

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

FORM 3  
 AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>				<b>1. WELL NAME and NUMBER</b> NBU 1022-202S		
<b>2. TYPE OF WORK</b> DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>				<b>3. FIELD OR WILDCAT</b> NATURAL BUTTES		
<b>4. TYPE OF WELL</b> Gas Well <input type="checkbox"/> Coalbed Methane Well: NO <input type="checkbox"/>				<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b> NATURAL BUTTES		
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.				<b>7. OPERATOR PHONE</b> 720 929-6587		
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217				<b>9. OPERATOR E-MAIL</b> mary.mondragon@anadarko.com		
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> ST ML 22651		<b>11. MINERAL OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>		<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>		
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>				<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>		
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>				<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>		
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b>		<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>		<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>		
<b>20. LOCATION OF WELL</b>	<b>FOOTAGES</b>	<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>
<b>LOCATION AT SURFACE</b>	2354 FSL 1593 FEL	NWSE	2	10.0 S	22.0 E	S
<b>Top of Uppermost Producing Zone</b>	1010 FSL 2055 FEL	SWSE	2	10.0 S	22.0 E	S
<b>At Total Depth</b>	1010 FSL 2055 FEL	SWSE	2	10.0 S	22.0 E	S
<b>21. COUNTY</b> UINTAH		<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 1010		<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 620		
		<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 20		<b>26. PROPOSED DEPTH</b> MD: 8833 TVD: 8500		
<b>27. ELEVATION - GROUND LEVEL</b> 5040		<b>28. BOND NUMBER</b> 22013542		<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> Permit #43-8496		

**ATTACHMENTS**

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

<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER	<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)	<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)	<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP

<b>NAME</b> Kevin McIntyre	<b>TITLE</b> Regulatory Analyst I	<b>PHONE</b> 720 929-6226
<b>SIGNATURE</b>	<b>DATE</b> 02/02/2009	<b>EMAIL</b> Kevin.McIntyre@anadarko.com
<b>API NUMBER ASSIGNED</b> 43047502160000	<b>APPROVAL</b>   Permit Manager	

**Proposed Hole, Casing, and Cement**

<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>		
Surf	12.25	9.625	0	1900		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade J-55 LT&C	1900	36.0			
	<b>Cement Interval</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>			
		0	1900			
		<b>Cement Description</b>	<b>Class</b>	<b>Sacks</b>	<b>Yield</b>	<b>Weight</b>
			Premium Foamed Cement	265	1.18	15.6

**Proposed Hole, Casing, and Cement**

<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>		
Prod	7.875	4.5	0	8833		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade I-80 LT&C	8833	11.6			
	<b>Cement Interval</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>			
		0	8833			
		<b>Cement Description</b>	<b>Class</b>	<b>Sacks</b>	<b>Yield</b>	<b>Weight</b>
			Premium Lite High Strength	350	3.38	11.0
			Pozzuolanic Cement	1280	1.31	14.3





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

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'				3520	2020	453000
SURFACE	9-5/8"	0 to 1900	36.00	J-55	LTC	0.99	2.27	8.43
PRODUCTION	4-1/2"	0 to 8833	11.60	I-80	LTC	2.18	1.15	2.25

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point)  
 2) MASP (Prod Casing) = Pore Pressure at TD - (.22 psi/ft-partial evac gradient x TD)  
 (Burst Assumptions: TD = 12.0 ppg) .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 3533 psi

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500	Premium cmt + 2% CaCl + .25 pps flocele	215	60%	15.60	1.18
Option 1	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt + 2% CaCl + .25 pps flocele	50		15.60	1.18
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
SURFACE	LEAD	1500	NOTE: If well will circulate water to surface, option 2 will be utilized 65/35 Poz + 6% Gel + 10 pps gilsonite +.25 pps Flocele + 3% salt BWOW	360	35%	12.60	1.81
Option 2	TAIL	500	Premium cmt + 2% CaCl + .25 pps flocele	180	35%	15.60	1.18
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION	LEAD	3,613'	Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	350	40%	11.00	3.38
	TAIL	5,220'	50/50 Poz/G + 10% salt + 2% gel +.1% R-3	1280	40%	14.30	1.31

\*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 to top of tail cement with 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. Test to 5,000 psi (annular to 2,500 psi) prior to drilling out. Record on chart recorder & tour sheet. Function test rams on each trip. Maintain safety valve & inside BOP on rig floor at all times. Kelly to be equipped with upper & lower kelly valves.  
 Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.  
 Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

DRILLING ENGINEER: \_\_\_\_\_  
 Brad Laney  
 DRILLING SUPERINTENDENT: \_\_\_\_\_  
 Randy Bayne

DATE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**NBU 1022-202S  
NWSE Sec. 2 T10S R22E  
UINTAH COUNTY, UTAH  
ST ML 22651**

**ONSHORE ORDER NO. 1**

***DRILLING PROGRAM***

**1. Estimated Tops of Important Geologic Markers:**

<u>Formation</u>	<u>Depth</u>
Uinta	0 - Surface
Green River	1020'
Birds Nest	1325'
Mahogany	1827'
Wasatch	4115'
Mesaverde	6412'
MVU2	7318'
MVL1	7921'
TVD	8500'
TD	8833'

**2. Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
	Green River	1020'
Water	Birds Nest	1325'
Water	Mahogany	1827'
Gas	Wasatch	4115'
Gas	Mesaverde	6412'
Gas	MVU2	7318'
Gas	MVL1	7921'
Water	N/A	
Other Minerals	N/A	

**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 8833' TD, approximately equals 5476 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 3533 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.*

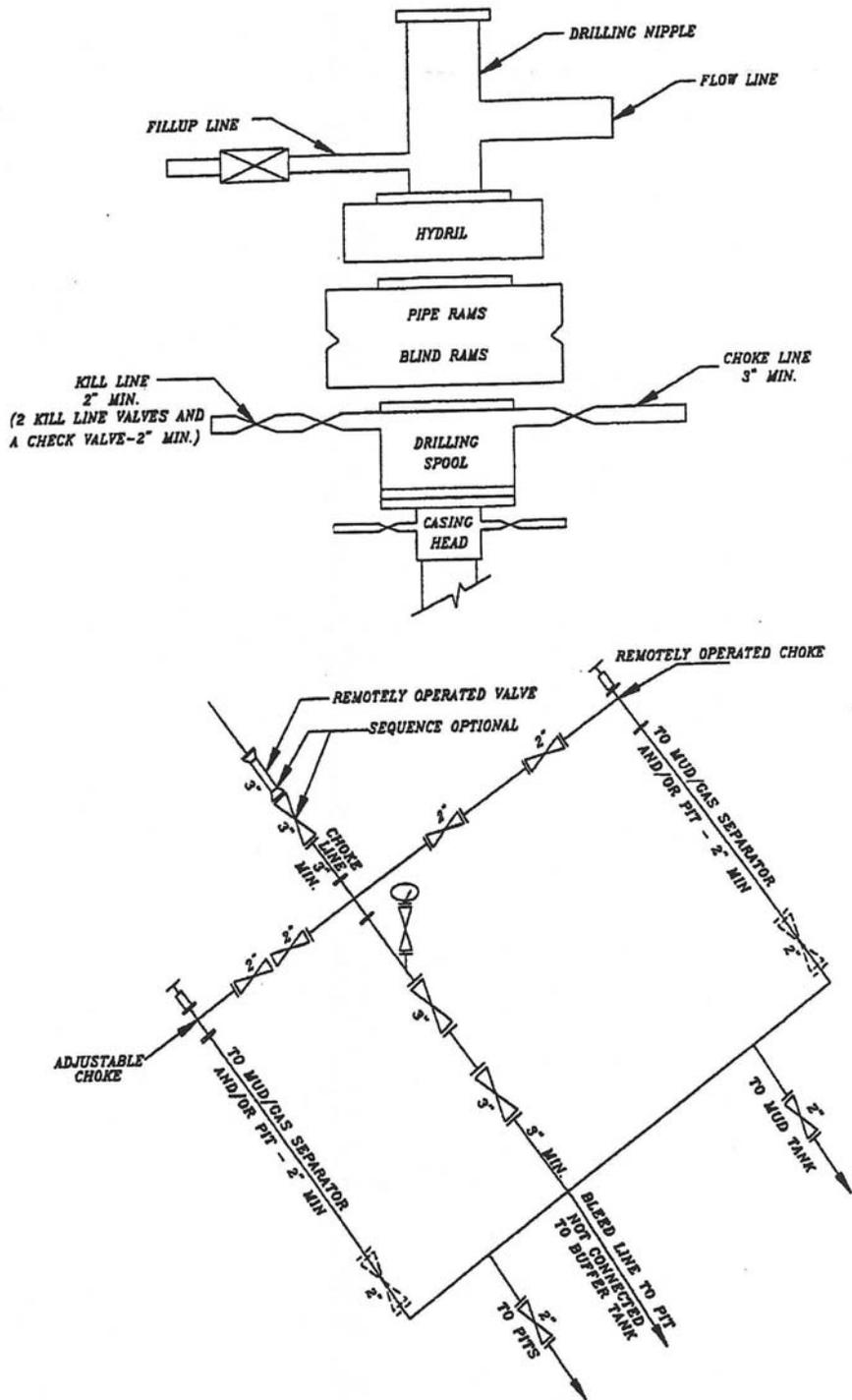
***Conclusion***

*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.*

EXHIBIT A



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK



**Scientific Drilling**  
Rocky Mountain Operations

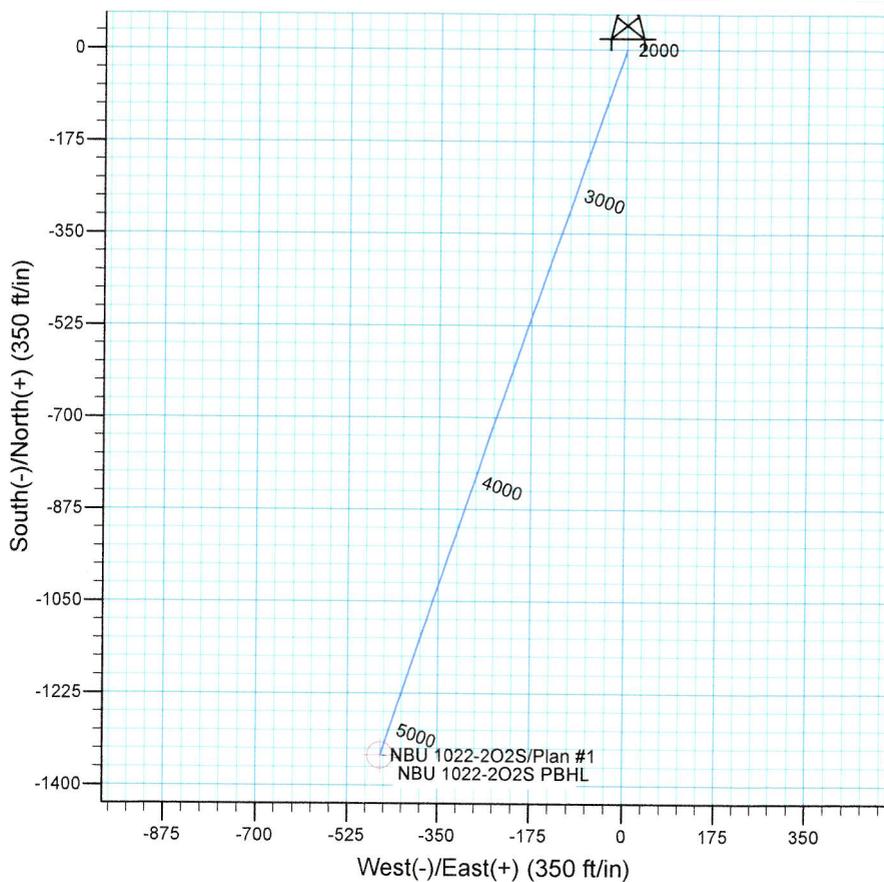
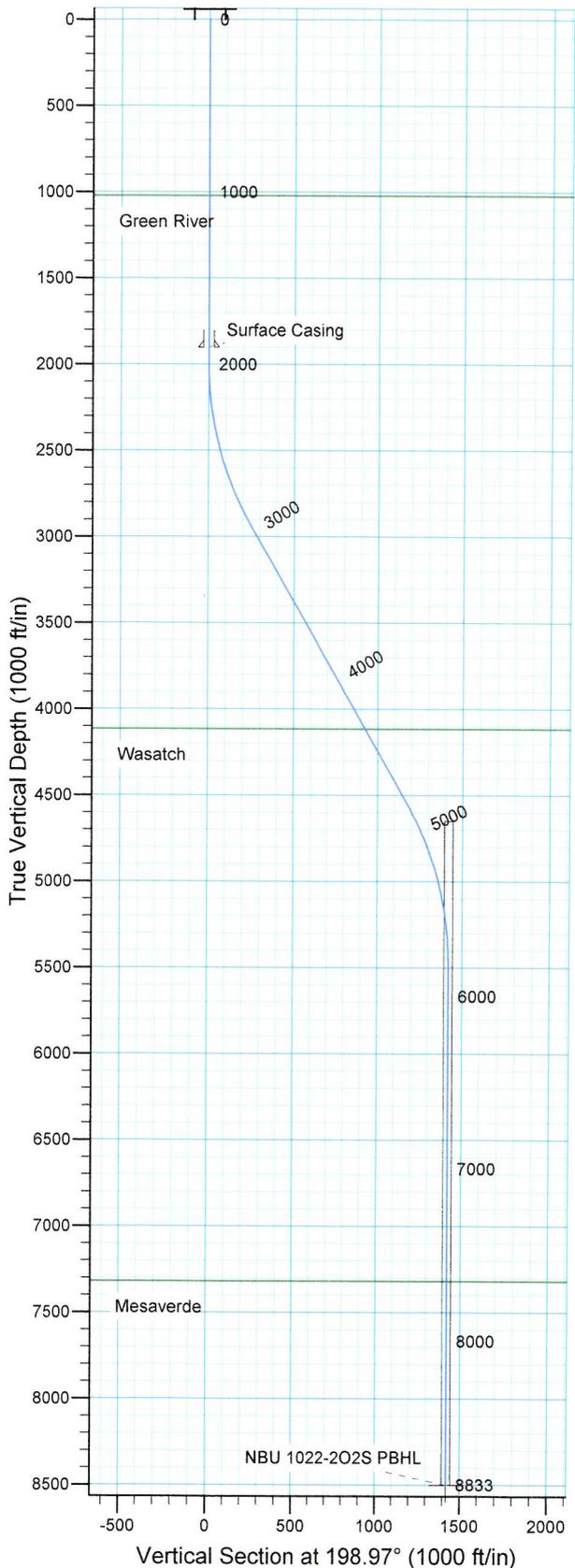
Project: Uintah County, UT  
Site: NBU 1022-2J Pad  
Well: NBU 1022-2O2S  
Wellbore: OH  
Design: Plan #1

McGee Oil and Gas Onshore LP

Azimuths to True North  
 Magnetic North: 11.36°  
 Magnetic Field  
 Strength: 52621.4snT  
 Dip Angle: 65.94°  
 Date: 2008-10-08  
 Model: IGRF2005-10

WELL DETAILS: NBU 1022-2O2S

GL 5040' & RKB 18' @ 5058.00ft 5040.00  
 +N/-S 0.00 +E/-W 0.00 Northing 605630.27 Easting 2587697.40 Latitude 39° 58' 37.900 N Longitude 109° 24' 9.630 W



Plan: Plan #1 (NBU 1022-2O2S/OH)
Created By: Julie Cruse Date: 2008-10-08
PROJECT DETAILS: Uintah County, UT
Geodetic System: US State Plane 1927 (Exact solution) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Utah Central 4302 Location: Sec 2 T10S R22E System Datum: Mean Sea Level Local North: True

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3000.00	30.00	198.97	2954.93	-241.97	-83.20	3.00	198.97	255.87	
4816.07	30.00	198.97	4527.69	-1100.67	-378.44	0.00	0.00	1163.91	
5816.07	0.00	0.00	5482.62	-1342.64	-461.64	3.00	180.00	1419.78	
8833.45	0.00	0.00	8500.00	-1342.64	-461.64	0.00	0.00	1419.78	NBU 1022-2O2S PBHL

APIWellNo:43047502.160000'



**Scientific Drilling**  
Rocky Mountain Operations

# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT  
NBU 1022-2J Pad  
NBU 1022-2O2S  
OH

Plan: Plan #1

## **Standard Planning Report**

08 October, 2008



## Scientific Drilling Planning Report

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	Uintah County, UT		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Utah Central 4302		

<b>Site</b>	NBU 1022-2J Pad, Sec 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	605,694.60 ft	<b>Latitude:</b>	39° 58' 38.550 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,587,635.16 ft	<b>Longitude:</b>	109° 24' 9.410 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in	<b>Grid Convergence:</b>	1.34 °

<b>Well</b>	NBU 1022-2O2S, 2354' FSL 1593' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	605,630.27 ft	<b>Latitude:</b>	39° 58' 37.900 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,587,697.40 ft	<b>Longitude:</b>	109° 24' 9.630 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,040.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	2008-10-08	11.36	65.94	52,621

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	198.97	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	30.00	198.97	2,954.93	-241.97	-83.20	3.00	3.00	0.00	198.97	
4,816.07	30.00	198.97	4,527.69	-1,100.67	-378.44	0.00	0.00	0.00	0.00	
5,816.07	0.00	0.00	5,482.62	-1,342.64	-461.64	3.00	-3.00	0.00	180.00	
8,833.45	0.00	0.00	8,500.00	-1,342.64	-461.64	0.00	0.00	0.00	0.00	NBU 1022-2O2S PBF

APIWellNo:43047502160000



# Scientific Drilling

## Planning Report

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,020.00	0.00	0.00	1,020.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Green River</b>									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	3.00	198.97	2,099.95	-2.48	-0.85	2.62	3.00	3.00	0.00
2,200.00	6.00	198.97	2,199.63	-9.89	-3.40	10.46	3.00	3.00	0.00
2,300.00	9.00	198.97	2,298.77	-22.24	-7.65	23.51	3.00	3.00	0.00
2,400.00	12.00	198.97	2,397.08	-39.47	-13.57	41.74	3.00	3.00	0.00
2,500.00	15.00	198.97	2,494.31	-61.54	-21.16	65.08	3.00	3.00	0.00
2,600.00	18.00	198.97	2,590.18	-88.40	-30.39	93.48	3.00	3.00	0.00
2,700.00	21.00	198.97	2,684.43	-119.96	-41.25	126.85	3.00	3.00	0.00
2,800.00	24.00	198.97	2,776.81	-156.14	-53.69	165.12	3.00	3.00	0.00
2,900.00	27.00	198.97	2,867.06	-196.85	-67.68	208.16	3.00	3.00	0.00
3,000.00	30.00	198.97	2,954.93	-241.97	-83.20	255.87	3.00	3.00	0.00
3,100.00	30.00	198.97	3,041.53	-289.25	-99.45	305.87	0.00	0.00	0.00
3,200.00	30.00	198.97	3,128.13	-336.54	-115.71	355.87	0.00	0.00	0.00
3,300.00	30.00	198.97	3,214.74	-383.82	-131.97	405.87	0.00	0.00	0.00
3,400.00	30.00	198.97	3,301.34	-431.10	-148.23	455.87	0.00	0.00	0.00
3,500.00	30.00	198.97	3,387.94	-478.39	-164.48	505.87	0.00	0.00	0.00
3,600.00	30.00	198.97	3,474.54	-525.67	-180.74	555.87	0.00	0.00	0.00
3,700.00	30.00	198.97	3,561.15	-572.95	-197.00	605.87	0.00	0.00	0.00
3,800.00	30.00	198.97	3,647.75	-620.23	-213.25	655.87	0.00	0.00	0.00
3,900.00	30.00	198.97	3,734.35	-667.52	-229.51	705.87	0.00	0.00	0.00
4,000.00	30.00	198.97	3,820.96	-714.80	-245.77	755.87	0.00	0.00	0.00
4,100.00	30.00	198.97	3,907.56	-762.08	-262.03	805.87	0.00	0.00	0.00
4,200.00	30.00	198.97	3,994.16	-809.37	-278.28	855.87	0.00	0.00	0.00
4,300.00	30.00	198.97	4,080.76	-856.65	-294.54	905.87	0.00	0.00	0.00
4,339.53	30.00	198.97	4,115.00	-875.34	-300.97	925.64	0.00	0.00	0.00
<b>Wasatch</b>									
4,400.00	30.00	198.97	4,167.37	-903.93	-310.80	955.87	0.00	0.00	0.00
4,500.00	30.00	198.97	4,253.97	-951.22	-327.06	1,005.87	0.00	0.00	0.00
4,600.00	30.00	198.97	4,340.57	-998.50	-343.31	1,055.87	0.00	0.00	0.00
4,700.00	30.00	198.97	4,427.17	-1,045.78	-359.57	1,105.87	0.00	0.00	0.00

APIWellNo:43047502160000

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	30.00	198.97	4,513.78	-1,093.07	-375.83	1,155.87	0.00	0.00	0.00
4,816.07	30.00	198.97	4,527.69	-1,100.67	-378.44	1,163.91	0.00	0.00	0.00
4,900.00	27.48	198.97	4,601.28	-1,138.83	-391.56	1,204.26	3.00	-3.00	0.00
5,000.00	24.48	198.97	4,691.16	-1,180.25	-405.80	1,248.07	3.00	-3.00	0.00
5,100.00	21.48	198.97	4,783.21	-1,217.17	-418.50	1,287.11	3.00	-3.00	0.00
5,200.00	18.48	198.97	4,877.18	-1,249.48	-429.61	1,321.28	3.00	-3.00	0.00
5,300.00	15.48	198.97	4,972.81	-1,277.10	-439.10	1,350.48	3.00	-3.00	0.00
5,400.00	12.48	198.97	5,069.84	-1,299.95	-446.96	1,374.64	3.00	-3.00	0.00
5,500.00	9.48	198.97	5,167.99	-1,317.96	-453.15	1,393.69	3.00	-3.00	0.00
5,600.00	6.48	198.97	5,267.01	-1,331.09	-457.67	1,407.57	3.00	-3.00	0.00
5,700.00	3.48	198.97	5,366.62	-1,339.30	-460.49	1,416.26	3.00	-3.00	0.00
5,800.00	0.48	198.97	5,466.55	-1,342.57	-461.61	1,419.71	3.00	-3.00	0.00
5,816.07	0.00	0.00	5,482.62	-1,342.64	-461.64	1,419.78	3.00	-3.00	0.00
5,900.00	0.00	0.00	5,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,100.00	0.00	0.00	5,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,200.00	0.00	0.00	5,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,300.00	0.00	0.00	5,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,700.00	0.00	0.00	6,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,800.00	0.00	0.00	6,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,900.00	0.00	0.00	6,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,100.00	0.00	0.00	6,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,200.00	0.00	0.00	6,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,300.00	0.00	0.00	6,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,400.00	0.00	0.00	7,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,500.00	0.00	0.00	7,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,600.00	0.00	0.00	7,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,651.45	0.00	0.00	7,318.00	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
<b>Mesaverde</b>									
7,700.00	0.00	0.00	7,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,800.00	0.00	0.00	7,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,900.00	0.00	0.00	7,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,000.00	0.00	0.00	7,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,100.00	0.00	0.00	7,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,200.00	0.00	0.00	7,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,300.00	0.00	0.00	7,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,400.00	0.00	0.00	8,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,500.00	0.00	0.00	8,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,600.00	0.00	0.00	8,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,700.00	0.00	0.00	8,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,800.00	0.00	0.00	8,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,833.45	0.00	0.00	8,500.00	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00

