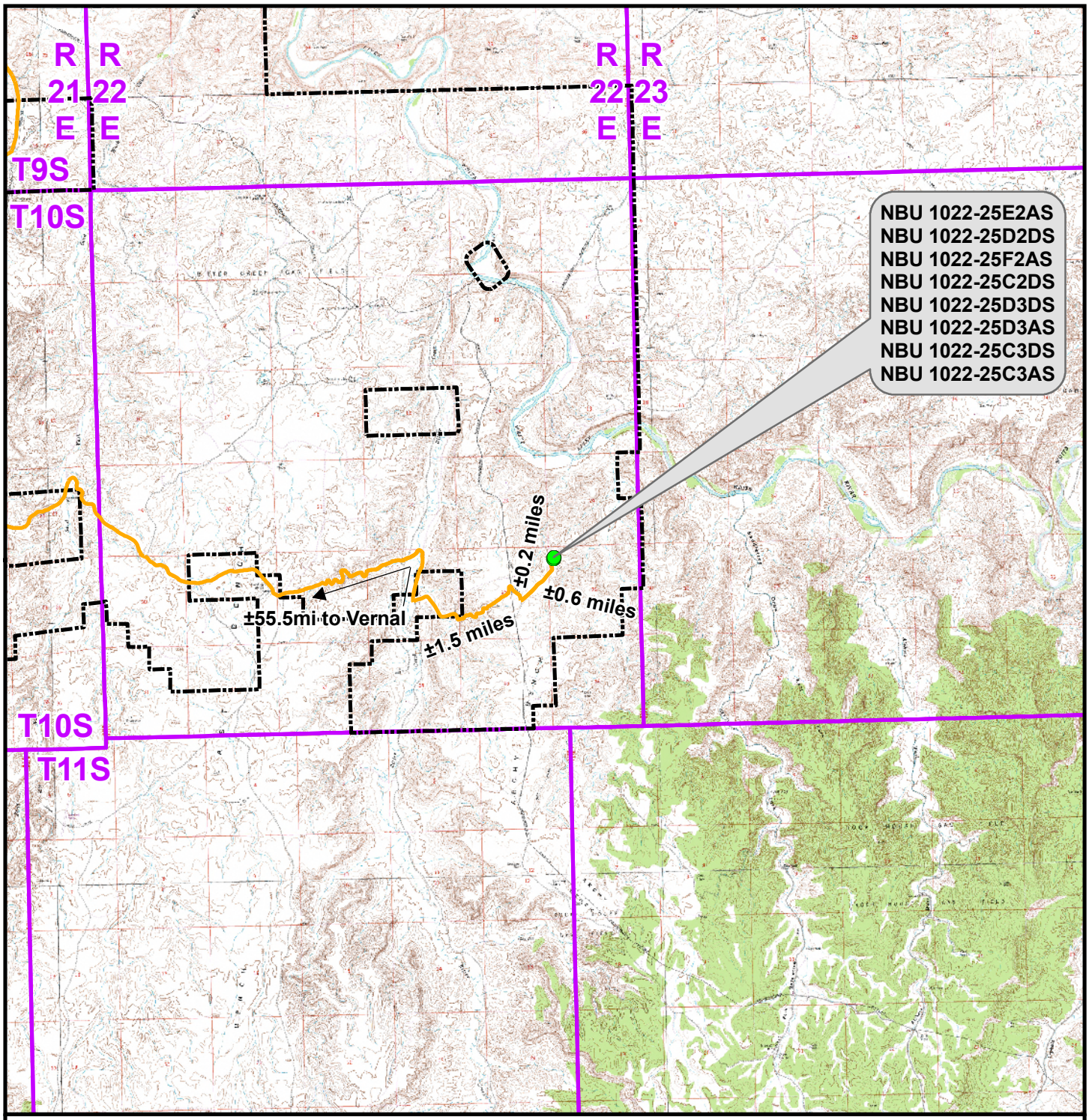
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE PHOTOS TAKEN: 02-18-11 | PHOTOS TAKEN BY: M.S.B. | SHEET NO: |
| DATE DRAWN: 02-22-11 | DRAWN BY: M.W.W. | 13 |
| Date Last Revised: | | 13 OF 20 |

RECEIVED: January 23, 2012




**Legend**

Distance From Well Pad - NBU 1022-25D To Unit Boundary: ±4,101ft

- Proposed Well Location
- Natural Buttes Unit Boundary
- Access Route - Proposed

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

TOPO A
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
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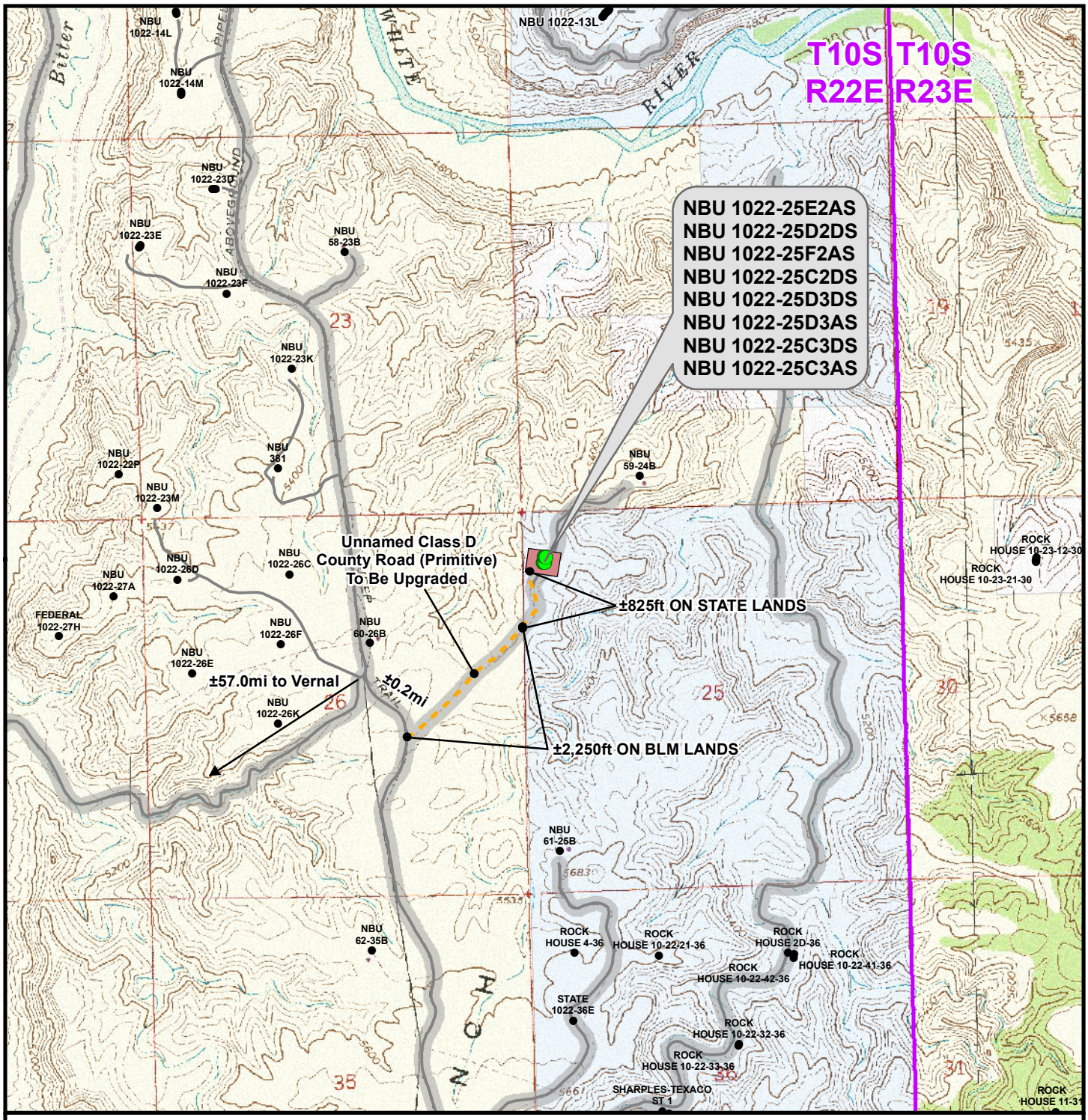
| | | | |
|---|---|---|---|
| Scale: 1:100,000 | NAD83 USP Central | | Sheet No: 14 |
| Drawn: CPS | Date: 4 Mar 2011 | | 14 of 20 |
| Revised: | Date: | | |

RECEIVED: January 23, 2012

API Well Number: 43047522990000




**Legend**

Total Proposed Road Length On State Lands: ±825ft

- Well - Proposed
- Well - Existing
- Well Pad
- Road - Proposed
- Road - Existing
- County Road
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

TOPO B
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
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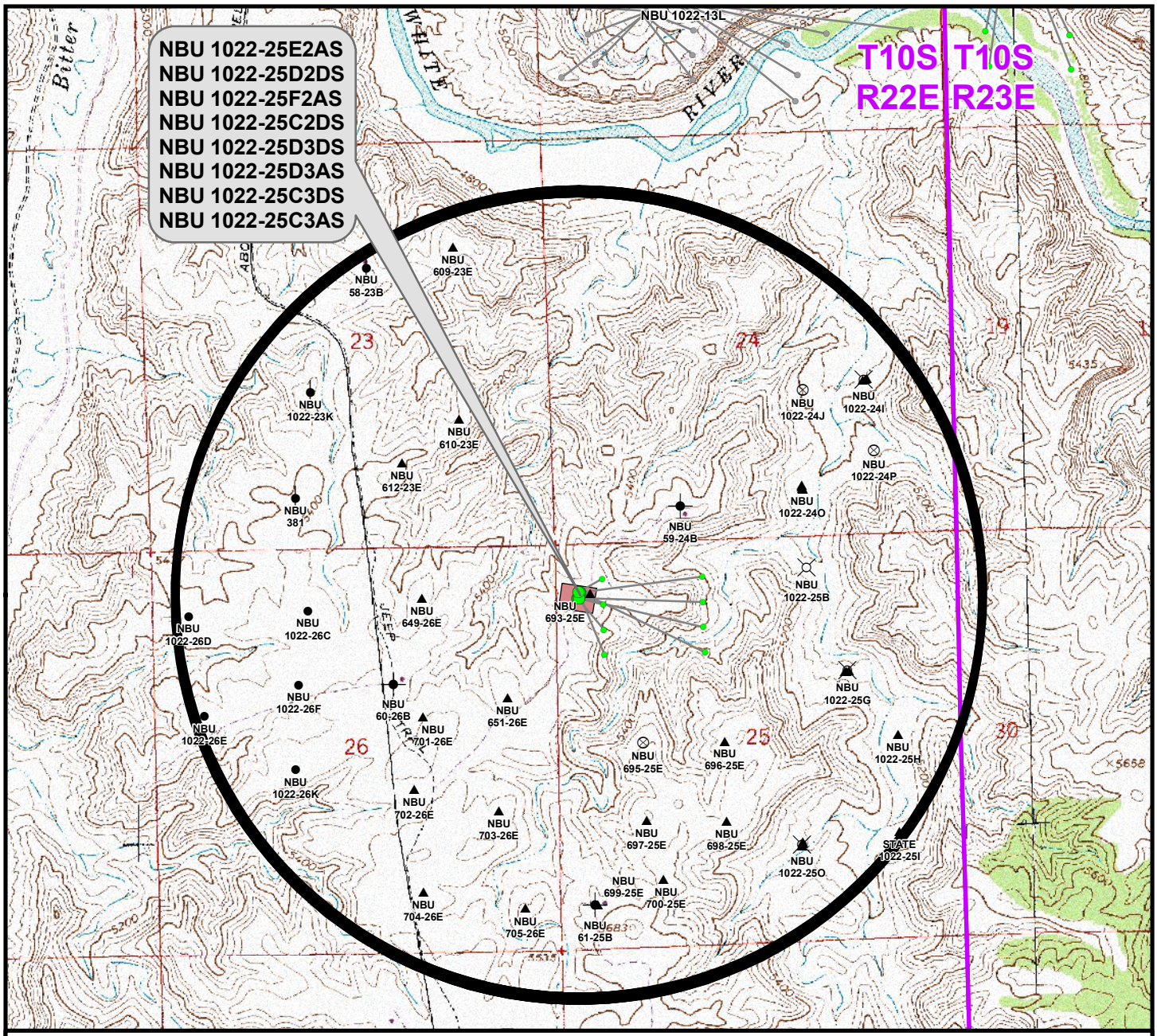
N

| | | |
|---|---|---|
| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 15 |
| Drawn: CPS | Date: 9 Mar 2011 | 15 of 20 |
| Revised: | Date: | |

