API Well Number: 43047518580000

**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 1022-11H4CS

**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)**
UO1197A-ST

**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 | 2592 FSL 514 FEL | NESE | 11 | 10.0 S | 22.0 E | S |
| Top of Uppermost Producing Zone | 2398 FNL 489 FEL | SENE | 11 | 10.0 S | 22.0 E | S |
| At Total Depth | 2398 FNL 489 FEL | SENE | 11 | 10.0 S | 22.0 E | S |

**21. COUNTY**
UINTAH

**22. DISTANCE TO NEAREST LEASE LINE (Feet)**
2398

**23. NUMBER OF ACRES IN DRILLING UNIT**
1674

**25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)**
313

**26. PROPOSED DEPTH**
MD: 8437 TVD: 8417

**27. ELEVATION - GROUND LEVEL**
5086

**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 | 11 | 8.625 | 0 - 2070 | 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 - 8437 | 11.6 | I-80 LT&C | 12.5 | Premium Lite High Strength | 260 | 3.38 | 11.0 |
| | | | | | | | 50/50 Poz | 1160 | 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** Andy Lytle **TITLE** Regulatory Analyst **PHONE** 720 929-6100

**SIGNATURE** **DATE** 08/11/2011 **EMAIL** andrew.lytle@anadarko.com

**API NUMBER ASSIGNED**
43047518580000

**APPROVAL**
Permit Manager

RECEIVED: November 03, 2011

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

**NBU 1022-11H4CS**

Surface: 2592 FSL / 514 FEL NESE
BHL: 2398 FNL / 489 FEL SENE

Section 11 T10S R22E

Uintah County, Utah
Mineral Lease: UO1197A-ST

**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 | 940 | |
| Birds Nest | 1252 | Water |
| Mahogany | 1621 | Water |
| Wasatch | 4017 | Gas |
| Mesaverde | 6256 | Gas |
| MVU2 | 7173 | Gas |
| MVL1 | 7705 | Gas |
| TVD | 8417 | Gas |
| TD | 8437 | Gas |

**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*

RECEIVED: August 11, 2011

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 8417' TVD, approximately equals 5,387 psi 0.64 psi/ft = actual bottomhole gradient

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

Maximum anticipated surface pressure equals approximately 3,523 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.*

RECEIVED: August 11, 2011

*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 11 inch 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*

**RECEIVED: August 11, 2011**

*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.*

***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.*

RECEIVED: August 11, 2011

API Well Number: 43047518580000

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | |
|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | DATE | August 10, 2011 |
| WELL NAME | **NBU 1022-11H4CS** | TD | 8,417' TVD 8,437' MD |
| FIELD | Natural Buttes | COUNTY Uintah STATE Utah | FINISHED ELEVATION 5084' |
| SURFACE LOCATION | NESE 2592 FSL 514 FEL Sec 11 T 10S R 22E | | |
| | Latitude: 39.963363 Longitude: -109.398906 | | NAD 27 |
| BTM HOLE LOCATION | SENE 2398 FNL 489 FEL Sec 11 T 10S R 22E | | |
| | Latitude: 39.96415 Longitude: -109.398808 | | 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 |
| | | | 11' | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | | | 7-7/8" | 4-1/2" 11.6# I-80 or equivalent BTC/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 @ 0,940'**

**Top of Birds Nest @ 1,252'**

**Mahogany @ 1,621'**

**Preset f/ GL @ 2,070' 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 @ 4,017'**

Mud logging program TBD

Cased hole logging program from TD - surf csg

**Mverde @ 6,256' TVD**

**MVU2 @ 7,173' TVD**

**MVU1 @ 7,705' TVD**

Max anticipated Mud required 12.5 ppg

**TD @ 8,417' TVD 8,437' MD**



RECEIVED: August 11, 2011

API Well Number: 43047518580000

# KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

**CASING PROGRAM**

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | COLLAPSE LTC | TENSION BTC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | | |
| | | | | | | | | 3,390 | 1,880 | 348,000 | N/A |
| SURFACE | 8-5/8" | 0 | to | 2,070 | 28.00 | IJ-55 | LTC | 2.61 | 1.94 | 6.86 | N/A |
| | | | | | | | | 7,780 | 6,350 | 279,000 | 367,000 |
| PRODUCTION | 4-1/2" | 0 | to | 8,437 | 11.60 | I-80 | LTC/BTC | 1.11 | 1.16 | 3.52 | 4.64 |
| | | | | | | | | | | | |

**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 | 1,570' | 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 | 3,517' | Premium Lite II +0.25 pps | 260 | 20% | 11.00 | | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | | |
| | | | + 0.5% extender | | | | | |
| | TAIL | 4,920' | 50/50 Poz/G + 10% salt + 2% gel | 1,160 | 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. No centralizers will be used. |
| | |

**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

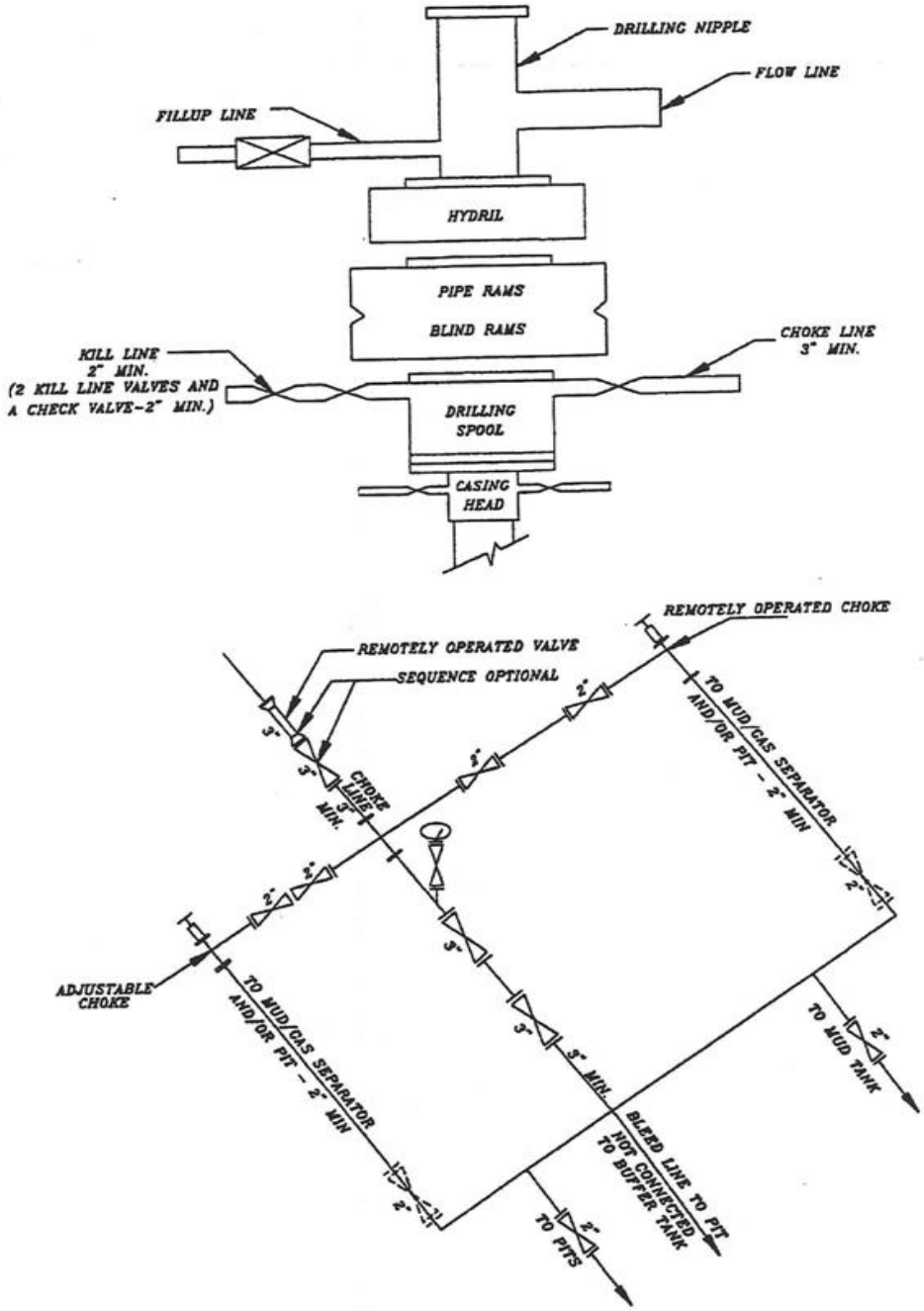
**DRILLING SUPERINTENDENT:** _____ **DATE:** _____

Kenny Gathings / Lovel Young



**RECEIVED: August 11, 2011**

**EXHIBIT A**
**NBU 1022-11H4CS**




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

RECEIVED: August 11, 2011

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

Found 1991 Aluminum Cap, Steel Post & Pile of Stones.

N89°55'57"W - 3073.93' (Measured to Witness Corner)

S89°59'W - 80.04 (G.L.O.)

W.C. Found Set Stone

S89°58'17"W - 2247.80' (Measured to Witness Corner)

Found 1991 Aluminum Cap with Pile of Stones. Fence Post on SE side of Cap.

25.23 (G.L.O.)

W.C. $\frac{1}{4}$ N89°59'E 6.02 (G.L.O.)

ALLOTMENT No.265 No.16 ATCHIE

LOT 1

N00°06'51"W 1320.03' (Meas.)

20.005 (G.L.O.)

2398'

Found 1991 Aluminum Cap in Pile of Stones.

N00°09'14"W 1320.53' (Meas.)

N0°06'W - 80.02 (G.L.O.)

20.005 (G.L.O.)

**WELL LOCATION:**
**NBU 1022-11H4CS**

ELEV. UNGRADED GROUND = 5085.6'

Bottom of Hole

489'

Not Monumented

N00°25'25"E - 5276.36' (Meas.)

N0°01'W (G.L.O.)

11

Found 1991 Aluminum Cap, Pile of Stones.

Well Surface Position

514'

N0°06'W - 80.02 (G.L.O.)

N00°06'14"W - 2640.39' (Meas.)

40.01 (G.L.O.)

NBU 1022-11H4CS (Surface Position)
NAD 83 LATITUDE = 39.963329° (39° 57' 47.983")
LONGITUDE = 109.399587° (109° 23' 58.514")
NAD 27 LATITUDE = 39.963363° (39° 57' 48.107")
LONGITUDE = 109.398906° (109° 23' 56.062")

NBU 1022-11H4CS (Bottom Hole)
NAD 83 LATITUDE = 39.964116° (39° 57' 50.817")
LONGITUDE = 109.399489° (109° 23' 58.161")
NAD 27 LATITUDE = 39.964150° (39° 57' 50.940")
LONGITUDE = 109.398808° (109° 23' 55.709")

2592'

Found 1991 Aluminum Cap, Set Stone West of Cap, Pile of Stones

Found Uintah County Aluminum Cap on 3/4" rebar. Pile of Stones

Found 1991 Aluminum Cap on 3/4" Rebar, Pile of Stones.

N89°59'34"W - 2633.26' (Meas.)

**S89°56'39"W (Basis of Bearings)**

2638.49' (Measured)

N89°59'W - 79.98 (G.L.O.)

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 N05°25'59"E 288.12' 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 3-22-11

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

**WELL PAD: NBU 1022-11I1**

**NBU 1022-11H4CS**
**WELL PLAT**
**2398' FNL, 489' FEL (Bottom Hole)**
**SE $\frac{1}{4}$ NE $\frac{1}{4}$ OF SECTION 11, 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

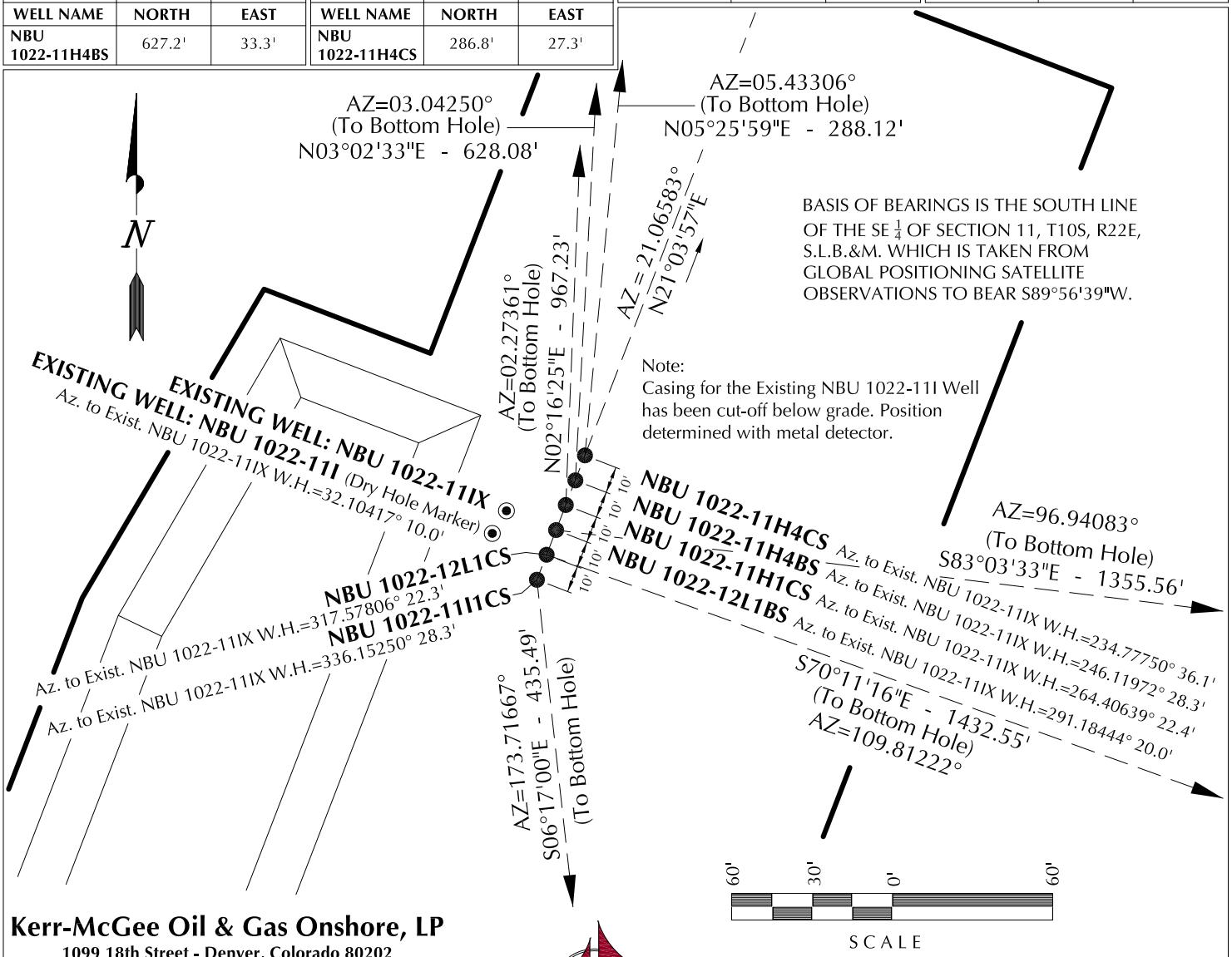
| | | |
|---|---|---|
| DATE SURVEYED: 12-29-10 | SURVEYED BY: R.Y. | SHEET NO: 6 |
| DATE DRAWN: 01-14-11 | DRAWN BY: E.M.S. | |
| SCALE: 1" = 1000' | Date Last Revised: 3-21-11 E.M.S. | 6 OF 18 |

RECEIVED: August 11, 2011

| WELL NAME | SURFACE POSITION | | | | | BOTTOM HOLE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NAD83 | | NAD27 | | | NAD83 | | NAD27 | | |
| | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES |
| NBU 1022-11I1CS | 39°57'47.522" 39.963201° | 109°23'58.746" 109.399652° | 39°57'47.645" 39.963235° | 109°23'56.294" 109.398971° | 2545' FSL 532' FEL | 39°57'43.245" 39.962012° | 109°23'58.138" 109.399483° | 39°57'43.368" 39.962047° | 109°23'55.687" 109.398802° | 2112' FSL 481' FEL |
| NBU 1022-12L1CS | 39°57'47.615" 39.963226° | 109°23'58.699" 109.399639° | 39°57'47.738" 39.963261° | 109°23'56.248" 109.398958° | 2554' FSL 528' FEL | 39°57'42.808" 39.961891° | 109°23'41.400" 109.394833° | 39°57'42.931" 39.961925° | 109°23'38.949" 109.394153° | 2070' FSL 823' FWL |
| NBU 1022-12L1BS | 39°57'47.706" 39.963252° | 109°23'58.653" 109.399626° | 39°57'47.829" 39.963286° | 109°23'56.202" 109.398945° | 2564' FSL 525' FEL | 39°57'46.078" 39.962799° | 109°23'41.378" 109.394827° | 39°57'46.201" 39.962834° | 109°23'38.927" 109.394146° | 2401' FSL 822' FWL |
| NBU 1022-11H1CS | 39°57'47.799" 39.963278° | 109°23'58.606" 109.399613° | 39°57'47.922" 39.963312° | 109°23'56.155" 109.398932° | 2573' FSL 521' FEL | 39°57'57.348" 39.965930° | 109°23'58.105" 109.399474° | 39°57'57.471" 39.965964° | 109°23'55.653" 109.398793° | 1737' FNL 490' FEL |
| NBU 1022-11H4BS | 39°57'47.891" 39.963303° | 109°23'58.560" 109.399600° | 39°57'48.014" 39.963337° | 109°23'56.109" 109.398919° | 2582' FSL 518' FEL | 39°57'54.087" 39.965024° | 109°23'58.126" 109.399480° | 39°57'54.210" 39.965058° | 109°23'55.675" 109.398799° | 2067' FNL 489' FEL |
| NBU 1022-11H4CS | 39°57'47.983" 39.963329° | 109°23'58.514" 109.399587° | 39°57'48.107" 39.963363° | 109°23'56.062" 109.398906° | 2592' FSL 514' FEL | 39°57'50.817" 39.964116° | 109°23'58.161" 109.399489° | 39°57'50.940" 39.964150° | 109°23'55.709" 109.398808° | 2398' FNL 489' FEL |
| NBU 1022-11IX | 39°57'47.778" 39.963272° | 109°23'58.893" 109.399692° | 39°57'47.901" 39.963306° | 109°23'56.441" 109.399011° | 2571' FSL 543' FEL | | | | | |
| NBU 1022-11I | 39°57'47.694" 39.963248° | 109°23'58.961" 109.399711° | 39°57'47.817" 39.963283° | 109°23'56.510" 109.399030° | 2562' FSL 549' FEL | | | | | |

