FORM 3

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

AMENDED REPORT ☐

| APPLICATION FOR PERMIT TO DRILL | | | | | | | 1. WELL NAME and NUMBER: NBU 921-20H |
|---|---|---|---|---|---|---|---|
| 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: 720 929-6587 |
| 8. ADDRESS OF OPERATOR: P.O. Box 173779, Denver, CO, 80217 | | | | | | | 9. OPERATOR E-MAIL: mary.mondragon@anadarko.com |
| 10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE): UTU 0575 | | 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'): UTE TRIBE | | 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 | 2037 FNL 749 FEL | SENE | 20 | 9.0 S | 21.0 E | S |
| Top of Uppermost Producing Zone | 2037 FNL 749 FEL | SENE | 20 | 9.0 S | 21.0 E | S |
| At Total Depth | 2037 FNL 749 FEL | SENE | 20 | 9.0 S | 21.0 E | S |

| 21. COUNTY: UINTAH | 22. DISTANCE TO NEAREST LEASE LINE (Feet): 749 | 23. NUMBER OF ACRES IN DRILLING UNIT: 1600 |
|---|---|---|
| | 25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed): 1000 | 26. PROPOSED DEPTH: MD: 10200 TVD: 10200 |
| 27. ELEVATION - GROUND LEVEL: 4834 | 28. BOND NUMBER: WYB000291 | 29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE: Permit #43-8496 |

**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 Kathy Schneebeck-Dulnoan | TITLE Staff Regulatory Analyst | PHONE 720 929-6007 |
|---|---|---|
| SIGNATURE | DATE 09/04/2009 | EMAIL Kathy.SchneebeckDulnoan@anadarko.com |

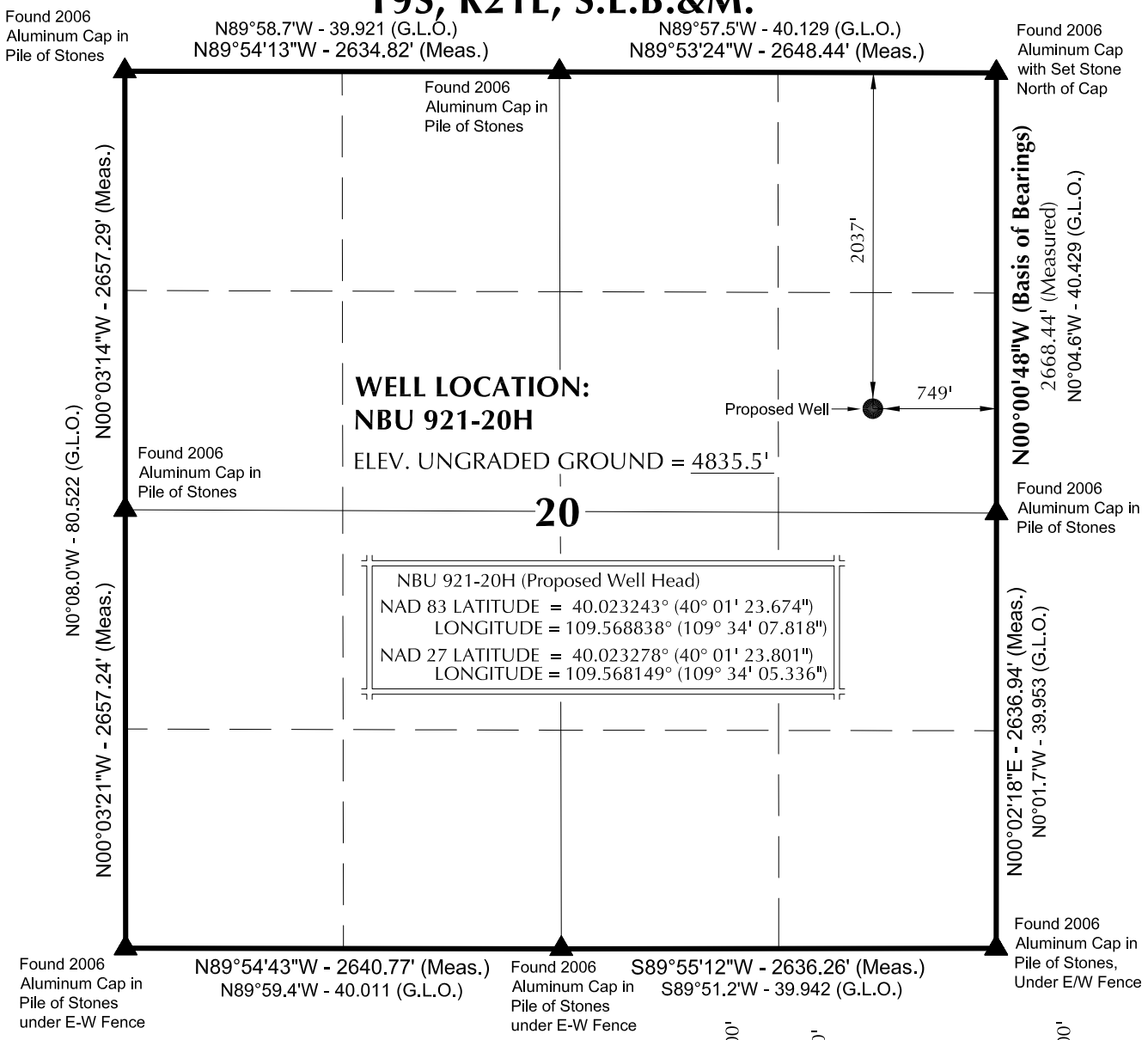
| API NUMBER ASSIGNED | APPROVAL |
|---|---|
| 43047507240000 |  Permit Manager |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Prod | 7.875 | 4.5 | 0 | 10200 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade HCP-110 LT&C | 600 | 11.6 | | | |
| | Grade I-80 Buttress | 9600 | 11.6 | | | |
| | | | | | | |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Surf | 12.25 | 9.625 | 0 | 2625 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade J-55 LT&C | 2625 | 36.0 | | | |
| | | | | | | |

’APIWellNo:43047507240000’

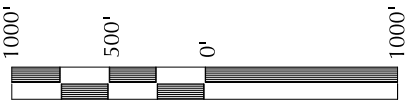
# T9S, R21E, S.L.B.&M.




NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
3. Bearings are based on Global Positioning Satellite observations.
4. Basis of elevation is Tri-Sta "Two Water" located in the NW ¼ 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'.


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.

REGISTERED LAND SURVEYOR No.362251 KOLBY R. KAY STATE OF UTAH

Kolby R. Kay

REGISTERED LAND SURVEYOR
REGISTRATION No. 362251
STATE OF UTAH

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

**WELL PAD - NBU 921-20H**

**NBU 921-20H**
**WELL PLAT**
**2037' FNL, 749' FEL**
**SE ¼ NE ¼ OF SECTION 20, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.**

609 CONSULTING, LLC
371 Coffeen Avenue
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: 04-13-09 | SURVEYED BY: M.S.B. | SHEET NO: 1 |
| DATE DRAWN: 04-14-09 | DRAWN BY: M.W.W. | 1 OF 9 |
| SCALE: 1" = 1000' | Date Last Revised: | |

**NBU 921-20H**
Surface: 2,037' FNL 749' FEL (SE/4NE/4)
Sec. 20 T9S R21E

Uintah, Utah
Mineral Lease: UTU 0575

# 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 | 1,636' | |
| Birds Nest | 1,927' | Water |
| Mahogany | 2,423' | Water |
| Wasatch | 4,988' | Gas |
| Mesaverde | 7,977' | Gas |
| MVU2 | 8,971' | Gas |
| MVL1 | 9,506' | Gas |
| TD | 10,200' | |

**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.*

**7. Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 10,200' TD, approximately equals 6,355 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 4,111 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

**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.*

*Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found*

*competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.*

*The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 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 9-5/8 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 on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.*

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

***Variance for FIT Requirements***
*KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). The air rig operation utilizes a 5M BOPE when drilling. This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.*

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

**10. Other Information:**

*Please refer to the attached Drilling Program.*

’APIWellNo:43047507240000’

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | | | DATE | September 3, 2009 |
| WELL NAME | **NBU 921-20H** | | | TD | 10,200' MD/TVD |
| FIELD | Natural Buttes | COUNTY Uintah | STATE Utah | FINISHED ELEVATION | 4,834' |
| SURFACE LOCATION | SE/4 NE/4 2,037' FNL 749' FEL | Sec 20 | T 9S | R 21E | BHL Straight Hole |
| | Latitude: 40.023243 | Longitude: -109.568838 | | NAD 83 | |
| OBJECTIVE ZONE(S) | Wasatch/Mesaverde | | | | |
| ADDITIONAL INFO | Regulatory Agencies: BLM (MINERALS), Ute Tribe (SURFACE), UDOGM, Tri-County Health Dept. | | | | |

| GEOLOGICAL | | | MECHANICAL | | |
|---|---|---|---|---|---|
| LOGS | FORMATION TOPS | DEPTH | HOLE SIZE | CASING SIZE | MUD WEIGHT |
| | | 40' | | 14" | |
| | | | 12-1/4" | 9-5/8", 36#, J-55, LTC | Air mist |
| **All water flows encountered while drilling will be reported to the appropriate agencies.** | | | | | |
| | **Green River @** | **1,636'** | | | |
| | **Top of Birds Nest Water @** | **1,927'** | | | |
| | **Mahogany @** | **2,423'** | | | |
| | **Preset f/ GL @** | **2,625' MD** | | | |
| | Note: 12.25" surface hole will usually be drilled ±400' below the bottom of lost circulation zone. Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone. | | | | |
| Mud logging program TBD<br>Open hole logging program from TD - surf csg | | | 7-7/8" | 4-1/2" 11.6# HCP-110 & I-80 or equivalent BTC/LTC casing | Water/Fresh Water Mud 8.3-12.2 ppg |
| | **Wasatch @** | **4,988'** | | | |
| | **Mverde @** | **7,977'** | | | |
| | **MVU2 @** | **8,971'** | | | |
| | **MVL1 @** | **9,506'** | | | |
| | **TD @** | **10,200'** | | | Max anticipated Mud required 12.2 ppg |

'APIWellNo:43047507240000'

# KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

## CASING PROGRAM

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | TENSION |
|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | |
| | | | | | | | | 3,520 | 2,020 | 453,000 |
| SURFACE | 9-5/8" | 0 | to | 2625 | 36.00 | J-55 | LTC | 0.83* | 1.64 | 4.79 |
| | | | | | | | | 7,780 | 6,350 | 278,000 |
| PRODUCTION | 4-1/2" | 0 | to | 9600 | 11.60 | I-80 | BTC | 1.84 | 1.04 | 2.89 |
| | | | | | | | | 10,690 | 8,650 | 279,000 |
| | | 9600 | to | 10200 | 11.60 | HCP-110 | LTC | 2.53 | 1.34 | 49.27 |

*Burst on suface casing is controlled by fracture gradient as shoe with gas gradient above. D.F. = 2.13

1) Max Anticipated Surf. Press.(MASP) (Surf Csg) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac grad x TVD of next csg point))

2) MASP (Prod Casing) = Pore Pressure at TD - (0.22 psi/ft-partial evac gradient x TD)
(Burst Assumptions: TD = 12.2 ppg) 0.22 psi/ft = gradient for partially evac wellbore
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
**MASP 4,111 psi**

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD
(Burst Assumptions: TD = 12.2 ppg) 0.62 psi/ft = bottomhole gradient
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
**MABHP 6,355 psi**

## CEMENT PROGRAM

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | YIELD |
|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500' | Premium cmt + 2% CaCl | 215 | 60% | 15.60 | 1.18 |
| **Option 1** | | | + 0.25 pps flocele | | | | |
| TOP OUT CMT (6 jobs) | | 1,200' | 20 gals sodium silicate + Premium cmt | 380 | 0% | 15.60 | 1.18 |
| | | | + 2% CaCl + 0.25 pps flocele | | | | |
| | | | Premium cmt + 2% CaCl | | | | |
| SURFACE | | | **NOTE: If well will circulate water to surface, option 2 will be utilized** | | | | |
| **Option 2** | LEAD | 2,125' | Prem cmt + 16% Gel + 10 pps gilsonite | 240 | 35% | 11.00 | 3.82 |
| | | | + 0.25 pps Flocele + 3% salt BWOC | | | | |
| | TAIL | 500 | Premium cmt + 2% CaCl | 180 | 35% | 15.60 | 1.18 |
| | | | + 0.25 pps flocele | | | | |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| | | | | | | | |
| PRODUCTION | LEAD | 4,480' | Premium Lite II + 0.25 pps celloflake + | 430 | 40% | 11.00 | 3.38 |
| | | | 5 pps gilsonite + 10% gel '+ 1% Retarder | | | | |
| | TAIL | 5,720' | 50/50 Poz/G + 10% salt + 2% gel | 1400 | 40% | 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. Centralize first 3 joints & every third joint for a total of 15 bow spring centralizers. |

## 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.

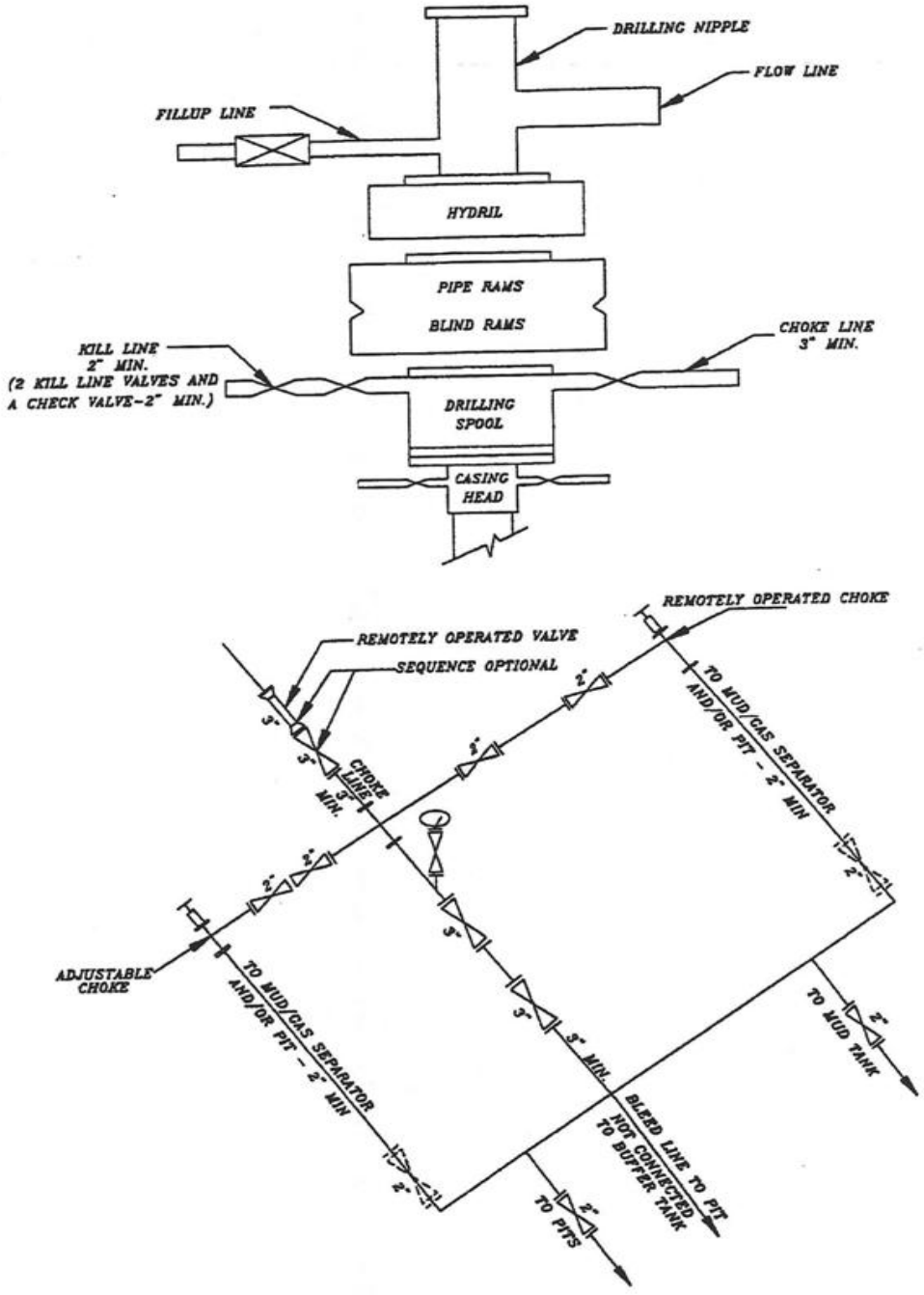
Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.

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

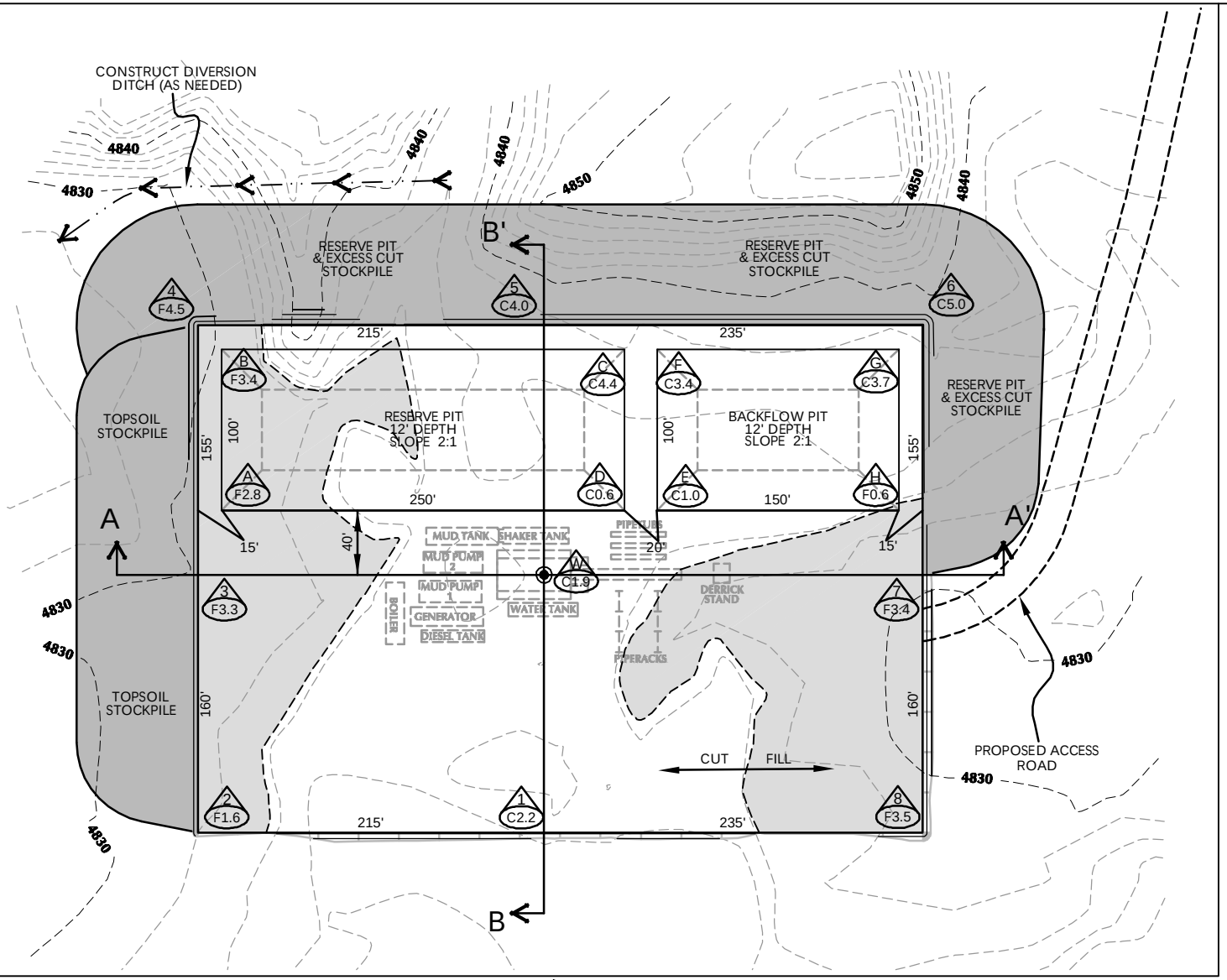
**DRILLING ENGINEER:** _____ **DATE:** _____
John Huycke / Emile Goodwin