RECEIVED: January 23, 2012

API Well Number: 43047522990000




| Proposed Well | Nearest Well Bore | Footage | Proposed Well | Nearest Well Bore | Footage |
|---|---|---|---|---|---|
| NBU 1022-25E2AS | NBU 59-24B | 2,188ft | NBU 1022-25D3DS | NBU 59-24B | 1,907ft |
| NBU 1022-25D2DS | NBU 59-24B | 1,396ft | NBU 1022-25D3AS | NBU 59-24B | 1,639ft |
| NBU 1022-25F2AS | NBU 59-24B | 1,951ft | NBU 1022-25C3DS | NBU 59-24B | 1,616ft |
| NBU 1022-25C2DS | NBU 59-24B | 973ft | NBU 1022-25C3AS | NBU 59-24B | 1,296ft |

Well locations derived from State of Utah, Dept. of Natural Resources, Division of Oil, Gas and Mining

**Legend**

- Well - Proposed
- Well Path
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Pad
- Well - 1 Mile Radius
- Producing
- Active
- Spudded (Drilling commenced: Not yet completed)
- Approved permit (APD); not yet spudded
- New Permit (Not yet approved or drilled)
- Inactive
- Drilling Operations Suspended
- Temporarily-Abandoned
- Shut-In
- Plugged and Abandoned
- Location Abandoned
- Dry hole marker, buried
- Returned APD (Unapproved)

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

TOPO C
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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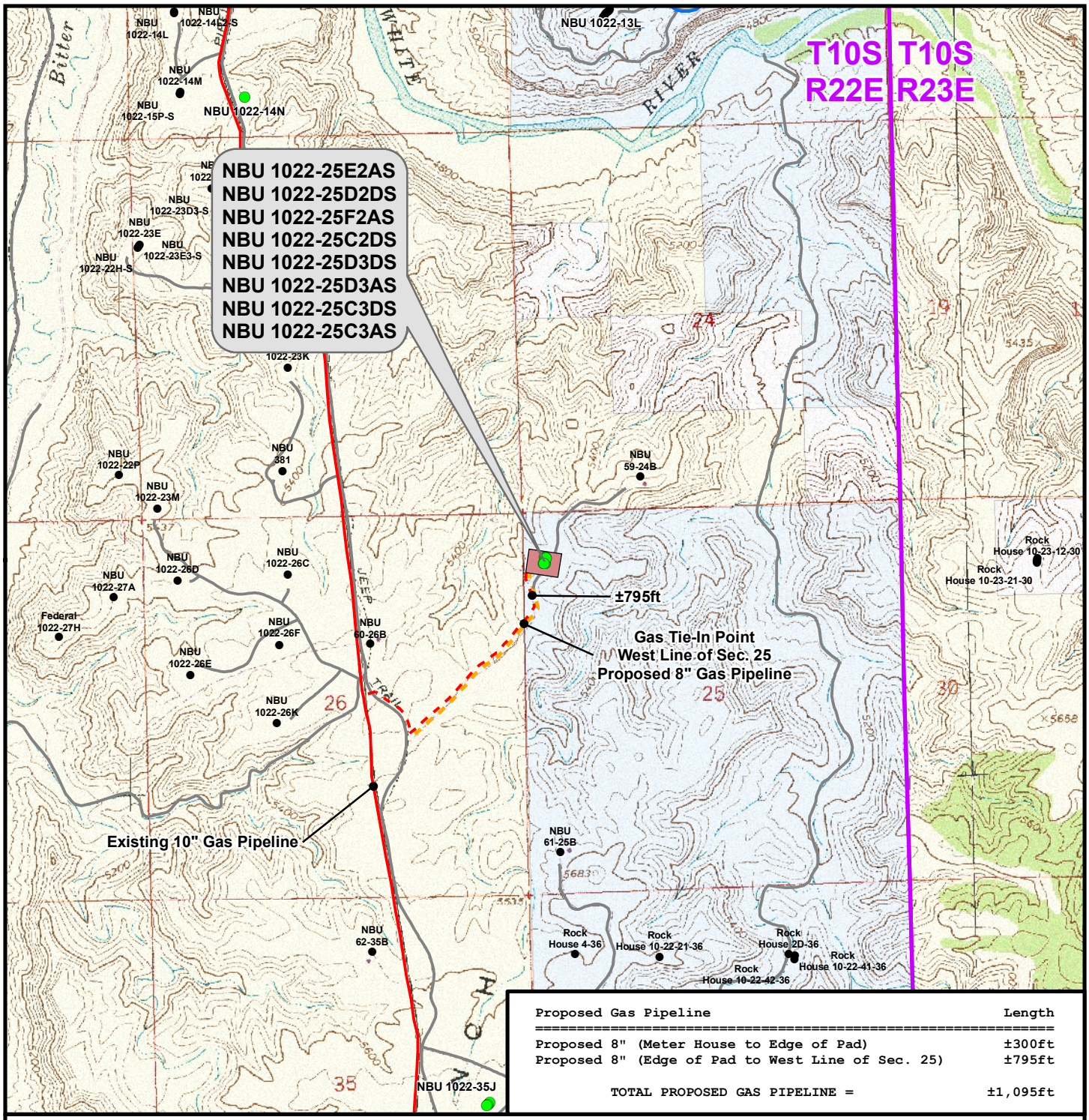
N

| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 16 |
|---|---|---|
| Drawn: CPS | Date: 4 Mar 2011 | 16 of 20 |
| Revised: | Date: | |

RECEIVED: January 23, 2012




| Proposed Gas Pipeline | Length |
|---|---|
| Proposed 8" (Meter House to Edge of Pad) | ±300ft |
| Proposed 8" (Edge of Pad to West Line of Sec. 25) | ±795ft |
| TOTAL PROPOSED GAS PIPELINE = | ±1,095ft |

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

## WELL PAD - NBU 1022-25D

TOPO D
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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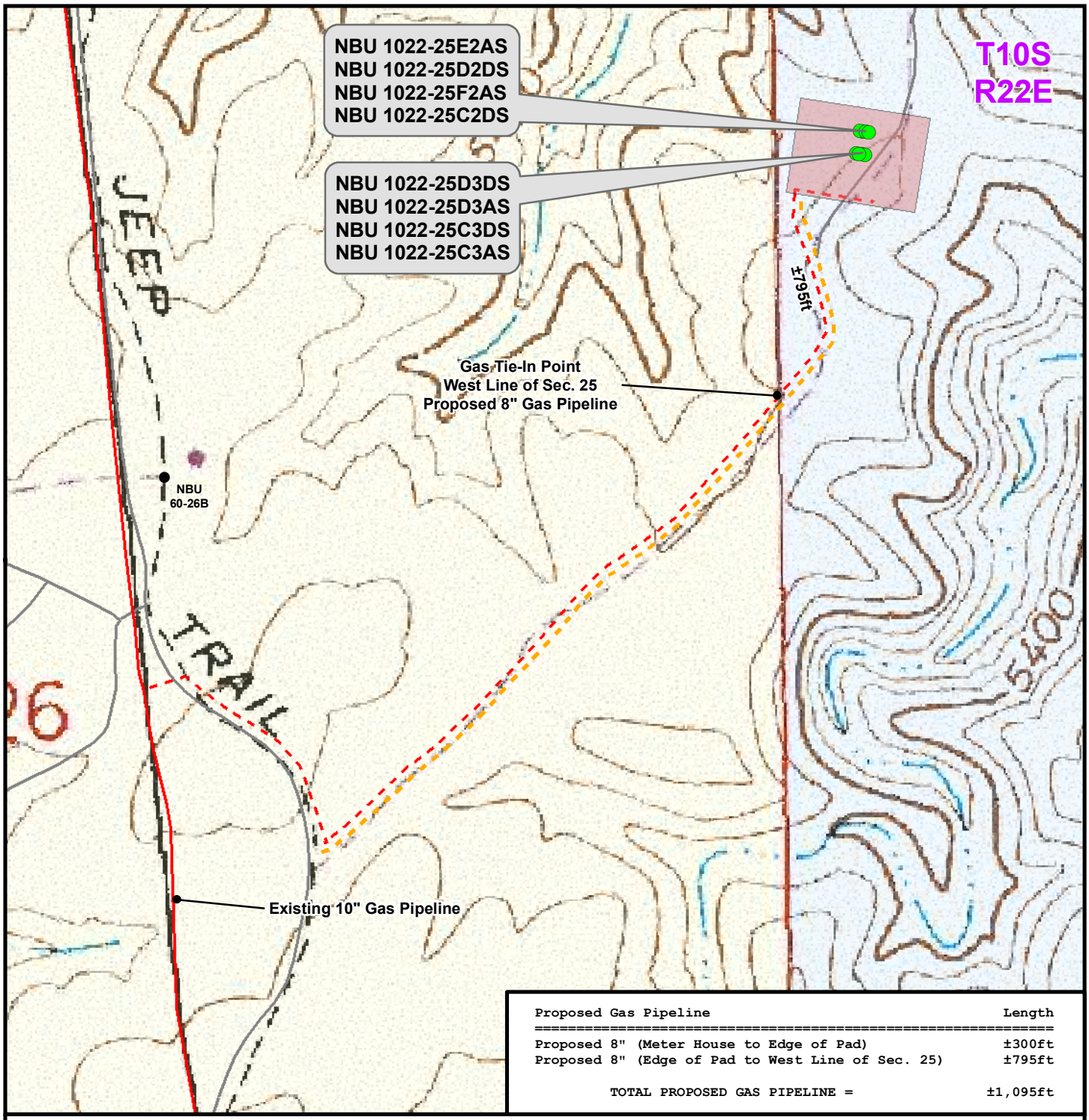
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 17 |
|---|---|---|
| Drawn: TL | Date: 9 Mar 2011 | 17 of 20 |
| Revised: CPS | Date: 11 Nov 2011 | |

RECEIVED: January 23, 2012

API Well Number: 43047522990000




| Proposed Gas Pipeline | Length |
|---|---|
| Proposed 8" (Meter House to Edge of Pad) | ±300ft |
| Proposed 8" (Edge of Pad to West Line of Sec. 25) | ±795ft |
| TOTAL PROPOSED GAS PIPELINE = | ±1,095ft |

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-25D**

TOPO D2 (PAD & PIPELINE DETAIL)
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