**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 1022-11I1CS | -432.9' | 47.7' | NBU 1022-12L1CS | -485.5' | 1,347.8' | NBU 1022-12L1BS | -163.8' | 1,345.6' | NBU 1022-11H1CS | 966.5' | 38.4' |
| WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST | | | | | | |
| NBU 1022-11H4BS | 627.2' | 33.3' | NBU 1022-11H4CS | 286.8' | 27.3' | | | | | | |




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

## WELL PAD - NBU 1022-11I1

**WELL PAD INTERFERENCE PLAT**
**WELLS - NBU 1022-11I1CS, NBU 1022-12L1CS, NBU 1022-12L1BS, NBU 1022-11H1CS, NBU 1022-11H4BS & NBU 1022-11H4CS**
**LOCATED IN SECTION 11, 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

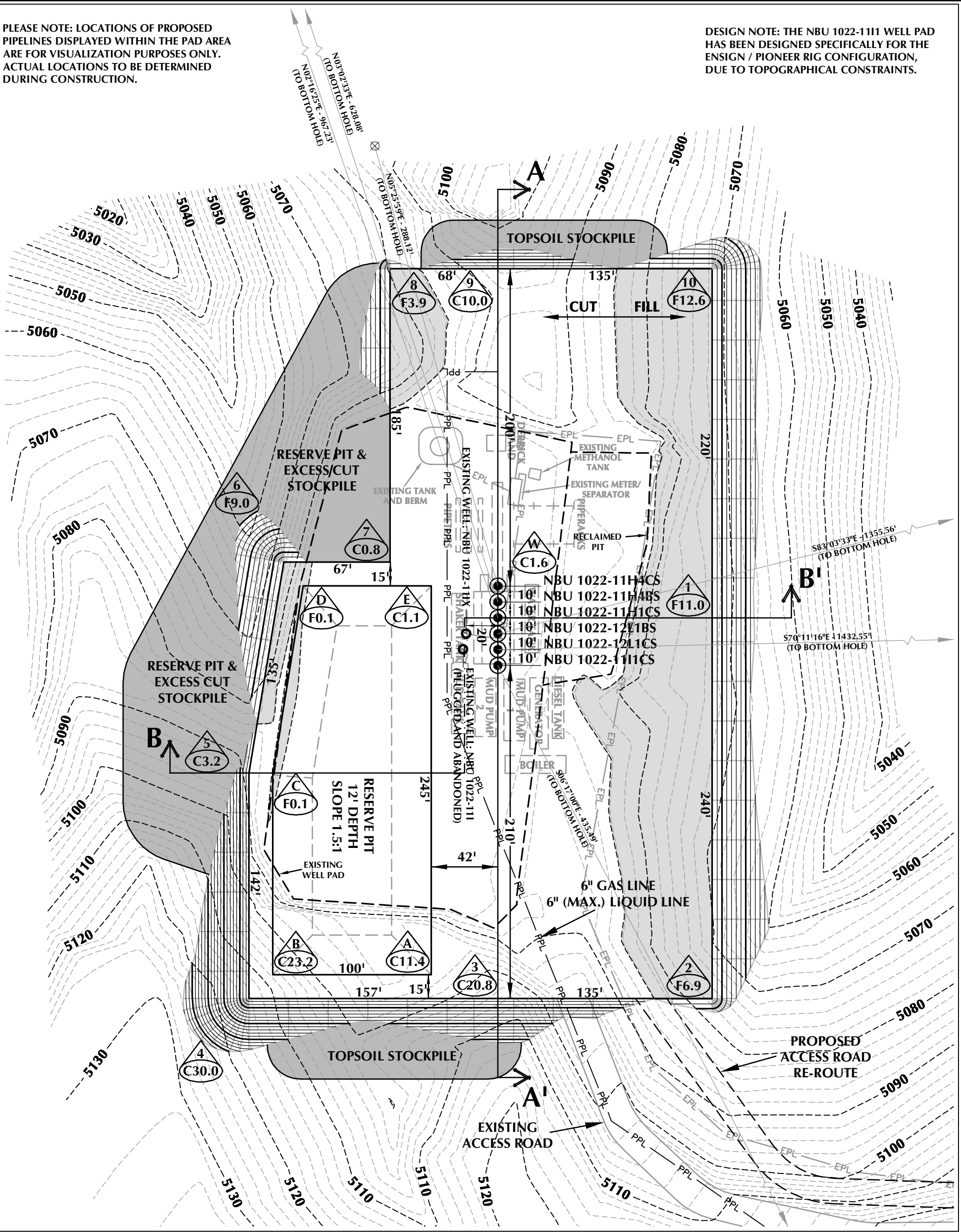
**TIMBERLINE** (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE SURVEYED: 12-29-10 | SURVEYED BY: R.Y. | SHEET NO: 7 |
| DATE DRAWN: 01-14-11 | DRAWN BY: E.M.S. | |
| SCALE: 1" = 60' | Date Last Revised: 3-21-11 E.M.S. | 7 OF 18 |

RECEIVED: August 11, 2011

PLEASE NOTE: LOCATIONS OF PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.

DESIGN NOTE: THE NBU 1022-11I1 WELL PAD HAS BEEN DESIGNED SPECIFICALLY FOR THE ENSIGN / PIONEER RIG CONFIGURATION, DUE TO TOPOGRAPHICAL CONSTRAINTS.




## WELL PAD - NBU 1022-11I1 DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5085.8'
FINISHED GRADE ELEVATION = 5084.2'
CUT SLOPES = 1:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.34 ACRES
TOTAL DAMAGE AREA = 5.49 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

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

WELL PAD - NBU 1022-11I1

WELL PAD - LOCATION LAYOUT
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, 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

### WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 13,189 C.Y.
TOTAL FILL FOR WELL PAD = 12,227 C.Y.
TOPSOIL @ 6" DEPTH = 1,867 C.Y.
EXCESS MATERIAL = 962 C.Y.

### RESERVE PIT QUANTITIES

TOTAL CUT FOR RESERVE PIT
+/- 7,880 C.Y.
RESERVE PIT CAPACITY (2' OF FREEBOARD)
+/- 29,940 BARRELS

### 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

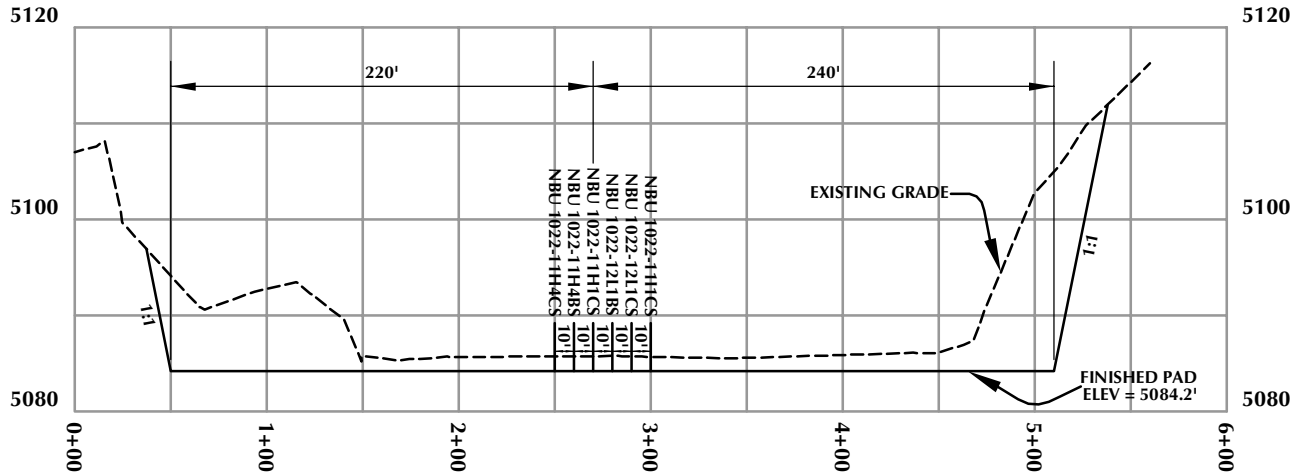
HORIZONTAL 0 30' 60' 1" = 60'
2' CONTOURS

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

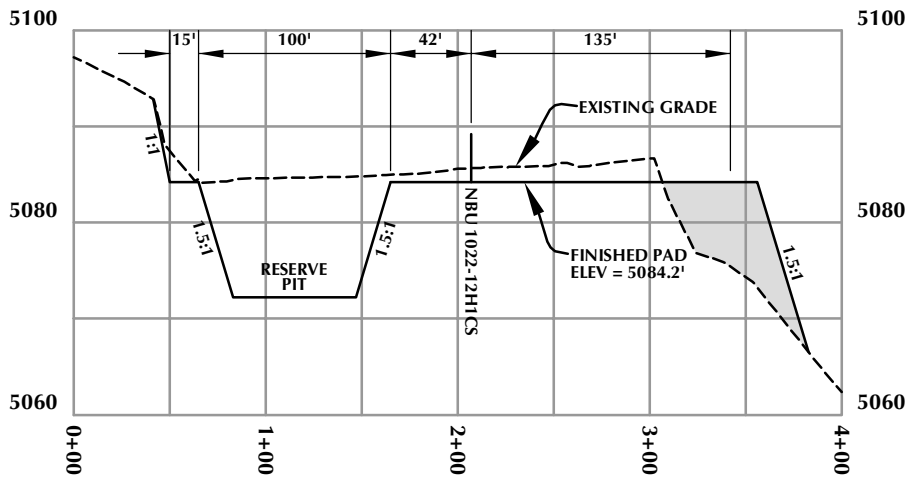
| SCALE: 1"=60' | DATE: 2/8/11 | SHEET NO: |
|---|---|---|
| REVISED: | TAR 3/24/11 | 8 8 OF 18 |

C:\ANADARKO\2010_62_NBU_FOCUS_1022-11_14\DWG\NBU_1022-11I1\NBU_1022-11I1_PAD_20110316.DWG, 3/24/2011 11:29:02 AM

RECEIVED: August 11, 2011




## CROSS SECTION A-A'




## CROSS SECTION B-B'

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

WELL PAD - NBU 1022-11I1

WELL PAD - CROSS SECTIONS
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, 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

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

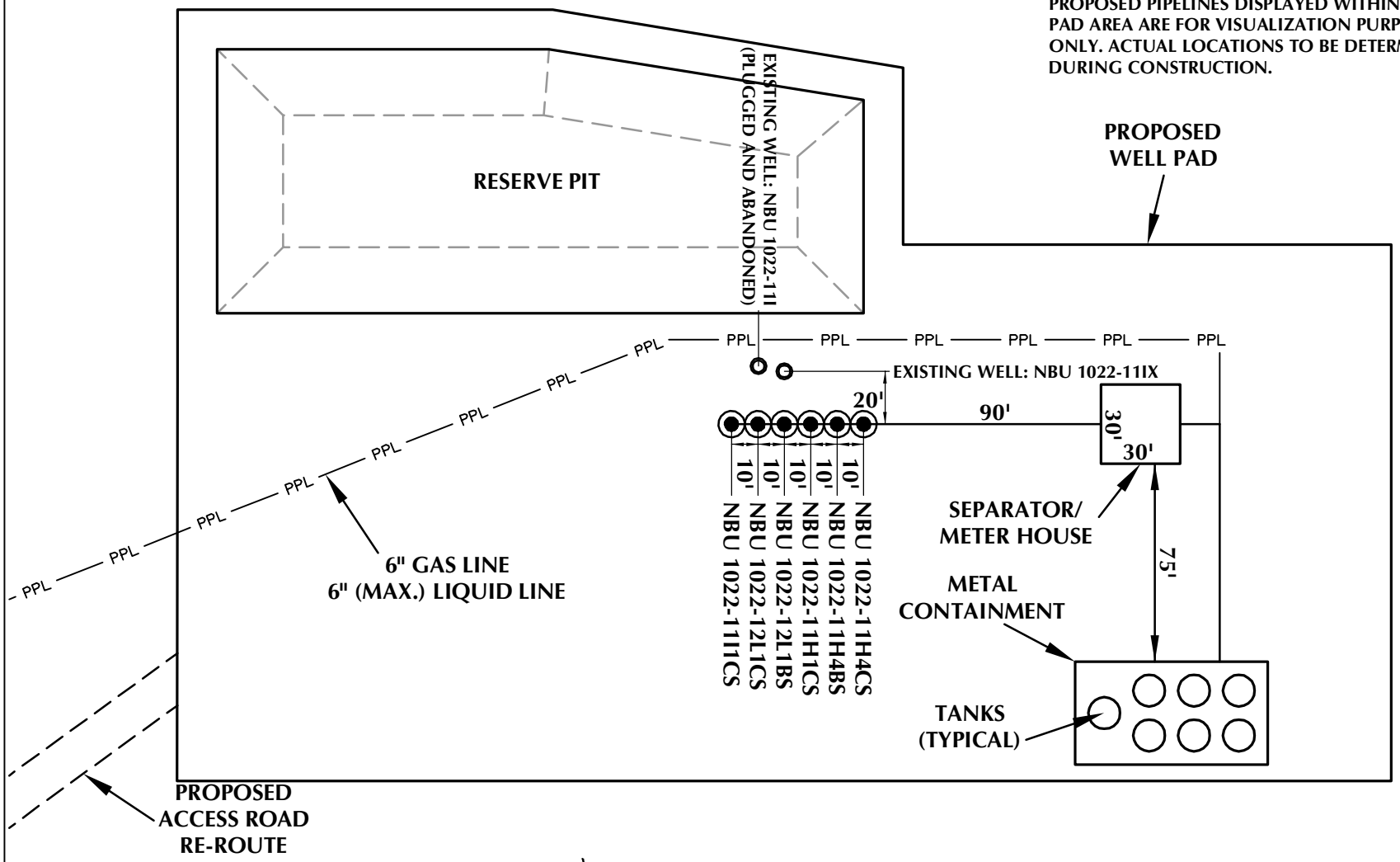
TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

Scale: 1"=100' | Date: 2/8/11 | SHEET NO: 9
REVISED: TAR 3/24/11 | 9 OF 18

K:\ANADARKO\2010_62_NBU_FOCUS_1022-11_14\DWG\NBU_1022-11I1\NBU_1022-11I1_PAD_20110316.DWG, 3/24/2011 11:34:17 AM

RECEIVED: August 11, 2011

PLEASE NOTE: LOCATIONS OF FACILITIES AND PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.




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

WELL PAD - NBU 1022-11I1

WELL PAD - FACILITIES DIAGRAM
NBU 1022-11I1CS, NBU 1022-12L1CS, NBU 1022-12L1BS, NBU 1022-11H1CS, NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, 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

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
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| Scale: 1"=60' | Date: 2/8/11 | SHEET NO: |
|---|---|---|
| REVISED: | TAR 3/24/11 | 10 10 OF 18 |