'APIWellNo:43047502160000'

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
NBU 1022-2O2S PBHL	0.00	0.00	8,500.00	-1,342.64	-461.64	604,277.18	2,587,267.37	39° 58' 24.630 N	109° 24' 15.560 W
- plan hits target center									
- Circle (radius 25.00)									

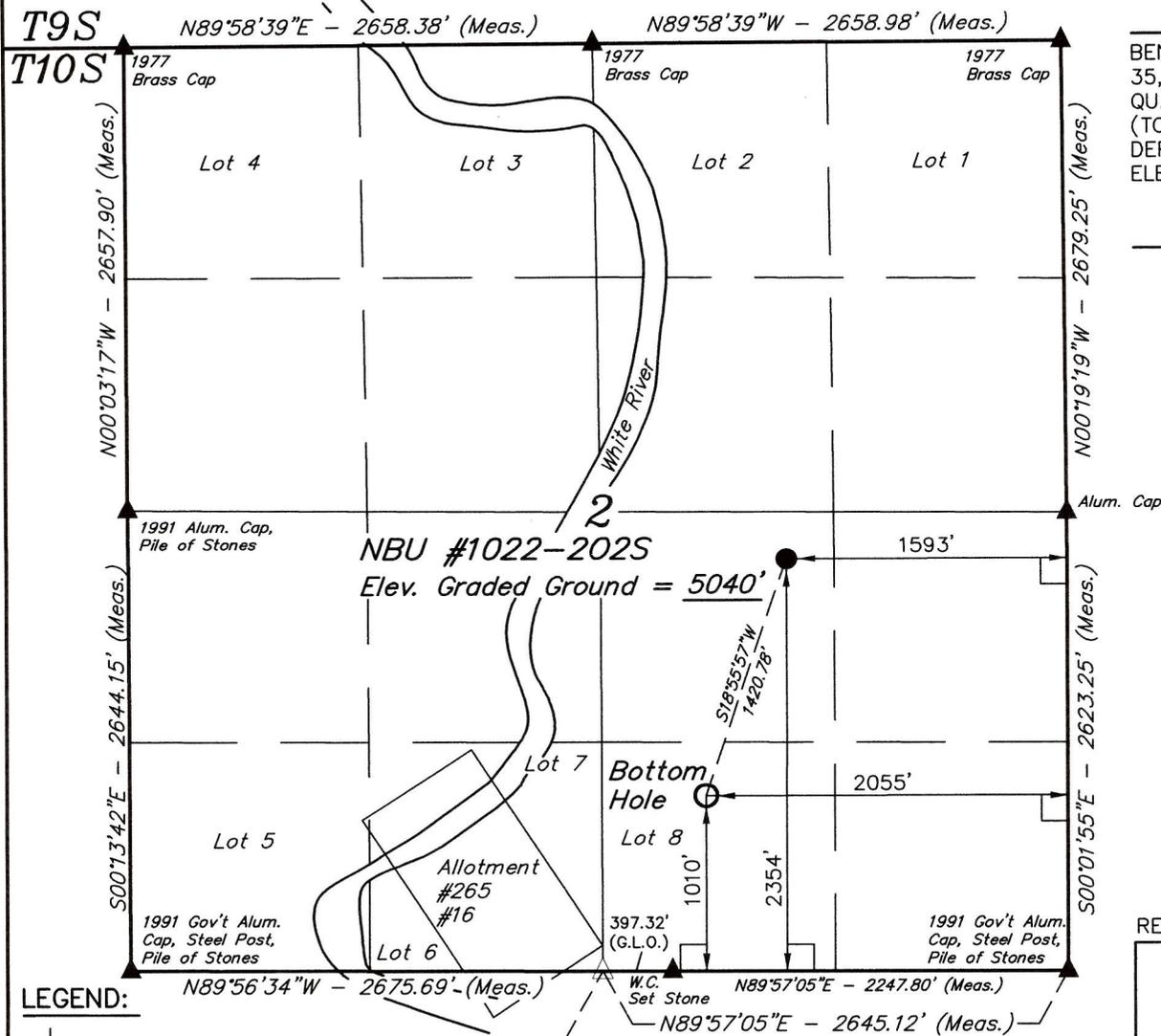
Casing Points						
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter		
(ft)	(ft)		(in)	(in)		
1,900.00	1,900.00	Surface Casing	9.625	13.500		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,020.00	1,020.00	Green River		0.00		
4,339.53	4,115.00	Wasatch		0.00		
7,651.45	7,318.00	Mesaverde		0.00		

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

## Kerr-McGee Oil & Gas Onshore LP

Well location, NBU #1022-202S, located as shown in NW 1/4 SE 1/4, of Section 2, T10S, R22E, S.L.B.&M., Uintah County, Utah.

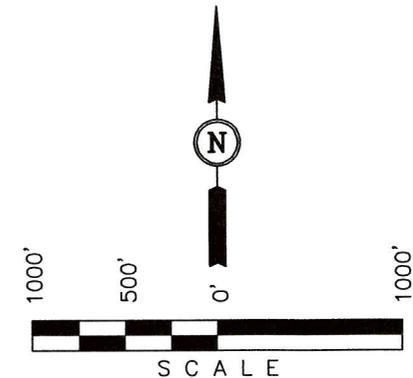


### BASIS OF ELEVATION

BENCH MARK (20EAM) LOCATED IN THE SE 1/4 OF SECTION 35, T8S, R21E, S.L.B.&M. TAKEN FROM THE OURAY SE QUADRANGLE, UTAH, UINTAH COUNTY, 7.5 MINUTE SERIES (TOPOGRAPHICAL MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 4697 FEET.

### BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



### 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  
 REGISTRATION NO. 161319  
 STATE OF UTAH

REVISED: 08-26-08 C.C.

**UINTAH ENGINEERING & LAND SURVEYING**  
 85 SOUTH 200 EAST - VERNAL, UTAH 84078  
 (435) 789-1017

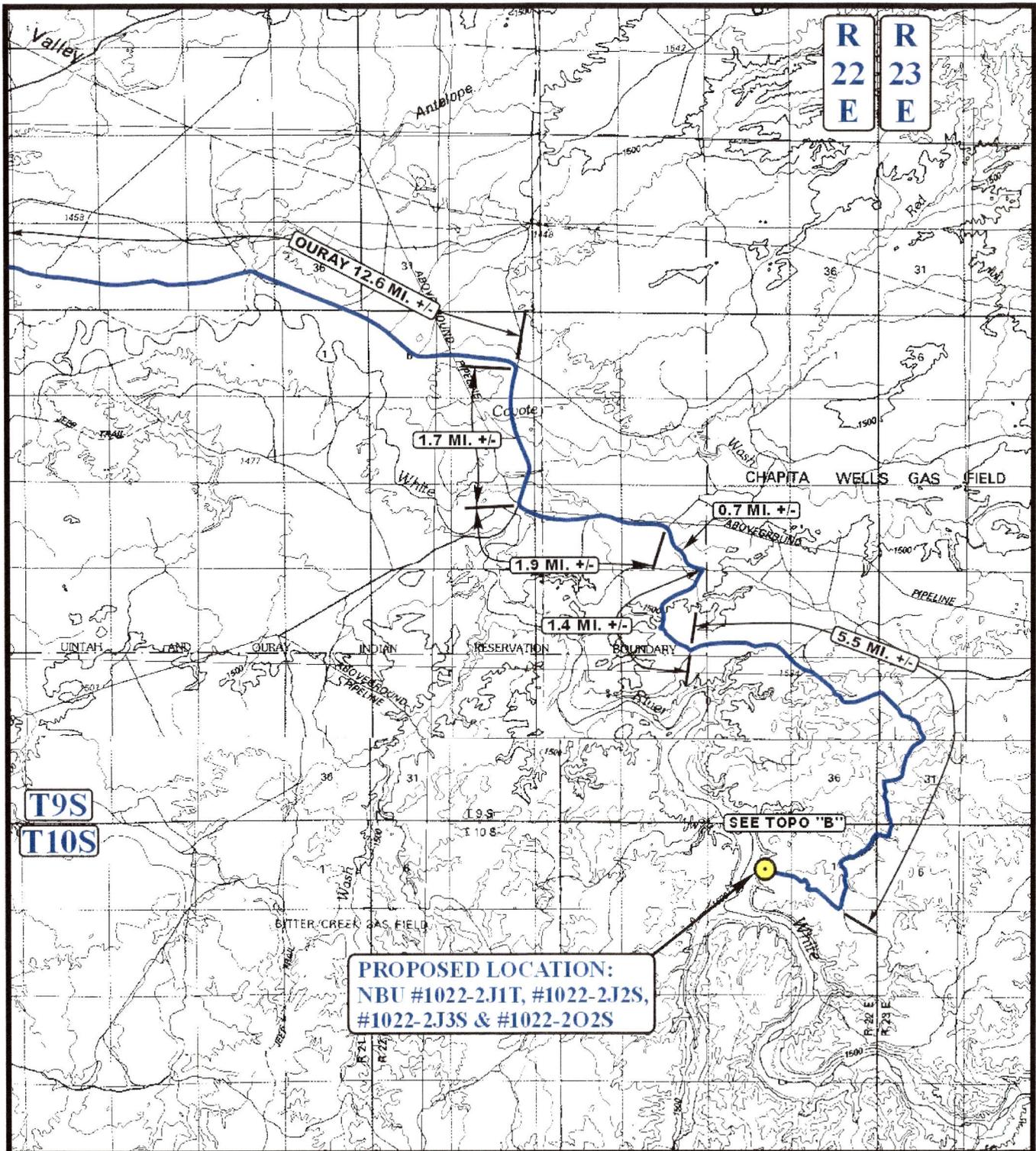
### LEGEND:

- └─┘ = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.
- △ = SECTION CORNERS RE-ESTABLISHED. (Not Set on Ground)

True Position  
S 1/4 Corner  
Sec. 2

<b>NAD 83 (TARGET BOTTOM HOLE)</b> LATITUDE = 39°58'24.50" (39.973472) LONGITUDE = 109°24'18.01" (109.405003)	<b>NAD 83 (SURFACE LOCATION)</b> LATITUDE = 39°58'37.78" (39.977161) LONGITUDE = 109°24'12.08" (109.403356)
<b>NAD 27 (TARGET BOTTOM HOLE)</b> LATITUDE = 39°58'24.63" (39.973508) LONGITUDE = 109°24'15.56" (109.404322)	<b>NAD 27 (SURFACE LOCATION)</b> LATITUDE = 39°58'37.90" (39.977194) LONGITUDE = 109°24'09.63" (109.402675)

SCALE 1" = 1000'	DATE SURVEYED: 06-17-08	DATE DRAWN: 07-08-08
PARTY L.K. D.D. S.L.	REFERENCES G.L.O. PLAT	
WEATHER WARM	FILE	Kerr-McGee Oil & Gas Onshore LP



**PROPOSED LOCATION:  
 NBU #1022-2J1T, #1022-2J2S,  
 #1022-2J3S & #1022-2O2S**

**LEGEND:**

PROPOSED LOCATION

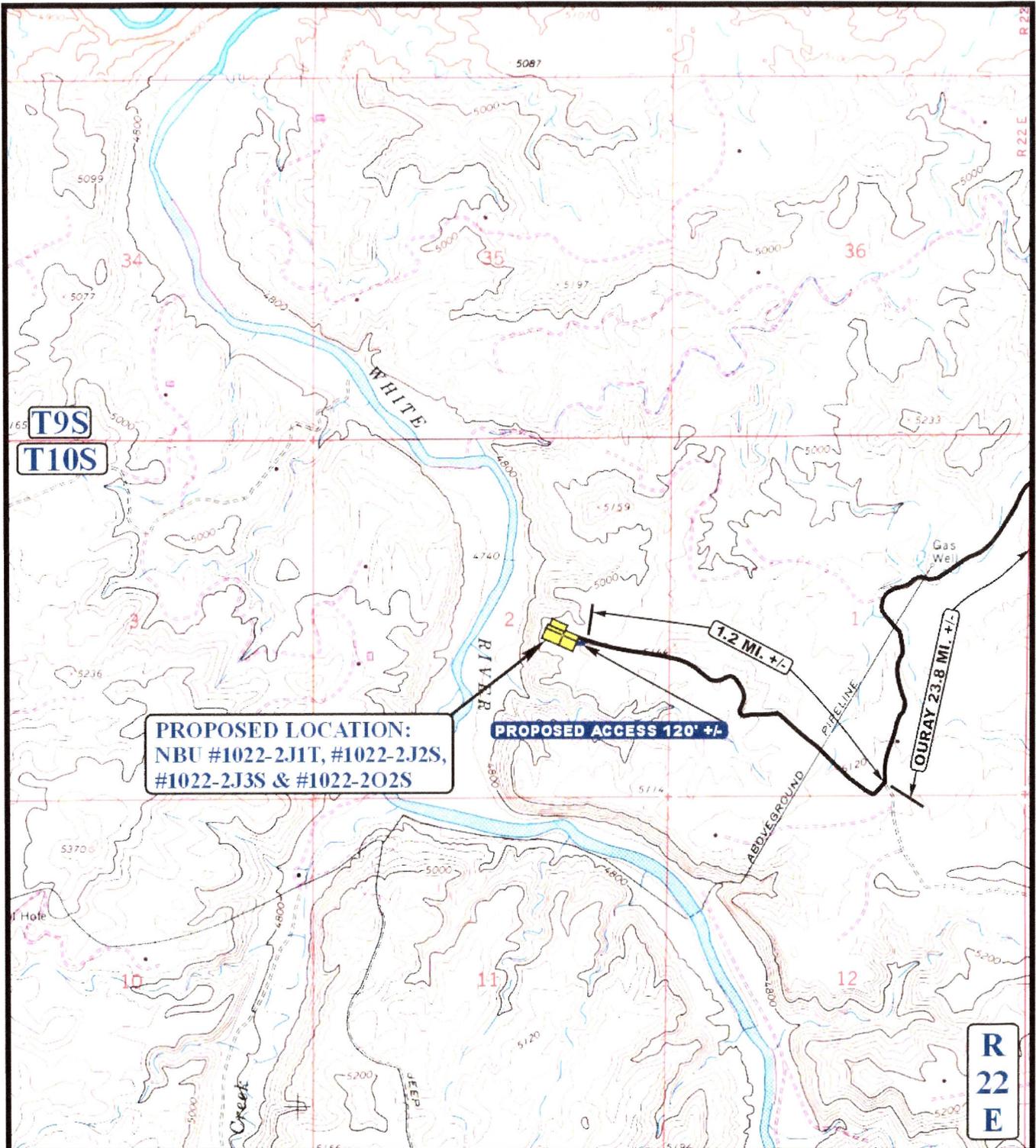


**Kerr-McGee Oil & Gas Onshore LP**

NBU #1022-2J1T, #1022-2J2S, #1022-2J3S & #1022-2O2S  
 SECTION 2, T10S, R22E, S.L.B.&M.  
 NW 1/4 SE 1/4

**UEIS** Uintah Engineering & Land Surveying  
 85 South 200 East Vernal, Utah 84078  
 (435) 789-1017 \* FAX (435) 789-1813

**TOPOGRAPHIC MAP** 07 14 08  
 MONTH DAY YEAR  
 SCALE: 1:100,000 DRAWN BY: J.J. REVISED: 09-15-08 **A TOPO**



**PROPOSED LOCATION:  
 NBU #1022-2J1T, #1022-2J2S,  
 #1022-2J3S & #1022-2O2S**

**PROPOSED ACCESS 120' +/-**

**R  
 22  
 E**

**LEGEND:**

————— EXISTING ROAD



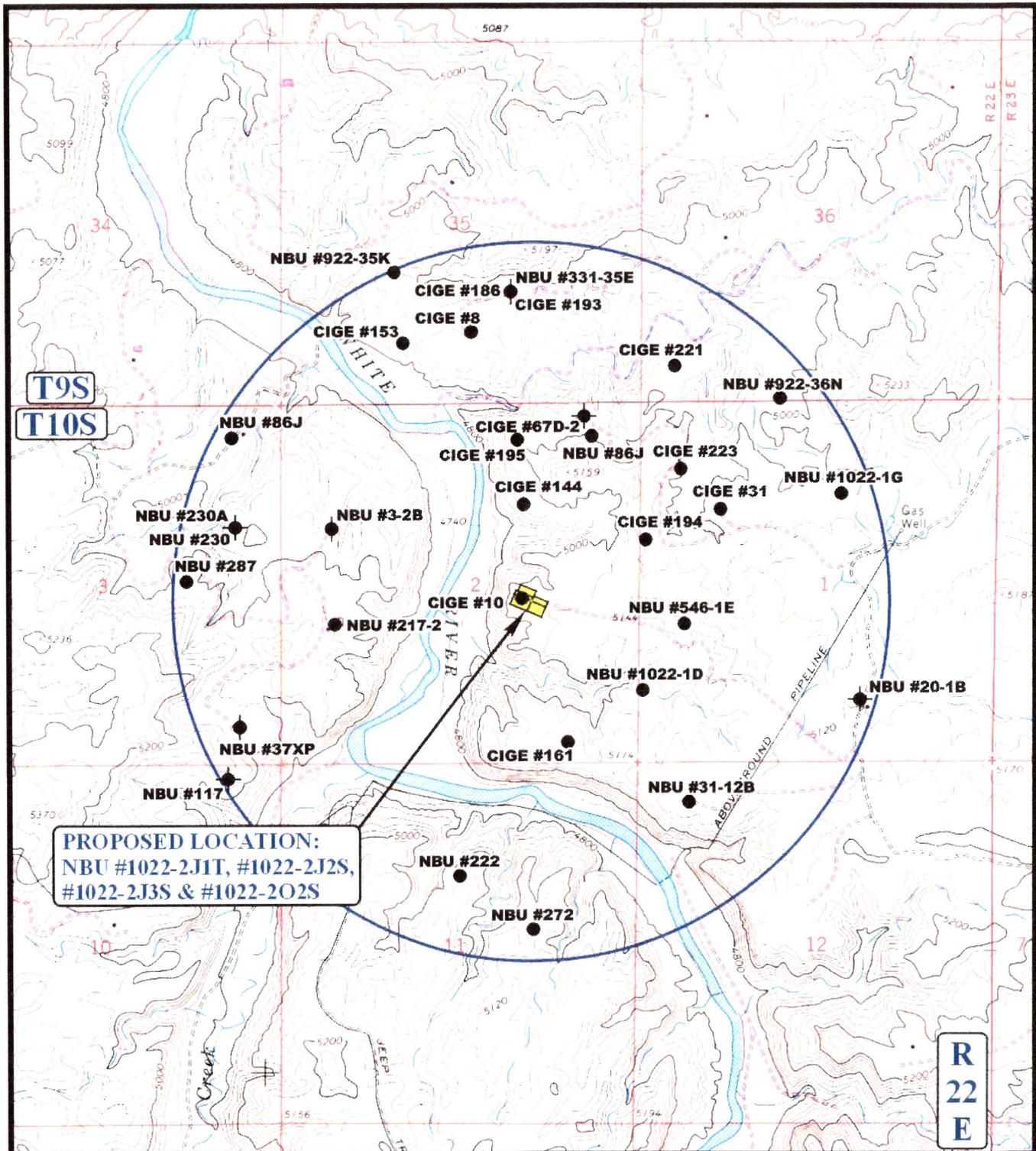
**Kerr-McGee Oil & Gas Onshore LP**

NBU #1022-2J1T, #1022-2J2S, #1022-2J3S & #1022-2O2S  
 SECTION 2, T10S, R22E, S.L.B.&M.  
 NW 1/4 SE 1/4

<b>UES</b>	<b>Uintah Engineering &amp; Land Surveying</b>
	85 South 200 East Vernal, Utah 84078
	(435) 789-1017 * FAX (435) 789-1813

<b>TOPOGRAPHIC</b>	<b>07</b>	<b>14</b>	<b>08</b>	<b>B</b>
<b>MAP</b>	MONTH	DAY	YEAR	
SCALE: 1" = 2000'	DRAWN BY: J.J.		REVISED: 09-15-08	

'APIWellNo:43047502160000'



**PROPOSED LOCATION:  
NBU #1022-2JIT, #1022-2J2S,  
#1022-2J3S & #1022-2O2S**

**LEGEND:**

- ⊗ DISPOSAL WELLS
- PRODUCING WELLS
- SHUT IN WELLS
- ⊗ WATER WELLS
- ABANDONED WELLS
- TEMPORARILY ABANDONED

**Kerr-McGee Oil & Gas Onshore LP**

**NBU #1022-2JIT, #1022-2J2S, #1022-2J3S & #1022-2O2S**  
SECTION 2, T10S, R22E, S.L.B.&M.  
NW 1/4 SE 1/4



**Uintah Engineering & Land Surveying**  
85 South 200 East Vernal, Utah 84078  
(435) 789-1017 \* FAX (435) 789-1813



**TOPOGRAPHIC  
MAP**

**07 14 08**  
MONTH DAY YEAR

SCALE: 1" = 2000' DRAWN BY: J.J. REVISED: 09-15-08



# Kerr-McGee Oil & Gas Onshore LP

NBU #1022-2J1T, #1022-2J2S, #1022-2J3S & #1022-2O2S

LOCATED IN UTAH COUNTY, UTAH

SECTION 2, T10S, R22E, S.L.B.&M.