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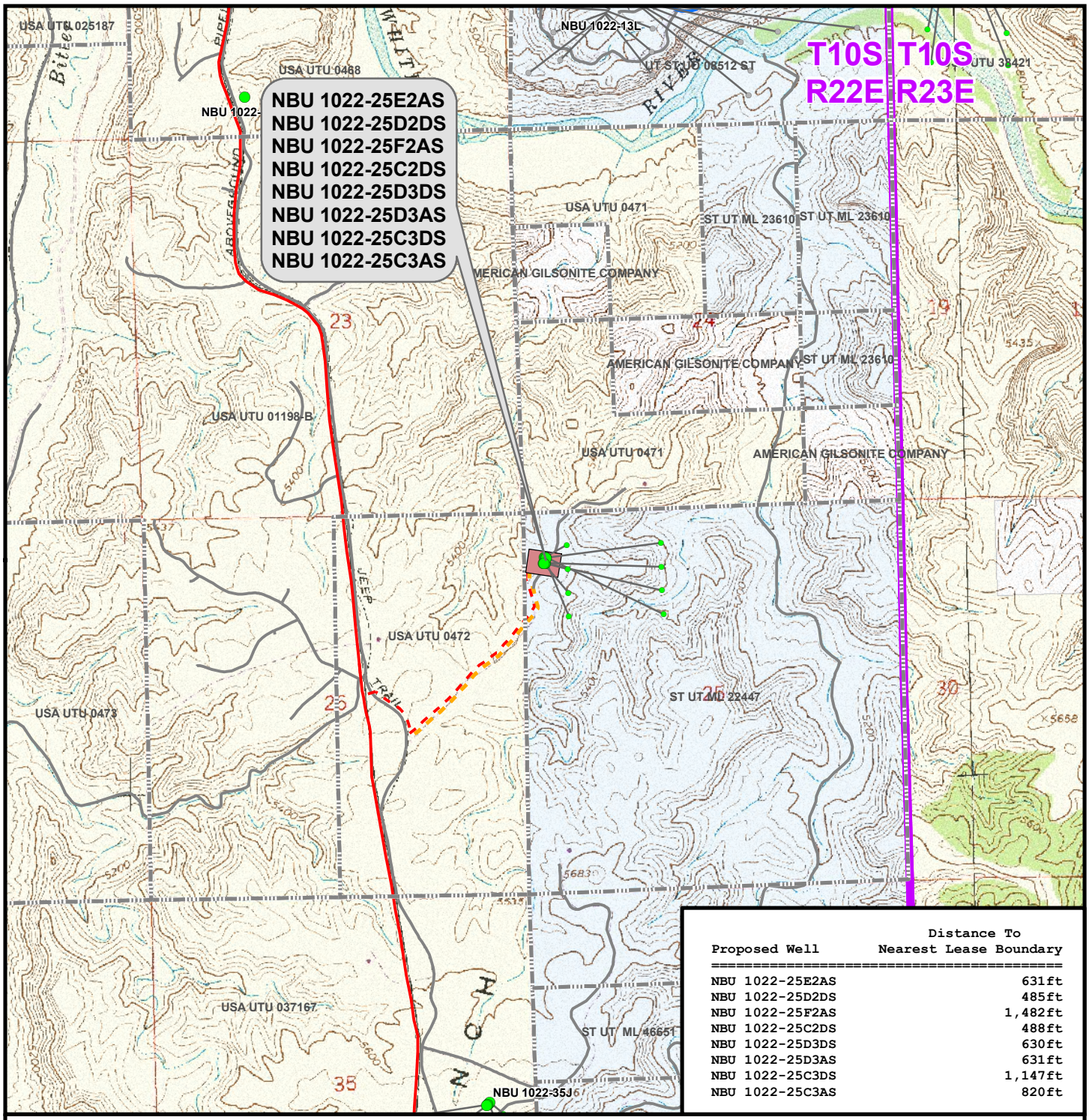
| Scale: 1" = 500ft | NAD83 USP Central | Sheet No: 18 |
|---|---|---|
| Drawn: TL | Date: 9 Mar 2011 | 18 of 20 |
| Revised: CPS | Date: 11 Nov 2011 | |

RECEIVED: January 23, 2012

API Well Number: 43047522990000




| Proposed Well | Distance To Nearest Lease Boundary |
|---|---|
| NBU 1022-25E2AS | 631ft |
| NBU 1022-25D2DS | 485ft |
| NBU 1022-25F2AS | 1,482ft |
| NBU 1022-25C2DS | 488ft |
| NBU 1022-25D3DS | 630ft |
| NBU 1022-25D3AS | 631ft |
| NBU 1022-25C3DS | 1,147ft |
| NBU 1022-25C3AS | 820ft |

**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- Lease Boundary
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street, Denver, Colorado 80202

## WELL PAD - NBU 1022-25D

TOPO E
NBU 1022-25E2AS, NBU 1022-25D2DS,
NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,
NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS
LOCATED IN SECTION 25, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
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| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 19 |
|---|---|---|
| Drawn: CPS | Date: 4 Mar 2011 | 19 of 20 |
| Revised: CPS | Date: 11 Nov 2011 | |

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**Kerr-McGee Oil & Gas Onshore, LP**
**WELL PAD - NBU 1022-25D**
**WELLS – NBU 1022-25E2AS, NBU 1022-25D2DS,**
**NBU 1022-25F2AS, NBU 1022-25C2DS, NBU 1022-25D3DS,**
**NBU 1022-25D3AS, NBU 1022-25C3DS & NBU 1022-25C3AS**
**Section 25, T10S, R22E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 23.8 miles to the intersection of the Bitter Creek Road (County B Road 4120). Exit left and proceed in a southeasterly direction along the Bitter Creek Road approximately 8.2 miles to the junction of the Bitter Creek Cut Off Road (County B Road 4140). Exit left and proceed in an easterly direction along the Bitter Creek Cut Off Road approximately 1.5 miles to the junction of the Archy Bench Road (County B Road 4150). Exit right and proceed in a southeasterly direction along the Archy Bench Road approximately 0.2 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road to be upgraded approximately 3075 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 57.8 miles in a southerly direction.



RECEIVED: January 23, 2012

# US ROCKIES REGION PLANNING

**UTAH - UTM (feet), NAD27, Zone 12N**
**UINTAH_NBU 1022-25D PAD**
**NBU 1022-25F2AS**

**NBU 1022-25F2AS**

**Plan: NBU 1022-25F2AS (wp01)**

# Standard Planning Report

**22 November, 2011**

RECEIVED: January 23, 2012

API Well Number: 43047522990000

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: UINTAH_NBU 1022-25D PAD
Well: NBU 1022-25F2AS
Wellbore: NBU 1022-25F2AS
Section:
SHL:
Design: NBU 1022-25F2AS (wp01)
Latitude: 39.925327
Longitude: -109.395856
GL: 5485.00
KB: RKB + gl @ 5485.00ft

**FORMATION TOP DETAILS**

| TVDPath | MDPath | Formation |
|---|---|---|
| 1662.00 | 1706.71 | MAHOGANY MARKER / GREEN RIVER |
| 3904.00 | 4092.60 | WASATCH / WASATCH |
| 6038.00 | 6337.15 | MESAVERDE / MESAVERDE |

**WELL DETAILS: NBU 1022-25F2AS**

Ground Level: 5485.00

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 14502894.86 | 2090169.96 | 39.925327 | -109.395856 | |

**CASING DETAILS**

| TVD | MD | Name | Size |
|---|---|---|---|
| 2112.00 | 2185.59 | 8-5/8 | 8-5/8 |

T M

Azimuths to True North
Magnetic North: 10.96°

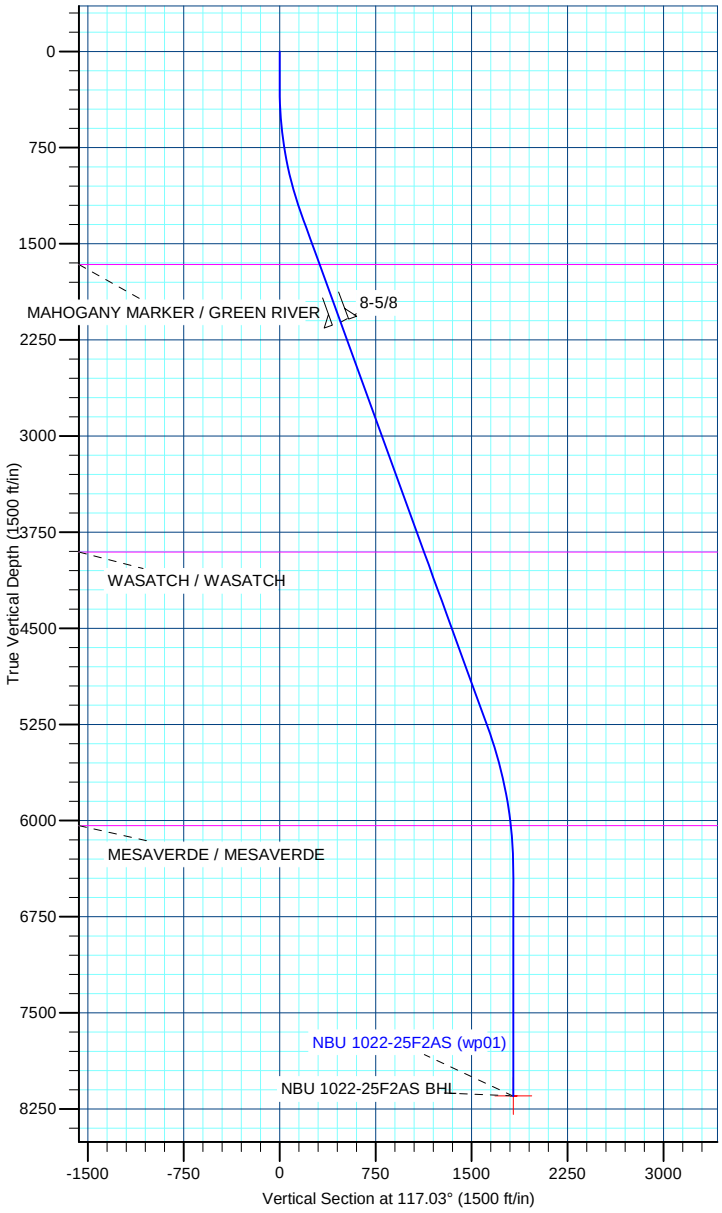
Magnetic Field
Strength: 52255.2snT
Dip Angle: 65.82°
Date: 11/22/2011
Model: IGRF2010

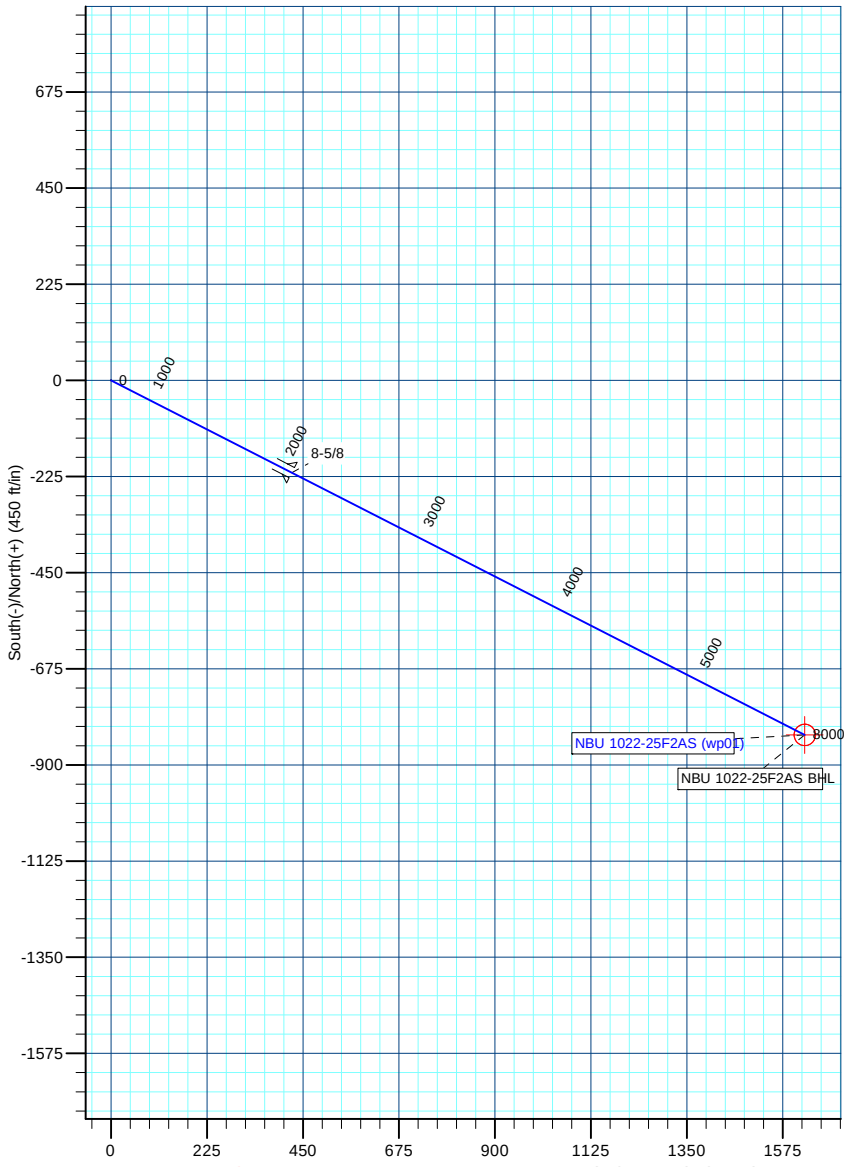
**DESIGN TARGET DETAILS**

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| NBU 1022-25F2AS BHL | 8148.00 | -829.63 | 1626.26 | 14502094.59 | 2091810.86 | 39.923049 | -109.390057 | Circle (Radius: 25.00) |