K:\ANADARKO\2010_62_NBU_FOCUS_1022-11_14\DWG\NBU_1022-11I1\NBU_1022-11I1_PAD_20110316.DWG, 3/24/2011 11:32:02 AM

RECEIVED: August 11, 2011

API Well Number: 43047518580000

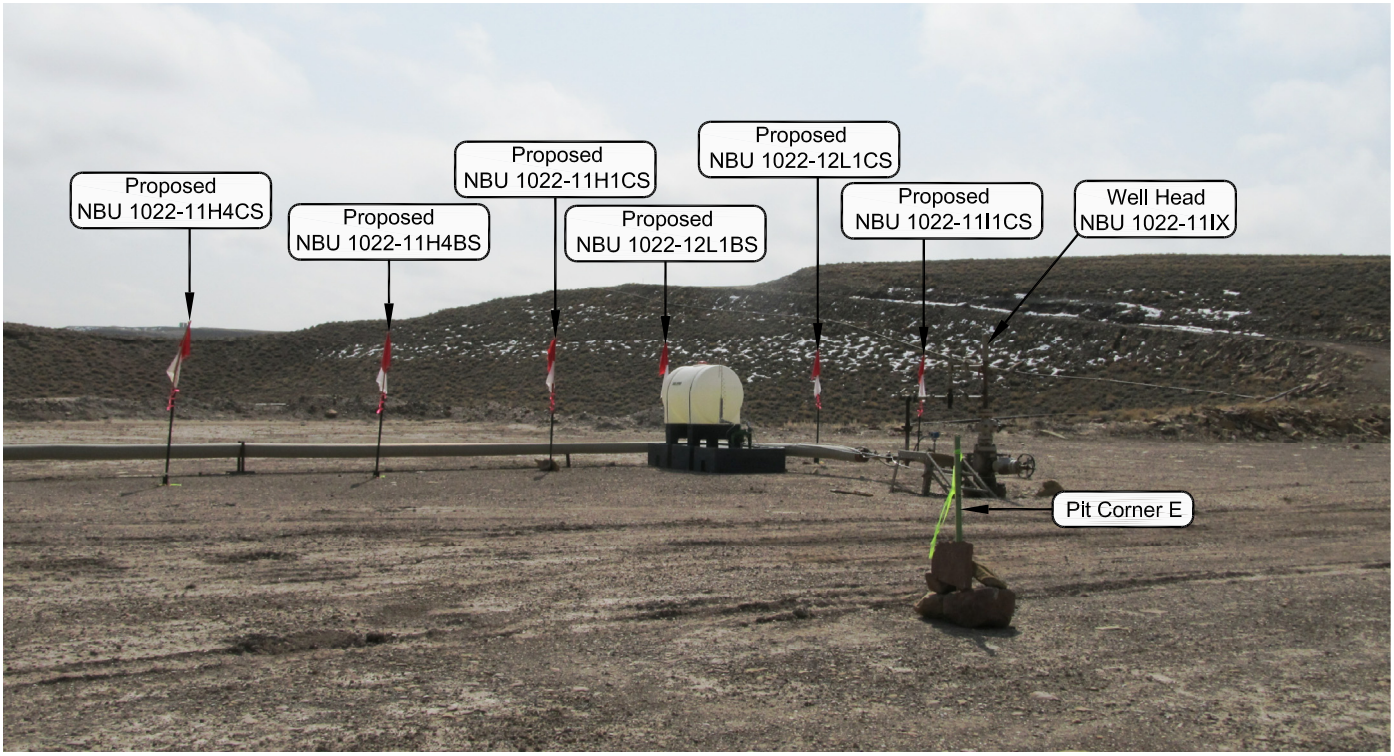



**PHOTO VIEW: FROM PIT CORNER E TO LOCATION STAKE** **CAMERA ANGLE: SOUTHEASTERLY**

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

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

**WELL PAD - NBU 1022-11I1**

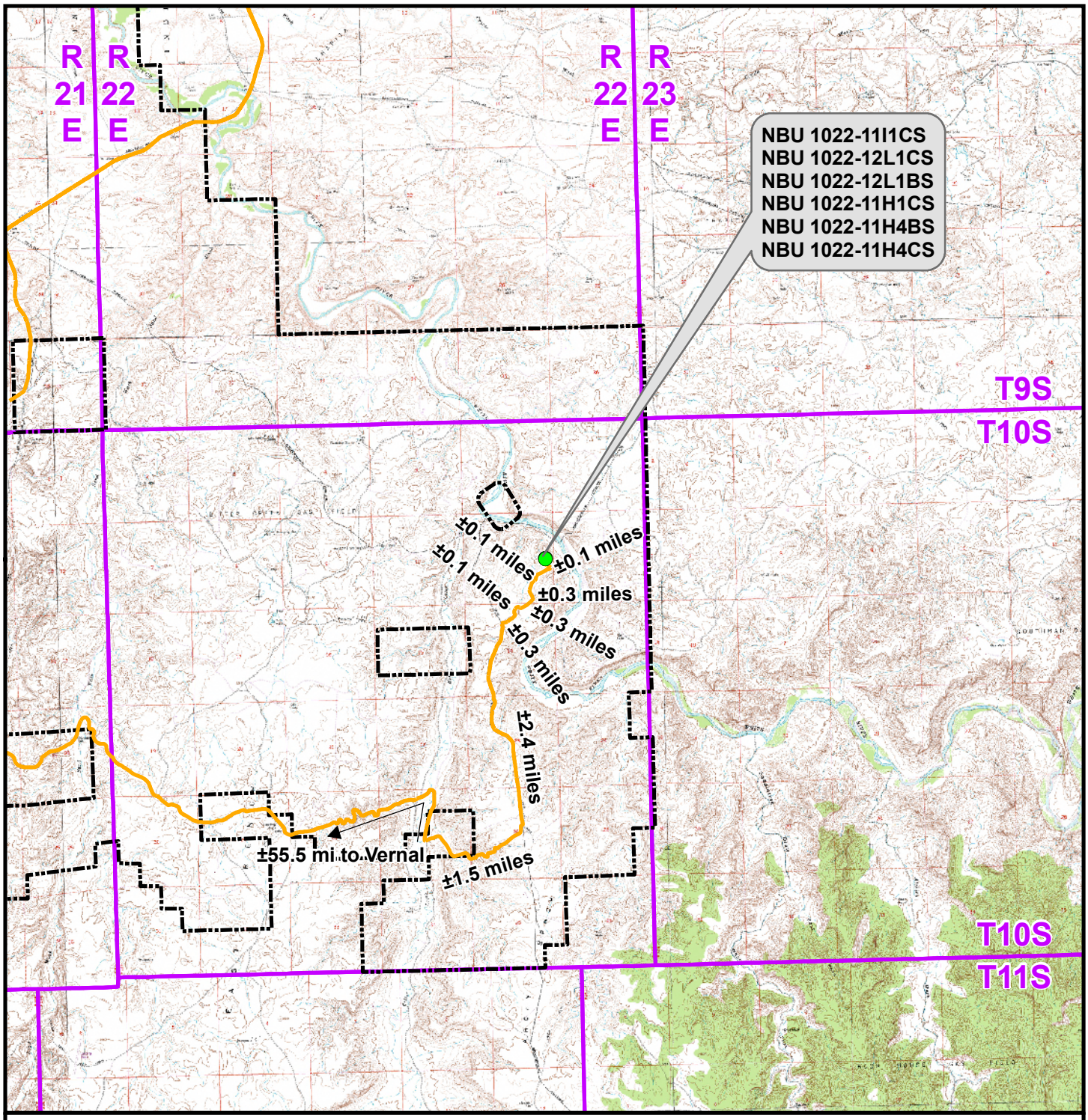
**LOCATION PHOTOS**
**NBU 1022-11I1CS, NBU 1022-12L1CS, NBU 1022-12L1BS, NBU 1022-11H1CS, NBU 1022-11H4BS & NBU 1022-11H4CS**
**LOCATED IN SECTION 11, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.**

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 PHOTOS TAKEN: 12-29-10 | PHOTOS TAKEN BY: R.Y. | SHEET NO: |
| DATE DRAWN: 01-14-11 | DRAWN BY: E.M.S. | 11 |
| Date Last Revised: 3-21-11 E.M.S. | | 11 OF 18 |

RECEIVED: August 11, 2011




**Legend**

Distance From Well Pad - NBU 1022-11I1 To Unit Boundary: ±3,431ft

- 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 1022-11I1**

TOPO A
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

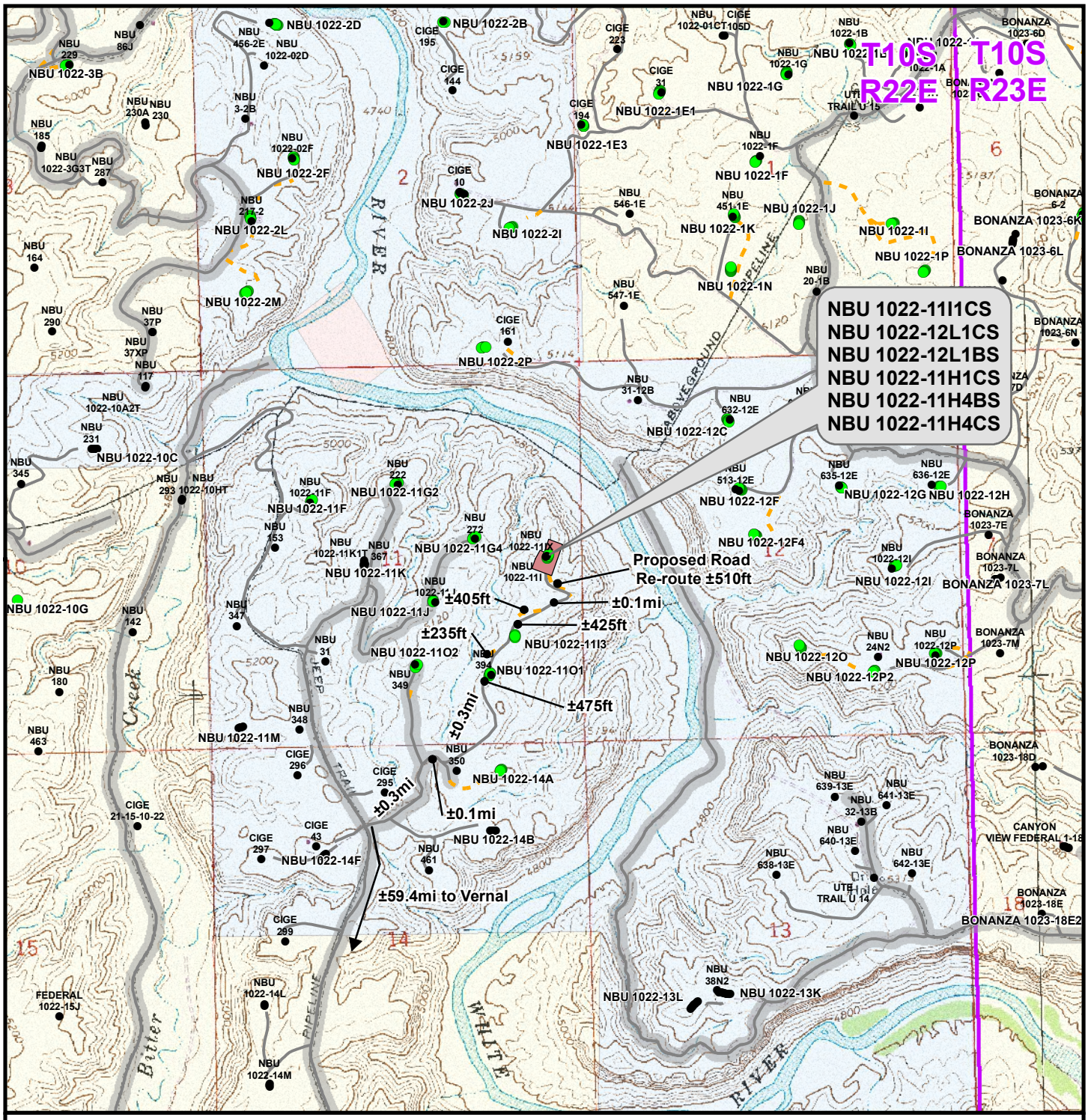
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

| Scale: 1:100,000 | NAD83 USP Central | Sheet No: |
|---|---|---|
| Drawn: KGS | Date: 8 Feb 2011 | 12 |
| Revised: TL | Date: 24 Mar 2011 | 12 of 18 |

RECEIVED: August 11, 2011

API Well Number: 43047518580000




**Legend**

Total Proposed Road Re-route Length: ±510ft

- 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 1022-11I1**

TOPO B
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

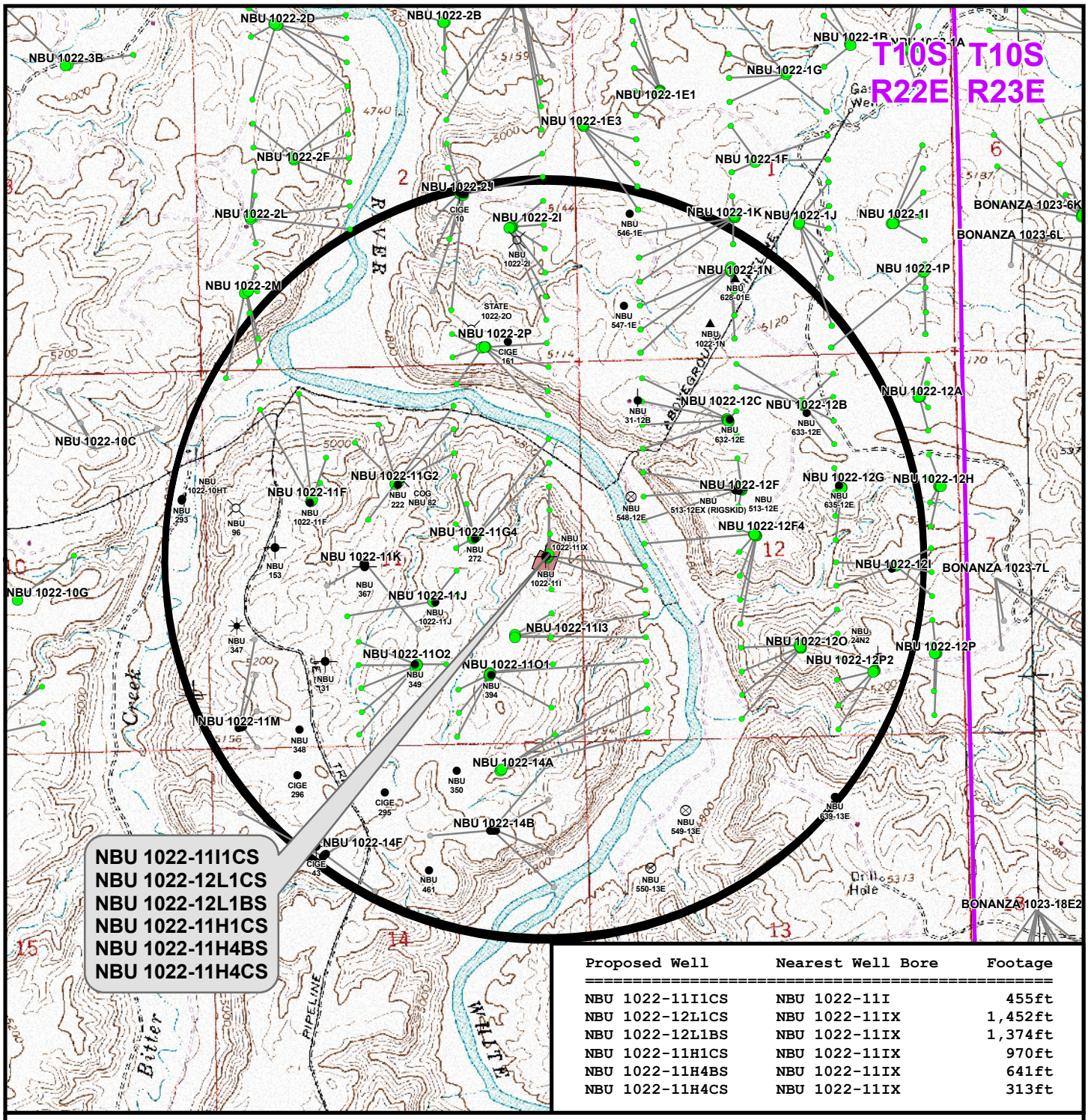
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

| | | |
|---|---|---|
| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 13 |
| Drawn: KGS | Date: 8 Feb 2011 | 13 of 18 |
| Revised: TL | Date: 24 Mar 2011 | |

RECEIVED: August 11, 2011

API Well Number: 43047518580000




| Proposed Well | Nearest Well Bore | Footage |
|---|---|---|
| NBU 1022-11I1CS | NBU 1022-11I | 455ft |
| NBU 1022-12L1CS | NBU 1022-11IX | 1,452ft |
| NBU 1022-12L1BS | NBU 1022-11IX | 1,374ft |
| NBU 1022-11H1CS | NBU 1022-11IX | 970ft |
| NBU 1022-11H4BS | NBU 1022-11IX | 641ft |
| NBU 1022-11H4CS | NBU 1022-11IX | 313ft |

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 1022-11I1**

**TOPO C**
NBU 1022-11I1CS, NBU 1022-12L1CS, NBU 1022-12L1BS, NBU 1022-11H1CS, NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

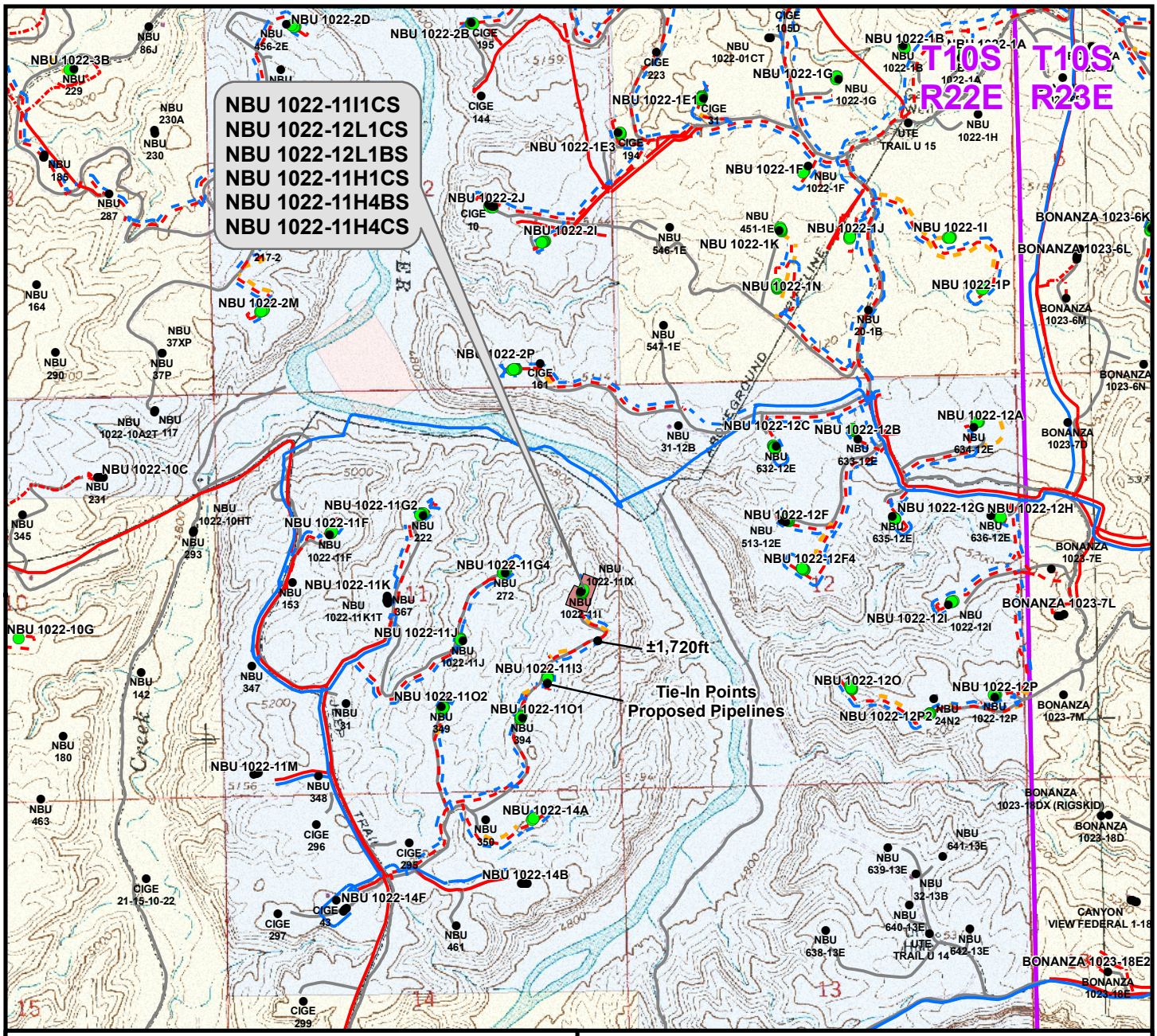
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 14 |
|---|---|---|
| Drawn: KGS | Date: 8 Feb 2011 | 14 of 18 |
| Revised: TL | Date: 24 Mar 2011 | |

