

**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 1022-12E4BS
<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 Coalbed Methane Well: NO		<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> 720 929-6515
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217		<b>9. OPERATOR E-MAIL</b> julie.jacobson@anadarko.com
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> UT ST UO 01997-A ST	<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"/>

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	1835 FNL 2170 FWL	SENW	12	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	2234 FNL 821 FWL	SWNW	12	10.0 S	22.0 E	S
At Total Depth	2234 FNL 821 FWL	SWNW	12	10.0 S	22.0 E	S

<b>21. COUNTY</b> UINTAH	<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 2234	<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 1674
<b>24. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 1362	<b>25. PROPOSED DEPTH</b> MD: 8699 TVD: 8471	
<b>26. ELEVATION - GROUND LEVEL</b> 5165	<b>27. BOND NUMBER</b> 22013542	<b>28. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 43-8496

Hole, Casing, and Cement Information										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2150	28.0	J-55 LT&C	0.2	Type V	180	1.15	15.8
							Class G	270	1.15	15.8
Prod	7.875	4.5	0 - 8699	11.6	I-80 LT&C	12.5	Premium Lite High Strength	270	3.38	11.0
							50/50 Poz	1210	1.31	14.3

**ATTACHMENTS**

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE 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> Gina Becker	<b>TITLE</b> Regulatory Analyst II	<b>PHONE</b> 720 929-6086
<b>SIGNATURE</b>	<b>DATE</b> 09/12/2011	<b>EMAIL</b> gina.becker@anadarko.com
<b>API NUMBER ASSIGNED</b> 43047519940000	<b>APPROVAL</b>  Permit Manager	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-12E4BS**

Surface: 1835 FNL / 2170 FWL      SENW  
 BHL: 2234 FNL / 821 FWL      SWNW

Section 12 T10S R22E

Uintah County, Utah  
 Mineral Lease: UT ST UO 01197-A ST

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1039	
Birds Nest	1332	Water
Mahogany	1700	Water
Wasatch	4099	Gas
Mesaverde	6296	Gas
MVU2	7238	Gas
MVL1	7781	Gas
TVD	8471	
TD	8699	

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 bottom hole pressure calculated at 8471' TVD, approximately equals  
 5,421 psi 0.64 psi/ft = actual bottomhole gradient

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

Maximum anticipated surface pressure equals approximately 3,546 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

**8. Anticipated Starting Dates:**

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

**9. Variances:**

*Please refer to the attached Drilling Program.*

*Onshore Order #2 – Air Drilling Variance*

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

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

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

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

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

**Background**

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

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

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

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

#### ***Variance for BOPE Requirements***

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

#### ***Variance for Mud Material Requirements***

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

#### ***Variance for Special Drilling Operation (surface equipment placement) Requirements***

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

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

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

*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.*

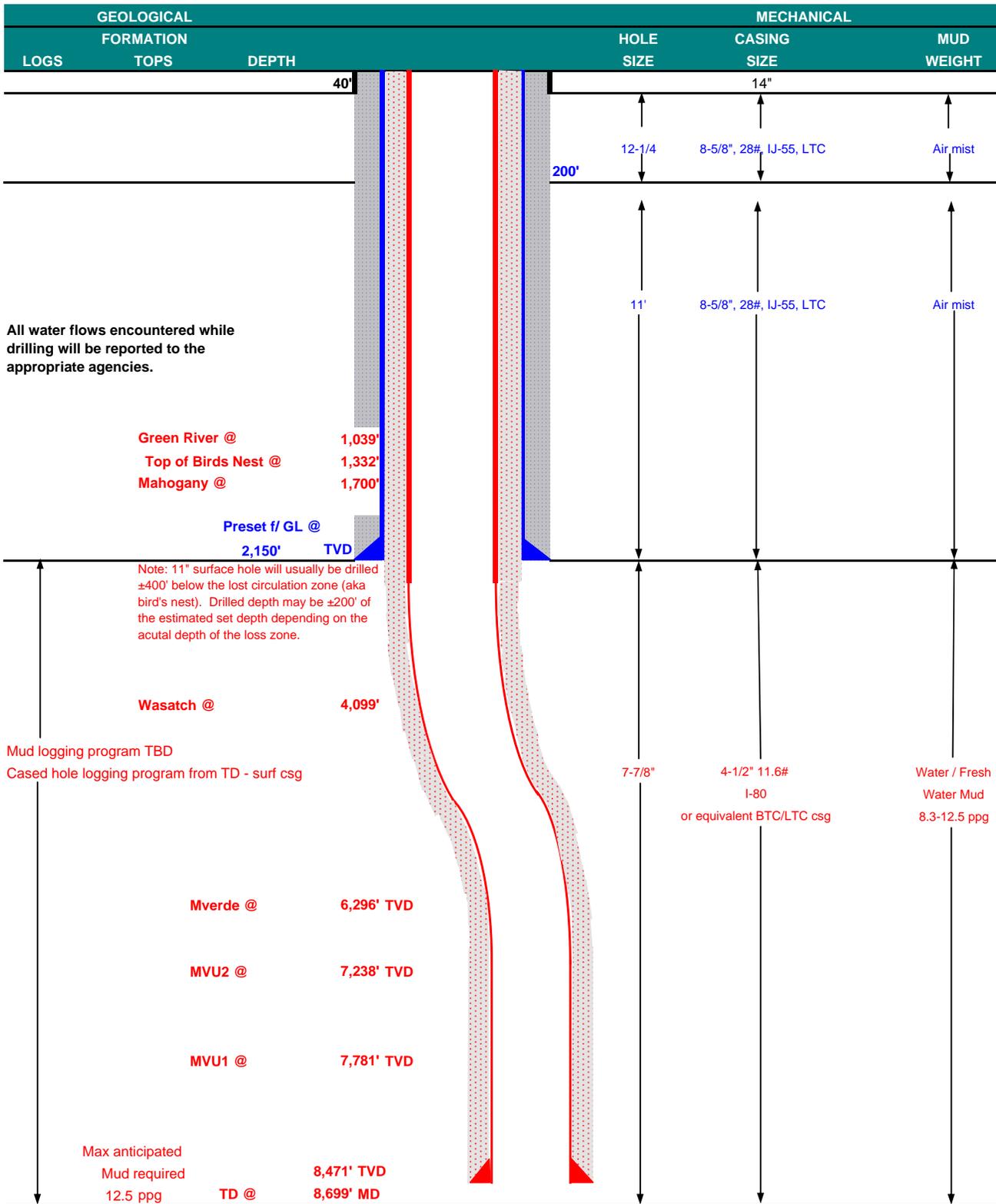
10. **Other Information:**

*Please refer to the attached Drilling Program.*



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	September 7, 2011	
WELL NAME	<b>NBU 1022-12E4BS</b>		TD	8,471' TVD	8,699' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	SENW	1835 FNL	2170 FWL	Sec 12 T 10S R 22E	FINISHED ELEVATION 5164.5
	Latitude: 39.965694		Longitude: -109.389307		NAD 27
BTM HOLE LOCATION	SWNW	2234 FNL	821 FWL	Sec 12 T 10S R 22E	
	Latitude: 39.964600		Longitude: -109.394131		NAD 27
OBJECTIVE ZONE(S)	Wasatch/Mesaverde				
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.				





**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	8-5/8"	0 to 2,150	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
						2.52	1.87	6.60	N/A
PRODUCTION	4-1/2"	0 to 8,699	11.60	I-80	LTC/BTC	7,780	6,350	279,000	367,000
						1.11	1.15	3.42	4.50

**Surface Casing:**

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe  
Fracture at surface shoe with 0.1 psi/ft gas gradient above

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

**Production casing:**

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

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

**CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
	TOP OUT CMT (6 jobs) 1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>						
SURFACE Option 2	LEAD 1,650'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	150	35%	11.00	3.82
	TAIL 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD 3,599'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	270	20%	11.00	3.38
	TAIL 5,100'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,210	35%	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.

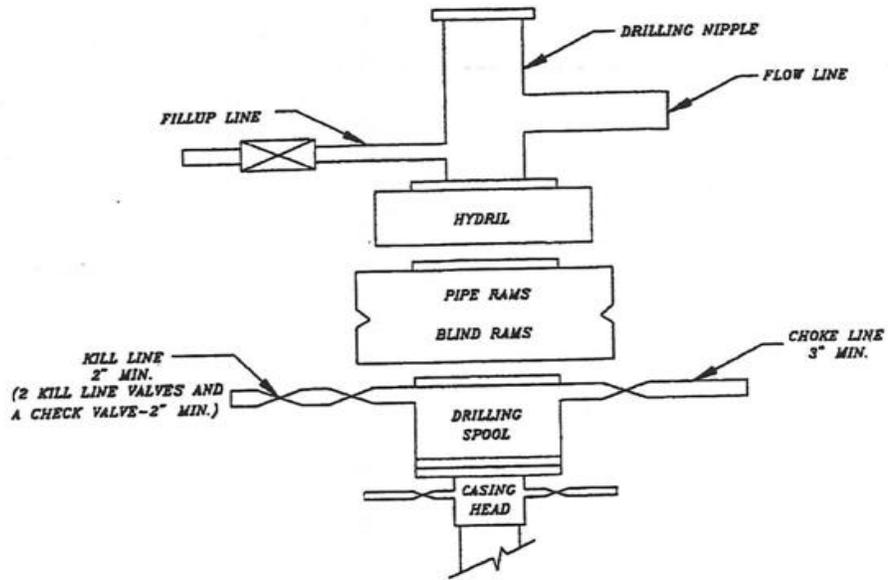
DRILLING ENGINEER: \_\_\_\_\_  
Nick Spence / Danny Showers

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

DRILLING SUPERINTENDENT: \_\_\_\_\_  
Kenny Gathings / Lovel Young

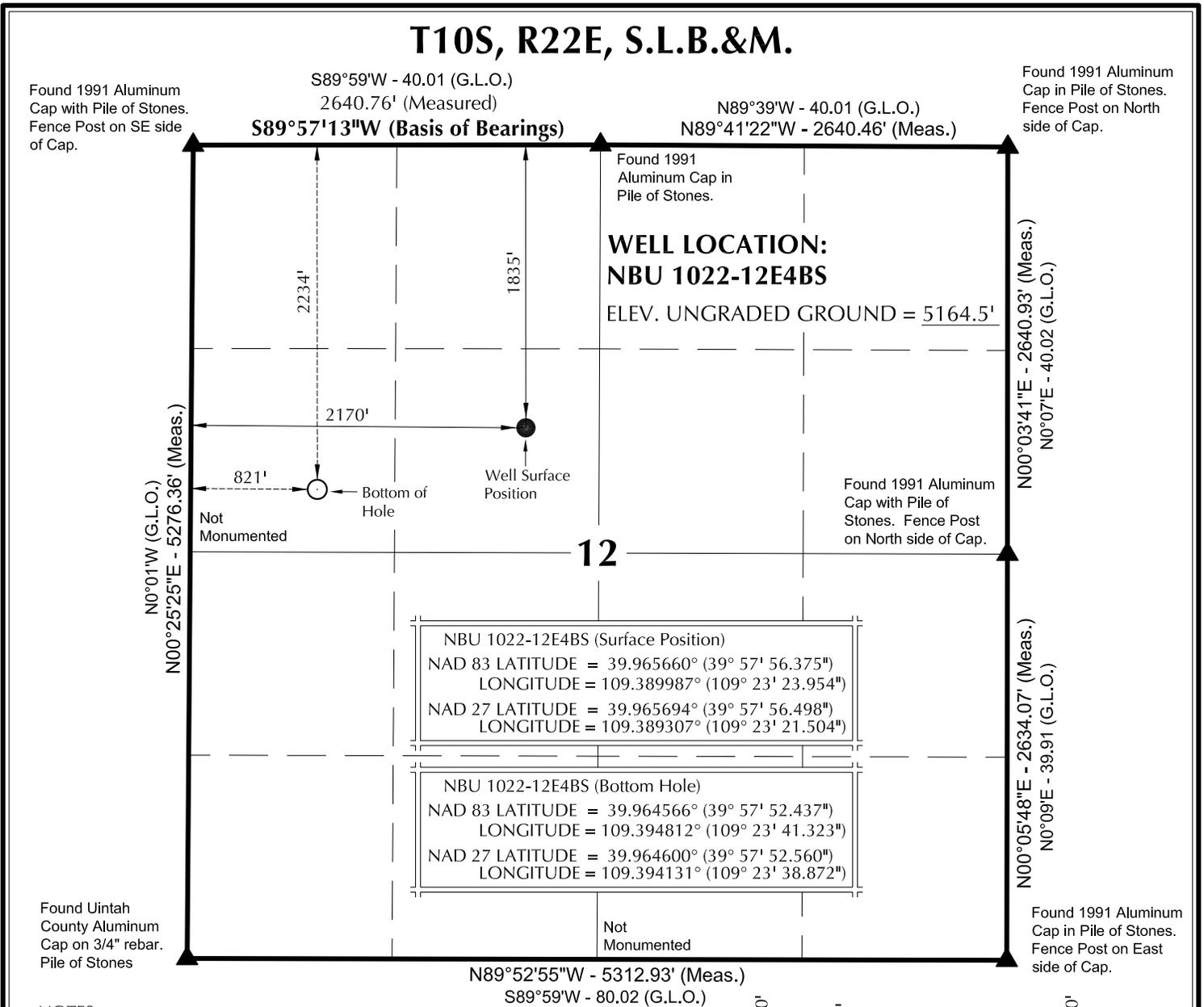
DATE: \_\_\_\_\_

EXHIBIT A  
NBU 1022-12E4BS



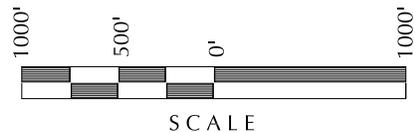
SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

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



**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains.  
1 chain = 66 feet.
- 3. The Bottom of hole bears S73°32'11"W 1410.28' from the Surface Position.
- 4. Bearings are based on Global Positioning Satellite observations.
- 5. Basis of elevation is Tri-Sta "Two Water" located in the NW ¼ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**SURVEYOR'S CERTIFICATE**

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

*John R. Haugh*  
 PROFESSIONAL LAND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH  
 2-11-11

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

**WELL PAD: NBU 1022-12F**

**NBU 1022-12E4BS  
WELL PLAT**

**2234' FNL, 821' FWL (Bottom Hole)**

**SW ¼ NW ¼ OF SECTION 12, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH.**

**609**

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

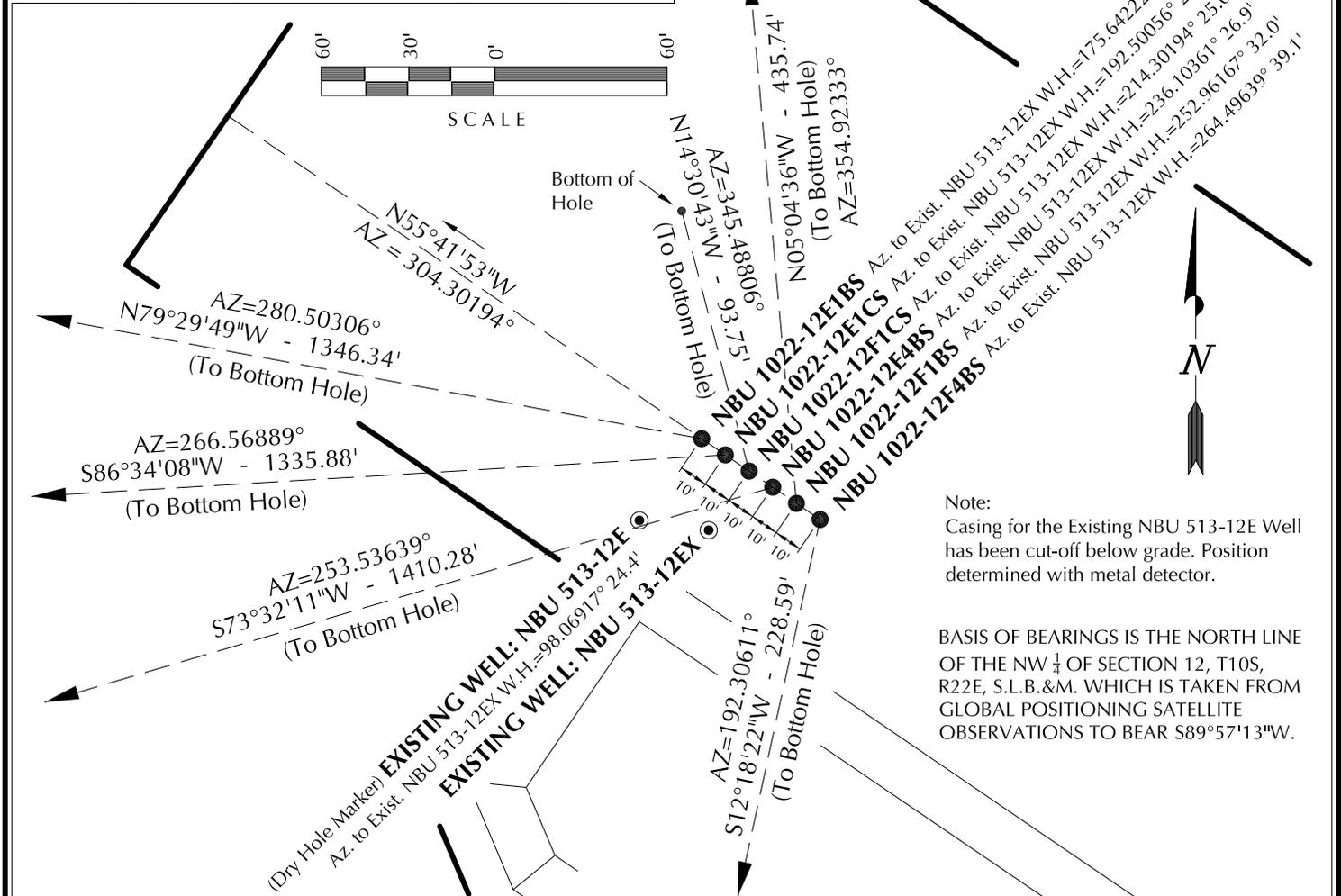
**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 01-26-11	SURVEYED BY: R.Y.	SHEET NO: <b>3</b>
DATE DRAWN: 02-10-11	DRAWN BY: E.M.S.	
SCALE: 1" = 1000'		3 OF 18

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1022-12F4BS	39°57'56.263"	109°23'23.742"	39°57'56.388"	109°23'21.292"	1847' FNL	39°57'54.057"	109°23'24.369"	39°57'54.180"	109°23'21.920"	2070' FNL
NBU 1022-12F1BS	39°57'56.319"	109°23'23.848"	39°57'56.442"	109°23'21.398"	2187' FWL	39°58'00.607"	109°23'24.338"	39°58'00.731"	109°23'21.888"	1407' FNL
NBU 1022-12E4BS	39°57'56.375"	109°23'23.954"	39°57'56.498"	109°23'21.504"	2179' FWL	39°57'52.437"	109°23'41.323"	39°57'52.560"	109°23'38.872"	2234' FNL
NBU 1022-12F1CS	39°57'56.430"	109°23'24.060"	39°57'56.554"	109°23'21.610"	1830' FNL	39°57'57.327"	109°23'24.360"	39°57'57.450"	109°23'21.910"	1739' FNL
NBU 1022-12E1CS	39°57'56.486"	109°23'24.166"	39°57'56.609"	109°23'21.716"	2162' FWL	39°57'55.707"	109°23'41.288"	39°57'55.830"	109°23'38.838"	2154' FNL
NBU 1022-12E1BS	39°57'56.542"	109°23'24.272"	39°57'56.665"	109°23'21.822"	1818' FNL	39°57'58.977"	109°23'41.266"	39°57'59.100"	109°23'38.816"	2146' FWL
NBU 513-12EX	39°57'56.226"	109°23'24.241"	39°57'56.350"	109°23'21.791"	1850' FNL	39°57'56.533"	109°23'41.266"	39°57'59.100"	109°23'38.816"	2148' FWL
NBU 513-12E	39°57'56.260"	109°23'24.551"	39°57'56.384"	109°23'22.101"	1847' FNL	39°57'56.260"	109°23'24.551"	39°57'56.384"	109°23'22.101"	2124' FWL

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-12F4BS	-223.3'	-48.7'	NBU 1022-12F1BS	434.0'	-38.6'	NBU 1022-12E4BS	-399.7'	-1,352.5'	NBU 1022-12F1CS	90.8'	-23.5'
NBU 1022-12E1CS	-80.0'	-1,333.5'	NBU 1022-12E1BS	245.4'	-1,323.8'						



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

**WELL PAD - NBU 1022-12F**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1022-12F4BS, NBU 1022-12F1BS, NBU 1022-12E4BS, NBU 1022-12F1CS, NBU 1022-12E1CS & NBU 1022-12E1BS LOCATED IN SECTION 12, T10S, R22E, S.L.B.&M., UTAH COUNTY, UTAH.