## 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 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1300.00 | 20.00 | 117.03 | 1279.82 | -78.51 | 153.90 | 2.00 | 117.03 | 172.77 |
| 5555.41 | 20.00 | 117.03 | 5278.59 | -739.90 | 1450.37 | 0.00 | 0.00 | 1628.20 |
| 6698.27 | 0.00 | 0.00 | 6398.38 | -829.63 | 1626.26 | 1.75 | 180.00 | 1825.65 |
| 8447.88 | 0.00 | 0.00 | 8148.00 | -829.63 | 1626.26 | 0.00 | 0.00 | 1825.65 |




RECEIVED: January 23, 2012

# Anadarko Petroleum Corp

## Planning Report

| | | | |
|---|---|---|---|
| **Database:** | edmp | **Local Co-ordinate Reference:** | Well NBU 1022-25F2AS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | RKB + gl @ 5485.00ft |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | RKB + gl @ 5485.00ft |
| **Site:** | UINTAH_NBU 1022-25D PAD | **North Reference:** | True |
| **Well:** | NBU 1022-25F2AS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-25F2AS | | |
| **Design:** | NBU 1022-25F2AS (wp01) | | |

**Project** UTAH - UTM (feet), NAD27, Zone 12N

| | | | |
|---|---|---|---|
| **Map System:** | Universal Transverse Mercator (US Survey Feet) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 12N (114 W to 108 W) | | |

**Site** UINTAH_NBU 1022-25D PAD

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,502,894.87 usft | **Latitude:** | 39.925327 |
| **From:** | Lat/Long | **Easting:** | 2,090,169.96 usft | **Longitude:** | -109.395856 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 1.03 ° |

**Well** NBU 1022-25F2AS

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 14,502,894.87 usft | **Latitude:** | 39.925327 |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,090,169.96 usft | **Longitude:** | -109.395856 |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | | **Ground Level:** | 5,485.00 ft |

**Wellbore** NBU 1022-25F2AS

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 11/22/2011 | 10.96 | 65.82 | 52,255 |

**Design** NBU 1022-25F2AS (wp01)

| | | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 117.03 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | 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 | |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,300.00 | 20.00 | 117.03 | 1,279.82 | -78.51 | 153.90 | 2.00 | 2.00 | 0.00 | 117.03 | |
| 5,555.41 | 20.00 | 117.03 | 5,278.59 | -739.90 | 1,450.37 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,698.27 | 0.00 | 0.00 | 6,398.38 | -829.63 | 1,626.26 | 1.75 | -1.75 | 0.00 | 180.00 | |
| 8,447.89 | 0.00 | 0.00 | 8,148.00 | -829.63 | 1,626.26 | 0.00 | 0.00 | 0.00 | 0.00 | NBU 1022-25F2AS B |



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# Anadarko Petroleum Corp

## Planning Report

| | | | |
|---|---|---|---|
| **Database:** | edmp | **Local Co-ordinate Reference:** | Well NBU 1022-25F2AS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | RKB + gl @ 5485.00ft |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | RKB + gl @ 5485.00ft |
| **Site:** | UINTAH_NBU 1022-25D PAD | **North Reference:** | True |
| **Well:** | NBU 1022-25F2AS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-25F2AS | | |
| **Design:** | NBU 1022-25F2AS (wp01) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | 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 | 2.00 | 117.03 | 399.98 | -0.79 | 1.55 | 1.75 | 2.00 | 2.00 | 0.00 |
| 500.00 | 4.00 | 117.03 | 499.84 | -3.17 | 6.22 | 6.98 | 2.00 | 2.00 | 0.00 |
| 600.00 | 6.00 | 117.03 | 599.45 | -7.13 | 13.98 | 15.69 | 2.00 | 2.00 | 0.00 |
| 700.00 | 8.00 | 117.03 | 698.70 | -12.67 | 24.83 | 27.88 | 2.00 | 2.00 | 0.00 |
| 800.00 | 10.00 | 117.03 | 797.47 | -19.78 | 38.77 | 43.52 | 2.00 | 2.00 | 0.00 |
| 900.00 | 12.00 | 117.03 | 895.62 | -28.45 | 55.77 | 62.60 | 2.00 | 2.00 | 0.00 |
| 1,000.00 | 14.00 | 117.03 | 993.06 | -38.67 | 75.80 | 85.10 | 2.00 | 2.00 | 0.00 |
| 1,100.00 | 16.00 | 117.03 | 1,089.64 | -50.43 | 98.86 | 110.98 | 2.00 | 2.00 | 0.00 |
| 1,200.00 | 18.00 | 117.03 | 1,185.27 | -63.72 | 124.90 | 140.21 | 2.00 | 2.00 | 0.00 |
| 1,300.00 | 20.00 | 117.03 | 1,279.82 | -78.51 | 153.90 | 172.77 | 2.00 | 2.00 | 0.00 |
| 1,400.00 | 20.00 | 117.03 | 1,373.78 | -94.05 | 184.36 | 206.97 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 20.00 | 117.03 | 1,467.75 | -109.60 | 214.83 | 241.17 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 20.00 | 117.03 | 1,561.72 | -125.14 | 245.30 | 275.37 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 20.00 | 117.03 | 1,655.69 | -140.68 | 275.76 | 309.58 | 0.00 | 0.00 | 0.00 |
| 1,706.71 | 20.00 | 117.03 | 1,662.00 | -141.72 | 277.81 | 311.87 | 0.00 | 0.00 | 0.00 |
| **MAHOGANY MARKER / GREEN RIVER** | | | | | | | | | |
| 1,800.00 | 20.00 | 117.03 | 1,749.66 | -156.22 | 306.23 | 343.78 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 20.00 | 117.03 | 1,843.63 | -171.77 | 336.70 | 377.98 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 20.00 | 117.03 | 1,937.60 | -187.31 | 367.16 | 412.18 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 20.00 | 117.03 | 2,031.57 | -202.85 | 397.63 | 446.38 | 0.00 | 0.00 | 0.00 |
| 2,185.59 | 20.00 | 117.03 | 2,112.00 | -216.15 | 423.71 | 475.66 | 0.00 | 0.00 | 0.00 |
| **8-5/8** | | | | | | | | | |
| 2,200.00 | 20.00 | 117.03 | 2,125.54 | -218.39 | 428.10 | 480.59 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 20.00 | 117.03 | 2,219.51 | -233.93 | 458.56 | 514.79 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 20.00 | 117.03 | 2,313.48 | -249.48 | 489.03 | 548.99 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 20.00 | 117.03 | 2,407.45 | -265.02 | 519.50 | 583.19 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 20.00 | 117.03 | 2,501.42 | -280.56 | 549.96 | 617.39 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 20.00 | 117.03 | 2,595.39 | -296.10 | 580.43 | 651.60 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 20.00 | 117.03 | 2,689.35 | -311.65 | 610.90 | 685.80 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 20.00 | 117.03 | 2,783.32 | -327.19 | 641.36 | 720.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 20.00 | 117.03 | 2,877.29 | -342.73 | 671.83 | 754.20 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 20.00 | 117.03 | 2,971.26 | -358.27 | 702.30 | 788.40 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 20.00 | 117.03 | 3,065.23 | -373.82 | 732.76 | 822.61 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 20.00 | 117.03 | 3,159.20 | -389.36 | 763.23 | 856.81 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 20.00 | 117.03 | 3,253.17 | -404.90 | 793.70 | 891.01 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 20.00 | 117.03 | 3,347.14 | -420.44 | 824.16 | 925.21 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 20.00 | 117.03 | 3,441.11 | -435.99 | 854.63 | 959.41 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 20.00 | 117.03 | 3,535.08 | -451.53 | 885.10 | 993.62 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 20.00 | 117.03 | 3,629.05 | -467.07 | 915.56 | 1,027.82 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 20.00 | 117.03 | 3,723.02 | -482.61 | 946.03 | 1,062.02 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 20.00 | 117.03 | 3,816.99 | -498.16 | 976.50 | 1,096.22 | 0.00 | 0.00 | 0.00 |
| 4,092.60 | 20.00 | 117.03 | 3,904.00 | -512.55 | 1,004.71 | 1,127.89 | 0.00 | 0.00 | 0.00 |
| **WASATCH / WASATCH** | | | | | | | | | |
| 4,100.00 | 20.00 | 117.03 | 3,910.96 | -513.70 | 1,006.96 | 1,130.42 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 20.00 | 117.03 | 4,004.92 | -529.24 | 1,037.43 | 1,164.63 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 20.00 | 117.03 | 4,098.89 | -544.78 | 1,067.90 | 1,198.83 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 20.00 | 117.03 | 4,192.86 | -560.33 | 1,098.36 | 1,233.03 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 20.00 | 117.03 | 4,286.83 | -575.87 | 1,128.83 | 1,267.23 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 20.00 | 117.03 | 4,380.80 | -591.41 | 1,159.29 | 1,301.43 | 0.00 | 0.00 | 0.00 |



RECEIVED: January 23, 2012

# Anadarko Petroleum Corp

## Planning Report

| | | | |
|---|---|---|---|
| **Database:** | edmp | **Local Co-ordinate Reference:** | Well NBU 1022-25F2AS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | RKB + gl @ 5485.00ft |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | RKB + gl @ 5485.00ft |
| **Site:** | UINTAH_NBU 1022-25D PAD | **North Reference:** | True |
| **Well:** | NBU 1022-25F2AS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-25F2AS | | |
| **Design:** | NBU 1022-25F2AS (wp01) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,700.00 | 20.00 | 117.03 | 4,474.77 | -606.95 | 1,189.76 | 1,335.64 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 20.00 | 117.03 | 4,568.74 | -622.49 | 1,220.23 | 1,369.84 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 20.00 | 117.03 | 4,662.71 | -638.04 | 1,250.69 | 1,404.04 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 20.00 | 117.03 | 4,756.68 | -653.58 | 1,281.16 | 1,438.24 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 20.00 | 117.03 | 4,850.65 | -669.12 | 1,311.63 | 1,472.44 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 20.00 | 117.03 | 4,944.62 | -684.66 | 1,342.09 | 1,506.65 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 20.00 | 117.03 | 5,038.59 | -700.21 | 1,372.56 | 1,540.85 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 20.00 | 117.03 | 5,132.56 | -715.75 | 1,403.03 | 1,575.05 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 20.00 | 117.03 | 5,226.52 | -731.29 | 1,433.49 | 1,609.25 | 0.00 | 0.00 | 0.00 |
| 5,555.41 | 20.00 | 117.03 | 5,278.59 | -739.90 | 1,450.37 | 1,628.20 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 19.22 | 117.03 | 5,320.60 | -746.70 | 1,463.71 | 1,643.17 | 1.75 | -1.75 | 0.00 |
| 5,700.00 | 17.47 | 117.03 | 5,415.51 | -761.01 | 1,491.74 | 1,674.64 | 1.75 | -1.75 | 0.00 |
| 5,800.00 | 15.72 | 117.03 | 5,511.34 | -773.98 | 1,517.18 | 1,703.20 | 1.75 | -1.75 | 0.00 |
| 5,900.00 | 13.97 | 117.03 | 5,608.00 | -785.63 | 1,540.00 | 1,728.82 | 1.75 | -1.75 | 0.00 |
| 6,000.00 | 12.22 | 117.03 | 5,705.40 | -795.92 | 1,560.18 | 1,751.47 | 1.75 | -1.75 | 0.00 |
| 6,100.00 | 10.47 | 117.03 | 5,803.44 | -804.86 | 1,577.70 | 1,771.14 | 1.75 | -1.75 | 0.00 |
| 6,200.00 | 8.72 | 117.03 | 5,902.04 | -812.43 | 1,592.55 | 1,787.81 | 1.75 | -1.75 | 0.00 |
| 6,300.00 | 6.97 | 117.03 | 6,001.10 | -818.64 | 1,604.71 | 1,801.46 | 1.75 | -1.75 | 0.00 |
| 6,337.15 | 6.32 | 117.03 | 6,038.00 | -820.59 | 1,608.54 | 1,805.76 | 1.75 | -1.75 | 0.00 |
| **MESAVERDE / MESAVERDE** | | | | | | | | | |
| 6,400.00 | 5.22 | 117.03 | 6,100.53 | -823.46 | 1,614.17 | 1,812.08 | 1.75 | -1.75 | 0.00 |
| 6,500.00 | 3.47 | 117.03 | 6,200.24 | -826.90 | 1,620.91 | 1,819.65 | 1.75 | -1.75 | 0.00 |
| 6,600.00 | 1.72 | 117.03 | 6,300.13 | -828.96 | 1,624.95 | 1,824.18 | 1.75 | -1.75 | 0.00 |
| 6,698.27 | 0.00 | 0.00 | 6,398.38 | -829.63 | 1,626.26 | 1,825.65 | 1.75 | -1.75 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,400.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 0.00 | 0.00 | 6,500.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,600.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 6,700.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 6,800.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 6,900.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,000.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,100.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,200.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,300.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,400.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,500.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,600.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,700.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 7,800.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 7,900.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,000.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,100.12 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| 8,447.89 | 0.00 | 0.00 | 8,148.00 | -829.63 | 1,626.26 | 1,825.65 | 0.00 | 0.00 | 0.00 |
| **NBU 1022-25F2AS BHL** | | | | | | | | | |