**DRILLING SUPERINTENDENT:** _____ **DATE:** _____
John Merkel / Lovel Young

# EXHIBIT A
# NBU 921-20H




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




## WELL PAD LEGEND

- WELL LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)

## WELL PAD NBU 921-20H QUANTITIES

EXISTING GRADE @ LOC. STAKE = 4835.5'
FINISHED GRADE ELEVATION = 4833.6'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 5,120 C.Y.
TOTAL FILL FOR WELL PAD = 4,858 C.Y.
TOPSOIL @ 6" DEPTH = 2,761 C.Y.
EXCESS MATERIAL = 262 C.Y.
TOTAL PAD DISTURBANCE = 3.42 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00
RESERVE PIT CAPACITY (2' OF FREEBOARD)
+/- 28,730 BARRELS
RESERVE PIT VOLUME
+/- 7,720 CY
BACKFLOW PIT CAPACITY (2' OF FREEBOARD)
+/- 15,900 BARRELS
BACKFLOW PIT VOLUME
+/- 4,350 CY

HORIZONTAL 0 50 100 1" = 100'
2' CONTOURS

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

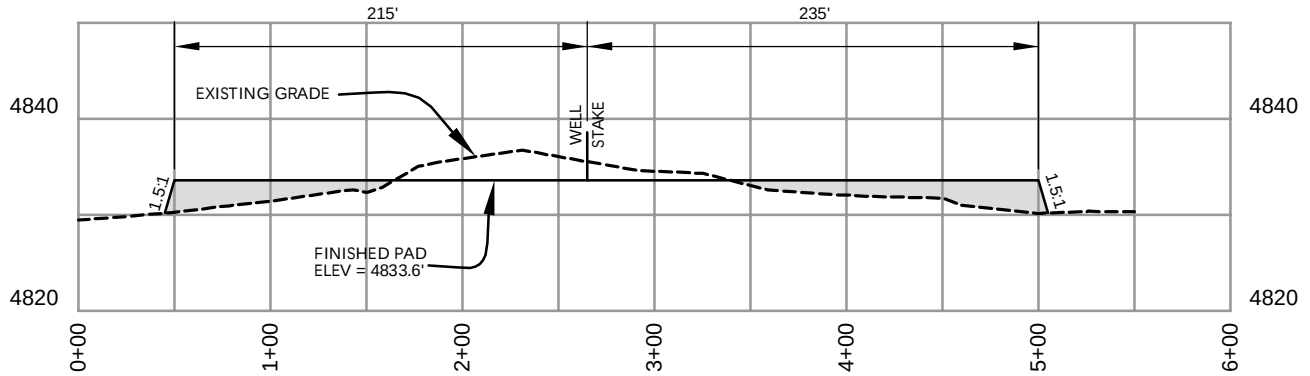
WELL PAD - NBU 921-20H

WELL PAD - LOCATION LAYOUT
NBU 921-20H
2037' FNL, 749' FEL
SE1/4 NE1/4 OF SECTION 20, T.9S., R.21E.
S.L.B.&M., UINTAH COUNTY, UTAH

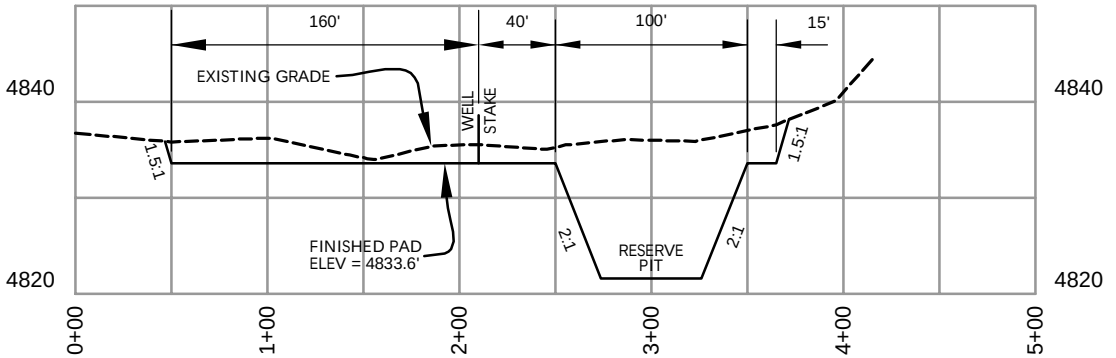
609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: 1"=100' | Date: 4/17/09 | SHEET NO: 2 2 OF 9
REVISED:

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




## CROSS SECTION A-A'




## CROSS SECTION B-B'

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

WELL PAD - NBU 921-20H

WELL PAD - CROSS SECTIONS
NBU 921-20H
2037' FNL, 749' FEL
SE1/4 NE1/4 OF SECTION 20, T.9S., R.21E.
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

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

| Scale: 1"=100' | Date: 4/17/09 | SHEET NO: 3 3 OF 9 |
|---|---|---|
| REVISED: | | |

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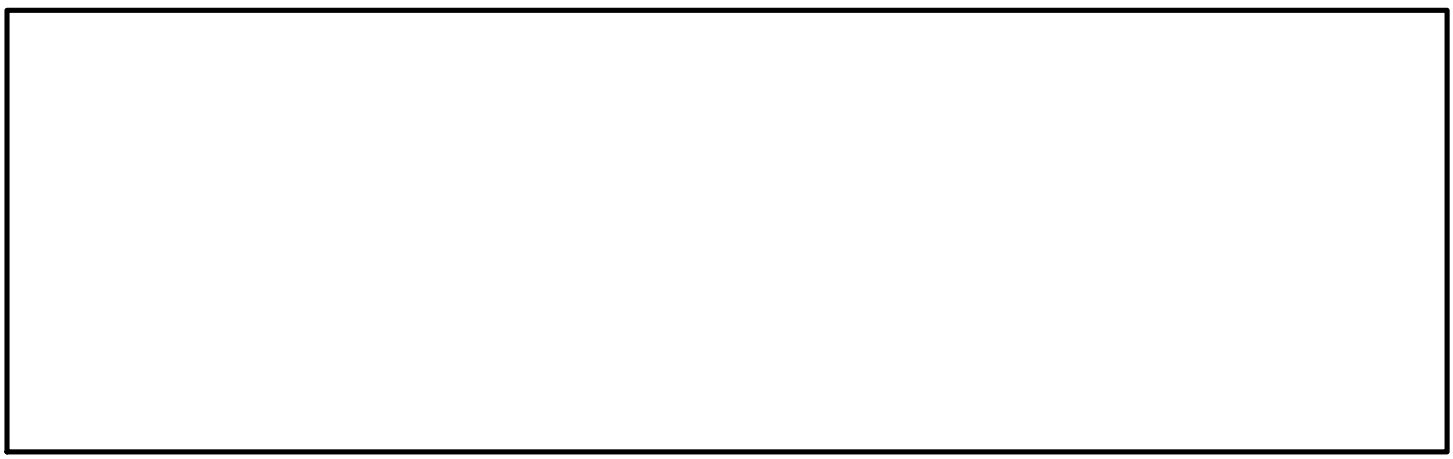
209 NORTH 300 WEST - VERNAL, UTAH 84078

’APIWellNo:43047507240000’



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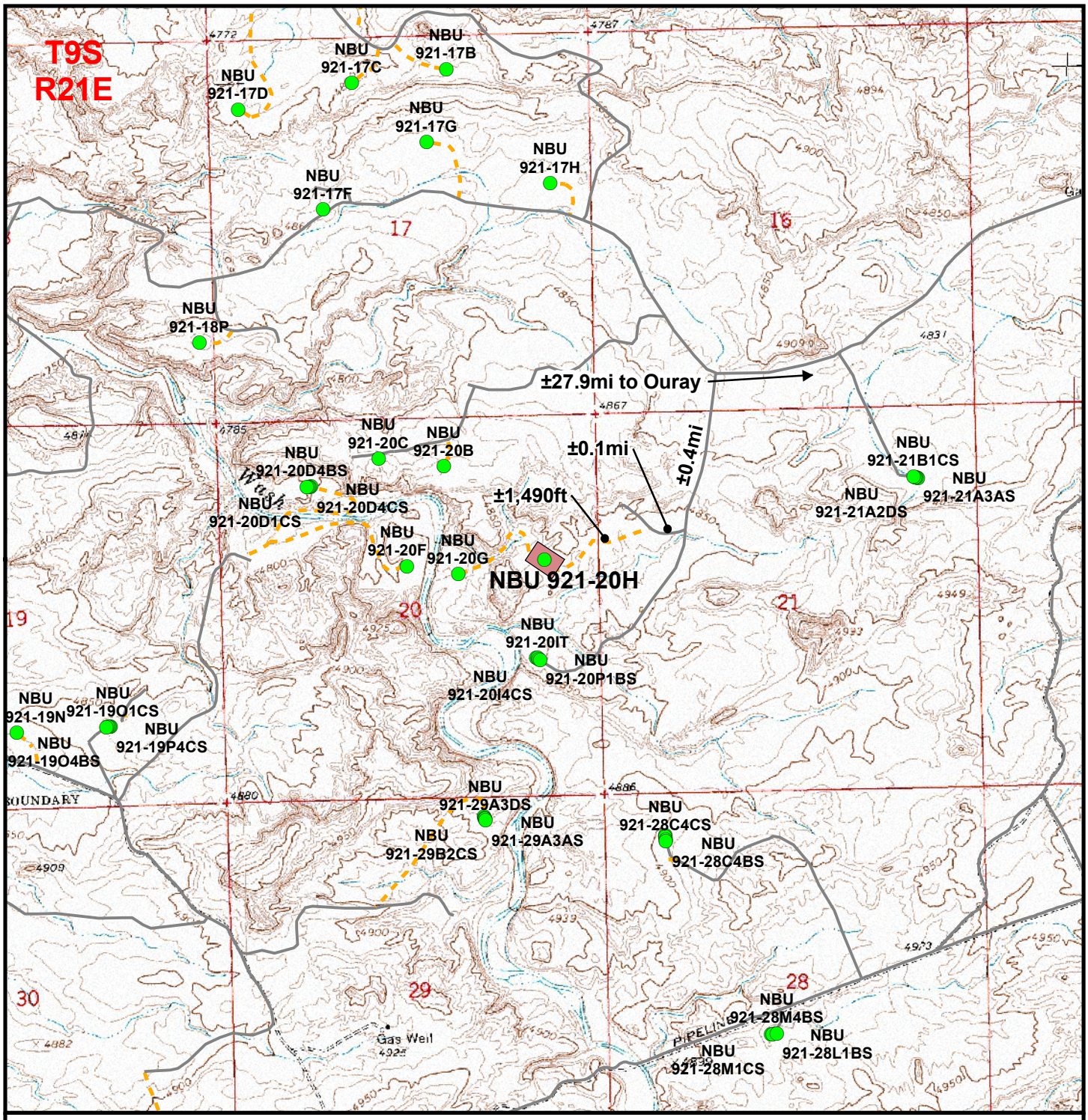



**Legend**

Well - Proposed | Well Pad | Road - Proposed | Road - Existing

Total Proposed Road Length: ±1,490ft


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


**Well Pad - NBU 921-20H**

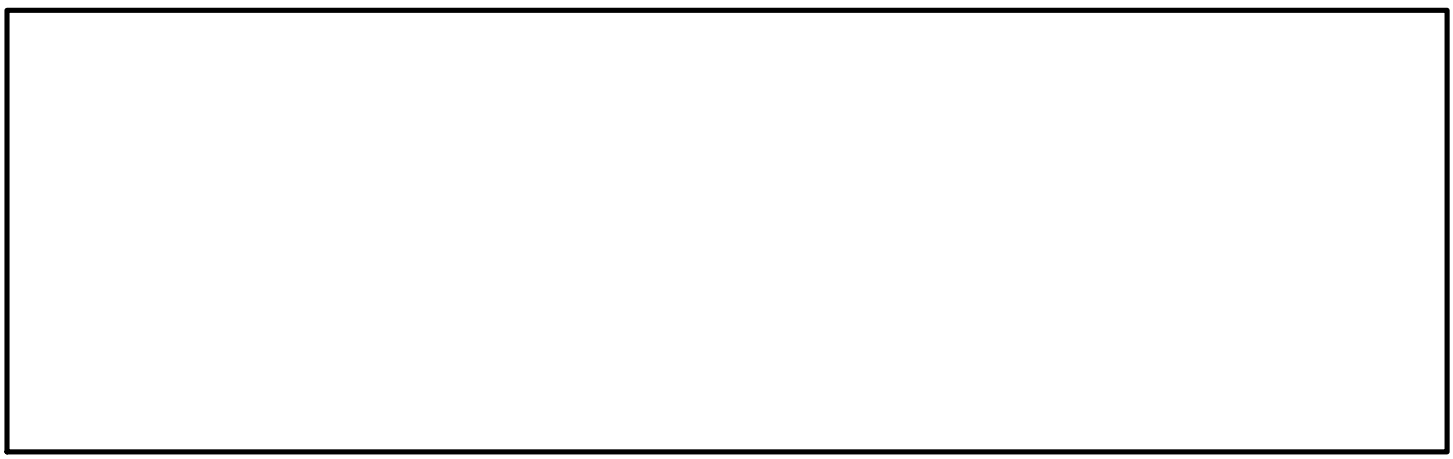
**NBU 921-20H**
**Topo B**
**2037' FNL, 749' FEL**
**SE¼ NE¼, Section 20, T9S, R21E**
**S.L.B.&M., Uintah County, Utah**


609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182


N

| | | | |
|---|---|---|---|
| Scale: 1" = 2000ft | NAD83 USP Central | Sheet No: 6 | 6 of 9 |
| Drawn: JELo | Date: 13 April 2009 | | |
| Revised: | Date: | | |

’APIWellNo:43047507240000’



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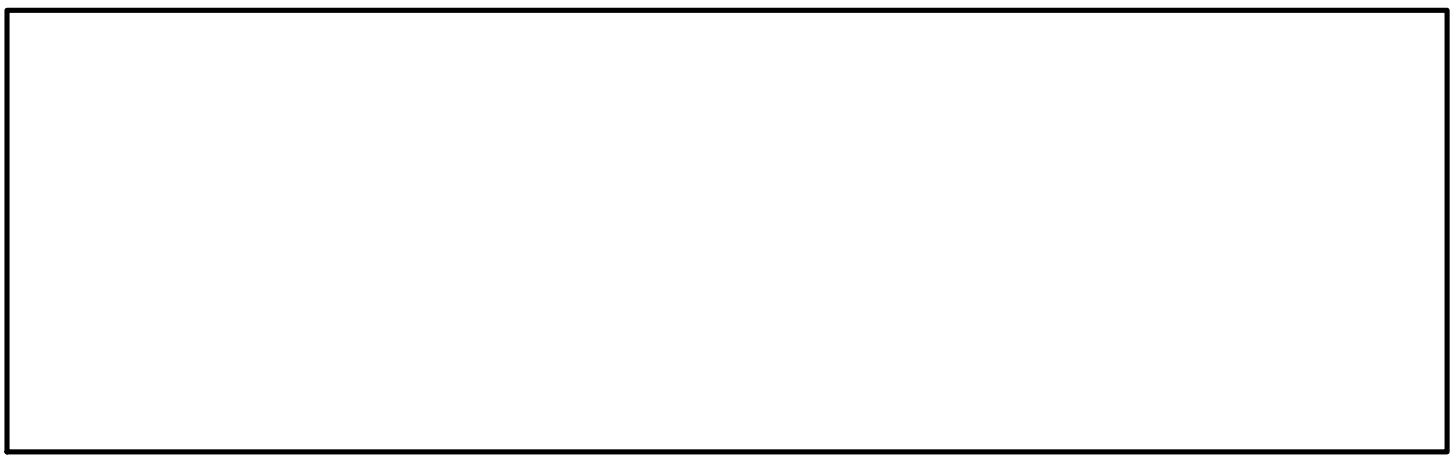

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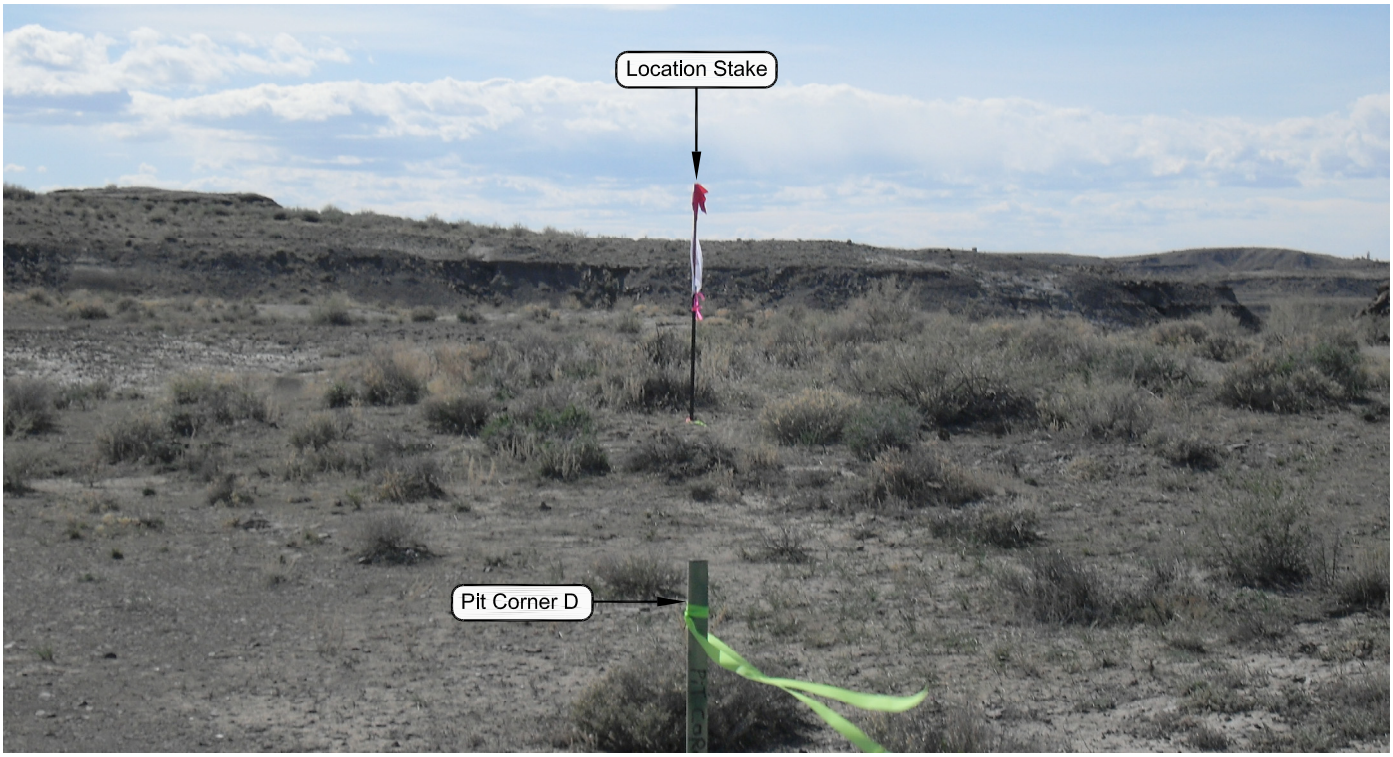



PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE CAMERA ANGLE: WESTERLY

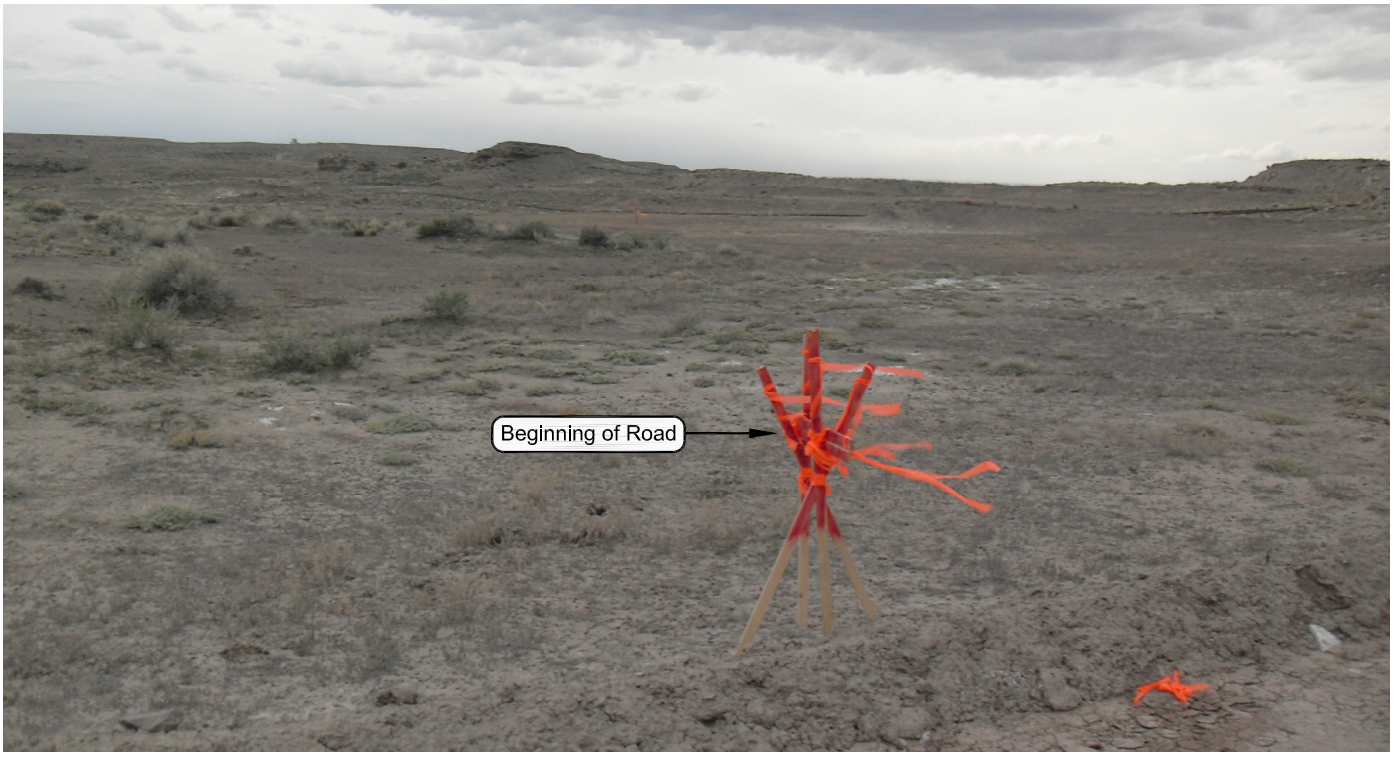



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD CAMERA ANGLE: SOUTHWESTERLY

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

**Well Pad - NBU 921-20H**

**NBU 921-20H**
**LOCATION PHOTOS**
**2037' FNL, 749' FEL**
**SE ¼ NE ¼ OF SECTION 20, T9S, R21E,**
**S.L.B.&M., UINTAH COUNTY, UTAH.**

609
CONSULTING, LLC
371 Coffeen Avenue
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: 04-13-09 | PHOTOS TAKEN BY: M.S.B. | SHEET NO: 4 |
| DATE DRAWN: 04-14-09 | DRAWN BY: M.W.W. | |
| Date Last Revised: | | 4 OF 9 |

**Kerr-McGee Oil & Gas Onshore, LP**
**WELL PAD - NBU 921-20H**
**WELL – NBU 921-20H**
**Section 20, T9S, R21E, S.L.B.&M.**

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 13.9 MILES TO THE JUNCTION OF STATE HIGHWAY 88. EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG STATE HIGHWAY 88 APPROXIMATELY 16.8 MILES TO OURAY, UTAH. FROM OURAY, PROCEED IN A SOUTHERLY DIRECTION ALONG THE SEEP RIDGE ROAD (COUNTY B ROAD 2810) APPROXIMATELY 11.2 MILES TO THE INTERSECTION OF THE GLEN BENCH ROAD (COUNTY B ROAD 3260). EXIT LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY, THEN NORTHEASTERLY DIRECTION ALONG THE GLEN BENCH ROAD APPROXIMATELY 11.4 MILES TO A CLASS D COUNTY ROAD TO THE SOUTHWEST. EXIT LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION ALONG THE CLASS D COUNTY ROAD APPROXIMATELY 1.8 MILES TO A SECOND CLASS D COUNTY ROAD TO THE NORTH. EXIT RIGHT AND PROCEED IN A NORTH BY NORTHWEST DIRECTION ALONG THE SECOND CLASS D COUNTY ROAD APPROXIMATELY 0.3 MILES TO A THIRD CLASS D COUNTY ROAD TO THE NORTH. EXIT RIGHT AND PROCEED IN A NORTHERLY, THEN NORTHEASTERLY, THEN NORTHERLY DIRECTION ALONG THE THIRD CLASS D COUNTY ROAD APPROXIMATELY 2.0 MILES TO A SERVICE ROAD TO THE SOUTHWEST. EXIT LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION ALONG THE SERVICE ROAD APPROXIMATELY 1.2 MILES TO A SECOND SERVICE ROAD TO THE SOUTH. EXIT LEFT AND PROCEED IN A SOUTH BY SOUTHWEST DIRECTION APPROXIMATELY 0.4 MILES TO A THIRD SERVICE ROAD TO THE WEST. EXIT RIGHT AND PROCEED IN A WESTERLY DIRECTION ALONG THE THIRD SERVICE ROAD APPROXIMATELY 0.1 MILES TO THE PROPOSED ACCESS ROAD. FOLLOW ROAD FLAGS IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 1,490 FEET TO THE PROPOSED WELL LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 59.4 MILES IN A SOUTHERLY DIRECTION.

’APIWellNo:43047507240000’

# CLASS I REVIEW OF KERR-MCGEE OIL & GAS ONSHORE LP’S 51 PROPOSED WELL LOCATIONS (T9S, R21E, SECTIONS 7, 8, 10, 11, 12, 17, 18, 19, 20, 23, 25, AND 30) IN UINTAH COUNTY, UTAH

’APIWellNo:43047507240000’

# CLASS I REVIEW OF KERR-MCGEE OIL & GAS ONSHORE LP’S 51 PROPOSED WELL LOCATIONS (T9S, R21E, SECTIONS 7, 8, 10, 11, 12, 17, 18, 19, 20, 23, 25, AND 30) IN UINTAH COUNTY, UTAH


By:

Jacki A. Montgomery


Prepared For:

Ute Tribal Land
Uintah and Ouray Agency

Bureau of Land Management
Vernal Field Office

Prepared Under Contract With:

Kerr-McGee Oil & Gas Onshore LP
1368 South 1200 East
Vernal, Utah 84078


Prepared By:

Montgomery Archaeological Consultants, Inc.
P.O. Box 219
Moab, Utah 84532



MOAC Report No. 09-39

May 11, 2009

United States Department of Interior (FLPMA)
Permit No. 09-UT-60122

Public Lands Policy Coordination Office
Archaeological Survey Permit No. 117

Ute Tribal Permit No. A09-363

**IPC #09-81**

# Paleontological Reconnaissance Survey Report

## Survey of Kerr McGee's Proposed Well Pads, Access Roads, and Pipelines for "NBU #921-18M, 18N, 19F, 20F, & 20H" (Sec. 18-21, T 9 S, R 21 E)

Ouray SE
Topographic Quadrangle
Uintah County, Utah

June 18, 2009

Prepared by Stephen D. Sandau
Paleontologist for
Intermountain Paleo-Consulting
P. O. Box 1125
Vernal, Utah 84078

**NBU 921-20H**
Surface: 2,037' FNL 749' FEL (SE/4NE/4)
Sec. 20 T9S R21E

Uintah, Utah
Mineral Lease: UTU 0575

Surface Owner: Ute Indian Tribe

# ONSHORE ORDER NO. 1

## *MULTI-POINT SURFACE USE & OPERATIONS PLAN SUBMITTED WITH SITE-SPECIFIC INFORMATION*

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) and Bureau of Indian Affairs (BIA) documents. An NOS was submitted showing the surface location in SE/4 NE/4 of Section 20 T9S R21E.

This Surface Use Plan of Operations (SUPO) or 13-point plan provides the site-specific information for the above-referenced wells. This information is to be incorporated by reference into the Master Development Plan (MDP) for Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee). The MDP is available upon request from the BIA-Ft Duchesne Office.

An on-site meeting is scheduled for September 1-3, 2009. Please contact Raleen White at 720-929-6666 for any questions.

**A. Existing Roads:**

A) Refer to Topo Map A for directions to the location.
B) Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

**B. Planned Access Roads:**

*See MDP for additional details on road construction.*
Approximately ±1,490' (±0.28 miles) of new access road is proposed. Please refer to the attached Topo Map B. No pipelines will be crossed with the new construction.

***Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site and are typically shown on the attached Exhibits and Topo maps.***

**C. Location of Existing Wells Within a 1-Mile Radius:**

Please refer to Topo Map C.

**D.** **Location of Existing and Proposed Facilities:**
*See MDP for additional details on Existing and Proposed Facilities.*

*The following guidelines will apply if the well is productive.*
Approximately ±1,090’ (±0.21 miles) of new pipeline is proposed for this well. Another ±4,200’ (±0.8 miles) of new pipeline is proposed for concurrent pipeline access to the proposed NBU 921-20I pad. Please refer to the attached Topo Map D. Appropriate surface use agreements have been or will be obtained from the Ute Indian Tribe. Pipeline segments will be welded or zaplocked together on disturbed areas in or near the location, whenever possible, and dragged into place

**E.** **Location and Type of Water Supply:**
*See MDP for additional details on 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.

No water well is to be drilled on this lease.

**F.** **Source of Construction Materials:**
*See MDP for additional details on Source of Construction Materials.*

**G.** **Methods of Handling Waste Materials:**
*See MDP for additional details on Methods of Handling Waste Materials.*

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E
NBU #159 in Sec. 35 T9S R21E
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

**H.** **Ancillary Facilities:**
*See MDP for additional details on Ancillary Facilities.*

None are anticipated.

**I.** **Well Site Layout:** (See Location Layout Diagram)
*See MDP for additional details on Well Site Layout.*

All pits will be fenced according to the following minimum standards:

- Net wire (39-inch) will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.
- The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.
- Corner posts shall be cemented and/or braced in such a manner 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.
- All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

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

*See MDP for additional details on Plans for Reclamation of the Surface.*

Kerr-McGee shall call the BIA for the seed mixture prior to starting interim and/or final reclamation actions.

**K. Surface/Mineral Ownership:**

The well pad and access road are located on lands owned by:

Ute Indian Tribe
PO Box 70
Fort Duchesne, Utah 84026
435-722-5141

The mineral ownership is listed below:

United States of America
Bureau of Land Management
170 South 500 East
Vernal, UT 84078
435-781-4400

**L. Other Information:**

*See MDP for additional details on Other Information.*

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

Kathy Schneebeck Dulnoan
Regulatory Analyst
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6007

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.

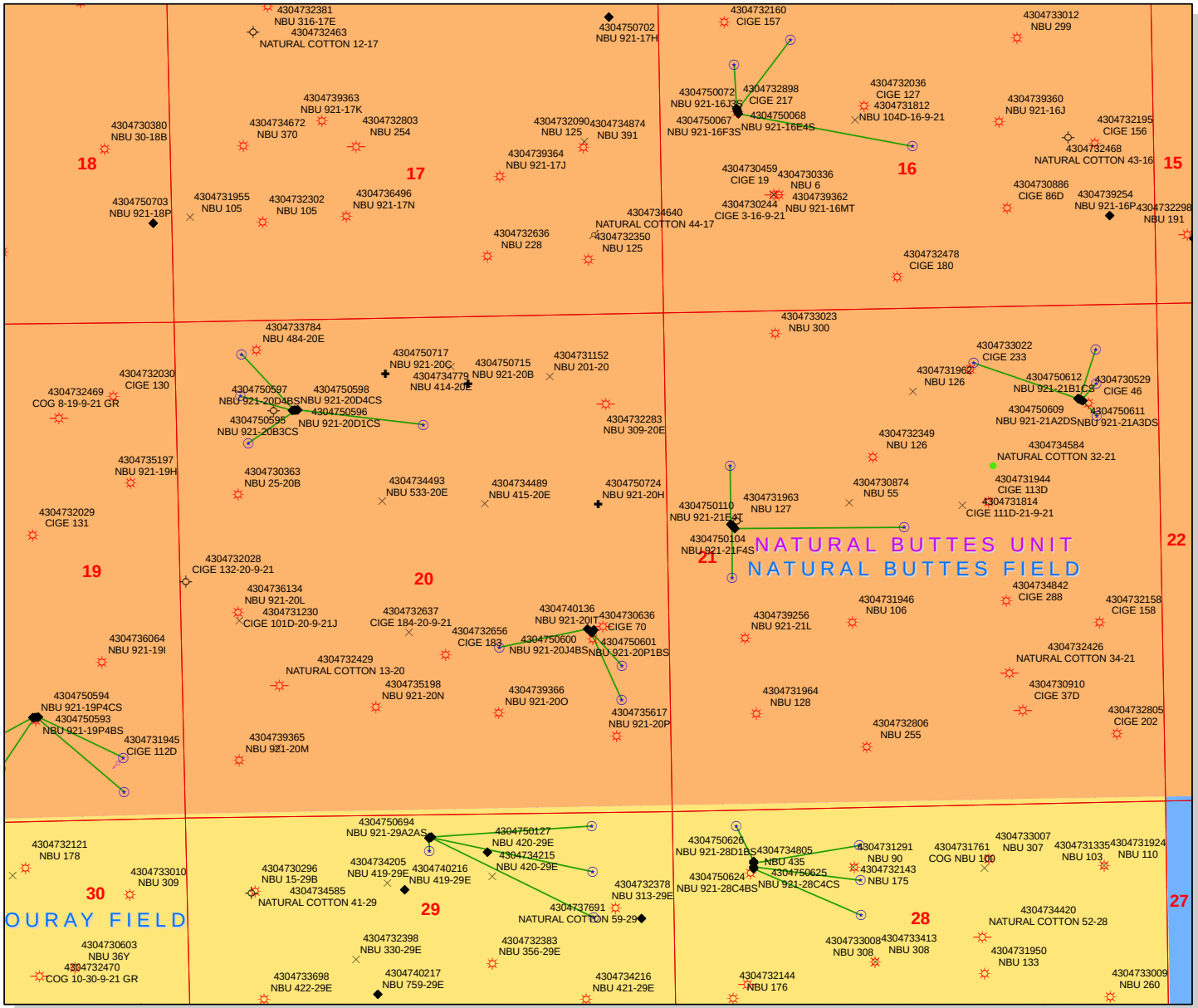
The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

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 pursuant to 43 CFR 3104 for lease activities is being provided 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.

_____ September 3, 2009
Kathy Schneebeck Dulnoan Date




**API Number: 4304750724**

**Well Name: NBU 921-20H**

**Township 09.0 S Range 21.0 E Section 20**

**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**

- ACTIVE
- COMBINED
- Sections

**Wells Query Events**

- <all other values>

**GIS_STAT_TYPE**

- <Null>
- APD
- DRL
- GI
- GS
- LA
- NEW
- OPS
- PA
- PGW
- POW
- RET
- SGW
- SOW
- TA
- TW
- WD
- WI
- WS


1,300 650 0 1,300 Feet

1:13,307

'APIWellNo:43047507240000'

# 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)**

September 11, 2009

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2009 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 2009 within the Natural Buttes Unit, Uintah County, Utah.

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

(Proposed PZ WASATCH-MESA VERDE)

43-047-50724 NBU 921-20H Sec 20 T09S R21E 2037 FNL 0749 FEL

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:9-11-09

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 9/4/2009 **API NO. ASSIGNED:** 43047507240000

**WELL NAME:** NBU 921-20H

**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) **PHONE NUMBER:** 720 929-6007

**CONTACT:** Kathy Schneebeck-Dulnoan

**PROPOSED LOCATION:** SENE 20 090S 210E **Permit Tech Review:** ☑

**SURFACE:** 2037 FNL 0749 FEL **Engineering Review:** ☑

**BOTTOM:** 2037 FNL 0749 FEL **Geology Review:** ☑

**COUNTY:** UINTAH

**LATITUDE:** 40.02318 **LONGITUDE:** -109.56814

**UTM SURF EASTINGS:** 622187.00 **NORTHINGS:** 4431102.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 1 - Federal

**LEASE NUMBER:** UTU 0575 **PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE

**SURFACE OWNER:** 2 - Indian **COALBED METHANE:** NO

**RECEIVED AND/OR REVIEWED:**

- ☑ **PLAT**
- ☑ **Bond:** FEDERAL - WYB000291
- ☐ **Potash**
- ☑ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** 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 & uncomm. tract

- ☐ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**
3 - Commingling - ddoucet
4 - Federal Approval - dmason
17 - Oil Shale 190-5(b) - dmason

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 921-20H
**API Well Number:** 43047507240000
**Lease Number:** UTU 0575
**Surface Owner:** INDIAN
**Approval Date:** 9/21/2009

**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:**
State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

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.