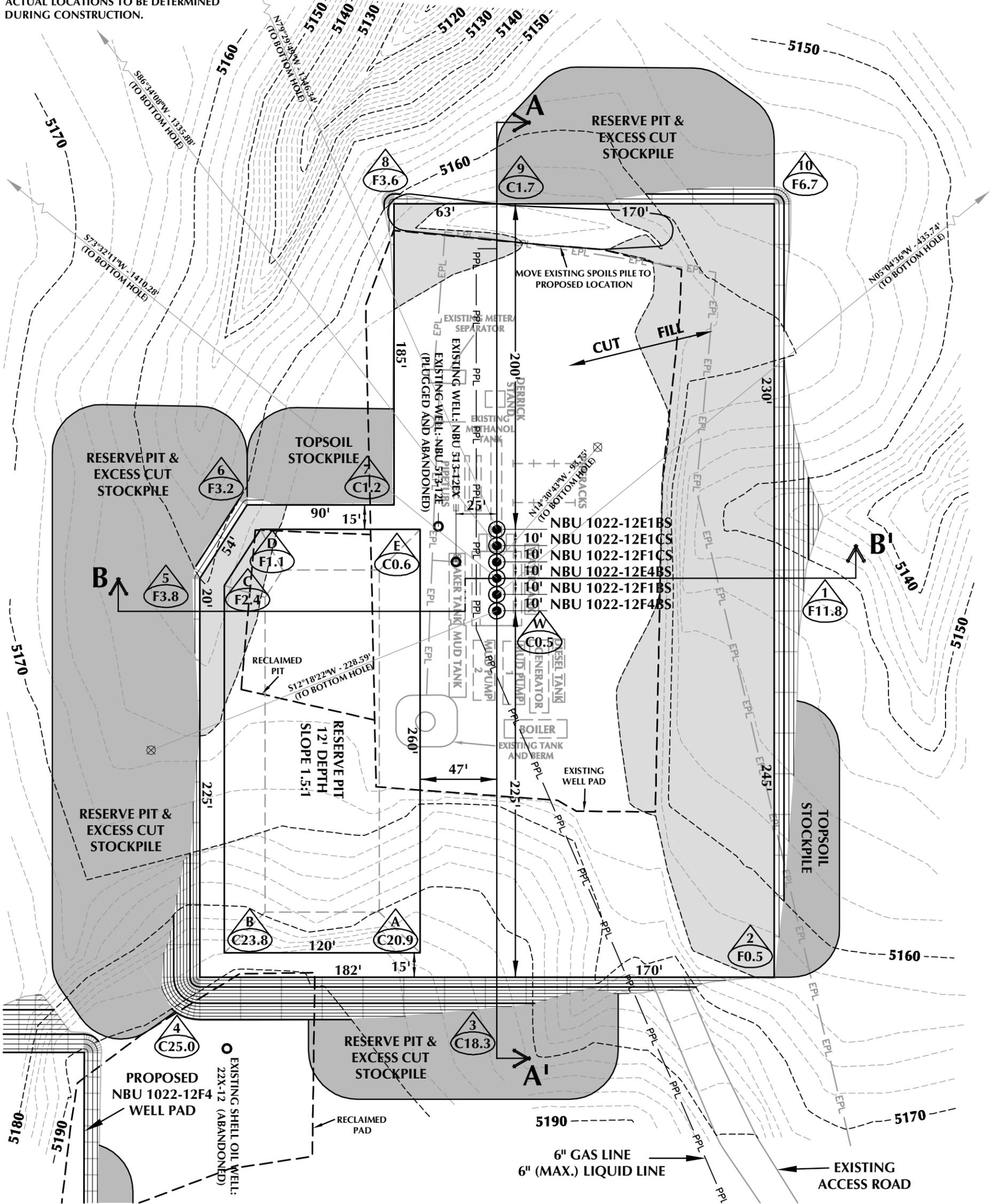
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ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 01-26-11	SURVEYED BY: R.Y.	SHEET NO: <b>7</b>
DATE DRAWN: 02-10-11	DRAWN BY: E.M.S.	
SCALE: 1" = 60'	Date Last Revised:	7 OF 18

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



**WELL PAD - NBU 1022-12F DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5164.5'  
 FINISHED GRADE ELEVATION = 5164.0'  
 CUT SLOPES = 1:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.68 ACRES  
 TOTAL DAMAGE AREA = 6.49 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-12F**

**WELL PAD - LOCATION LAYOUT**  
 NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 17,410 C.Y.  
 TOTAL FILL FOR WELL PAD = 10,082 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,878 C.Y.  
 EXCESS MATERIAL = 7,328 C.Y.

**RESERVE PIT QUANTITIES**

TOTAL CUT FOR RESERVE PIT  
 +/- 10,910 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 41,860 BARRELS



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 2155 North Main Street  
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 Fax 307-674-0182

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(435) 789-1365

**WELL PAD LEGEND**

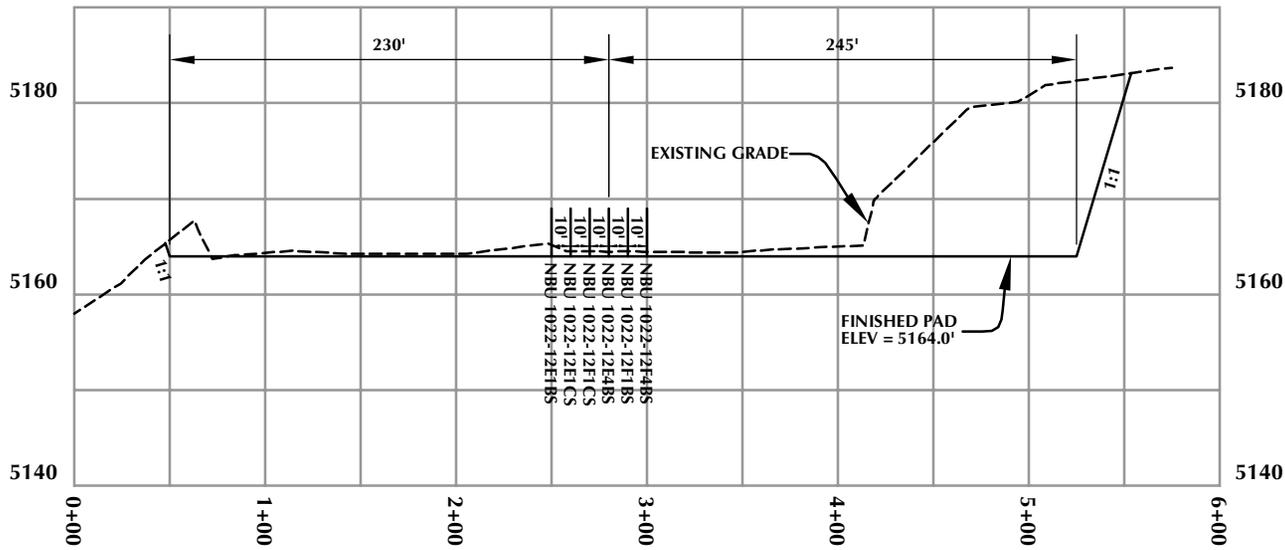
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE



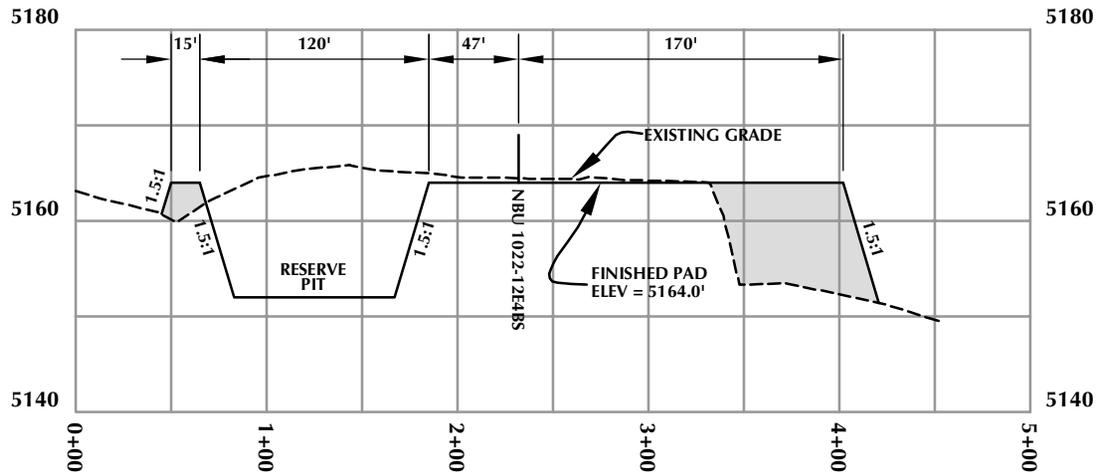
HORIZONTAL 0 30' 60' 1" = 60'

2' CONTOURS

SCALE: 1"=60'	DATE: 3/8/11	SHEET NO:
REVISED:	TAR 4/15/11	<b>8</b> 8 OF 18



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 1022-12F**

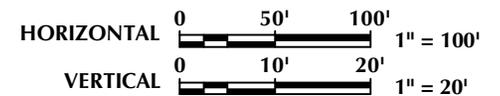
**WELL PAD - CROSS SECTIONS**  
NBU 1022-12F4BS, NBU 1022-12F1BS,  
NBU 1022-12E4BS, NBU 1022-12E1CS,  
NBU 1022-12E1CS & NBU 1022-12E1BS  
LOCATED IN SECTION 12, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH



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

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

(435) 789-1365



Scale: 1"=100'

Date: 3/8/11

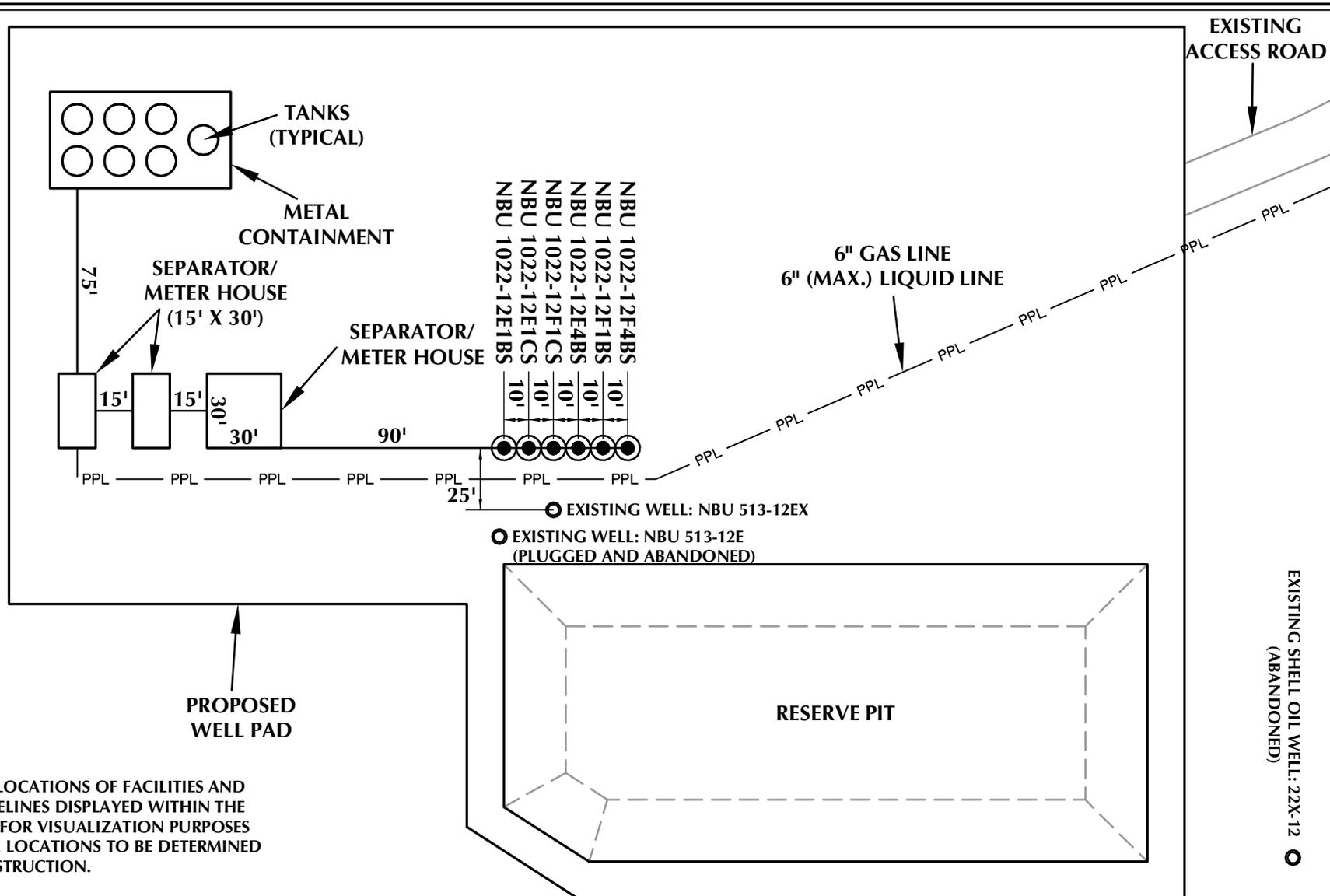
SHEET NO:

REVISED:

**9**

9 OF 18

**RECEIVED: September 12, 2011**



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

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

**WELL PAD - NBU 1022-12F**

**WELL PAD - FACILITIES DIAGRAM**  
NBU 1022-12F4BS, NBU 1022-12F1BS,  
NBU 1022-12E4BS, NBU 1022-12F1CS,  
NBU 1022-12E1CS & NBU 1022-12E1BS  
LOCATED IN SECTION 12, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

**WELL PAD LEGEND**

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



HORIZONTAL 1" = 60'

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

Scale: 1"=60' Date: 3/8/11  
REVISED: TAR 4/15/11

SHEET NO:  
**10** 10 OF 18

K:\ANADARKO\2010\2010\_64\_NBU\_FOCUS\_1022-12\DWG\NBU\_1022-12F\_PAD\_20110201.dwg, 4/12/2011 10:59:25 AM

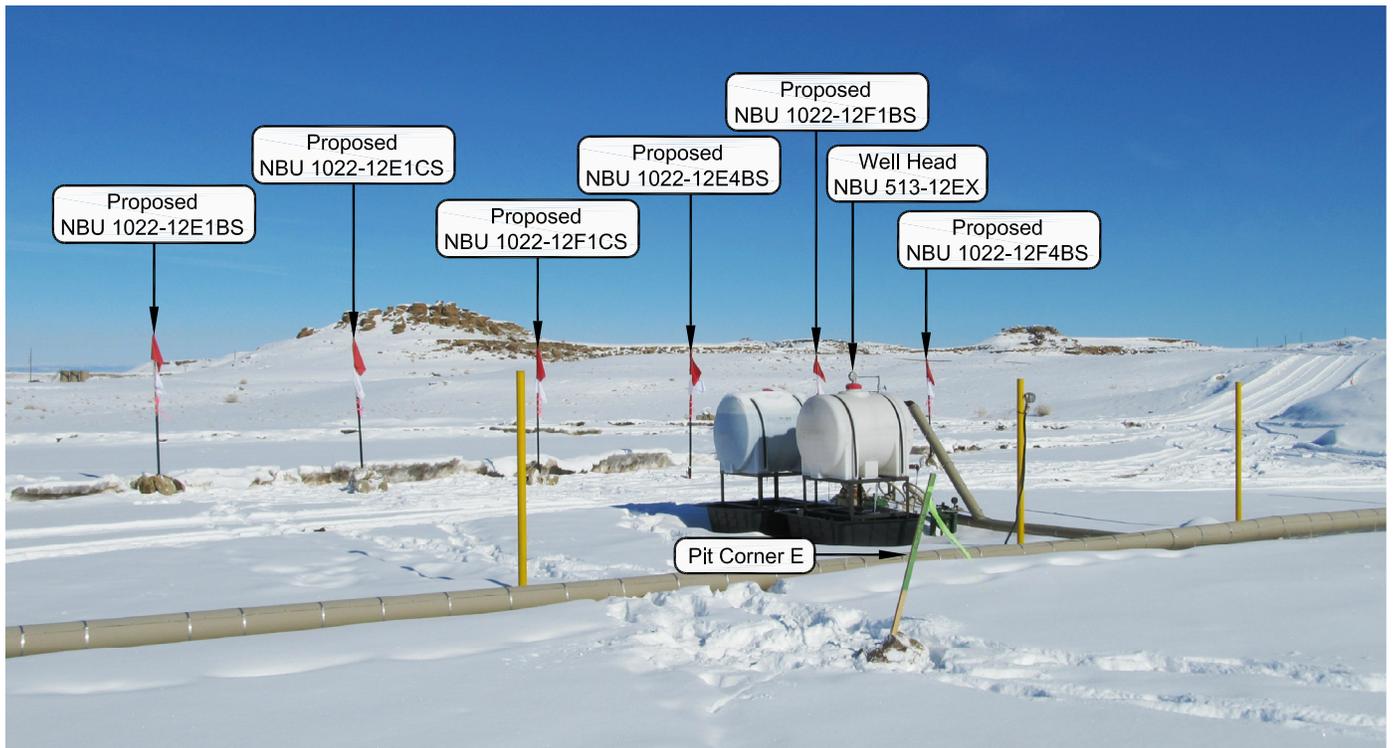


PHOTO VIEW: FROM PIT CORNER E TO LOCATION STAKE

CAMERA ANGLE: NORTHEASTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: WESTERLY

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

**WELL PAD - NBU 1022-12F**

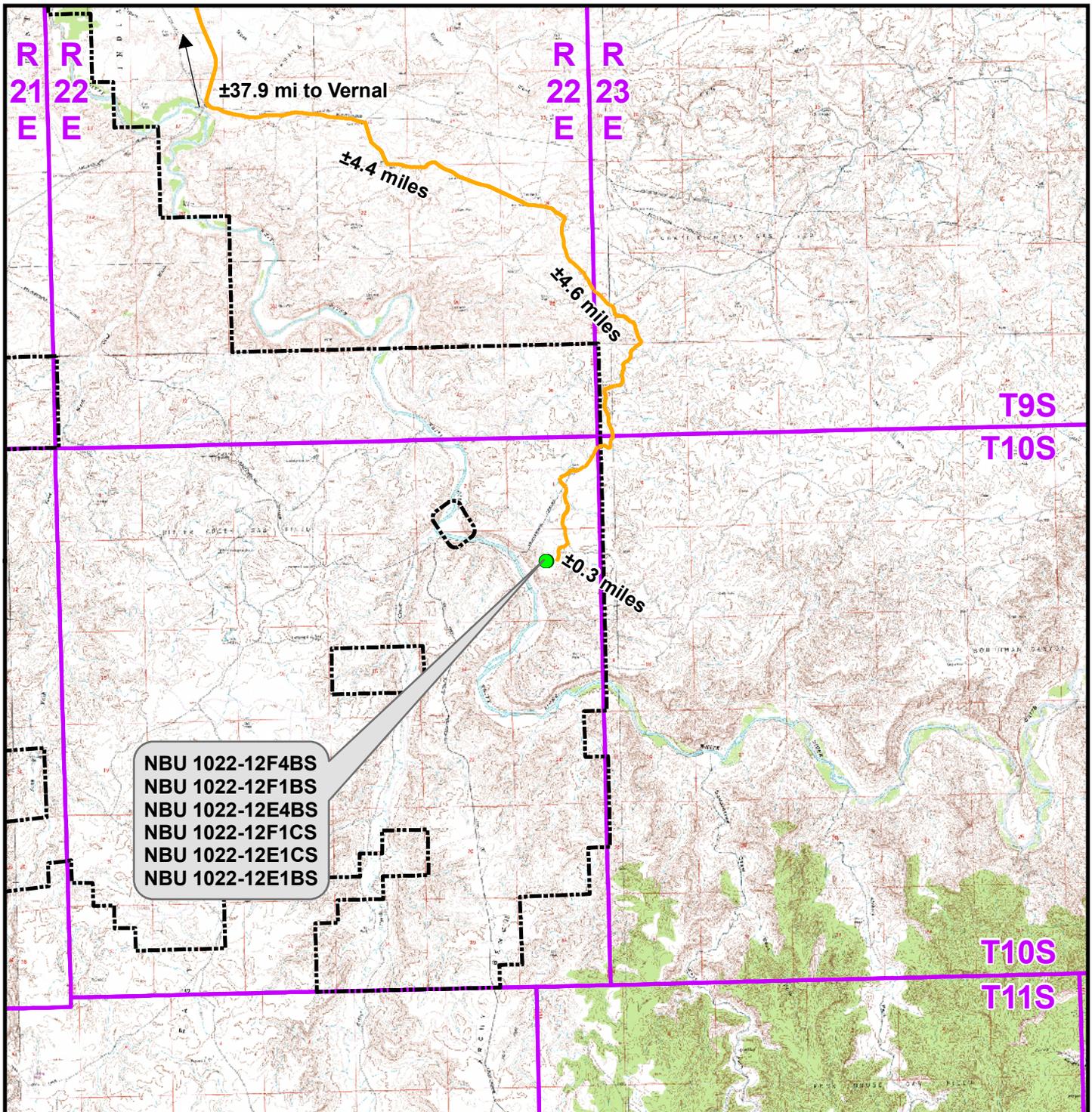
**LOCATION PHOTOS**  
 NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., Uintah County, Utah.