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# Anadarko Petroleum Corp

## Planning Report

| | | | |
|---|---|---|---|
| **Database:** | edmp | **Local Co-ordinate Reference:** | Well NBU 1022-25F2AS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | RKB + gl @ 5485.00ft |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | RKB + gl @ 5485.00ft |
| **Site:** | UINTAH_NBU 1022-25D PAD | **North Reference:** | True |
| **Well:** | NBU 1022-25F2AS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-25F2AS | | |
| **Design:** | NBU 1022-25F2AS (wp01) | | |

**Design Targets**

| Target Name<br>- hit/miss target<br>- Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| NBU 1022-25F2AS BHL<br>- plan hits target center<br>- Circle (radius 25.00) | 0.00 | 0.00 | 8,148.00 | -829.63 | 1,626.26 | 14,502,094.60 | 2,091,810.86 | 39.923049 | -109.390057 |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 2,185.59 | 2,112.00 | 8-5/8 | 8-5/8 | 11 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,706.71 | 1,662.00 | MAHOGANY MARKER / GREEN RIVEF | | 0.00 | |
| 4,092.60 | 3,904.00 | WASATCH / WASATCH | | | |
| 6,337.15 | 6,038.00 | MESAVERDE / MESAVERDE | | | |



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**NBU 1022-25C2DS**

| | | | |
|---|---|---|---|
| Surface: | 653 FNL / 339 FWL | NWNW | Lot |
| BHL: | 488 FNL / 1933 FWL | NENW | Lot |

**NBU 1022-25C3AS**

| | | | |
|---|---|---|---|
| Surface: | 732 FNL / 324 FWL | NWNW | Lot |
| BHL: | 820 FNL / 1938 FWL | NENW | Lot |

**NBU 1022-25C3DS**

| | | | |
|---|---|---|---|
| Surface: | 730 FNL / 314 FWL | NWNW | Lot |
| BHL: | 1147 FNL / 1931 FWL | NENW | Lot |

**NBU 1022-25D2DS**

| | | | |
|---|---|---|---|
| Surface: | 650 FNL / 319 FWL | NWNW | Lot |
| BHL: | 485 FNL / 630 FWL | NWNW | Lot |

**NBU 1022-25D3AS**

| | | | |
|---|---|---|---|
| Surface: | 729 FNL / 305 FWL | NWNW | Lot |
| BHL: | 822 FNL / 631 FWL | NWNW | Lot |

**NBU 1022-25D3DS**

| | | | |
|---|---|---|---|
| Surface: | 727 FNL / 295 FWL | NWNW | Lot |
| BHL: | 1152 FNL / 630 FWL | NWNW | Lot |

**NBU 1022-25E2AS**

| | | | |
|---|---|---|---|
| Surface: | 648 FNL / 309 FWL | NWNW | Lot |
| BHL: | 1479 FNL / 631 FWL | SWNW | Lot |

**NBU 1022-25F2AS**

| | | | |
|---|---|---|---|
| Surface: | 652 FNL / 329 FWL | NWNW | Lot |
| BHL: | 1482 FNL / 1955 FWL | SENW | Lot |

**Pad: NBU 1022-25D PAD**

Section 25 T10S R22E

Mineral Lease: UT ST ML 22447

Uintah County, Utah

Operator: Kerr-McGee Oil & Gas Onshore LP

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including but not limited to, APDs/SULAs/ROEs/ROWs and/or easements.)

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See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

**A. Existing Roads:**

Existing roads consist of county and improved/unimproved lease roads. KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

**B. Planned Access Roads:**

One new access road is proposed (see Topo Map B). The ±825 ft route will be an upgrade to an unnamed Class D County Road. Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

New roads will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

During the onsite, turnouts, major cut and fills, culverts, bridges, gates, cattle guards, low water crossings, or modifications needed to existing infrastructure/facilities were determined, as applicable, are typically shown on attached Exhibits and Topo maps.

**C. Location of Existing and Proposed Facilities:**

The NBU 1022-25D pad is a newly proposed wellpad with no existing wells.

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of the well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) above ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

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**Gathering Facilities:**

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is ±1,095' and the individual segments are broken up as follows:

±300' (0.05 miles) –New 8" buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
±795' (0.1 miles) –New 8" buried gas pipeline from the edge of pad to the West Line of Section 25 at the Gas Tie-In Point. Please refer to Topo D2 - Pad and Pipeline Detail.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. KMG requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, KMG requests a temporary 45' construction right-of-way 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity and ownership, as well as to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

**D. <u>Location and Type of Water Supply</u>:**

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

**E. <u>Source of Construction Materials</u>:**

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

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**F. Methods for Handling Waste Materials:**

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E
Ace Oilfield in Sec. 2 T6S R20E
MC&MC in Sec. 12 T6S R19E
Pipeline Facility in Sec. 36 T9S R20E
Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E
Bonanza Evaporation Pond in Sec. 2 T10S R23E
Ouray #1 SWD in Sec. 1 T9S R21E
NBU 159 SWD in Sec. 35 T9S R21E
CIGE 112D SWD in Sec. 19 T9S R21E
CIGE 114 SWD in Sec. 34 T9S R21E
NBU 921-34K SWD in Sec. 34 T9S R21E
NBU 921-33F SWD in Sec. 33 T9S R21E
NBU 921-34L SWD in Sec. 34 T9S R21E

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

Unless otherwise approved, no oil or other oil based drill additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water, biodegradable polymer soap, bentonite clay, and /or non-toxic additives will be used in the system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions, or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum

trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be release into the pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternative is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as the hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods. (e.g. solidification)

Any additional pits necessary for subsequent operations, such as temporary flare pits, or workover pits, will contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of the work.

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For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

Any undesirable event, including accidental release of fluids, or release in excess of reportable quantities, will be managed according to the notification requirements of UDOGMs “Reporting Oil and Gas Undesirable Events” rule. Where State wells are participatory to a Federal agreement, according to NTL-3A, the appropriate Federal agencies will be notified.

**Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term “hazardous materials” as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

**G. <u>Ancillary Facilities</u>:**

None are anticipated.

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**H. Well Site Layout (see Well Pad Design Summary):**

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; access road ingress/ egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1927 (NAD27) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

**I. Plans for Reclamation of the Surface:**

Surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. This reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

**Interim Reclamation**

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left “rough” after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/ completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit.

**Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

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After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to UDOGM.

**Seeding and Measures Common to Interim and Final Reclamation**

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to, erosion control blankets and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The site specific seed mix will be provided by SITLA.

**J. Surface/Mineral Ownership:**

SITLA
675 East 500 South, Suite 500
Salt Lake City, UT 84102

**L. Other Information:**

None

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**M. Lessee's or Operators' Representative & Certification:**

Jaime Scharnowske
Regulatory Analyst
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6304

Tommy Thompson
General Manager, Drilling
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and 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 operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Jaime Scharnowske

Jaime Scharnowske

January 23, 2012

Date

RECEIVED: January 23, 2012

Kerr-McGee Oil & Gas Onshore LP
P.O. Box 173779
Denver, CO 80217-3779

BRETT TORINAI
TELEPHONE: (720) 929-6081
EMAIL: BRETT.TORINA@ANADARKO.COM

January 24, 2012

Mrs. Diana Mason
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11
NBU 1022-25F2AS
T10S R22E
Section 25: NWNW (Surface) /SENW (Bottom Hole)
Surface: 652' FNL, 329' FWL
Bottom Hole: 1482' FNL, 1955' FWL
Uintah County, Utah

Dear Mrs. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Directional Drilling of Wells.

- Kerr-McGee's NBU 1022-25F2AS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore

Therefore, based on the above stated information Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

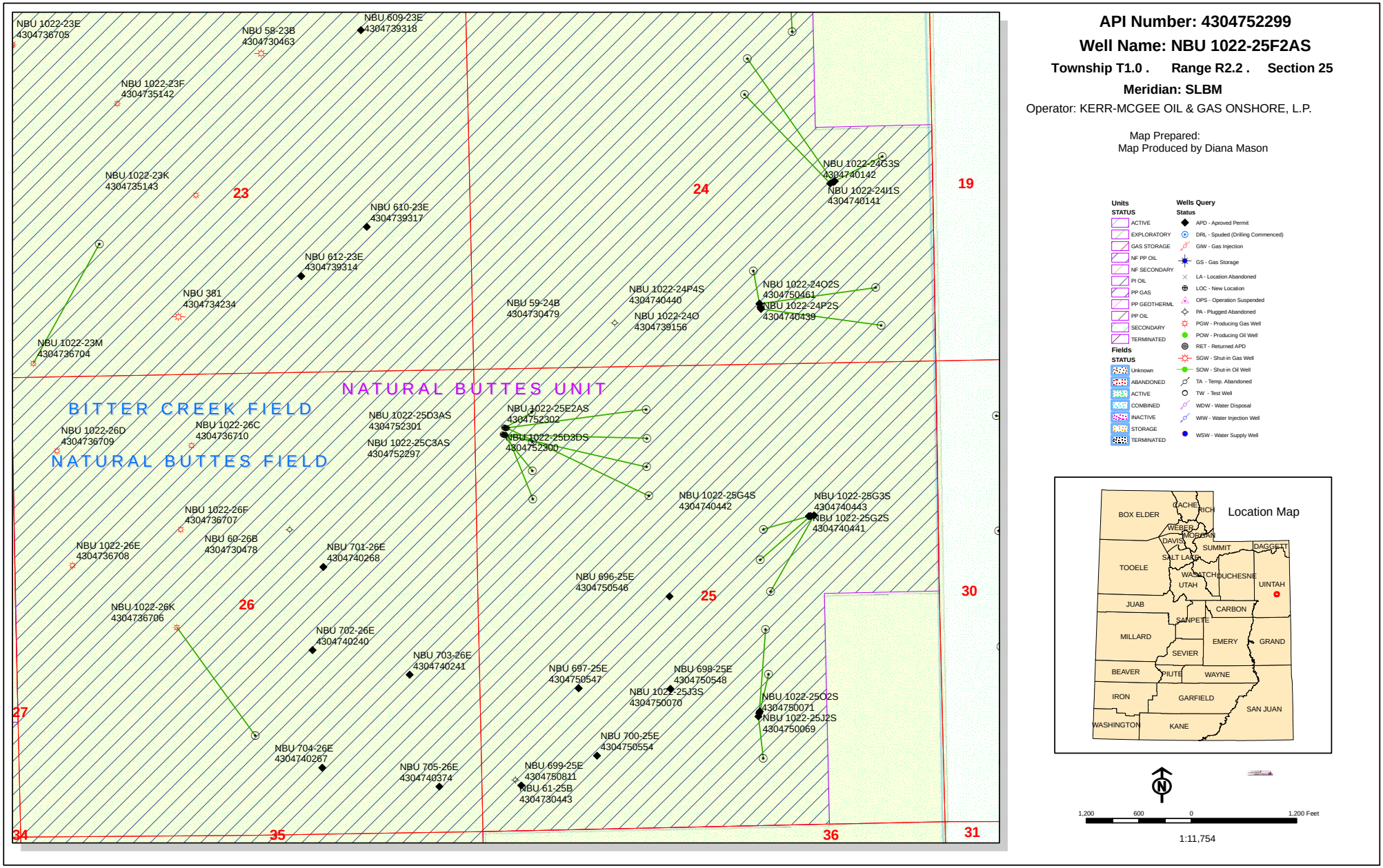
KERR-MCGEE OIL & GAS ONSHORE LP

Brett Torina

Brett Torina
Landman

RECEIVED: January 25, 2012

API Well Number: 43047522990000

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# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