RECEIVED: August 11, 2011

API Well Number: 43047518580000




| Proposed Liquid Pipeline | Length |
|---|---|
| Proposed 6"(Max.) (Meter House to Edge of Pad) | ±520ft |
| Proposed 6"(Max.) (Edge of Pad to 11I3 Intersection) | ±1,720ft |
| TOTAL PROPOSED LIQUID PIPELINE = | ±2,240ft |

| Proposed Gas Pipeline | Length |
|---|---|
| Proposed 6" (Meter House to Edge of Pad) | ±520ft |
| Proposed 6" (Edge of Pad to 11I3 Intersection) | ±1,720ft |
| TOTAL PROPOSED GAS PIPELINE = | ±2,240ft |

**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 1022-11I1**

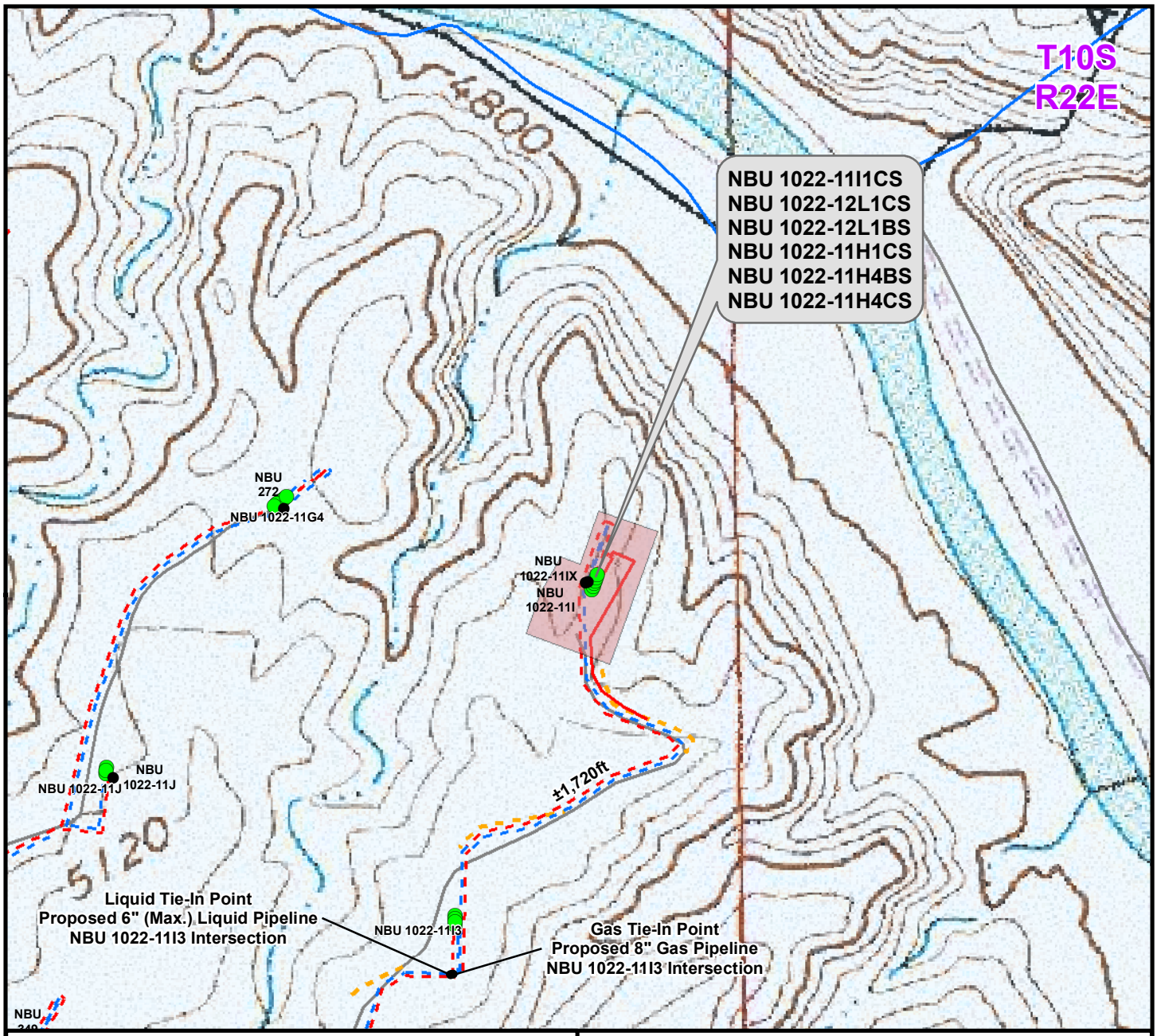
TOPO D
NBU 1022-11I1CS, NBU 1022-12L1CS, NBU 1022-12L1BS, NBU 1022-11H1CS, NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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

N

| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: |
|---|---|---|
| Drawn: JFE | Date: 8 Feb 2011 | 15 |
| Revised: TL | Date: 24 Mar 2011 | 15 of 18 |

RECEIVED: August 11, 2011




| Proposed Liquid Pipeline | Length |
|---|---|
| Proposed 6"(Max.) (Meter House to Edge of Pad) | ±520ft |
| Proposed 6"(Max.) (Edge of Pad to 11I3 Intersection) | ±1,720ft |
| TOTAL PROPOSED LIQUID PIPELINE = | ±2,240ft |

| Proposed Gas Pipeline | Length |
|---|---|
| Proposed 6" (Meter House to Edge of Pad) | ±520ft |
| Proposed 6" (Edge of Pad to 11I3 Intersection) | ±1,720ft |
| TOTAL PROPOSED GAS PIPELINE = | ±2,240ft |

**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 1022-11I1**

TOPO D2 (PAD & PIPELINE DETAIL)
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

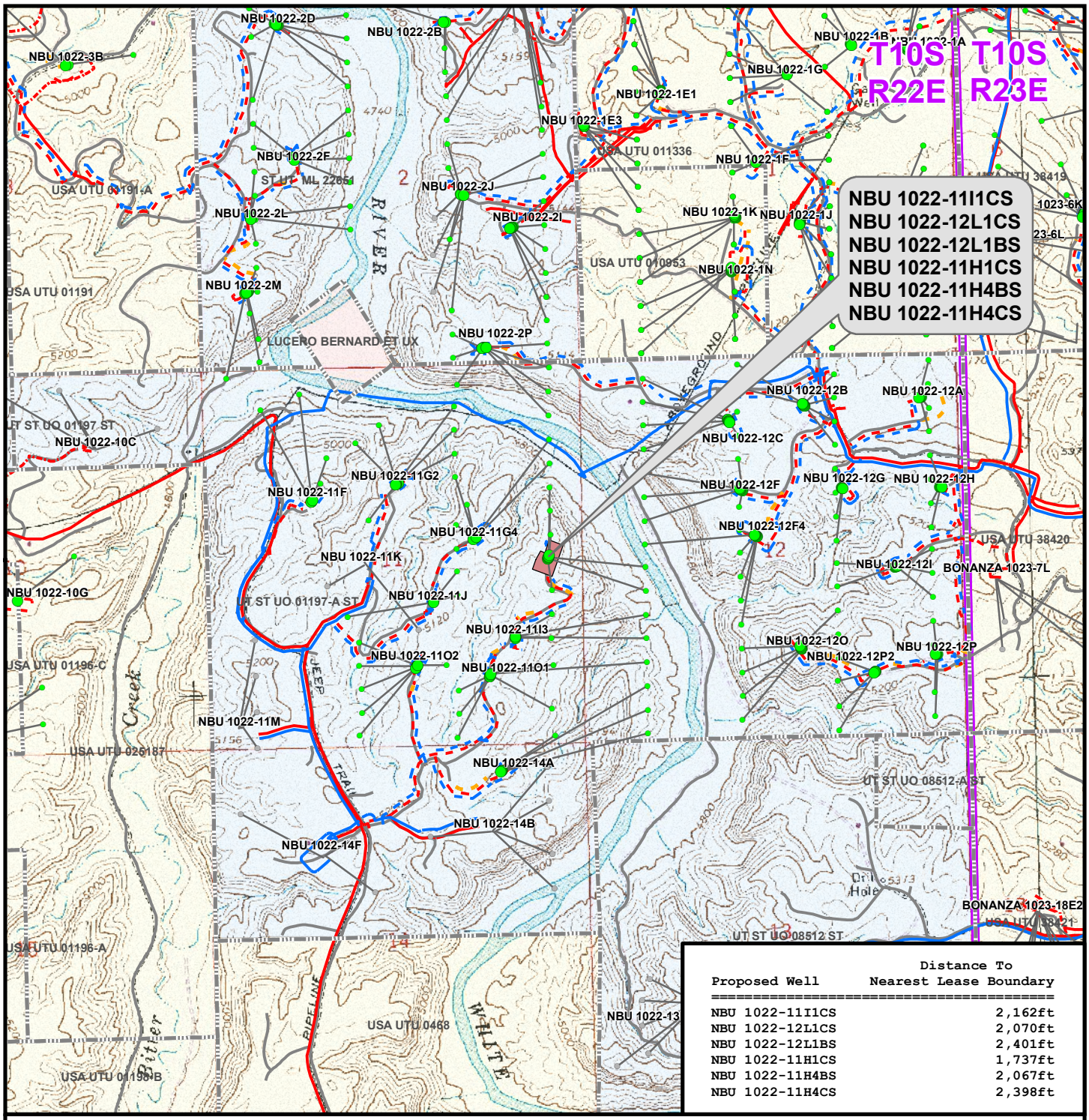
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

| Scale: 1" = 500ft | NAD83 USP Central | Sheet No: |
|---|---|---|
| Drawn: JFE | Date: 8 Feb 2011 | 16 |
| Revised: TL | Date: 24 Mar 2011 | 16 of 18 |

RECEIVED: August 11, 2011

API Well Number: 43047518580000




| Proposed Well | Distance To Nearest Lease Boundary |
|---|---|
| NBU 1022-11I1CS | 2,162ft |
| NBU 1022-12L1CS | 2,070ft |
| NBU 1022-12L1BS | 2,401ft |
| NBU 1022-11H1CS | 1,737ft |
| NBU 1022-11H4BS | 2,067ft |
| NBU 1022-11H4CS | 2,398ft |

**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 1022-11I1**

TOPO E
NBU 1022-11I1CS, NBU 1022-12L1CS,
NBU 1022-12L1BS, NBU 1022-11H1CS,
NBU 1022-11H4BS & NBU 1022-11H4CS
LOCATED IN SECTION 11, 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

N

| | | | |
|---|---|---|---|
| Scale: 1" = 2,000ft | NAD83 USP Central | Sheet No: 17 | |
| Drawn: KGS | Date: 8 Feb 2011 | | 17 of 18 |
| Revised: TL | Date: 24 Mar 2011 | | |

RECEIVED: August 11, 2011

**Kerr-McGee Oil & Gas Onshore, LP**
**WELL PAD - NBU 1022-11I1**
**WELLS – NBU 1022-11I1CS, NBU 1022-12L1CS,**
**NBU 1022-12L1BS, NBU 1022-11H1CS,**
**NBU 1022-11H4BS & NBU 1022-11H4CS**
**Section 11, 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 D Road 4150). Exit left and proceed in a northerly direction along the Archy Bench Road approximately 2.4 miles to a Class D County Road to the northeast. Exit right and proceed in a northeasterly direction along the Class D County Road approximately 0.3 miles to a second Class D County Road to the northeast. Exit right and proceed in a northeasterly, then southeasterly direction along the second Class D County Road approximately 0.1 miles to a service road to the northeast. Exit left and proceed in a northeasterly direction along the service road approximately 0.3 miles to the proposed NBU 1022-11O1 well pad. Continue through the proposed NBU 1022-11O1 well pad approximately 475 feet in a northeasterly direction to the proposed access road for the NBU 1022-11I3 well pad. Follow the road flags in a northeasterly direction approximately 235 feet to the proposed NBU 1022-11I3 well pad. Continue through the proposed NBU 1022-11I3 well pad approximately 425 feet in a northeasterly direction to a proposed road re-route. Follow the road flags in a northeasterly direction approximately 405 feet to the existing service road. Continue in a northeasterly direction along the service road approximately 0.1 miles to the proposed access road. Follow the road flags in a northeasterly, then northwesterly direction approximately 510 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 60.6 miles in a southerly direction.



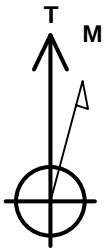
RECEIVED: August 11, 2011

API Well Number: 43047518580000

Scientific Drilling
Rocky Mountain Operations

**Project:** Uintah County, UT UTM12
**Site:** NBU 1022-11I1 PAD
**Well:** NBU 1022-11H4CS
**Wellbore:** OH
**Design:** PLAN #1 5-11-11 RHS

Anadarko Petroleum Corporation




Azimuths to True North
Magnetic North: 11.04°

Magnetic Field
Strength: 52331.8snT
Dip Angle: 65.86°
Date: 05/11/2011
Model: IGRF2010

**WELL DETAILS: NBU 1022-11H4CS**

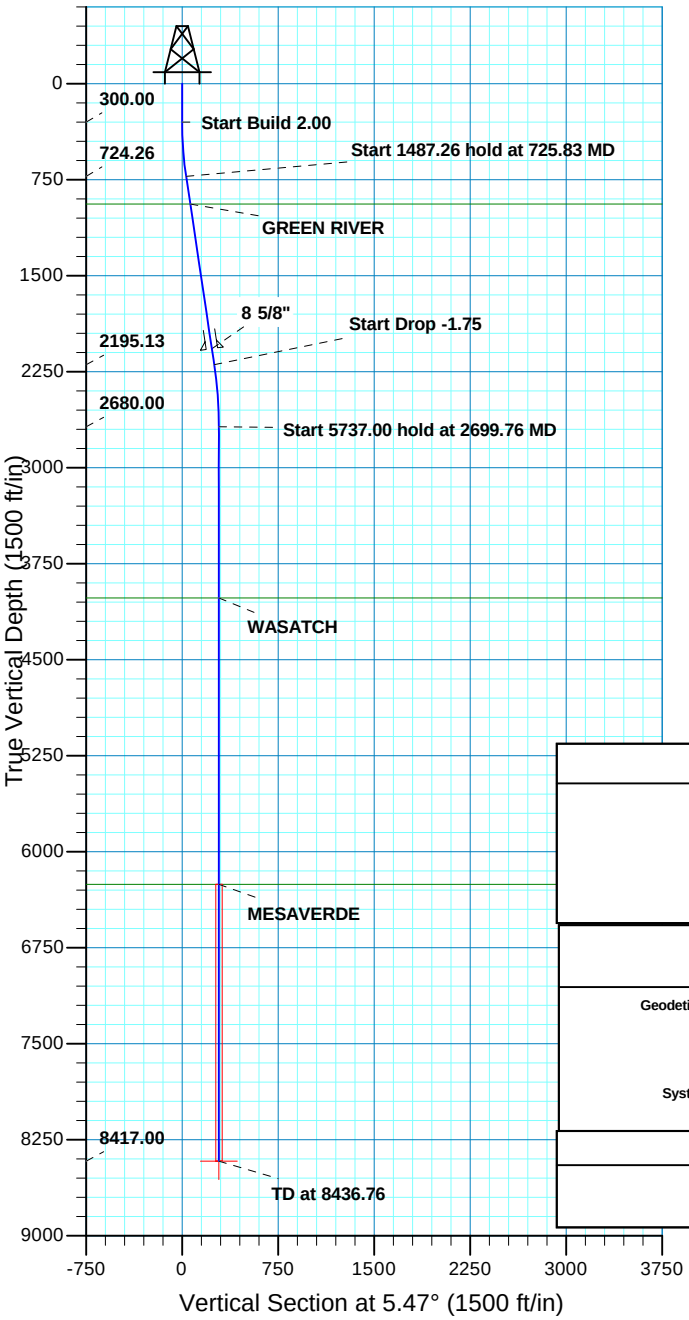
GL 5084' & KB 14'
@ 5098.00ft (ASSUMED)

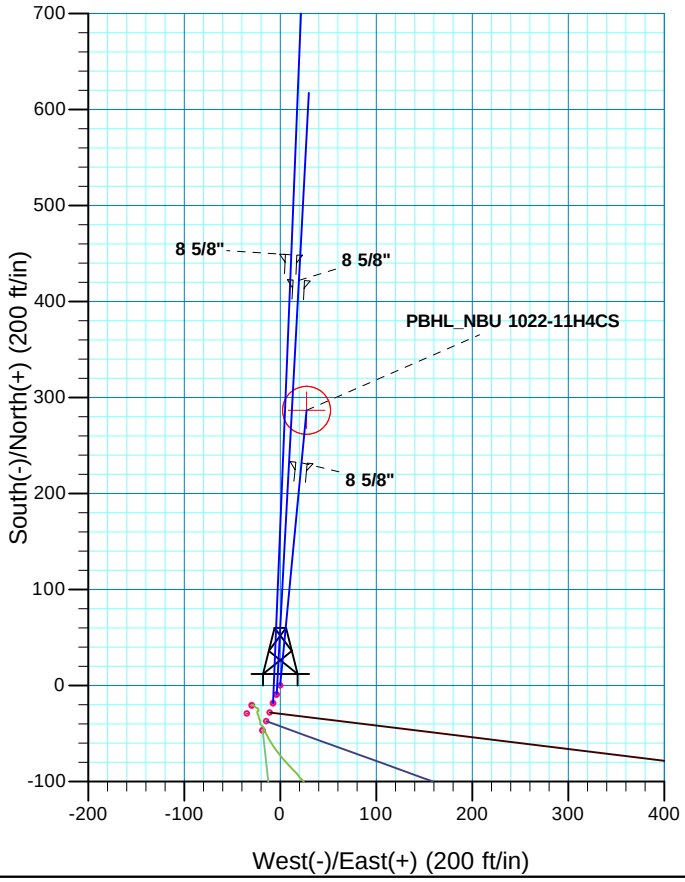
| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 14516730.53 | 2089066.22 | 39° 57' 48.107 N | 109° 23' 56.062 W |