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

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

DATE PHOTOS TAKEN: 02-10-11	PHOTOS TAKEN BY: R.Y.	SHEET NO: <b>11</b>
DATE DRAWN: 02-10-11	DRAWN BY: E.M.S.	
Date Last Revised:		11 OF 18



**Legend**

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

Distance From Well Pad - NBU 1022-12F To Unit Boundary: ±3,105ft

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

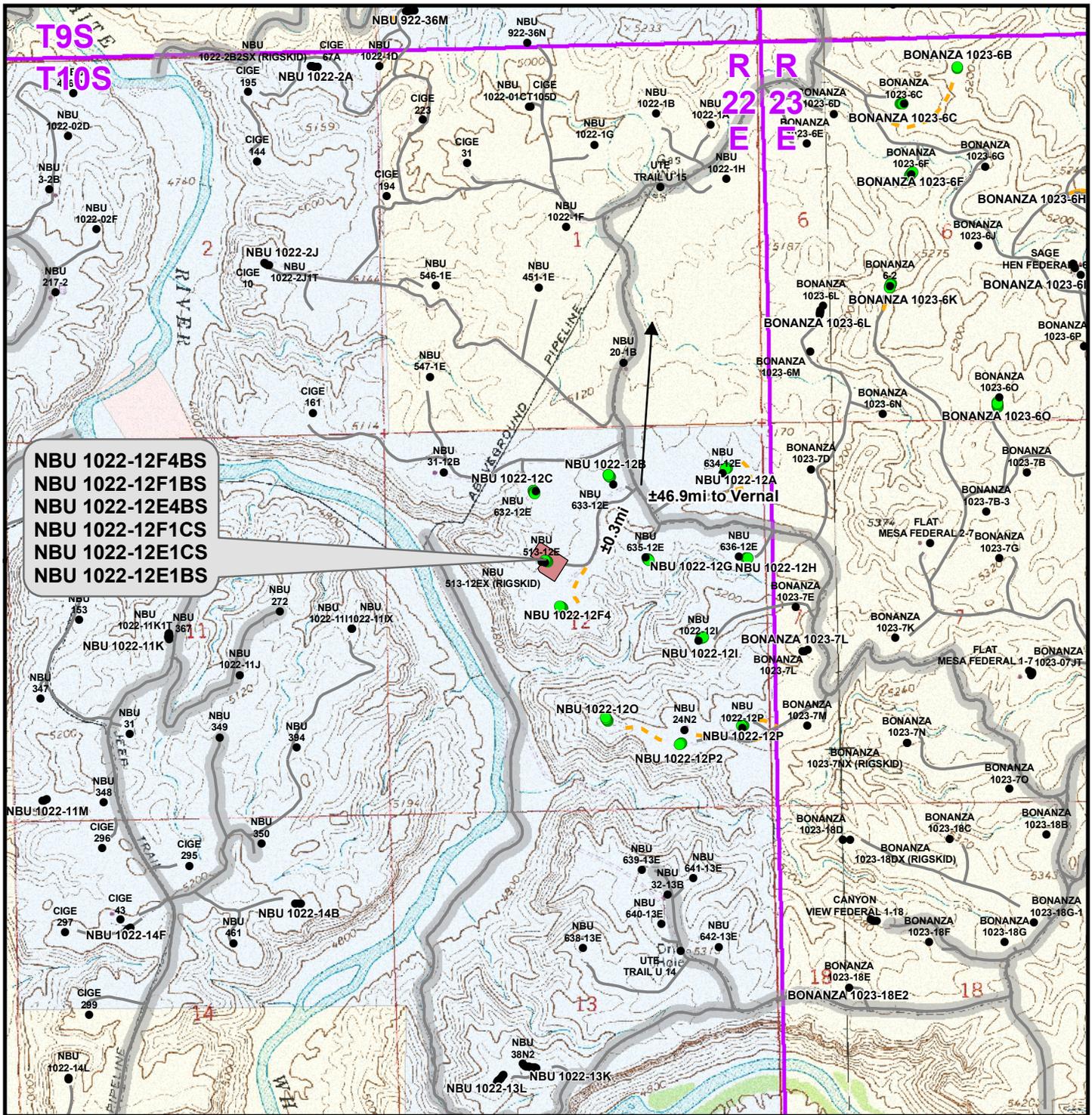
**WELL PAD - NBU 1022-12F**

TOPO A

NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 8 Mar 2011	12
Revised:	Date:	



NBU 1022-12F4BS  
 NBU 1022-12F1BS  
 NBU 1022-12E4BS  
 NBU 1022-12F1CS  
 NBU 1022-12E1CS  
 NBU 1022-12E1BS

**Legend**

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

Total Proposed Road Length: ±0ft

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

**WELL PAD - NBU 1022-12F**

**TOPO B**

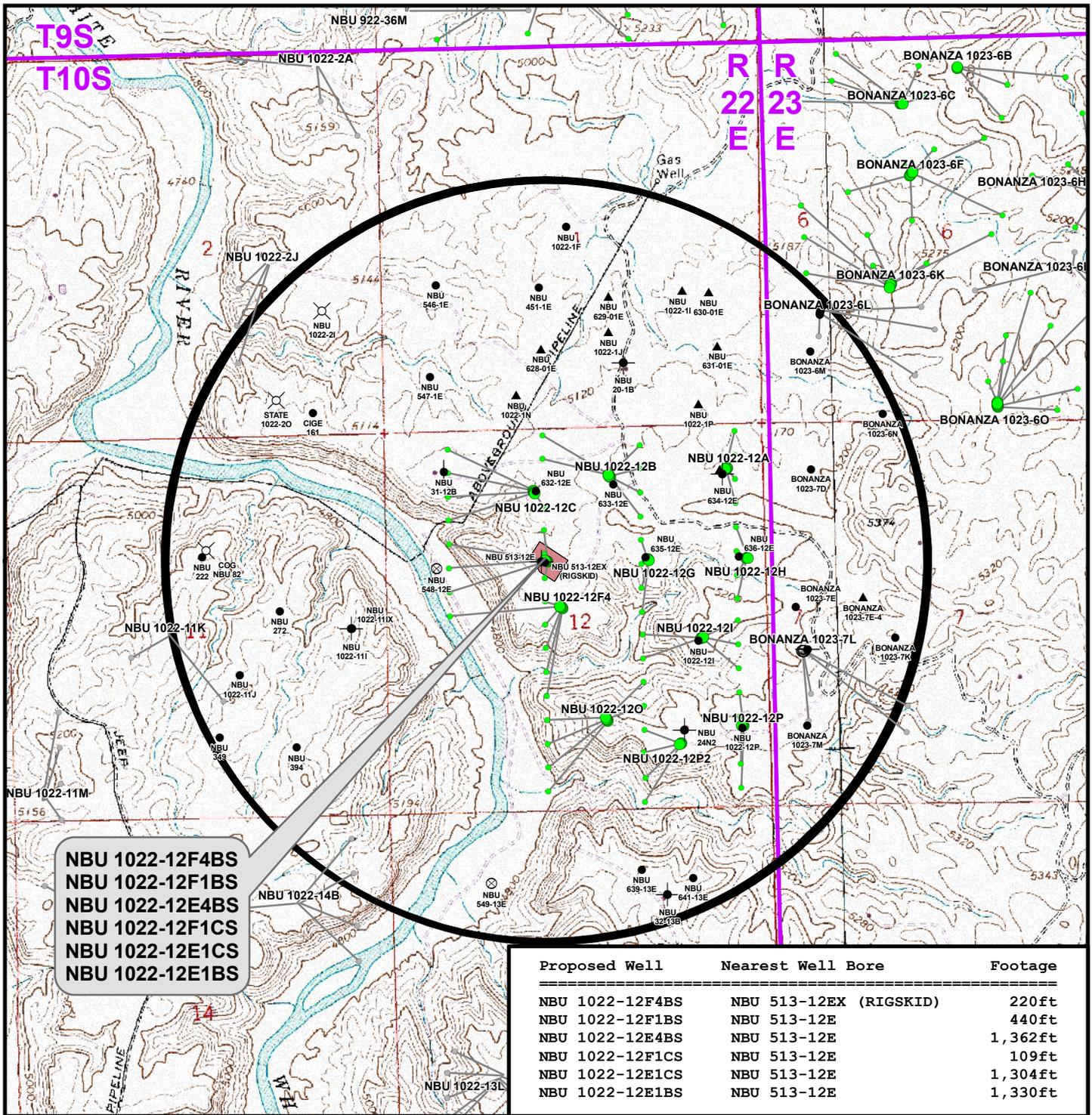
NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH



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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: <b>13</b>	13 of 18
Drawn: TL	Date: 8 Mar 2011		
Revised:	Date:		



**Legend**

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

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

**WELL PAD - NBU 1022-12F**

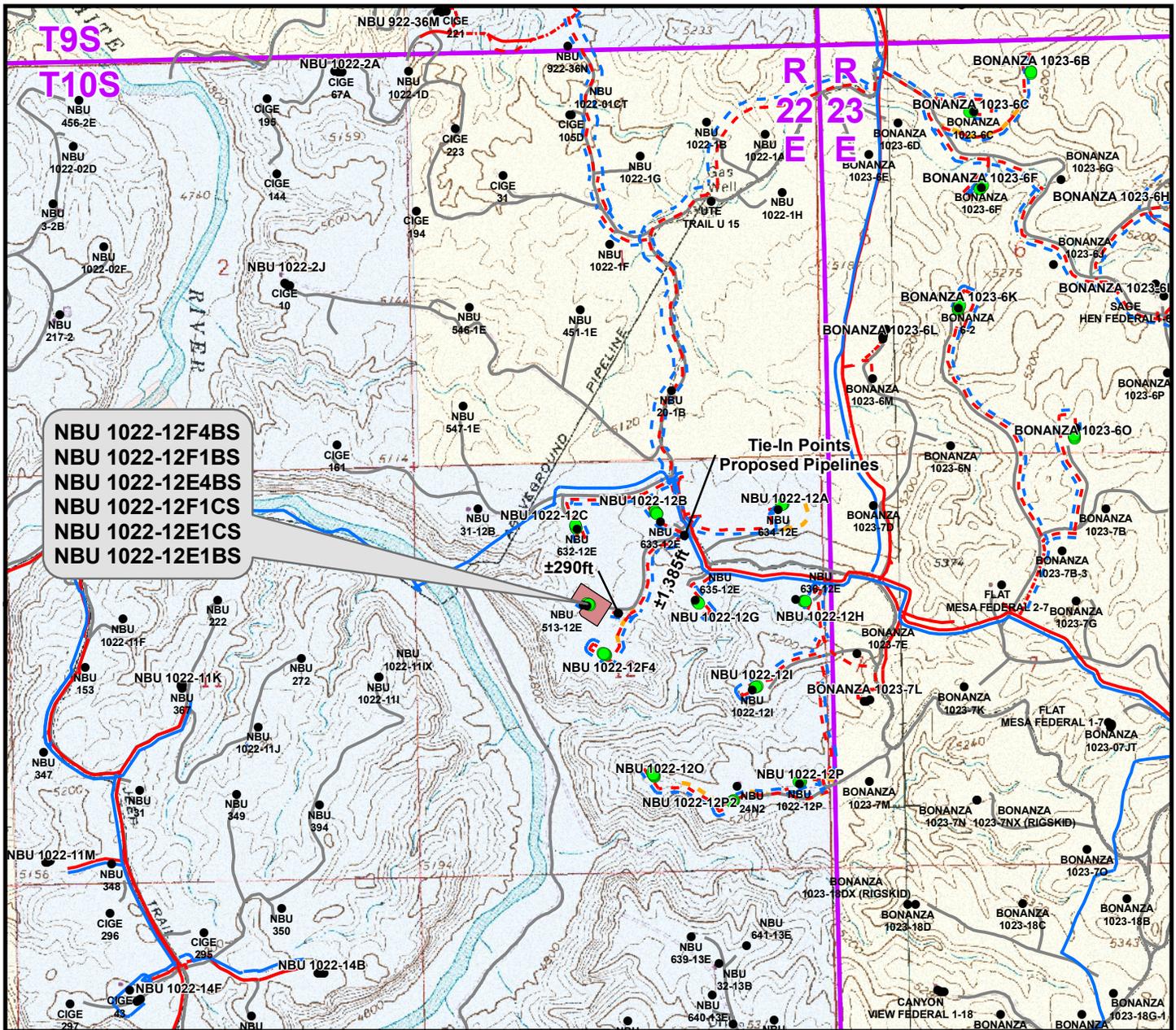
**TOPO C**

NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: <b>14</b>
Drawn: TL	Date: 8 Mar 2011	14 of 18
Revised:	Date:	



Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±495ft
Proposed 6" (Max.) (Edge of Pad to 12F4 Intersection)	±290ft
Proposed 6" (Max.) (12F4 Intersection to 12B Intersection)	±1,385ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±2,170ft</b>

Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±495ft
Proposed 6" (Edge of Pad to 12F4 Intersection)	±290ft
Proposed 8" (12F4 Intersection to 12B Intersection)	±1,385ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,170ft</b>

**Legend**

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

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

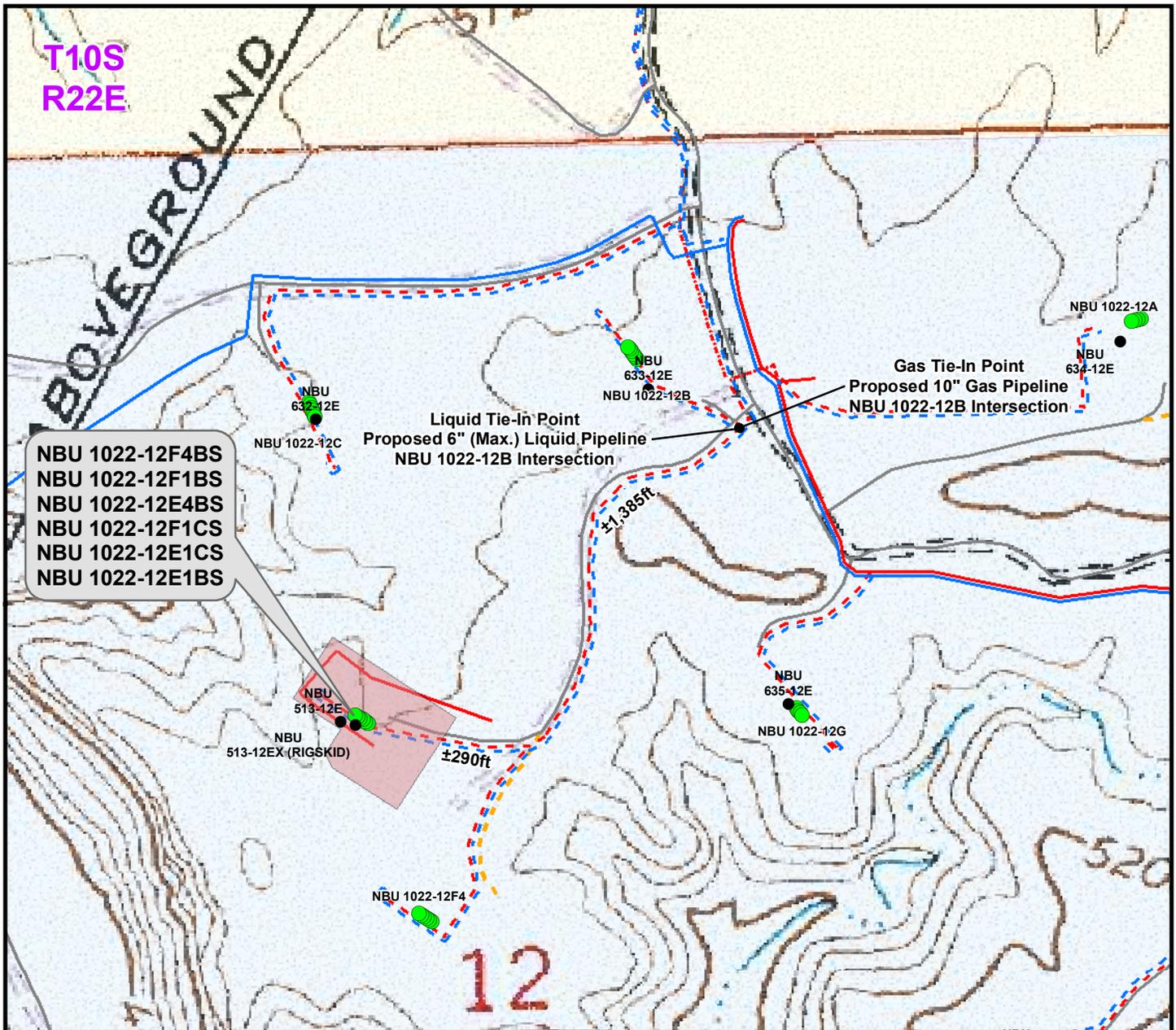
**WELL PAD - NBU 1022-12F**

**TOPO D**  
 NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: <b>15</b>
Drawn: JFE	Date: 8 Mar 2011	<b>15</b> of 18
Revised: TL	Date: 19 Apr 2011	



- NBU 1022-12F4BS
- NBU 1022-12F1BS
- NBU 1022-12E4BS
- NBU 1022-12F1CS
- NBU 1022-12E1CS
- NBU 1022-12E1BS

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±495ft
Proposed 6" (Max.) (Edge of Pad to 12F4 Intersection)	±290ft
Proposed 6" (Max.) (12F4 Intersection to 12B Intersection)	±1,385ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±2,170ft</b>

Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±495ft
Proposed 6" (Edge of Pad to 12F4 Intersection)	±290ft
Proposed 8" (12F4 Intersection to 12B Intersection)	±1,385ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,170ft</b>

**Legend**

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

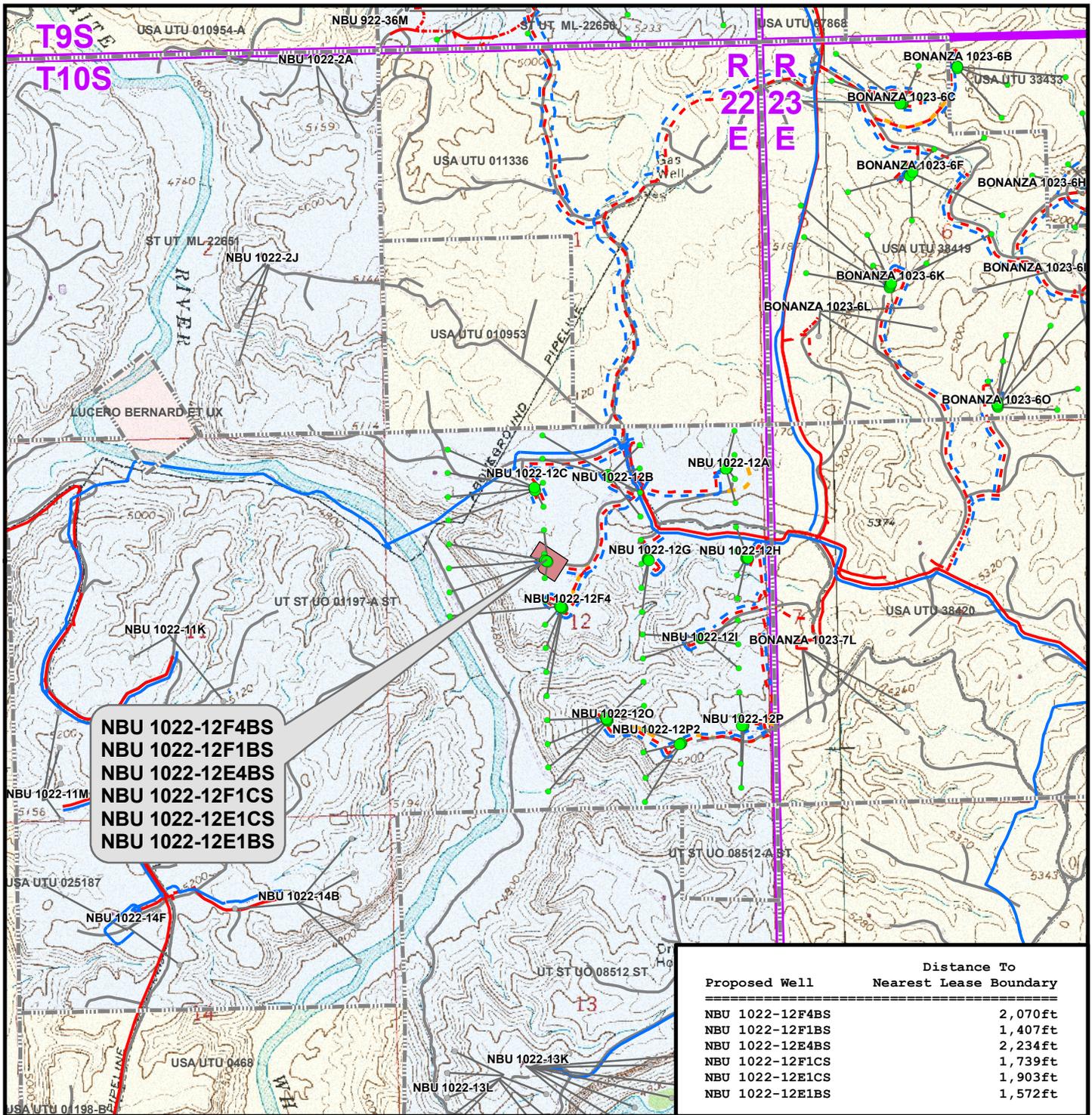
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-12F**

**TOPO D2 (PAD & PIPELINE DETAIL)**  
 NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH

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

Scale: 1" = 500ft	NAD83 USP Central	Sheet No:
Drawn: JFE	Date: 8 Mar 2011	<b>16</b> 16 of 18
Revised: TL	Date: 19 Apr 2011	



**Legend**

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

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

**WELL PAD - NBU 1022-12F**

**TOPO E**

NBU 1022-12F4BS, NBU 1022-12F1BS,  
 NBU 1022-12E4BS, NBU 1022-12F1CS,  
 NBU 1022-12E1CS & NBU 1022-12E1BS  
 LOCATED IN SECTION 12, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: <b>17</b>
Drawn: TL	Date: 8 Mar 2011	<b>17</b> of 18
Revised: TL	Date: 19 Apr 2011	

**Kerr-McGee Oil & Gas Onshore, LP**  
**WELL PAD – NBU 1022-12F**  
**WELLS – NBU 1022-12F4BS, NBU 1022-12F1BS, NBU 1022-12E4BS,**  
**NBU 1022-12F1CS, NBU 1022-12E1CS & NBU 1022-12E1BS**  
**Section 12, T10S, R22E, S.L.B.&M.**

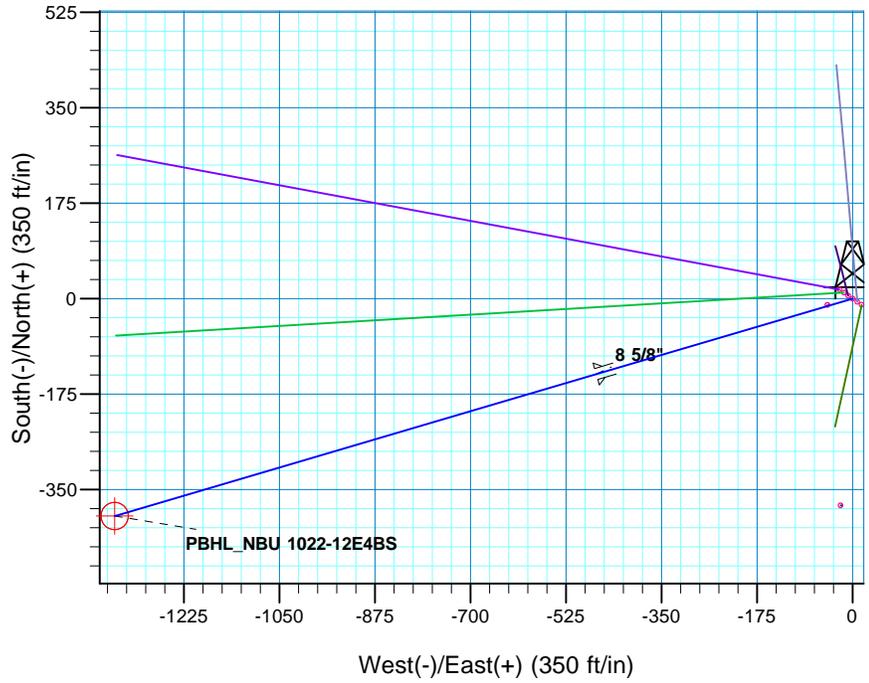
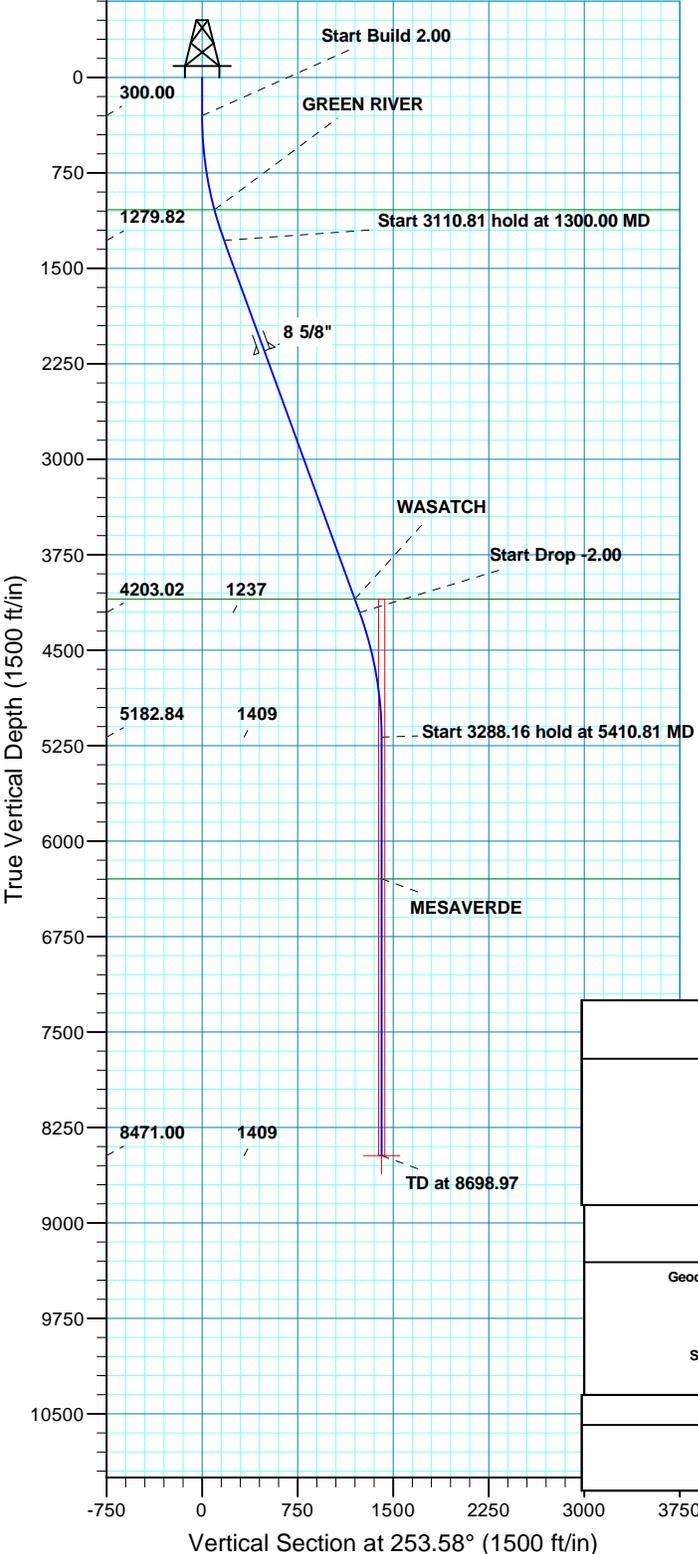
From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 14.4 miles to the intersection of the Fidlar Road (County B Road 3410) which road intersection is approximately 400 feet northeast of the Mountain Fuel Bridge at the White River. Exit left and proceed in a southeasterly direction along the Fidlar Road approximately 4.4 miles to the intersection of the Seven Sisters Road (County B Road 3420). Exit right and proceed in a southeasterly then southerly direction along the Seven Sisters Road approximately 4.6 miles to a service road to the southwest. Exit right and proceed in a southwesterly direction along the service road approximately 0.3 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 47.2 miles in a southerly direction.