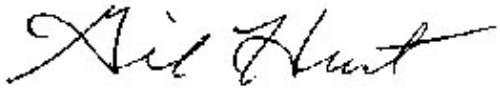
**Notification Requirements:**
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:
- Within 24 hours following the spudding of the well – contact Carol Daniels at 801-538-5284

(please leave a voicemail message if not available)
OR
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at https://oilgas.ogm.utah.gov

**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:**



Gil Hunt
Associate Director, Oil & Gas

API Well No: 43047507240000

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6007 Ext

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start: 9/21/2010 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ DRILLING REPORT<br>Report Date: | ☐ 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:** September 28, 2010

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Danielle Piernot | 720 929-6156 | Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 9/20/2010 |

**RECEIVED** September 20, 2010

**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 43047507240000

**API:** 43047507240000
**Well Name:** NBU 921-20H
**Location:** 2037 FNL 0749 FEL QTR SENE SEC 20 TWNP 090S RNG 210E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 9/21/2009

**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**

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

**Signature:** Danielle Piernot **Date:** 9/20/2010
**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date:** September 28, 2010

**By:** 

**RECEIVED** September 20, 2010

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

**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:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start: 8/22/2011 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ 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 |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ 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 |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ✓ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

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

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

**Date:** 08/22/2011

**By:** 

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 8/22/2011 |

**RECEIVED** Aug. 22, 2011


**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 43047507240000

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**Well Name:** NBU 921-20H
**Location:** 2037 FNL 0749 FEL QTR SENE SEC 20 TWNP 090S RNG 210E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 9/21/2009

**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:** Andy Lytle **Date:** 8/22/2011
**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**RECEIVED** Aug. 22, 2011

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
SEP 0 4 2009

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: UTU0575

6. If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER — CONFIDENTIAL

7. If Unit or CA Agreement, Name and No.: NATURAL BUTTES

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

8. Lease Name and Well No.: NBU 921-20H

2. Name of Operator: KERR MCGEE OIL&GAS ONSHORE LP
Contact: KATHY SCHNEEBECK DULNOAN
E-Mail: kathy.schneebeckdulnoan@anadarko.com

9. API Well No.: 43 047 56724

3a. Address: PO BOX 173779, DENVER, CO 80217

3b. Phone No. (include area code): Ph: 720-929-6007, Fx: 720-929-7007

10. Field and Pool, or Exploratory: NATURAL BUTTES

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

At surface: SENE 2037FNL 749FEL 40.02324 N Lat, 109.56884 W Lon

At proposed prod. zone: SENE 2037FNL 749FEL 40.02324 N Lat, 109.56884 W Lon

11. Sec., T., R., M., or Blk. and Survey or Area: Sec 20 T9S R21E Mer SLB

14. Distance in miles and direction from nearest town or post office*: APPROXIMATELY 29 MILES SOUTHEAST OF OURAY, UT

12. County or Parish: UINTAH

13. State: UT

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): APPROXIMATELY 749' TO LEASE LINE

16. No. of Acres in Lease: 1600.00

17. Spacing Unit dedicated to this well:

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.: APPROXIMATELY 1000'

19. Proposed Depth: 10200 MD, 10200 TVD

20. BLM/BIA Bond No. on file: WYB000291

21. Elevations (Show whether DF, KB, RT, GL, etc.): 4834 GL

22. Approximate date work will start: 09/28/2009

23. Estimated duration: 60-90 DAYS

## 24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature: (Electronic Submission)
Name (Printed/Typed): KATHY SCHNEEBECK DULNOAN Ph: 720-929-6007
Date: 09/04/2009

Title: STAFF REGULATORY ANALYST

Approved by (Signature):
Name (Printed/Typed): Jerry Kenczka
Date: NOV 16 201

Title: Assistant Field Manager
Lands & Mineral Resources
Office: VERNAL FIELD OFFICE

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

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

**Additional Operator Remarks (see next page)**

NOTICE OF APPROVAL

**Electronic Submission #74002 verified by the BLM Well Information System**
**For KERR MCGEE OIL&GAS ONSHORE LP, sent to the Vernal**
**Committed to AFMSS for processing by ROBIN R. HANSEN on 09/04/2009 ()**

RECEIVED
NOV 21 2011
DIV. OF OIL, GAS & MINING

UDOGM

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VERNAL FIELD OFFICE
170 South 500 East VERNAL, UT 84078 (435) 781-4400

## *CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL*

| | | | |
|---|---|---|---|
| **Company:** | **Kerr McGee Oil & Gas Onshore** | **Location:** | **SENE, Sec. 20, T9S, R21E (S)**<br>**SENE, Sec. 20, T9S, R21E (B)** |
| **Well No:** | **NBU 921-20H** | **Lease No:** | **UTU-0575** |
| **API No:** | **43-047-50724** | **Agreement:** | **Natural Buttes Unit** |

**OFFICE NUMBER: (435) 781-4400**
**OFFICE FAX NUMBER: (435) 781-3420**

**A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE**

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. **This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.**

### NOTIFICATION REQUIREMENTS

| | | |
|---|---|---|
| Construction Activity<br>(Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist) | - | The Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist shall be notified at least 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday. |
| Construction Completion<br>(Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist) | - | Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion. Notify the BLM Environmental Scientist prior to moving on the drilling rig. |
| Spud Notice<br>(Notify BLM Petroleum Engineer) | - | Twenty-Four (24) hours prior to spudding the well. |
| Casing String & Cementing<br>(Notify BLM Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to running casing and cementing all casing strings to: ut_vn_opreport@blm.gov. |
| BOP & Related Equipment Tests<br>(Notify BLM Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to initiating pressure tests. |
| First Production Notice<br>(Notify BLM Petroleum Engineer) | - | Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days. |

## *SURFACE USE PROGRAM*
## *CONDITIONS OF APPROVAL (COAs)*

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of $NO_x$ per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.

- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of $NO_x$ per horsepower-hour.

**SITE SPECIFIC COAs:**

- Paint facilities "Shadow Gray."
- Re-route storm water runoff around the perimeter of the well pad, as depicted on location layout.
- Construct low water crossing on access road.
- Monitor location by a permitted paleontologist during the construction process.
- Monitor location by a permitted archaeologist during the construction process.
- Fence of the archaeological site 42Un2138 prior to the construction operations.
- In accordance with the guidelines specified in the Utah BLM Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002 a raptor survey shall be conducted prior to construction of the proposed location, pipeline, or access road if construction would take place during raptor nesting season (January 1 through September 30). If active raptor nests are identified during a new survey, KMG shall conduct its operations according to the seasonal restrictions detailed I the Uinta Basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (See Appendix D). The USFWS recommends a ¼-mile avoidance buffer surrounding active burrowing owl nests between March 1 and August 31. The USFWS recommends a ¼-mile avoidance buffer surrounding active golden eagle nests between January 1 and August 31.
- Conduct a new biological survey in accordance with the guidelines specified in the USFWS Rare Plant Conservation Measures for Uinta Basin hookless Cactus and the 2008 BLM RMP ROD, to include a 300-foot buffer from proposed construction operations (See Appendix D), and conduct operations according to agency specifications and the requirements of the BO issued as a result of Section & USFWS consultation.

**BIA Standard Conditions of Approval**

- Soil erosion will be mitigated by reseeding all disturbed areas.
- The gathering pipelines will be constructed to lie on the surface. The surface pipelines will not be bladed or cleared of vegetation. Where pipelines are constructed parallel to roads they may be welded on the road and then lifted from the road onto the right-of-way. Where pipelines do

not parallel roads but cross-country between sites, they shall be welded in place at well sites or on access roads and then pulled between stations with a suitable piece of equipment. Traffic will be restricted along these areas so that the pipeline right-of-way will not be used as an access road.

- An open drilling system shall be used, unless otherwise specified in 10.0 Additional Stipulations of this document and in the Application for Permit to Drill. A closed drilling system shall be used in all flood plain areas, and other highly sensitive areas, recommended by the Ute Tribe Technician, BIA, and other agencies involved.
- The reserve pit shall be lined with a synthetic leak proof liner. After the drilling operation is complete, excess fluids shall be removed from the reserve pit and either hauled to an approved disposal site or shall be used to drill other wells. When the fluids are removed the pit shall be backfilled a minimum of 3.0' below the soil surface elevation.
- A closed production system shall be used. This means all produced water and oil field fluid wastes shall be contained in leak proof tanks. These fluids shall be disposed of in either approved injection wells or disposal pits.
- Major low water crossings will be armored with pit run material to protect them from erosion.
- All personnel shall refrain from collecting any paleontological fossils and from disturbing any fossil resources in the area.
- If fossils are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.
- Before the site is abandoned the company will be required to restore the right-of-way to near its original state. The disturbed area will be reseeded with desirable perennial vegetation. If necessary, the Bureau of Indian Affairs or Bureau of Land Management will provide a suitable seed mixture.
- Noxious weeds will be controlled on all surface disturbances within the project area. If noxious weeds spread from the project area onto adjoining land, the company will also be responsible for their control.
- If project construction operations are scheduled to occur after December 31, 2009, KMG shall conduct annual raptor surveys in accordance with the guidelines specified in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002. If active raptor nest are indentified during a new survey, KMG shall conduct its operations according to the seasonal restrictions detailed in the Uinta basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (See Appendix D).
- USFWS threatened and endangered plant and animal conservation measures will be followed, as appropriate to the species identified by the biological resource survey (See Appendix D).
- All personnel shall refrain from collecting artifacts and from disturbing any significant cultural resources in the area.
- If artifacts or any culturally sensitive materials are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.

***DOWNHOLE PROGRAM***
***CONDITIONS OF APPROVAL (COAs)***

**SITE SPECIFIC DOWNHOLE COAs:**

Gamma Ray Log shall be run from total depth to surface.

**Variances Granted:**

Air Drilling

Properly lubricated and maintained rotating head. Variance granted to use a properly maintained and lubricated diverter bowl in place of a rotating head.

Blooie line discharge 100' from the well bore. Variance granted for blooie line discharge to be 45' from the well bore.

Variance granted for two truck/trailer mounted air compressors located with 40 feet from the well bore and 60' from the blooie line.

Mud material requirements. In lieu of mud products on location, Kerr McGee will fill the reserve pit with water for kill fluid.

Automatic igniter. Variance granted for igniter due to there being no productive formations while drilling with air.

FIT test. Variance granted due to well know geology and problems that can occur with FIT test.

**All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to.** The following items are emphasized:

**DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS**

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.

- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.

- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.

- No aggressive/fresh hard-banded drill pipe shall be used within casing.

- **Cement baskets shall not be run on surface casing.**

- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.

- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.

- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.

- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.

- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.

- **Please submit an electronic copy of all other logs run on this well in LAS format to UT_VN_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.**

- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

**OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.

- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.

- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:

    - Operator name, address, and telephone number.
    - Well name and number.
    - Well location (¼¼, Sec., Twn, Rng, and P.M.).
    - Date well was placed in a producing status (date of first production for which royalty will be paid).
    - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
    - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
    - Unit agreement and/or participating area name and number, if applicable.
    - Communitization agreement number, if applicable.

- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.

- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.

- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.

- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.

- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.

- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.

- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.

- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.

- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

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

FORM 9

## SUNDRY NOTICES AND REPORTS ON WELLS

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**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ 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 |
| ✓ SPUD REPORT<br>Date of Spud:<br>3/2/2012 | ☐ 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 |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

MIRU TRIPPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL ON 03/02/2012 AT 1200 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
March 06, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Sheila Wopsock | 435 781-7024 | Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 3/5/2012 |

RECEIVED: Mar. 05, 2012

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

FORM 9

**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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 3/14/2012 | ☐ 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.**

MIRU AIR RIG ON MARCH 11, 2012. DRILLED SURFACE HOLE TO 2,920'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
March 16, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** N/A | | **DATE** 3/15/2012 |

RECEIVED: Mar. 15, 2012

**FEDERAL APPROVAL OF THIS ACTION IS NECESSARY**

**FORM 9**

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:**
UTU 0575

## 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:**
UTE

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

**1. TYPE OF WELL**
Gas Well

**8. WELL NAME and NUMBER:**
NBU 921-20H

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

**9. API NUMBER:**
43047507240000

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

**PHONE NUMBER:**
720 929-6515

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:**
UINTAH

**STATE:**
UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start:<br>3/15/2012 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ✓ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ✓ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

The operator requests approval to deepen the well to the Blackhawk formation (part of the Mesaverde Group). The Operator also requests approval for closed loop drilling option, surface casing change and production casing change. All other aspects of the previously approved drilling plan will not change. Please see the attachment. Thank you.

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

**Date:** March 22, 2012

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 3/15/2012 |

RECEIVED: Mar. 15, 2012

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

**NBU 921-20H**

Surface: 2037 FNL / 749 FEL SENE

Section 20 T9S R21E

Unitah County, Utah
Mineral Lease: UTU-0575

**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 | 1,643' | |
| Birds Nest | 1,931' | Water |
| Mahogany | 2,419' | Water |
| Wasatch | 4,987' | Gas |
| Mesaverde | 7,955' | Gas |
| Sego | 10,217' | Gas |
| Castlegate | 10,307' | Gas |
| Blackhawk | 10,696' | Gas |
| TVD | 11,296' | |
| TD | 11,296' | |

**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

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**5. Drilling Fluids Program:**

Please refer to the attached Drilling Program

**6. Evaluation Program:**

Please refer to the attached Drilling Program

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 11296' TVD, approximately equals 7,455 psi (0.66 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 5,022 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.

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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.

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

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

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

**Variance for BOPE Requirements**

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

**Variance for Mud Material Requirements**

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

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

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

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

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

**10.** **Other Information:**

Please refer to the attached Drilling Program.

RECEIVED: Mar. 15, 2012

**KERR-McGEE OIL & GAS ONSHORE LP**

# DRILLING PROGRAM

| | | | |
|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | DATE | March 15, 2012 |
| WELL NAME | **NBU 921-20H** | TD | 11,296' TVD 11,296' MD |
| FIELD | Natural Buttes | COUNTY Uintah STATE Utah | FINISHED ELEVATION 4,834' |
| SURFACE LOCATION | SENE 2037 FNL 749 FEL | Sec 20 T 9S R 21E | |
| | Latitude: 40.023243 | Longitude: -109.568838 | NAD 83 |
| OBJECTIVE ZONE(S) | BLACKHAWK (Part of the Mesaverde Group) | | |
| ADDITIONAL INFO | Regulatory Agencies: BLM (Minerals), BIA (Surface), UDOGM Tri-County Health Dept. | | |

| GEOLOGICAL | | | MECHANICAL | | |
|---|---|---|---|---|---|
| FORMATION | | | HOLE | CASING | MUD |
| LOGS | TOPS | DEPTH | SIZE | SIZE | WEIGHT |
| | | 40' | 14" | | |
| | | | 12 1/4" | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | | 200' | | | |
| **All water flows encountered while drilling will be reported to the appropriate agencies.** | | | | | |
| | | | 11' | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | Green River @ | 1,643' | | | |
| | Top of Birds Nest @ | 1,931' | | | |
| | Mahogany @ | 2,419' | | | |
| | Preset f/ GL @ 2,870' 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 @ | 4,987' | | | |
| Mud logging program TBD<br>Cased hole logging program from TD - surf csg | | | 7-7/8" | 4-1/2" 11.6#<br>HCP-110<br>Ultra DQX/LTC csg | Water / Fresh Water Mud<br>8.3-13.0 ppg |
| | Mverde @ | 7,955' TVD | | | |
| | Sego @ | 10,217' TVD | | | |
| | Castlegate @ | 10,307' TVD | | | |
| | MN5 @ | 10,696' TVD | | | |
| Max anticipated Mud required 13.0 ppg | TD @ | 11,296' TVD<br>11,296' MD | | | |

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

### CASING PROGRAM

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | TENSION LTC | TENSION DQX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | | |
| | | | | | | | | 3,390 | 1,880 | 348,000 | N/A |
| SURFACE | 8-5/8" | 0 | to | 2,870 | 28.00 | IJ-55 | LTC | 1.87 | 1.40 | 4.95 | N/A |
| | | | | | | | | 10,690 | 8,650 | 279,000 | 367,000 |
| PRODUCTION | 4-1/2" | 0 | to | 5,000 | 11.60 | HCP-110 | DQX | 1.19 | 1.13 | | 3.50 |
| | 4-1/2" | 5,000 | to | 11,296' | 11.60 | HCP-110 | LTC | 1.19 | 1.13 | 4.77 | |

**Surface Casing:**

(Burst Assumptions: TD = 13.0 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 @ 9000 psi) 0.66 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 | 2,370' | 65/35 Poz + 6% Gel + 10 pps gilsonite | 220 | 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 | 4,486' | Premium Lite II +0.25 pps | 350 | 35% | 12.00 | | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | | |
| | | | + 0.5% extender | | | | | |
| | TAIL | 6,810' | 50/50 Poz/G + 10% salt + 2% gel | 1,610 | 35% | 14.30 | | 1.31 |
| | | | + 0.1% R-3 | | | | | |

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

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

### FLOAT EQUIPMENT & CENTRALIZERS

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

### ADDITIONAL INFORMATION

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

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

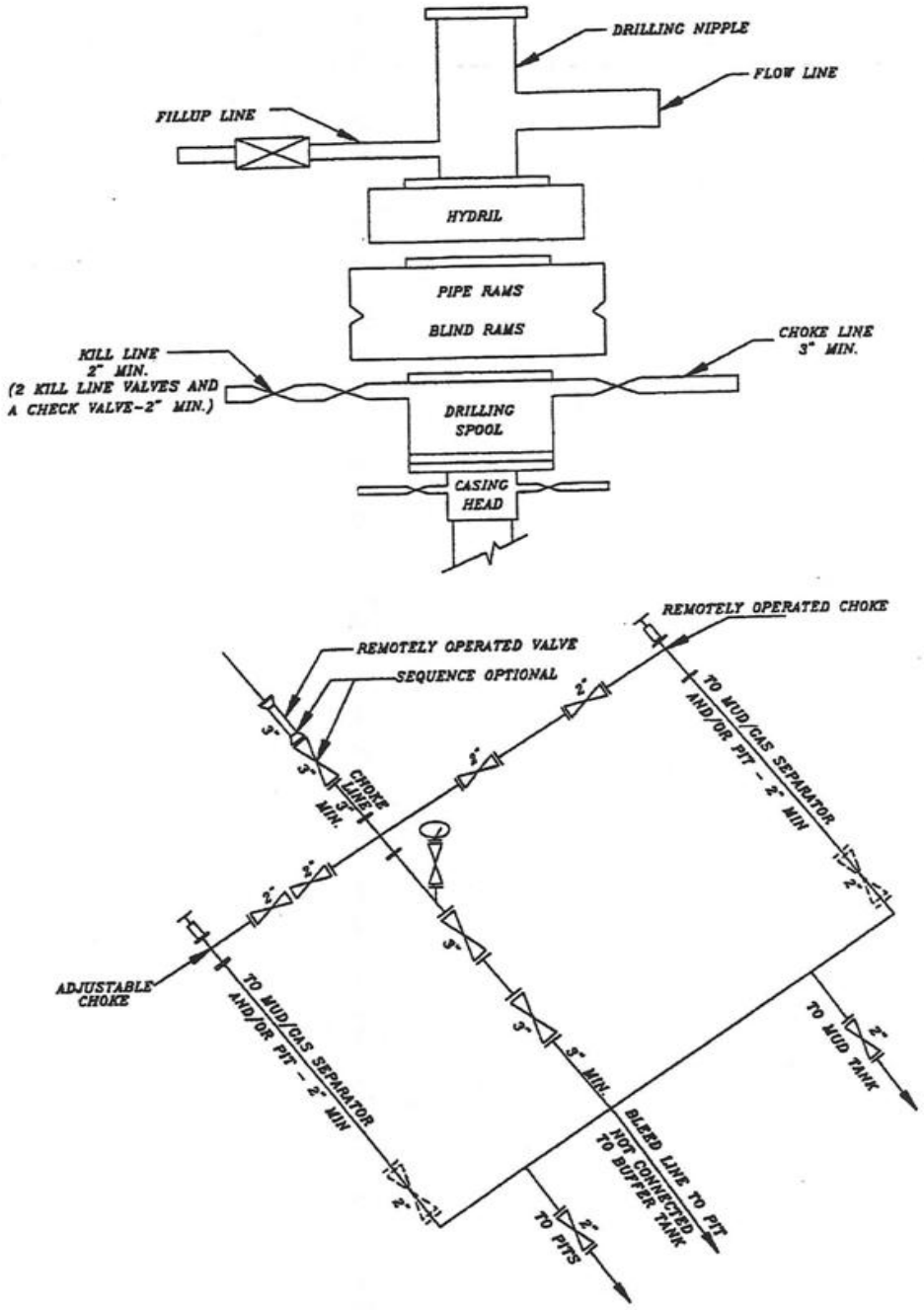
Surveys will be taken at 1,000' minimum intervals.

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

**DRILLING ENGINEER:** Nick Spence / Danny Showers / Chad Loesel **DATE:**

**DRILLING SUPERINTENDENT:** Kenny Gathings / Lovel Young **DATE:**

**EXHIBIT A**
**NBU 921-20H**




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

RECEIVED: Mar. 15, 2012

Requested Drilling Options:

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

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

RECEIVED: Mar. 15, 2012

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

FORM 6

# ENTITY ACTION FORM

Operator: KERR McGEE OIL & GAS ONSHORE LP
Operator Account Number: N 2995
Address: 1368 SOUTH 1200 EAST
city VERNAL
state UT zip 84078
Phone Number: (435) 781-7024

**Well 1**

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| 4304750724 | NBU 921-20H | | SENE | 20 | 9S | 21E | UINTAH |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| B | 99999 | 2900 | 3/2/2012 | | | 3/20/2012 | |
| **Comments:** MIRU TRIPPLE A BUCKET RIG. SPUD WELL ON 03/02/2012 AT 1200 HRS. WSMVD | | | | | | | |

**Well 2**

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| | | | | | | | |
| **Comments:** | | | | | | | |

**Well 3**

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| | | | | | | | |
| **Comments:** | | | | | | | |

**ACTION CODES:**

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

SHEILA WOPSOCK
Name (Please Print)
Signature
REGULATORY ANALYST
Title
3/5/2012
Date

RECEIVED
MAR 05 2012
Div. Oil, Gas & Mining

(5/2000)

FORM 9

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

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>7/6/2012 | ☐ 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.**

No activity for the month of June 2012. Surface casing set at 2,920'.