**DESIGN TARGET DETAILS**

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| PBHL | 8417.00 | 286.64 | 27.47 | 14517017.62 | 2089088.54 | 39° 57' 50.940 N | 109° 23' 55.709 W | Circle (Radius: 25.00) |

- plan hits target center




**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 | |
| 725.83 | 8.52 | 5.47 | 724.26 | 31.45 | 3.01 | 2.00 | 5.47 | 31.59 | |
| 2213.09 | 8.52 | 5.47 | 2195.13 | 250.70 | 24.02 | 0.00 | 0.00 | 251.85 | |
| 2699.76 | 0.00 | 0.00 | 2680.00 | 286.64 | 27.47 | 1.75 | 180.00 | 287.95 | |
| 8436.76 | 0.00 | 0.00 | 8417.00 | 286.64 | 27.47 | 0.00 | 0.00 | 287.95 | PBHL_NBU 1022-11H4CS |

**PROJECT DETAILS: Uintah County, UT UTM12**

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 11 T10S R22E
System Datum: Mean Sea Level

**FORMATION TOP DETAILS**

| TVDPath | MDPath | Formation |
|---|---|---|
| 940.00 | 943.97 | GREEN RIVER |
| 4017.00 | 4036.76 | WASATCH |
| 6256.00 | 6275.76 | MESAVERDE |

**CASING DETAILS**

| TVD | MD | Name | Size |
|---|---|---|---|
| 2070.00 | 2086.57 | 8 5/8" | 8.625 |

RECE

Plan: PLAN #1 5-11-11 RHS (NBU 1022-11H4CS/OH)

Created By: RobertScott Date: 9:37, May 11 2011

Scientific Drilling
Rocky Mountain Operations

# Kerr McGee Oil and Gas Onshore LP

**Uintah County, UT UTM12**
**NBU 1022-11I1 PAD**
**NBU 1022-11H4CS**

**OH**

**Plan: PLAN #1 5-11-11 RHS**

# Standard Planning Report

**11 May, 2011**

Anadarko
Petroleum Corporation

RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Project** Uintah County, UT UTM12

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

**Site** NBU 1022-11I1 PAD, SECTION 11 T10S R22E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,516,711.83 usft | **Latitude:** | 39° 57' 47.923 N |
| **From:** | Lat/Long | **Easting:** | 2,089,059.26 usft | **Longitude:** | 109° 23' 56.155 W |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 1.03 ° |

**Well** NBU 1022-11H4CS, 2592 FSL 514 FEL

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 18.58 ft | **Northing:** | 14,516,730.54 usft | **Latitude:** | 39° 57' 48.107 N |
| | **+E/-W** | 7.29 ft | **Easting:** | 2,089,066.22 usft | **Longitude:** | 109° 23' 56.062 W |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | | **Ground Level:** | 5,084.00 ft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 05/11/2011 | 11.04 | 65.86 | 52,332 |

**Design** PLAN #1 5-11-11 RHS

**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 | 5.47 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | 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 | |
| 725.83 | 8.52 | 5.47 | 724.26 | 31.45 | 3.01 | 2.00 | 2.00 | 0.00 | 5.47 | |
| 2,213.09 | 8.52 | 5.47 | 2,195.13 | 250.70 | 24.02 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,699.76 | 0.00 | 0.00 | 2,680.00 | 286.64 | 27.47 | 1.75 | -1.75 | 0.00 | 180.00 | |
| 8,436.76 | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_NBU 1022-11I |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 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 |
| **Start Build 2.00** | | | | | | | | | |
| 400.00 | 2.00 | 5.47 | 399.98 | 1.74 | 0.17 | 1.75 | 2.00 | 2.00 | 0.00 |
| 500.00 | 4.00 | 5.47 | 499.84 | 6.95 | 0.67 | 6.98 | 2.00 | 2.00 | 0.00 |
| 600.00 | 6.00 | 5.47 | 599.45 | 15.62 | 1.50 | 15.69 | 2.00 | 2.00 | 0.00 |
| 700.00 | 8.00 | 5.47 | 698.70 | 27.75 | 2.66 | 27.88 | 2.00 | 2.00 | 0.00 |
| 725.83 | 8.52 | 5.47 | 724.26 | 31.45 | 3.01 | 31.59 | 2.00 | 2.00 | 0.00 |
| **Start 1487.26 hold at 725.83 MD** | | | | | | | | | |
| 800.00 | 8.52 | 5.47 | 797.62 | 42.38 | 4.06 | 42.57 | 0.00 | 0.00 | 0.00 |
| 900.00 | 8.52 | 5.47 | 896.51 | 57.12 | 5.47 | 57.38 | 0.00 | 0.00 | 0.00 |
| 943.97 | 8.52 | 5.47 | 940.00 | 63.60 | 6.09 | 63.90 | 0.00 | 0.00 | 0.00 |
| **GREEN RIVER** | | | | | | | | | |
| 1,000.00 | 8.52 | 5.47 | 995.41 | 71.86 | 6.89 | 72.19 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 8.52 | 5.47 | 1,094.31 | 86.61 | 8.30 | 87.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 8.52 | 5.47 | 1,193.20 | 101.35 | 9.71 | 101.81 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 8.52 | 5.47 | 1,292.10 | 116.09 | 11.12 | 116.62 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 8.52 | 5.47 | 1,391.00 | 130.83 | 12.54 | 131.43 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 8.52 | 5.47 | 1,489.90 | 145.57 | 13.95 | 146.24 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 8.52 | 5.47 | 1,588.79 | 160.32 | 15.36 | 161.05 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 8.52 | 5.47 | 1,687.69 | 175.06 | 16.77 | 175.86 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 8.52 | 5.47 | 1,786.59 | 189.80 | 18.19 | 190.67 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 8.52 | 5.47 | 1,885.49 | 204.54 | 19.60 | 205.48 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 8.52 | 5.47 | 1,984.38 | 219.29 | 21.01 | 220.29 | 0.00 | 0.00 | 0.00 |
| 2,086.57 | 8.52 | 5.47 | 2,070.00 | 232.05 | 22.24 | 233.11 | 0.00 | 0.00 | 0.00 |
| **8 5/8"** | | | | | | | | | |
| 2,100.00 | 8.52 | 5.47 | 2,083.28 | 234.03 | 22.43 | 235.10 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 8.52 | 5.47 | 2,182.18 | 248.77 | 23.84 | 249.91 | 0.00 | 0.00 | 0.00 |
| 2,213.09 | 8.52 | 5.47 | 2,195.13 | 250.70 | 24.02 | 251.85 | 0.00 | 0.00 | 0.00 |
| **Start Drop -1.75** | | | | | | | | | |
| 2,300.00 | 7.00 | 5.47 | 2,281.24 | 262.37 | 25.14 | 263.58 | 1.75 | -1.75 | 0.00 |
| 2,400.00 | 5.25 | 5.47 | 2,380.66 | 272.99 | 26.16 | 274.24 | 1.75 | -1.75 | 0.00 |
| 2,500.00 | 3.50 | 5.47 | 2,480.37 | 280.57 | 26.89 | 281.86 | 1.75 | -1.75 | 0.00 |
| 2,600.00 | 1.75 | 5.47 | 2,580.26 | 285.13 | 27.32 | 286.43 | 1.75 | -1.75 | 0.00 |
| 2,699.76 | 0.00 | 0.00 | 2,680.00 | 286.64 | 27.47 | 287.95 | 1.75 | -1.75 | 0.00 |
| **Start 5737.00 hold at 2699.76 MD** | | | | | | | | | |
| 2,700.00 | 0.00 | 0.00 | 2,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 0.00 | 0.00 | 2,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 0.00 | 0.00 | 2,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 0.00 | 0.00 | 2,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 0.00 | 0.00 | 3,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 0.00 | 0.00 | 3,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 0.00 | 0.00 | 3,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 0.00 | 0.00 | 3,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 0.00 | 0.00 | 3,480.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 0.00 | 0.00 | 3,580.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 0.00 | 0.00 | 3,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 0.00 | 0.00 | 3,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 0.00 | 0.00 | 3,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,000.00 | 0.00 | 0.00 | 3,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,036.76 | 0.00 | 0.00 | 4,017.00 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| **WASATCH** | | | | | | | | | |
| 4,100.00 | 0.00 | 0.00 | 4,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 0.00 | 0.00 | 4,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 0.00 | 0.00 | 4,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 0.00 | 0.00 | 4,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 0.00 | 0.00 | 4,480.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 0.00 | 0.00 | 4,580.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 0.00 | 0.00 | 4,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 0.00 | 0.00 | 4,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 0.00 | 0.00 | 4,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 0.00 | 0.00 | 4,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 0.00 | 0.00 | 5,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 0.00 | 0.00 | 5,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 5,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 0.00 | 0.00 | 5,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 0.00 | 0.00 | 5,480.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 0.00 | 0.00 | 5,580.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 5,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 6,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 6,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,275.76 | 0.00 | 0.00 | 6,256.00 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| **MESAVERDE** | | | | | | | | | |
| 6,300.00 | 0.00 | 0.00 | 6,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,480.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,580.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 0.00 | 0.00 | 6,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 6,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 7,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 7,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,480.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,580.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,680.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,780.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,880.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,980.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 8,080.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,180.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,280.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,380.24 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| 8,436.76 | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 287.95 | 0.00 | 0.00 | 0.00 |
| **PBHL_NBU 1022-11H4CS** | | | | | | | | | |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL_NBU 1022-11H4( - plan hits target center - Circle (radius 25.00) | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 2,086.57 | 2,070.00 | 8 5/8" | 8.625 | 11.000 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 943.97 | 940.00 | GREEN RIVER | | | |
| 4,036.76 | 4,017.00 | WASATCH | | | |
| 6,275.76 | 6,256.00 | MESAVERDE | | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 300.00 | 300.00 | 0.00 | 0.00 | Start Build 2.00 |
| 725.83 | 724.26 | 31.45 | 3.01 | Start 1487.26 hold at 725.83 MD |
| 2,213.09 | 2,195.13 | 250.70 | 24.02 | Start Drop -1.75 |
| 2,699.76 | 2,680.00 | 286.64 | 27.47 | Start 5737.00 hold at 2699.76 MD |
| 8,436.76 | 8,417.00 | 286.64 | 27.47 | TD at 8436.76 |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# Kerr McGee Oil and Gas Onshore LP

**Uintah County, UT UTM12**
**NBU 1022-11I1 PAD**
**NBU 1022-11H4CS**

**OH**

**Plan: PLAN #1 5-11-11 RHS**

# Standard Planning Report - Geographic

**11 May, 2011**

Anadarko
Petroleum Corporation

RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report - Geographic

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Project** Uintah County, UT UTM12

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

**Site** NBU 1022-11I1 PAD, SECTION 11 T10S R22E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,516,711.83 usft | **Latitude:** | 39° 57' 47.923 N |
| **From:** | Lat/Long | **Easting:** | 2,089,059.26 usft | **Longitude:** | 109° 23' 56.155 W |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 1.03 ° |

**Well** NBU 1022-11H4CS, 2592 FSL 514 FEL

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 14,516,730.54 usft | **Latitude:** | 39° 57' 48.107 N |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,089,066.22 usft | **Longitude:** | 109° 23' 56.062 W |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | | **Ground Level:** | 5,084.00 ft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 05/11/2011 | 11.04 | 65.86 | 52,332 |

**Design** PLAN #1 5-11-11 RHS

**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 | 5.47 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | 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 | |
| 725.83 | 8.52 | 5.47 | 724.26 | 31.45 | 3.01 | 2.00 | 2.00 | 0.00 | 5.47 | |
| 2,213.09 | 8.52 | 5.47 | 2,195.13 | 250.70 | 24.02 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,699.76 | 0.00 | 0.00 | 2,680.00 | 286.64 | 27.47 | 1.75 | -1.75 | 0.00 | 180.00 | |
| 8,436.76 | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_NBU 1022-11I |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report - Geographic

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14,516,730.54 | 2,089,066.22 | 39° 57' 48.107 N | 109° 23' 56.062 W |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 14,516,730.54 | 2,089,066.22 | 39° 57' 48.107 N | 109° 23' 56.062 W |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 14,516,730.54 | 2,089,066.22 | 39° 57' 48.107 N | 109° 23' 56.062 W |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 14,516,730.54 | 2,089,066.22 | 39° 57' 48.107 N | 109° 23' 56.062 W |
| **Start Build 2.00** | | | | | | | | | |
| 400.00 | 2.00 | 5.47 | 399.98 | 1.74 | 0.17 | 14,516,732.28 | 2,089,066.35 | 39° 57' 48.124 N | 109° 23' 56.059 W |
| 500.00 | 4.00 | 5.47 | 499.84 | 6.95 | 0.67 | 14,516,737.49 | 2,089,066.76 | 39° 57' 48.175 N | 109° 23' 56.053 W |
| 600.00 | 6.00 | 5.47 | 599.45 | 15.62 | 1.50 | 14,516,746.18 | 2,089,067.43 | 39° 57' 48.261 N | 109° 23' 56.042 W |
| 700.00 | 8.00 | 5.47 | 698.70 | 27.75 | 2.66 | 14,516,758.33 | 2,089,068.38 | 39° 57' 48.381 N | 109° 23' 56.027 W |
| 725.83 | 8.52 | 5.47 | 724.26 | 31.45 | 3.01 | 14,516,762.03 | 2,089,068.66 | 39° 57' 48.418 N | 109° 23' 56.023 W |
| **Start 1487.26 hold at 725.83 MD** | | | | | | | | | |
| 800.00 | 8.52 | 5.47 | 797.62 | 42.38 | 4.06 | 14,516,772.98 | 2,089,069.52 | 39° 57' 48.526 N | 109° 23' 56.009 W |
| 900.00 | 8.52 | 5.47 | 896.51 | 57.12 | 5.47 | 14,516,787.75 | 2,089,070.66 | 39° 57' 48.671 N | 109° 23' 55.991 W |
| 943.97 | 8.52 | 5.47 | 940.00 | 63.60 | 6.09 | 14,516,794.24 | 2,089,071.17 | 39° 57' 48.735 N | 109° 23' 55.983 W |
| **GREEN RIVER** | | | | | | | | | |
| 1,000.00 | 8.52 | 5.47 | 995.41 | 71.86 | 6.89 | 14,516,802.51 | 2,089,071.81 | 39° 57' 48.817 N | 109° 23' 55.973 W |
| 1,100.00 | 8.52 | 5.47 | 1,094.31 | 86.61 | 8.30 | 14,516,817.28 | 2,089,072.96 | 39° 57' 48.963 N | 109° 23' 55.955 W |
| 1,200.00 | 8.52 | 5.47 | 1,193.20 | 101.35 | 9.71 | 14,516,832.04 | 2,089,074.11 | 39° 57' 49.109 N | 109° 23' 55.937 W |
| 1,300.00 | 8.52 | 5.47 | 1,292.10 | 116.09 | 11.12 | 14,516,846.81 | 2,089,075.25 | 39° 57' 49.254 N | 109° 23' 55.919 W |
| 1,400.00 | 8.52 | 5.47 | 1,391.00 | 130.83 | 12.54 | 14,516,861.57 | 2,089,076.40 | 39° 57' 49.400 N | 109° 23' 55.901 W |
| 1,500.00 | 8.52 | 5.47 | 1,489.90 | 145.57 | 13.95 | 14,516,876.34 | 2,089,077.55 | 39° 57' 49.546 N | 109° 23' 55.882 W |
| 1,600.00 | 8.52 | 5.47 | 1,588.79 | 160.32 | 15.36 | 14,516,891.10 | 2,089,078.70 | 39° 57' 49.691 N | 109° 23' 55.864 W |
| 1,700.00 | 8.52 | 5.47 | 1,687.69 | 175.06 | 16.77 | 14,516,905.87 | 2,089,079.85 | 39° 57' 49.837 N | 109° 23' 55.846 W |
| 1,800.00 | 8.52 | 5.47 | 1,786.59 | 189.80 | 18.19 | 14,516,920.63 | 2,089,080.99 | 39° 57' 49.983 N | 109° 23' 55.828 W |
| 1,900.00 | 8.52 | 5.47 | 1,885.49 | 204.54 | 19.60 | 14,516,935.40 | 2,089,082.14 | 39° 57' 50.129 N | 109° 23' 55.810 W |
| 2,000.00 | 8.52 | 5.47 | 1,984.38 | 219.29 | 21.01 | 14,516,950.16 | 2,089,083.29 | 39° 57' 50.274 N | 109° 23' 55.792 W |
| 2,086.57 | 8.52 | 5.47 | 2,070.00 | 232.05 | 22.24 | 14,516,962.94 | 2,089,084.28 | 39° 57' 50.400 N | 109° 23' 55.776 W |
| **8 5/8"** | | | | | | | | | |
| 2,100.00 | 8.52 | 5.47 | 2,083.28 | 234.03 | 22.43 | 14,516,964.93 | 2,089,084.44 | 39° 57' 50.420 N | 109° 23' 55.774 W |
| 2,200.00 | 8.52 | 5.47 | 2,182.18 | 248.77 | 23.84 | 14,516,979.69 | 2,089,085.58 | 39° 57' 50.566 N | 109° 23' 55.755 W |
| 2,213.09 | 8.52 | 5.47 | 2,195.13 | 250.70 | 24.02 | 14,516,981.63 | 2,089,085.73 | 39° 57' 50.585 N | 109° 23' 55.753 W |
| **Start Drop -1.75** | | | | | | | | | |
| 2,300.00 | 7.00 | 5.47 | 2,281.24 | 262.37 | 25.14 | 14,516,993.32 | 2,089,086.64 | 39° 57' 50.700 N | 109° 23' 55.739 W |
| 2,400.00 | 5.25 | 5.47 | 2,380.66 | 272.99 | 26.16 | 14,517,003.95 | 2,089,087.47 | 39° 57' 50.805 N | 109° 23' 55.726 W |
| 2,500.00 | 3.50 | 5.47 | 2,480.37 | 280.57 | 26.89 | 14,517,011.55 | 2,089,088.06 | 39° 57' 50.880 N | 109° 23' 55.716 W |
| 2,600.00 | 1.75 | 5.47 | 2,580.26 | 285.13 | 27.32 | 14,517,016.10 | 2,089,088.42 | 39° 57' 50.925 N | 109° 23' 55.711 W |
| 2,699.76 | 0.00 | 0.00 | 2,680.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| **Start 5737.00 hold at 2699.76 MD** | | | | | | | | | |
| 2,700.00 | 0.00 | 0.00 | 2,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 2,800.00 | 0.00 | 0.00 | 2,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 2,900.00 | 0.00 | 0.00 | 2,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,000.00 | 0.00 | 0.00 | 2,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,100.00 | 0.00 | 0.00 | 3,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,200.00 | 0.00 | 0.00 | 3,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,300.00 | 0.00 | 0.00 | 3,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,400.00 | 0.00 | 0.00 | 3,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,500.00 | 0.00 | 0.00 | 3,480.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,600.00 | 0.00 | 0.00 | 3,580.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,700.00 | 0.00 | 0.00 | 3,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,800.00 | 0.00 | 0.00 | 3,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 3,900.00 | 0.00 | 0.00 | 3,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,000.00 | 0.00 | 0.00 | 3,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report - Geographic