**Utah State Office**
**P.O. Box 45155**
**Salt Lake City, Utah 84145-0155**

**IN REPLY REFER TO:**
**3160**
**(UT-922)**

February 10, 2012

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2011 Plan of Development Natural Buttes Unit
Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2011 within the Natural Buttes Unit, Uintah County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| **WELL PAD - NBU 1022-25D** | | |
| 43-047-52295 | NBU 1022-25C2DS | Sec 25 T10S R22E 0653 FNL 0339 FWL |
| | | BHL Sec 25 T10S R22E 0488 FNL 1933 FWL |
| 43-047-52296 | NBU 1022-25C3DS | Sec 25 T10S R22E 0730 FNL 0314 FWL |
| | | BHL Sec 25 T10S R22E 1147 FNL 1931 FWL |
| 43-047-52297 | NBU 1022-25C3AS | Sec 25 T10S R22E 0732 FNL 0324 FWL |
| | | BHL Sec 25 T10S R22E 0820 FNL 1938 FWL |
| 43-047-52298 | NBU 1022-25D2DS | Sec 25 T10S R22E 0650 FNL 0319 FWL (BH) |
| | | BHL Sec 25 T10S R22E 0485 FNL 0630 FWL |
| 43-047-52299 | NBU 1022-25F2AS | Sec 25 T10S R22E 0652 FNL 0329 FWL |
| | | BHL Sec 25 T10S R22E 1482 FNL 1955 FWL |
| 43-047-52300 | NBU 1022-25D3DS | Sec 25 T10S R22E 0727 FNL 0295 FWL |
| | | BHL Sec 25 T10S R22E 1152 FNL 0630 FWL |
| 43-047-52301 | NBU 1022-25D3AS | Sec 25 T10S R22E 0729 FNL 0305 FWL |
| | | BHL Sec 25 T10S R22E 0822 FNL 0631 FWL |
| 43-047-52302 | NBU 1022-25E2AS | Sec 25 T10S R22E 0648 FNL 0309 FWL |
| | | BHL Sec 25 T10S R22E 1479 FNL 0631 FWL |
| **WELL PAD - NBU 1022-1A** | | |
| 43-047-52335 | NBU 1022-1A1BS | Sec 01 T10S R22E 1030 FNL 0663 FEL |
| | | BHL Sec 01 T10S R22E 0099 FNL 0498 FEL |

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| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| 43-047-52336 | NBU 1022-1A1CS | Sec 01 T10S R22E 1040 FNL 0665 FEL |
| | | BHL Sec 01 T10S R22E 0416 FNL 0493 FEL |
| 43-047-52337 | NBU 1022-1A4BS | Sec 01 T10S R22E 1050 FNL 0667 FEL |
| | | BHL Sec 01 T10S R22E 0748 FNL 0493 FEL |
| 43-047-52338 | NBU 1022-1H1CS | Sec 01 T10S R22E 1069 FNL 0670 FEL |
| | | BHL Sec 01 T10S R22E 1745 FNL 0493 FEL |
| 43-047-52340 | NBU 1022-1A4CS | Sec 01 T10S R22E 1059 FNL 0668 FEL |
| | | BHL Sec 01 T10S R22E 1083 FNL 0497 FEL |
| **WELL PAD - NBU 1022-1B** | | |
| 43-047-52339 | NBU 1022-1B1BS | Sec 01 T10S R22E 0976 FNL 1453 FEL |
| | | BHL Sec 01 T10S R22E 0262 FNL 1811 FEL |
| 43-047-52341 | NBU 1022-1B4CS | Sec 01 T10S R22E 0984 FNL 1447 FEL |
| | | BHL Sec 01 T10S R22E 1282 FNL 1825 FEL |
| 43-047-52342 | NBU 1022-1B1CS | Sec 01 T10S R22E 0968 FNL 1459 FEL |
| | | BHL Sec 01 T10S R22E 0580 FNL 1812 FEL |
| **WELL PAD - NBU 1022-1E1** | | |
| 43-047-52343 | NBU 1022-1D1BS | Sec 01 T10S R22E 1559 FNL 1172 FWL |
| | | BHL Sec 01 T10S R22E 0238 FNL 0820 FWL |
| 43-047-52344 | NBU 1022-1D1CS | Sec 01 T10S R22E 1568 FNL 1168 FWL |
| | | BHL Sec 01 T10S R22E 0585 FNL 0820 FWL |
| 43-047-52345 | NBU 1022-1D4BS | Sec 01 T10S R22E 1577 FNL 1164 FWL |
| | | BHL Sec 01 T10S R22E 0912 FNL 0822 FWL |
| 43-047-52346 | NBU 1022-1D4CS | Sec 01 T10S R22E 1586 FNL 1160 FWL |
| | | BHL Sec 01 T10S R22E 1244 FNL 0822 FWL |
| 43-047-52347 | NBU 1022-1E1BS | Sec 01 T10S R22E 1596 FNL 1156 FWL |
| | | BHL Sec 01 T10S R22E 1576 FNL 0821 FWL |
| 43-047-52348 | NBU 1022-1E1CS | Sec 01 T10S R22E 1605 FNL 1152 FWL |
| | | BHL Sec 01 T10S R22E 1909 FNL 0821 FWL |
| **WELL PAD - NBU 1022-1E3** | | |
| 43-047-52349 | NBU 1022-1E4BS | Sec 01 T10S R22E 2011 FNL 0086 FWL |
| | | BHL Sec 01 T10S R22E 2241 FNL 0821 FWL |
| 43-047-52350 | NBU 1022-1E4CS | Sec 01 T10S R22E 2020 FNL 0088 FWL |
| | | BHL Sec 01 T10S R22E 2573 FNL 0821 FWL |
| 43-047-52351 | NBU 1022-1L1BS | Sec 01 T10S R22E 2030 FNL 0091 FWL |
| | | BHL Sec 01 T10S R22E 2409 FSL 0820 FWL |
| 43-047-52356 | NBU 1022-1L1CS | Sec 01 T10S R22E 2040 FNL 0094 FWL |
| | | BHL Sec 01 T10S R22E 2077 FSL 0820 FWL |
| **WELL PAD - NBU 1022-1F** | | |
| 43-047-52352 | NBU 1022-1K1BS | Sec 01 T10S R22E 2588 FNL 2468 FWL |
| | | BHL Sec 01 T10S R22E 2574 FSL 2136 FWL |

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API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE