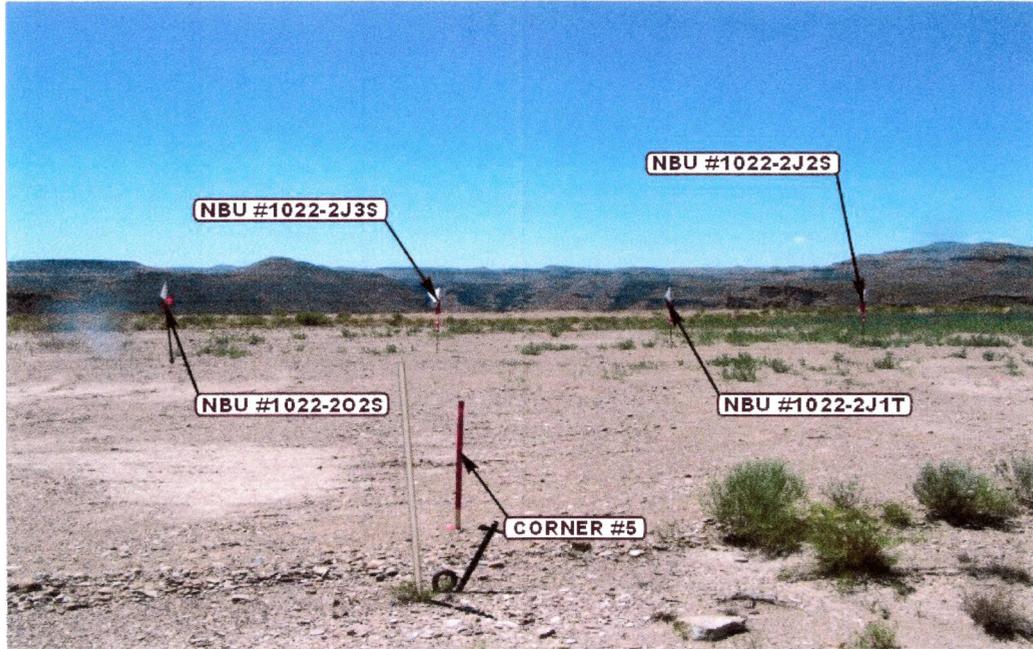


PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKES

CAMERA ANGLE: SOUTHWESTERLY



PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS

CAMERA ANGLE: WESTERLY



**UELS** Uintah Engineering & Land Surveying  
 85 South 200 East Vernal, Utah 84078  
 (435) 789-1017 \* FAX (435) 789-1813

- Since 1964 -

LOCATION PHOTOS			07	14	08	PHOTO
			MONTH	DAY	YEAR	
TAKEN BY: L.K.	DRAWN BY: J.J.	REVISED: 09-15-08				

APIWellNo: 43047502160000

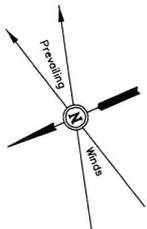
Kerr-McGee Oil & Gas Onshore LP

LOCATION LAYOUT FOR

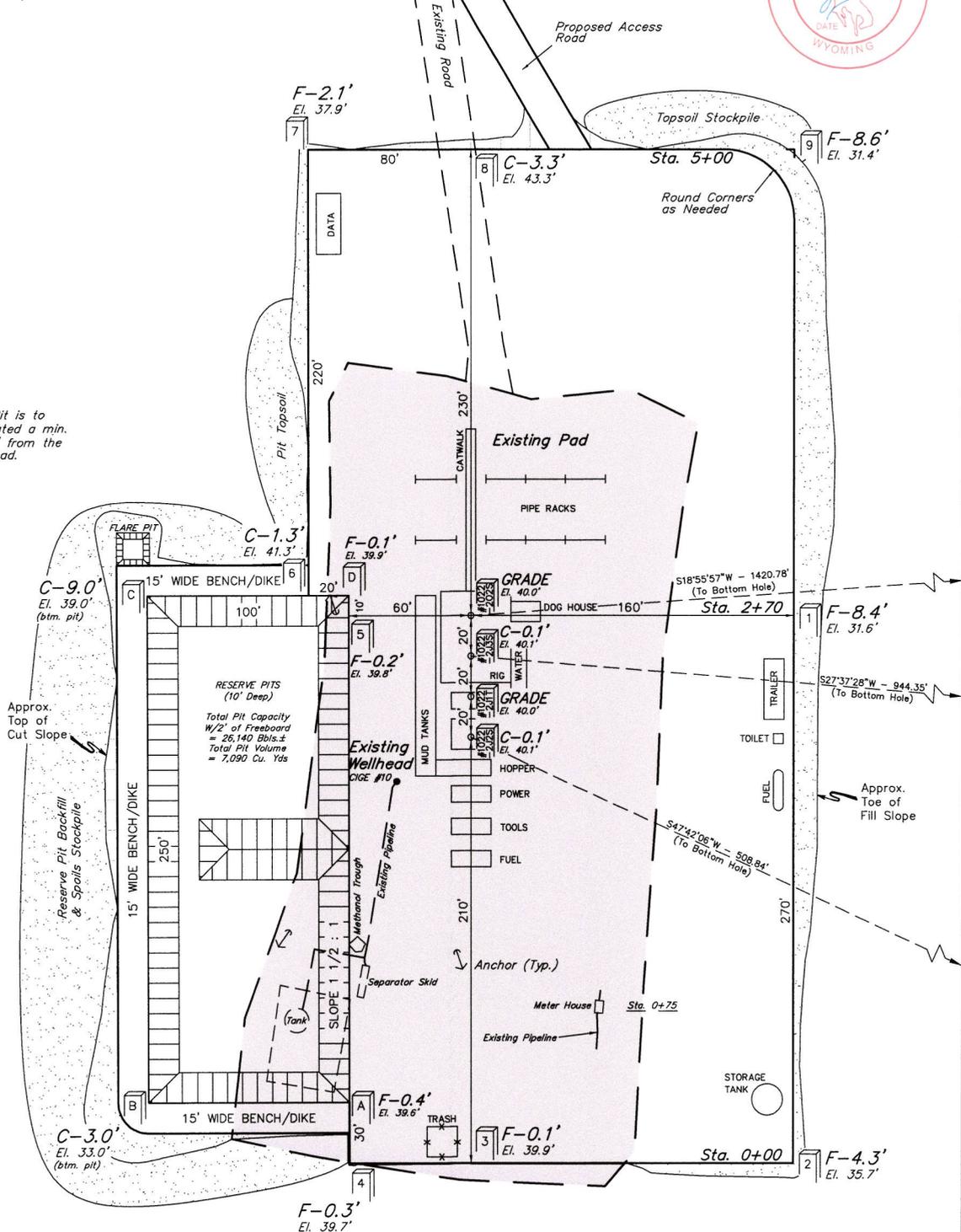
NBU #1022-202S, #1022-2J3S, #1022-2J1T & #1022-2J2S  
SECTION 2, T10S, R22E, S.L.B.&M.  
NW 1/4 SE 1/4

FIGURE #1

SCALE: 1" = 50'  
DATE: 07-08-08  
Drawn By: S.L.  
Revised: 08-26-08 C.C.



NOTE:  
Flare Pit is to be located a min. of 100' from the Well Head.



CIGE #10

(NAD 83)  
LATITUDE = 39°58'38.43" (39.977342)  
LONGITUDE = 109°24'12.86" (109.403572)  
(NAD 27)  
LATITUDE = 39°58'38.55" (39.977375)  
LONGITUDE = 109°24'10.41" (109.402892)

Elev. Ungraded Ground at #1022-202S Location Stake = 5040.0'  
Elev. Graded Ground at #1022-202S Location Stake = 5040.0'

UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

APIWellNo:43047502160000

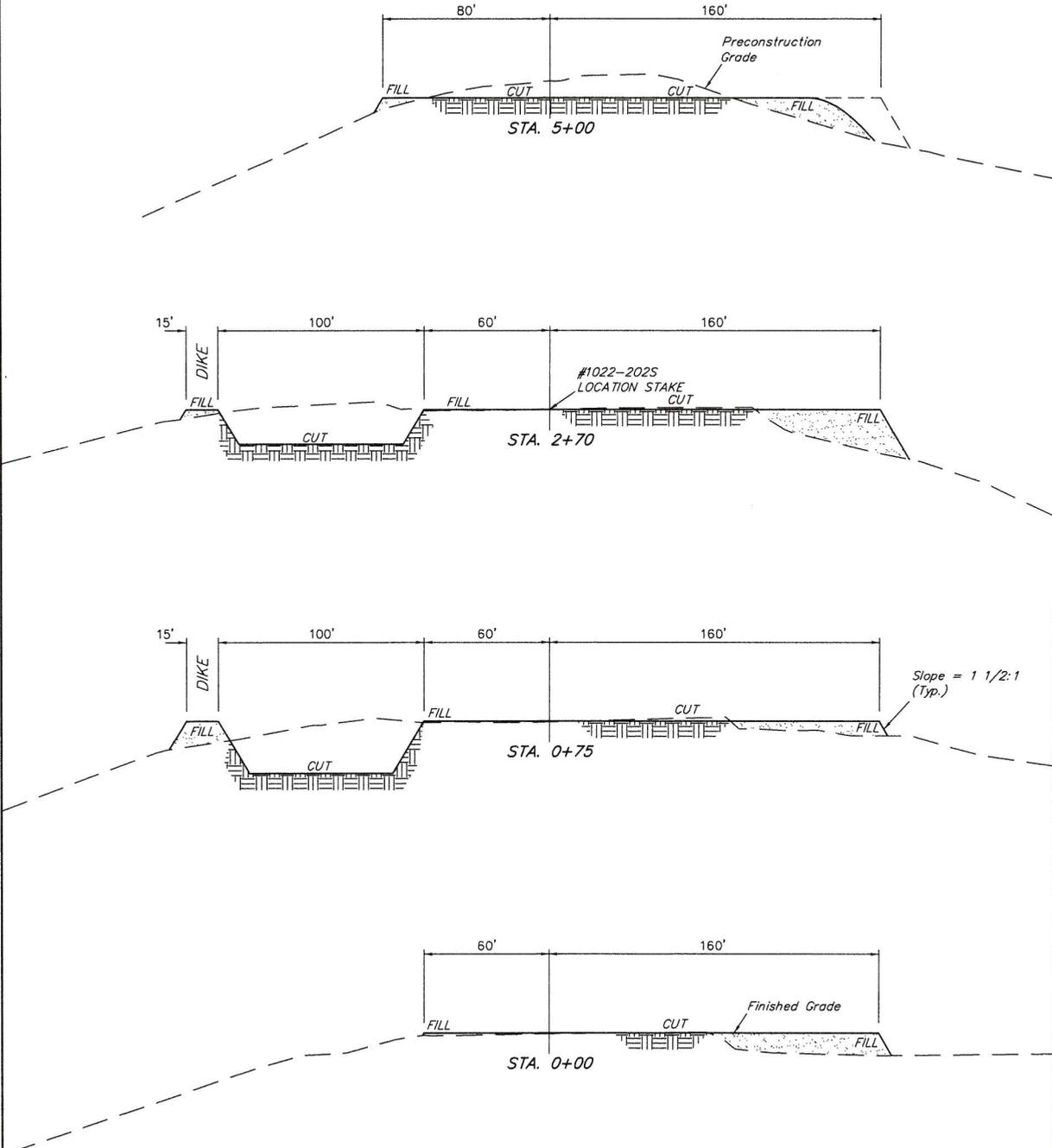
Kerr-McGee Oil & Gas Onshore LP

FIGURE #2

TYPICAL CROSS SECTIONS FOR

NBU #1022-202S, #1022-2J3S, #1022-2J1T & #1022-2J2S  
SECTION 2, T10S, R22E, S.L.B.&M.  
NW 1/4 SE 1/4

1" = 20'  
X-Section  
Scale  
1" = 50'  
DATE: 07-08-08  
Drawn By: S.L.  
Revised: 08-26-08 C.C.



NOTE:  
Topsoil should not be Stripped Below Finished Grade on Substructure Area.

**APPROXIMATE ACREAGES**  
WELL SITE DISTURBANCE = ±4.131 ACRES  
ACCESS ROAD DISTURBANCE = ±0.086 ACRES  
TOTAL = ±4.217 ACRES

\* NOTE:  
FILL QUANTITY INCLUDES 5% FOR COMPACTION

**APPROXIMATE YARDAGES**

(6") Topsoil Stripping	=	1,450 Cu. Yds.
Remaining Location	=	8,950 Cu. Yds.
<b>TOTAL CUT</b>	=	<b>10,400 CU.YDS.</b>
<b>FILL</b>	=	<b>9,120 CU.YDS.</b>

EXCESS MATERIAL	=	1,280 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	=	5,000 Cu. Yds.
DEFICIT UNBALANCE (After Interim Rehabilitation)	=	<3,720> Cu. Yds.

UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1077

APIWellNo:43047502160000

## Kerr-McGee Oil & Gas Onshore LP

NBU #1022-2J1T, #1022-2J2S, #1022-2J3S & #1022-2O2S  
SECTION 2, T10S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 0.3 MILES ON THE SEEP RIDGE ROAD TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 12.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN AN SOUTHERLY DIRECTION APPROXIMATELY 1.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 1.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN RIGHT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 1.4 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN SOUTHWESTERLY DIRECTION APPROXIMATELY 5.5 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 1.2 MILES TO THE BEGINNING OF THE PROPOSED ACCESS TO THE SOUTHWEST; FOLLOW ROAD FLAGS IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 120' TO THE EXISTING LOCATION CIGE #10 AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 56.0 MILES.



**Scientific Drilling**  
Rocky Mountain Operations

Project: Uintah County, UT  
Site: NBU 1022-2J Pad  
Well: NBU 1022-2O2S  
Wellbore: OH  
Design: Plan #1

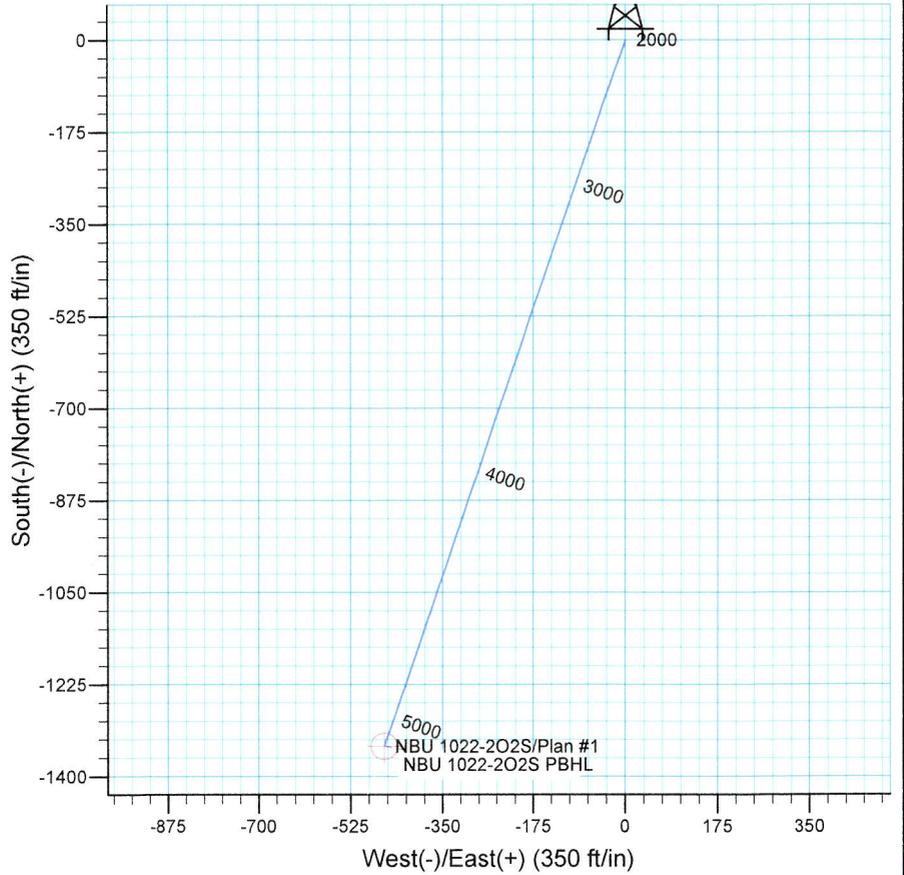
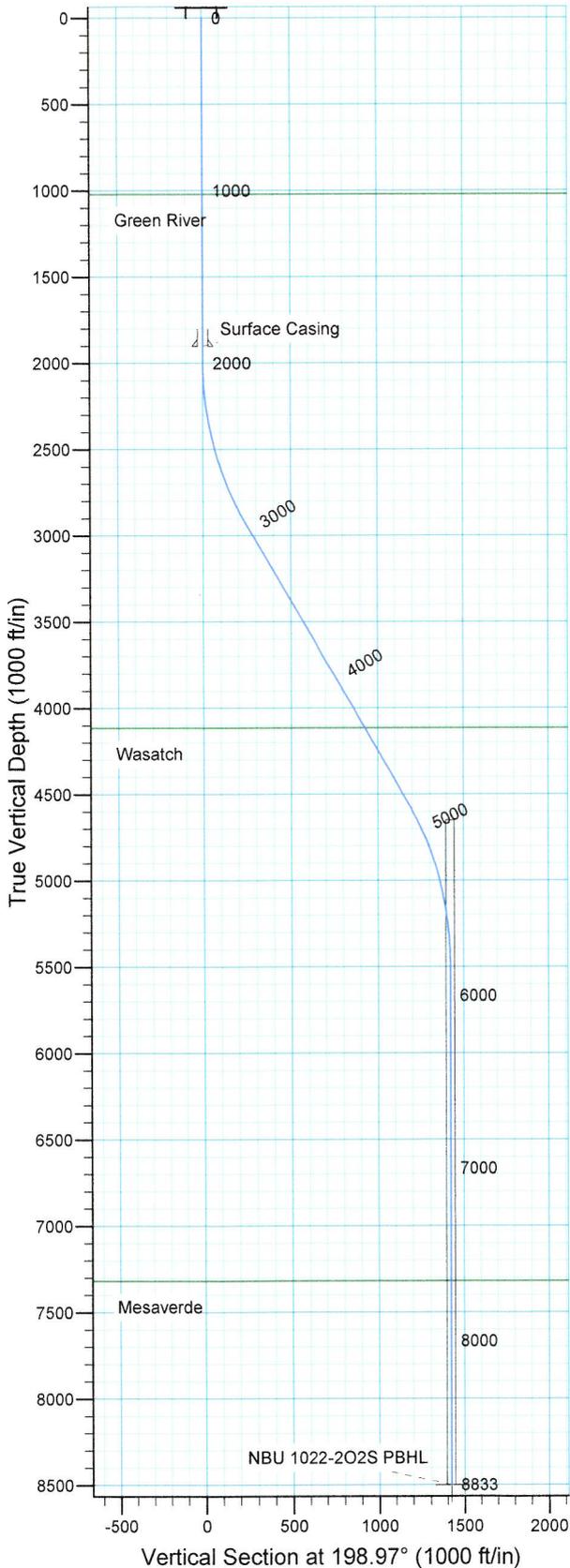
McGee Oil and Gas Onshore LP

WELL DETAILS: NBU 1022-2O2S

Azimuths to True North  
Magnetic North: 11.36°

Magnetic Field  
Strength: 52621.4snT  
Dip Angle: 65.94°  
Date: 2008-10-08  
Model: IGRF2005-10

GL 5040' & RKB 18' @ 5058.00ft 5040.00  
+N/-S 0.00 +E/-W 0.00 Northing 605630.27 Easting 2587697.40 Latitude 39° 58' 37.900 N Longitude 109° 24' 9.630 W



Plan: Plan #1 (NBU 1022-2O2S/OH)
Created By: Julie Cruse Date: 2008-10-08
PROJECT DETAILS: Uintah County, UT
Geodetic System: US State Plane 1927 (Exact solution) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Utah Central 4302 Location: Sec 2 T10S R22E System Datum: Mean Sea Level Local North: True

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3000.00	30.00	198.97	2954.93	-241.97	-83.20	3.00	198.97	255.87	
4816.07	30.00	198.97	4527.69	-1100.67	-378.44	0.00	0.00	1163.91	
5816.07	0.00	0.00	5482.62	-1342.64	-461.64	3.00	180.00	1419.78	
8833.45	0.00	0.00	8500.00	-1342.64	-461.64	0.00	0.00	1419.78	NBU 1022-2O2S PBHL

APIWellNo:43047502160000'



**Scientific Drilling**  
Rocky Mountain Operations

# **Kerr McGee Oil and Gas Onshore LP**

**Uintah County, UT  
NBU 1022-2J Pad  
NBU 1022-2O2S  
OH**

**Plan: Plan #1**

## **Standard Planning Report**

**08 October, 2008**

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	Uintah County, UT		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Utah Central 4302		

<b>Site</b>	NBU 1022-2J Pad, Sec 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	605,694.60 ft	<b>Latitude:</b>	39° 58' 38.550 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,587,635.16 ft	<b>Longitude:</b>	109° 24' 10.410 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in	<b>Grid Convergence:</b>	1.34 °

<b>Well</b>	NBU 1022-2O2S, 2354' FSL 1593' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	605,630.27 ft	<b>Latitude:</b>	39° 58' 37.900 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,587,697.40 ft	<b>Longitude:</b>	109° 24' 9.630 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,040.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	2008-10-08	11.36	65.94	52,621

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	198.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	30.00	198.97	2,954.93	-241.97	-83.20	3.00	3.00	0.00	198.97	
4,816.07	30.00	198.97	4,527.69	-1,100.67	-378.44	0.00	0.00	0.00	0.00	
5,816.07	0.00	0.00	5,482.62	-1,342.64	-461.64	3.00	-3.00	0.00	180.00	
8,833.45	0.00	0.00	8,500.00	-1,342.64	-461.64	0.00	0.00	0.00	0.00	NBU 1022-2O2S PBF