Azimuths to True North  
 Magnetic North: 11.00°  
  
 Magnetic Field  
 Strength: 52304.6snT  
 Dip Angle: 65.86°  
 Date: 08/26/2011  
 Model: IGRF2010

WELL DETAILS: NBU 1022-12E4BS						
GL 5164 & KB 4 @ 5168.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	14517627.82	2091740.79	39° 57' 56.498 N	109° 23' 21.505 W	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
PBHL	8471.00	-398.42	-1352.02	14517205.05	2090396.19	39° 57' 52.560 N
- plan hits target center						
Shape	Circle (Radius: 25.00)					



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1300.00	20.00	253.58	1279.82	-48.84	-165.72	2.00	253.58	172.77	
4410.81	20.00	253.58	4203.02	-349.58	-1186.29	0.00	0.00	1236.73	
5410.81	0.00	0.00	5182.84	-398.42	-1352.02	2.00	180.00	1409.50	
8698.97	0.00	0.00	8471.00	-398.42	-1352.02	0.00	0.00	1409.50	PBHL_NBU 1022-12E4BS

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1039.00	1047.45	GREEN RIVER
4099.00	4300.11	WASATCH
6296.00	6523.97	MESAVERDE

**PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N**  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 12 T10S R22E  
 System Datum: Mean Sea Level

CASING DETAILS			
TVD	MD	Name	Size
2150.00	2226.03	8 5/8"	8.625





# **US ROCKIES REGION PLANNING**

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

**NBU 1022-12F PAD**

**NBU 1022-12E4BS**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**26 August, 2011**





SDI  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-12F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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

<b>Site</b>	NBU 1022-12F PAD, SECTION 12 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,517,644.13 usft	<b>Latitude:</b>	39° 57' 56.664 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,091,715.83 usft	<b>Longitude:</b>	109° 23' 21.822 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.03 °

<b>Well</b>	NBU 1022-12E4BS, 1835 FNL 2170 FWL					
<b>Well Position</b>	<b>+N/-S</b>	-16.75 ft	<b>Northing:</b>	14,517,627.82 usft	<b>Latitude:</b>	39° 57' 56.498 N
	<b>+E/-W</b>	24.66 ft	<b>Easting:</b>	2,091,740.79 usft	<b>Longitude:</b>	109° 23' 21.505 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,164.00 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>
	IGRF2010	08/26/11	11.00	65.86	52,305

<b>Design</b>	PLAN #1 PRELIMINARY			
<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	253.58

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	253.58	1,279.82	-48.84	-165.72	2.00	2.00	0.00	253.58	
4,410.81	20.00	253.58	4,203.02	-349.58	-1,186.29	0.00	0.00	0.00	0.00	
5,410.81	0.00	0.00	5,182.84	-398.42	-1,352.02	2.00	-2.00	0.00	180.00	
8,698.97	0.00	0.00	8,471.00	-398.42	-1,352.02	0.00	0.00	0.00	0.00	PBHL_NBU 1022-12



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-12F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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	
<b>Start Build 2.00</b>										
400.00	2.00	253.58	399.98	-0.49	-1.67	1.75	2.00	2.00	0.00	
500.00	4.00	253.58	499.84	-1.97	-6.69	6.98	2.00	2.00	0.00	
600.00	6.00	253.58	599.45	-4.44	-15.05	15.69	2.00	2.00	0.00	
700.00	8.00	253.58	698.70	-7.88	-26.74	27.88	2.00	2.00	0.00	
800.00	10.00	253.58	797.47	-12.30	-41.75	43.52	2.00	2.00	0.00	
900.00	12.00	253.58	895.62	-17.70	-60.05	62.60	2.00	2.00	0.00	
1,000.00	14.00	253.58	993.06	-24.05	-81.63	85.10	2.00	2.00	0.00	
1,047.45	14.95	253.58	1,039.00	-27.41	-93.00	96.96	2.00	2.00	0.00	
<b>GREEN RIVER</b>										
1,100.00	16.00	253.58	1,089.64	-31.37	-106.45	110.98	2.00	2.00	0.00	
1,200.00	18.00	253.58	1,185.27	-39.63	-134.49	140.21	2.00	2.00	0.00	
1,300.00	20.00	253.58	1,279.82	-48.84	-165.72	172.77	2.00	2.00	0.00	
<b>Start 3110.81 hold at 1300.00 MD</b>										
1,400.00	20.00	253.58	1,373.78	-58.50	-198.53	206.97	0.00	0.00	0.00	
1,500.00	20.00	253.58	1,467.75	-68.17	-231.34	241.17	0.00	0.00	0.00	
1,600.00	20.00	253.58	1,561.72	-77.84	-264.14	275.37	0.00	0.00	0.00	
1,700.00	20.00	253.58	1,655.69	-87.51	-296.95	309.58	0.00	0.00	0.00	
1,800.00	20.00	253.58	1,749.66	-97.17	-329.76	343.78	0.00	0.00	0.00	
1,900.00	20.00	253.58	1,843.63	-106.84	-362.57	377.98	0.00	0.00	0.00	
2,000.00	20.00	253.58	1,937.60	-116.51	-395.37	412.18	0.00	0.00	0.00	
2,100.00	20.00	253.58	2,031.57	-126.18	-428.18	446.38	0.00	0.00	0.00	
2,200.00	20.00	253.58	2,125.54	-135.84	-460.99	480.59	0.00	0.00	0.00	
2,226.03	20.00	253.58	2,150.00	-138.36	-469.53	489.49	0.00	0.00	0.00	
<b>8 5/8"</b>										
2,300.00	20.00	253.58	2,219.51	-145.51	-493.79	514.79	0.00	0.00	0.00	
2,400.00	20.00	253.58	2,313.48	-155.18	-526.60	548.99	0.00	0.00	0.00	
2,500.00	20.00	253.58	2,407.45	-164.85	-559.41	583.19	0.00	0.00	0.00	
2,600.00	20.00	253.58	2,501.42	-174.52	-592.22	617.39	0.00	0.00	0.00	
2,700.00	20.00	253.58	2,595.39	-184.18	-625.02	651.60	0.00	0.00	0.00	
2,800.00	20.00	253.58	2,689.35	-193.85	-657.83	685.80	0.00	0.00	0.00	
2,900.00	20.00	253.58	2,783.32	-203.52	-690.64	720.00	0.00	0.00	0.00	
3,000.00	20.00	253.58	2,877.29	-213.19	-723.44	754.20	0.00	0.00	0.00	
3,100.00	20.00	253.58	2,971.26	-222.85	-756.25	788.40	0.00	0.00	0.00	
3,200.00	20.00	253.58	3,065.23	-232.52	-789.06	822.61	0.00	0.00	0.00	
3,300.00	20.00	253.58	3,159.20	-242.19	-821.87	856.81	0.00	0.00	0.00	
3,400.00	20.00	253.58	3,253.17	-251.86	-854.67	891.01	0.00	0.00	0.00	
3,500.00	20.00	253.58	3,347.14	-261.52	-887.48	925.21	0.00	0.00	0.00	
3,600.00	20.00	253.58	3,441.11	-271.19	-920.29	959.41	0.00	0.00	0.00	
3,700.00	20.00	253.58	3,535.08	-280.86	-953.10	993.62	0.00	0.00	0.00	
3,800.00	20.00	253.58	3,629.05	-290.53	-985.90	1,027.82	0.00	0.00	0.00	
3,900.00	20.00	253.58	3,723.02	-300.20	-1,018.71	1,062.02	0.00	0.00	0.00	
4,000.00	20.00	253.58	3,816.99	-309.86	-1,051.52	1,096.22	0.00	0.00	0.00	
4,100.00	20.00	253.58	3,910.95	-319.53	-1,084.32	1,130.42	0.00	0.00	0.00	
4,200.00	20.00	253.58	4,004.92	-329.20	-1,117.13	1,164.63	0.00	0.00	0.00	
4,300.00	20.00	253.58	4,098.89	-338.87	-1,149.94	1,198.83	0.00	0.00	0.00	
4,300.11	20.00	253.58	4,099.00	-338.88	-1,149.98	1,198.87	0.00	0.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-12F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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)	
<b>WASATCH</b>										
4,400.00	20.00	253.58	4,192.86	-348.53	-1,182.75	1,233.03	0.00	0.00	0.00	
4,410.81	20.00	253.58	4,203.02	-349.58	-1,186.29	1,236.73	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
4,500.00	18.22	253.58	4,287.29	-357.83	-1,214.30	1,265.92	2.00	-2.00	0.00	
4,600.00	16.22	253.58	4,382.81	-366.20	-1,242.69	1,295.52	2.00	-2.00	0.00	
4,700.00	14.22	253.58	4,479.30	-373.62	-1,267.86	1,321.76	2.00	-2.00	0.00	
4,800.00	12.22	253.58	4,576.64	-380.08	-1,289.79	1,344.63	2.00	-2.00	0.00	
4,900.00	10.22	253.58	4,674.73	-385.58	-1,308.45	1,364.08	2.00	-2.00	0.00	
5,000.00	8.22	253.58	4,773.43	-390.10	-1,323.81	1,380.09	2.00	-2.00	0.00	
5,100.00	6.22	253.58	4,872.64	-393.65	-1,335.86	1,392.65	2.00	-2.00	0.00	
5,200.00	4.22	253.58	4,972.22	-396.22	-1,344.58	1,401.74	2.00	-2.00	0.00	
5,300.00	2.22	253.58	5,072.05	-397.81	-1,349.96	1,407.35	2.00	-2.00	0.00	
5,400.00	0.22	253.58	5,172.03	-398.41	-1,352.00	1,409.48	2.00	-2.00	0.00	
5,410.81	0.00	0.00	5,182.84	-398.42	-1,352.02	1,409.50	2.00	-2.00	0.00	
<b>Start 3288.16 hold at 5410.81 MD</b>										
5,500.00	0.00	0.00	5,272.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,372.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,472.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,572.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,672.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,772.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,872.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,972.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,072.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,172.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,272.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,523.97	0.00	0.00	6,296.00	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
<b>MESAVERDE</b>										
6,600.00	0.00	0.00	6,372.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,472.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,572.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,672.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,772.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,872.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,972.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,072.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,172.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,272.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,372.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,472.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,572.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,672.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,772.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,872.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,972.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,072.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,172.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,272.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,372.03	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	
8,698.97	0.00	0.00	8,471.00	-398.42	-1,352.02	1,409.50	0.00	0.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5164 & KB 4 @ 5168.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-12F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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)
TD at 8698.97 - PBHL_NBU 1022-12E4BS 8471 2150 4372									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1022-12E4 - hit/miss target - Shape - Circle (radius 25.00)	0.00	0.00	8,471.00	-398.42	-1,352.02	14,517,205.06	2,090,396.19	39° 57' 52.560 N	109° 23' 38.872 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,226.03	2,150.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,047.45	1,039.00	GREEN RIVER			
4,300.11	4,099.00	WASATCH			
6,523.97	6,296.00	MESAVERDE			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	-48.84	-165.72	Start 3110.81 hold at 1300.00 MD
4,410.81	4,203.02	-349.58	-1,186.29	Start Drop -2.00
5,410.81	5,182.84	-398.42	-1,352.02	Start 3288.16 hold at 5410.81 MD
8,698.97	8,471.00	-398.42	-1,352.02	TD at 8698.97

NBU 1022-12E1BS/ 1022-12E1CS/  
 1022-12E4BS/ 1022-12F1BS  
 1022-12F1CS/ 1022-12F4BS

Surface Use Plan of Operations  
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<b>NBU 1022-12E1BS</b>			
Surface:	1818 FNL / 2146 FWL	SENW	Lot
BHL:	1572 FNL / 820 FWL	SWNW	Lot
<b>NBU 1022-12E1CS</b>			
Surface:	1824 FNL / 2154 FWL	SENW	Lot
BHL:	1903 FNL / 821 FWL	SWNW	Lot
<b>NBU 1022-12E4BS</b>			
Surface:	1835 FNL / 2170 FWL	SENW	Lot
BHL:	2234 FNL / 821 FWL	SWNW	Lot
<b>NBU 1022-12F1BS</b>			
Surface:	1841 FNL / 2179 FWL	SENW	Lot
BHL:	1407 FNL / 2137 FWL	SENW	Lot
<b>NBU 1022-12F1CS</b>			
Surface:	1830 FNL / 2162 FWL	SENW	Lot
BHL:	1739 FNL / 2138 FWL	SENW	Lot
<b>NBU 1022-12F4BS</b>			
Surface:	1847 FNL / 2187 FWL	SENW	Lot
BHL:	2070 FNL / 2140 FWL	SENW	Lot

**Pad: NBU 1022-12F PAD**

Section 12 T10S R22E

Mineral Lease: UT ST UO 01197-A ST

Uintah County, Utah

Operator: Kerr-McGee Oil & Gas Onshore LP

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

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

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

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

Surface Use Plan of Operations  
2 of 9

**A. Existing Roads:**

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

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

**B. Planned Access Roads:**

No new access road is proposed. (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

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

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

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

This pad will expand the existing pad for the NBU 513-12E and NBU 513-12EX. The NBU 513-12E was plugged and abandoned on April 27, 2010. The NBU 513-12EX well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of September 7, 2011

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

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

**Gathering Facilities:**

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

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

Surface Use Plan of Operations  
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The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 2,170'$  and the individual segments are broken up as follows:

- $\pm 495'$  (0.1 miles) –New 6” buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 290'$  (0.1 miles) –New 6” buried gas pipeline from the edge of pad to the tie-in at the proposed 1022-12F4 Intersection 8" gas pipeline. Please refer to Topo D & D2.
- $\pm 1,385'$  (0.3 miles) –New 8” buried gas pipeline from the proposed 1022-12F4 Intersection 8" gas pipeline to the tie-in at the proposed 1022-12B Intersection 10" gas pipeline. Please refer to Topo D & D2.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 2,170'$  and the individual segments are broken up as follows:

- $\pm 495'$  (0.1 miles) –New 6” buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 290'$  (0.1 miles) –New 6” buried liquid pipeline from the edge of pad to the tie-in at the proposed 1022-12F4 Intersection 6" liquid pipeline. Please refer to Topo D & D2.
- $\pm 1,385'$  (0.3 miles) –New 6” buried liquid pipeline from the tie-in at the proposed 1022-12F4 Intersection 6" liquid pipeline to the tie-in at the proposed 1022-12B Intersection 6" liquid pipeline. Please refer to Topo D & D2.

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

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

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

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

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

Surface Use Plan of Operations  
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**D. Location and Type of Water Supply:**

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

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

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

No water well is to be drilled on this lease.

**E. Source of Construction Materials:**

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

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

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

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

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

Surface Use Plan of Operations  
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Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification.)

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

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

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

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

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

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

### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

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containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

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

**G. Ancillary Facilities:**

None are anticipated.

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

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

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

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

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

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

**Interim Reclamation**

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

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

re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

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

### **Final Reclamation**

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

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

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

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

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

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

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

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

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

**J. Surface/Mineral Ownership:**

SITLA

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

**L. Other Information:**

None

NBU 1022-12E1BS/ 1022-12E1CS/  
1022-12E4BS/ 1022-12F1BS  
1022-12F1CS/ 1022-12F4BS

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

Gina T. Becker  
Regulatory Analyst II  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6086

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

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

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

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

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

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.



Gina T. Becker

September 7, 2011

Date



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

September 7, 2011

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

Re: Directional Drilling R649-3-11  
NBU 1022-12E4BS  
10S-22E-Sec. 12  
SEnw/SWNW  
Surface: 1835' FNL, 2170' FWL  
Bottom Hole: 2234' FNL, 821' FWL  
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 1022-12E4BS 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,

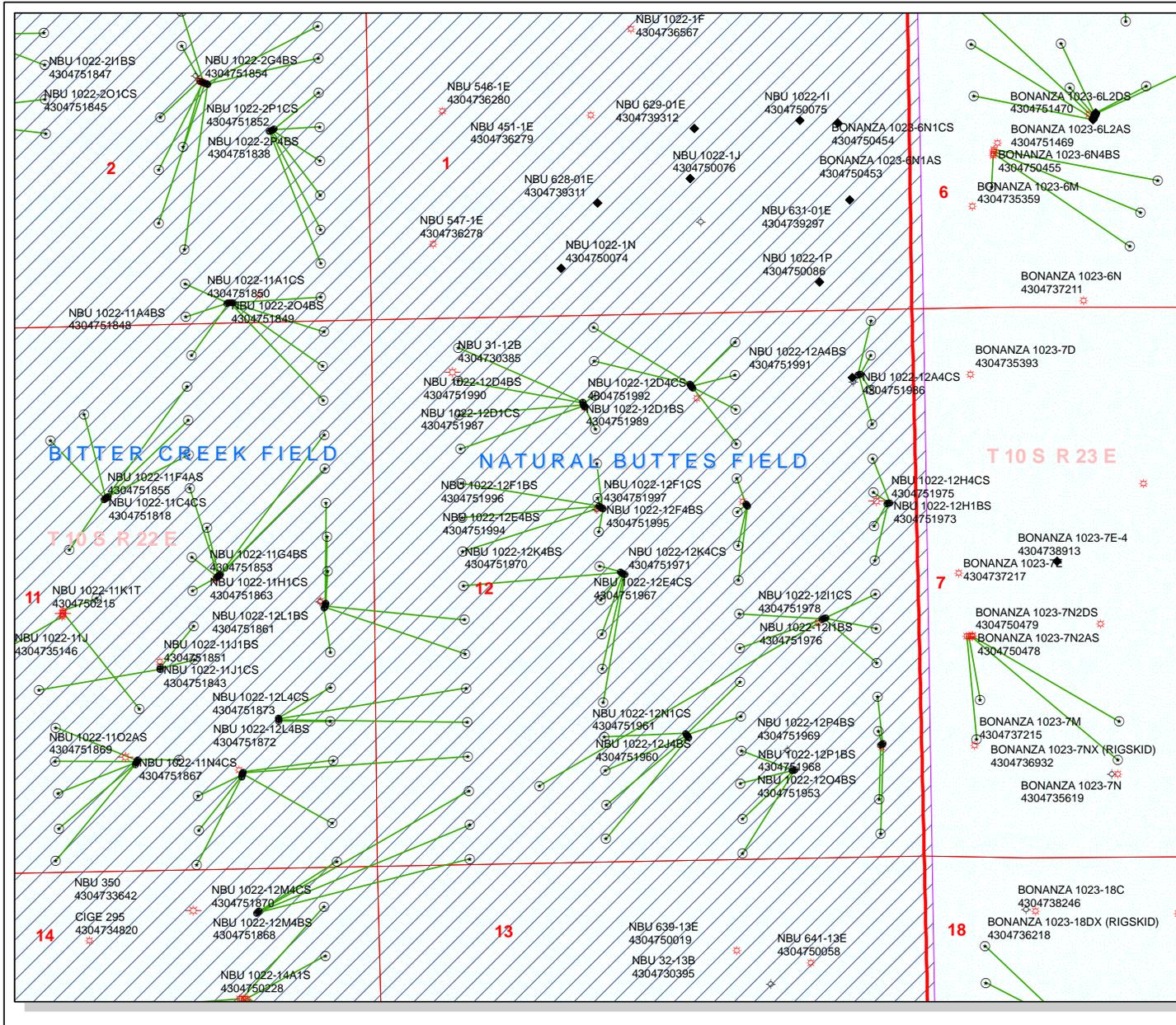
KERR-MCGEE OIL & GAS ONSHORE LP

A handwritten signature in blue ink, appearing to read 'Joe D. Johnson', with a horizontal line underneath.