43-047-52357 NBU 1022-1F4BS Sec 01 T10S R22E 2573 FNL 2480 FWL
BHL Sec 01 T10S R22E 2076 FNL 2138 FWL

43-047-52358 NBU 1022-1G4BS Sec 01 T10S R22E 2565 FNL 2486 FWL
BHL Sec 01 T10S R22E 2242 FNL 1808 FEL

43-047-52360 NBU 1022-1G4CS Sec 01 T10S R22E 2580 FNL 2474 FWL
BHL Sec 01 T10S R22E 2574 FNL 1808 FEL

**WELL PAD - NBU 1022-1G**

43-047-52353 NBU 1022-1C4CS Sec 01 T10S R22E 1366 FNL 2354 FEL
BHL Sec 01 T10S R22E 1080 FNL 2140 FWL

43-047-52354 NBU 1022-1F1CS Sec 01 T10S R22E 1395 FNL 2362 FEL
BHL Sec 01 T10S R22E 1744 FNL 2138 FWL

43-047-52355 NBU 1022-1G1CS Sec 01 T10S R22E 1385 FNL 2359 FEL
BHL Sec 01 T10S R22E 1909 FNL 1809 FEL

43-047-52363 NBU 1022-1F1BS Sec 01 T10S R22E 1375 FNL 2357 FEL
BHL Sec 01 T10S R22E 1412 FNL 2139 FWL

43-047-52386 NBU 1022-1C1CS Sec 01 T10S R22E 1356 FNL 2351 FEL
BHL Sec 01 T10S R22E 0415 FNL 2141 FWL

**WELL PAD - NBU 1022-1J**

43-047-52359 NBU 1022-1J1BS Sec 01 T10S R22E 1887 FSL 2226 FEL
BHL Sec 01 T10S R22E 2410 FSL 1807 FEL

43-047-52362 NBU 1022-1O1BS Sec 01 T10S R22E 1847 FSL 2232 FEL
BHL Sec 01 T10S R22E 1081 FSL 1805 FEL

43-047-52366 NBU 1022-1J4CS Sec 01 T10S R22E 1857 FSL 2231 FEL
BHL Sec 01 T10S R22E 1413 FSL 1805 FEL

43-047-52367 NBU 1022-1O4BS Sec 01 T10S R22E 1838 FSL 2234 FEL
BHL Sec 01 T10S R22E 0417 FSL 1804 FEL

43-047-52384 NBU 1022-1J1CS Sec 01 T10S R22E 1877 FSL 2227 FEL
BHL Sec 01 T10S R22E 2078 FSL 1807 FEL

**WELL PAD - NBU 1022-1K**

43-047-52361 NBU 1022-1M1BS Sec 01 T10S R22E 1966 FSL 2158 FWL
BHL Sec 01 T10S R22E 1081 FSL 0819 FWL

43-047-52365 NBU 1022-1K1CS Sec 01 T10S R22E 1994 FSL 2146 FWL
BHL Sec 01 T10S R22E 2242 FSL 2136 FWL

43-047-52370 NBU 1022-1K4CS Sec 01 T10S R22E 1948 FSL 2166 FWL
BHL Sec 01 T10S R22E 1578 FSL 2134 FWL

43-047-52371 NBU 1022-1L4BS Sec 01 T10S R22E 1985 FSL 2150 FWL
BHL Sec 01 T10S R22E 1745 FSL 0820 FWL

RECEIVED: February 10, 2012

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE

43-047-52373 NBU 1022-1K4BS Sec 01 T10S R22E 1957 FSL 2162 FWL
BHL Sec 01 T10S R22E 1910 FSL 2135 FWL

43-047-52374 NBU 1022-1L4CS Sec 01 T10S R22E 1975 FSL 2154 FWL
BHL Sec 01 T10S R22E 1413 FSL 0819 FWL

**WELL PAD - NBU 1022-1I**

43-047-52364 NBU 1022-1I4CS Sec 01 T10S R22E 1828 FSL 0928 FEL
BHL Sec 01 T10S R22E 1579 FSL 0492 FEL

43-047-52368 NBU 1022-1I1BS Sec 01 T10S R22E 1826 FSL 0937 FEL
BHL Sec 01 T10S R22E 2576 FSL 0492 FEL

43-047-52369 NBU 1022-1I1CS Sec 01 T10S R22E 1830 FSL 0918 FEL
BHL Sec 01 T10S R22E 2243 FSL 0492 FEL

43-047-52382 NBU 1022-1H4CS Sec 01 T10S R22E 1824 FSL 0947 FEL
BHL Sec 01 T10S R22E 2410 FNL 0492 FEL

**WELL PAD - NBU 1022-1N**

43-047-52372 NBU 1022-1M4CS Sec 01 T10S R22E 1228 FSL 2092 FWL
BHL Sec 01 T10S R22E 0098 FSL 0810 FWL

43-047-52375 NBU 1022-1M4BS Sec 01 T10S R22E 1238 FSL 2093 FWL
BHL Sec 01 T10S R22E 0416 FSL 0819 FWL

43-047-52376 NBU 1022-1N1CS Sec 01 T10S R22E 1218 FSL 2092 FWL
BHL Sec 01 T10S R22E 0914 FSL 2133 FWL

43-047-52377 NBU 1022-1N4BS Sec 01 T10S R22E 1208 FSL 2091 FWL
BHL Sec 01 T10S R22E 0581 FSL 2132 FWL

43-047-52378 NBU 1022-1N4CS Sec 01 T10S R22E 1198 FSL 2090 FWL
BHL Sec 01 T10S R22E 0262 FSL 2124 FWL

43-047-52381 NBU 1022-1M1CS Sec 01 T10S R22E 1248 FSL 2094 FWL
BHL Sec 01 T10S R22E 0748 FSL 0819 FWL

**WELL PAD - NBU 1022-1P**

43-047-52379 NBU 1022-1P1BS Sec 01 T10S R22E 1168 FSL 0485 FEL
BHL Sec 01 T10S R22E 1246 FSL 0491 FEL

43-047-52380 NBU 1022-1P4BS Sec 01 T10S R22E 1154 FSL 0500 FEL
BHL Sec 01 T10S R22E 0582 FSL 0491 FEL

43-047-52383 NBU 1022-1O4CS Sec 01 T10S R22E 1141 FSL 0515 FEL
BHL Sec 01 T10S R22E 0106 FSL 1816 FEL

43-047-52385 NBU 1022-1P4CS Sec 01 T10S R22E 1148 FSL 0508 FEL
BHL Sec 01 T10S R22E 0270 FSL 0503 FEL

RECEIVED: February 10, 2012

The NBU 1022-25D2DS, 43-047-52298, is being permitted to target productive horizons below the unitized zone of the Natural Buttes Unit as defined in Section 3 of said agreement. We recommend not approving commingling of production with these zones and the unitized zones of the Natural Buttes Unit until this matter has been resolved by the BLM's Utah State Office.

This office has no other objection to permitting the wells at this time.

Michael L. Coulthard

Digitally signed by Michael L. Coulthard
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael_Coulthard@blm.gov, c=US
Date: 2012.02.10 08:36:59 -07'00'

bcc: File - Natural Buttes Unit
Division of Oil Gas and Mining
Central Files
Agr. Sec. Chron
Fluid Chron

MCoulthard:mc:2-10-12

RECEIVED: February 10, 2012

API Well Number: 43047522990000

**BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-25F2AS 43047522990000**

| | | | | |
|---|---|---|---|---|
| **Well Name** | KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-25F2AS 4304752 | | | |
| **String** | Surf | Prod | | |
| **Casing Size(")** | 8.625 | 4.500 | | |
| **Setting Depth (TVD)** | 2088 | 8419 | | |
| **Previous Shoe Setting Depth (TVD)** | 0 | 2088 | | |
| **Max Mud Weight (ppg)** | 8.3 | 12.5 | | |
| **BOPE Proposed (psi)** | 500 | 5000 | | |
| **Casing Internal Yield (psi)** | 3390 | 7780 | | |
| **Operators Max Anticipated Pressure (psi)** | 5215 | 11.9 | | |

| Calculations | Surf String | 8.625 | " |
|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | 904 | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | 653 | NO air drill |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | 445 | YES OK |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 445 | NO Reasonable depth in area |
| **Required Casing/BOPE Test Pressure=** | | 2088 | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | 0 | psi *Assumes 1psi/ft frac gradient |

| Calculations | Prod String | 4.500 | " |
|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | 5472 | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | 4462 | YES |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | 3620 | YES OK |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 4079 | NO Reasonable |
| **Required Casing/BOPE Test Pressure=** | | 5000 | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | 2088 | psi *Assumes 1psi/ft frac gradient |

| Calculations | String | | " |
|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | | NO |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | | NO |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | | NO |
| **Required Casing/BOPE Test Pressure=** | | | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | | psi *Assumes 1psi/ft frac gradient |

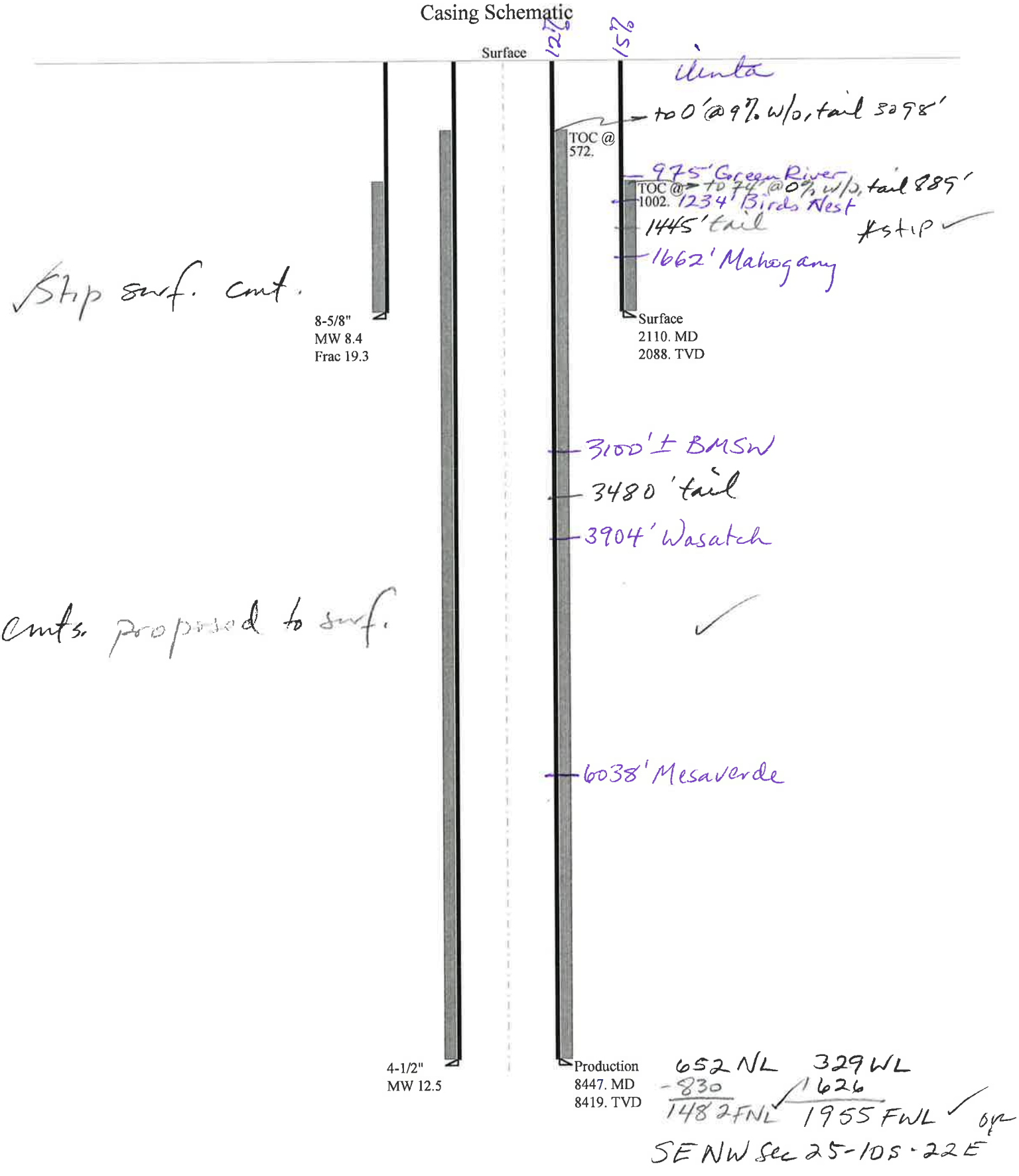
| Calculations | String | | " |
|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | | NO |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | | NO |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | | NO |
| **Required Casing/BOPE Test Pressure=** | | | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | | psi *Assumes 1psi/ft frac gradient |

RECEIVED: March 20, 2012

API Well Number: 43047522990000

# 43047522990000 NBU 1022-25F2AS

Casing Schematic



API Well Number: 43047522990000

| | |
|---|---|
| Well name: | **43047522990000 NBU 1022-25F2AS** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Surface |
| Project ID: | 43-047-52299 |
| Location: | UINTAH COUNTY |

**Design parameters:**

**Collapse**

Mud weight: 8.400 ppg

Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 1,837 psi

Internal gradient: 0.120 psi/ft

Calculated BHP 2,088 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

8 Round STC: 1.80 (J)

8 Round LTC: 1.70 (J)

Buttress: 1.60 (J)

Premium: 1.50 (J)

Body yield: 1.50 (B)

Tension is based on air weight.

Neutral point: 1,847 ft

**Environment:**

H2S considered? No

Surface temperature: 74 °F

Bottom hole temperature: 103 °F

Temperature gradient: 1.40 °F/100ft

Minimum section length: 100 ft

Cement top: 1,002 ft

**Directional well information:**

Kick-off point 300 ft

Departure at shoe: 271 ft

Maximum dogleg: 2 °/100ft

Inclination at shoe: 10.01 °

**Re subsequent strings:**

Next setting depth: 8,420 ft

Next mud weight: 12.500 ppg

Next setting BHP: 5,467 psi

Fracture mud wt: 19.250 ppg

Fracture depth: 2,088 ft

Injection pressure: 2,088 psi

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Est. Cost ($) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2110 | 8.625 | 28.00 | I-55 | LT&C | 2088 | 2110 | 7.892 | 83556 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (kips) | Tension Strength (kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 911 | 1880 | 2.064 | 2088 | 3390 | 1.62 | 58.5 | 348 | 5.95 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940

Date: March 13,2012
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2088 ft, a mud weight of 8.4 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

*Engineering responsibility for use of this design will be that of the purchaser.*

API Well Number: 43047522990000

| | |
|---|---|
| Well name: | **43047522990000 NBU 1022-25F2AS** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Production |
| Project ID: | 43-047-52299 |
| Location: | UINTAH COUNTY |

## Design parameters:

**Collapse**

Mud weight: 12.500 ppg

Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 3,615 psi

Internal gradient: 0.220 psi/ft

Calculated BHP 5,467 psi

No backup mud specified.

## Minimum design factors:

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

| | |
|---|---|
| 8 Round STC: | 1.80 (J) |
| 8 Round LTC: | 1.80 (J) |
| Buttress: | 1.60 (J) |
| Premium: | 1.50 (J) |
| Body yield: | 1.60 (B) |

Tension is based on air weight.

Neutral point: 6,874 ft

Estimated cost: 177,500 ($)

## Environment:

| | |
|---|---|
| H2S considered? | No |
| Surface temperature: | 74 °F |
| Bottom hole temperature: | 192 °F |
| Temperature gradient: | 1.40 °F/100ft |
| Minimum section length: | 100 ft |
| Cement top: | 572 ft |

**Directional well information:**

| | |
|---|---|
| Kick-off point | 300 ft |
| Departure at shoe: | 352 ft |
| Maximum dogleg: | 2 °/100ft |
| Inclination at shoe: | 0 ° |

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Est. Cost ($) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 5000 | 4.5 | 11.60 | I-80 | DQX | 4972 | 5000 | 3.875 | 132000 |
| 1 | 3447 | 4.5 | 11.60 | I-80 | LT&C | 8419 | 8447 | 3.875 | 45500 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (kips) | Tension Strength (kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 3229 | 6036 | 1.870 | 4708 | 7780 | 1.65 | 97.7 | 267 | 2.73 J |
| 1 | 5467 | 6360 | 1.163 | 5467 | 7780 | 1.42 | 40 | 212 | 5.30 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940

Date: March 13,2012
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 8419 ft, a mud weight of 12.5 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

*Engineering responsibility for use of this design will be that of the purchaser.*

**From:** Jim Davis
**To:** APD APPROVAL
**CC:** Jaime.Scharnowske@anadarko.com
**Date:** 3/30/2012 4:56 PM
**Subject:** APD approval 8 on one pad for Anadarko

The following APDs have been approved by SITLA including arch and paleo clearance

NBU 1022-25C2DS (4304752295),
NBU 1022-25C3DS (4304752296),
NBU 1022-25C3AS (4304752297),
NBU 1022-25D2DS (4304752298),
NBU 1022-25F2AS (4304752299),
NBU 1022-25D3DS (4304752300),
NBU 1022-25D3AS (4304752301),
NBU 1022-25E2AS (4304752302)

Thanks.
-Jim Davis

RECEIVED: April 04, 2012

# ON-SITE PREDRILL EVALUATION
## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Well Name** NBU 1022-25F2AS
**API Number** 43047522990000 **APD No** 5232 **Field/Unit** NATURAL BUTTES
**Location: 1/4,1/4** NWNW **Sec** 25 **Tw** 10.0S **Rng** 22.0E 652 FNL 329 FWL
**GPS Coord (UTM)** 637026 4420701 **Surface Owner**

**Participants**

Sheila Wopsock, Charles Chase, Jaime Scharnowke, Doyle Holmes, (Anadarko). John Slaugh, Mitch Batty, (Timberline). Ben Williams (DWR), David Hackford, (DOGM).