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,020.00	0.00	0.00	1,020.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Green River</b>									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	3.00	198.97	2,099.95	-2.48	-0.85	2.62	3.00	3.00	0.00
2,200.00	6.00	198.97	2,199.63	-9.89	-3.40	10.46	3.00	3.00	0.00
2,300.00	9.00	198.97	2,298.77	-22.24	-7.65	23.51	3.00	3.00	0.00
2,400.00	12.00	198.97	2,397.08	-39.47	-13.57	41.74	3.00	3.00	0.00
2,500.00	15.00	198.97	2,494.31	-61.54	-21.16	65.08	3.00	3.00	0.00
2,600.00	18.00	198.97	2,590.18	-88.40	-30.39	93.48	3.00	3.00	0.00
2,700.00	21.00	198.97	2,684.43	-119.96	-41.25	126.85	3.00	3.00	0.00
2,800.00	24.00	198.97	2,776.81	-156.14	-53.69	165.12	3.00	3.00	0.00
2,900.00	27.00	198.97	2,867.06	-196.85	-67.68	208.16	3.00	3.00	0.00
3,000.00	30.00	198.97	2,954.93	-241.97	-83.20	255.87	3.00	3.00	0.00
3,100.00	30.00	198.97	3,041.53	-289.25	-99.45	305.87	0.00	0.00	0.00
3,200.00	30.00	198.97	3,128.13	-336.54	-115.71	355.87	0.00	0.00	0.00
3,300.00	30.00	198.97	3,214.74	-383.82	-131.97	405.87	0.00	0.00	0.00
3,400.00	30.00	198.97	3,301.34	-431.10	-148.23	455.87	0.00	0.00	0.00
3,500.00	30.00	198.97	3,387.94	-478.39	-164.48	505.87	0.00	0.00	0.00
3,600.00	30.00	198.97	3,474.54	-525.67	-180.74	555.87	0.00	0.00	0.00
3,700.00	30.00	198.97	3,561.15	-572.95	-197.00	605.87	0.00	0.00	0.00
3,800.00	30.00	198.97	3,647.75	-620.23	-213.25	655.87	0.00	0.00	0.00
3,900.00	30.00	198.97	3,734.35	-667.52	-229.51	705.87	0.00	0.00	0.00
4,000.00	30.00	198.97	3,820.96	-714.80	-245.77	755.87	0.00	0.00	0.00
4,100.00	30.00	198.97	3,907.56	-762.08	-262.03	805.87	0.00	0.00	0.00
4,200.00	30.00	198.97	3,994.16	-809.37	-278.28	855.87	0.00	0.00	0.00
4,300.00	30.00	198.97	4,080.76	-856.65	-294.54	905.87	0.00	0.00	0.00
4,339.53	30.00	198.97	4,115.00	-875.34	-300.97	925.64	0.00	0.00	0.00
<b>Wasatch</b>									
4,400.00	30.00	198.97	4,167.37	-903.93	-310.80	955.87	0.00	0.00	0.00
4,500.00	30.00	198.97	4,253.97	-951.22	-327.06	1,005.87	0.00	0.00	0.00
4,600.00	30.00	198.97	4,340.57	-998.50	-343.31	1,055.87	0.00	0.00	0.00
4,700.00	30.00	198.97	4,427.17	-1,045.78	-359.57	1,105.87	0.00	0.00	0.00

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	30.00	198.97	4,513.78	-1,093.07	-375.83	1,155.87	0.00	0.00	0.00
4,816.07	30.00	198.97	4,527.69	-1,100.67	-378.44	1,163.91	0.00	0.00	0.00
4,900.00	27.48	198.97	4,601.28	-1,138.83	-391.56	1,204.26	3.00	-3.00	0.00
5,000.00	24.48	198.97	4,691.16	-1,180.25	-405.80	1,248.07	3.00	-3.00	0.00
5,100.00	21.48	198.97	4,783.21	-1,217.17	-418.50	1,287.11	3.00	-3.00	0.00
5,200.00	18.48	198.97	4,877.18	-1,249.48	-429.61	1,321.28	3.00	-3.00	0.00
5,300.00	15.48	198.97	4,972.81	-1,277.10	-439.10	1,350.48	3.00	-3.00	0.00
5,400.00	12.48	198.97	5,069.84	-1,299.95	-446.96	1,374.64	3.00	-3.00	0.00
5,500.00	9.48	198.97	5,167.99	-1,317.96	-453.15	1,393.69	3.00	-3.00	0.00
5,600.00	6.48	198.97	5,267.01	-1,331.09	-457.67	1,407.57	3.00	-3.00	0.00
5,700.00	3.48	198.97	5,366.62	-1,339.30	-460.49	1,416.26	3.00	-3.00	0.00
5,800.00	0.48	198.97	5,466.55	-1,342.57	-461.61	1,419.71	3.00	-3.00	0.00
5,816.07	0.00	0.00	5,482.62	-1,342.64	-461.64	1,419.78	3.00	-3.00	0.00
5,900.00	0.00	0.00	5,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,100.00	0.00	0.00	5,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,200.00	0.00	0.00	5,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,300.00	0.00	0.00	5,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,700.00	0.00	0.00	6,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,800.00	0.00	0.00	6,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
6,900.00	0.00	0.00	6,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,000.00	0.00	0.00	6,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,100.00	0.00	0.00	6,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,200.00	0.00	0.00	6,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,300.00	0.00	0.00	6,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,400.00	0.00	0.00	7,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,500.00	0.00	0.00	7,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,600.00	0.00	0.00	7,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,651.45	0.00	0.00	7,318.00	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
<b>Mesaverde</b>									
7,700.00	0.00	0.00	7,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,800.00	0.00	0.00	7,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
7,900.00	0.00	0.00	7,566.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,000.00	0.00	0.00	7,666.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,100.00	0.00	0.00	7,766.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,200.00	0.00	0.00	7,866.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,300.00	0.00	0.00	7,966.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,400.00	0.00	0.00	8,066.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,500.00	0.00	0.00	8,166.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,600.00	0.00	0.00	8,266.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,700.00	0.00	0.00	8,366.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,800.00	0.00	0.00	8,466.55	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00
8,833.45	0.00	0.00	8,500.00	-1,342.64	-461.64	1,419.78	0.00	0.00	0.00

APIWellNo:43047502160000'

**Database:** EDM 2003.16 Multiuser DB  
**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT  
**Site:** NBU 1022-2J Pad  
**Well:** NBU 1022-2O2S  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well NBU 1022-2O2S  
**TVD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**MD Reference:** GL 5040' & RKB 18' @ 5058.00ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
NBU 1022-2O2S PBHL	0.00	0.00	8,500.00	-1,342.64	-461.64	604,277.18	2,587,267.37	39° 58' 24.630 N	109° 24' 15.560 W
- plan hits target center									
- Circle (radius 25.00)									

Casing Points						
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter		
(ft)	(ft)		(in)	(in)		
1,900.00	1,900.00	Surface Casing	9.625	13.500		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,020.00	1,020.00	Green River		0.00		
4,339.53	4,115.00	Wasatch		0.00		
7,651.45	7,318.00	Mesaverde		0.00		

CLASS I REVIEW OF KERR-MCGEE OIL AND GAS  
ONSHORE LP'S 73 PROPOSED NBU WELL LOCATIONS  
IN TOWNSHIP 10S, RANGE 22E  
UINTAH COUNTY, UTAH

CLASS I REVIEW OF KERR-MCGEE OIL AND GAS  
ONSHORE LP'S 73 PROPOSED NBU WELL LOCATIONS  
IN TOWNSHIP 10S, RANGE 22E  
UINTAH COUNTY, UTAH

By:

Jacki A. Montgomery

Prepared For:

Bureau of Land Management  
Vernal Field Office  
and  
School and Institutional  
Trust Lands Administration

Prepared Under Contract With:

Kerr-McGee Oil and 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. 08-268

October 16, 2008

United States Department of Interior (FLPMA)  
Permit No. 08-UT-60122

Public Lands Policy Coordination Office  
Archaeological Survey Permit No. 117

## INTRODUCTION

A Class I literature review was completed by Montgomery Archaeological Consultants, Inc. (MOAC) in October 2008 of Kerr-McGee Onshore's 73 proposed NBU well locations in Township 10S, Range 22E. The project area is situated south of the White River and southeast of the Ouray, Uintah County, Utah. The wells are designated NBU 1022-1I, 1022-1J, 1022-1N, 1022-1P, 1022-2A2T, 1022-2A3S, 1022-2A4S, 1022-2B2S, 1022-2D, 1022-2F, 1022-2J1T, 1022-2J2S, 1022-2J3S, 1022-2O2S, 1022-03A2T, 1022-03A3S, 1022-03B2S, 1022-03B4T, 1022-03C1S, 1022-04H2CS, 1022-04H3BS, 1022-03H2T, 1022-03L4BS, 1022-03L3DS, 1022-03M1DS, 1022-03M2DS, 1022-03J3T, 1022-03L2T, 1022-03N4T, 1022-03P4T, 1022-03O3T, 1022-04K3S, 1022-04M1S, 1022-05H2BS, 1022-05H2CS, 1022-05E4S, 1022-05F2S, 1022-05K1S, 1022-05L1S, 1022-05IT, 1022-06DT, 1022-06ET, 1022-06FT, 1022-06I3AS, 1022-06J4CS, 1022-06O1BS, 1022-06P1CS, 1022-7AT, 1022-7A4BS, 1022-7A4CS, 1022-7B2DS, 1022-08GT, 1022-08IT, 1022-09AT, 1022-11F4S, 1022-11J3S, 1022-11K1T, 1022-11K2S, 1022-11K3S, 1022-11L2S, 1022-11L3S, 1022-11M1S, 1022-13H, 1022-24O, 1022-24O2S, 1022-24P2S, 1022-24P4S, 1022-25H, 1022-32B3S, 1022-32D1S, 1022-32D4AS, 1022-32D4DS, and 1022-35M.

The purpose of this Class I review is to identify, classify, and evaluate the previously conducted cultural resource inventories and archaeological sites in the project area in order to comply with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

The project area in which Kerr-McGee Onshore's 73 proposed NBU well locations occur was previously inventoried by MOAC in 2007 for the Class III inventory of Township 10 South, Range 22 East (Montgomery 2008; U-07-MQ-1438b,s,p). A file search was completed by consulting MOAC's Class I existing data review of 459 square miles (293,805 acres) covering the Greater NBU study area between Bonanza and Ouray in Uintah County, northeastern Utah (Patterson et al. 2008). Kerr-McGee Oil & Gas Onshore LP proposes to explore and develop oil and natural gas resources throughout the area. Record searches were performed for this Class I project by Marty Thomas at the Utah State Historic Preservation Office (SHPO) on various dates between June 14, 2006 and January 27, 2007. The results of this Class I data review and Class III inventory indicated that no previously recorded sites occur in the current project area.

## DESCRIPTION OF THE PROJECT AREA

The project area is situated west of the White River and both sides of Bitter Creek in the Uinta Basin. The legal description is Township 10S, Range 22E, Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 24, 25, 32, 36; Township 11S, Range 22E, Sections 1 and 2 (Figures 1, 2 and 3; Table 1). Land status is public land administered by the Bureau of Land Management (BLM) Vernal Field Office and School and Institutional Trust Lands Administration (SITLA) property.

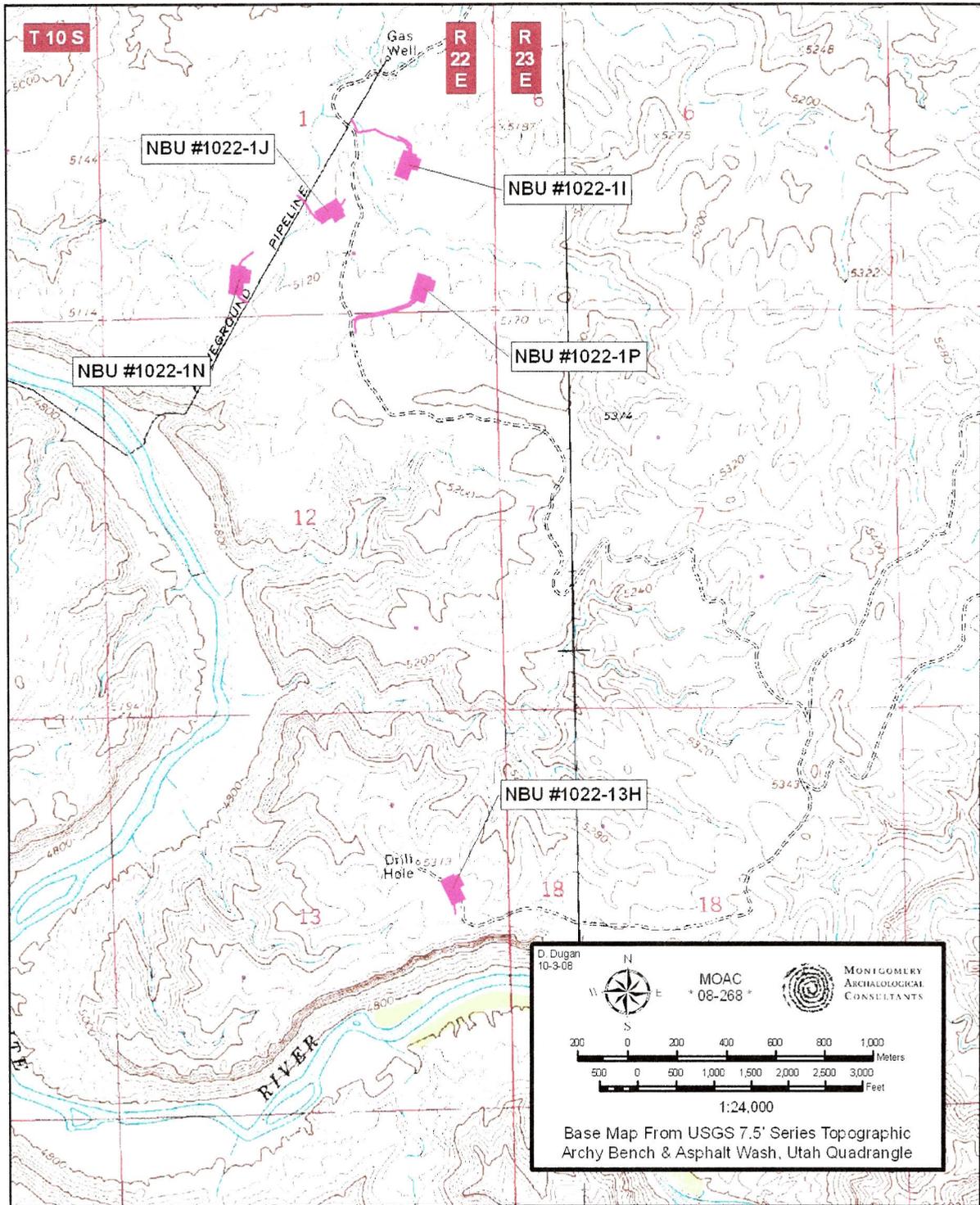
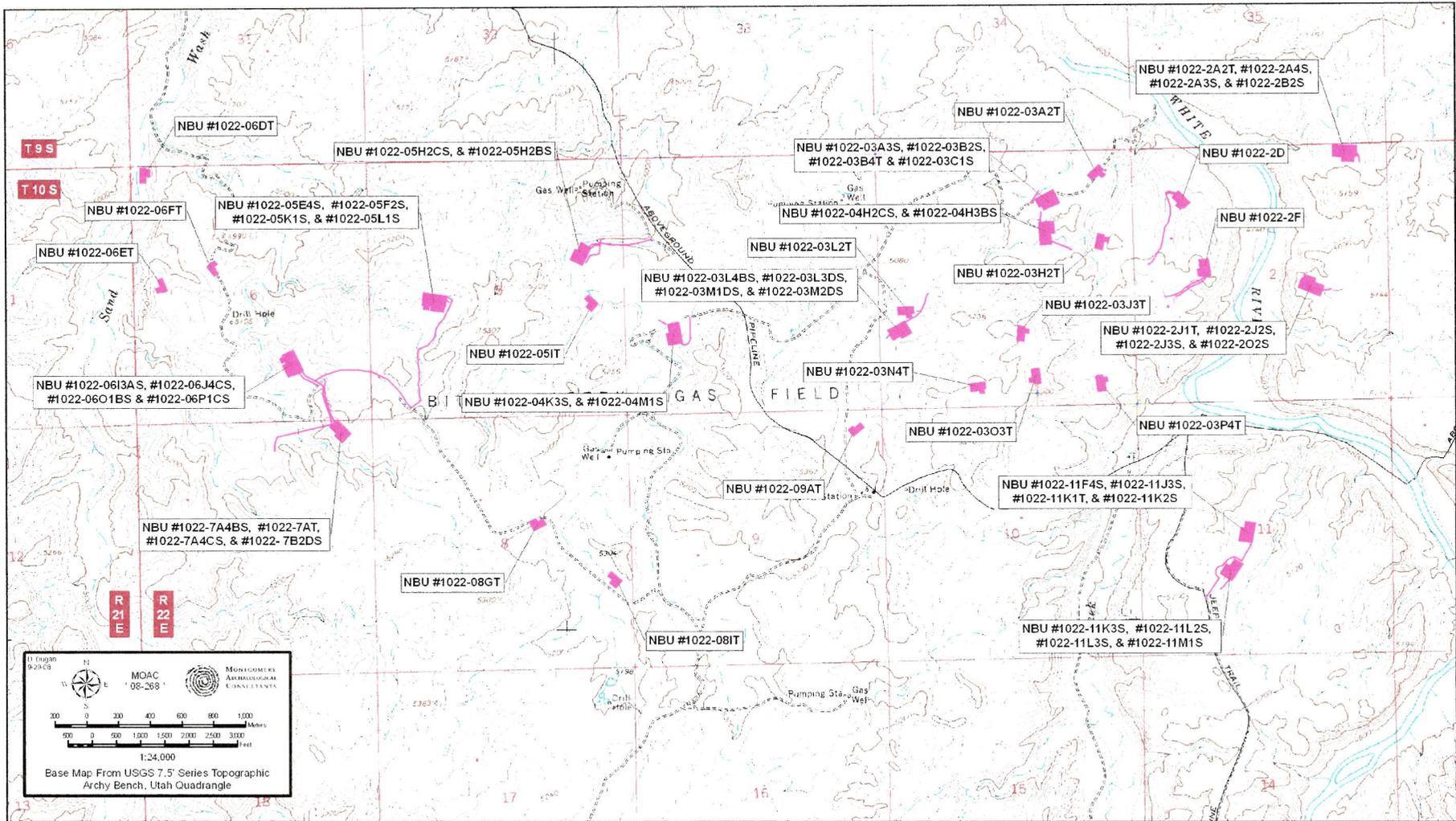


Figure 1. Location of Kerr-McGee Onshore's Well Pads in T10S, R22E.



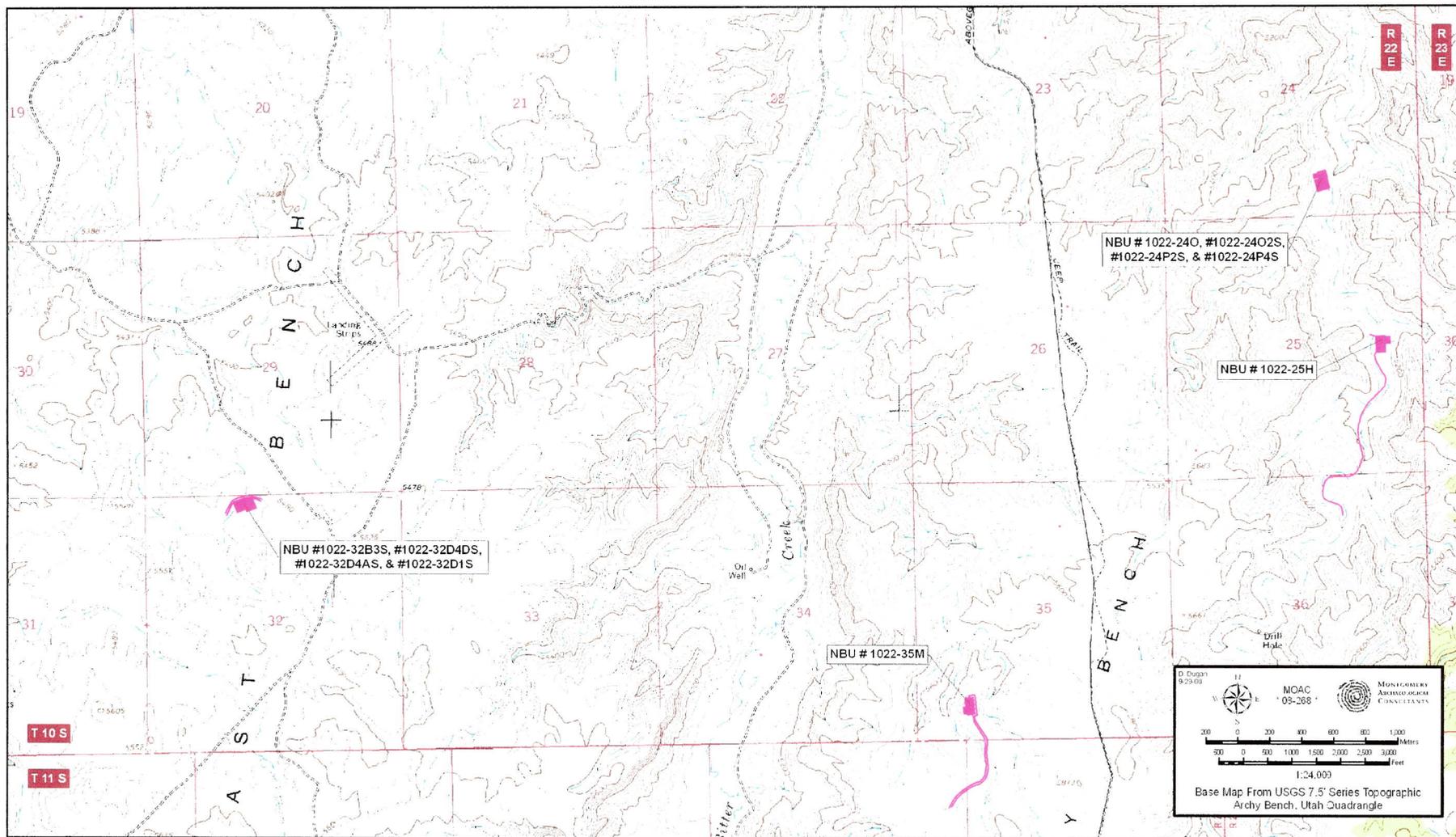


Table 1. Kerr-McGee Onshore's 73 NBU Well Locations.