**Accepted by the**
**Utah Division of**
**Oil, Gas and Mining**
**FOR RECORD ONLY**
July 10, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** N/A | | **DATE** 7/6/2012 |

RECEIVED: Jul. 06, 2012

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>8/2/2012 | ☐ 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.**

No activity for the month of July 2012. Surface casing set at 2,935'.

**Accepted by the**
**Utah Division of**
**Oil, Gas and Mining**
**FOR RECORD ONLY**
August 02, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Cara Mahler | 720 929-6029 | Regulatory Analyst I |
| **SIGNATURE** | | **DATE** |
| N/A | | 8/2/2012 |

FORM 9

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU 0575

## 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:** UTE

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-20H

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

**9. API NUMBER:** 43047507240000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2037 FNL 0749 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ✓ SUBSEQUENT REPORT<br>Date of Work Completion:<br>8/13/2012 | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT<br>Report Date: | ☐ 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: ACTS PIT |

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

MIRU ROTARY RIG. FINISHED DRILLING FROM 2920' TO 11330' ON 8/10/2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED PIONEER 54 RIG ON 8/13/2012 @ 8:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES. THE PIT ON THIS LOCATION WILL BE REFURBISHED AND UTILIZED AS PART OF THE ACTS SYSTEM.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
August 29, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Cara Mahler | 720 929-6029 | Regulatory Analyst I |
| **SIGNATURE** N/A | | **DATE** 8/14/2012 |

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

FORM 9

**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.

| | |
|---|---|
| **1. TYPE OF WELL**<br>Gas Well | **5.LEASE DESIGNATION AND SERIAL NUMBER:**<br>UTU 0575 |
| | **6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**<br>UTE |
| | **7.UNIT or CA AGREEMENT NAME:**<br>NATURAL BUTTES |
| | **8. WELL NAME and NUMBER:**<br>NBU 921-20H |
| **2. NAME OF OPERATOR:**<br>KERR-MCGEE OIL & GAS ONSHORE, L.P. | **9. API NUMBER:**<br>43047507240000 |
| **3. ADDRESS OF OPERATOR:**<br>P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6527 | **9. FIELD and POOL or WILDCAT:**<br>NATURAL BUTTES |
| **4. LOCATION OF WELL**<br>**FOOTAGES AT SURFACE:**<br>2037 FNL 0749 FEL<br>**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**<br>Qtr/Qtr: SENE Section: 20 Township: 09.0S Range: 21.0E Meridian: S | **COUNTY:**<br>UINTAH<br>**STATE:**<br>UTAH |

**11.**

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>9/26/2012 | ☐ 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.**

The subject well was placed on production on 09/26/2012. The Chronological Well History will be submitted with the well completion Report

**Accepted by the**
**Utah Division of**
**Oil, Gas and Mining**
**FOR RECORD ONLY**
September 28, 2012

| | |
|---|---|
| **NAME (PLEASE PRINT)** Lindsey Frazier **PHONE NUMBER** 720 929-6857 | **TITLE** Regulatory Analyst II |
| **SIGNATURE** N/A | **DATE** 9/27/2012 |

Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. UTU0575

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No. UTU63047A

2. Name of Operator KERR MCGEE OIL & GAS ONSHORE LP — Contact: JAIME L. SCHARNOWSKE — E-Mail: JAIME.SCHARNOWSKE@ANADARKO.COM

8. Lease Name and Well No. NBU 921-20H

3. Address PO BOX 173779 DENVER, CO 80217

3a. Phone No. (include area code) Ph: 720-929-6304

9. API Well No. 43-047-50724

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

At surface SENE 2037FNL 749FEL 40.023243 N Lat, 109.568838 W Lon

At top prod interval reported below SENE 2037FNL 749FEL 40.023243 N Lat, 109.568838 W Lon

At total depth SENE 2037FNL 749FEL 40.023243 N Lat, 109.568838 W Lon BHL by HSM

10. Field and Pool, or Exploratory NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey or Area Sec 20 T9S R21E Mer SLB

12. County or Parish UINTAH — 13. State UT

14. Date Spudded 03/02/2012

15. Date T.D. Reached 08/10/2012

16. Date Completed ☐ D & A ☒ Ready to Prod. 09/26/2012

17. Elevations (DF, KB, RT, GL)* 4834 GL

18. Total Depth: MD 11330 TVD 11327

19. Plug Back T.D.: MD 11283 TVD 11280

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
BHP-HDIL/ZDL/CNGR-CBL/GR/CCL/TEMP

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record *(Report all strings set in well)*

| Hole Size | Size/Grade | Wt. (#/ft.) | Top (MD) | Bottom (MD) | Stage Cementer Depth | No. of Sks. & Type of Cement | Slurry Vol. (BBL) | Cement Top* | Amount Pulled |
|---|---|---|---|---|---|---|---|---|---|
| 20.000 | 14.000 STL | 36.7 | 0 | 40 | | 28 | | | |
| 11.000 | 8.625 IJ-55 | 28.0 | 0 | 2900 | | 680 | | 0 | |
| 7.875 | 4.500 I-80 | 11.6 | 0 | 11330 | | 2343 | | 1522 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

24. Tubing Record

| Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) |
|---|---|---|---|---|---|---|---|---|
| 2.375 | 10731 | | | | | | | |

25. Producing Intervals — 26. Perforation Record

| Formation | Top | Bottom | Perforated Interval | Size | No. Holes | Perf. Status |
|---|---|---|---|---|---|---|
| A) MESAVERDE | 9183 | 11061 | 9183 TO 11061 | 0.360 | 114 | OPEN |
| B) | | | | | | |
| C) | | | | | | |
| D) | | | | | | |

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

| Depth Interval | Amount and Type of Material |
|---|---|
| 9183 TO 11061 | PUMP 10,245 BBLS SLICK H2O & 162,940 LBS 30/50 TLC SAND AND 62,694 LBS 30/50 OTTAWA SAND |
| | |
| | |
| | |

28. Production - Interval A

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| 09/26/2012 | 09/28/2012 | 24 | → | 0.0 | 3144.0 | 0.0 | | | FLOWS FROM WELL |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| 20/64 | 2393 | 3308.0 | → | 0 | 3144 | 0 | | PGW |

28a. Production - Interval B

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | | |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

RECEIVED
OCT 24 2012
DIV. OF OIL, GAS & MINING

*(See Instructions and spaces for additional data on reverse side)*
**ELECTRONIC SUBMISSION #155527 VERIFIED BY THE BLM WELL INFORMATION SYSTEM**
**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

28b. Production - Interval C

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | | |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

28c. Production - Interval D

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | | |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

| Formation | Top | Bottom | Descriptions, Contents, etc. | Name | Top Meas. Depth |
|---|---|---|---|---|---|
| | | | | GREEN RIVER | 1690 |
| | | | | BIRD'S NEST | 1996 |
| | | | | MAHOGANY | 2298 |
| | | | | WASATCH | 4992 |
| | | | | MESAVERDE | 8011 |

32. Additional remarks (include plugging procedure):
The first 210?of the surface hole was drilled with a 12 ?? bit. The remainder of surface hole was drilled with an 11? bit. DQX P-110 csg was run from surface to 5036 ft; LTC P-110 csg was run from 5036 ft to 11,330 ft. Attached is the chronological well history, perforation report & final survey.

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

**Electronic Submission #155527 Verified by the BLM Well Information System.**
**For KERR MCGEE OIL & GAS ONSHORE,L, sent to the Vernal**

Name *(please print)* JAIME L. SCHARNOWSKE Title REGULATORY ANALYST

Signature (Electronic Submission) Date 10/19/2012

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

**** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ****

# US ROCKIES REGION

## Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-20H | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 3/11/2012 | 14:00 - 0:00 | 10.00 | DRLSUR | 01 | B | P | | 8 MILE MOVE. MIRU WITH JD SERVICES, MOUNTAIN WEST- MOVE RIG AND CAMPS MILES WITH 3 J D FIELD SERVICE TRUCKS. MOVE RIG WITH 3 PRO PETRO CDL DRIVERS - 5 MAN CREWS. RIG UP CAMPS WITH 2 MOUNTAIN WEST SWAMPERS AND 1 ELECTRICIAN, 2 MOUNTAIN WEST TRUCKS, 1 WATER TRUCK. 1 KNOPP MECHANIC AND TRUCK. 95 % OF RIG ON LOCATION BY 0000 hrs. (MOUNTAIN WEST HAULED CAMPS) *INSTALL CONTAINMENTS UNDER FUEL AND HOLE PUMP. SPOT IN RIG AND MUD PUMP. RIG UP CAMPS. |
| 3/12/2012 | 0:00 - 1:00 | 1.00 | PRPSPD | 01 | B | P | | COMPLETE RIG UP OF COMPONENTS ON LOCATION. 100% OF RIG ON LOCATION AT 0000 hrs. |
| | 1:00 - 1:30 | 0.50 | PRPSPD | 01 | B | P | | INSTALL DIVERTER HEAD AND BLOOWIE LINE, BUILD DITCH, SPOT IN RIG, CATWALK AND PIPE RACKS. RIG UP PIT PUMP. RIG UP HOLE PUMP. INSPECT RIG. PERFORM SAFETY INSPECTION. HELD PRE JOB SAFETY MEETING. |
| | 1:30 - 2:00 | 0.50 | PRPSPD | 01 | B | P | | PICK UP 8" 1.83 BEND .17 RPG MUD MOTOR (4 th RUN) (SN 775-77252). M/U QD507 12.25" BIT (19 th RUN) (SN 7137066). TRIP IN CONDUCTOR TO SPUD. |
| | 2:00 - 4:00 | 2.00 | DRLSUR | 02 | D | P | | SPUD 03/12/2012 02:00 hrs. DRILL 12.25" HOLE 44 ft TO 210 ft (166 FT, 111 FPH). WOB 5-15 Kips. GPM 491. PSI ON/OFF 600/400. SURFACE RPM 55, MOTOR 83, TOTAL RPM 138. UP/DOWN/ ROT 20/20/20 K. DRAG 0 Kips . CIRCULATE RESERVE W/8.4 ppg WATER. DRILL DOWN TO 210 ft W/6 in COLLARS. CIRC 15 min. AND TRIP OUT TO CHANGE ASSEMBLY. |
| | 4:00 - 6:30 | 2.50 | DRLSUR | 06 | A | P | | PRE JOB SAFETY MEETING, LAY DOWN 6 in DRILL COLLARS, 12 1/4 in BIT. MAKE UP Q506F 11in BIT (3 rd RUN) (SN 7138966) PICK UP 8 in DIRECTIONAL ASSEMBLY. INSTALL EM TOOL. TRIP IN HOLE. CREW CHANGE. |
| | 6:30 - 10:30 | 4.00 | DRLSUR | 02 | D | P | | DRILL 11 in. SURFACE HOLE 210 ft TO 850 ft, (640 ft, 160 FPH). WOB 15-25 Kips. GPM 491. PSI ON/OFF 1160/890. SURFACE RPM 55, MOTOR 83, TOTAL RPM 138. UP/DOWN/ ROT 54/52/53 K. DRAG 2 Kips. CIRCULATE RESERVE PIT WITH 8.5 ppg WATER. NO HOLE ISSUES. |
| | 10:30 - 12:00 | 1.50 | DRLSUR | 22 | L | Z | | GENERATOR TO CAMPS RAN OUT OF FUEL AND AIR-LOCKED, DRILLED ONLY 2 JOINTS BLIND, ESTABLISHED ALTERNATE POWER TO DIRECTIONAL EQUIPMENT. KNOPP REPRIMED AND RESTARTED GENERATOR. |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 12:00 - 0:00 | 12.00 | DRLSUR | 02 | D | P | | DRILL 11 in. SURFACE HOLE 850 ft TO 1960 ft, (1110 ft, 92.5 FPH).<br>WOB 15-25 Kips. GPM 491. PSI ON/OFF 1660/1305.<br>SURFACE RPM 55, MOTOR 83, TOTAL RPM 138.<br>UP/DOWN/ ROT 68/62/65 K. DRAG 3 Kips.<br>CIRCULATE RESERVE PIT WITH 8.5 ppg WATER.<br>NO HOLE ISSUES.<br>SLIDING @ 8 PERCENT FOR VERTICAL CONTROL. 3 ft SW OF CENTER AT 1960 ft. INCLINATION AVE @ ONE HALF DEGREE. |
| 3/13/2012 | 0:00 - 14:30 | 14.50 | DRLSUR | 02 | D | P | | DRILL 11in. SURFACE HOLE 1960 ft TO 2920 ft, (960 ft, 66 FPH).<br>WOB 15-25 Kips.<br>GPM 491. PSI ON/OFF 1870/1709.<br>SURFACE RPM 55, MOTOR 83, TOTAL RPM 138.<br>UP/DOWN/ ROT 82/72/79 K. DRAG 3 Kips.<br>CIRC RESERVE PIT WITH 8.6 ppg WATER. BHL= 0.83 foot left and 0.12 foot below center @ 2920 ft. (TD) |
| | 14:30 - 16:30 | 2.00 | DRLSUR | 05 | C | P | | PRE-JOB SAFETY MEETING, CIRCULATE AND CONDITION WELLBORE FOR TRIP OUT OF HOLE |
| | 16:30 - 19:30 | 3.00 | DRLSUR | 06 | D | P | | TRIP OUT OF HOLE, LAY DOWN BOTTOM HOLE ASSEMBLY AND DIRECTIONAL TOOLS, MOTOR AND BIT. BREAK DOWN DIRECTIONAL TOOLS. |
| | 19:30 - 0:00 | 4.50 | DRLSUR | 12 | C | P | | PRE JOB SAFETY MEETING MOVE PIPE RACKS AND CATWALK. PULL DIVERTER HEAD. RIG UP AND START TO RUN CASING. RUN IN TO 2044 ft MD BY CLOSE OF REPORT TIME. |
| 3/14/2012 | 0:00 - 1:30 | 1.50 | DRLSUR | 12 | C | P | | FINISH RUNNING 65 JOINTS OF 8-5/8 in. 28# J-55 LTC CASING. LAND FLOAT SHOE @ 2885.14 ft KB. LAND BAFFLE PLATE @ 2840 ft KB. RAN 5 TOTAL CENTRALIZERS. LAND CASING WHILE RIGGING UP CEMENTERS. CIRCULATE CASING WITH HOLE PUMP AS PER PROGRAM. RAN 120 ft OF 1 lin. PIPE DOWN BACK-SIDE OF CASING. |
| | 1:30 - 3:30 | 2.00 | DRLSUR | 12 | E | P | | HELD PRE JOB SAFETY MEETING, PRESSURE TEST LINES TO 2000 PSI. PUMP 30 BBLS OF WATER AHEAD. MIX AND PUMP 20 BBLS OF 8.5# GEL WATER AHEAD. MIX AND PUMP (230 sx) 156 BBLS OF 11.8# 3.85 YIELD 5 GAL/SK HYFILL CEMENT W/ 4% CALC AS LEAD. MIX AND PUMP (200 sx) 41 BBLS OF 15.8# 1.15 YIELD 5 GAL/SK PREMIUM CEMENT W/ 4% CALC AS TAIL. DROP PLUG ON FLY. DISPLACE W/ 177 BBLS OF H2O. FULL RETURNS THROUGH OUT JOB. FINAL LIFT OF 550 PSI AT 3 BBL/MIN. BUMP PLUG AT DISPLACEMENT VOLUME. LAND THE PLUG WITH 850 PSI. SHUT DOWN HELD 850 PSI FOR 5 MIN. TESTED FLOAT AND FLOAT HELD. RETURNED 35 BBLS LEAD BACK TO PIT. CEMENT DOWN ONE INCH TREMMIE W/ 150 sx (31 bbls)SAME TAIL CEMENT WITH RETURNS TO SURFACE, TAIL CEMENT TO SURFACE. CEMENT FELL BACK. |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 3:30 - 6:00 | 2.50 | DRLSUR | 12 | E | P | | WAIT 1.5 HOURS ON CEMENT, CEMENT DOWN BACKSIDE W/ 100 sx SAME TAIL CEMENT WITH RETURNS TO SURFACE, CEMENT TO SURFACE AND WELL TOPPED OUT. RIG DOWN CEMENTERS. (CEMENT JOB FINISHED AT 0530 hrs. 3/14/2012) RELEASE RIG AT 0600 hrs. 3/14/2012. |
| 8/1/2012 | 10:00 - 0:00 | 14.00 | DRLPRV | 01 | E | P | | RIG DOWN TOP DRIVE, TORQUE TUBE, SERVICE LOOP, RIG FLOOR, DERRICK LOWERED @1830, RIG DOWN BACK YARD, PREPARING FOR RIG MOBILIZATION |
| 8/2/2012 | 0:00 - 6:00 | 6.00 | DRLPRV | 01 | A | P | | PREPARING FOR RIG MOBILIZATION |
| | 6:00 - 18:00 | 12.00 | DRLPRV | 01 | B | P | | MOVE RIG 3 MILES TO THE NBU 921-20H, WITH WESTROC TRUCKING, 6 BED , 3 HAUL TRUCK, 2 FORKLIFTS, 1 PUSHER & 2 SWAMPERS, J&C CRANE,1 OPERATER & 4 OILERS, PTI ON CAMPS-2 HAUL TRUCKS & 2/ 1-TONS WITH 4 HANDS, 5 EXTRA RIG HANDS, TRUCKS RELEASED @ 15:00, CRANE @ 16:00, RAISE DERRICK @ 14:00 |
| | 18:00 - 20:30 | 2.50 | DRLPRV | 14 | A | P | | NIPPLE UP KOOMY LINES, FLOWLINES, CHOKE LINES, NIPPLE UP BOPE |
| | 20:30 - 22:00 | 1.50 | DRLPRV | 14 | A | P | | NIPPLE UP SWACO |
| | 22:00 - 0:00 | 2.00 | DRLPRV | 15 | A | P | | HELD SAFETY MEETING W/ RIG CREW & B& C, TESTER, TEST PIPE RAMS & BLIND RAM 250 LOW FOR 5 MIN, 5000 HIGH FOR 10 MIN |
| 8/3/2012 | 0:00 - 1:00 | 1.00 | DRLPRV | 15 | A | P | | HELD SAFETY MEETING W/ RIG CREW & B& C, TESTER, TEST PIPE RAMS & BLIND RAM 250 LOW FOR 5 MIN, 5000 HIGH FOR 10 MIN |
| | 1:00 - 2:30 | 1.50 | DRLPRV | 15 | A | P | | TESTING SWACO |
| | 2:30 - 3:00 | 0.50 | DRLPRV | 14 | B | P | | INSTALL WEAR BUSHING |
| | 3:00 - 8:00 | 5.00 | DRLPRV | 06 | A | P | | SAFETY MEETING WITH KIMZEY LAYDOWN TRUCK, PICKING UP BIT, MOTOR, AND DIRECTIONAL TOOLS |
| | 8:00 - 8:30 | 0.50 | DRLPRV | 09 | A | P | | SLIP AND CUT DRILL LINE |
| | 8:30 - 11:30 | 3.00 | DRLPRV | 02 | F | P | | DRILLING SHOE TRACK. BAFFLE@2854', SHOE@2900', NEW HOLE@2935' |
| | 11:30 - 12:30 | 1.00 | DRLPRV | 07 | A | P | | PRESPUD SAFETY INSPECTION, LUBRICATE RIG |
| | 12:30 - 0:00 | 11.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 2935' TO 4562',1627'@141.4'PH<br>WOB / 20-22<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 8.5 PPG 27 VIS<br>TRQ ON/OFF = 4-8 K<br>PSI ON /OFF 1550/1250, DIFF 200-500<br>PU/SO/RT = 130/120/124 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE = 12' IN 0.33 HRS = 36' PH<br>ROT = 1615' IN 11.17 HRS = 144.6' PH<br>NOV 2- DEWATERING<br>2.5' W & 28' S OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 8/4/2012 | 0:00 - 12:00 | 12.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 4562' TO 6207',1645'@137'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 8.8 PPG 32 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2100/1700, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE = 42' IN 0.51 HRS = 82' PH<br>ROT = 1603' IN 11.49 HRS = 139.5' PH<br>NOV 2- DEWATERING<br>12' W & 1' S OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| | 12:00 - 12:30 | 0.50 | DRLPRV | 08 | B | Z | | *** FAILURE: PUMPS, CHANGING OUT PISTON ON PUMP |
| | 12:30 - 14:00 | 1.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 6207' TO 6343',136'@90.6'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 8.8 PPG 32 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2100/1700, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- DEWATERING<br>12' W & 1' S OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| | 14:00 - 15:00 | 1.00 | DRLPRV | 08 | B | Z | | *** FAILURE: PUMPS, CHANGE OUT PISTON ON PUMP |
| | 15:00 - 19:30 | 4.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 6343' TO 6741',398'@88.4'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 8.8 PPG 32 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2100/1700, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- DEWATERING<br>12' W & 1' S OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| | 19:30 - 20:00 | 0.50 | DRLPRV | 07 | A | P | | LUBRICATE RIG |