**Regional/Local Setting & Topography**

The general area is in the southeast end of the Natural Buttes Unit and contains the White River and short rugged
drainages that drain into the White River. Topography is varied and frequently dissected by short draws or
washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River
is 1.1 miles. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area.
An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 36 air miles and 58 road miles to the northwest. A total of eight gas wells will be drilled on this location.

The location is proposed on Archy Bench on top of a narrow ridge, which extends in a southerly to northerly
direction. The ridge breaks off sharply on both the west and east sides into rugged canyons, which run northerly
toward the White River. No drainages intersect the site and no diversions are needed. The location should
be stable and pose no significant problems for drilling and operating eight wells.

The surface and minerals for this location are owned by SITLA.

**Surface Use Plan**

**Current Surface Use**
Grazing
Wildlfe Habitat

| New Road Miles | Well Pad | | Src Const Material | Surface Formation |
|---|---|---|---|---|
| 0.6 | **Width** 330 | **Length** 425 | Onsite | UNTA |

**Ancillary Facilities** N

**Waste Management Plan Adequate?** Y

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Vegetation includes black sagebrush, bud sage, horsebrush, halogeton, curly mesquite, shadscale, cheatgrass, broom snakeweed, rabbit brush and spring annuals.

Antelope, coyote, small mammals and birds. Endangered fish species exist in the White River. Domestic sheep graze the area in the winter.

**Soil Type and Characteristics**

Rocky sandy clay loam.

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diverson Required?** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** Y **Paleo Potental Observed?** N **Cultural Survey Run?** Y **Cultural Resources?** N

## Reserve Pit

| Site-Specific Factors | | Site Ranking | |
|---|---|---|---|
| **Distance to Groundwater (feet)** | 100 to 200 | 5 | |
| **Distance to Surface Water (feet)** | >1000 | 0 | |
| **Dist. Nearest Municipal Well (ft)** | >5280 | 0 | |
| **Distance to Other Wells (feet)** | | 20 | |
| **Native Soil Type** | Mod permeability | 10 | |
| **Fluid Type** | Fresh Water | 5 | |
| **Drill Cuttings** | Normal Rock | 0 | |
| **Annual Precipitation (inches)** | | 0 | |
| **Affected Populations** | | | |
| **Presence Nearby Utility Conduits** | Not Present | 0 | |
| | **Final Score** | 40 | 1 Sensitivity Level |

**Characteristics / Requirements**

The reserve pit is planned in an area of cut except for the northeast corner which will be 3.5 feet of fill.
This corner will be backed up with the excess cut stockpile. The reserve pit will be on the east side of the location. Dimensions are 230’ x 75’ x 12’ deep with two feet of freeboard. Kerr McGee has agreed to line this pit with a 30 mil synthetic liner and a felt sub-liner.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 30 **Pit Underlayment Required?** Y

**Other Observations / Comments**

| David Hackford | 2/15/2012 |
|---|---|
| **Evaluator** | **Date / Time** |

# Application for Permit to Drill
# Statement of Basis



## Utah Division of Oil, Gas and Mining



| APD No | API WellNo | Status | Well Type | Surf Owner | CBM |
|---|---|---|---|---|---|
| 5232 | 43047522990000 | SITLA | GW | S | No |
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | **Surface Owner-APD** | | |
| **Well Name** | NBU 1022-25F2AS | | **Unit** | NATURAL BUTTES | |
| **Field** | NATURAL BUTTES | | **Type of Work** | DRILL | |
| **Location** | NWNW 25 10S 22E S 652 FNL 329 FWL GPS Coord (UTM) 637031E 4420690N | | | | |

**Geologic Statement of Basis**

Kerr McGee proposes to set 2,110’ of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 3,100'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 25. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

| Brad Hill | 2/28/2012 |
|---|---|
| **APD Evaluator** | **Date / Time** |

**Surface Statement of Basis**

The general area is in the southeast end of the Natural Buttes Unit and contains the White River and short
rugged drainages that drain into the White River. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is 1.1 miles. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area.
An occasional pond has been constructed to supply water for livestock and antelope. Vernal,Utah is approximately 58 road miles to the northwest. The access road will be an existing 2-track road upgraded for 3075 feet.

The location will be for eight gas wells. They are the NBU 1022-25E2AS, NBU 1022-25D2DS, NBU 1022-25F2AS,
NBU 1022-25C2DS, NBU1022-D3DS, NBU 1022-25D3AS, NBU 1022-25C3DS and the NBU 1022-25C3AS.

The location is proposed on Archy Bench on top of a narrow ridge, which extends in a southerly to northerly
direction. The ridge breaks off sharply on both the west and east sides into rugged canyons, which run northerly toward the White River. No drainages intersect the site and no diversions are needed. The location should be stable and pose no significant problems for drilling and operating eight wells.

The surface and minerals for this location are owned by SITLA. Jim Davis of SITLA was invited to this presite, but did not attended. Ben Williams represented the Utah Division of Wildlife Resources. He had no comments regarding wildlife issues. This site is the best site

RECEIVED: April 04, 2012

# Application for Permit to Drill
# Statement of Basis



for a location in the immediate area.

| | |
|---|---|
| David Hackford | 2/15/2012 |
| **Onsite Evaluator** | **Date / Time** |

**Conditions of Approval / Application for Permit to Drill**

| Category | Condition |
|---|---|
| Pits | A synthetic liner with a minimum thickness of 30 mils with a felt subliner shall be properly installed and maintained in the reserve pit. |
| Pits | The reserve pit should be located on the east side of the location. |
| Surface | The well site shall be bermed to prevent fluids from leaving the pad. |

RECEIVED: April 04, 2012

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 1/27/2012
**API NO. ASSIGNED:** 43047522990000
**WELL NAME:** NBU 1022-25F2AS
**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)
**PHONE NUMBER:** 720 929-6156
**CONTACT:** Danielle Piernot

**PROPOSED LOCATION:** NWNW 25 100S 220E
**Permit Tech Review:** ✔

**SURFACE:** 0652 FNL 0329 FWL
**Engineering Review:** ✔

**BOTTOM:** 1482 FNL 1955 FWL
**Geology Review:** ✔

**COUNTY:** UINTAH
**LATITUDE:** 39.92524
**LONGITUDE:** -109.39645
**UTM SURF EASTINGS:** 637031.00
**NORTHINGS:** 4420690.00
**FIELD NAME:** NATURAL BUTTES
**LEASE TYPE:** 3 - State
**LEASE NUMBER:** UT ST ML 22447
**PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE
**SURFACE OWNER:** 3 - State
**COALBED METHANE:** NO

**RECEIVED AND/OR REVIEWED:**

- ✔ **PLAT**
- ✔ **Bond:** STATE/FEE - 22013542
- ☐ **Potash**
- ✔ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ✔ **Water Permit:** 43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ✔ **Intent to Commingle**

**Commingling Approved**

**LOCATION AND SITING:**

- ☐ **R649-2-3.**

**Unit:** NATURAL BUTTES

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ✔ **Drilling Unit**

**Board Cause No:** Cause 173-14
**Effective Date:** 12/2/1999
**Siting:** Suspends General Siting

- ✔ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**
3 - Commingling - ddoucet
5 - Statement of Basis - bhill
15 - Directional - dmason
17 - Oil Shale 190-5(b) - dmason
25 - Surface Casing - hmacdonald

RECEIVED: April 04, 2012

GARY R. HERBERT
*Governor*
GREGORY S. BELL
*Lieutenant Governor*

# State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
*Executive Director*
Division of Oil, Gas and Mining
JOHN R. BAZA
*Division Director*

# Permit To Drill

**********

**Well Name:** NBU 1022-25F2AS
**API Well Number:** 43047522990000
**Lease Number:** UT ST ML 22447
**Surface Owner:** STATE
**Approval Date:** 4/4/2012

**Issued to:**
KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

**Authority:**
Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

**Duration:**
This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

**Commingle:**
In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

**General:**
Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

**Conditions of Approval:**
In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Surface casing shall be cemented to the surface.

**Additional Approvals:**
The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

**Notification Requirements:**
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels OR submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at http://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program - contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

**Contact Information:**
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
  801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
  801-231-8956 - after office hours

**Reporting Requirements:**
All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or

plugging

**Approved By:**

For John Rogers
Associate Director, Oil & Gas

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UT ST ML 22447

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-25F2AS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047522990000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6515 EXT

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0652 FNL 0329 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NWNW Section: 25 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT Approximate date work will start: 4/4/2013 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ✓ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** March 21, 2013

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Luke Urban | 720 929-6501 | Regulatory Specialist |

| SIGNATURE | DATE |
|---|---|
| N/A | 3/21/2013 |

RECEIVED: Mar. 21, 2013

## The Utah Division of Oil, Gas, and Mining

**- State of Utah**
**- Department of Natural Resources**

**Electronic Permitting System - Sundry Notices**

## Request for Permit Extension Validation Well Number 43047522990000

**API:** 43047522990000
**Well Name:** NBU 1022-25F2AS
**Location:** 0652 FNL 0329 FWL QTR NWNW SEC 25 TWNP 100S RNG 220E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 4/4/2012

**The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.**

- **If located on private land, has the ownership changed, if so, has the surface agreement been updated?** ○ **Yes** ◉ **No**
- **Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?** ○ **Yes** ◉ **No**
- **Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?** ○ **Yes** ◉ **No**
- **Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?** ○ **Yes** ◉ **No**
- **Has the approved source of water for drilling changed?** ○ **Yes** ◉ **No**
- **Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?** ○ **Yes** ◉ **No**
- **Is bonding still in place, which covers this proposed well?** ◉ **Yes** ○ **No**

**Signature:** Luke Urban **Date:** 3/21/2013
**Title:** Regulatory Specialist **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Mar. 21, 2013

GARY R. HERBERT
*Governor*

SPENCER J. COX
*Lieutenant Governor*

# State of Utah

**DEPARTMENT OF NATURAL RESOURCES**

MICHAEL R. STYLER
*Executive Director*

**Division of Oil, Gas and Mining**

JOHN R. BAZA
*Division Director*

February 20, 2014

Teena Paulo
Kerr-McGee Oil & Gas Onshore, LP
1099 18th Street, Suite 600
Denver, CO 80202

Re: APDs Rescinded for Kerr-McGee O&G Onshore, L.P., Uintah County

Dear Ms. Paulo:

Enclosed find the list of APDs that you have asked to be rescinded. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded, effective February 20, 2014.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason
Environmental Scientist

cc: Well File
Bureau of Land Management, Vernal

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

| | |
|---|---|
| 43-047-52301 | NBU 1022-25D3AS |
| 43-047-52302 | NBU 1022-25E2AS |
| 43-047-53531 | NBU 1022-5A4BS |
| 43-047-53579 | NBU 1022-5F4BS |
| 43-047-50107 | NBU 921-8B4S |
| 43-047-50109 | NBU 921-8A1S |
| 43-047-52299 | NBU 1022-25F2AS |
| 43-047-52296 | NBU 1022-25C3DS |
| 43-047-52297 | NBU 1022-25C3AS |
| 43-047-52295 | NBU 1022-25C2DS |
| 43-047-52300 | NBU 1022-25D3DS |
| 43-047-52298 | NBU 1022-25D2DS |
| 43-047-51025 | NBU 921-11I |