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 4,036.76 | 0.00 | 0.00 | 4,017.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| **WASATCH** | | | | | | | | | |
| 4,100.00 | 0.00 | 0.00 | 4,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,200.00 | 0.00 | 0.00 | 4,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,300.00 | 0.00 | 0.00 | 4,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,400.00 | 0.00 | 0.00 | 4,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,500.00 | 0.00 | 0.00 | 4,480.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,600.00 | 0.00 | 0.00 | 4,580.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,700.00 | 0.00 | 0.00 | 4,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,800.00 | 0.00 | 0.00 | 4,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 4,900.00 | 0.00 | 0.00 | 4,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,000.00 | 0.00 | 0.00 | 4,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,100.00 | 0.00 | 0.00 | 5,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,200.00 | 0.00 | 0.00 | 5,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,300.00 | 0.00 | 0.00 | 5,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,400.00 | 0.00 | 0.00 | 5,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,500.00 | 0.00 | 0.00 | 5,480.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,600.00 | 0.00 | 0.00 | 5,580.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,700.00 | 0.00 | 0.00 | 5,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,800.00 | 0.00 | 0.00 | 5,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 5,900.00 | 0.00 | 0.00 | 5,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,000.00 | 0.00 | 0.00 | 5,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,100.00 | 0.00 | 0.00 | 6,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,200.00 | 0.00 | 0.00 | 6,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,275.76 | 0.00 | 0.00 | 6,256.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| **MESAVERDE** | | | | | | | | | |
| 6,300.00 | 0.00 | 0.00 | 6,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,400.00 | 0.00 | 0.00 | 6,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,500.00 | 0.00 | 0.00 | 6,480.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,600.00 | 0.00 | 0.00 | 6,580.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,700.00 | 0.00 | 0.00 | 6,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,800.00 | 0.00 | 0.00 | 6,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 6,900.00 | 0.00 | 0.00 | 6,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,000.00 | 0.00 | 0.00 | 6,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,100.00 | 0.00 | 0.00 | 7,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,200.00 | 0.00 | 0.00 | 7,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,300.00 | 0.00 | 0.00 | 7,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,400.00 | 0.00 | 0.00 | 7,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,500.00 | 0.00 | 0.00 | 7,480.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,600.00 | 0.00 | 0.00 | 7,580.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,700.00 | 0.00 | 0.00 | 7,680.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,800.00 | 0.00 | 0.00 | 7,780.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 7,900.00 | 0.00 | 0.00 | 7,880.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,000.00 | 0.00 | 0.00 | 7,980.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,100.00 | 0.00 | 0.00 | 8,080.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,200.00 | 0.00 | 0.00 | 8,180.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,300.00 | 0.00 | 0.00 | 8,280.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,400.00 | 0.00 | 0.00 | 8,380.24 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| 8,436.76 | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |
| **PBHL_NBU 1022-11H4CS** | | | | | | | | | |



RECEIVED: August 11, 2011

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report - Geographic

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM5000-RobertS-Local | **Local Co-ordinate Reference:** | Well NBU 1022-11H4CS |
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **TVD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Project:** | Uintah County, UT UTM12 | **MD Reference:** | GL 5084' & KB 14' @ 5098.00ft (ASSUMED) |
| **Site:** | NBU 1022-11I1 PAD | **North Reference:** | True |
| **Well:** | NBU 1022-11H4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 5-11-11 RHS | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL_NBU 1022-11H4( - plan hits target center - Circle (radius 25.00) | 0.00 | 0.00 | 8,417.00 | 286.64 | 27.47 | 14,517,017.62 | 2,089,088.53 | 39° 57' 50.940 N | 109° 23' 55.709 W |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 2,086.57 | 2,070.00 | 8 5/8" | 8.625 | 11.000 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 943.97 | 940.00 | GREEN RIVER | | | |
| 4,036.76 | 4,017.00 | WASATCH | | | |
| 6,275.76 | 6,256.00 | MESAVERDE | | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 300.00 | 300.00 | 0.00 | 0.00 | Start Build 2.00 |
| 725.83 | 724.26 | 31.45 | 3.01 | Start 1487.26 hold at 725.83 MD |
| 2,213.09 | 2,195.13 | 250.70 | 24.02 | Start Drop -1.75 |
| 2,699.76 | 2,680.00 | 286.64 | 27.47 | Start 5737.00 hold at 2699.76 MD |
| 8,436.76 | 8,417.00 | 286.64 | 27.47 | TD at 8436.76 |



RECEIVED: August 11, 2011

| | NBU 1022-11H1CS | | |
|---|---|---|---|
| Surface: | 2573 FSL / 521 FEL | NESE | Lot |
| BHL: | 1737 FNL / 490 FEL | SENE | Lot |

| | NBU 1022-11H4BS | | |
|---|---|---|---|
| Surface: | 2582 FSL / 518 FEL | NESE | Lot |
| BHL: | 2067 FNL / 489 FEL | SENE | Lot |

| | NBU 1022-11H4CS | | |
|---|---|---|---|
| Surface: | 2592 FSL / 514 FEL | NESE | Lot |
| BHL: | 2398 FNL / 489 FEL | SENE | Lot |

| | NBU 1022-11I1CS | | |
|---|---|---|---|
| Surface: | 2545 FSL / 532 FEL | NESE | Lot |
| BHL: | 2112 FSL / 481 FEL | NESE | Lot |

| | NBU 1022-12L1BS | | |
|---|---|---|---|
| Surface: | 2564 FSL / 525 FEL | NESE | Lot |
| BHL: | 2401 FSL / 822 FWL | NWSW | Lot |

| | NBU 1022-12L1CS | | |
|---|---|---|---|
| Surface: | 2554 FSL / 528 FEL | NESE | Lot |
| BHL: | 2070 FSL / 823 FWL | NWSW | Lot |

Pad: NBU 1022-11I1 PAD
Section 11 T10S R22E
Mineral Lease: UO1197A-ST

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.)

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.

RECEIVED: August 11, 2011

**B. Planned Access Roads:**

Modifications to the current access road are proposed (see Topo Map B). The ± 510' reroute will closely follow the existing road; but more accurately follow the proposed gas and liquid pipelines. 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.

If there are roads that are new or to be reconstructed, they 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:**

This pad will expand the existing pad for the NBU 1022-11IX. The NBU 1022-11IX well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of August 5, 2011.

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.

**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 ±2,240' and the individual segments are broken up as follows:

±520' (0.10 miles) –New 6" buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
±1,720' (0.33 miles) –New 6" buried gas pipeline from the edge of pad to the tie-in at the proposed NBU 1022-11I3 Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the tie in point is ±2,240'and the individual segments are broken up as follows:

±520' (0.10 miles) –New 6" (max) buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
±1,720' (0.33 miles) –New 6" (max) buried liquid pipeline from the edge of pad to the tie-in at the proposed NBU 1022-11I3 Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

RECEIVED: August 11, 2011

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. Location and Type of Water Supply:**

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. Source of Construction Materials:**

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.

**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

RECEIVED: August 11, 2011

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud 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 released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate 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 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.)

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20 mil or thicker, The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

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.

RECEIVED: August 11, 2011

**G. Ancillary Facilities:**

None are anticipated.

**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.

RECEIVED: August 11, 2011

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.

RECEIVED: August 11, 2011

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

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

Andy Lytle
Regulatory Analyst I
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6100

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.

Andy Lytle

August 5, 2011
Date

JOSEPH D. JOHNSON
LANDMAN

Joseph D. Johnson
1099 18TH STREET STE. 1800 • DENVER, CO 80202
720-929-6708 • FAX 720-929-7708
E-MAIL: JOE.JOHNSON@ANADARKO.COM

August 5, 2011

Ms. 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 1022-11H4CS
T10S-R22E
Section 11: NESE
Surface: 2592' FSL, 514' FEL
T10S-R22E
Section 11: SENE
Bottom Hole: 2398' FNL, 489' FEL
Uintah County, Utah

Dear Ms. 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 Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 1022-11H4CS 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

Joseph D. Johnson
Landman

RECEIVED: August 11, 2011

# 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)**

August 19, 2011

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) | | |
| **NBU 1022-11F PAD** | | |
| 43-047-51797 | NBU 1022-11C2CS | Sec 11 T10S R22E 1860 FNL 1499 FWL |
| | | BHL Sec 11 T10S R22E 0370 FNL 1365 FWL |
| 43-047-51799 | NBU 1022-11C3DS | Sec 11 T10S R22E 1852 FNL 1505 FWL |
| | | BHL Sec 11 T10S R22E 1268 FNL 1726 FWL |
| 43-047-51800 | NBU 1022-11D1CS | Sec 11 T10S R22E 1868 FNL 1493 FWL |
| | | BHL Sec 11 T10S R22E 0576 FNL 0818 FWL |
| 43-047-51801 | NBU 1022-11F2DS | Sec 11 T10S R22E 1844 FNL 1512 FWL |
| | | BHL Sec 11 T10S R22E 1622 FNL 1625 FWL |
| **NBU 1022-11G2 PAD** | | |
| 43-047-51802 | NBU 1022-11B4CS | Sec 11 T10S R22E 1627 FNL 2594 FEL |
| | | BHL Sec 11 T10S R22E 1238 FNL 1803 FEL |
| 43-047-51813 | NBU 1022-11B4BS | Sec 11 T10S R22E 1633 FNL 2601 FEL |
| | | BHL Sec 11 T10S R22E 0908 FNL 1804 FEL |
| 43-047-51815 | NBU 1022-11B1CS | Sec 11 T10S R22E 1639 FNL 2609 FEL |
| | | BHL Sec 11 T10S R22E 0577 FNL 1805 FEL |
| 43-047-51817 | NBU 1022-C4AS | Sec 11 T10S R22E 1645 FNL 2617 FEL |
| | | BHL Sec 11 T10S R22E 0825 FNL 2462 FWL |
| 43-047-51818 | NBU 1022-11C4CS | Sec 11 T10S R22E 1651 FNL 2625 FEL |
| | | BHL Sec 11 T10S R22E 1071 FNL 2131 FWL |

**RECEIVED: August 22, 2011**

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| 43-047-51855 | NBU 1022-11F4AS | Sec 11 T10S R22E 1657 FNL 2633 FEL |
| | | BHL Sec 11 T10S R22E 2138 FNL 2288 FWL |
| **NBU 1022-2A PAD** | | |
| 43-047-51803 | NBU 1022-2G1CS | Sec 02 T10S R22E 0165 FNL 0760 FEL |
| | | BHL Sec 02 T10S R22E 1905 FNL 1814 FEL |
| 43-047-51807 | NBU 1022-2G1BS | Sec 02 T10S R22E 0164 FNL 0770 FEL |
| | | BHL Sec 02 T10S R22E 1573 FNL 1815 FEL |
| 43-047-51808 | NBU 1022-2H1BS | Sec 02 T10S R22E 0167 FNL 0730 FEL |
| | | BHL Sec 02 T10S R22E 1410 FNL 0494 FEL |
| 43-047-51812 | NBU 1022-2H1CS | Sec 02 T10S R22E 0166 FNL 0740 FEL |
| | | BHL Sec 02 T10S R22E 1743 FNL 0494 FEL |
| 43-047-51825 | NBU 1022-2H4BS | Sec 02 T10S R22E 0165 FNL 0750 FEL |
| | | BHL Sec 02 T10S R22E 2074 FNL 0493 FEL |
| **NBU 1022-11G4 PAD** | | |
| 43-047-51805 | NBU 1022-11A4CS | Sec 11 T10S R22E 2411 FNL 1535 FEL |
| | | BHL Sec 11 T10S R22E 1075 FNL 0490 FEL |
| 43-047-51814 | NBU 1022-11H1BS | Sec 11 T10S R22E 2405 FNL 1526 FEL |
| | | BHL Sec 11 T10S R22E 1406 FNL 0490 FEL |
| 43-047-51822 | NBU 1022-11G4CS | Sec 11 T10S R22E 2435 FNL 1566 FEL |
| | | BHL Sec 11 T10S R22E 2559 FNL 1799 FEL |
| 43-047-51823 | NBU 1022-11G1BS | Sec 11 T10S R22E 2423 FNL 1550 FEL |
| | | BHL Sec 11 T10S R22E 1568 FNL 1802 FEL |
| 43-047-51837 | NBU 1022-11G1CS | Sec 11 T10S R22E 2417 FNL 1542 FEL |
| | | BHL Sec 11 T10S R22E 1954 FNL 1646 FEL |
| 43-047-51853 | NBU 1022-11G4BS | Sec 11 T10S R22E 2429 FNL 1558 FEL |
| | | BHL Sec 11 T10S R22E 2229 FNL 1800 FEL |
| **NBU 1022-2I PAD** | | |
| 43-047-51809 | NBU 1022-2I4CS | Sec 02 T10S R22E 1886 FSL 0949 FEL |
| | | BHL Sec 02 T10S R22E 1576 FSL 0492 FEL |
| 43-047-51810 | NBU 1022-2P1BS | Sec 02 T10S R22E 1881 FSL 0957 FEL |
| | | BHL Sec 02 T10S R22E 1245 FSL 0492 FEL |
| 43-047-51824 | NBU 1022-2I1CS | Sec 02 T10S R22E 1895 FSL 0931 FEL |
| | | BHL Sec 02 T10S R22E 2240 FSL 0493 FEL |
| 43-047-51829 | NBU 1022-2I4BS | Sec 02 T10S R22E 1890 FSL 0940 FEL |
| | | BHL Sec 02 T10S R22E 1909 FSL 0492 FEL |
| 43-047-51838 | NBU 1022-2P4BS | Sec 02 T10S R22E 1872 FSL 0975 FEL |
| | | BHL Sec 02 T10S R22E 0581 FSL 0492 FEL |
| 43-047-51852 | NBU 1022-2P1CS | Sec 02 T10S R22E 1877 FSL 0966 FEL |
| | | BHL Sec 02 T10S R22E 0913 FSL 0492 FEL |
| **NBU 1022-2B PAD** | | |
| 43-047-51811 | NBU 1022-2B1CS | Sec 02 T10S R22E 0544 FNL 1813 FEL |
| | | BHL Sec 02 T10S R22E 0579 FNL 1818 FEL |