# Operation Summary Report

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|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 20:00 - 22:00 | 2.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 6741' TO 6930',189'@94.5'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.0 PPG 35 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2300/2000, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE = 15' IN 0.42 HRS@ 35.7' PH<br>ROT = 174' IN 1.58 HRS@ 110.1' PH<br>NOV 2- DEWATERING<br>15' W & 13' N OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| | 22:00 - 23:00 | 1.00 | DRLPRV | 08 | B | Z | | *** FAILURE: PUMPS, CHANGE OUT LINER |
| | 23:00 - 0:00 | 1.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 6930' TO 6980',50'@50'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.0 PPG 35 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2300/2000, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- DEWATERING<br>15' W & 13' N OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| 8/5/2012 | 0:00 - 0:30 | 0.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 6980' TO 7017',37'@74'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.0 PPG 35 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2300/2000, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- DEWATERING<br>15' W & 13' N OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | Spud Date: 3/12/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 0:30 - 22:00 | 21.50 | DRLPRV | 08 | A | Z | | *** FAILURE: TOP DRIVE, PARTIAL LOSS OF HYDROLIC OIL PRESSURE WITHIN TOP DRIVE, TROUBLESHOOT TOP DRIVE, SERVICE LOOP AND CONTROL PANEL, TRIP OUT OF HOLE TO CASING SHOE, CHANGE OUT HYDROLIC PUMP AND UB1 VALVE, CLEAN AND FLUSHED OUT OIL RESIVIOR, CHANGED OUT TURBO ON DRAW WORKS MOTOR, ADJUST AND CORRELATE HYDROLIC PRESSURES, FUNCTION TOP DRIVE, REINSTALL GUARDS, TRIP BACK IN HOLE TO BOTTOM |
| | 22:00 - 0:00 | 2.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 7017' TO 7216',199'@99.5'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.0 PPG 35 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2300/2000, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- DEWATERING<br>15' W & 13' N OF TARGET CENTER<br>SWACO ON BYPASS<br>0 DRILL FLARE, 0 CONN FLARE |
| 8/6/2012 | 0:00 - 3:00 | 3.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 7216' TO 7290',74'@24.6'PH<br>WOB / 21-23<br>RPM TOP DRIVE 50-60<br>SPM 100 GPM 293<br>MW 9.0 PPG 35 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2300/2000, DIFF 200-500<br>PU/SO/RT = 156/138/144 K<br>LOST 15 BBLS TO FORMATION<br>SLIDE = 17' IN 0.58 HRS@29.3' PH<br>ROT = 57' IN 2.42 HRS@ 23.5' PH<br>NOV 2- CONVENTIONAL<br>15' W & 13' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 3:00 - 3:30 | 0.50 | DRLPRV | 08 | B | Z | | ***FAILURE:REPAIRING PUMPS |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 3:30 - 18:30 | 15.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 7290' TO 8169', 879'@58.6'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 171/143/165 K<br>LOST 30 BBLS TO FORMATION<br>SLIDE = 20' IN 0.58 HRS@34.4' PH<br>ROT = 859' IN 14.42 HRS@59.6 ' PH<br>NOV 2- CONVENTIONAL<br>27' W & 67' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 18:30 - 19:00 | 0.50 | DRLPRV | 07 | A | P | | LUBRICATE RIG |
| | 19:00 - 21:00 | 2.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 8169' TO 8265', 96'@48'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 171/143/165 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>27' W & 67' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 21:00 - 21:30 | 0.50 | DRLPRV | 08 | B | Z | | ***FAILURE: REPAIRING PUMPS |
| | 21:30 - 0:00 | 2.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 8265' TO 8415',150' @60'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 171/143/165 K<br>LOST 15 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>27' W & 67' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 8/7/2012 | 0:00 - 10:30 | 10.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 8415' TO 8926',511'@48.6'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 171/143/165 K<br>LOST 10 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>27' W & 67' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 10:30 - 11:00 | 0.50 | DRLPRV | 08 | A | Z | | ***FAILURE: TOP DRIVE, DIAGNOSING CONTROL PANEL ISSUES |
| | 11:00 - 13:30 | 2.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 8926' TO 9115', 189'@75.6'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 171/143/165 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>27' W & 67' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 13:30 - 14:00 | 0.50 | DRLPRV | 07 | A | P | | LUBRICATE RIG |
| | 14:00 - 17:00 | 3.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 9115' TO 9305', 190'@63.3'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 45 VIS<br>TRQ ON/OFF = 5-8 K<br>PSI ON /OFF 2800/2400, DIFF 200-500<br>PU/SO/RT = 185/155/173 K<br>LOST 0 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>24' W & 66' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 17:00 - 18:00 | 1.00 | DRLPRV | 08 | B | Z | | *** FAILURE: PUMPS, CHANGE OUT SWAB ON PUMP #2 |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 18:00 - 22:00 | 4.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 9305' TO 9505', 200'@50'PH<br>WOB / 22-24<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 40 VIS<br>TRQ ON/OFF = 6-9 K<br>PSI ON /OFF 2900/2600, DIFF 200-500<br>PU/SO/RT = 240/165/200 K<br>LOST 15 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>22' W & 55' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| | 22:00 - 22:30 | 0.50 | DRLPRV | 08 | A | Z | | *** FAILURE: TOP DRIVE, CHANGE OUT TOP DRIVE FILTERS, ADD OIL, CHECKING ALL SERVICE LOOP CONNECTIONS |
| | 22:30 - 0:00 | 1.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 9505' TO 9590', 85'@56.7'PH<br>WOB / 23-25<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 40 VIS<br>TRQ ON/OFF = 6-9 K<br>PSI ON /OFF 2900/2600, DIFF 200-500<br>PU/SO/RT = 240/165/200 K<br>LOST 10 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>22' W & 55' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |
| 8/8/2012 | 0:00 - 4:00 | 4.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 9590' TO 9701', 111'@27.7'PH<br>WOB / 23-25<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.1 PPG 40 VIS<br>TRQ ON/OFF = 6-9 K<br>PSI ON /OFF 2900/2600, DIFF 200-500<br>PU/SO/RT = 240/165/200 K<br>LOST 10 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>22' W & 55' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>0 DRILL FLARE, 0 CONN FLARE |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 4:00 - 10:00 | 6.00 | DRLPRV | 06 | H | Z | | ***FAILURE: MUD MOTOR, UNABLE TO ACHEIVE DESIRED ROP DUE TO A FAILED MOTOR, WOB 20-23 K RESULTED IN FULL MOTOR STALL, 6 STALLS IN EXCESS OF 3500 PSI STAND PIPE PRESSURE FROM 0300-0400, TRIPPING OUT OF THE HOLE TO CHANGE OUT BHA, PICKED UP NEW MOTOR AND BIT, TRIPPING IN HOLE TO SHOE |
| | 10:00 - 11:00 | 1.00 | DRLPRV | 09 | A | P | | SLIP AND CUT DRILL LINE |
| | 11:00 - 15:00 | 4.00 | DRLPRV | 06 | H | Z | | ***FAILURE: MUD MOTOR, TRIPPING IN HOLE, WASHING LAST 90' TO BOTTOM |
| | 15:00 - 15:30 | 0.50 | DRLPRV | 07 | A | P | | LUBRICATE RIG, BOPE DRILL 70 SEC, FUNCTION HCR AND ANNULAR |
| | 15:30 - 0:00 | 8.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 9701' TO 10313', 612'@72'PH<br>WOB / 18-23<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.2 PPG 45 VIS<br>TRQ ON/OFF = 6-9 K<br>PSI ON /OFF 2900/2600, DIFF 200-500<br>PU/SO/RT = 245/160/190 K<br>LOST 30 BBLS TO FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>20' W & 38' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>150 ANN PSI DRILLING, 250 ANN PSI CONN<br>5 DRILL FLARE, 5 CONN FLARE |
| 8/9/2012 | 0:00 - 17:30 | 17.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 10313' TO 10922', 609"@35'PH<br>WOB / 23-27<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.5 PPG 45 VIS<br>TRQ ON/OFF = 7-10 K<br>PSI ON /OFF 3100/2900, DIFF 200-500<br>PU/SO/RT = 255/175/200 K<br>GAINED 30 BBLS OF WATER FROM FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>4.6' W & 7.1' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>350 ANN PSI DRILLING, 450 ANN PSI CONN<br>10 DRILL FLARE, 15 CONN FLARE |
| | 17:30 - 18:00 | 0.50 | DRLPRV | 07 | A | P | | LUBRICATE RIG |
| | 18:00 - 18:30 | 0.50 | DRLPRV | 08 | B | Z | | ***FAILURE: MUD PUMP, CAHNGED OUT 3 SWABS AND 1 LINER |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 18:30 - 0:00 | 5.50 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 10922' TO 11117', 195"@35'PH<br>WOB / 23-27<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.5 PPG 45 VIS<br>TRQ ON/OFF = 7-10 K<br>PSI ON /OFF 3100/2900, DIFF 200-500<br>PU/SO/RT = 255/175/200 K<br>GAINED 15 BBLS OF WATER FROM FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- CONVENTIONAL<br>4.6' W & 7.1' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>350 ANN PSI DRILLING, 450 ANN PSI CONN<br>10 DRILL FLARE, 15 CONN FLARE |
| 8/10/2012 | 0:00 - 4:00 | 4.00 | DRLPRV | 02 | B | P | | CLOSED LOOP SYSTEM<br>DRILL F/ 11117' TO 11330', 213'@53'PH<br>WOB / 25-28<br>RPM TOP DRIVE 50-60<br>SPM 200 GPM 586<br>MW 9.7 PPG 45 VIS<br>TRQ ON/OFF = 7-10 K<br>PSI ON /OFF 3100/2900, DIFF 200-500<br>PU/SO/RT = 255/175/200 K<br>GAINED 10 BBLS OF WATER FROM FORMATION<br>SLIDE =<br>ROT = 100%<br>NOV 2- BYPASSED<br>4.6' W & 7.1' N OF TARGET CENTER<br>SWACO ONLINE@7200'<br>350 ANN PSI DRILLING, 450 ANN PSI CONN<br>10 DRILL FLARE, 15 CONN FLARE |
| | 4:00 - 12:30 | 8.50 | DRLPRV | 05 | G | P | | DISPLACING MUD WITH 600 BBLS OF 12.7 PPG MUD. RESULTING IN 11.1 OVERALL. HAVING TO HOLD 250+ PSI ANN PRESSURE TO KEEP WATER FROM DOWNHOLE FLOWING IN, STAGING MUD WEIGHT UP WHILE LOWERING ANN PRESSURE UNTIL WELL CONTAINED, SPOTTED 80 BBLS 13.0 PPG MUD ON BOTTOM, SHUT DOWN FOR 15 MIN FLOW CHECK |
| | 12:30 - 18:30 | 6.00 | DRLPRV | 06 | E | P | | WIPER TRIP TO THE SHOE AND BACK, NO HOLE ISSUES |
| | 18:30 - 20:30 | 2.00 | DRLPRV | 05 | C | P | | CIRCULATE BOTTOMS UP |
| | 20:30 - 0:00 | 3.50 | DRLPRV | 06 | E | P | | 2ND WIPER TRIP TO THE SHOE AND BACK |
| 8/11/2012 | 0:00 - 2:00 | 2.00 | DRLPRV | 02 | B | P | | TRIPPING IN THE HOLE FROM 2ND WIPER TRIP |
| | 2:00 - 4:00 | 2.00 | DRLPRV | 05 | C | P | | CIRCULATING BOTTOMS UP PRIOR TO TRIPPING OUT FOR LOGS |
| | 4:00 - 8:30 | 4.50 | DRLPRV | 06 | B | P | | TRIPPING OUT OF THE HOLE FOR LOGS, LAYED DOWN DIRECTIONAL TOOLS |
| | 8:30 - 19:30 | 11.00 | DRLPRV | 11 | D | P | | RIGGED UP BAKER HUGHES LOGGING CREW, SAFETY MEETING, RAN TRIPLE COMBO LOGS DOWN AND UP FROM 11230', RIGGED DOWN |
| | 19:30 - 21:00 | 1.50 | DRLPRV | 06 | A | P | | TRIPPED IN THE HOLE |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: PROPETRO 12/12, PIONEER 54/54 |
| Event: DRILLING | Start Date: 3/1/2012 | | End Date: 8/13/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 21:00 - 21:30 | 0.50 | DRLPRV | 09 | A | P | | SLIP AND CUT DRILL LINE |
| | 21:30 - 0:00 | 2.50 | DRLPRV | 06 | A | P | | TRIPPING IN THE HOLE TO LAY DOWN DRILL PIPE. |
| 8/12/2012 | 0:00 - 2:00 | 2.00 | DRLPRV | 05 | C | P | | CIRCULATING BOTTOMS UP PRIOR TO LAYING DOWN DRILL PIPE |
| | 2:00 - 9:00 | 7.00 | DRLPRV | 06 | A | P | | RIGGED UP FRANKS LAY DOWN TRUCK, SAFETY MEETING, LAYED DOWN DRILL PIPE AND BHA |
| | 9:00 - 9:30 | 0.50 | DRLPRV | 14 | B | P | | PULL WEAR BUSHING |
| | 9:30 - 10:30 | 1.00 | DRLPRV | 12 | A | P | | RIGGED UP FRANKS CASING EQUIPMENT, SAFETY MEETING |
| | 10:30 - 18:30 | 8.00 | DRLPRV | 12 | C | P | | RUN 149 JTS 4.5" P-110 LTC, 112 JTS 4.5" P110 DQX, 2 MARKER'S & 1 X/O, LAND CASING & RIG DOWN CASING CREW, SHOE @ 11,311, FLOAT @ 11,265, BLACKHAWK MARKER @ 10689, MESA MARKER @ 7975, CROSSOVER @ 4994 |
| | 18:30 - 20:30 | 2.00 | DRLPRV | 05 | D | P | | RIGGED DOWN CASING CREW, CIRCULATING DOWN CASING PRIOR TO CEMENT |
| | 20:30 - 0:00 | 3.50 | DRLPRV | 12 | E | P | | HELD SAFETY MEETING WITH RIG & CEMENTER'S, RIG UP & TEST LINES TO 500 PSI, PUMP 25 BBL SPACER, LEAD 695 SACKS 13 PPG 1.77 YLD, TAIL 1648 SACKS 14.3 PPG 1.32 YLD, DISPLACE WELL WITH 175 BBLS CLAYCARE WATER, FLOATS HELD, LOST RETURNS 100 BBLS INTO DISPLACEMENT, BUMP PLUG WITH 4450 PSI ( 500 OVER FINAL LIFT OF 3850), FLUSH STACK & RIG DOWN |
| 8/13/2012 | 0:00 - 2:00 | 2.00 | DRLPRV | 12 | B | P | | RIGGING DOWN CEMENT CREW |
| | 2:00 - 3:00 | 1.00 | DRLPRV | 14 | B | P | | SET CASING PACKER WITH CAMERON |
| | 3:00 - 5:00 | 2.00 | DRLPRV | 14 | A | P | | NIPPLE DOWN SWACO |
| | 5:00 - 8:00 | 3.00 | DRLPRV | 14 | A | P | | NIPPLE DOWN BOPE, RELEASED RIG TO NBU 921-20F |

# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | US ROCKIES REGION |
| **Representative** | |
| **Address** | |

## 1.2 Well/Wellbore Information

| | | | |
|---|---|---|---|
| **Well** | NBU 921-20H | **Wellbore No.** | OH |
| **Well Name** | NBU 921-20H | **Wellbore Name** | NBU 921-20H |
| **Report No.** | 1 | **Report Date** | 3/12/2012 |
| **Project** | UTAH-UINTAH | **Site** | NBU 921-20H |
| **Rig Name/No.** | | **Event** | COMPLETION |
| **Start Date** | 9/18/2012 | **End Date** | 9/26/2012 |
| **Spud Date** | 3/12/2012 | **Active Datum** | RKB @4,853.00usft (above Mean Sea Level) |
| **UWI** | SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

## 1.3 General

| | | | | | |
|---|---|---|---|---|---|
| **Contractor** | CASED HOLE | **Job Method** | | **Supervisor** | STEVE WALL, SR. |
| **Perforated Assembly** | | **Conveyed Method** | | | |

## 1.4 Initial Conditions

| | | | |
|---|---|---|---|
| **Fluid Type** | | **Fluid Density** | |
| **Surface Press** | | **Estimate Res Press** | |
| **TVD Fluid Top** | | **Fluid Head** | |
| **Hydrostatic Press** | | **Press Difference** | |
| **Balance Cond** | NEUTRAL | | |

## 1.5 Summary

| | | | |
|---|---|---|---|
| **Gross Interval** | 9,183.0 (usft)-11,061.0 (us | **Start Date/Time** | 9/21/2012 12:00AM |
| **No. of Intervals** | 23 | **End Date/Time** | 9/24/2012 12:00AM |
| **Total Shots** | 114 | **Net Perforation Interval** | 38.00 (usft) |
| **Avg Shot Density** | 3.00 (shot/ft) | **Final Surface Pressure** | |
| | | **Final Press Date** | |

# 2 Intervals

## 2.1 Perforated Interval

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,183.0 | 9,186.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

## 2.1 Perforated Interval (Continued)

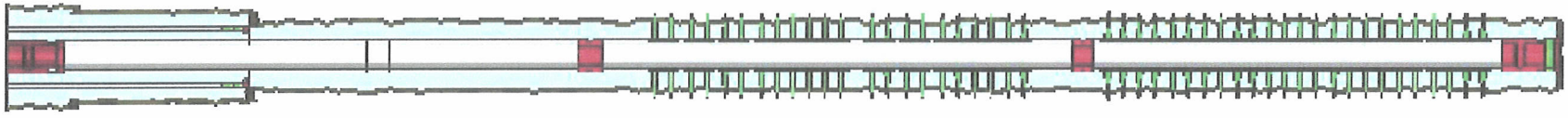
| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,283.0 | 9,285.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,340.0 | 9,342.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,435.0 | 9,437.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,453.0 | 9,455.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,468.0 | 9,471.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,747.0 | 9,748.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,811.0 | 9,812.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,892.0 | 9,894.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,918.0 | 9,920.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 9,960.0 | 9,962.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 10,747.0 | 10,749.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 10,764.0 | 10,766.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 10,789.0 | 10,790.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/24/2012 12:00AM | MESAVERDE/ | | | 10,818.0 | 10,821.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,843.0 | 10,844.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,854.0 | 10,855.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,867.0 | 10,868.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,916.0 | 10,917.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,932.0 | 10,933.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 10,974.0 | 10,975.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 9/21/2012 12:00AM | MESAVERDE/ | | | 11,025.0 | 11,026.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