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-1I	T10S, R22E, Sec. 1 NE/SE	Pipeline: 1000 ft Access: 200 ft	None
NBU 1022-1J	T10S, R22E, Sec. 1 NW/SE	Pipeline: 400 ft Access: 50 ft	None
NBU 1022-1N	T10S, R22E, Sec. 1 SE/SW	Pipeline: 150 ft Access: 200 ft	None
NBU 1022-1P	T10S, R22E, Sec. 1 SE/SE	Pipeline: 1050 ft Access: 1000 ft	None
NBU 1022-2A2T, 1022-2A4S 1022-243S, 1022-2B2S	T10S, R22E, Sec. 2 NE/NE	Access: 200 ft	None
NBU 1022-2D	T10S, R22E, Sec. 2 NW/NW	Pipeline: 1600 ft	None
NBU 1022-2F	T10S, R22E, Sec. 2 SE/NW	Pipeline: 800 ft Access: 1000 ft	None
NBU 1022-2J1T, 1022-2J2S, 1022-2J3S, 1022-2O2S	T10S, R22E, Sec. 2 NW/SE	Pipeline: 200 ft	None
NBU 1022-03A2T	T10S, R22E, Sec. 3 NE/NE	None	None
NBU1022-03A3S, 1022-03B2S 1022-03B4T, 1022-03C1S	T10S, R22E, Sec. 3 NW/NE	None	None
NBU 1022-04H2CS 1022-04H3BS	T10S, R22E, Sec. 3 SW/NE	Pipeline: 450 ft Access: 200 ft	None
NBU 1022-03H2T	T10S, R22E, Sec. 3 SE/NE	None	None
NBU 1022-03J3T	T10S, R22E, Sec. 3 NW/SE	None	None
NBU 1022-03L2T	T10S, R22E, Sec. 3 NW/SW	None	None
NBU 1022-03L4BS, 1022-03L3DS 1022-03M1DS, 1022-03M2DS	T10S, R22E, Sec. 3 NW/SW	Pipeline: 800 ft Access: 100 ft	None
NBU 1022-03N4T	T10S, R22E, Sec. 3 SE/SW	None	None
NBU 1022-03O3T	T10S, R22E, Sec. 3 SW/SE	None	None
NBU 1022-03P4T	T10S, R22E, Sec. 3 SE/SE	None	None

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-04K3S, 1022-04M1S	T10S, R22E, Sec. 4 NW/SW	Pipeline: 200 ft Access: 600 ft	None
NBU 1022-05H2CS, 1022-05H2BS	T10S, R22E, Sec. 5 SE/NE	Pipeline: 800 ft Access: 1200 ft	None
NBU 1022-05E4S, 1022-05F2S 1022-05K1S, 1022-05L1S	T10S, R22E Sec. 5 NE/SW	Pipeline: 4800 ft Access: 100 ft	None
NBU 1022-05IT	T10S, R22E, Sec. 5 NE/SE	None	None
NBU 1022-06DT	T10S, R22E, Sec. 6 NW/NW	None	None
NBU 1022-06ET	T10S, R22E, Sec. 6 SW/NW	None	None
NBU 1022-06FT	T10S, R22E, Sec. 6 SE/NW	None	None
NBU 1022-06I3AS, 1022-06J4CS 1022-06O1BS, 1022-06P1CS	T10S, R22E, Sec. 6 SW/SE	Pipeline: 1400 ft Access: 450 ft	None
NBU 1022-7A4BS, 1022-7AT 1022-7A4CS, 1022-7B2DS	T10S, R22E, Sec. 7 NE/NE	Pipeline: 1300 ft Access: 1000 ft	None
NBU 1022-08GT	T10SS, R22E, Sec. 8 SW/NE	None	None
NBU 1022-08IT	T10S, R22E, Sec. 8 NE/SE	None	None
NBU 1022-09AT	T10S, R22E, Sec. 9 NE/NE	None	None
NBU 1022-11F4S, 1022-11J3S, 1022-11K1T, 1022-11K2S	T10S, R22E, Sec. 11 NE/SW	Pipeline: 1600 ft	None
NBU 1022-11K3S, 1022-11L2S, 1022-11L3S, 1022-11M1S	T10S, R22E, Sec. 11 NE/SW	Pipeline: 500 ft Access: 250 ft	None
NBU 1022-13H	T10S, R22E, Sec. 13 SE/NE	Pipeline: 100 ft	
NBU 1022-24O, 1022-24O2S 1022-24P2S, 1022-24P4S	T10S, R22E, Sec. 24 SW/SE	None	None
NBU 1022-25H	T10S, R22E, Sec. 25 SE/NE	Pipeline: 4000 ft	None

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-32B3S, 1022-32D4DS 1022-3-2D4AS, 1022-32D1S	T10S, R22E, Sec. 32 NE/NW	Pipeline: 900 ft Access: 800 ft	None
NBU 1022-35M	T10S, R22E, Sec. 35 SW/SW	Pipeline: 2750 ft Access: 2200 ft	None

### Environmental Setting

The study area lies within the Uinta Basin physiographic unit, a distinctly bowl-shaped geologic structure (Stokes 1986:231). The Uinta Basin ecosystem is within the Green River drainage, considered to be the northernmost extension of the Colorado Plateau. The geology is comprised of Tertiary age deposits, which include Paleocene age deposits and Eocene age fluvial and lacustrine sedimentary rocks. The Uinta Formation, which is predominate in the project area, occurs as eroded outcrops (formed by fluvial deposited, stream laid interbedded sandstone and mudstone), and is known for its prolific paleontological localities. Specifically, the inventory area is situated south of the White River and on both sides of Cottonwood Wash. Elevation ranges from 5080 to 5680 ft asl. The project occurs within the Upper Sonoran Desert Shrub Association which includes sagebrush, shadscale, greasewood, mat saltbush, snakeweed, rabbitbrush, and prickly pear cactus. Modern disturbances include livestock grazing, roads, and oil/gas development.

### CLASS I RESULTS AND RECOMMENDATIONS

The Class I literature review of Kerr-McGee Onshore's 73 proposed NBU well locations and associated pipeline/access corridors in Township 10S, Range 22E resulted in the location of no cultural resources. Based on the findings, a determination of "no adverse impact" is recommended for the undertaking pursuant to Section 106, CFR 800.

### REFERENCES CITED

- Montgomery, J. A.  
2007 Cultural Resource Management Report for Kerr-McGee Oil and Gas Onshore LP's Greater NBU Blocks in Township 10 South, Range 22 East, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah. Report No. U-07-MQ-1438bsp.
- Patterson, J. J., J. Fritz, K. Lower-Eskelson, R. Stash and A. Thomas  
2008 NBU Class I Existing Data Review for Kerr-McGee Oil & Gas Onshore LP, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah.
- Stokes, W. L.  
1986 *Geology of Utah*. Utah Museum of Natural History and Utah Geological and Mineral Survey, Salt Lake City.

## Paleontological Reconnaissance Survey Report

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**Survey of Kerr McGee's Proposed Twin Wells "NBU #922-32AT,  
#922-32IT, #922-32MT, #922-32OIT, #922-35IT, #922-36NT"  
(Sec. 32, 35 & 36, T 9 S, R 22 E) & "NBU #1022-2A2T &  
#1022-2JIT" (Sec. 2, T 10 S, R 22 E)**

Archy Bench  
Topographic Quadrangle  
Uintah County, Utah

July 25, 2008

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

## INTRODUCTION

At the request of Raleen White of Kerr McGee Onshore LP and authorized by the BLM Vernal Field Office and James Kirkland of the Office of the State Paleontologist, a paleontological reconnaissance survey of Kerr McGee's proposed twin wells "NBU #922-32AT, #922-32IT, #922-32MT, #922-32OIT, #922-35IT, #922-36NT" (Sec. 32, 35 & 36, T 9 S, R 22 E) & "NBU #1022-2A2T & #1022-2JIT" (Sec. 2, T 10 S, R 22 E) was conducted by Stephen D. Sandau Jason Klimek and Arica Scheetz on July 22 and 23, 2008. The reconnaissance survey was conducted under the Utah BLM Paleontological Resources Use Permit #UT08-006C and Utah Paleontological Investigations Permit #07-356. This survey to locate, identify, and evaluate paleontological resources was done to meet requirements of the National Environmental Policy Act of 1969 and other State and Federal laws and regulations that protect paleontological resources.

## FEDERAL AND STATE REQUIREMENTS

As mandated by the Federal and State government, paleontologically sensitive geologic formations on State lands that are considered for exchange or may be impacted due to ground disturbance require paleontological evaluation. This requirement complies with:

- 1) The National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 et. Seq., P.L. 91-190);
- 2) The Federal Land Policy and Management Act (FLPMA) of 1976 (90 Stat. 2743, 43 U.S.C. § 1701-1785, et. Seq., P.L. 94-579);
- 3) The National Historic Preservation Act. 16 U.S.C. § 470-1, P.L. 102-575 in conjunction with 42 U.S.C. § 5320; and
- 4) The Utah Geological Survey. S. C. A.: 63-73-1. (1-21) and U.C.A.: 53B-17-603

The new Potential Fossil Yield Classification (PFYC) System (October, 2007) replaces the Condition Classification System from Handbook H-8270-1. Geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential.

- **Class 1 – Very Low.** Geologic units (igneous, metamorphic, or Precambrian) not likely to contain recognizable fossil remains.
- **Class 2 – Low.** Sedimentary geologic units not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils. (Including modern eolian, fluvial, and colluvial deposits etc...)
- **Class 3 – Moderate or Unknown.** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.
  - **Class 3a – Moderate Potential.** The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

- **Class 3b – Unknown Potential.** Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known.
- **Class 4 – High.** Geologic units containing a high occurrence of vertebrate fossils or scientifically significant invertebrate or plant fossils, but may vary in abundance and predictability.
  - **Class 4a** – Outcrop areas with high potential are extensive (greater than two acres) and paleontological resources may be susceptible to adverse impacts from surface disturbing actions.
  - **Class 4b** – Areas underlain by geologic units with high potential but have lowered risks of disturbance due to moderating circumstances such as a protective layer of soil or alluvial material; or outcrop areas are smaller than two contiguous acres.
- **Class 5 – Very High.** Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils.
  - **Class 5a** - Outcrop areas with very high potential are extensive (greater than two acres) and paleontological resources may be susceptible to adverse impacts from surface disturbing actions.
  - **Class 5b** - Areas underlain by geologic units with very high potential but have lowered risks of disturbance due to moderating circumstances such as a protective layer of soil or alluvial material; or outcrop areas are smaller than two contiguous acres.

It should be noted that many fossils, though common and unimpressive in and of themselves, can be important paleo-environmental, depositional, and chronostratigraphic indicators.

## LOCATION

Kerr McGee’s proposed twin wells “NBU #922-32AT, #922-32IT, #922-32MT, #922-32OIT, #922-35IT, #922-36NT” (Sec. 32, 35 & 36, T 9 S, R 22 E) & “NBU #1022-2A2T & #1022-2JIT” (Sec. 2, T 10 S, R 22 E) are on lands managed by the BLM and the State of Utah Trust Lands Administration (SITLA), in and slightly northeast of Sand Wash, south of Coyote Wash and on the East Bench, just 16 miles south and east of Ouray, Utah, and 12-16 miles west of Bonanza, Utah. The project area can be found on the Archy Bench 7.5 minute U. S. Geological Survey Quadrangle Map, Uintah County, Utah.

## PREVIOUS WORK

The basins of western North America have long produced some of the richest fossil collections in the world. Early Cenozoic sediments are especially well represented throughout the western interior. Paleontologists started field work in Utah's Uinta Basin as early as 1870 (Betts, 1871; Marsh, 1871, 1875a, 1875b). The Uinta Basin is located in the northeastern corner of Utah and covers approximately 31,000 sq. km (12,000 sq. miles) ranging in elevation from 1,465 to 2,130 m (4,800 to 7,000 ft) (Marsell, 1964; Hamblin et al., 1987). Middle to late Eocene time marked a period of dramatic change in the climate, flora, (Stucky, 1992) and fauna (Black and Dawson, 1966) of North America.

## GEOLOGICAL AND PALEONTOLOGICAL OVERVIEW

Early in the geologic history of Utah, some 1,000 to 600 Ma, an east-west trending basin developed creating accommodation for 25,000 feet of siliclastics. Uplift of that filled-basin during the early Cenozoic formed the Uinta Mountains (Rasmussen et al., 1999). With the rise of the Uinta Mountains the asymmetrical synclinal Uinta Basin is thought to have formed through the effects of down warping in connection with the uplift. Throughout the Paleozoic and Mesozoic deposition fluctuated between marine and non-marine environments laying down a thick succession of sediments in the area now occupied by the Uinta Basin. Portions of these beds crop out on the margins of the basin due to tectonic events during the late Mesozoic.

Early Tertiary Uinta Basin sediments were deposited in alternating lacustrine and fluvial environments. Large shallow lakes periodically covered most of the basin and surrounding areas during early to mid Eocene time (Abbott, 1957). These lacustrine sediments show up in the western part of the basin, dipping 2-3 degrees to the northeast and are lost in the subsurface on the east side. The increase of cross-bedded, coarse-grained sandstone and conglomerates preserved in paleo-channels indicates a transition to a fluvial environment toward the end of the epoch.

Four Eocene formations are recognized in the Uinta Basin: the Wasatch, Green River, Uinta and Duchesne River, respectively (Wood, 1941). The Uinta Formation is subdivided into two lithostratigraphic units namely: the Wagonhound Member (Wood, 1934), formerly known as Uinta A and B (Osborn, 1895, 1929) and the Myton Member previously regarded as the Uinta C.

Within the Uinta Basin in northeast Utah, the Uinta Formation in the western part of the basin is composed primarily of lacustrine sediments inter-fingering with over-bank deposits of silt and mudstone and westward flowing channel sands and fluvial clays, muds, and sands in the east (Bryant et al, 1990; Ryder et al, 1976). Stratigraphic work done by early geologists and paleontologists within the Uinta Formation focused on the definition of rock units and attempted to define a distinction between early and late Uintan faunas (Riggs, 1912; Peterson and Kay, 1931; Kay 1934). More recent work focused on magnetostratigraphy, radioscopic chronology, and continental biostratigraphy (Flynn, 1986; Prothero, 1996). Well-known for its fossiliferous nature and distinctive mammalian fauna of mid-Eocene Age, the Uinta Formation is the type formation for the Uintan Land Mammal Age (Wood et al, 1941).

The Duchesne River Formation of the Uinta Basin in northeastern Utah is composed of a succession of fluvial and flood plain deposits composed of mud, silt, and sandstone. The source area for these late Eocene deposits is from the Uinta Mountains indicated by paleocurrent data (Anderson and Picard, 1972). In Peterson's (1931c) paper, the name "Duchesne Formation" was applied to the formation and it was later changed to the "Duchesne River Formation" by Kay (1934). The formation is divided up into four members: the Brennan Basin, Dry Gulch Creek, LaPoint, and Starr Flat (Anderson and Picard, 1972). Debates concerning the Duchesne River Formation, as to whether its age was late Eocene or early Oligocene, have surfaced throughout the literature of the last century (Wood et al., 1941; Scott 1945). Recent paleo-magnetostratigraphic work (Prothero, 1996) shows that the Duchesne River Formation is late Eocene in time.

## **FIELD METHODS**

In order to determine if the proposed project area contained any paleontological resources, a reconnaissance survey was performed. An on-site observation of the proposed areas undergoing surficial disturbance is necessary because judgments made from topographic maps alone are often unreliable. Areas of low relief have potential to be erosional surfaces with the possibility of bearing fossil materials rather than surfaces covered by unconsolidated sediment or soils.

When found within the proposed construction areas, outcrops and erosional surfaces were checked to determine if fossils were present and to assess needs. Careful effort is made during surveys to identify and evaluate significant fossil materials or fossil horizons when they are found. Microvertebrates, although rare, are occasionally found in anthills or upon erosional surfaces and are of particular importance.

## **PROJECT AREA**

The project area is situated in the Wagonhound Member (Uinta A & B) of the Uinta Formation. The following list provides a description of the individual wells and their associated pipelines and access roads.

### **NBU #922-32AT**

The proposed twin is located on the existing well "NBU #190" in the NE/NE quarter-quarter section of Sec. 32, T 9 S, R 22 E (Figure 1). The proposed twin is located on a colluvium-covered hill derived from underlying sandstones which outcrop along the perimeter. No fossils were found.

### **NBU #922-32IT**

The proposed twin is located on the existing well "NBU #282" in the NE/SE quarter-quarter section of Sec. 32, T 9 S, R 22 E (Figure 1). The proposed twin is located on a colluvium-covered hill of inter-bedded brown/tan sandstones. No fossils were found.

**NBU #922-32MT**

The proposed twin is located on the existing well “NBU #281” in the SW/SW quarter-quarter section of Sec. 32, T 9 S, R 22 E (Figure 1). The proposed twin is located among hills of inter-bedded tan sandstones and variegated green siltstone.

No fossils were found.

**NBU #922-32OIT**

The proposed twin is located on the existing well “NBU #404” in the SW/SE quarter-quarter section of Sec. 32, T 9 S, R 22 E (Figure 1). The proposed twin is located among hills of inter-bedded gray sandstones and variegated mudstones. No fossils were found.

**NBU #922-35IT**

The proposed twin is located on the existing well “CIGE #118” in the NE/SE quarter-quarter section of Sec. 35, T 9 S, R 22 E (Figure 2). The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones which outcrop along the perimeter. No fossils were found.

**NBU #922-36NT**

The proposed twin is located on a previously existing well “CIGE #147” in the SE/SW quarter-quarter section of Sec. 36, T 9 S, R 22 E (Figure 2). The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones. No fossils were found.

**NBU #1022-2JIT (multi-well also included: 2J25, 2J3S & 2O2S)**

The proposed twin is located on the existing well “CIGE #10” in the NW/SE quarter-quarter section of Sec. 2, T 10 S, R 22 E (Figure 2). The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones. No fossils were found.

**NBU #1022-2A2T (multi-well also included: 2B2S, 2A3S & 2A4S)**

The proposed twin is located on the existing well “CIGE #67A” in the NE/NE quarter-quarter section of Sec. 2, T 10 S, R 22 E (Figure 2). The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones. No fossils were found.

## SURVEY RESULTS

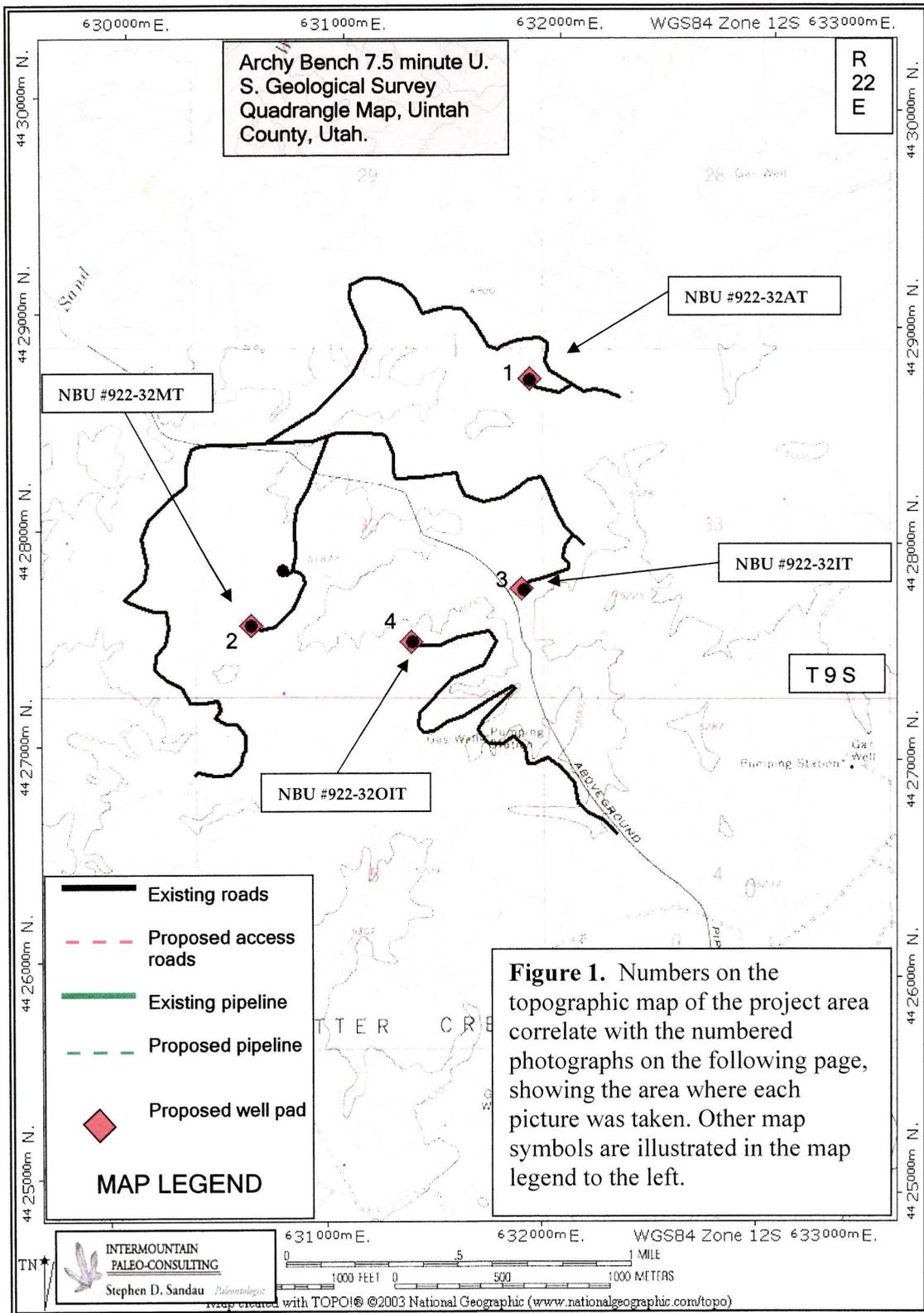
PROJECT	GEOLOGY	PALEONTOLOGY
"NBU #922-32AT" (Sec. 32, T 9 S, R 22 E)	The proposed twin is located on a colluvium-covered hill derived from underlying sandstones which outcrop along the perimeter.	No fossils were found. <b>Class 3a</b>
"NBU #922-32IT" (Sec. 32, T 9 S, R 22 E)	The proposed twin is located on a colluvium-covered hill of inter-bedded brown/tan sandstones.	No fossils were found. <b>Class 3a</b>
"NBU #922-32MT" (Sec. 32, T 9 S, R 22 E)	The proposed twin is located among hills of inter-bedded tan sandstones and variegated green siltstone.	No fossils were found. <b>Class 3a</b>
"NBU #922-32OIT" (Sec. 32, T 9 S, R 22 E)	The proposed twin is located among hills of inter-bedded gray sandstones and variegated mudstones.	No fossils were found. <b>Class 3a</b>
"NBU #922-35IT" (Sec. 35, T 9 S, R 22 E)	The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones which outcrop along the perimeter.	No fossils were found. <b>Class 3a</b>
"NBU #922-36NT" (Sec. 36, T 9 S, R 22 E)	The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones.	No fossils were found <b>Class 3a</b>
"NBU #1022-2A2T" (Sec. 2, T 10 S, R 22 E)	The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones.	No fossils were found. <b>Class 3a</b>
"NBU #1022-2JIT" (Sec. 2, T 10 S, R 22 E)	The proposed twin is located on colluvium-covered hills derived from underlying tan sandstones.	No fossils were found. <b>Class 3a</b>

## RECOMMENDATIONS

A reconnaissance survey was conducted for Kerr McGee's proposed twin wells "NBU #922-32AT, #922-32IT, #922-32MT, #922-32OIT, #922-35IT, #922-36NT" (Sec. 32, 35 & 36, T 9 S, R 22 E) & "NBU #1022-2A2T & #1022-2JIT" (Sec. 2, T 10 S, R 22 E). The twin wells covered in this report showed no signs of vertebrate fossils. Therefore, we recommend that no paleontological restrictions should be placed on the development of the projects included in this report.