**RECEIVED: August 22, 2011**

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

43-047-51827 NBU 1022-2B4CS Sec 02 T10S R22E 0543 FNL 1793 FEL
BHL Sec 02 T10S R22E 1242 FNL 1816 FEL

43-047-51828 NBU 1022-2B4BS Sec 02 T10S R22E 0543 FNL 1803 FEL
BHL Sec 02 T10S R22E 0910 FNL 1817 FEL

43-047-51830 NBU 1022-2C1BS Sec 02 T10S R22E 0544 FNL 1823 FEL
BHL Sec 02 T10S R22E 0090 FNL 2158 FWL

**NBU 1022-11J PAD**

43-047-51816 NBU 1022-11K4BS Sec 11 T10S R22E 1980 FSL 2131 FEL
BHL Sec 11 T10S R22E 1804 FSL 1963 FWL

43-047-51843 NBU 1022-11J1CS Sec 11 T10S R22E 1990 FSL 2130 FEL
BHL Sec 11 T10S R22E 2065 FSL 1797 FEL

43-047-51851 NBU 1022-11J1BS Sec 11 T10S R22E 2000 FSL 2129 FEL
BHL Sec 11 T10S R22E 2395 FSL 1798 FEL

**NBU 1022-2J PAD**

43-047-51819 NBU 1022-2G4CS Sec 02 T10S R22E 2375 FSL 1639 FEL
BHL Sec 02 T10S R22E 2568 FNL 1813 FEL

43-047-51820 NBU 1022-2H4CS Sec 02 T10S R22E 2351 FSL 1584 FEL
BHL Sec 02 T10S R22E 2406 FNL 0493 FEL

43-047-51844 NBU 1022-2J4BS Sec 02 T10S R22E 2367 FSL 1621 FEL
BHL Sec 02 T10S R22E 1741 FSL 1811 FEL

43-047-51845 NBU 1022-2O1CS Sec 02 T10S R22E 2343 FSL 1566 FEL
BHL Sec 02 T10S R22E 0747 FSL 1808 FEL

43-047-51847 NBU 1022-2I1BS Sec 02 T10S R22E 2347 FSL 1575 FEL
BHL Sec 02 T10S R22E 2572 FSL 0493 FEL

43-047-51854 NBU 1022-2G4BS Sec 02 T10S R22E 2359 FSL 1602 FEL
BHL Sec 02 T10S R22E 2237 FNL 1814 FEL

**NBU 1022-O1 PAD**

43-047-51821 NBU 1022-11O1CS Sec 11 T10S R22E 0944 FSL 1360 FEL
BHL Sec 11 T10S R22E 0744 FSL 1793 FEL

43-047-51831 NBU 1022-11O4CS Sec 11 T10S R22E 0925 FSL 1366 FEL
BHL Sec 11 T10S R22E 0079 FSL 1824 FEL

43-047-51832 NBU 1022-11P1BS Sec 11 T10S R22E 0973 FSL 1351 FEL
BHL Sec 11 T10S R22E 1068 FSL 0474 FEL

43-047-51833 NBU 1022-11P4BS Sec 11 T10S R22E 0954 FSL 1357 FEL
BHL Sec 11 T10S R22E 0456 FSL 0504 FEL

43-047-51836 NBU 1022-12M1BS Sec 11 T10S R22E 0963 FSL 1354 FEL
BHL Sec 12 T10S R22E 1077 FSL 0824 FWL

43-047-51856 NBU 1022-11O4BS Sec 11 T10S R22E 0935 FSL 1363 FEL
BHL Sec 11 T10S R22E 0413 FSL 1792 FEL

**RECEIVED: August 22, 2011**

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

**NBU 1022-11I1 PAD**

43-047-51834 NBU 1022-11I1CS Sec 11 T10S R22E 2545 FSL 0532 FEL
BHL Sec 11 T10S R22E 2112 FSL 0481 FEL

43-047-51835 NBU 1022-12L1CS Sec 11 T10S R22E 2554 FSL 0528 FEL
BHL Sec 12 T10S R22E 2070 0FSL 823 FWL

43-047-51857 NBU 1022-11H4BS Sec 11 T10S R22E 2582 FSL 0518 FEL
BHL Sec 11 T10S R22E 2067 FNL 0489 FEL

43-047-51858 NBU 1022-11H4CS Sec 11 T10S R22E 2592 FSL 0514 FEL
BHL Sec 11 T10S R22E 2398 FNL 0489 FEL

43-047-51861 NBU 1022-12L1BS Sec 11 T10S R22E 2564 FSL 0525 FEL
BHL Sec 12 T10S R22E 2401 FSL 0822 FWL

43-047-51863 NBU 1022-11H1CS Sec 11 T10S R22E 2573 FSL 0521 FEL
BHL Sec 11 T10S R22E 1737 FNL 0490 FEL

**NBU 1022-2P PAD**

43-047-51839 NBU 1022-2P4CS Sec 02 T10S R22E 0221 FSL 1342 FEL
BHL Sec 02 T10S R22E 0255 FSL 0496 FEL

43-047-51841 NBU 1022-11B1BS Sec 02 T10S R22E 0221 FSL 1382 FEL
BHL Sec 11 T10S R22E 0280 FNL 1755 FEL

43-047-51842 NBU 1022-11A1BS Sec 02 T10S R22E 0221 FSL 1352 FEL
BHL Sec 11 T10S R22E 0080 FNL 0473 FEL

43-047-51846 NBU 1022-2O4CS Sec 02 T10S R22E 0220 FSL 1402 FEL
BHL Sec 02 T10S R22E 0095 FSL 1804 FEL

43-047-51848 NBU 1022-11A4BS Sec 02 T10S R22E 0221 FSL 1372 FEL
BHL Sec 11 T10S R22E 0744 FNL 0490 FEL

43-047-51849 NBU 1022-2O4BS Sec 02 T10S R22E 0221 FSL 1392 FEL
BHL Sec 02 T10S R22E 0415 FSL 1807 FEL

43-047-51850 NBU 1022-11A1CS Sec 02 T10S R22E 0221 FSL 1362 FEL
BHL Sec 11 T10S R22E 0413 FNL 0491 FEL

**NBU 1022-14A PAD**

43-047-51840 NBU 1022-11P4CS Sec 14 T10S R22E 0379 FNL 1228 FEL
BHL Sec 11 T10S R22E 0088 FSL 0466 FEL

43-047-51860 NBU 1022-12M1CS Sec 14 T10S R22E 0385 FNL 1236 FEL
BHL Sec 12 T10S R22E 0746 FSL 0825 FWL

43-047-51868 NBU 1022-12M4BS Sec 14 T10S R22E 0391 FNL 1244 FEL
BHL Sec 12 T10S R22E 0415 FSL 0825 FWL

43-047-51870 NBU 1022-12M4CS Sec 14 T10S R22E 0397 FNL 1252 FEL
BHL Sec 12 T10S R22E 0086 FSL 0819 FWL

**NBU 1022-11O2 PAD**

43-047-51859 NBU 1022-11K4CS Sec 11 T10S R22E 1103 FSL 2372 FEL
BHL Sec 11 T10S R22E 1442 FSL 2113 FWL

**RECEIVED: August 22, 2011**

| API # | WELL NAME | LOCATION |
|---|---|---|

(Proposed PZ WASATCH-MESA VERDE)

43-047-51862 NBU 1022-11N1BS Sec 11 T10S R22E 1094 FSL 2377 FEL
BHL Sec 11 T10S R22E 1111 FSL 2105 FWL

43-047-51864 NBU 1022-11N1CS Sec 11 T10S R22E 1085 FSL 2382 FEL
BHL Sec 11 T10S R22E 0801 FSL 2127 FWL

43-047-51865 NBU 1022-11N4BS Sec 11 T10S R22E 1077 FSL 2387 FEL
BHL Sec 11 T10S R22E 0462 FSL 2127 FWL

43-047-51867 NBU 1022-11N4CS Sec 11 T10S R22E 1068 FSL 2392 FEL
BHL Sec 11 T10S R22E 0146 FSL 2084 FWL

43-047-51869 NBU 1022-11O2AS Sec 11 T10S R22E 1111 FSL 2367 FEL
BHL Sec 11 T10S R22E 1102 FSL 1964 FEL

**NBU 1022-11I3 PAD**

43-047-51866 NBU 1022-11I4BS Sec 11 T10S R22E 1489 FSL 0996 FEL
BHL Sec 11 T10S R22E 1774 FSL 0485 FEL

43-047-51871 NBU 1022-11I4CS Sec 11 T10S R22E 1459 FSL 0997 FEL
BHL Sec 11 T10S R22E 1443 FSL 0497 FEL

43-047-51872 NBU 1022-12L4BS Sec 11 T10S R22E 1479 FSL 0996 FEL
BHL Sec 12 T10S R22E 1739 FSL 0823 FWL

43-047-51873 NBU 1022-12L4CS Sec 11 T10S R22E 1469 FSL 0996 FEL
BHL Sec 12 T10S R22E 1408 FSL 0824 FWL

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

Michael L. Coulthard

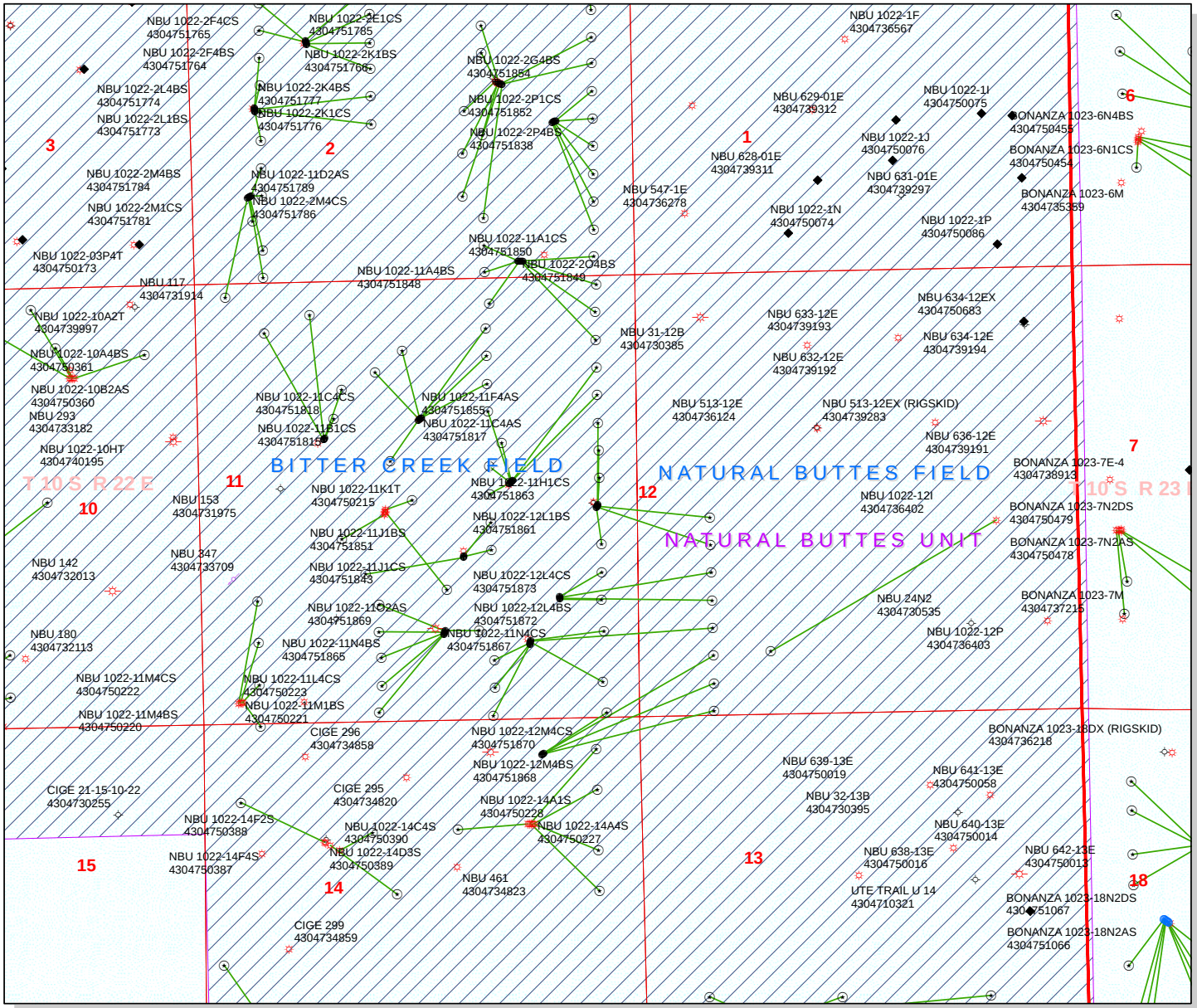
Digitally signed by Michael L. Coulthard
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael_Coulthard@blm.gov, c=US
Date: 2011.08.19 08:43:17 -06'00'

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

MCoulthard:mc:8-19-11

RECEIVED: August 22, 2011

API Well Number: 43047518580000




**API Number: 4304751858**

**Well Name: NBU 1022-11H4CS**

**Township T1.0 . Range R2.2 . Section 11**

**Meridian: SLBM**

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:
Map Produced by Diana Mason

**Units**
**STATUS**
- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Fields**
**STATUS**
- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED
- Sections
- Township

**Wells Query**
**Status**
- APD - Aproved Permit
- DRL - Spuded (Drilling Commenced)
- GIW - Gas Injection
- GS - Gas Storage
- LA - Location Abandoned
- LOC - New Location
- OPS - Operation Suspended
- PA - Plugged Abandoned
- PGW - Producing Gas Well
- POW - Producing Oil Well
- RET - Returned APD
- SGW - Shut-in Gas Well
- SOW - Shut-in Oil Well
- TA - Temp. Abandoned
- TW - Test Well
- WDW - Water Disposal
- WIW - Water Injection Well
- WSW - Water Supply Well

1,500 750 0 1,500 Feet

1:14,795

**RECEIVED: August 22, 2011**

**From:** Jim Davis
**To:** Hill, Brad; Mason, Diana
**CC:** Bonner, Ed; Garrison, LaVonne; Lytle, Andy
**Date:** 9/26/2011 5:08 PM
**Subject:** Anadarko APD approvals 10S 22E Sec 2, 11 and 14
**Attachments:** Anadarko Approvals from SITLA 9.26.11.xls

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

| | |
|---|---|
| 4304751840 | NBU 1022-11P4CS |
| 4304751860 | NBU 1022-12M1CS |
| 4304751868 | NBU 1022-12M4BS |
| 4304751870 | NBU 1022-12M4CS |
| 4304751803 | NBU 1022-2G1CS |
| 4304751807 | NBU 1022-2G1BS |
| 4304751808 | NBU 1022-2H1BS |
| 4304751812 | NBU 1022-2H1CS |
| 4304751825 | NBU 1022-2H4BS |
| 4304751811 | NBU 1022-2B1CS |
| 4304751827 | NBU 1022-2B4CS |
| 4304751828 | NBU 1022-2B4BS |
| 4304751830 | NBU 1022-2C1BS |
| 4304751809 | NBU 1022-2I4CS |
| 4304751810 | NBU 1022-2P1BS |
| 4304751824 | NBU 1022-2I1CS |
| 4304751829 | NBU 1022-2I4BS |
| 4304751838 | NBU 1022-2P4BS |
| 4304751852 | NBU 1022-2P1CS |
| 4304751839 | NBU 1022-2P4CS |
| 4304751841 | NBU 1022-11B1BS |
| 4304751842 | NBU 1022-11A1BS |
| 4304751846 | NBU 1022-2O4CS |
| 4304751848 | NBU 1022-11A4BS |
| 4304751849 | NBU 1022-2O4BS |
| 4304751850 | NBU 1022-11A1CS |

These APDS are approved including arch clearance but will require **spot paleo monitoring** as recommended in the applicable paleo reports:

| | |
|---|---|
| 4304751758 | NBU 1022-2C1CS |
| 4304751767 | NBU 1022-2C4BS |
| 4304751768 | NBU 1022-2C4CS |
| 4304751779 | NBU 1022-2D1BS |
| 4304751780 | NBU 1022-2D4BS |
| 4304751782 | NBU 1022-2E1BS |
| 4304751783 | NBU 1022-2F1BS |
| 4304751760 | NBU 1022-2E4BS |
| 4304751761 | NBU 1022-2F1CS |
| 4304751764 | NBU 1022-2F4BS |
| 4304751765 | NBU 1022-2F4CS |
| 4304751766 | NBU 1022-2K1BS |
| 4304751785 | NBU 1022-2E1CS |
| 4304751775 | NBU 1022-2L4CS |
| 4304751778 | NBU 1022-2M1BS |
| 4304751781 | NBU 1022-2M1CS |
| 4304751784 | NBU 1022-2M4BS |
| 4304751786 | NBU 1022-2M4CS |
| 4304751789 | NBU 1022-11D2AS |

**RECEIVED: September 27, 2011**

| | |
|---|---|
| 4304751802 | NBU 1022-11B4CS |
| 4304751813 | NBU 1022-11B4BS |
| 4304751815 | NBU 1022-11B1CS |
| 4304751817 | NBU 1022-11C4AS |
| 4304751818 | NBU 1022-11C4CS |
| 4304751855 | NBU 1022-11F4AS |
| 4304751805 | NBU 1022-11A4CS |
| 4304751814 | NBU 1022-11H1BS |
| 4304751822 | NBU 1022-11G4CS |
| 4304751823 | NBU 1022-11G1BS |
| 4304751837 | NBU 1022-11G1CS |
| 4304751853 | NBU 1022-11G4BS |
| 4304751834 | NBU 1022-11I1CS |
| 4304751835 | NBU 1022-12L1CS |
| 4304751857 | NBU 1022-11H4BS |
| 4304751858 | NBU 1022-11H4CS |
| 4304751861 | NBU 1022-12L1BS |
| 4304751863 | NBU 1022-11H1CS |
| 4304751866 | NBU 1022-11I4BS |
| 4304751871 | NBU 1022-11I4CS |
| 4304751872 | NBU 1022-12L4BS |
| 4304751873 | NBU 1022-12L4CS |
| 4304751816 | NBU 1022-11K4BS |
| 4304751843 | NBU 1022-11J1CS |
| 4304751851 | NBU 1022-11J1BS |
| 4304751859 | NBU 1022-11K4CS |
| 4304751862 | NBU 1022-11N1BS |
| 4304751864 | NBU 1022-11N1CS |
| 4304751865 | NBU 1022-11N4BS |
| 4304751867 | NBU 1022-11N4CS |
| 4304751869 | NBU 1022-11O2AS |

These APDS are approved including arch clearance but will require **full paleo monitoring** as recommended in the applicable paleo reports:

| | |
|---|---|
| 4304751771 | NBU 1022-2E4CS |
| 4304751772 | NBU 1022-2L1CS |
| 4304751773 | NBU 1022-2L1BS |
| 4304751774 | NBU 1022-2L4BS |
| 4304751776 | NBU 1022-2K1CS |
| 4304751777 | NBU 1022-2K4BS |
| 4304751819 | NBU 1022-2G4CS |
| 4304751820 | NBU 1022-2H4CS |
| 4304751844 | NBU 1022-2J4BS |
| 4304751845 | NBU 1022-2O1CS |
| 4304751847 | NBU 1022-2I1BS |
| 4304751854 | NBU 1022-2G4BS |
| 4304751797 | NBU 1022-11C2CS |
| 4304751799 | NBU 1022-11C3DS |
| 4304751800 | NBU 1022-11D1CS |
| 4304751801 | NBU 1022-11F2DS |
| 4304751821 | NBU 1022-11O1CS |
| 4304751831 | NBU 1022-11O4CS |
| 4304751832 | NBU 1022-11P1BS |
| 4304751833 | NBU 1022-11P4BS |
| 4304751836 | NBU 1022-12M1BS |
| 4304751856 | NBU 1022-11O4BS |