### 2.1 Perforated Interval (Continued)

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/21/2012 12:00AM | MESAVERDE/ | | | 11,060.0 | 11,061.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

## 3 Plots

### 3.1 Wellbore Schematic



US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: SWABBCO 8/8 |
| Event: COMPLETION | Start Date: 9/18/2012 | | End Date: 9/26/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 3/12/2012 | - | | | | | | | |
| 9/19/2012 | 11:00 - 13:00 | 2.00 | FRAC | 33 | C | P | | FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN GAIN + 15 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 34 PSI. 1ST PSI TEST T/ 9000 PSI. HELD FOR 30 MIN LOST 93 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLED OFF PSI. SWIFN CSG TEST ONLY |
| 9/20/2012 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | HSM, RIGGING DWN RIG & EQUIP. |
| | 7:30 - 13:00 | 5.50 | COMP | 30 | A | P | | RIG DOWN OFF NBU 921-17F, WAIT FOR BLASTING CREW TO BLAST PIT, MIRU, ND WH NU FV.RU B&C INSTALL PLUGGED HANGER, TEST FRAC VALVES TO 9,0003 PSI. PULL HANGER RD B&C PREP TO PERF IN AM SDFN. |
| 9/21/2012 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | HSM, WORKING WITH WIRE LINE. |
| | 7:30 - 15:00 | 7.50 | COMP | 37 | B | P | | RU CASED HOLE, RIH W/ 31/8 23 GRM .36" HOLES 120 DEG PHASING GUNS & PERF 1ST STG AS OF PROCEDURE, POOH SWI PREP TO FRAC 9/24/12. SDFWE |
| 9/24/2012 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | HSM, STAYING AWAY F/ PRESSURE LINES & HAVING LINE F/ SURFACE TO PIT. |
| | 7:30 - 9:13 | 1.72 | COMP | 36 | E | | | ( STG #1 ) WHP 2175 PSI, BRK 4600 PSI @ 4.4 BPM, ISIP 3461 PSI, FG .75.SPOT ACID ON PERFS LET SOAK FOR 5 MIN. PUMP 100 BBLS @ 48.4 BPM, @ 7761 PSI = 63% PERFS OPEN. MP 8123 PSI, MR 50.6 BPM, AP 7388 PSI, AR 44 BPM, ISIP 4064 PSI, FG 80 . NPI 603 PSI. |
| | 9:13 - 14:14 | 5.02 | COMP | 36 | E | P | | ( STG #2 ) RIH W/ 31/8 EXP 23 GRM, .36" 120 DEG PHASING GUNS & 41/2 HAL 8-K CBP & SET @ 10,831',PERF WELL AS OF PROCEDURE, HAD TROUBLE W/ BTM FRAC VALVE, HAD TO GREASE TO GET OPEN ENOUGH TO GET PLUG IN HOLE.11:30 AM. WHP 3765 PSI, BRK 4849 PSI @ 4.3 BPM, ISIP 3923 PSI, FG .80. PUMP 100 BBLS @ 50.6 BPM, @ 6894 PSI = 100% PERFS OPEN. MP 8071 PSI, MR 50.7 BPM, AP 7160 PSI, AR 50.3 BPM, ISIP 4037 PSI, FG 81 . NPI 114 PSI. |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: SWABBCO 8/8 |
| Event: COMPLETION | Start Date: 9/18/2012 | | End Date: 9/26/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 14:14 - 15:45 | 1.52 | COMP | 36 | E | P | | ( STG # 3 ) RIH W/ 31/8 EXP 23 GRM, .36" 120 DEG PHASING GUNS & 41/2 HAL 8-K CBP & SET @ 9,992',PERF WELL AS OF PROCEDURE, WHP 1794 PSI, BRK 3779 PSI @ 4.4 BPM, ISIP 2763 PSI, FG .71. PUMP 100 BBLS @ 50.8 BPM, @ 5196 PSI = 100% PERFS OPEN. MP 6145 PSI, MR 51.0 BPM, AP 5385 PSI, AR 48.6 BPM, ISIP 3072 PSI, FG 75 . NPI 309 PSI. |
| | 15:45 - 17:18 | 1.55 | COMP | 36 | E | P | | ( STG # 4 ) RIH W/ 31/8 EXP 23 GRM, .36" 120 DEG PHASING GUNS & 41/2 HAL 8-K CBP & SET @ 9,501',PERF WELL AS OF PROCEDURE, WHP 1340 PSI, BRK 3624 PSI @ 4.4 BPM, ISIP 2732 PSI, FG .72. PUMP 100 BBLS @ 50.8 BPM, @ 5250 PSI = 100% PERFS OPEN. MP 6354 PSI, MR 50.9 BPM, AP 5599 PSI, AR 48.5 BPM, ISIP 3169 PSI, FG 77 . NPI 437 PSI. |
| | 17:18 - 20:30 | 3.20 | COMP | 36 | E | P | | ( STG # 5 ) RIH W/ 31/8 EXP 23 GRM, .36" 120 DEG PHASING GUNS & 41/2 HAL 8-K CBP & SET @ 9,372',PERF WELL AS OF PROCEDURE, WHP 1470 PSI, BRK 3611 PSI @ 4.2 BPM, ISIP 2959 PSI, FG .76. PUMP 100 BBLS @ 50.8 BPM, @ 5424 PSI = 100% PERFS OPEN. MP 8181 PSI, MR 51.0 BPM, AP 5371 PSI, AR 49.1 BPM, ISIP 3110 PSI, FG 77 . NPI 151 PSI. 18:40 FINISH FRAC<br><br>( KILL PLUG ) RIH W/ 41/2 8-K CBP & SET @ 9104' POOH SWI RD WL & FRAC CREW SDFN<br><br>TOTAL 162,940 LBS 30/50 TLC SAND<br>TOTAL 62,694 LBS 30/50 OTTAWA SAND<br>TOTAL 10,245 BBLS WATER<br>TOTAL 245 GALS SCALE INH<br>TOTAL 133 GALS BIOCIDE<br>TOTAL 1917 GAL DIESEL FRAC CREW |
| 9/25/2012 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | HSM, PICKING TBG UP OFF FLOAT. |
| | 7:30 - 15:00 | 7.50 | COMP | 31 | | P | | SICP 0, ND FV, NU BOPS, RU FLOOR & TBG EQUIP. TALLY & PU 37/8 BIT, POBS, 1.875 X/N & 287 JTS 23/8 P-110 TBG OFF FLOAT. EOT @ 9095 ' RU DRLG EQUIP, FILL CSG TEST BOPS TO 4,000#, PREP TO D/O IN AM SWI SDFN. |
| 9/26/2012 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | HSM, WORKING W/ POWER SWIVEL DRILLING PLUGS. |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-20H | | | Spud Date: 3/12/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-20H | | Rig Name No: SWABBCO 8/8 |
| Event: COMPLETION | Start Date: 9/18/2012 | | End Date: 9/26/2012 |
| Active Datum: RKB @4,853.00usft (above Mean Sea Level) | UWI: SE/NE/0/9/S/21/E/20/0/0/26/PM/N/2037/E/0/749/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:30 - 18:30 | 11.00 | COMP | 44 | C | P | | SICP 0, BROKE CIRC CONVENTIONAL RIH.<br><br>C/O 5' SAND TAG 1ST PLG @ 9104' DRL PLG IN 10 MIN 1500 PSI INCREASE RIH.<br><br>C/O 25' SAND TAG 2ND PLG @ 9372' DRL PLG IN 7 MIN 500 PSI INCREASE RIH.<br><br>C/O 20' SAND TAG 3RD PLG @ 9501' DRL PLG IN 7 MIN 1200 PSI INCREASE RIH.<br><br>C/O 25' SAND TAG 4TH PLG @ 9,990' DRL PLG IN 10 MIN 1200 PSI INCREASE RIH.<br><br>C/O 5' SAND TAG 5TH PLG @ 10,831' DRL PLG IN 7 MIN 1000 PSI INCREASE RIH<br><br>C/O TO @ 11,163',CIRC CLN, HANG SWIVEL, L/D 14 JTS 23/8, LAND TBG ND BOPS NU WH, TEST LINE TO SEP, PUMP OFF BIT, LET WELL SET FOR 30 MIN FOR BIT TO FALL. TURN WELL OVER TO FB CREW. RDMOL, MIRU ON NBU 52J SDFN.<br><br>KB = 19' (<br>SURFACE OPEN & LOCKED )<br>41/16 CAMERON HANGER = .83' SICP<br>2800# FTP 100 #<br>338 JTS 23/8 P-110 = 10,709.09'<br>POBS W/ 1.875 X/N = 2.20'<br>EOT @ 10,731.12'<br><br>TWTR 10,435 BBLS<br>TWR 1000 BBLS<br>TWLTR 9435 BBLS<br><br>359 JTS HAULED OUT<br>338 JTS LANDED<br>21 JTS TO RETURN |
| | 18:30 - 18:30 | 0.00 | COMP | 50 | | | | WELL TURNED TO SALES @ 1330 HR ON 9/26/2012, 500 MCFD, 1920 BWPD, FCP 2800#, FTP 2150#, 20/64" CK. |
| 9/28/2012 | 7:00 - | | | 50 | | | | WELL IP'D ON 9/28/12 - 3144 MCFD, 0 BWPD, 0 BOPD, CP 3308#, FTP 2393#, LP 243#, 24 HRS, CK 20/64 |

Scientific Drilling

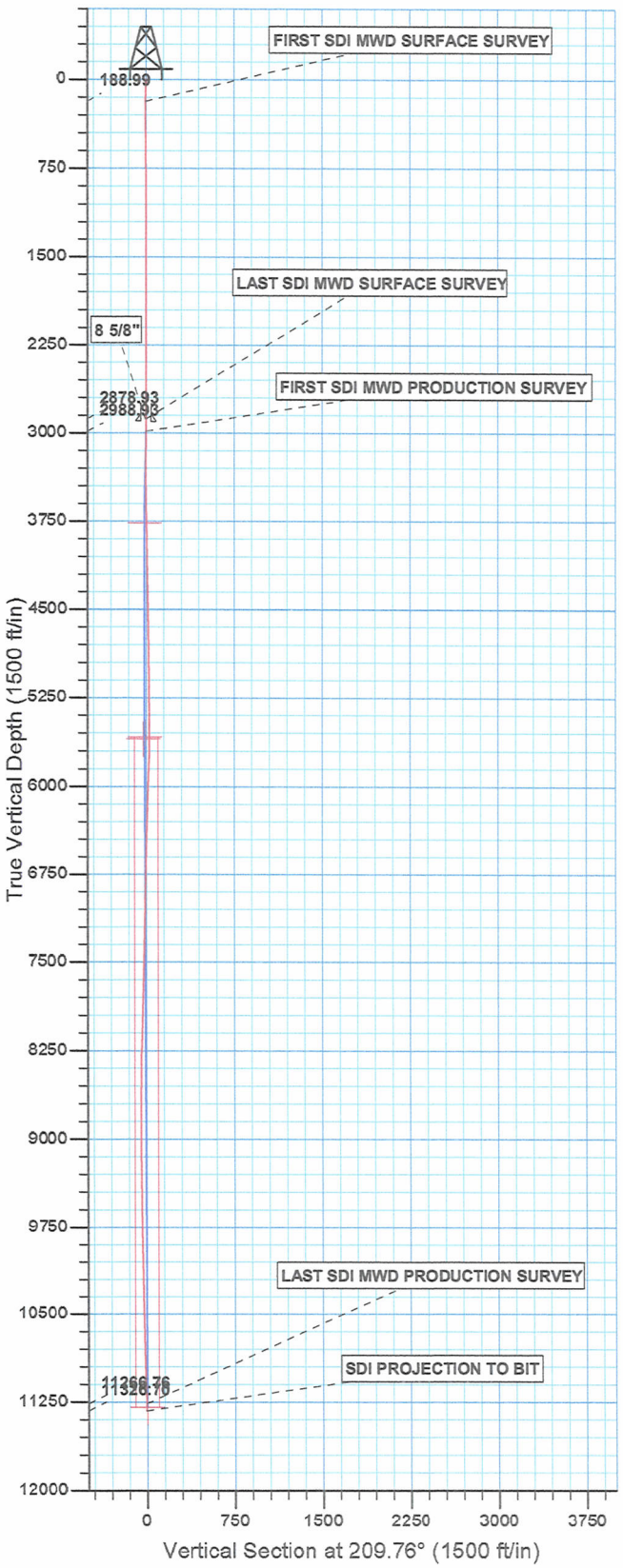
Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 921-20H
Well: NBU 921-20H
Wellbore: OH
Design: OH

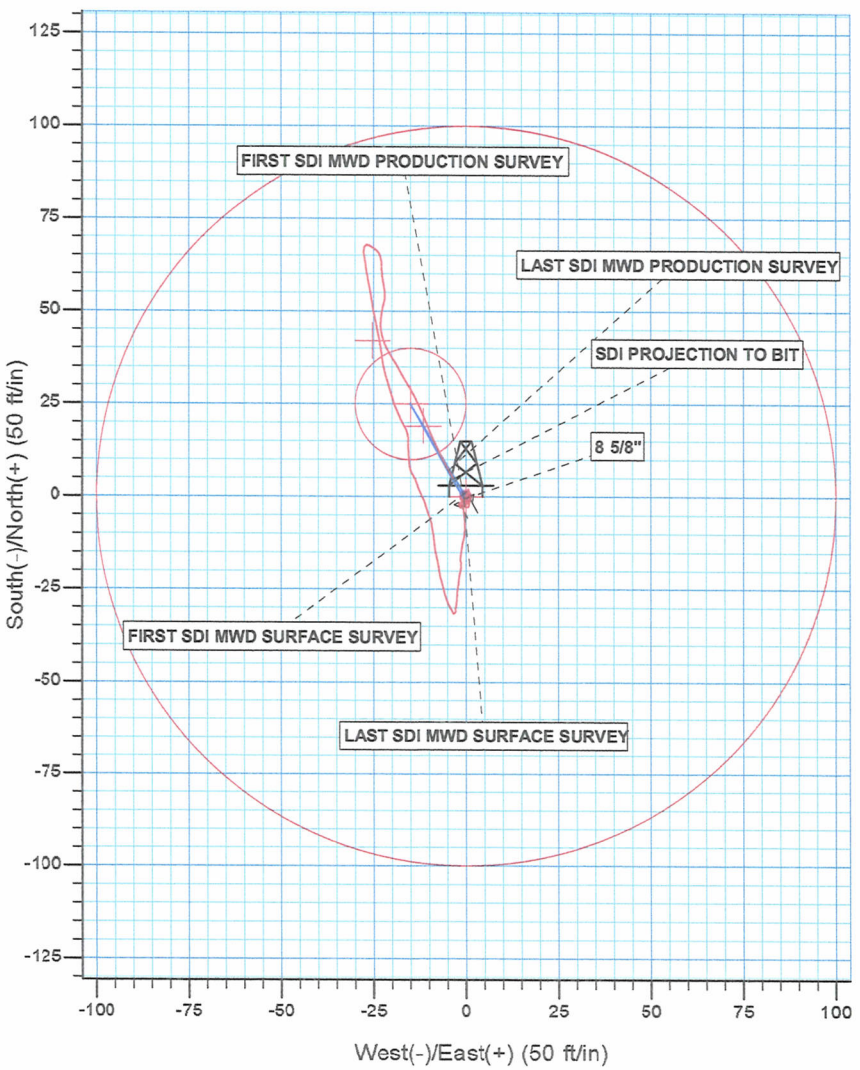
Anadarko Petroleum Corporation

| WELL DETAILS: NBU 921-20H | | | | | |
|---|---|---|---|---|---|
| GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) | | | | | |
| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
| 0.00 | 0.00 | 14537742.36 | 2041289.54 | 40.023278 | -109.568149 |


Azimuths to True North
Magnetic North: 11.01°

Magnetic Field
Strength: 52261.1snT
Dip Angle: 65.86°
Date: 03/06/2012
Model: IGRF2010




| PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N | |
|---|---|
| Geodetic System: | Universal Transverse Mercator (US Survey Feet) |
| Datum: | NAD 1927 (NADCON CONUS) |
| Ellipsoid: | Clarke 1866 |
| Zone: | Zone 12N (114 W to 108 W) |
| Location: | SECTION 20 T9S R21E |
| System Datum: | Mean Sea Level |

Design: OH (NBU 921-20H/OH)

Created By: Gabe Kendall Date: 15:32, August 16 2012

Scientific Drilling

# US ROCKIES REGION PLANNING

**UTAH - UTM (feet), NAD27, Zone 12N**
**NBU 921-20H**
**NBU 921-20H**

**OH**

**Design: OH**

# Standard Survey Report

**16 August, 2012**

Anadarko
Petroleum Corporation

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-20H |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Site:** | NBU 921-20H | **MD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Well:** | NBU 921-20H | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 5000.1 Single User Db |

| **Project** | UTAH - UTM (feet), NAD27, Zone 12N | | |
|---|---|---|---|
| **Map System:** | Universal Transverse Mercator (US Survey Feet) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 12N (114 W to 108 W) | | |

| **Site** | NBU 921-20H, SECTION 20 T9S R21E | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,537,742.36 usft | **Latitude:** | 40.023278 |
| **From:** | Lat/Long | **Easting:** | 2,041,289.54 usft | **Longitude:** | -109.568149 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 0.92 ° |

| **Well** | NBU 921-20H, 2037 FNL 749 FEL | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 14,537,742.36 usft | **Latitude:** | 40.023278 |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,041,289.54 usft | **Longitude:** | -109.568149 |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 4,834.00 ft |

| **Wellbore** | OH | | | |
|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2010 | 03/06/12 | 11.01 | 65.86 | 52,261 |

| **Design** | OH | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0.00 | 0.00 | 0.00 | 209.76 | |

| **Survey Program** | **Date** 08/16/12 | | |
|---|---|---|---|
| **From (ft)** | **To (ft)** | **Survey (Wellbore)** | **Tool Name** | **Description** |
| 15.00 | 2,879.00 | Survey #1 SDI MWD SURFACE (OH) | SDI MWD | SDI MWD - Standard ver 1.0.1 |
| 2,989.00 | 11,330.00 | Survey #2 SDI MWD PRODUCTION (OH) | SDI MWD | SDI MWD - Standard ver 1.0.1 |

**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 |
| 15.00 | 0.00 | 0.00 | 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 189.00 | 0.88 | 17.96 | 188.99 | 1.27 | 0.41 | -1.31 | 0.51 | 0.51 | 0.00 |
| **FIRST SDI MWD SURFACE SURVEY** | | | | | | | | | |
| 276.00 | 0.18 | 10.49 | 275.99 | 2.04 | 0.64 | -2.09 | 0.81 | -0.80 | -8.59 |
| 359.00 | 0.26 | 176.42 | 358.99 | 1.98 | 0.68 | -2.06 | 0.53 | 0.10 | 199.92 |
| 449.00 | 0.46 | 157.88 | 448.99 | 1.44 | 0.83 | -1.66 | 0.25 | 0.22 | -20.60 |
| 539.00 | 0.36 | 171.18 | 538.98 | 0.83 | 1.01 | -1.22 | 0.15 | -0.11 | 14.78 |
| 629.00 | 0.50 | 162.62 | 628.98 | 0.17 | 1.17 | -0.73 | 0.17 | 0.16 | -9.51 |
| 719.00 | 0.35 | 193.30 | 718.98 | -0.47 | 1.22 | -0.20 | 0.30 | -0.17 | 34.09 |