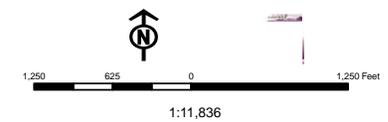
Joseph D. Johnson  
Landman

**API Number: 4304751994**  
**Well Name: NBU 1022-12E4BS**  
 Township T1.0 Range R2.2 Section 12  
 Meridian: SLBM  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason



<b>Units</b>	<b>Wells Query Status</b>
ACTIVE	APD - Approved Permit
EXPLORATORY	DRL - Spudded (Drilling Commenced)
GAS STORAGE	GIW - Gas Injection
NF PP OIL	GS - Gas Storage
NF SECONDARY	LA - Location Abandoned
PI OIL	LOC - New Location
PP GAS	OPS - Operation Suspended
PP GEOTHERMAL	PA - Plugged Abandoned
PP OIL	PGW - Producing Gas Well
SECONDARY	POW - Producing Oil Well
TERMINATED	RET - Returned APD
<b>Status</b>	SGW - Shut-in Gas Well
Unknown	SOW - Shut-in Oil Well
ABANDONED	TA - Temp. Abandoned
ACTIVE	TW - Test Well
COMBINED	WDW - Water Disposal
INACTIVE	WIW - Water Injection Well
STORAGE	WSW - Water Supply Well
TERMINATED	
Sections	
Township	



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office

P.O. Box 45155

Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:

3160

(UT-922)

September 19, 2011

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

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

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

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
<b>NBU 1022-12H PAD</b>		
43-047-51941	NBU 1022-12H4BS	Sec 12 T10S R22E 1846 FNL 0361 FEL BHL Sec 12 T10S R22E 2071 FNL 0491 FEL
43-047-51942	NBU 1022-12H1CS	Sec 12 T10S R22E 1843 FNL 0341 FEL BHL Sec 12 T10S R22E 1740 FNL 0491 FEL
43-047-51973	NBU 1022-12H1BS	Sec 12 T10S R22E 1842 FNL 0331 FEL BHL Sec 12 T10S R22E 1408 FNL 0491 FEL
43-047-51975	NBU 1022-12H4CS	Sec 12 T10S R22E 1845 FNL 0351 FEL BHL Sec 12 T10S R22E 2402 FNL 0492 FEL
<b>NBU 1022-12O PAD</b>		
43-047-51943	NBU 1022-12N4BS	Sec 12 T10S R22E 1224 FSL 2329 FEL BHL Sec 12 T10S R22E 0580 FSL 2150 FWL
43-047-51945	NBU 1022-12N4CS	Sec 12 T10S R22E 1216 FSL 2323 FEL BHL Sec 12 T10S R22E 0251 FSL 2141 FWL
43-047-51956	NBU 1022-12J4CS	Sec 12 T10S R22E 1240 FSL 2341 FEL BHL Sec 12 T10S R22E 1409 FSL 1817 FEL
43-047-51959	NBU 1022-12N1BS	Sec 12 T10S R22E 1257 FSL 2352 FEL BHL Sec 12 T10S R22E 1242 FSL 2147 FWL
43-047-51960	NBU 1022-12J4BS	Sec 12 T10S R22E 1249 FSL 2346 FEL BHL Sec 12 T10S R22E 1740 FSL 1816 FEL

**RECEIVED: September 20, 2011**

API #	WELL NAME			LOCATION						
(Proposed PZ WASATCH-MESA VERDE)										
43-047-51961	NBU 1022-12N1CS	Sec	12	T10S	R22E	1232	FSL	2335	FEL	
	BHL	Sec	12	T10S	R22E	0911	FSL	2149	FWL	
<b>NBU 1022-12B PAD</b>										
43-047-51944	NBU 1022-12B1BS	Sec	12	T10S	R22E	0668	FNL	2232	FEL	
	BHL	Sec	12	T10S	R22E	0259	FNL	1797	FEL	
43-047-51979	NBU 1022-12C1BS	Sec	12	T10S	R22E	0651	FNL	2244	FEL	
	BHL	Sec	12	T10S	R22E	0089	FNL	2138	FWL	
43-047-51980	NBU 1022-12B1CS	Sec	12	T10S	R22E	0676	FNL	2227	FEL	
	BHL	Sec	12	T10S	R22E	0579	FNL	1806	FEL	
43-047-51981	NBU 1022-12C1CS	Sec	12	T10S	R22E	0660	FNL	2238	FEL	
	BHL	Sec	12	T10S	R22E	0414	FNL	2133	FWL	
43-047-51982	NBU 1022-12B4BS	Sec	12	T10S	R22E	0684	FNL	2221	FEL	
	BHL	Sec	12	T10S	R22E	0910	FNL	1807	FEL	
43-047-51983	NBU 1022-12B4CS	Sec	12	T10S	R22E	0692	FNL	2215	FEL	
	BHL	Sec	12	T10S	R22E	1241	FNL	1808	FEL	
<b>NBU 1022-12P PAD</b>										
43-047-51947	NBU 1022-12P4CS	Sec	12	T10S	R22E	1115	FSL	0442	FEL	
	BHL	Sec	12	T10S	R22E	0246	FSL	0491	FEL	
43-047-51962	NBU 1022-12I4CS	Sec	12	T10S	R22E	1112	FSL	0451	FEL	
	BHL	Sec	12	T10S	R22E	1574	FSL	0493	FEL	
43-047-51968	NBU 1022-12P1BS	Sec	12	T10S	R22E	1109	FSL	0461	FEL	
	BHL	Sec	12	T10S	R22E	1240	FSL	0489	FEL	
43-047-51969	NBU 1022-12P4BS	Sec	12	T10S	R22E	1105	FSL	0470	FEL	
	BHL	Sec	12	T10S	R22E	0580	FSL	0494	FEL	
<b>NBU 1022-12P2 PAD</b>										
43-047-51949	NBU 1022-12O1BS	Sec	12	T10S	R22E	0877	FSL	1322	FEL	
	BHL	Sec	12	T10S	R22E	1077	FSL	1818	FEL	
43-047-51950	NBU 1022-12O1CS	Sec	12	T10S	R22E	0873	FSL	1331	FEL	
	BHL	Sec	12	T10S	R22E	0761	FSL	1834	FEL	
43-047-51953	NBU 1022-12O4BS	Sec	12	T10S	R22E	0881	FSL	1313	FEL	
	BHL	Sec	12	T10S	R22E	0415	FSL	1820	FEL	
43-047-51954	NBU 1022-12O4CS	Sec	12	T10S	R22E	0885	FSL	1304	FEL	
	BHL	Sec	12	T10S	R22E	0082	FSL	1828	FEL	
<b>NBU 1022-12A PAD</b>										
43-047-51951	NBU 1022-12A1BS	Sec	12	T10S	R22E	0598	FNL	0621	FEL	
	BHL	Sec	12	T10S	R22E	0081	FNL	0481	FEL	
43-047-51952	NBU 1022-12A1CS	Sec	12	T10S	R22E	0591	FNL	0592	FEL	
	BHL	Sec	12	T10S	R22E	0414	FNL	0490	FEL	

API #	WELL NAME			LOCATION						
(Proposed PZ WASATCH-MESA VERDE)										
43-047-51986	NBU 1022-12A4CS	Sec	12	T10S	R22E	0596	FNL	0611	FEL	
	BHL	Sec	12	T10S	R22E	1077	FNL	0491	FEL	
43-047-51991	NBU 1022-12A4BS	Sec	12	T10S	R22E	0593	FNL	0601	FEL	
	BHL	Sec	12	T10S	R22E	0746	FNL	0490	FEL	
<b>NBU 1022-12I PAD</b>										
43-047-51955	NBU 1022-12J1CS	Sec	12	T10S	R22E	2333	FSL	1011	FEL	
	BHL	Sec	12	T10S	R22E	2071	FSL	1815	FEL	
43-047-51957	NBU 1022-12J1BS	Sec	12	T10S	R22E	2337	FSL	1002	FEL	
	BHL	Sec	12	T10S	R22E	2402	FSL	1814	FEL	
43-047-51958	NBU 1022-12I4BS	Sec	12	T10S	R22E	2341	FSL	0993	FEL	
	BHL	Sec	12	T10S	R22E	1905	FSL	0493	FEL	
43-047-51976	NBU 1022-12I1BS	Sec	12	T10S	R22E	2350	FSL	0974	FEL	
	BHL	Sec	12	T10S	R22E	2568	FSL	0492	FEL	
43-047-51978	NBU 1022-12I1CS	Sec	12	T10S	R22E	2345	FSL	0984	FEL	
	BHL	Sec	12	T10S	R22E	2237	FSL	0492	FEL	
<b>NBU 1022-12G PAD</b>										
43-047-51963	NBU 1022-12G1CS	Sec	12	T10S	R22E	1833	FNL	1721	FEL	
	BHL	Sec	12	T10S	R22E	1904	FNL	1810	FEL	
43-047-51972	NBU 1022-12G4BS	Sec	12	T10S	R22E	1841	FNL	1715	FEL	
	BHL	Sec	12	T10S	R22E	2235	FNL	1812	FEL	
43-047-51974	NBU 1022-12G1BS	Sec	12	T10S	R22E	1826	FNL	1727	FEL	
	BHL	Sec	12	T10S	R22E	1572	FNL	1809	FEL	
43-047-51977	NBU 1022-12G4CS	Sec	12	T10S	R22E	1849	FNL	1709	FEL	
	BHL	Sec	12	T10S	R22E	2566	FNL	1813	FEL	
<b>NBU 1022-12F4 PAD</b>										
43-047-51964	NBU 1022-12F4CS	Sec	12	T10S	R22E	2462	FNL	2342	FWL	
	BHL	Sec	12	T10S	R22E	2401	FNL	2141	FWL	
43-047-51965	NBU 1022-12K1BS	Sec	12	T10S	R22E	2473	FNL	2359	FWL	
	BHL	Sec	12	T10S	R22E	2567	FSL	2142	FWL	
43-047-51966	NBU 1022-12K1CS	Sec	12	T10S	R22E	2479	FNL	2367	FWL	
	BHL	Sec	12	T10S	R22E	2236	FSL	2144	FWL	
43-047-51967	NBU 1022-12E4CS	Sec	12	T10S	R22E	2467	FNL	2350	FWL	
	BHL	Sec	12	T10S	R22E	2565	FNL	0822	FWL	
43-047-51970	NBU 1022-12K4BS	Sec	12	T10S	R22E	2484	FNL	2375	FWL	
	BHL	Sec	12	T10S	R22E	1904	FSL	2145	FWL	
43-047-51971	NBU 1022-12K4CS	Sec	12	T10S	R22E	2490	FNL	2384	FWL	
	BHL	Sec	12	T10S	R22E	1573	FSL	2146	FWL	

API #	WELL NAME	LOCATION
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(Proposed PZ WASATCH-MESA VERDE)

**NBU 1022-12CPAD**

43-047-51984	NBU 1022-12C4BS	Sec 12 T10S R22E 0827 FNL 2020 FWL
	BHL	Sec 12 T10S R22E 0745 FNL 2134 FWL

43-047-51985	NBU 1022-12C4CS	Sec 12 T10S R22E 0855 FNL 2031 FWL
	BHL	Sec 12 T10S R22E 1076 FNL 2135 FWL

43-047-51987	NBU 1022-12D1CS	Sec 12 T10S R22E 0818 FNL 2016 FWL
	BHL	Sec 12 T10S R22E 0579 FNL 0819 FWL

43-047-51989	NBU 1022-12D1BS	Sec 12 T10S R22E 0809 FNL 2013 FWL
	BHL	Sec 12 T10S R22E 0260 FNL 0823 FWL

43-047-51990	NBU 1022-12D4BS	Sec 12 T10S R22E 0837 FNL 2024 FWL
	BHL	Sec 12 T10S R22E 0910 FNL 0819 FWL

43-047-51992	NBU 1022-12D4CS	Sec 12 T10S R22E 0846 FNL 2027 FWL
	BHL	Sec 12 T10S R22E 1241 FNL 0820 FWL

**NBU 1022-12FPAD**

43-047-51988	NBU 1022-12E1BS	Sec 12 T10S R22E 1818 FNL 2146 FWL
	BHL	Sec 12 T10S R22E 1572 FNL 0820 FWL

43-047-51993	NBU 1022-12E1CS	Sec 12 T10S R22E 1824 FNL 2154 FWL
	BHL	Sec 12 T10S R22E 1903 FNL 0821 FWL

43-047-51994	NBU 1022-12E4BS	Sec 12 T10S R22E 1835 FNL 2170 FWL
	BHL	Sec 12 T10S R22E 2234 FNL 0821 FWL

43-047-51995	NBU 1022-12F4BS	Sec 12 T10S R22E 1847 FNL 2187 FWL
	BHL	Sec 12 T10S R22E 2070 FNL 2140 FWL

43-047-51996	NBU 1022-12F1BS	Sec 12 T10S R22E 1841 FNL 2179 FWL
	BHL	Sec 12 T10S R22E 1407 FNL 2137 FWL

43-047-51997	NBU 1022-12F1CS	Sec 12 T10S R22E 1830 FNL 2162 FWL
	BHL	Sec 12 T10S R22E 1739 FNL 2138 FWL

Michael L. Coulthard

Digitally signed by Michael L. Coulthard  
 DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals,  
 email=Michael\_Coulthard@blm.gov, c=US  
 Date: 2011.09.19 14:47:24 -0600

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

MCoulthard:mc:9-19-11

**RECEIVED: September 20, 2011**

**From:** Jim Davis  
**To:** Hill, Brad; Mason, Diana  
**CC:** Bonner, Ed; Garrison, LaVonne; Julie Jacobsen  
**Date:** 11/28/2011 3:44 PM  
**Subject:** APD approvals (Kerr McGee in 10S 22E Sec12)

The following APD have been approved by SITLA including arch clearance. Construction of these locations will need to be monitored by a paleontologist as recommended in the paleo survey reports. Kerr McGee, please acknowledge this stipulation with an email response. Thanks.

4304751984 NBU 1022-12C4BS  
4304751985 NBU 1022-12C4CS  
4304751987 NBU 1022-12D1CS  
4304751989 NBU 1022-12D1BS  
4304751990 NBU 1022-12D4BS  
4304751992 NBU 1022-12D4CS  
4304751988 NBU 1022-12E1BS  
4304751993 NBU 1022-12E1CS  
4304751994 NBU 1022-12E4BS  
4304751995 NBU 1022-12F4BS  
4304751996 NBU 1022-12F1BS  
4304751997 NBU 1022-12F1CS

-Jim Davis

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

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-12E4B			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2079	8471		
Previous Shoe Setting Depth (TVD)	40	2079		
Max Mud Weight (ppg)	8.3	12.5		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	5421	12.3		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	897	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	648	NO <input type="text" value="air drill"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	440	YES <input type="text" value="OK"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	448	NO <input type="text" value="Reasonable for area"/>
Required Casing/BOPE Test Pressure=		2079	psi
*Max Pressure Allowed @ Previous Casing Shoe=		40	psi *Assumes 1psi/ft frac gradient

Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	5506	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4489	YES <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3642	YES <input type="text" value="OK"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4100	NO <input type="text" value="Reasonable"/>
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2079	psi *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (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 <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO <input type="text"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO <input type="text"/>
Required Casing/BOPE Test Pressure=			psi
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient

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

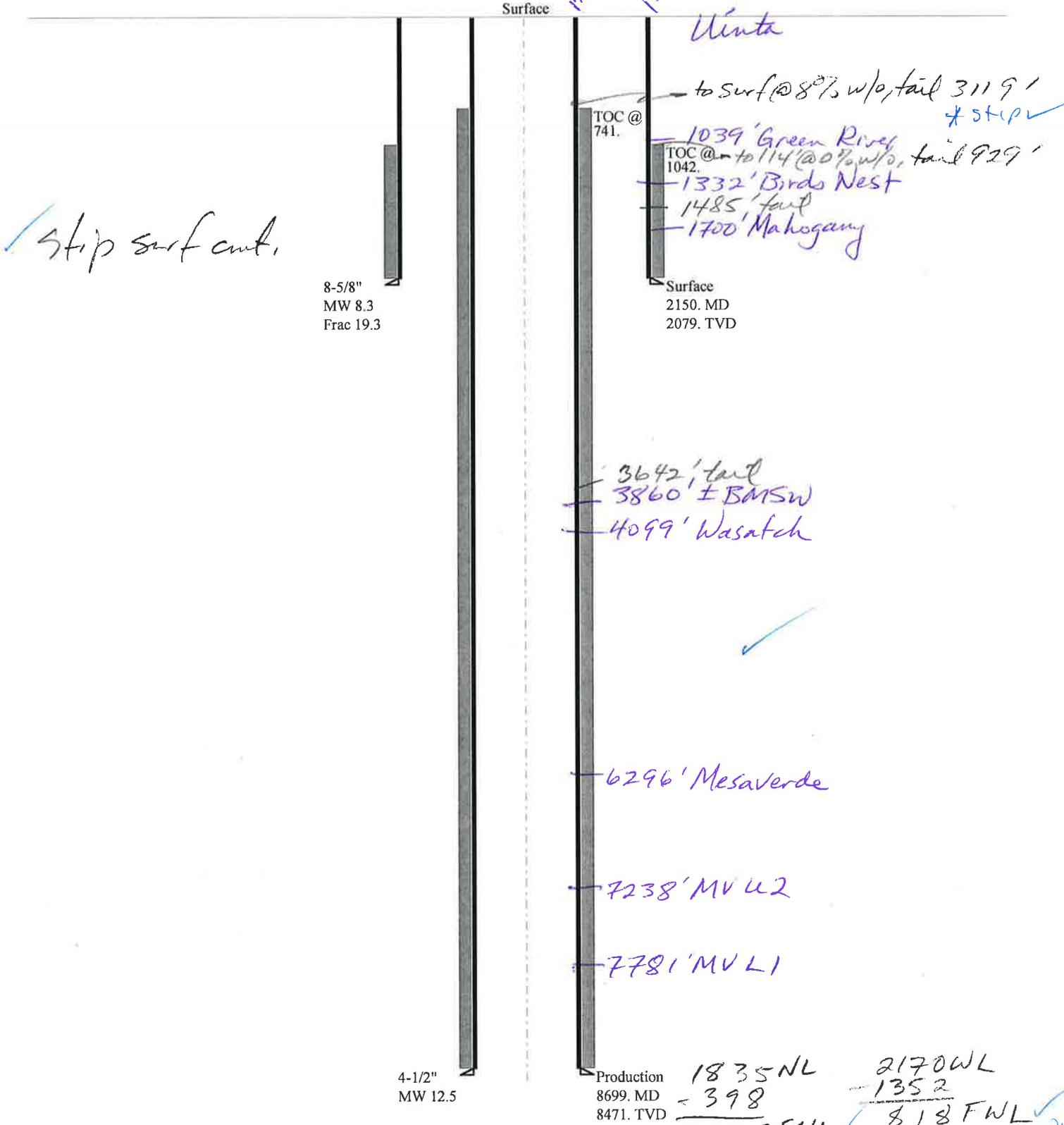
API Well Number: 43047519940000

*Max Pressure Allowed @ Previous Casing Shoe=	<input type="text"/>	psi *Assumes 1psi/ft frac gradient
---	----------------------	------------------------------------

43047519940000 NBU 1022-12E4BS

Casing Schematic

Surface



Strip surf cont.

8-5/8"  
MW 8.3  
Frac 19.3

4-1/2"  
MW 12.5

Production  
8699. MD  
8471. TVD

127  
157

Uinta

to Surf @ 8% w/o, tail 3119' \*strip ✓

TOC @ 741

1039' Green River

TOC @ 1042

to 114' @ 0% w/o, tail 929'

1332' Birds Nest

1485' tail

1700' Mahogany

Surface  
2150. MD  
2079. TVD

3642' tail

3860' ± BMSW

4099' Wasatch

6296' Mesaverde

7238' MV U2

7781' MV L1

1835 NL      2170 WL

- 398      - 1352

2233 FNL ✓      818 FNL ✓

SW NW Sec 12-10S-22E

Well name:	<b>43047519940000 NBU 1022-12E4BS</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Surface	Project ID: 43-047-51994
Location:	UINTAH COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 8.330 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: 74 °F  
Bottom hole temperature: 103 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 1,042 ft

**Burst**

Max anticipated surface pressure: 1,892 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,141 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.70 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on air weight.  
Neutral point: 1,878 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 463 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 8,699 ft  
Next mud weight: 12.500 ppg  
Next setting BHP: 5,649 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,150 ft  
Injection pressure: 2,150 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	2150	8.625	28.00	I-55	LT&C	2079	2150	7.892	85140
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	899	1880	2.090	2141	3390	1.58	58.2	348	5.98 J

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

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

Date: December 16, 2011  
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2079 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Well name:	<b>43047519940000 NBU 1022-12E4BS</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Production	Project ID: 43-047-51994
Location:	UINTAH COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 12.500 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: 74 °F  
Bottom hole temperature: 193 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft  
Cement top: 741 ft

**Burst**

Max anticipated surface pressure: 3,637 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 5,501 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: 7,116 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 1410 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	8699	4.5	11.60	I-80	LT&C	8471	8699	3.875	114827
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	5501	6360	1.156	5501	7780	1.41	98.3	212	2.16 J

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

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

Date: December 16, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 8471 ft, a mud weight of 12.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 1022-12E4BS  
**API Number** 43047519940000      **APD No** 4584      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** SENW      **Sec** 12      **Tw** 10.0S      **Rng** 22.0E      1835 FNL 2170 FWL  
**GPS Coord (UTM)** 637563 4424981      **Surface Owner**

### Participants

Andy Lytle, Sheila Wopsock, Charles Chase, Grizz Oleen, Jaime Scharnowski, Doyle Holmes, (Kerr McGee). John Slaugh, Mitch Batty, (Timberline). Jim Davis (SITLA). Ben Williams (DWR). David Hackford, (DOGM).