Buried pipeline will encounter Uinta formational sediments along most of the staked pipeline corridors yet indications from surface fossils predict that little if any vertebrate fossils will be disturbed.

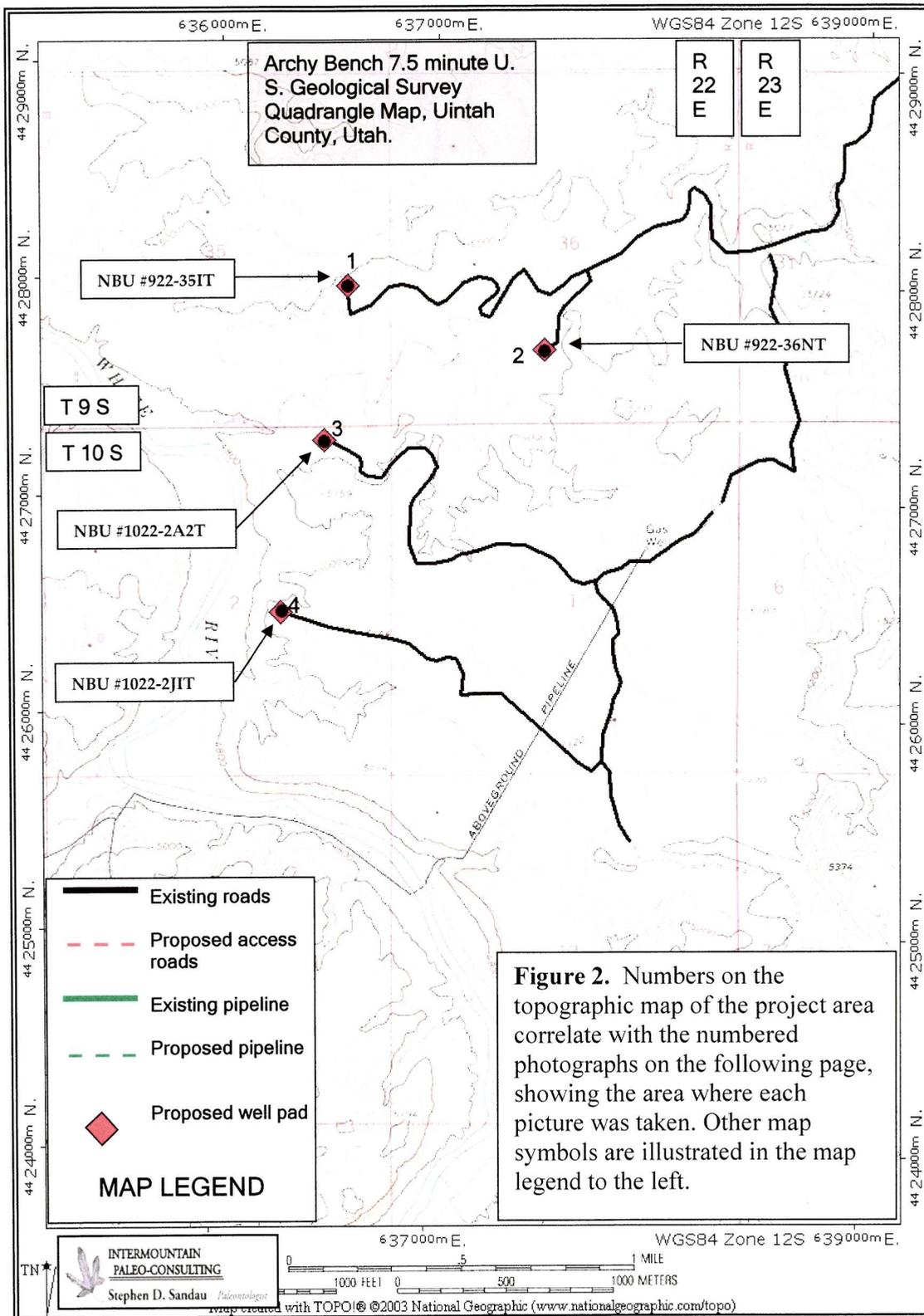
**Nevertheless, if any vertebrate fossil(s) are found during construction within the project area, Operator (Lease Holder) will report all occurrences of paleontological resources discovered to a geologist with the Vernal Field Office of the BLM and the Office of the State Paleontologist. The operator is responsible for informing all persons in the areas who are associated with this project of the requirements for protecting paleontological resources. Paleontological resources found on the public lands are recognized by the BLM and State as constituting a fragile and nonrenewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage. These resources are afforded protection under 43 CFR 3802 and 3809, and penalties possible for the collection of vertebrate fossils are under 43 CFR 8365.1-5.**



'APIWellNo:43047502160000'

Figure 1. *continued...*





'APIWellNo:43047502160000'

Figure 2. *continued...*



## REFERENCES CITED

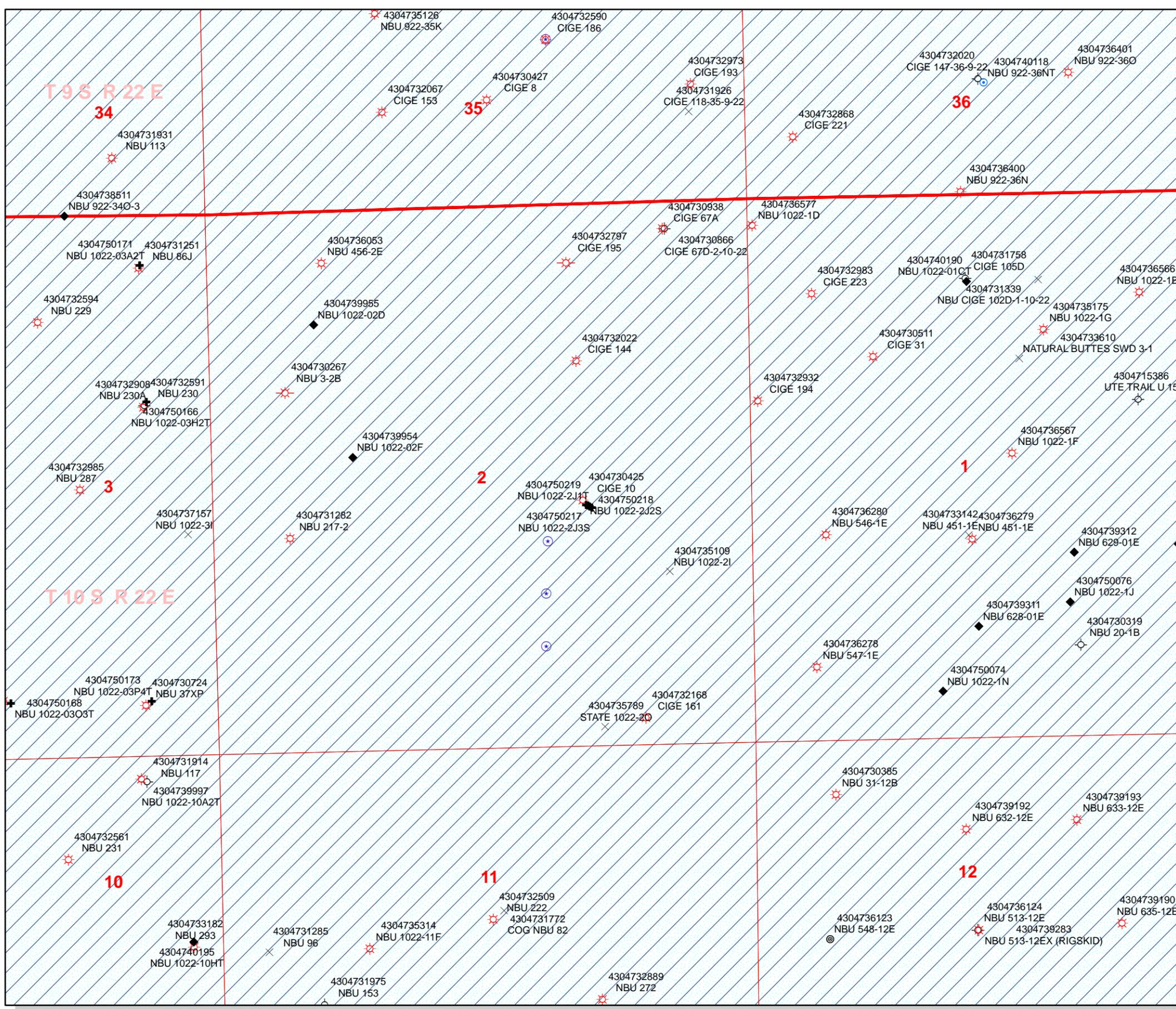
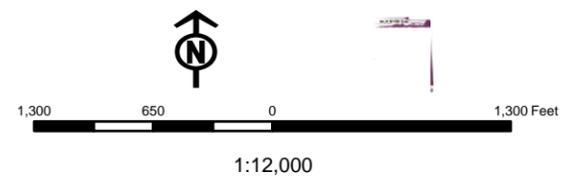
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**API Number: 4304750216**  
**Well Name: NBU 1022-202S**  
**Township 10.0 S Range 22.0 E Section 2**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason

<b>Units</b>	<b>Wells Query Events</b>
ACTIVE	<all other values>
EXPLORATORY	<b>GIS_STAT_TYPE</b>
GAS STORAGE	<Null>
NF PP OIL	APD
NF SECONDARY	DRL
PI OIL	GI
PP GAS	GS
PP GEOTHERML	LA
PP OIL	NEW
SECONDARY	OPS
TERMINATED	PA
<b>Fields</b>	PGW
ACTIVE	POW
COMBINED	RET
Sections	SGW
Township	SOW
	TA
	TW
	WD
	WI
	WS





Kerr-McGee Oil & Gas Onshore LP  
1999 Broadway, Suite 3700  
Denver, CO 80205

November 3, 2008

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

Re: Directional Drilling R649-3-11  
NBU 1022-2O2S  
T10S R22E  
Section 2: SWSE  
NWSE 2354' FSL, 1593' FEL (surface)  
SWSE 1010' FSL, 2055' FEL (bottom hole)  
Uintah County, Utah

1164

Dear Mrs. Mason:

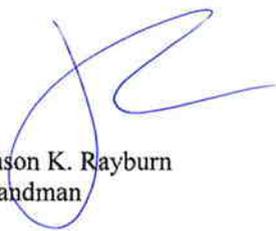
Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 1022-2O2S is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore

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

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

  
Jason K. Rayburn  
Landman

RECEIVED

NOV 10 2008

DIV. OF OIL, GAS & MINING

# 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)

November 12, 2008

### Memorandum

To: Assistant District Manager Minerals, Vernal District  
From: Michael Coulthard, Petroleum Engineer  
Subject: 2008 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 2008 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50212	NBU 1022-11F4S	Sec 11 T10S R22E 2571 FSL 2215 FWL BHL Sec 11 T10S R22E 2615 FNL 2540 FWL
43-047-50213	NBU 1022-11J3S	Sec 11 T10S R22E 2551 FSL 2212 FWL BHL Sec 11 T10S R22E 1600 FSL 2340 FEL
43-047-50214	NBU 1022-11K2S	Sec 11 T10S R22E 2512 FSL 2206 FWL BHL Sec 11 T10S R22E 2230 FSL 1690 FWL
43-047-50215	NBU 1022-11K1T	Sec 11 T10S R22E 2531 FSL 2209 FWL
43-047-50216	NBU 1022-2O2S	Sec 02 T10S R22E 2354 FSL 1593 FEL BHL Sec 02 T10S R22E 1010 FSL 2055 FEL
43-047-50217	NBU 1022-2J3S	Sec 02 T10S R22E 2362 FSL 1612 FEL BHL Sec 02 T10S R22E 1525 FSL 2050 FEL
43-047-50218	NBU 1022-2J2S	Sec 02 T10S R22E 2377 FSL 1648 FEL BHL Sec 02 T10S R22E 2035 FSL 2025 FEL
43-047-50219	NBU 1022-2J1T	Sec 02 T10S R22E 2370 FSL 1630 FEL

Page 2

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50220	NBU 1022-11M1S	Sec 11 T10S R22E 1750 FSL 1885 FWL BHL Sec 11 T10S R22E 1035 FSL 0850 FWL
43-047-50221	NBU 1022-11L2S	Sec 11 T10S R22E 1798 FSL 1921 FWL BHL Sec 11 T10S R22E 2495 FSL 0080 FWL
43-047-50222	NBU 1022-11K3S	Sec 11 T10S R22E 1766 FSL 1897 FWL BHL Sec 11 T10S R22E 1655 FSL 1735 FWL
43-047-50223	NBU 1022-11L3S	Sec 11 T10S R22E 1782 FSL 1909 FWL BHL Sec 11 T10S R22E 1850 FSL 0040 FWL

This office has no objection to permitting the wells 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:11-12-08

**From:** Jim Davis  
**To:** Bonner, Ed; Mason, Diana  
**Date:** 12/16/2008 10:30 AM  
**Subject:** KMG well approvals (4 on one pad)

**CC:** Garrison, LaVonne  
The following wells have been approved by SITLA including arch and paleo clearance.

4304750216 220E	NBU 1022-2O2S	Kerr-McGee Oil & Gas	630	Natural Buttes	NWSE	2	100S
4304750217 220E	NBU 1022-2J3S	Kerr-McGee Oil & Gas	630	Natural Buttes	NWSE	2	100S
4304750218 220E	NBU 1022-2J2S	Kerr-McGee Oil & Gas	630	Natural Buttes	NWSE	2	100S
4304750219 220E	NBU 1022-2J1T	Kerr-McGee Oil & Gas	630	Natural Buttes	NWSE	2	100S

-Jim

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

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-202S 43047502160		
String	Surf	Prod	
Casing Size(")	9.625	4.500	
Setting Depth (TVD)	1900	8833	
Previous Shoe Setting Depth (TVD)	60	1900	
Max Mud Weight (ppg)	8.4	12.0	
BOPE Proposed (psi)	500	5000	
Casing Internal Yield (psi)	3520	7780	
Operators Max Anticipated Pressure (psi)	5270	11.5	

Calculations	Surf String	9.625	"
Max BPH (psi)	.052*Setting Depth*MW=	830	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	602	NO Air/Mist drill - OK
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	412	YES
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	425	NO Reasonable depth, no expected pressures
Required Casing/BOPE Test Pressure=		1900	psi
*Max Pressure Allowed @ Previous Casing Shoe=		60	psi *Assumes 1psi/ft frac gradient

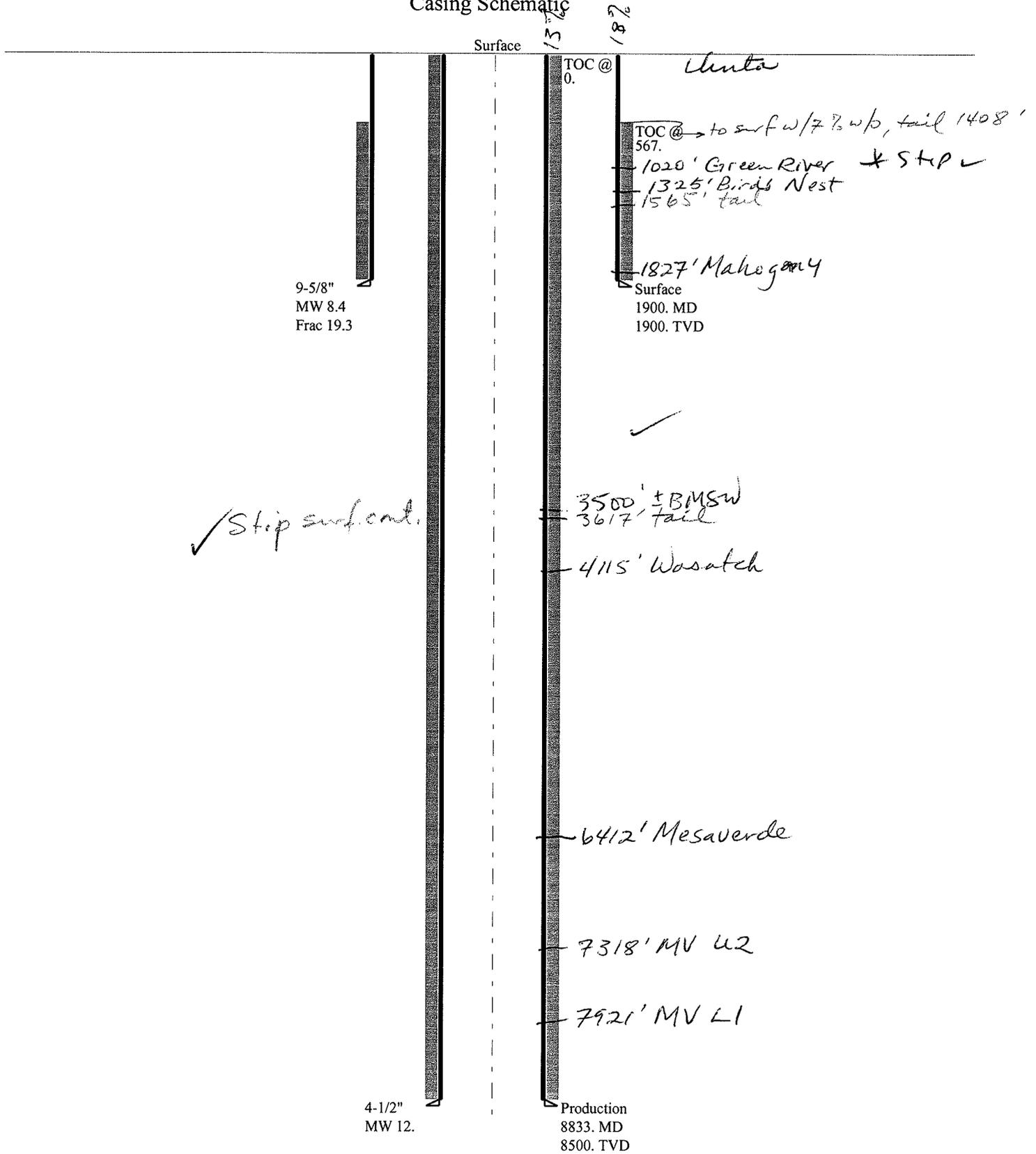
Calculations	Prod String	4.500	"
Max BPH (psi)	.052*Setting Depth*MW=	5512	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4452	YES OK
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3569	YES
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	3987	NO Reasonable, note max allowed pressure
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		1900	psi *Assumes 1psi/ft frac gradient

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

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

# 43047502160000 NBU 1022-202S

## Casing Schematic



Well name:	<b>43047502160000 NBU 1022-202S</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Surface	Project ID: 43-047-50216
Location:	UINTAH COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 8.400 ppg  
Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 102 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

Cement top: 567 ft

**Burst**

Max anticipated surface pressure: 1,672 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 1,900 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
Neutral point: 1,664 ft

**Non-directional string.**

**Re subsequent strings:**

Next setting depth: 8,500 ft  
Next mud weight: 12.000 ppg  
Next setting BHP: 5,298 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 1,900 ft  
Injection pressure: 1,900 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	1900	9.625	36.00	J-55	LT&C	1900	1900	8.796	15537

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	829	2020	2.436	1900	3520	1.85	68.4	453	6.62 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: January 28, 2009  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 1900 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>43047502160000 NBU 1022-202S</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Production	Project ID: 43-047-50216
Location:	UINTAH COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 12.000 ppg  
Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 194 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

Cement top: Surface

**Burst**

Max anticipated surface pressure: 3,429 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 5,298 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
Neutral point: 7,308 ft

**Directional Info - Build & Drop**

Kick-off point 2100 ft  
Departure at shoe: 1420 ft  
Maximum dogleg: 3 °/100ft  
Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	8833	4.5	11.60	I-80	LT&C	8500	8833	3.875	116596

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5298	6360	1.200	5298	7780	1.47	98.6	212	2.15 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: January 28, 2009  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 8500 ft, a mud weight of 12 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 1022-2O2S  
**API Number** 43047502160000      **APD No** 1164      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** NWSE      **Sec 2 Tw 10.0S Rng 22.0E** 2354 FSL 1593 FEL  
**GPS Coord (UTM)** 636426 4426249      **Surface Owner**

**Participants**

Floyd Bartlett (DOGM), Jim Davis (SITLA), Ramie Hoopes, Griz Oleen and Tony Kzneck (Kerr McGee), Pat Rainbolt (UDWR) and David Kay (Uintah Engineering and Land Surveying).

**Regional/Local Setting & Topography**

The general area is in the southeast end of the Natural Buttes Unit, which contains the White River and short rugged drainages that drain into the White River. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River varies from ¼ mile to 2 miles. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 43 air miles to the northwest. Access from Ouray, Utah is approximately 25 road miles following Utah State, Uintah County and oilfield development roads to the location.

The proposed pad encompasses the existing pad of the CIGE 10 gas well and will be enlarged in all directions except to the west. The location is near the end of a flat-topped ridge which runs in an east to west direction and ends west of the proposed pad at some steep ledged breaks. Swales exist to the south and east which becomes deep secondary canyons of the White River. The planned reserve pit is on the north side of the location and also extends to near the edge of a seep side-slope of a canyon. Pit corner C is embanked by 0.6 ‘ of fill but should be stable with the 15-foot wide outer embankment. The existing pad shows no stability problems and the site has no significant concerns, which would prohibit constructing an enlarged pad, drilling and operating the planned wells, and is the only suitable location in the immediate area.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA reviewed the site and had no concerns regarding the proposal.

**Surface Use Plan**

**Current Surface Use**

Existing Well Pad  
 Wildlife Habitat

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0	<b>Width 335 Length 500</b>	Onsite	UNTA

**Ancillary Facilities** N

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Poorly vegetated with cheatgrass, black sagebrush, broom snakeweed, shadscale, rabbitbrush, pepper weed, halogeton, black sage and annuals.

Sheep, deer, antelope, coyote, and other small mammals and birds.

**Soil Type and Characteristics**

Shallow rocky sandy loam.