**RECEIVED: September 27, 2011**

That's a big enough list that I'm including a simple spreadsheet that has this same information, but organized in such a way as may be more useful to some of you.
Thanks.
-Jim

Jim Davis
Utah Trust Lands Administration
jimdavis1@utah.gov
Phone: (801) 538-5156

**RECEIVED: September 27, 2011**

API Well Number: 43047518580000

**BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-11H4CS 43047518580000**

| | | | | |
|---|---|---|---|---|
| **Well Name** | KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-11H4C | | | |
| **String** | Surf | Prod | | |
| **Casing Size(")** | 8.625 | 4.500 | | |
| **Setting Depth (TVD)** | 2054 | 8417 | | |
| **Previous Shoe Setting Depth (TVD)** | 40 | 2054 | | |
| **Max Mud Weight (ppg)** | 8.3 | 12.5 | | |
| **BOPE Proposed (psi)** | 500 | 5000 | | |
| **Casing Internal Yield (psi)** | 3390 | 7780 | | |
| **Operators Max Anticipated Pressure (psi)** | 5387 | 12.3 | | |

| **Calculations** | **Surf String** | **8.625** | **"** | |
|---|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | 887 | | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** | |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | 641 | NO | air drill |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | 435 | YES | OK |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** | |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 444 | NO | Reasonable depth in area |
| **Required Casing/BOPE Test Pressure=** | | 2054 | psi | |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | 40 | psi *Assumes 1psi/ft frac gradient | |

| **Calculations** | **Prod String** | **4.500** | **"** | |
|---|---|---|---|---|
| **Max BHP (psi)** | .052*Setting Depth*MW= | 5471 | | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** | |
| **MASP (Gas) (psi)** | Max BHP-(0.12*Setting Depth)= | 4461 | YES | |
| **MASP (Gas/Mud) (psi)** | Max BHP-(0.22*Setting Depth)= | 3619 | YES | OK |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** | |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 4071 | NO | Reasonable |
| **Required Casing/BOPE Test Pressure=** | | 5000 | psi | |
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | 2054 | 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 | |

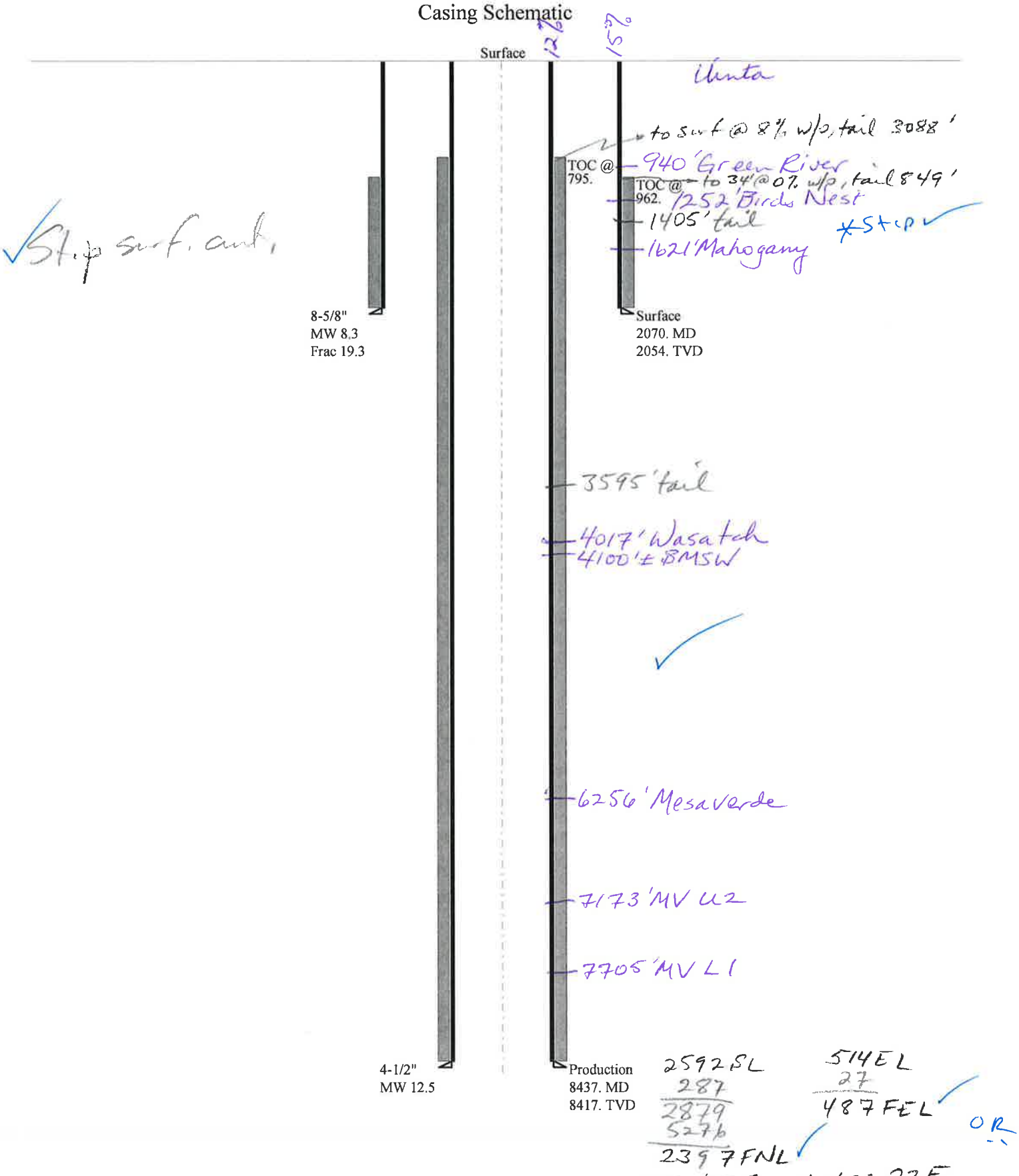
**RECEIVED: November 02, 2011**

| | | |
|---|---|---|
| ***Max Pressure Allowed @ Previous Casing Shoe=** | | psi *Assumes 1psi/ft frac gradient |

**RECEIVED: November 02, 2011**

# 43047518580000 NBU 1022-11H4CS

## Casing Schematic



| | |
|---|---|
| Well name: | **43047518580000 NBU 1022-11H4CS** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Surface |
| Project ID: | 43-047-51858 |
| Location: | UINTAH COUNTY |

## Design parameters:

**Collapse**

Mud weight: 8.330 ppg
Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 1,822 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 2,068 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: 1,815 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: 962 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft
Departure at shoe: 231 ft
Maximum dogleg: 2 °/100ft
Inclination at shoe: 8.52 °

**Re subsequent strings:**

Next setting depth: 8,417 ft
Next mud weight: 12.500 ppg
Next setting BHP: 5,466 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,070 ft
Injection pressure: 2,070 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 | 2070 | 8.625 | 28.00 | I-55 | LT&C | 2054 | 2070 | 7.892 | 81972 |

| 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 | 889 | 1880 | 2.116 | 2068 | 3390 | 1.64 | 57.5 | 348 | 6.05 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940
Date: October 19,2011
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 2054 ft, a mud weight of 8.33 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.*

| | |
|---|---|
| Well name: | **43047518580000 NBU 1022-11H4CS** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Production |
| Project ID: | 43-047-51858 |
| Location: | UINTAH COUNTY |

**Design parameters:**

**Collapse**

Mud weight: 12.500 ppg

Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 3,614 psi

Internal gradient: 0.220 psi/ft

Calculated BHP 5,466 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: 6,864 ft

**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: | 795 ft |

**Directional Info - Build & Drop**

| | |
|---|---|
| Kick-off point | 300 ft |
| Departure at shoe: | 288 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 ($) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8437 | 4.5 | 11.60 | I-80 | LT&C | 8417 | 8437 | 3.875 | 111368 |

| 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 | 5466 | 6360 | 1.164 | 5466 | 7780 | 1.42 | 97.6 | 212 | 2.17 J |

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

Date: October 19,2011
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 8417 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.*

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

| | | | | | |
|---|---|---|---|---|---|
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | | | |
| **Well Name** | NBU 1022-11H4CS | | | | |
| **API Number** | 43047518580000 | **APD No** | 4418 | **Field/Unit** | NATURAL BUTTES |
| **Location: 1/4,1/4** | NESE **Sec** 11 **Tw** 10.0S **Rng** 22.0E 2592 FSL 514 FEL | | | | |
| **GPS Coord (UTM)** | 636749 4424701 | **Surface Owner** | | | |

**Participants**

Andy Lytle, Sheila Wopsock, Charles Chase, Grizz Oleen, Mark Kuehn, Doyle Holmes, (Kerr McGee). John Slaugh, Mitch Batty, (Timberline). Jim Davis (SITLA). David Hackford, (DOGM).

**Regional/Local Setting & Topography**

The general area is in the southeast portion of the Natural Buttes Unit on the northeast end of a major drainage divide called Archy Bench. Within this area is the White River and rugged drainages that drain into it. 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 varies from ¼ mile to 2 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 41 air miles to the northwest. Access from Vernal is approximately 60.6 road miles following Utah State, Uintah County and oilfield development roads. Five wells, in addition to this one will be directionally drilled from this pad. (For a total of six new wells). There is one existing well on this pad. (The NBU 1022-11IX). At this time, the decision rather to PA or TA this well has not been made. There is also one PA'd well on this location. It is the NBU 1022-11I . This proposed location takes in an existing location, and very little new construction will be necessary except for digging the reserve pit. The existing access road will be reclaimed and a new one of 510' will be constructed. The location runs in a north-south direction along the top of a flat topped ridge. This ridge breaks off sharply into rugged secondary canyons on the north, west and east sides. New construction will consist of approx. 50 feet on all sides of the existing pad, and an additional 50 feet on the northwest side for reserve pit and excess cut stockpile. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and should be a suitable location for seven wells, and is on the best site available in the immediate area.

**Surface Use Plan**

**Current Surface Use**

Grazing
Wildlfe Habitat
Existing Well Pad

| New Road Miles | Well Pad | Src Const Material | Surface Formation |
|---|---|---|---|
| 0.1 | **Width** 292 **Length** 410 | Onsite | UNTA |

**Ancillary Facilities** N

**Waste Management Plan Adequate?** Y

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Prickly pear, wild onion, shadscale, mat saltbrush, Indian ricegrass, halogeton, pepper grass, annuals and curly Vegetation is a salt desert shrub type. Principal species present are cheatgrass, black sagebrush, stipa, mesquite grass.

Sheep, antelope, raptors, small mammals and birds.

**Soil Type and Characteristics**

Shallow rocky sandy 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 on the west side of the location. Dimensions are 100’ x 245’ x 12’ deep with 2’ of freeboard. Kerr McGee agreed to line this pit with a 30 mil synthetic liner and two layers of felt sub-liner.

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

**Other Observations / Comments**

This location will be in section 11 and two of the six proposed wells will have well bores that leave section 11and produce from section 12. They are the NBU 1022-12L1BS and the NBU 1022-12L1CS.

| David Hackford | 8/18/2011 |
|---|---|
| **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 |
|---|---|---|---|---|---|
| 4418 | 43047518580000 | SITLA | GW | S | No |
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | **Surface Owner-APD** | | |
| **Well Name** | NBU 1022-11H4CS | | **Unit** | NATURAL BUTTES | |
| **Field** | NATURAL BUTTES | | **Type of Work** | DRILL | |

**Location** NESE 11 10S 22E S 2592 FSL 514 FEL GPS Coord (UTM) 636682E 4424906N

**Geologic Statement of Basis**

Kerr McGee proposes to set 2,070' 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 4,100'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 11. 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 | 9/1/2011 |
|---|---|
| **APD Evaluator** | **Date / Time** |

**Surface Statement of Basis**

The general area is in the southeast portion of the Natural Buttes Unit on the northeast end of a major drainage divide called Archy Bench. Within this area is the White River and rugged drainages that drain into it. 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 varies from ¼ mile to 2 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 41 air miles to the northwest. Access from Vernal is approximately 60.6 road miles following Utah State, Uintah County and oilfield development roads. The existing access road will be reclaimed and a new 510' access road will be constructed.

Six wells will be directionally drilled from this location. They are the NBU 1022-11H4CS, NBU 1022-11H4BS, NBU 1022-11H1CS, NBU 1022-12L1BS, NBU 1022-12L1CS and the NBU 1022-11I1CS. The existing location has one existing well. This well is the NBU 1022-11IX, and at this time the decision rather to PA or TA this well has not been made. There is also one PA'd well. It is the NBU 1022-11I. The location is on a flat topped ridge that runs in a north-south direction. This ridge breaks off sharply into rugged secondary canyons on the north, west and east sides. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and sufficient for seven wells, and is the best site for a location in the immediate area.

Excess material will be stockpiled on the west side of the location. Approx. 50' of additional construction will be necessary on all sides of the original location.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA and Ben Williams with DWR were invited by email to the pre-site evaluation. Jim Davis was present. Kerr McGee was told to consult with SITLA for reclamation standards including seeding mixes to be used.

| David Hackford | 8/18/2011 |
|---|---|
| **Onsite Evaluator** | **Date / Time** |

RECEIVED: November 03, 2011

# Application for Permit to Drill
# Statement of Basis



**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 west side of the location. |

RECEIVED: November 03, 2011

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 8/11/2011
**API NO. ASSIGNED:** 43047518580000
**WELL NAME:** NBU 1022-11H4CS
**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)
**PHONE NUMBER:** 720 929-6100
**CONTACT:** Andy Lytle

**PROPOSED LOCATION:** NESE 11 100S 220E
**Permit Tech Review:** ✔

**SURFACE:** 2592 FSL 0514 FEL
**Engineering Review:** ✔

**BOTTOM:** 2398 FNL 0489 FEL
**Geology Review:** ✔

**COUNTY:** UINTAH
**LATITUDE:** 39.96326
**LONGITUDE:** -109.39965
**UTM SURF EASTINGS:** 636682.00
**NORTHINGS:** 4424906.00
**FIELD NAME:** NATURAL BUTTES
**LEASE TYPE:** 3 - State
**LEASE NUMBER:** UO1197A-ST
**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:** 460' Fr U Bdry & Uncommitted Tracts

- ✔ **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 - ddoucet

**RECEIVED: November 03, 2011**

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 1022-11H4CS
**API Well Number:** 43047518580000
**Lease Number:** UO1197A-ST
**Surface Owner:** STATE
**Approval Date:** 11/3/2011

**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

FORM 9

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UO1197A-ST

## 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 1022-11H4CS

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

**9. API NUMBER:** 43047518580000

**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:** 2592 FSL 0514 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESE Section: 11 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**

- ✓ NOTICE OF INTENT — Approximate date work will start: 11/3/2012
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ☐ SPUD REPORT — Date of Spud:
- ☐ DRILLING REPORT — Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ 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:** November 13, 2012

**By:**

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

| SIGNATURE | DATE |
|---|---|
| N/A | 11/1/2012 |

RECEIVED: Nov. 01, 2012

## 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 43047518580000

**API:** 43047518580000
**Well Name:** NBU 1022-11H4CS
**Location:** 2592 FSL 0514 FEL QTR NESE SEC 11 TWNP 100S RNG 220E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 11/3/2011

**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:** 11/1/2012
**Title:** Regulatory Specialist **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Nov. 01, 2012

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UO1197A-ST

## 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 1022-11H4CS

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

**9. API NUMBER:** 43047518580000

**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:** 2592 FSL 0514 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESE Section: 11 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**

- ✓ NOTICE OF INTENT — Approximate date work will start: 11/3/2013
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ☐ SPUD REPORT — Date of Spud:
- ☐ DRILLING REPORT — Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ 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:** October 02, 2013

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Teena Paulo | 720 929-6236 | Staff Regulatory Specialist |

| SIGNATURE | DATE |
|---|---|
| N/A | 10/2/2013 |

RECEIVED: Oct. 02, 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 43047518580000

**API:** 43047518580000
**Well Name:** NBU 1022-11H4CS
**Location:** 2592 FSL 0514 FEL QTR NESE SEC 11 TWNP 100S RNG 220E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 11/3/2011

**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:** Teena Paulo **Date:** 10/2/2013
**Title:** Staff Regulatory Specialist **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Oct. 02, 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*

December 11, 2014

Kerr-McGee Oil & Gas Onshore, L.P.
1099 18th Street, Suite 600
Denver, CO 80217

Re: APDs Rescinded for Kerr-McGee Oil & Gas Onshore, L.P., Uintah and Duchesne County

Ladies and Gentlemen:

Enclosed find the list of APDs that is being rescinded. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded.

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
SITLA, Ed Bonner

43-047-51821 NBU 1022-11O1CS
43-047-51831 NBU 1022-11O4CS
43-013-51832 NBU 1022-11P1BS
43-047-51833 NBU 1022-11P4BS
43-047-51834 NBU 1022-11I1CS
43-047-51835 NBU 1022-12L1CS
43-047-51836 NBU 1022-12M1BS
43-047-51840 NBU 1022-11P4CS
43-047-51856 NBU 1022-11O4BS
43-047-51857 NBU 1022-11H4BS
43-047-51858 NBU 1022-11H4CS
43-047-51859 NBU 1022-11K4CS
43-047-51860 NBU 1022-12M1CS
43-047-51861 NBU 1022-12L1BS
43-047-51862 NBU 1022-11N1BS
43-047-51863 NBU 1022-11H1CS
43-047-51864 NBU 1022-11N1CS
43-047-51865 NBU 1022-11N4BS
43-047-51867 NBU 1022-11N4CS
43-047-51868 NBU 1022-12M4BS
43-047-51869 NBU 1022-11O2AS
43-047-51870 NBU 1022-12M4CS
43-047-54169 NBU 922-35H4BS (FEDERAL)