### Regional/Local Setting & Topography

The general area is in the southeast portion of the Natural Buttes Unit. Within this area is the White River and rugged drainages that drain into it. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is 1500'. 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 47.2 miles to the northwest. Access from Vernal is by following Utah State, Uintah County and oilfield development roads. Five wells, in addition to this one will be directionally drilled from this pad. (For a total of six new wells). There is one existing well on this pad. (The NBU 513-12EX). At this time, the decision rather to PA or TA this well has not been made. This proposed location takes in an existing location, and very little new construction will be necessary except for digging the reserve pit. The existing access road will be adequate. The location runs in an east-west direction along the top of a flat topped ridge. This ridge breaks off sharply into rugged secondary canyons on the north and west sides. New construction will consist of approx. 50 feet on all sides of the existing pad, and an additional 50 feet on the southwest side for reserve pit and excess cut stockpile. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and should be a suitable location for seven wells, and is on the best site available in the immediate area.

### Surface Use Plan

#### **Current Surface Use**

Grazing  
Wildlife Habitat  
Existing Well Pad

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0	<b>Width</b> 352 <b>Length</b> 425	Onsite	UNTA

**Ancillary Facilities** N

**Waste Management Plan Adequate?** Y

### Environmental Parameters

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

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

Sheep, antelope, coyote, raptors, small mammals and birds.

**Soil Type and Characteristics**

Rocky sandy clay loam.

**Erosion Issues**

**Sedimentation Issues** N

**Site Stability Issues** Y

West side of reserve pit will be 1.1 feet of fill. This fill shall be compacted during location construction.

**Drainage Diverson Required?** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

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

**Reserve Pit**

**Site-Specific Factors**

**Site Ranking**

<b>Distance to Groundwater (feet)</b>	100 to 200	5	
<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>	40	1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned in an area of cut(except for the west side which will be in 1.1 feet of fill) on the west side of the location. Dimensions are 120' x 260' x 12' deep with 2' of freeboard. Kerr McGee agreed to line this pit with a 16 mil synthetic liner and a layer of felt sub-liner.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 16 **Pit Underlayment Required?** Y

**Other Observations / Comments**

David Hackford  
**Evaluator**

10/12/2011  
**Date / Time**

# Application for Permit to Drill Statement of Basis

12/29/2011

## Utah Division of Oil, Gas and Mining

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<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
4584	43047519940000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1022-12E4BS	<b>Unit</b>		NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES	<b>Type of Work</b>		DRILL	
<b>Location</b>	SENW 12 10S 22E S 1835 FNL 2170 FWL GPS Coord (UTM) 637494E 4425188N				

### Geologic Statement of Basis

Kerr McGee proposes to set 2,150' 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 3,860'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 12. 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**

10/19/2011  
**Date / Time**

### Surface Statement of Basis

The general area is in the southeast portion of the Natural Buttes Unit. Within this area is the White River and rugged drainages that drain into it. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is 1500'. 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 47 miles to the northwest. Access from Vernal is by following Utah State, Uintah County and oilfield development roads. The existing access road will be adequate.

Six wells will be directionally drilled from this location. They are the NBU 1022-12E1BS, NBU 1022-12E1CS, NBU 1022-12E4BS, NBU 1022-12F1BS, NBU 1022-12F1CS and the NBU 1022-12F4BS. The existing location has one well. This well is the NBU 513-12EX, and at this time the decision rather to PA or TA this well has not been made. The location is on a flat topped ridge that runs in a northeast-southwest direction. This ridge breaks off sharply into rugged secondary canyons on the north and west sides. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and sufficient for seven wells, and is the best site for a location in the immediate area.

New construction will consist of approx. 50 feet on all sides of the existing pad, and an additional 50 feet on the southwest side for reserve pit and excess cut stockpile.

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

David Hackford  
**Onsite Evaluator**

10/12/2011  
**Date / Time**

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

<b>Category</b>	<b>Condition</b>
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**RECEIVED: December 29, 2011**

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# Application for Permit to Drill Statement of Basis

12/29/2011

Utah Division of Oil, Gas and Mining

Page 2

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Pits A synthetic liner with a minimum thickness of 16 mils with a felt subliner shall be properly installed and maintained in the reserve pit.

Pits The reserve pit should be located on the west side of the location.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 9/12/2011**API NO. ASSIGNED:** 43047519940000**WELL NAME:** NBU 1022-12E4BS**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)**PHONE NUMBER:** 720 929-6086**CONTACT:** Gina Becker**PROPOSED LOCATION:** SENW 12 100S 220E**Permit Tech Review:** **SURFACE:** 1835 FNL 2170 FWL**Engineering Review:** **BOTTOM:** 2234 FNL 0821 FWL**Geology Review:** **COUNTY:** UINTAH**LATITUDE:** 39.96567**LONGITUDE:** -109.39008**UTM SURF EASTINGS:** 637494.00**NORTHINGS:** 4425188.00**FIELD NAME:** NATURAL BUTTES**LEASE TYPE:** 3 - State**LEASE NUMBER:** UT ST UO 01997-A ST**PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE**SURFACE OWNER:** 3 - State**COALBED METHANE:** NO**RECEIVED AND/OR REVIEWED:**

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

**Commingle Approved****LOCATION AND SITING:**

- R649-2-3.**
- Unit:** NATURAL BUTTES
- R649-3-2. General**
- R649-3-3. Exception**
- Drilling Unit**
- Board Cause No:** Cause 173-14
- Effective Date:** 12/2/1999
- Siting:** Suspends General Siting
- R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**

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



GARY R. HERBERT  
*Governor*

GREGORY S. BELL  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-12E4BS  
**API Well Number:** 43047519940000  
**Lease Number:** UT ST UO 01997-A ST  
**Surface Owner:** STATE  
**Approval Date:** 12/29/2011

**Issued to:**

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

**Authority:**

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

**Duration:**

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

**Commingle:**

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

**General:**

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

**Conditions of Approval:**

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

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

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

Surface casing shall be cemented to the surface.

**Additional Approvals:**

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

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

**Notification Requirements:**

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

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

**Contact Information:**

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

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

**Reporting Requirements:**

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

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

**Approved By:**



For John Rogers  
Associate Director, Oil & Gas

<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> UT ST UO 01997-	
<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>8. WELL NAME and NUMBER:</b> NBU 1022-12E4BS	
<b>9. API NUMBER:</b> 43047519940000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>	
<b>1. TYPE OF WELL</b> Gas Well	<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 4/23/2012	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT 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 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: 100px;" type="text"/>

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

MIRU TRIPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'.  
 RAN 14" 36.7# SCHEDULE 10 CONDUCTOR PIPE. CMT W/ 28 SX READY MIX. SPUD WELL LOCATION ON APRIL 23, 2012 AT 13:30 HRS.

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

**FOR RECORD ONLY**

April 27, 2012

<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> 4/25/2012	

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

FORM 9

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**UT ST UO 01197-A ST**

**SUNDRY NOTICES AND REPORTS ON WELLS**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

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.

7. UNIT or CA AGREEMENT NAME:  
**UTU63047A**

1. TYPE OF WELL      OIL WELL       GAS WELL       OTHER \_\_\_\_\_

8. WELL NAME and NUMBER:  
**Multiple Well Locations**

2. NAME OF OPERATOR:  
**Kerr-McGee Oil & Gas Onshore, L.P.**

9. API NUMBER:

3. ADDRESS OF OPERATOR:  
P.O. Box 173779      Denver      CO      80217

PHONE NUMBER:  
**(720) 929-6086**

10. FIELD AND POOL, OR W/LDCAT  
**Natural Buttes**

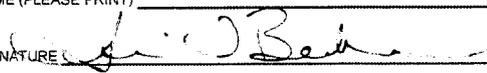
4. LOCATION OF WELL  
FOOTAGES AT SURFACE: **Various Locations in T10S-R22E, Section 12**      COUNTY: **Uintah**  
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:      **12 10S 22E 6**      STATE: **UTAH**

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>4/23/2012</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<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 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>Lease Number Correction</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.  
**Kerr-McGee is requesting approval to correct the lease number from UT ST UO 01997-A ST to UT ST UO 01197-A ST for various well locations. Please see attached well list.**

Thank you!

NAME (PLEASE PRINT) Gina T Becker      TITLE Senior Regulatory Analyst  
SIGNATURE       DATE 4/23/2012

(This space for State use only)

**RECEIVED**  
**APR 24 2012**

	API UWI NO	WELL NAME	SL STATE	SL SECTION	SL TOWNSHIP	SL RANGE	SL COUNTY NAME	GOV LEASE NO	FEDERAL LEASE NO
1	4304751951	NBU 1022-12A1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
2	4304751952	NBU 1022-12A1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
3	4304751991	NBU 1022-12A4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
4	4304751986	NBU 1022-12A4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
5	4304751944	NBU 1022-12B1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
6	4304751980	NBU 1022-12B1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
7	4304751982	NBU 1022-12B4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
8	4304751983	NBU 1022-12B4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
9	4304751979	NBU 1022-12C1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
10	4304751981	NBU 1022-12C1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
11	4304751984	NBU 1022-12C4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
12	4304751985	NBU 1022-12C4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
13	4304751989	NBU 1022-12D1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
14	4304751987	NBU 1022-12D1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
15	4304751990	NBU 1022-12D4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
16	4304751992	NBU 1022-12D4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
17	4304751988	NBU 1022-12E1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
18	4304751993	NBU 1022-12E1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
19	4304751994	NBU 1022-12E4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
20	4304751996	NBU 1022-12F1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
21	4304751997	NBU 1022-12F1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
22	4304751995	NBU 1022-12F4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
23	4304751967	NBU 1022-12E4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
24	4304751964	NBU 1022-12F4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
25	4304751965	NBU 1022-12K1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
26	4304751966	NBU 1022-12K1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
27	4304751970	NBU 1022-12K4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
28	4304751971	NBU 1022-12K4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
29	4304751974	NBU 1022-12G1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
30	4304751963	NBU 1022-12G1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
31	4304751972	NBU 1022-12G4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
32	4304751977	NBU 1022-12G4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
33	4304751973	NBU 1022-12H1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
34	4304751942	NBU 1022-12H1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
35	4304751941	NBU 1022-12H4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
36	4304751975	NBU 1022-12H4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
37	4304751976	NBU 1022-12I1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
38	4304751978	NBU 1022-12I1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
39	4304751958	NBU 1022-12I4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
40	4304751957	NBU 1022-12J1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
41	4304751955	NBU 1022-12J1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
42	4304751960	NBU 1022-12J4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
43	4304751956	NBU 1022-12J4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
44	4304751959	NBU 1022-12N1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
45	4304751961	NBU 1022-12N1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
46	4304751943	NBU 1022-12N4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
47	4304751945	NBU 1022-12N4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
48	4304751962	NBU 1022-12I4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
49	4304751968	NBU 1022-12P1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A

	API UWI NO	WELL NAME	SL STATE	SL SECTION	SL TOWNSHIP	SL RANGE	SL COUNTY NAME	GOV LEASE NO	FEDERAL LEASE NO
50	4304751969	NBU 1022-12P4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
51	4304751947	NBU 1022-12P4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
52	4304751949	NBU 1022-12O1BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
53	4304751950	NBU 1022-12O1CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
54	4304751953	NBU 1022-12O4BS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A
55	4304751954	NBU 1022-12O4CS	UT	12	10	22	UINTAH	UT ST UO 01197-A ST	UTU63047A

**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: P.O. Box 173779  
city DENVER  
state CO zip 80217 Phone Number: (720) 929-6086

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751995	NBU 1022-12F4BS		SENW	12	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	4/23/2012		4/30/2012		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. SPUD WELL LOCATION ON 04/23/2012 AT 07:00 HRS. <i>WSMVD SPUD</i>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751996	NBU 1022-12F1BS		SENW	12	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	4/23/2012		4/30/2012		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. SPUD WELL LOCATION ON 04/23/2012 AT 10:30 HRS. <i>WSMVD</i>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751994	NBU 1022-12E4BS		SENW	12	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	4/23/2012		4/30/2012		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. SPUD WELL LOCATION ON 04/23/2012 AT 13:30 HRS. <i>WSMVD SWNW</i>							

**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)

GINA BECKER

Name (Please Print)

Signature

REGULATORY ANALYST

Title

4/25/2012

Date

RECEIVED

APR 25 2012

<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> UT ST UO 01197-	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-12E4BS	
<b>9. API NUMBER:</b> 43047519940000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**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.

<b>1. TYPE OF WELL</b> Gas Well	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	

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 Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT 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"/> SPUD REPORT 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"/> DRILLING REPORT Report Date: 4/28/2012	<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: <input style="width: 100px;" type="text"/>

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

MIRU AIR RIG ON 4/26/2012. DRILLED SURFACE HOLE TO 2394'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.

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

**FOR RECORD ONLY**

May 09, 2012

<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> 4/30/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<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>1. TYPE OF WELL</b> Gas Well	<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UT ST UO 01197-
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	<b>8. WELL NAME and NUMBER:</b> NBU 1022-12E4BS
<b>PHONE NUMBER:</b> 720 929-6511	<b>9. API NUMBER:</b> 43047519940000
<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: 5/1/2012	<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"/> 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 type="checkbox"/> TEMPORARY ABANDON
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	<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: 100px;" type="text"/>

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

THE OPERATOR REQUESTS APPROVAL FOR A FIT WAIVER, A CLOSED LOOP DRILLING OPTION, AND A PRODUCTION CASING CHANGE. ALL OTHER ASPECTS OF THE PREVIOUSLY APPROVED DRILLING PLAN WILL NOT CHANGE. PLEASE SEE THE ATTACHMENT. THANK YOU.

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

**Date:** May 24, 2012

**By:** *D. K. Quist*

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/1/2012	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-12E4BS**

Surface: 1835 FNL / 2170 FWL      SENW  
 BHL: 2234 FNL / 821 FWL      SWNW

Section 12 T10S R22E

Uintah County, Utah  
 Mineral Lease: UT ST UO 01197-A ST

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,039'	
Birds Nest	1,332'	Water
Mahogany	1,700'	Water
Wasatch	4,009'	Gas
Mesaverde	6,296'	Gas
Sego	8,471'	Gas
TVD	8,476'	
TD	8,699'	

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 bottom hole pressure calculated at 8476' TVD, approximately equals  
 5,425 psi 0.64 psi/ft = actual bottomhole gradient

---

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

Maximum anticipated surface pressure equals approximately 3,548 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

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

**8. Anticipated Starting Dates:**

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

**9. Variances:**

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

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

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

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

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

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

**Background**

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

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

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

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

#### **Variance for BOPE Requirements**

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

#### **Variance for Mud Material Requirements**

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

#### **Variance for Special Drilling Operation (surface equipment placement) Requirements**

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

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

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

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

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

**Variance for FIT Requirements**

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

**Conclusion**

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

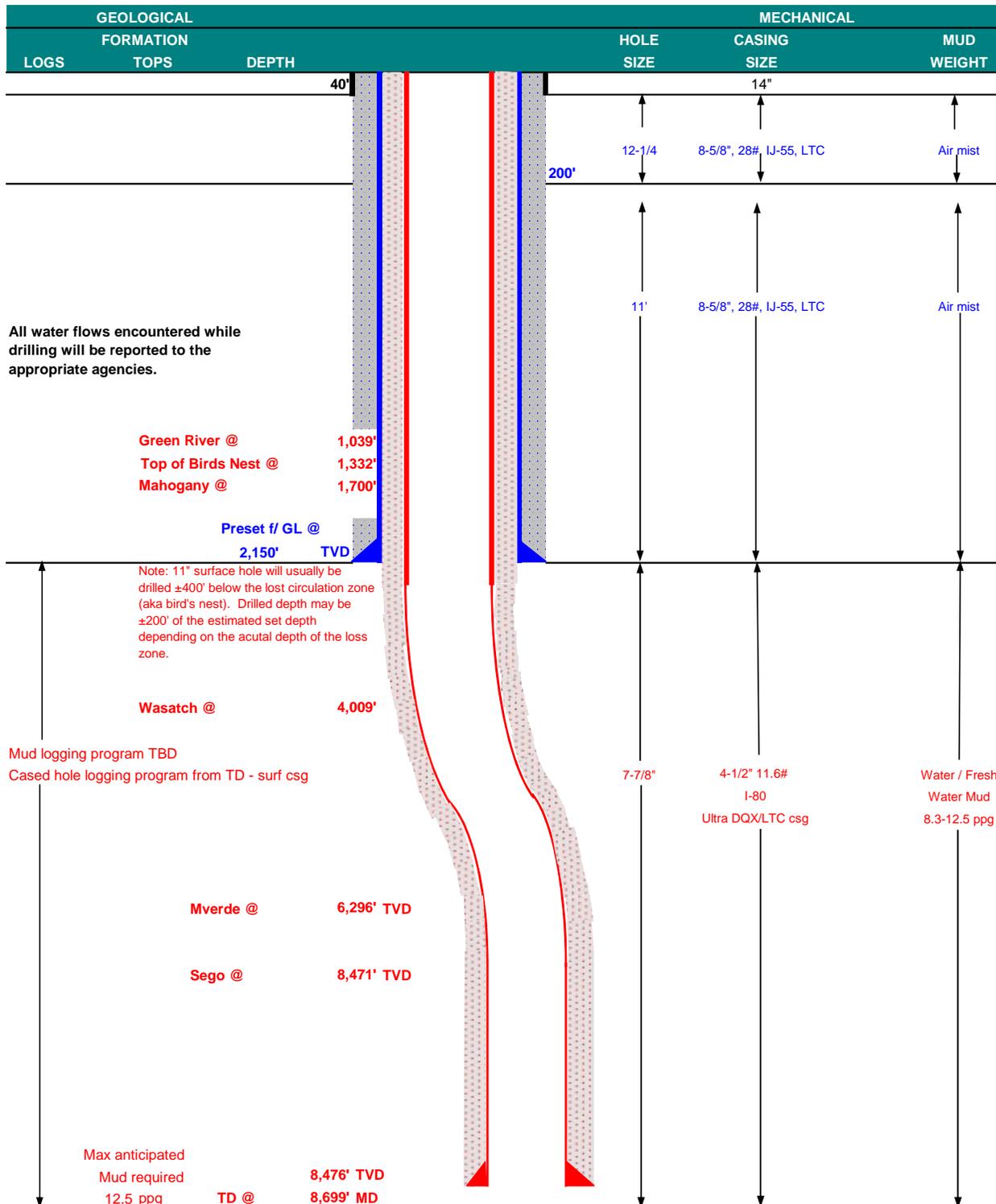
**10. Other Information:**

Please refer to the attached Drilling Program.



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	May 1, 2012	
WELL NAME	NBU 1022-12E4BS		TD	8,476' TVD	8,699' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	SENW	1835 FNL	2170 FWL	Sec 12 T 10S R 22E	FINISHED ELEVATION 5164
	Latitude:	39.965694	Longitude:	-109.389307	NAD 27
BTM HOLE LOCATION	SWNW	2234 FNL	821 FWL	Sec 12 T 10S R 22E	
	Latitude:	39.964600	Longitude:	-109.394131	NAD 27
OBJECTIVE ZONE(S)	Wasatch/Mesaverde				
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.				





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

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	LTC		DQX
							COLLAPSE	TENSION	
CONDUCTOR	14"	0-40'				3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,150	28.00	IJ-55	LTC	2.52	1.87	6.60	N/A
						7,780	6,350	223,000	267,035
PRODUCTION	4-1/2"	0 to 5,000	11.60	I-80	DQX	1.11	1.15		3.27
						7,780	6,350	223,000	267,035
	4-1/2"	5,000 to 8,699'	11.60	I-80	LTC	1.11	1.15	6.42	

**Surface casing:**

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe  
Fracture at surface shoe with 0.1 psi/ft gas gradient above

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

**Production casing:**

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

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

**CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
Option 1 TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>						
SURFACE LEAD	1,650'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	150	35%	11.00	3.82
Option 2 TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	3,509'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	280	35%	12.00	3.38
TAIL	5,190'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,230	35%	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. 15 centralizers for a Mesaverde and 20 for a Blackhawk well. 1 centralizer on the first 3 joints and one every third joint thereafter.

**ADDITIONAL INFORMATION**

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

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

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

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

**DRILLING ENGINEER:**

Nick Spence / Danny Showers / Chad Loesel

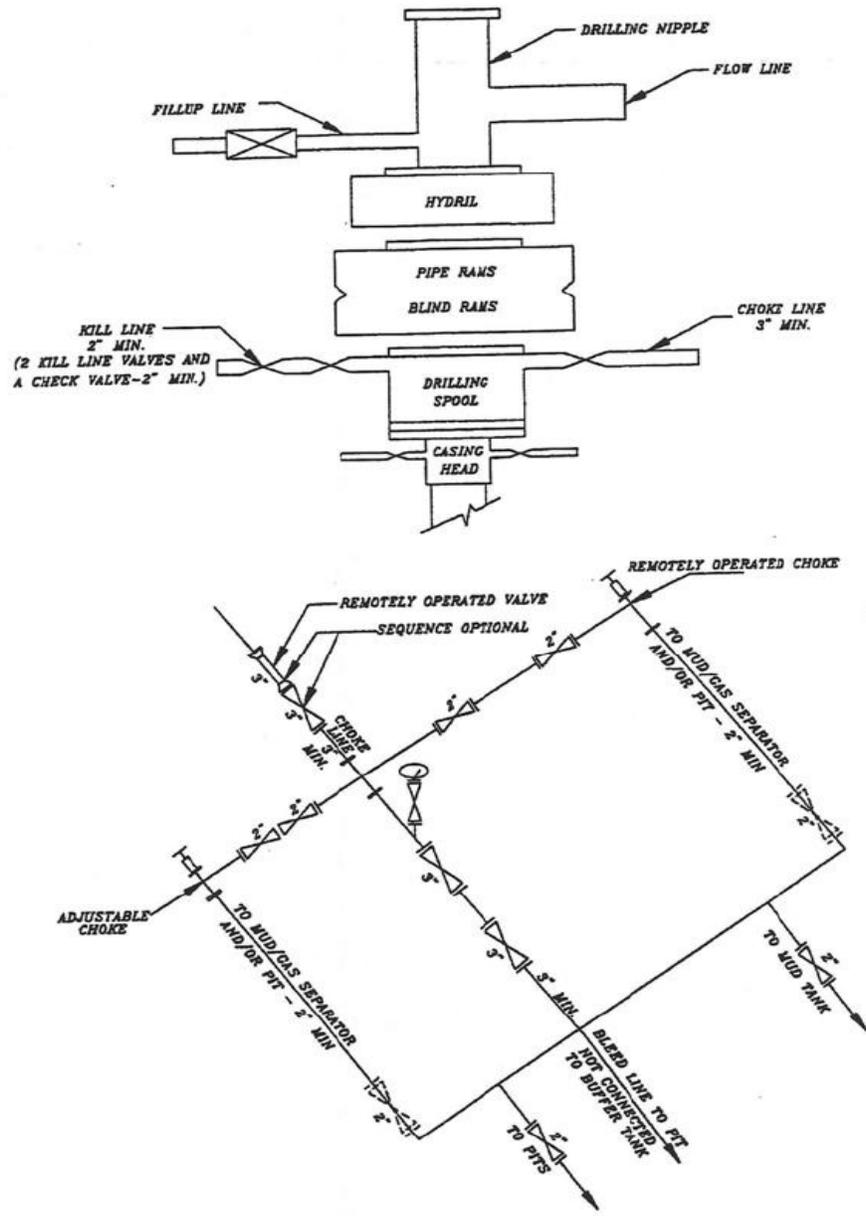
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

**DATE:**

**EXHIBIT A**  
**NBU 1022-12E4BS**



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

Requested Drilling Options:

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

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

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UT ST UO 01197-
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</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>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 1022-12E4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047519940000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S		<b>COUNTY:</b> UINTAH
		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 6/11/2012	<input type="checkbox"/> ACIDIZE  <input 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	
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12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
MIRU ROTARY RIG. FINISHED DRILLING FROM 2394' TO 8735' ON 6/9/2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P 298 RIG ON 6/11/2012 @ 12:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.		<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b> June 13, 2012
<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A		<b>DATE</b> 6/13/2012

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: UT ST UO 01197-
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4. LOCATION OF WELL FOOTAGES AT SURFACE: 1835 FNL 2170 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	COUNTY: UINTAH  STATE: UTAH

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<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 8/3/2012	<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"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  
 No activity for the month of July 2012. Well TD at 8,735'.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 August 07, 2012**

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regularatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 8/3/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: UT ST UO 01197-
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4. LOCATION OF WELL FOOTAGES AT SURFACE: 1835 FNL 2170 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	COUNTY: UINTAH  STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT 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"/> SPUD REPORT 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"/> DRILLING REPORT Report Date: 9/5/2012	<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: <input style="width: 100px;" type="text"/>

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

No Activity for the month of August 2012. Well TD at 8,735.