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diversion Required?** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** **Paleo Potential Observed?** N **Cultural Survey Run?** **Cultural Resources?** N

**Reserve Pit**

**Site-Specific Factors**

**Site Ranking**

<b>Distance to Groundwater (feet)</b>	>200	0
<b>Distance to Surface Water (feet)</b>	>1000	0
<b>Dist. Nearest Municipal Well (ft)</b>	>5280	0
<b>Distance to Other Wells (feet)</b>		20
<b>Native Soil Type</b>	Mod permeability	10
<b>Fluid Type</b>	Fresh Water	5
<b>Drill Cuttings</b>	Normal Rock	0
<b>Annual Precipitation (inches)</b>		0
<b>Affected Populations</b>		
<b>Presence Nearby Utility Conduits</b>	Not Present	0
	<b>Final Score</b>	35

1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned in an area of cut in the northwest corner of the location. Dimensions are 100' x 250' x 10' deep with 2' of freeboard. A 15' bench is provided on the outer sides. Because the length of time the reserve pit will be used and the roughness of the terrain, Kerr McGee committed to line it with a double 20-mil.liner and an appropriate thickness of felt sub-liner to cushion the rock.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 40 **Pit Underlayment Required?** Y

**Other Observations / Comments**

New cut-sheets, Figure #1 were prepared to slightly lower the surface to provide the fill needed for the enlarged pad.

Floyd Bartlett  
**Evaluator**

11/18/2008  
**Date / Time**

# Application for Permit to Drill Statement of Basis

2/2/2009

## Utah Division of Oil, Gas and Mining

Page 1

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
1164	43047502160000	FILED	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1022-2O2S		<b>Unit</b>	NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	NWSE 2 10S 22E S 2354 FSL 1593 FEL GPS Coord (UTM)			636388E	4426234N

**Geologic Statement of Basis**

Kerr McGee proposes to set 1,900' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 3,500'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 2. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

Brad Hill  
**APD Evaluator**

12/13/2008  
**Date / Time**

**Surface Statement of Basis**

The general area is in the southeast end of the Natural Buttes Unit, which contains the White River and short rugged drainages that drain into the White River. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River varies from ¼ mile to 2 miles. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 43 air miles to the northwest. Access from Ouray, Utah is approximately 25 road miles following Utah State, Uintah County and oilfield development roads to the location.

The proposed pad encompasses the existing pad of the CIGE 10 gas well and will be enlarged in all directions except to the west. The location is near the end of a flat-topped ridge which runs in an east to west direction and ends west of the proposed pad at some steep ledged breaks. Swales exist to the south and east which becomes deep secondary canyons of the White River. The planned reserve pit is on the north side of the location and also extends to near the edge of a seep side-slope of a canyon. Pit corner C is embanked by 0.6 ' of fill but should be stable with the 15-foot wide outer embankment. The existing pad shows no stability problems and the site has no significant concerns, which would prohibit constructing an enlarged pad, drilling and operating the planned wells, and is the only suitable location in the immediate area.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA reviewed the site and had no concerns regarding the proposal.

Pat Rainbolt of the Utah Division of Wildlife Resources also attended the pre-site. Mr. Rainbolt stated drilling and operating the wells at this location would significantly affect no wildlife values. He provided Jim Davis of SITLA and Ramie Hoopes of Kerr McGee a written wildlife evaluation and a copy of a recommended seed mix to be used for re-vegetating the disturbed area.

Floyd Bartlett  
**Onsite Evaluator**

11/18/2008  
**Date / Time**

# Application for Permit to Drill Statement of Basis

2/2/2009

Utah Division of Oil, Gas and Mining

Page 2

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## Conditions of Approval / Application for Permit to Drill

<b>Category</b>	<b>Condition</b>
Pits	A double synthetic liner each with a minimum thickness of 20 mils and an appropriate thickness of felt sub-liner to cushion the liners shall be properly installed and maintained in the reserve pit.
Surface	The reserve pit shall be fenced upon completion of drilling operations.

# WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 11/7/2008

**API NO. ASSIGNED:** 43047502160000

**WELL NAME:** NBU 1022-202S

**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)

**PHONE NUMBER:** 720 929-6226

**CONTACT:** Kevin McIntyre

**PROPOSED LOCATION:** NWSE 2 100S 220E

**Permit Tech Review:**

**SURFACE:** 2354 FSL 1593 FEL

**Engineering Review:**

**BOTTOM:** 1010 FSL 2055 FEL

**Geology Review:**

**COUNTY:** UINTAH

**LATITUDE:** 39.97717

**LONGITUDE:** -109.40281

**UTM SURF EASTINGS:** 636388.00

**NORTHINGS:** 4426234.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 3 - State

**LEASE NUMBER:** ST ML 22651

**PROPOSED FORMATION:** WSMVD

**SURFACE OWNER:** 3 - State

**COALBED METHANE:** NO

**RECEIVED AND/OR REVIEWED:**

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

**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  
5 - Statement of Basis - bhill  
15 - Directional - dmason  
17 - Oil Shale 190-5(b) - dmason  
25 - Surface Casing - hmadonald



JON M. HUNTSMAN, JR.  
*Governor*

GARY R. HERBERT  
*Lieutenant Governor*

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

## Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-2O2S  
**API Well Number:** 43047502160000  
**Lease Number:** ST ML 22651  
**Surface Owner:** STATE  
**Approval Date:** 2/5/2009

**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 .

**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

**Commingling:**

In accordance with Cause No. 173-14, commingling of the Wasatch and Mesaverde formations is allowed.

**General:**

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

**Conditions of Approval:**

In accordance with 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.

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

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

Surface casing shall be cemented to the surface.

**Notification Requirements:**

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

- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to spudding the well - contact Carol Daniels
- Within 24 hours of any emergency changes made to the approved drilling program - contact

Dustin Doucet

- Prior to commencing operations to plug and abandon the well - contact Dan Jarvis

The operator is required to get approval from the Division of Oil, Gas and Mining before performing any of the following actions during the drilling of this well:

- Plugging and abandonment or significant plug back of this well - contact Dustin Doucet
- Any changes to the approved drilling plan - contact Dustin Doucet

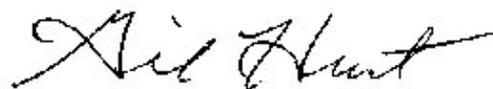
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voice mail message if the person is not available to take the call):

- Dan Jarvis at: (801) 538-5338 office  
(801) 942-0871 home
- Carol Daniels at: (801) 538-5284 office
- Dustin Doucet at: (801) 538-5281 office  
(801) 733-0983 home

**Reporting Requirements:**

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

**Approved By:**



Gil Hunt  
Associate Director, Oil & Gas

**DIVISION OF OIL, GAS AND MINING**

**SPUDDING INFORMATION**

Name of Company:           **KERR-McGEE OIL & GAS ONSHORE, L.P.**          

Well Name:                                   **NBU 1022-202S**                                  

Api No:           **43-047-50216**                                   Lease Type:           **STATE**                                  

Section   **02**   Township   **10S**   Range   **22E**   County   **UINTAH**                                  

Drilling Contractor           **PETE MARTIN DRLG**                                   RIG #   **BUCKET**                                  

**SPUDDED:**

Date           **04/21/09**                                  

Time           **3:00 PM**                                  

How           **DRY**                                  

**Drilling will Commence:**                                   

Reported by                                   **LEW WELDON**                                  

Telephone #                                   **(435) 828-7035**                                  

Date           **04/23/09**                                   Signed           **CHD**

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-2025
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047502160000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6587 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2354 FSL 1593 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 2 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 5/2/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**  
 MIRU PROPETRO AIR RIG ON 04/28/2009. DRILLED 12 1/4" SURFACE HOLE TO 2070'. RAN 9 5/8" 36# J-55 SURFACE CSG. CMT W/350 SX PREM CLASS G @15.8 PPG 1.15 YIELD. NO RETURNS THROUGH OUT JOB 310 PSI LIFT LAND PLUG WITH 800 PSI FLOATS HELD TOP OUT W/375 SX PREM CLASS @15.8 PPG 1.15 YIELD. DOWN BACKSIDE GOOD CMT TO SURFACE HOLES STAYED FULL. WORT.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 May 06, 2009

<b>NAME (PLEASE PRINT)</b> Sheila Upchego	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/6/2009	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
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<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-2025
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047502160000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6587 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2354 FSL 1593 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 2 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 5/16/2009	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input checked="" type="checkbox"/> <b>CHANGE TO PREVIOUS PLANS</b>	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
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	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

Kerr-McGee Oil & Gas Onshore LP respectfully requests to change the surface casing for this well from 1,900' to 2,030'. Please see the attached drilling diagram for additional details. Thank you.

**Approved by the Utah Division of Oil, Gas and Mining**  
  
**Date:** May 18, 2009  
**By:** *Danielle Piernot*

<b>NAME (PLEASE PRINT)</b> Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/13/2009	



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

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices**

**Sundry Conditions of Approval Well Number 43047502160000**

**Surface casing shall be cemented from setting depth back to surface.**

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

**Date:** May 18, 2009  
**By:** *David H. [Signature]*





# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

### CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'						
SURFACE	9-5/8"	0 to 2,030	36.00	J-55	LTC	3520	2020	453000
						7,780	6,350	201,000
PRODUCTION	4-1/2"	0 to 8,833	11.60	I-80	LTC	2.39	1.24	2.25

1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient 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 = 11.6 ppg) 0.22 psi/ft = gradient for partially evac wellbore  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoyn.Fact. of water)  
**MASP 3,161 psi**

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD  
 (Burst Assumptions: TD = 11.6 ppg) 0.59 psi/ft = bottomhole gradient  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoyn.Fact. of water)  
**MABHP 5,031 psi**

### CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD	500	Premium cmt + 2% CaCl + 0.25 pps flocele	215	60%	15.60	1.18
	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	50		15.60	1.18
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE Option 2	LEAD	1500	65/35 Poz + 6% Gel + 10 pps gilsonite +.25 pps Flocele + 3% salt BWOW	360	35%	12.60	1.81
	TAIL	500	Premium cmt + 2% CaCl + 0.25 pps flocele	180	35%	15.60	1.18
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION	LEAD	3,613'	Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	340	40%	11.00	3.38
	TAIL	5,220'	50/50 Poz/G + 10% salt + 2% gel +.1% R-3	1280	40%	14.30	1.31

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

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

### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

### ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_  
 John Huycke / Grant Schluender

DRILLING SUPERINTENDENT: \_\_\_\_\_ DATE: \_\_\_\_\_  
 John Merkel / Lovel Young

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
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<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2354 FSL 1593 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 2 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 6/13/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

FINISHED DRILLING FROM 2070' TO 8990' ON 06/10/2009. RAN 4 1/2" 11.6# I-80 PRODUCTION CSG. LEAD CMT W/560 SX PREM LITE II @12.5 PPG 1.98 YIELD TAILED CMT W/1100 SX 50/50 POZ @14.3 PPG 1.31 YIELD. DISPLACED W/138 BBLS WATER BUMPED PLUG FLOATS HELD. RETURNED 145 ON 06/13/2009 AT 1530 HRS.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 June 16, 2009

<b>NAME (PLEASE PRINT)</b> Sheila Upchego	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/16/2009	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-202S
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047502160000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2354 FSL 1593 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 2 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 9/21/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input checked="" type="checkbox"/> <b>PRODUCTION START OR RESUME</b>	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> 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 09/21/2009 AT 12:00 A.M. PLEASE REFER TO THE ATTACHED CHRONOLOGICAL WELL HISTORY.

Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
**FOR RECORD ONLY**  
 September 22, 2009

<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 9/22/2009

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1022-2O2S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: PROPETRO/, ENSIGN 145/145  
 Event: DRILLING      Start Date: 4/22/2009      End Date: 6/13/2009  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	PAU	MD From (ft)	Operation
4/28/2009	7:30 - 14:00	6.50	DRLSUR	02	A	P		MOVE IN AND RIG UP AIR RIG SPUD WELL @ 0730 HR 4/28/09 D/F 40'-510' W/ AIR MIST
	14:00 - 14:30	0.50	DRLSUR	10	A	P		RUN SURVEY .6 DEG. 115 AZI SEP. FACTOR 43.005
	14:30 - 23:30	9.00	DRLSUR	02	A	P		RIG DRILLING AHEAD W/ AIR MIST NO WATER 1000'
	23:30 - 0:00	0.50	DRLSUR	10	A	P		RUN SURVEY .8 DEG. 138.3 AZI 43.005 SEP FACTOR
4/29/2009	0:00 - 12:00	12.00	DRLSUR	02	A	P		RIG DRILLED TO 1350' W AIR MIST PREP TO TFNB
	12:00 - 15:00	3.00	DRLSUR	06	A	P		TRIP DP OUT OF HOLE LAY DOWN HAMMER RIH W/ TRI CONE
	15:00 - 0:00	9.00	DRLSUR	02	A	P		RIG DRILLING AHEAD HIT TRONA WATER @ 1420' DRILLING WITH FLUID NO RETURNS 1500'
4/30/2009	0:00 - 7:00	7.00	DRLSUR	02	A	P		RIG DRILL TO 1560' DRILLING W/ FLUID NO RETURNS
	7:00 - 7:30	0.50	DRLSUR	10	A	P		RUN SURVEY 1 DEG. 175.1 AZI 5.35 SEP. FACTOR
	7:30 - 0:00	16.50	DRLSUR	02	A	P		RIG DRILLING AHEAD W/FLUID NO RETURNS 1800'
5/1/2009	0:00 - 12:00	12.00	DRLSUR	02	A	P		RIG DRILLING AHEAD WITH FLUID NO RETURNS SLOW ROP 1980'
	12:00 - 22:30	10.50	DRLSUR	02	A	P		RIG T/D @ 2070' CONDITION HOLE 1 HR
	22:30 - 23:00	0.50	DRLSUR	10	A	P		SURVEY @ 2000' .5 DEG 184.3 AZI 4.869 SEP. FACTOR
5/2/2009	23:00 - 0:00	1.00	DRLSUR	06	D	P		TRIP DP OUT OF HOLE @ REPORT TIME
	0:00 - 2:30	2.50	DRLSUR	06	D	P		FINISH LAYING DOWN DP
	2:30 - 5:30	3.00	DRLSUR	12	C	P		RUN 2038.85' OF 9 5/8 36# J-55 CSG FLOAT COLLAR @ 1993.5 RIG DOWN AIR RIG
	5:30 - 6:30	1.00	DRLSUR	12	E	P		CEMENT SURFACE WITH 350 SKS @ 15.8# 1.15 5.0 GAL/SK NO RETURNS THRU OUT JOB 310 PSI
	6:30 - 7:00	0.50	DRLSUR	12	E	P		LIFT LAND PLUG WITH 800 PSI FLOATS HELD 1ST TOP JOB 100 SKS DOWN BS WOC
	7:00 - 9:00	2.00	DRLSUR	12	E	P		2ND TOP JOB 150 SKS DOWN BS WOC
	9:00 - 11:00	2.00	DRLSUR	12	E	P		3RD TOP JOB 125 SKS DOWN BS GOOD CEMENT TO SURFACE AND STAYED AT SURFACE
6/3/2009	11:00 - 11:00	0.00	DRLSUR					NO VISIBLE LEAKS PIT 20% FULL WORT
	21:00 - 0:00	3.00	DRLPRO	01	C	P		SKID RIG FROM THE NBU 1022-2J3S. NU BOP AND HOOK UP FLOW AND FLARE LINES. NU BOP'S
6/4/2009	0:00 - 1:30	1.50	DRLPRO	14	A	P		PRE JOB RIG INSPECTION. HELD SAFETY MEETING WITH BOP TESTER.
	1:30 - 2:00	0.50	DRLPRO	23		P		TEST BLIND RAMS, PIPE RAMS, FLOOR VALVES, CHOKE MANIFOLD AND ALL RELATED VALVES TO 250 AND 5000 PSI FOR 5 AND 10 MINUTES RESPECTFULLY. TEST CASING TO 1500 PSI FOR 30 MINUTES.
	2:00 - 6:00	4.00	DRLPRO	15	A	P		INSTALL WEAR BUSHING. PU HTC Q506, ON A 1.5 DEG BH, 6/7 LOBE, 2.7 STAGE .23 RPG MOTOR AND MWD EQUIPMENT WITH 678' OF HWDP BHA. TIH WITH SAME TO 1900'.
	6:00 - 10:00	4.00	DRLPRO	06	A	P		CHANGE OUT SAVER SUB/GRABBER DIES. SERVICE RIG.
	10:00 - 12:00	2.00	DRLPRO	08	A	P		DRILL SHOE TRACK.
	12:00 - 12:30	0.50	DRLPRO	07	A	P		
	12:30 - 13:00	0.50	DRLPRO	02	F	P		

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-202S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: PROPETRO/, ENSIGN 145/145  
 Event: DRILLING      Start Date: 4/22/2009      End Date: 6/13/2009  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	13:00 - 0:00	11.00	DRLPRO	02	D	P		DRILL/SLIDE 2070'-2960' (890') 80.9'/HR. 12-14K WOB, BIT RPM 164. 200-250 DIFF. PP 1350-1550 @ 499 GPM.
6/5/2009	0:00 - 14:00	14.00	DRLPRO	02	D	P		DRILL/SLIDE 2960'-4025' (1065') 76.07'/HR. 12-14K WOB, BIT RPM 164. 200-250 DIFF. PP 1400-1650 @ 499 GPM. TO 4071', ROT. 50%, SLIDE 50%.
	14:00 - 14:30	0.50	DRLPRO	07	A	P		RIG SERVICE, CHECK COM, WORK FLOOR SAVER. BOP DRILL 1MIN.
	14:30 - 20:00	5.50	DRLPRO	02	D	P		DRILL 4025'-4398' (373') 67.8'/HR. 12-16K WOB, ROT, 18-35K WOB SLIDING. BIT RPM 164. 200-250 DIFF. PP 1400-1650 @ 499 GPM. ROT. 50%, SLIDE 50%.
	20:00 - 20:30	0.50	DRLPRO	08	A	P		RECALIBRATE/SET CROWN SAVER AND FLOOR SAVER.
	20:30 - 0:00	3.50	DRLPRO	02	D	P		DRILL 4398'-4768' (370') 105.7'/HR. 12-16K WOB, ROT, 18-35K WOB SLIDING. BIT RPM 164. 200-400 DIFF. PP 1600-1950 @ 499 GPM. SLIDE 46% to 54% of the time.
6/6/2009	0:00 - 11:30	11.50	DRLPRO	02	D	P		DRILL/SLIDE II 4768'-5890' (1122') 97.57'/HR. 18-20K WOB, ROT, 18-35K WOB SLIDING. BIT RPM 164. 250-5250 DIFF. PP 1750-2150 @ 499 GPM.
	11:30 - 12:00	0.50	DRLPRO	07	A	P		SERVICE RIG, CHECK COM, FLOOR SAVER.
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DRILL/SLIDE 5890'-6343' (453') 37.7'/HR. 18-20K WOB, ROT, 18-25K WOB SLIDING. BIT RPM 164. 250-525 DIFF. PP 1750-2150 @ 499 GPM. 52% SIDE, 48% ROTATING LAST 130' AT END OF DROP. HAD DIFFICULTY HOLDING TOOL FACE DURING SLIDES.
6/7/2009	0:00 - 11:00	11.00	DRLPRO	02	D	P		DRILL/SLIDE 6343'-6923' (580') 52.7'/HR. 18-20K WOB ROT, 20-35K WOB SLIDING. BIT RPM 164. 250-525 DIFF. PP 1750-2150 @ 499 GPM. 52% SIDE, 48% ROTATING.
	11:00 - 11:30	0.50	DRLPRO	07	A	P		SERVICE RIG, FUNCTION COM, FLOOR SAVER.
	11:30 - 12:00	0.50	DRLPRO	08	A	P		CHANGE OUT SAVER SUB ON TOP DRIVE.
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DRILL/SLIDE 6923'-7502' (679') 56.5'/HR. 18-20K WOB ROT, 20-35K WOB SLIDING. BIT RPM 128. 250-400 DIFF. PP 1950-2350 @ 430 GPM. 15% SLIDE, 85% ROT. LAST 790'
6/8/2009	0:00 - 15:00	15.00	DRLPRO	02	D	P		DRILL/SLIDE 7502'-8320' (818') 54.5'/HR. 18-20K WOB ROT, 20-35K WOB SLIDING. BIT RPM 128. 250-400 DIFF. PP 2550-2900 @ 430 GPM.
	15:00 - 15:30	0.50	DRLPRO	07	A	P		SERVICE RIG.
	15:30 - 0:00	8.50	DRLPRO	02	D	P		DRILL ROTATE 8320'-8667' (347') 40.8'/HR. 18-25K WOB ROT, BIT RPM 128. 200-350 DIFF. PP 2450-2800 @ 430 GPM
6/9/2009	0:00 - 7:00	7.00	DRLPRO	02	D	P		DRILL 8667'-8852' (185') 26.4'/HR. 18-25K WOB ROT, BIT RPM 128. 200-350 DIFF. PP 2450-2800 @ 430 GPM...MOTOR STARTED STALLING WITH LIGHT WEIGHT. PROBABLE THRUST BEARING. CIRCULATE BOTTOMS UP.
	7:00 - 8:00	1.00	DRLPRO	05	C	P		
	8:00 - 15:00	7.00	DRLPRO	06	A	P		POOH, PUMP AND ROTATE FIRST 9 STANDS OUT, ROTATE NEXT 20 STANDS OUT TILL FREE. PUMP SLUG. POOH TO 3400' AND IRON ROUGH NECK STOPPED WORKING.
	15:00 - 19:00	4.00	DRLPRO	08	A	Z		TROUBLE SHOOT IRON ROUGH NECK. BYPASS PRESSURE BLOCK.
	19:00 - 0:00	5.00	DRLPRO	06	A	P		POOH, BREAK HWDP WITH SCORPION. ALL CONNECTIONS IN BHA ARE OVER TORQUED. LAY DOWN MOTOR AND BIT. BIT WAS RUNG OUT IN THE SHOULDER/TAPER AREA.