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-20H |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Site:** | NBU 921-20H | **MD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Well:** | NBU 921-20H | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 5000.1 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 809.00 | 0.55 | 188.36 | 808.98 | -1.16 | 1.10 | 0.47 | 0.23 | 0.22 | -5.49 |
| 899.00 | 0.79 | 191.54 | 898.97 | -2.20 | 0.91 | 1.46 | 0.27 | 0.27 | 3.53 |
| 989.00 | 0.24 | 268.74 | 988.97 | -2.81 | 0.60 | 2.14 | 0.86 | -0.61 | 85.78 |
| 1,079.00 | 0.24 | 288.98 | 1,078.97 | -2.75 | 0.23 | 2.28 | 0.09 | 0.00 | 22.49 |
| 1,169.00 | 0.34 | 249.42 | 1,168.97 | -2.79 | -0.20 | 2.52 | 0.24 | 0.11 | -43.96 |
| 1,259.00 | 0.48 | 27.55 | 1,258.96 | -2.55 | -0.27 | 2.35 | 0.85 | 0.16 | 153.48 |
| 1,349.00 | 0.44 | 27.54 | 1,348.96 | -1.90 | 0.06 | 1.62 | 0.04 | -0.04 | -0.01 |
| 1,439.00 | 0.26 | 143.46 | 1,438.96 | -1.76 | 0.34 | 1.36 | 0.67 | -0.20 | 128.80 |
| 1,529.00 | 0.18 | 18.75 | 1,528.96 | -1.79 | 0.51 | 1.30 | 0.44 | -0.09 | -138.57 |
| 1,619.00 | 0.05 | 218.76 | 1,618.96 | -1.69 | 0.53 | 1.20 | 0.25 | -0.14 | -177.77 |
| 1,709.00 | 0.35 | 240.06 | 1,708.96 | -1.86 | 0.27 | 1.48 | 0.34 | 0.33 | 23.67 |
| 1,799.00 | 0.53 | 224.50 | 1,798.96 | -2.29 | -0.26 | 2.12 | 0.24 | 0.20 | -17.29 |
| 1,889.00 | 0.70 | 235.93 | 1,888.95 | -2.90 | -1.01 | 3.02 | 0.23 | 0.19 | 12.70 |
| 1,979.00 | 0.26 | 333.22 | 1,978.95 | -3.02 | -1.56 | 3.40 | 0.86 | -0.49 | 108.10 |
| 2,069.00 | 0.44 | 9.34 | 2,068.95 | -2.50 | -1.59 | 2.96 | 0.31 | 0.20 | 40.13 |
| 2,159.00 | 0.26 | 349.57 | 2,158.95 | -1.96 | -1.58 | 2.48 | 0.24 | -0.20 | -21.97 |
| 2,249.00 | 0.09 | 298.06 | 2,248.95 | -1.72 | -1.67 | 2.33 | 0.24 | -0.19 | -57.23 |
| 2,339.00 | 0.44 | 199.10 | 2,338.94 | -2.02 | -1.85 | 2.67 | 0.51 | 0.39 | -109.96 |
| 2,429.00 | 0.18 | 191.36 | 2,428.94 | -2.48 | -1.99 | 3.14 | 0.29 | -0.29 | -8.60 |
| 2,519.00 | 0.20 | 61.06 | 2,518.94 | -2.54 | -1.88 | 3.14 | 0.38 | 0.02 | -144.78 |
| 2,609.00 | 0.60 | 62.71 | 2,608.94 | -2.25 | -1.33 | 2.61 | 0.44 | 0.44 | 1.83 |
| 2,699.00 | 0.44 | 20.33 | 2,698.94 | -1.71 | -0.79 | 1.88 | 0.45 | -0.18 | -47.09 |
| 2,789.00 | 0.35 | 37.82 | 2,788.94 | -1.17 | -0.50 | 1.26 | 0.17 | -0.10 | 19.43 |
| 2,879.00 | 0.26 | 323.46 | 2,878.93 | -0.79 | -0.45 | 0.91 | 0.42 | -0.10 | -82.62 |
| **LAST SDI MWD SURFACE SURVEY** | | | | | | | | | |
| 2,989.00 | 0.18 | 88.75 | 2,988.93 | -0.58 | -0.43 | 0.72 | 0.36 | -0.07 | 113.90 |
| **FIRST SDI MWD PRODUCTION SURVEY** | | | | | | | | | |
| 3,084.00 | 0.21 | 246.01 | 3,083.93 | -0.65 | -0.44 | 0.78 | 0.40 | 0.03 | 165.54 |
| 3,179.00 | 0.24 | 236.74 | 3,178.93 | -0.83 | -0.76 | 1.10 | 0.05 | 0.03 | -9.76 |
| 3,274.00 | 0.18 | 269.36 | 3,273.93 | -0.94 | -1.08 | 1.35 | 0.14 | -0.06 | 34.34 |
| 3,369.00 | 0.09 | 173.56 | 3,368.93 | -1.02 | -1.22 | 1.49 | 0.22 | -0.09 | -100.84 |
| 3,464.00 | 0.26 | 150.97 | 3,463.93 | -1.28 | -1.11 | 1.66 | 0.19 | 0.18 | -23.78 |
| 3,558.00 | 0.26 | 154.49 | 3,557.93 | -1.66 | -0.91 | 1.89 | 0.02 | 0.00 | 3.74 |
| 3,653.00 | 0.70 | 181.47 | 3,652.93 | -2.43 | -0.83 | 2.53 | 0.51 | 0.46 | 28.40 |
| 3,748.00 | 0.77 | 166.85 | 3,747.92 | -3.64 | -0.70 | 3.51 | 0.21 | 0.07 | -15.39 |
| 3,843.00 | 0.88 | 174.09 | 3,842.91 | -4.98 | -0.48 | 4.57 | 0.16 | 0.12 | 7.62 |
| 3,938.00 | 1.32 | 179.89 | 3,937.89 | -6.80 | -0.40 | 6.11 | 0.48 | 0.46 | 6.11 |
| 4,033.00 | 1.20 | 175.78 | 4,032.87 | -8.89 | -0.33 | 7.88 | 0.16 | -0.13 | -4.33 |
| 4,127.00 | 1.14 | 194.83 | 4,126.85 | -10.78 | -0.50 | 9.60 | 0.42 | -0.06 | 20.27 |
| 4,222.00 | 1.39 | 191.70 | 4,221.83 | -12.82 | -0.97 | 11.61 | 0.27 | 0.26 | -3.29 |
| 4,317.00 | 1.76 | 185.87 | 4,316.79 | -15.40 | -1.35 | 14.04 | 0.42 | 0.39 | -6.14 |
| 4,412.00 | 0.34 | 173.53 | 4,411.77 | -17.13 | -1.47 | 15.60 | 1.50 | -1.49 | -12.99 |
| 4,507.00 | 0.57 | 170.28 | 4,506.77 | -17.87 | -1.36 | 16.19 | 0.24 | 0.24 | -3.42 |

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-20H |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Site:** | NBU 921-20H | **MD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Well:** | NBU 921-20H | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 5000.1 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 4,602.00 | 0.68 | 183.68 | 4,601.76 | -18.90 | -1.32 | 17.06 | 0.19 | 0.12 | 14.11 |
| 4,697.00 | 0.79 | 193.16 | 4,696.76 | -20.10 | -1.50 | 18.20 | 0.17 | 0.12 | 9.98 |
| 4,792.00 | 1.06 | 187.45 | 4,791.74 | -21.61 | -1.77 | 19.64 | 0.30 | 0.28 | -6.01 |
| 4,886.00 | 1.41 | 189.21 | 4,885.72 | -23.62 | -2.06 | 21.52 | 0.37 | 0.37 | 1.87 |
| 4,981.00 | 1.32 | 185.16 | 4,980.69 | -25.86 | -2.35 | 23.61 | 0.14 | -0.09 | -4.26 |
| 5,076.00 | 1.37 | 183.40 | 5,075.67 | -28.08 | -2.51 | 25.63 | 0.07 | 0.05 | -1.85 |
| 5,171.00 | 1.32 | 189.29 | 5,170.64 | -30.30 | -2.76 | 27.67 | 0.15 | -0.05 | 6.20 |
| 5,264.00 | 0.21 | 240.73 | 5,263.63 | -31.44 | -3.08 | 28.82 | 1.29 | -1.19 | 55.31 |
| 5,359.00 | 0.09 | 228.41 | 5,358.63 | -31.57 | -3.29 | 29.04 | 0.13 | -0.13 | -12.97 |
| 5,454.00 | 1.41 | 330.53 | 5,453.62 | -30.60 | -3.92 | 28.51 | 1.51 | 1.39 | 107.49 |
| 5,549.00 | 0.88 | 325.88 | 5,548.60 | -28.98 | -4.90 | 27.59 | 0.57 | -0.56 | -4.89 |
| 5,643.00 | 2.11 | 349.78 | 5,642.57 | -26.68 | -5.61 | 25.95 | 1.44 | 1.31 | 25.43 |
| 5,738.00 | 1.49 | 345.39 | 5,737.52 | -23.76 | -6.24 | 23.73 | 0.67 | -0.65 | -4.62 |
| 5,832.00 | 1.32 | 339.06 | 5,831.50 | -21.57 | -6.93 | 22.17 | 0.24 | -0.18 | -6.73 |
| 5,927.00 | 2.64 | 353.74 | 5,926.44 | -18.37 | -7.56 | 19.70 | 1.48 | 1.39 | 15.45 |
| 6,021.00 | 2.46 | 347.67 | 6,020.34 | -14.25 | -8.23 | 16.46 | 0.35 | -0.19 | -6.46 |
| 6,116.00 | 2.37 | 353.39 | 6,115.26 | -10.31 | -8.89 | 13.36 | 0.27 | -0.09 | 6.02 |
| 6,211.00 | 2.02 | 344.68 | 6,210.19 | -6.74 | -9.56 | 10.60 | 0.51 | -0.37 | -9.17 |
| 6,305.00 | 1.85 | 342.84 | 6,304.14 | -3.69 | -10.44 | 8.39 | 0.19 | -0.18 | -1.96 |
| 6,400.00 | 1.49 | 335.72 | 6,399.10 | -1.10 | -11.40 | 6.62 | 0.44 | -0.38 | -7.49 |
| 6,495.00 | 2.20 | 338.27 | 6,494.05 | 1.72 | -12.59 | 4.76 | 0.75 | 0.75 | 2.68 |
| 6,590.00 | 1.85 | 336.25 | 6,588.99 | 4.81 | -13.88 | 2.71 | 0.38 | -0.37 | -2.13 |
| 6,686.00 | 1.23 | 332.64 | 6,684.95 | 7.15 | -14.98 | 1.23 | 0.65 | -0.65 | -3.76 |
| 6,781.00 | 2.29 | 359.36 | 6,779.91 | 9.95 | -15.47 | -0.96 | 1.38 | 1.12 | 28.13 |
| 6,876.00 | 1.76 | 354.97 | 6,874.85 | 13.30 | -15.62 | -3.80 | 0.58 | -0.56 | -4.62 |
| 6,971.00 | 1.23 | 4.90 | 6,969.81 | 15.77 | -15.66 | -5.92 | 0.62 | -0.56 | 10.45 |
| 7,066.00 | 2.20 | 335.28 | 7,064.77 | 18.44 | -16.33 | -7.90 | 1.35 | 1.02 | -31.18 |
| 7,161.00 | 1.61 | 329.21 | 7,159.72 | 21.25 | -17.78 | -9.62 | 0.66 | -0.62 | -6.39 |
| 7,256.00 | 2.90 | 341.26 | 7,254.64 | 24.67 | -19.23 | -11.87 | 1.44 | 1.36 | 12.68 |
| 7,351.00 | 2.63 | 341.07 | 7,349.53 | 29.01 | -20.71 | -14.90 | 0.28 | -0.28 | -0.20 |
| 7,447.00 | 2.20 | 347.23 | 7,445.45 | 32.89 | -21.83 | -17.71 | 0.52 | -0.45 | 6.42 |
| 7,541.00 | 1.58 | 351.01 | 7,539.40 | 35.93 | -22.44 | -20.05 | 0.67 | -0.66 | 4.02 |
| 7,636.00 | 1.14 | 354.00 | 7,634.37 | 38.16 | -22.74 | -21.84 | 0.47 | -0.46 | 3.15 |
| 7,731.00 | 3.17 | 347.59 | 7,729.30 | 41.67 | -23.40 | -24.55 | 2.15 | 2.14 | -6.75 |
| 7,826.00 | 2.84 | 349.13 | 7,824.17 | 46.54 | -24.41 | -28.29 | 0.36 | -0.35 | 1.62 |
| 7,921.00 | 2.46 | 351.98 | 7,919.07 | 50.87 | -25.14 | -31.68 | 0.42 | -0.40 | 3.00 |
| 8,016.00 | 2.20 | 350.13 | 8,013.99 | 54.69 | -25.74 | -34.70 | 0.28 | -0.27 | -1.95 |
| 8,111.00 | 2.02 | 345.04 | 8,108.92 | 58.10 | -26.48 | -37.29 | 0.27 | -0.19 | -5.36 |
| 8,206.00 | 1.76 | 354.09 | 8,203.87 | 61.17 | -27.06 | -39.67 | 0.42 | -0.27 | 9.53 |
| 8,301.00 | 1.49 | 351.98 | 8,298.83 | 63.84 | -27.39 | -41.83 | 0.29 | -0.28 | -2.22 |
| 8,396.00 | 0.88 | 356.20 | 8,393.81 | 65.80 | -27.61 | -43.41 | 0.65 | -0.64 | 4.44 |
| 8,492.00 | 0.53 | 15.53 | 8,489.80 | 66.96 | -27.54 | -44.46 | 0.44 | -0.36 | 20.14 |
| 8,587.00 | 0.37 | 53.91 | 8,584.80 | 67.56 | -27.17 | -45.17 | 0.35 | -0.17 | 40.40 |
| 8,681.00 | 0.18 | 72.05 | 8,678.80 | 67.79 | -26.78 | -45.55 | 0.22 | -0.20 | 19.30 |

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-20H |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Site:** | NBU 921-20H | **MD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Well:** | NBU 921-20H | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 5000.1 Single User Db |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 8,776.00 | 0.35 | 111.51 | 8,773.80 | 67.73 | -26.37 | -45.70 | 0.25 | 0.18 | 41.54 |
| 8,871.00 | 0.53 | 114.85 | 8,868.80 | 67.44 | -25.70 | -45.78 | 0.19 | 0.19 | 3.52 |
| 8,966.00 | 0.81 | 124.70 | 8,963.79 | 66.87 | -24.75 | -45.76 | 0.32 | 0.29 | 10.37 |
| 9,060.00 | 0.77 | 146.72 | 9,057.78 | 65.96 | -23.86 | -45.42 | 0.32 | -0.04 | 23.43 |
| 9,155.00 | 0.97 | 155.54 | 9,152.77 | 64.70 | -23.18 | -44.66 | 0.25 | 0.21 | 9.28 |
| 9,250.00 | 1.00 | 178.39 | 9,247.76 | 63.14 | -22.82 | -43.48 | 0.41 | 0.03 | 24.05 |
| 9,344.00 | 1.06 | 182.79 | 9,341.74 | 61.45 | -22.84 | -42.01 | 0.11 | 0.06 | 4.68 |
| 9,439.00 | 1.23 | 168.73 | 9,436.72 | 59.57 | -22.68 | -40.45 | 0.34 | 0.18 | -14.80 |
| 9,534.00 | 1.41 | 172.16 | 9,531.70 | 57.41 | -22.33 | -38.76 | 0.21 | 0.19 | 3.61 |
| 9,629.00 | 1.21 | 168.30 | 9,626.67 | 55.27 | -21.96 | -37.08 | 0.23 | -0.21 | -4.06 |
| 9,724.00 | 1.41 | 191.23 | 9,721.65 | 53.14 | -21.99 | -35.22 | 0.59 | 0.21 | 24.14 |
| 9,819.00 | 1.17 | 197.51 | 9,816.62 | 51.07 | -22.51 | -33.16 | 0.29 | -0.25 | 6.61 |
| 9,914.00 | 1.04 | 186.89 | 9,911.61 | 49.29 | -22.90 | -31.42 | 0.25 | -0.14 | -11.18 |
| 10,009.00 | 1.09 | 179.56 | 10,006.59 | 47.53 | -23.00 | -29.85 | 0.15 | 0.05 | -7.72 |
| 10,103.00 | 0.98 | 182.59 | 10,100.58 | 45.83 | -23.03 | -28.36 | 0.13 | -0.12 | 3.22 |
| 10,198.00 | 1.53 | 168.24 | 10,195.55 | 43.78 | -22.81 | -26.69 | 0.66 | 0.58 | -15.11 |
| 10,293.00 | 1.85 | 156.42 | 10,290.51 | 41.13 | -21.93 | -24.82 | 0.50 | 0.34 | -12.44 |
| 10,387.00 | 2.02 | 147.55 | 10,384.46 | 38.35 | -20.44 | -23.14 | 0.37 | 0.18 | -9.44 |
| 10,482.00 | 2.20 | 151.06 | 10,479.39 | 35.34 | -18.66 | -21.42 | 0.23 | 0.19 | 3.69 |
| 10,577.00 | 1.93 | 149.04 | 10,574.33 | 32.37 | -16.95 | -19.69 | 0.29 | -0.28 | -2.13 |
| 10,672.00 | 2.29 | 150.62 | 10,669.27 | 29.34 | -15.20 | -17.93 | 0.38 | 0.38 | 1.66 |
| 10,767.00 | 2.31 | 152.27 | 10,764.19 | 26.00 | -13.38 | -15.93 | 0.07 | 0.02 | 1.74 |
| 10,861.00 | 2.24 | 159.11 | 10,858.12 | 22.60 | -11.84 | -13.74 | 0.30 | -0.07 | 7.28 |
| 10,957.00 | 2.29 | 158.27 | 10,954.04 | 19.07 | -10.46 | -11.36 | 0.06 | 0.05 | -0.88 |
| 11,052.00 | 2.46 | 155.72 | 11,048.96 | 15.45 | -8.92 | -8.98 | 0.21 | 0.18 | -2.68 |
| 11,147.00 | 2.41 | 154.16 | 11,143.87 | 11.79 | -7.21 | -6.66 | 0.09 | -0.05 | -1.64 |
| 11,242.00 | 2.55 | 148.69 | 11,238.79 | 8.19 | -5.24 | -4.51 | 0.29 | 0.15 | -5.76 |
| 11,270.00 | 2.46 | 148.42 | 11,266.76 | 7.14 | -4.60 | -3.92 | 0.32 | -0.32 | -0.96 |
| **LAST SDI MWD PRODUCTION SURVEY** | | | | | | | | | |
| 11,330.00 | 2.46 | 148.42 | 11,326.70 | 4.95 | -3.25 | -2.68 | 0.00 | 0.00 | 0.00 |
| **SDI PROJECTION TO BIT** | | | | | | | | | |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 2,900.00 | 2,899.93 | 8 5/8" | 8.625 | 11.000 |

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-20H |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Site:** | NBU 921-20H | **MD Reference:** | GL 4834 & KB 19 @ 4853.00ft (PIONEER 54) |
| **Well:** | NBU 921-20H | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 5000.1 Single User Db |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 189.00 | 188.99 | 1.27 | 0.41 | FIRST SDI MWD SURFACE SURVEY |
| 2,879.00 | 2,878.93 | -0.79 | -0.45 | LAST SDI MWD SURFACE SURVEY |
| 2,989.00 | 2,988.93 | -0.58 | -0.43 | FIRST SDI MWD PRODUCTION SURVEY |
| 11,270.00 | 11,266.76 | 7.14 | -4.60 | LAST SDI MWD PRODUCTION SURVEY |
| 11,330.00 | 11,326.70 | 4.95 | -3.25 | SDI PROJECTION TO BIT |

Checked By: _____ Approved By: _____ Date: _____