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

**FOR RECORD ONLY**

September 10, 2012

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regularatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/5/2012	

<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> UT ST UO 01197-	
<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>8. WELL NAME and NUMBER:</b> NBU 1022-12E4BS	
<b>9. API NUMBER:</b> 43047519940000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 <span style="float: right;"><b>PHONE NUMBER:</b> 720 929-6511</span>	
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	
<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"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT 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"/> SPUD REPORT 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"/> DRILLING REPORT Report Date: 9/27/2012	<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"/> 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: <input style="width: 100px;" type="text"/>

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

The subject well was placed on production on 09/27/2012. The Chronological Well History will be submitted with the well completion Report.

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

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/1/2012	

<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> UT ST UO 01197-	
<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>8. WELL NAME and NUMBER:</b> NBU 1022-12E4BS	
<b>9. API NUMBER:</b> 43047519940000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>1. TYPE OF WELL</b> Gas Well	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 <span style="float: right;"><b>PHONE NUMBER:</b> 720 929-6511</span>	
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1835 FNL 2170 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 12 Township: 10.0S Range: 22.0E Meridian: S	
<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"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT 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"/> SPUD REPORT 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"/> DRILLING REPORT Report Date: 10/2/2012	<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: <input style="width: 100px;" type="text"/>

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

Well was completed, finishing well completion report. Well TD at 8,735.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 October 03, 2012**

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/2/2012	

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

AMENDED REPORT  FORM 8  
(highlight changes)

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**UT ST UO 01997-A ST**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME  
**UTU63047A**

8. WELL NAME and NUMBER:  
**NBU 1022-12E4BS**

9. API NUMBER:  
**4304751994**

10. FIELD AND POOL, OR WILDCAT  
**NATURAL BUTTES**

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:  
**SENW 12 10S 22E S**

12. COUNTY  
**UINTAH**

13. STATE  
**UTAH**

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  OTHER \_\_\_\_\_

b. TYPE OF WORK: NEW WELL  HORIZ. LATS.  DEEP-EN  RE-ENTRY  DIFF. RESVR.  OTHER \_\_\_\_\_

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

3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY **DENVER** STATE **CO** ZIP **80217** PHONE NUMBER: (720) 929-6000

4. LOCATION OF WELL (FOOTAGES)  
AT SURFACE: **SENW 1835FNL 2170FWL S12,T10S,R22E**  
AT TOP PRODUCING INTERVAL REPORTED BELOW: **SWNW 2232 FNL 818 FWL S12,T10S,R22E**  
AT TOTAL DEPTH: **SWNW 2238 FNL 838 FWL S12,T10S,R22E** *ID BHL by HSM*

14. DATE SPURRED: **4/23/2012** 15. DATE T.D. REACHED: **6/9/2012** 16. DATE COMPLETED: **9/27/2012** ABANDONED  READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL): **5164 GL**

18. TOTAL DEPTH: MD **8,735** TVD **8,471** 19. PLUG BACK T.D.: MD **8,702** TVD **8,438 TD** 20. IF MULTIPLE COMPLETIONS, HOW MANY? \*

21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)  
**CBL/GR/CCL/TEMP-BHV-SD/DSN/ACTR**

23. WAS WELL CORED? NO  YES  (Submit analysis)  
WAS DST RUN? NO  YES  (Submit report)  
DIRECTIONAL SURVEY? NO  YES  (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,376		945		0	
7 7/8"	4 1/2" I-80	11.6#	0	8,723		1,753		1652	

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	8,016							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) MESAVERDE	6,679	8,528			6,679 8,528	0.36	162	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6679-8528	PUMP 6767 BBLs SLICK H2O & 143,885 LBS 30/50 OTTAWA SAND
	7 STAGES

29. ENCLOSED ATTACHMENTS:  ELECTRICAL/MECHANICAL LOGS  GEOLOGIC REPORT  DST REPORT  DIRECTIONAL SURVEY  
 SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION  CORE ANALYSIS  OTHER: \_\_\_\_\_

30. WELL STATUS: **PROD**

**RECEIVED**

31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED: 9/27/2012		TEST DATE: 9/30/2012		HOURS TESTED: 24		TEST PRODUCTION RATES: →	OIL – BBL: 0	GAS – MCF: 2,597	WATER – BBL: 0	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 1,796	CSG. PRESS. 2,425	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL: 0	GAS – MCF: 2,597	WATER – BBL: 0	INTERVAL STATUS: PROD

INTERVAL B (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

SOLD

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
				GREEN RIVER	1,039
				BIRD'S NEST	1,337
				MAHOGANY	1,703
				WASATCH	4,376
				MESAVERDE	6,555

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/4" bit. The remainder of surface hole was drilled with an 11" bit. DQX csg was run from surface to 5052'; LTC csg was run from 5052' to 8723'. Attached is the chronological well history, perforation report & final survey.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) LINDSEY FRAZIER TITLE REGULATORY ANALYST  
 SIGNATURE  DATE 10/18/2012

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining  
 1594 West North Temple, Suite 1210  
 Box 145801  
 Salt Lake City, Utah 84114-5801  
 Phone: 801-538-5340  
 Fax: 801-359-3940

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 4/5/2012

End Date: 6/11/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
4/26/2012	19:00 - 19:30	0.50	MIRU	01	B	P		MOVE TO OVER HOLE ( WELL3/6 )  INSTALL DIVERTOR HEAD AND BLUEY LINE.  BUILD DITCH. SPOT IN RIG.  SPOT IN CATWALK AND PIPE RACKS.  RIG UP PIT PUMP.  RIG UP PUMP. PRIME PUMP. INSPECT RIG.  HELD PRE-SPUD SAFETY MEETING.
	19:30 - 21:30	2.00	DRLSUR	02	D	P		SPUD @ 19:30 DRL F/ 44' T/210' (166'@ 110.66' PER HR)  WOB, 5-15 K RPM, 45  UP/DWN/ROT WEIGHTS 20/20/20  PSI ON BTTM, 600 OFF BTTM, 400  PUMP RATE 512 GPM. NO AIR
	21:30 - 22:00	0.50	DRLSUR	06	A	P		M.W. 8.34, VIS 27 POOH
	22:00 - 0:00	2.00	DRLSUR	08	A	Z		BROKE TONGS  WAIT ON PARTS FROM TOWN
4/27/2012	0:00 - 1:00	1.00	DRLSUR	06	A	P		REPLACE TONGS MAKE UP 11" BIT & DIRECTIONAL TOOLS  TRIP IN HOLE TO 210'

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 4/5/2012

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Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	1:00 - 12:00	11.00	DRLSUR	02	D	P		DRL F/210' T/1720' (1510'@137' PER HR)  WOB, 18 RPM, 40  UP/DWN/ROT WEIGHTS 78/57/70  PSI ON BTTM/1830 OFF BTTM/1650  M.W. 8.34, VIS 27  LOST CIRCULATION @ 1500' & APPLIED AIR  PUMP RATE 512 GPM, 24.2 CFM AIR  3.5' RIGHT & 17' HIGH OF TARGET  DISCUSSED BEING HIGH OF THE TARGET WITH KENNY GATHINGS, CHAD LOESEL & TRAVIS HANSEL
	12:00 - 20:00	8.00	DRLSUR	02	D	P		DRL F/1720' T/2394' (674'@84.25' PER HR)  WOB, 18 RPM, 40  UP/DWN/ROT WEIGHTS 90/60/75  PSI ON BTTM/1850 OFF BTTM/1650  M.W. 8.34, VIS 27  PUMP RATE 512 GPM, 24.2 CFM AIR  STARTED COMMUNICATING WITH LAST WELL @ 1990'.  3.87' RIGHT & 22.7' HIGH OF TARGET CIRCULATE FOR CASING LAYDOWN DRILL STRING
4/28/2012	0:00 - 1:30	1.50	CSGSUR	06	D	P		LAYDOWN BHA & DIRECTIONAL TOOLS MOVE PIPE RACKS AND CATWALK.  PULL DIVERTER HEAD.  RIG UP TO RUN CSG.
	1:30 - 2:30	1.00	CSGSUR	12	A	P		
	2:30 - 5:00	2.50	CSGSUR	12	C	P		MOVE CSG INTO POSITION TO P/U. RUN 53 JOINTS 8 5/8", 28# J55 CASING  SHOE @ 2354'  BAFFLE @ 2308'

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

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End Date: 6/11/2012

Active Datum: RKB @5,190.00usff (above Mean Sea Level)

UWI: SE/NW0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	5:00 - 6:00	1.00	CSGSUR	12	B	P		HOLD SAFETY MEETING,  RUN 200' OF 1".  RIG DOWN RIG MOVE OFF WELL,  REBUILD DITCH.
	6:00 - 7:30	1.50	CSGSUR	12	E	P		RIG UP CEMENT TRUCK, 2" HARD LINES., PRO PETRO MAKE UP CMT HEAD & LOAD PLUG  PRESSURE TEST LINES TO 2000 PSI.  PUMP 130 BBLS OF WATER AHEAD.  PUMP 20 BBLS OF 8.3# GEL WATER AHEAD.  PUMP (300 SX) 61.35 BBLS OF TAIL 15.8# 1.15 YD 5 GAL/SK PREMIUM CEMENT W/ 2% CALC. CMT TOP 1266'  DROP PLUG ON FLY.  DISPLACE W/ 141 BBLS OF H2O.  NO CIRC THROUGH OUT.  FINAL LIFT OF 140 PSI AT 4 BBL/MIN.  BUMP PLUG W/500 PSI HELD FOR 5 MIN. FLOAT HELD.
	7:30 - 9:00	1.50	CSGSUR	13	A	P		PUMP (150 SX) 30.64 BBLS OF SAME TAIL CEMENT W/ 4% CALC. DOWN BACK SIDE. SHUT DOWN AND CLEAN TRUCK. NO CEMENT TO SURFACE. WOC, 1.5 HOURS
	9:00 - 11:00	2.00	CSGSUR	13	A	P		PUMP 125 SKS (25.6 BBLS) WOC, 1.5 HOURS
	11:00 - 12:30	1.50	CSGSUR	13	A	P		PUMP 125 SKS (25.6 BBLS) WOC, 1.5 HOURS
	12:30 - 13:30	1.00	CSGSUR	13	A	P		PUMP 125 SKS (25.6 BBLS) WOC, 1.5 HOURS  PUMP 120 SKS (24.6 BBLS)
6/6/2012	14:00 - 15:00	1.00	PRPSPD	01	C	P		RELEASE RIG @ 13:30 SKID RIG 10' TO NBU 1022-E4BS, ALIGN OVER WELL
	15:00 - 15:30	0.50	PRPSPD	14	A	P		NIPPLE UP BOPE
	15:30 - 16:00	0.50	PRPSPD	01	B	P		CHANGE OUT CASING BAILS TO DRILLING BAILS

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

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UWI: SE/NW0/10/S/22/E/12/0/0/26/PM/N/1835/VW0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:00 - 20:30	4.50	PRSPD	15	A	P		PRESSURE TEST /TEST CASING 1500 HIGH 250 LOW FOR 30 MIN / PRESSURE TEST H&P EQUIP BLIND RAMS,PIPE RAMS , FLOOR VALVE, KILL LINES & KILL LINE VALVES, BOP WING VALVES , HCR VALVE + CHOKE LINE; INNER AND OUTER CHOKE VALVES & MANIFOLD TO 250 PSI LOW @ 5 MINUTES + 5000 PSI HIGH @ 10 MINUTES / TEST ANNULAR TO 250 PSI LOW @ 5 MINUTES + 2500 PSI HIGH
	20:30 - 21:00	0.50	PRSPD	14	B	P		SET WEAR BUSHING ,INSTALL BEARING ASSEMBLY & TEST PLUG
	21:00 - 21:30	0.50	PRSPD	15	A	P		TEST MI SWACO,CHOKE MANIFOLD & ORBIT VALVES, 1,000 PSI
	21:30 - 23:00	1.50	PRSPD	06	A	P		PICK UP & MAKE UP BHA #1 SCRIBE ,ORIENTATE & TEST SAME / TIH TAG CEMENT @
	23:00 - 0:00	1.00	PRSPD	07	B	P		PRE SPUD INSPECTION / LEVEL DERRICK / INSTALL ROTATING RUBBER
6/7/2012	0:00 - 1:00	1.00	DRLPRC	02	F	P		DRILL FLOAT TRACK F2,243,BAFFLE@2,243 SHOE@2,376,OPEN HOLE TO 2,416
	1:00 - 6:00	5.00	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/2,416 TO 3,176 = 760' @ 152 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 90-115 PUMPS -122 SPM=550 GPM PUMP PRESSURE ON/OFF BTM 1,860/ 1,530 TORQUE ON/OFF BTM 8,000/ 4,000 PICK UP WT 108,000 SLACK OFF WT 88,000 ROT WT 95,000 SLIDE 231' IN 96 MIN .30% OF FOOTAGE DRILLED,32%OF HRS DRILLED MW 8.5 VIS 25 /NOV D-WATER
	6:00 - 14:30	8.50	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/3,176 TO 4,498 = 1,322' @155.5 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 115 PUMPS -122 SPM=550 GPM PUMP PRESSURE ON/OFF BTM 2,000/ 1,675 TORQUE ON/OFF BTM 9,000/ 6,000 PICK UP WT 140,000 SLACK OFF WT 98,000 ROT WT 115,000 SLIDE 319" IN 205 MIN .24% OF FOOTAGE DRILLED,39%OF HRS DRILLED MW 8.5 VIS 26 NOC D-WATER
	14:30 - 15:00	0.50	DRLPRC	07	A	P		RIG SERVICE

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 4/5/2012

End Date: 6/11/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	15:00 - 0:00	9.00	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/4,498 TO 5,634 = 1,136' @126.2 FPH WOB 16,000-24,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 115 PUMPS -124 SPM=-558 GPM PUMP PRESSURE ON/OFF BTM 2,150/ 1,845 TORQUE ON/OFF BTM 12,000/ 11,000 PICK UP WT 167,000 SLACK OFF WT 105,000 ROT WT 132,000 SLIDE 187" IN 149 MIN .16% OF FOOTAGE DRILLED,28%OF HRS DRILLED MW 8.5 VIS 26
6/8/2012	0:00 - 6:00	6.00	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/5,634 TO 6,300 = 666 @ 111 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-70 MUD MOTOR RPM 90-115 PUMPS -122 SPM=-550 GPM PUMP PRESSURE ON/OFF BTM 2,150/ 1,845 TORQUE ON/OFF BTM 13,000/ 12,000 PICK UP WT 172,000 SLACK OFF WT 110,000 ROT WT138,000 SLIDE 82' IN 86 MIN .14% OF FOOTAGE DRILLED,8%OF HRS DRILLED MW 8.5 VIS 26
	6:00 - 13:30	7.50	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/6,300 TO 6,953 = 653 @ 87 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-75 MUD MOTOR RPM 90-115 PUMPS -110-122 SPM=-500-550 GPM PUMP PRESSURE ON/OFF BTM 1,925/ 1,625 TORQUE ON/OFF BTM 15,000/ 14,000 PICK UP WT 1206,000 SLACK OFF WT 120,000 ROT WT156,000 SLIDE 84' IN 105 MIN .13% OF FOOTAGE DRILLED 21.8%OF HRS DRILLED MW 8.5 VIS 26
	13:30 - 14:00	0.50	DRLPRC	07	A	P		RIG SERVICE
	14:00 - 0:00	10.00	DRLPRC	02	D	P		DRILL / SLIDE / SURVEY F/6,963 TO 8,156 = 1,193' @ 119 FPH WOB 20,000-27,000 TOP DRIVE RPM 40-78 MUD MOTOR RPM 90-115 PUMPS -100-122 SPM=-450-550 GPM PUMP PRESSURE ON/OFF BTM 1,985/ 1,695 TORQUE ON/OFF BTM 17,000/ 16,000 PICK UP WT 221,000 SLACK OFF WT 139,000 ROT WT 176,000 MUD WT 8.4 VIS 26 NOV D-WATER

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 4/5/2012

End Date: 6/11/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
6/9/2012	0:00 - 1:30	1.50	DRLPRC	02	D	P		DRILL/ SURVEY F/ 8,156 TO 8,203 = 47' @ 31 FPH WOB 20,000-27,000 TOP DRIVE RPM 40-78 MUD MOTOR RPM 90-115 PUMPS -100-122 SPM=-450-550 GPM PUMP PRESSURE ON/OFF BTM 1,985/ 1,695 TORQUE ON/OFF BTM 17,000/ 16,000 PICK UP WT 221,000 SLACK OFF WT 139,000 ROT WT 176,000 MUD WT 8.4 VIS 26
	1:30 - 4:00	2.50	DRLPRC	05	G	P		CCH/ DISPLACE HOLE W/ 11.8 MUD
	4:00 - 10:00	6.00	DRLPRC	06	A	P		TRIP FOR BIT, BACK REAM OUT 10 STANDS, STRAIGHT PULL 5 STANDS, PUMP SLUG ,TOH /HOLE GOOD / FLOW CHECK @ SHOE / PULL TO BHA, PULL ROTA RUBBER / BREAK BIT, CHECK M MTR MUD LOSS 50 BBLs
	10:00 - 15:00	5.00	DRLPRC	06	A	P		MAKE UP BIT, SCRIBE DIR TOOLS & SURFACE TEST / TIH ,INSTALL ROT HEAD, BREAK, CIRC @ CSG SHO 5,200 8,000 15 BBL MUD LOSS
	15:00 - 16:30	1.50	DRLPRC	03	C	P		W&R F/ 8000-8,182 UNDERGUAGE HOLE F/8,182 TO 8,203 ,12'FLARE ON BTMS UP
	16:30 - 17:00	0.50	DRLPRC	02	D	P		DRILL/ SURVEY F/ 8,203 TO 8,259 = 56 @ 112 FPH WOB 20,000-24,000 TOP DRIVE RPM 40-78 MUD MOTOR RPM 90-115 PUMPS -110 SPM=-495GPM PUMP PRESSURE ON/OFF BTM 2,550/ 2,200 TORQUE ON/OFF BTM 17,000/ 16,000 PICK UP WT 220,000 SLACK OFF WT 150,000 ROT WT 170,000 MUD WT 11.8 VIS 38
	17:00 - 19:00	2.00	DRLPRC	07	C	Z		WORKING ON MUD PUMPS, CHANGING SWABS
	19:00 - 23:00	4.00	DRLPRC	02	D			DRILL/ SURVEY F/ 8,259 TO 8,735 TD= 476 @ 119 FPH WOB 20,000-26,000 TOP DRIVE RPM 40-78 MUD MOTOR RPM 105 PUMPS -110 SPM=-495 GPM PUMP PRESSURE ON/OFF BTM 2,905/ 2,515 TORQUE ON/OFF BTM 18,000/ 17,000 PICK UP WT 219,000 SLACK OFF WT 137,000 ROT WT 174,000 MUD WT 11.8 VIS 38 NO MUD LOSS
	23:00 - 0:00	1.00	DRLPRC	05	C	P		CCH F/ WIPER TRIP TO CASING SHOE
6/10/2012	0:00 - 5:00	5.00	DRLPRC	06	E	P		WIPER TRIP TO CSG SHOE/NO PROBLEM
	5:00 - 5:30	0.50	DRLPRC	03	D	P		W&R 95' TO BTM 2' FILL
	5:30 - 7:30	2.00	DRLPRC	05	C	P		CCH F/ OPEN HOLE LOGS/ PUMP SWEEP

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: PROPETRO 11/11, H&P 298/298