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-202S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: PROPETRO/, ENSIGN 145/145  
 Event: DRILLING      Start Date: 4/22/2009      End Date: 6/13/2009  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	PU	MD From (ft)	Operation
6/10/2009	0:00 - 9:00	9.00	DRLPRO	06	A	P		MAKE UP NEW PDC AND .14 RPG MUD MOTOR. TIH WITH SAME.
	9:00 - 9:30	0.50	DRLPRO	03	A	P		REAM BACK TO BOTTOM 4982-5035, 8232-8270, 8699-8853
	9:30 - 14:00	4.50	DRLPRO	02	D	P		DRILL 8853 TO 8990, 138', TD AT 14:00, WOB-14, ROTARY RPM-33, MOTOR RPM-72, PUMP #1-59 SPM, 22G GPM, PUMP #2-60 SPM, 230 GPM, TORQUE ON/OFF BOTTOM-21/9, SPP ON/OFF BOTTOM- 2580/2490, ROP-20 TO 60 FPH
	14:00 - 17:00	3.00	DRLPRO	05	F	P		PUMP SWEEPS, CIRC HOLE
	17:00 - 0:00	7.00	DRLPRO	06	A	P		PUMP AND ROTATE OUT OF HOLE 22 STDS, PUMP PILL, POOH, LD DP SINGLES.
6/11/2009	0:00 - 8:30	8.50	DRLPRO	06	A	P		POOH & LD DP, DEVELOPING PROBLEMS WITH IRON ROUGHNECK
	8:30 - 11:00	2.50	DRLPRO	08	A	Z		REPAIR IRON ROUGHNECK HYDRAULICS
	11:00 - 13:30	2.50	DRLPRO	06	A	P		POOH & LD DP
	13:30 - 15:30	2.00	DRLPRO	06	A	P		DIR WORK, LD DIR TOOLS
	15:30 - 20:00	4.50	DRLPRO	11	D	P		HOLD SAFETY MEETING, RU LOGGERS, RUN TRIPLE COMBO OH LOGS, LOGS RUN IN HOLE TO 8986, LOGGED OUT
	20:00 - 22:00	2.00	DRLPRO	12	A	P		RD LOGGERS, RU CASERS, HOLD SAFETY MEETING
	22:00 - 0:00	2.00	DRLPRO	12	C	P		MAKE UP SHOE & SHOE JT, RUN 44 JTS4 1/2, 11.6#, I-80 CSG
6/12/2009	0:00 - 0:30	0.50	DRLPRO	12	C	P		RUN 4 1/2 CSG, DEVELOPED ELECTRICAL PROBLEM, TOP DRIVE SHORTING OUT AND ARCING TO THE CASING.
	0:30 - 21:30	21.00	DRLPRO	08	B	Z		REPAIR TOP DRIVE ELECTRICAL PROBLEM, REPAIR INCOMPLETE, TOP DRIVE POWER ISOLATED, CAN SAFELY RUN CSG
	21:30 - 22:00	0.50	DRLPRO	12	A	P		RU CASERS, HOLD SAFETY MEETING
6/13/2009	22:00 - 0:00	2.00	DRLPRO	12	C	P		RUN 24 JTS 4 1/2 CSG TO 3000
	0:00 - 7:00	7.00	DRLPRO	12	C	P		RUN 204 JTS, 4 1/2, I-80, 11.6# CSG, SHOE AT 8962.
	7:00 - 9:00	2.00	DRLPRO	12	C	P		CIRCULATE CSG, RU CEMENTERS
	9:00 - 9:30	0.50	DRLPRO	05	A	P		RU CEMENTERS, HOLD SAFETY MEETING
	9:30 - 12:00	2.50	DRLPRO	12	E	P		PUMP 40 BBLS FRESH WATER, 560 SX, 197 BBLS 12.5#, 1.98 YIELD LEAD, 1100 SX, 14.3#, 256 BBLS, 1.31 YIELD TAIL, DISPLACED W/ 138 BBLS WATER, BUMPED PLUG, FLOATS HELD, RETURNED 48 BBLS CMT TO SURFACE
12:00 - 12:30	0.50	DRLPRO	12	E	P		LAND CSG, RD CEMENTERS	
12:30 - 15:30	3.00	DRLPRO	01	E	P		CLEAN PITS, RELEASE RIG AT 15:30	

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-2O2S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: GWS 1/1  
 Event: COMPLETION      Start Date: 9/4/2009      End Date:  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
8/27/2009	7:00 - 7:30	0.50	COMP	48		P		HSM, ROADING RIG AND EQUIP
	7:30 - 15:00	7.50	COMP	31	I	P		ROAD RIG F/ NBU 436X, RIG UP, ND WH NU BOPS, RU FLOOR & EQUIP. PU 37/8 BIT & 42 JTS 23/8 J-55 TBG EOT @ 1354' SWI SDFWE.
8/31/2009	7:00 - 7:30	0.50	COMP	48		P		HSM, PICKING UP TBG OFF FLOAT
	7:30 - 15:00	7.50	COMP	31	I	P		0 PSI ON WELL, PU REM 241 JTS 23/8 J-55 TBG OFF FLOAT, TOTAL 283 JTS TAG UP @ 8912'. RU DRL EQUIP C/O 6' FILL, DRILL FOR 15 MIN ON BTM @ 8918' CIRC WELL CLEAN GOT RUBBER F/ FLOAT DART. RD SWIVEL POOH L/D 55 JTS 23/8 J-55, EOT @ 7185'. SWI SDFN.
9/1/2009	7:00 - 7:30	0.50	COMP	48		P		HSM, LAYING DWN TBG.
	7:30 - 15:00	7.50	COMP	31	I	P		0 PSI ON WELL, L/D REM 228 JTS 23/8 J-55 AND BIT, ND BOPS NU FRAC VALVE, TOP OFF WELL W/ WTR. RDMOL, TO LOCATION NEAR 18 SOUTH PAD WELL AND PARK SDFN, PREP TO DRILL OUT PLUGS ON PAD WELL.
9/4/2009	7:00 - 7:30	0.50	COMP	48		P		HSM. WL SAFTY.
	7:30 - 15:00	7.50	COMP	37	B	P		MIRU SCHLUMBERGER WL & FRAC CREW. OPEN WELL 0#. PU 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF F/ 8902'-04', 4 SPF, 8 HOLES. 8856'-60', 4 SPF, 16 HOLES. 8808'-10', 4 SPF, 8 HOLES. 8792'-94', 4 SPF, 8 HOLES. POOH. SWI, SDFWE. READY T/ FRAC 09/08.
9/8/2009	7:00 - 7:30	0.50	COMP	48		P		HSM. SIMULTANEOUS OPERATIONS.

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-202S ( RED )	Spud Conductor: 4/21/2009	Spud Date: 4/28/2009
Project: UTAH-UINTAH	Site: NBU 1022-2J PAD	Rig Name No: GWS 1/1
Event: COMPLETION	Start Date: 9/4/2009	End Date:
Active Datum: RKB @5,040.01ft (above Mean Sea Level)	UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:30 - 7:30	0.00	COMP					<p>10:07 OPEN WELL 1675#. BEG PUMP,BRK @ 4342# @ 5.3 BPM. SD ISIP 2900#, FG .76. BEG FRAC, PUMP 35,760# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2700# FG .74. SWI. X-OVER T/ GREEN WELL.</p> <p>STG 2) PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8710'. ATTM T/ PERF. GUN WENT SHORT. ( MISFIRE ). POOH. MAKE REPAIRS T/ GUN. RIH PERF F/ 8674'-80', 4 SPF, 24 HOLES. 8608'-10', 4 SPF, 8 HOLES. 8566'-68', 4 SPF, 8 HOLES. POOH.</p> <p>2:23 OPEN WELL 550#. BEG PUMP, BRK @ 3717# @ 5.3 BPM. SD ISIP 2750# FG .75. BEG FRAC, PUMP 19,052# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2800# FG .75. SWI. X-OVER T/ YELLOW WELL.</p> <p>STG 3) PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 8516' P/U PERF F/ 8482'-86', 3 SPF, 12 HOLES. 8410'-12', 4 SPF, 8 HOLES. 8346'-50', 4 SPF, 16 HOLES. 8260'-62', 4 SPF, 8 HOLES. POOH.</p> <p>4:10 OPEN WELL 2385#. BEG PUMP, BRK @ 3027# @ 5.4 BPM. SD ISIP 2500# FG .73. BEG FRAC. EST INJT RT @ 51.3 BPM @ 4400# =100% OPEN PERF'S. PUMP 55,269# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2700# FG .75. SWI. SDFN.</p>

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-202S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: GWS 1/1  
 Event: COMPLETION      Start Date: 9/4/2009      End Date:  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/9/2009	9:30 - 18:00	8.50	COMP	36	B	P		<p>STG 4) OPEN WELL 1200#. BEG PUMP, BRK @ 3484# @ 6.4 BPM. SD ISIP 2500# FG .74. BEG FRAC. EST INJT RT @ 51.3 BPM @ 4300# =100% OPEN. PUMP 57,442# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2900# FG .79. SWI. FRAC CREW X-OVER T/ GREEN WELL.</p> <p>STG 5)PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 7984' P/U PERF F/ 7950'-54', 4 SPF, 16 HOLES. 7930'-32', 4 SPF, 8 HOLES. 7876'-80', 3 SPF, 12 HOLES. 7838'-40', 3 SPF, 6 HOLES. POOH. 1:23PM OPEN WELL 2170#. BEG PUMP, BRK @ 4200# @ 6.4 BPM. SD ISIP 2550# FG .75. BEG FRAC, EST INJT RT @ 51.3 BPM @ 4600# =100% PERF'S OPEN. PUMP 17,790# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2900# FG .80. SWI. X-OVER T/ GREEN.</p> <p>STG 6)PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 7764' P/U PERF F/ 7730'-34', 4 SPF, 16 HOLES. 7680'-83', 3 SPF, 9 HOLES. 7640'-42', 3 SPF, 6 HOLES. 7606'-10', 4 SPF, 12 HOLES. POOH. WAIT ON WL T/ GET OUT OF RED WELL. (( 30 MIN DOWN TIME. )) 3:43 OPEN WELL 645#. BEG PUMP, BRK @ 3261# @ 6.3 BPM. SD ISIP 1850# FG .67. BEG FRAC, EST INJT RT @ 51.4 BPM @ 3475# =100% PERF'S OPEN. PUMP 83,857# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2400# FG .74. SWI, SDFN. READY T/ PERF STG 7 IN THE :AM.</p>

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-2O2S ( RED )      Spud Conductor: 4/21/2009      Spud Date: 4/28/2009  
 Project: UTAH-UINTAH      Site: NBU 1022-2J PAD      Rig Name No: GWS 1/1  
 Event: COMPLETION      Start Date: 9/4/2009      End Date:  
 Active Datum: RKB @5,040.01ft (above Mean Sea Level)      UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/10/2009	9:00 - 18:00	9.00	COMP	36	B	P		<p>STG 7) OPEN WELL 1200#. PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 7530' P/U PERF F/ 7494'-00', 4 SPF, 24 HOLES. 7460'-64', 4 SPF, 16 HOLES. POOH. 9:25AM OPEN WELL 1700#. BEG PUMP, BRK @ 2003# @ 6.4 BPM. SD ISIP 1700# FG .66. BEG FRAC, EST INJT RT @ 53.4 BPM @ 3900# =71% PERF'S OPEN. PUMP 32,290# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2500# FG .76. SWI. FRAC CREW X-OVER T/ GREEN WELL.</p> <p>STG 8)PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 7372' P/U PERF F/ 7338'-42', 4 SPF, 19 HOLES. 7286'-88', 4 SPF, 8 HOLES. 7254'-58', 4 SPF, 16 HOLES. POOH. (( DOWN 1HR 15 MIN T/ CHANGE OUT 4" GROUND VALVE. BEFORE WE COULD CANGE VALVE HAD T/ WAIT FOR WL T/ GET OUT OF YELLOW WELL. )) 1:00PM OPEN WELL 1540#. BEG PUMP, BRK @ 2796# @ 5.3 BPM. SD ISIP 2050# FG .71. BEG FRAC, EST INJT RT @ 54 BPM @ 5200# =72% OPEN PERF'S. PUMP 17,542# 30/50 WHITE &amp; TAIL IN W/ 5,000# 20/40 TLC. SD ISIP 2500# FG .77. SWI. FRAC CREWX-OVER T/ GREEN.</p> <p>STG 9) PU 4 1/2 8K HAL CBP &amp; 3 3/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 7210' P/U PERF F/ 7172'-76', 4 SPF, 16 HOLES. 7148'-50', 4 SPF, 8 HOLES. 7100'-04', 3 SPF, 12 HOLES. 7014'-16', 3 SPF, 6 HOLES. POOH. OPEN WELL 1550#. BEG PUMP, BRK @ 2617# @ 5.3 BPM. SD ISIP 1950# FG .70. BEG FRAC, EST INJT RT @ 54.5 BPM @ 3542# = 100% PERF'S OPEN. PUMP 57,332# 30/50 WHITE &amp; TAIL IN W/ 5,000# TLC. SD ISIP 2450# FG .78. SWI. X-OVER FOR WL.</p> <p>STG 10)PU 4 1/2 8K HAL CBP. RIH SET CBP @ 6946' P/U PERF F/ 6906'-10', 4 SPF, 16 HOLES. 6846'-48', 4 SPF, 8 HOLES. 6769'-71', 4 SPF, 8 HOLES. 6686'-88', 4 SPF, 8 HOLES. POOH. OPEN WELL 230#. BEG PUMP, BRK @ 2684# @ 6.4 BPM. SD ISIP 2200# .74. BEG FRAC, EST INJT RT @ 56 BPM @ 4100# =89% PERF'S OPEN. PUMP 39,773# 30/50 WHITE &amp; TAIL IN W/ 5,000# TLC. SD ISIP 2600# FG .80. SWI. X- OVER FOR WL.</p> <p>PU 4 1/2 8K HAL CBP. RIH SET KILL PLUG @ 6620'. POOH. SWI. SDFN.</p>

**RECEIVED** September 22, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-2O2S ( RED )		Spud Conductor: 4/21/2009	Spud Date: 4/28/2009
Project: UTAH-UINTAH		Site: NBU 1022-2J PAD	Rig Name No: GWS 1/1
Event: COMPLETION		Start Date: 9/4/2009	End Date:
Active Datum: RKB @5,040.01ft (above Mean Sea Level)		UWI: 0/10/S/22/E/2/0/NWSE/6/PM/0/2,354.00/E/0/1,593.00/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/21/2009	11:27 -		PROD	50				RDMO SCHLUMBERGER WL & FRAC SERV. WELL TURNED TO SALE @ 2400 HR ON 9/21/09 -FTP 2150#, CP 2500#, 2100 MCFD, 30 BWPD, 20/64 CK

**RECEIVED** September 22, 2009

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-2025
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047502160000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6587 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2354 FSL 1593 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 2 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 5/16/2009  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: _____

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**  
 Kerr-McGee Oil & Gas Onshore LP respectfully requests to change the surface casing for this well from 1,900' to 2,030'. Please see the attached drilling diagram for additional details. Thank you.

**Approved by the Utah Division of Oil, Gas and Mining**  
  
**Date:** May 18, 2009  
**By:** *Danielle Piernot*

<b>NAME (PLEASE PRINT)</b> Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/13/2009	



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

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices**

**Sundry Conditions of Approval Well Number 43047502160000**

**Surface casing shall be cemented from setting depth back to surface.**

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

**Date:** May 18, 2009  
**By:** *David K. [Signature]*





# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

### CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'						
SURFACE	9-5/8"	0 to 2,030	36.00	J-55	LTC	3520 1.04	2020 2.13	453000 7.89
PRODUCTION	4-1/2"	0 to 8,833	11.60	I-80	LTC	7,780 2.39	6,350 1.24	201,000 2.25

1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient 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 = 11.6 ppg) 0.22 psi/ft = gradient for partially evac wellbore  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoyn.Fact. of water)  
**MASP 3,161 psi**

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD  
 (Burst Assumptions: TD = 11.6 ppg) 0.59 psi/ft = bottomhole gradient  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoyn.Fact. of water)  
**MABHP 5,031 psi**

### CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD	500	Premium cmt + 2% CaCl + 0.25 pps flocele	215	60%	15.60	1.18
	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	50		15.60	1.18
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE Option 2	LEAD	1500	65/35 Poz + 6% Gel + 10 pps gilsonite +.25 pps Flocele + 3% salt BWOW	360	35%	12.60	1.81
	TAIL	500	Premium cmt + 2% CaCl + 0.25 pps flocele	180	35%	15.60	1.18
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION	LEAD	3,613'	Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	340	40%	11.00	3.38
	TAIL	5,220'	50/50 Poz/G + 10% salt + 2% gel +.1% R-3	1280	40%	14.30	1.31

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

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

### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

### ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_  
 John Huycke / Grant Schluender

DRILLING SUPERINTENDENT: \_\_\_\_\_ DATE: \_\_\_\_\_  
 John Merkel / Lovel Young

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  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.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-202S
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047502160000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1417 FSL 2458 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 11/3/2011	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input checked="" type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 50px;" type="text"/>

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

The operator request the authorization to temporarily abandon the subject well location. The operator proposes to TA the subject well to drill the NBU 1022-2J Pad, which consists of the following wells: NBU 1022-2G4BS, NBU 1022-2G4CS, NBU 1022-2H4CS, NBU 1022-2I1BS, NBU 1022-2J4BS & NBU 1022-2O1CS.

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

Date: 11/23/2011  
 By: *Dark K. Quist*

<b>NAME (PLEASE PRINT)</b> Gina Becker	<b>PHONE NUMBER</b> 720 929-6086	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 11/3/2011	

Well Name: **NBU 1022-202S** 11/2/2011  
 Surface Location: NWSE Sec. 2, T10S, R22E  
 Uintah County, UT

API: 43043750216 LEASE#: ML-22651

ELEVATIONS: 5040' GL 5052' KB

TOTAL DEPTH: 8990' PBTD: 8918'

SURFACE CASING: 9 5/8", 36# J-55 @ 2039'

PRODUCTION CASING: 4 1/2", 11.6# I-80 @ 8961'  
 TOC @ Surface per CBL

PERFORATIONS: MESAVERDE 6686' - 8904'

Tubular/Borehole	Drift inches	Collapse psi	Burst psi	Capacities		
				Gal./ft.	Cuft/ft.	Bbl./ft.
2.375" 4.7# J-55 tbg.	1.901	8100	7700	0.1624	0.02171	0.00387
4.5" 11.6# I-80	3.875	6350	7780	0.6528	0.0872	0.0155
9.625" 36# J-55	8.765	2020	3520	3.247	0.434	0.0773
Annular Capacities						
2.375" tbg. X 4 1/2" 11.6# csg				0.4227	0.0565	0.01
4.5" csg X 9 5/8" 36# csg				2.227	0.2977	0.053
4.5" csg X 7.875 borehole				1.704	0.2278	0.0406
9.625" csg X 12 1/4" borehole				2.3428	0.3132	0.0558

**GEOLOGICAL TOPS:**

4320' Wasatch  
 6536' Mesaverde

**Tech. Pub. #92 Base of USDW's**

USDW Elevation ~1600' MSL  
 USDW Depth ~3452' KBE

**Recommended future action for disposition of well bore:**

Temporarily abandon the wellbore during the drilling and completion operations of the **NBU 1022-2J** pad wells. Return to production as soon as possible once completions are done.

## **NBU 1022-202S TEMPORARY ABANDONMENT PROCEDURE**

### **GENERAL**

- H2S MAY BE PRESENT. CHECK FOR H2S AND TAKE APPROPRIATE PRECAUTIONS.
- CEMENT QUANTITIES BELOW ASSUME NEAT CLASS G, YIELD 1.145 CUFT./SX. IF A DIFFERENT PRODUCT IS USED, WELLSITE PERSONNEL ARE RESPONSIBLE FOR CORRECTING QUANTITIES TO YIELD THE STATED SLURRY VOLUME. WHEN SQUEEZING, INCLUDE 10% EXCESS PER 1000' OF DEPTH.
- TREATED FRESH WATER WILL BE PLACED BETWEEN ALL PLUGS INSTEAD OF BRINE.
- ALL DISPLACEMENT FLUID SHALL CONTAIN CORROSION INHIBITOR AND BIOCIDES. PREMIX 5 GALLONS PER 100 BBLS FLUID.
- NOTIFY UDOGM 24 HOURS BEFORE MOVING ON LOCATION.

### **PROCEDURE**

**Note: An estimated 24 sx Class "G" cement needed for procedure**

1. MIRU. KILL WELL AS NEEDED. ND WH, NU AND TEST BOPE.
2. RU WIRELINE. ENSURE WELLBORE IS CLEAN. **A GPS READING WILL NEED TO BE TAKEN AT THE WELL SITE AND RECORDED IN OPENWELLS. PLEASE TAKE IT TO THE 6TH DECIMAL PLACE.**
3. **PLUG #1, ISOLATE MV PERFORATIONS (6686' – 8904'):** RIH W/ 4 ½" CBP. SET @ ~6630'. RELEASE CBP, PUH 10', BRK CIRC W/ FRESH WATER. PRESSURE TEST CASING TO 500 PSI. INFORM ENGINEERING IF IT DOESN'T TEST. DISPLACE A MINIMUM OF **8 SX/ 1.6 BBL/ 8.7 CUFT**. ON TOP OF PLUG. PUH ABOVE TOC (~6530'). REVERSE CIRCULATE W/ TREATED FRESH WATER.
4. **PLUG #2, PROTECT TOP OF WASATCH (4320'):** PUH TO ~4420'. BRK CIRC W/ FRESH WATER. DISPLACE A MINIMUM OF **16 SX / 3.1 BBL / 17.4 CUFT** AND BALANCE PLUG W/ TOC @ ~4220' (200' COVERAGE). PUH ABOVE TOC. REVERSE CIRCULATE W/ TREATED FRESH WATER.
5. LOWER WELLHEAD TO GROUND LEVEL TO ACCOMMODATE DRILLING OPS AND INSTALL MARKER PER UDOGM GUIDELINES.
6. RDMO. TURN OVER TO DRILLING OPERATIONS.

ALM 11/2/2011

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
4304750219	NBU 1022-2J1T		NWSE	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
<u>B</u>	99999	<u>2900</u>	4/21/2009			<u>4/29/09</u>	
Comments: MIRU PETE MARTIN BUCKET RIG. <u>WSTMVD</u> SPUD WELL LOCATION ON 04/21/2009 AT 1100 HRS.							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304750216	NBU 1022-2O2S		SWSE	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
<u>B</u>	99999	<u>2900</u>	4/21/2009			<u>4/29/09</u>	
Comments: MIRU PETE MARTIN BUCKET RIG. SPUD WELL LOCATION ON 04/21/2009 AT 1500 HRS. <u>BHL = SWSE</u>							

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 UPCHEGO

Name (Please Print)

Signature

REGULATORY ANALYST

4/24/2009

Title

Date

RECEIVED

APR 27 2009

DIV. OF OIL, GAS & MINING

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 OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: ST ML-22651
2. NAME OF OPERATOR: KERR MCGEE OIL & GAS ONSHORE LP		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
3. ADDRESS OF OPERATOR: 1368 SOUTH 1200 EAST CITY VERNAL STATE UT ZIP 84078		7. UNIT or CA AGREEMENT NAME: UNIT #891008900A
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2354'FSL, 1593'FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 2 10S 22E		8. WELL NAME and NUMBER: NBU 1022-2O2S
		9. API NUMBER: 4304750216
		10. FIELD AND POOL, OR WILDCAT: NATURAL BUTTES
		COUNTY: UINTAH
		STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>WELL SPUD</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX.

SPUD WELL LOCATION ON 04/21/2009 AT 1500 HRS.

NAME (PLEASE PRINT) SHEILA UPCHEGO	TITLE REGULATORY ANALYST
SIGNATURE 	DATE 4/24/2009

(This space for State use only)

**RECEIVED**  
**APR 30 2009**