Event: DRILLING

Start Date: 4/5/2012

End Date: 6/11/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:30 - 12:00	4.50	EVALPR	06	B	P		BACK REAM 5 STDS OFF BTM,PULL 5 STDS,PUMP SLUG TOO,NO TIGHT SPOTS,FLOW CHECK @ CSG SHOE,PULL BHA, L/D MWD,BREAK BIT,RACK BACK M MTR & DIR TOOLS /FUNCT TEST PIPE & BLIND RAMS
	12:00 - 17:30	5.50	EVALPR	11	E	P		HSM W/ HALLIBURTON & RIG CREW/ R/U AND RUN TRIPLE COMBO / DRILLER TD 8,735 LOGGER TD8,738 ,LOG OUT TO SURFACE R/D SAME
	17:30 - 19:30	2.00	CSGPRO	14	B	P		PULL SMITH BEARING ASSEMBLY,INSTALL CASING ROTATING HEAD HOUSING,PULL WEAR BUSHING,X/O BAILS
	19:30 - 0:00	4.50	CSGPRO	12	C	P		CT-JSA RIG UP FRANKS,M/U FLOAT EQUIP,TEST FLOATS, RUN 41/2 CASING
6/11/2012	0:00 - 4:00	4.00	CSGPRO	12	C	P		RUN 116 JTS I-80 11.6# LTC 4.5 CASING +85 JTS I-80 11.6# DQX 4.5 CASING+ RELATED TOOLS / BREAKING CIRCULATION @ SELECTED INTERVALS / LANDING CASING MANDREL IN BOWL W/95,000 @ 8,723' FOR CIRC & CEMENTING
	4:00 - 5:30	1.50	CSGPRO	05	E	P		CIRC CASING / R/D FRANKS /CT-JSA WITH BJ
	5:30 - 8:30	3.00	CSGPRO	12	E	P		INSTALL BJ CMT HEAD , TEST PUMP & LINES TO 5,000 PSI, ,DROP BOTTOM PLUG PUMP 25 BBLS FW PUMP 503 SKS LEAD CEMENT @ 12.5 PPG,(177 BBLS) (PREM LITE II + .025 pps CELLO FLAKE + 5 pps KOL SEAL + .05 lb/sx STATIC FREE + 6% bwoc BENTONITE + .2% bwoc SODIUM META SILICATE + 0.2 % R-3 +0.4%bwoc FL-52 100.1% FRESH WATER / (10.44 gal/sx, 1.98 yield) + 1250 SX TAIL @ 14.3 ppg( 294 BBLS)+ (CLS G 50/50 POZ + 10% SALT + .005lbs/sx STATIC FREE + .2% R3 + .002 GPS FP-6L + 2% BENTONITE +0.5%EC-1+ 58.9% FW / (5.94 gal/sx, 1.32 yield) WASH PUMP & LINES DROP TOP PLUG & DISPLACE W/ 135.2 BBLS H2O + ADDITIVES / PLUG DOWN @ 08:48 HOURS / FLOATS HELD W/ 1.5 BBLS H2O RETURNED TO INVENTORY/ GOOD RETURNS THROUGH 110 BBLS /PARTICAL RETURNS TO PLUG BUMP WITH NO LEAD CMT TO SURFACE / WATER SPACER BACK TO SURFACE /GOOD LIFT PRESSURE 100 PSI ABOVE CALCULATED PRESSURE / LIFT PRESSURE @ 2,550 PSI / BUMP PRESSURE TO 3,150PSI / TOP OF TAIL CEMENT CALCULATED @ 3,000' / RIG DOWN BJ
	8:30 - 12:00	3.50	CSGPRO	14	A			FLUSH BOP'S & EQUIPMENT / SET PACK OFF WITH CAMERON / LAY DOWN RUNNING TOOL / NIPPLE DOWN BOP & EQUIPMENT / PREP FOR SKID / RELEASE RIG @ 12:00 HRS 6/11/12 TO NBU 1022-F1CS

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 1022-12E4BS YELLOW	Wellbore No.	OH
Well Name	NBU 1022-12E4BS	Wellbore Name	NBU 1022-12E4BS
Report No.	1	Report Date	9/10/2012
Project	UTAH-UINTAH	Site	NBU 1022-12F PAD
Rig Name/No.		Event	COMPLETION
Start Date	9/10/2012	End Date	9/27/2012
Spud Date	4/26/2012	Active Datum	RKB @5,190.00usft (above Mean Sea Level)
UWI	SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0		

1.3 General

Contractor		Job Method		Supervisor	
Perforated Assembly		Conveyed Method			

1.4 Initial Conditions

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

1.5 Summary

Gross Interval	6,679.0 (usft)-8,528.0 (usft)	Start Date/Time	9/10/2012 12:00AM
No. of Intervals	31	End Date/Time	9/10/2012 12:00AM
Total Shots	162	Net Perforation Interval	52.00 (usft)
Avg Shot Density	3.12 (shot/ft)	Final Surface Pressure	
		Final Press Date	

2 Intervals

2.1 Perforated Interval

Date	Formation/Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/10/2012 12:00AM	MESAVERDE/			6,679.0	6,681.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	N

2.1 Perforated Interval (Continued)

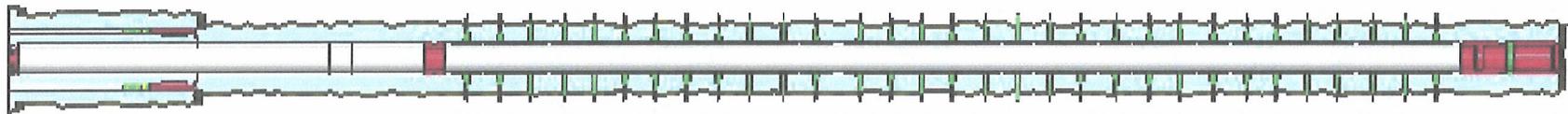
Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/10/2012 12:00AM	MESAVERDE/			6,771.0	6,773.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,808.0	6,810.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,906.0	6,907.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,919.0	6,920.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,938.0	6,940.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,961.0	6,963.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			6,995.0	6,997.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,042.0	7,044.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,081.0	7,083.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,172.0	7,174.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,242.0	7,244.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,545.0	7,547.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,579.0	7,581.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,610.0	7,612.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,646.0	7,648.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,717.0	7,718.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,776.0	7,777.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,830.0	7,832.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,858.0	7,860.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			7,966.0	7,968.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,050.0	8,051.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
9/10/2012 12:00AM	MESAVERDE/			8,075.0	8,076.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,159.0	8,161.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,250.0	8,251.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,266.0	8,268.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,297.0	8,298.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,317.0	8,318.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,450.0	8,451.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,500.0	8,502.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
9/10/2012 12:00AM	MESAVERDE/			8,526.0	8,528.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

3 Plots

3.1 Wellbore Schematic



**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 9/10/2012

End Date: 9/27/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
4/26/2012	-							
4/27/2012	-							
9/10/2012	11:00 - 12:30	1.50	FRAC	33	C	P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 10 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 28 PSI. 1ST PSI TEST T/ 7000 PSI. HELD FOR 30 MIN LOST 55 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL. SWIFW
9/14/2012	11:00 - 15:00	4.00	FRAC	37	B	P		PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER DESIGN. POOH. SWIFWE.
9/17/2012	7:00 - 13:00	6.00	FRAC	36	B	P		MIRU SUPERIOR FRAC EQUIP, BLENDER BROKE DOWN DID NOT FRAC
9/19/2012	6:45 - 7:00	0.25	FRAC	48		P		HSM, PLACEMENT, HIGH PRESSURE

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 9/10/2012

End Date: 9/27/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/W/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 17:00	10.00	FRAC	36	B	P		<p>PERF &amp; FRAC FOLLOWING WELL AS PER DESIGN W/ 30/50 MESH SAND &amp; SLK WTR. ALL CBP'S ARE HALIBURTON 8K CBP'S. REFER TO STIM PJR FOR FLUID, SAND AND CHEMICAL VOLUME PUMP'D</p> <p>FRAC STG #1] WHP=1,628#, BRK DN PERFS=5,402#, @=4.5 BPM, INJ RT=41.1, INJ PSI=6,194#, INITIAL ISIP=2,600#, INITIAL FG=.75, FINAL ISIP=2,650#, FINAL FG=.75, AVERAGE RATE=42.9, AVERAGE PRESSURE=5,716#, MAX RATE=51.3, MAX PRESSURE=6,205#, NET PRESSURE INCREASE=50#, 13/21 62% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=8,287', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #2] WHP=2,270#, BRK DN PERFS=3,401#, @=4.7 BPM, INJ RT=30.8, INJ PSI=6,014#, INITIAL ISIP=2,525#, INITIAL FG=.74, FINAL ISIP=2,979#, FINAL FG=.75, AVERAGE RATE=39.2, AVERAGE PRESSURE=5,888#, MAX RATE=51, MAX PRESSURE=6,601#, NET PRESSURE INCREASE=464#, 13/24 60% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,998', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWFN. HSM, SIP, TRIPS, FALLS.</p>
9/20/2012	6:30 - 6:45	0.25	FRAC	48		P		

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

Well: NBU 1022-12E4BS YELLOW		Spud Date: 4/26/2012	
Project: UTAH-UINTAH		Site: NBU 1022-12F PAD	Rig Name No: ROCKY MOUNTAIN WELL SERVICE 3/3
Event: COMPLETION		Start Date: 9/10/2012	End Date: 9/27/2012
Active Datum: RKB @5,190.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:45 - 17:00	10.25	FRAC	36	B	P		<p>FRAC STG #3] WHP=2,075#, BRK DN PERFS=3,489#, @=4.4 BPM, INJ RT=50.1, INJ PSI=5,016#, INITIAL ISIP=1,721#, INITIAL FG=.65, FINAL ISIP=2,004#, FINAL FG=.69, AVERAGE RATE=47.8, AVERAGE PRESSURE=4,978#, MAX RATE=50.2, MAX PRESSURE=5,808#, NET PRESSURE INCREASE=283#, 18/24 75% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,678', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #4] WHP=1,616#, BRK DN PERFS=2,122#, @=6.1 BPM, INJ RT=51.3, INJ PSI=4,449#, INITIAL ISIP=1,700#, INITIAL FG=.66, FINAL ISIP=1,990#, FINAL FG=.70, AVERAGE RATE=51.1, AVERAGE PRESSURE=4,366#, MAX RATE=51.3, MAX PRESSURE=5,219#, NET PRESSURE INCREASE=298#, 22/24 92% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,274', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #5] WHP=598#, BRK DN PERFS=3,040#, @=6.1 BPM, INJ RT=50.8, INJ PSI=5,019#, INITIAL ISIP=2,113#, INITIAL FG=.73, FINAL ISIP=2,397#, FINAL FG=.77, AVERAGE RATE=50.8, AVERAGE PRESSURE=4,943#, MAX RATE=51, MAX PRESSURE=5,614#, NET PRESSURE INCREASE=284#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,027', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWIFN. HSM, RIGGING DOWN</p>
9/21/2012	6:45 - 7:00	0.25	FRAC	48		P		

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 9/10/2012

End Date: 9/27/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 16:00	9.00	FRAC	36	B	P		<p>FRAC STG #6] WHP=1,304#, BRK DN PERFS=3,296#, @=3.3 BPM, INJ RT=50.8, INJ PSI=5,087#, INITIAL ISIP=2,125#, INITIAL FG=.74, FINAL ISIP=2,380#, FINAL FG=.78, AVERAGE RATE=45.8, AVERAGE PRESSURE=4,858#, MAX RATE=50.8, MAX PRESSURE=5,500#, NET PRESSURE INCREASE=255#, 19/24 79% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=6,840', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #7] WHP=798#, BRK DN PERFS=3,516#, @=4.1 BPM, INJ RT=51, INJ PSI=4,576#, INITIAL ISIP=1,595#, INITIAL FG=.67, FINAL ISIP=2,076#, FINAL FG=.74, AVERAGE RATE=45.8, AVERAGE PRESSURE=4,174#, MAX RATE=51.3, MAX PRESSURE=5,259#, NET PRESSURE INCREASE=481#, 19/24 79% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=6,629'</p> <p>TOTAL FLUID PUMP'D=6,767 TOTAL SAND PUMP'D=143,885# HSM-JSA</p>
9/27/2012	7:00 - 7:15	0.25	DRLOUT	48		P		

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 9/10/2012

End Date: 9/27/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 16:00	8.75	DRLOUT	44	C	P		<p>NDWH, NUBOP, PU 3 7/8" BIT &amp; POBS W/XN SN, RIH W/ 209 JTS 2 3/8" L-80 OFF FLOAT TAG FILL @ 6,609', RU PWR SWWL, BRK CIRC PRESS TEST BOP TO 3,000 PSI LOST 0 PSI IN 15 MIN.</p> <p>C/O 20' SAND TAG PLUG #1 @ 6,629', DRL HAL 8K CBP IN 7 MIN, 50 PSI INC, FCP 25 PSI, RIH TAG FILL @ 6,815'.</p> <p>C/O 25' SAND TAG PLUG #2 @ 6,840', DRL HAL 8K CBP IN 6 MIN, 100 PSI INC, FCP 50 PSI, RIH TAG FILL @ 6,992'.</p> <p>C/O 35' SAND TAG PLUG #3 @ 7,027', DRL HAL 8K CBP IN 6 MIN, 100 PSI INC, FCP 100 PSI, RIH TAG FILL @ 7,244'.</p> <p>C/O 30' SAND TAG PLUG #4 @ 7,274', DRL HAL 8K CBP IN 7 MIN, 400 PSI INC, FCP 300 PSI, RIH TAG FILL @ 7,648'.</p> <p>C/O 30' SAND TAG PLUG #5 @ 7,678', DRL HAL 8K CBP IN 8 MIN, 200 PSI INC, FCP 400 PSI, RIH TAG FILL @ 7,968'.</p> <p>C/O 30' SAND TAG PLUG #6 @ 7,998', DRL HAL 8K CBP IN 6 MIN, 100 PSI INC, FCP 400 PSI, RIH TAG FILL @ 8,267'.</p> <p>C/O 20' SAND TAG PLUG #7 @ 8,287', DRL HAL 8K CBP IN 6 MIN, 200 PSI INC, FCP 400 PSI, RIH TAG FILL @ 8,649', 121' BELOW BTM PERF, CIRC WELL CLEAN, RD PWR SWWL, POOH LD 20 JTS TBG, LAND TBG W/ 252 JTS 2 3/8" L-80 EOT @ 8,015.80', RD FLOOR &amp; TBG EQUIP, NDBOP, NUWH, DROP BALL POBS @ 2,100 PSI, PRESS TEST FLOWLINE FROM WELLHEAD TO HAL 9,000 TO 3,000 PSI, LET BIT FALL 20 MIN TURN OVER TO FBC, SDFN.</p> <p>KB=26' HANGER-.83' 252 JTS 2 3/8" L-80-7,986.77' POBS W/ XN SN-2.20' EOT@ 8,015.80'</p> <p>283 JTS DEL 252 JTS USED 31 JTS RET</p> <p>TWTR=7,016 BBLS TWR=2,126 BBLS TWLTR=4,890 BBLS</p>
	16:00 - 16:00	0.00	DRLOUT	50				<p>WELL TURNED TO SALES @ 1630 HR ON 9/27/2012, 968 MCFD, 1920 BWPD, FCP 2160#, FTP 1643#, 20/64" CK.</p>

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

Well: NBU 1022-12E4BS YELLOW

Spud Date: 4/26/2012

Project: UTAH-UINTAH

Site: NBU 1022-12F PAD

Rig Name No: ROCKY MOUNTAIN WELL SERVICE  
3/3

Event: COMPLETION

Start Date: 9/10/2012

End Date: 9/27/2012

Active Datum: RKB @5,190.00usft (above Mean Sea Level)

UWI: SE/NW/0/10/S/22/E/12/0/0/26/PM/N/1835/NW/0/2170/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/30/2012	7:00 -			50				WELL IP'D ON 9/30/12 - 2597 MCFD, 0 BWPD, 0 BOPD, CP 2425#, FTP 1796#, LP 138#, 24 HRS, CK 20/64

Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH\_NBU 1022-12F PAD  
 Well: NBU 1022-12E4BS  
 Wellbore: NBU 1022-12E4BS  
 Section:  
 SHL:  
 Design: NBU 1022-12E4BS (wp01)  
 Latitude: 39.965694  
 Longitude: -109.389307  
 GL: 5164.00  
 KB: 5164' GL + 26' RKB @ 5190.00ft (H&P 298)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4100.00	4356.02	WASATCH
4700.00	4961.17	top of cylinder
6295.00	6556.20	MESAVERDE
8476.00	8737.24	SEGO

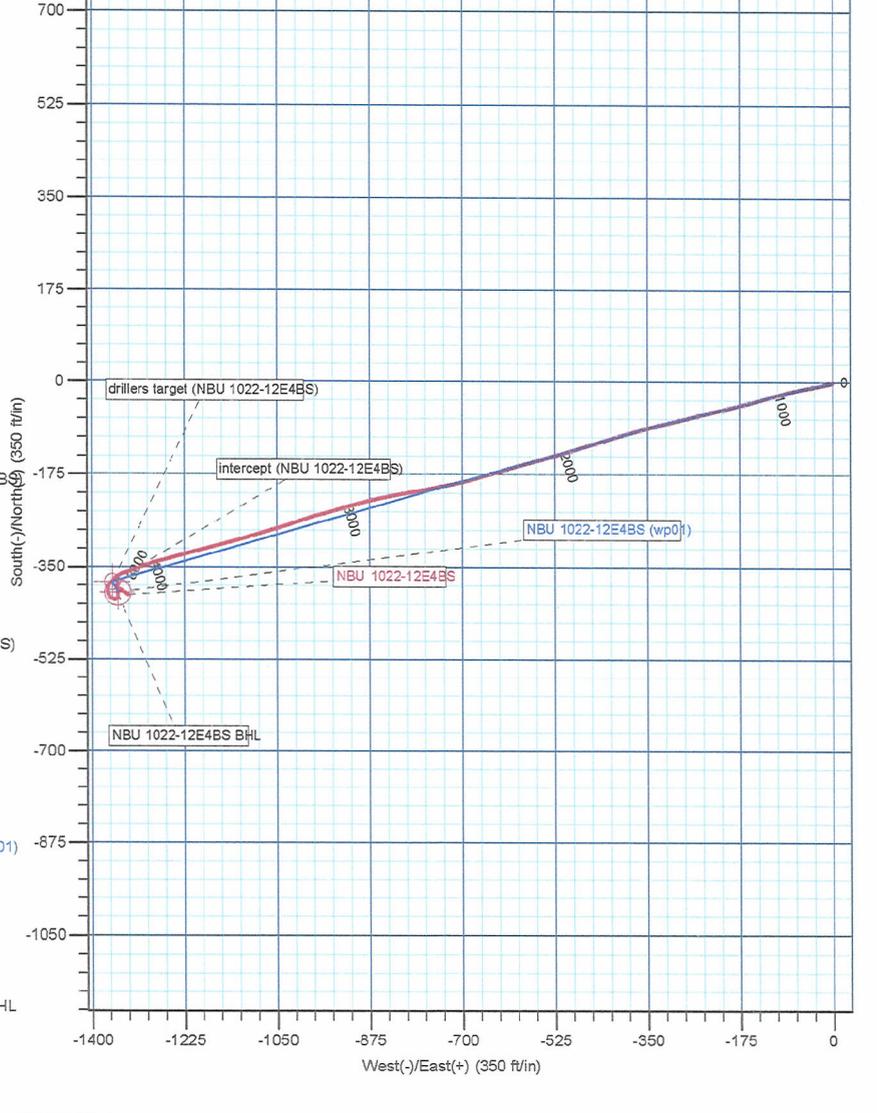
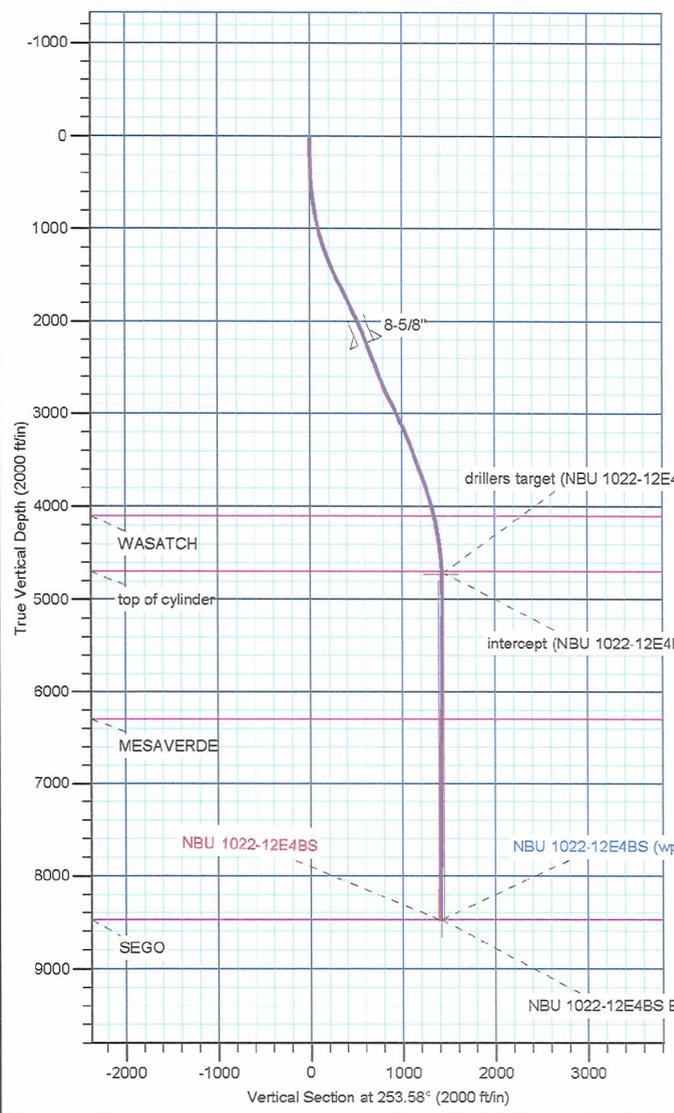
WELL DETAILS: NBU 1022-12E4BS						
+N/-S	+E/-W	Northing	Ground Level: Easting	5164.00 Latitude	39.965694	Longitude
0.00	0.00	14517627.82	2091740.79			-109.389307
						Slot

CASING DETAILS			
TVD	MD	Name	Size
2239.85	2354.00	8-5/8"	8-5/8

Azimuths to True North  
 Magnetic North: 10.91°  
 Magnetic Field  
 Strength: 5234.9snT  
 Dip Angle: 65.84°  
 Date: 5/7/2012  
 Model: IGRF2010

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
intercept (NBU 1022-12E4BS)	4700.00	-378.38	-1361.88	14517224.90	2090385.97	39.964655	-109.394166	Point	
drillers target (NBU 1022-12E4BS)	4728.50	-378.42	-1362.02	14517224.86	2090385.83	39.964655	-109.394167	Circle (Radius: 15.00)	
NBU 1022-12E4BS BHL	8476.00	-398.42	-1352.02	14517205.05	2090396.19	39.964600	-109.394131	Circle (Radius: 25.00)	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
2332.00	22.37	254.96	2219.51	-154.75	-580.88	0.00	0.00	600.94	
2482.00	22.37	254.96	2358.22	-169.56	-636.02	0.00	0.00	658.01	
2615.06	22.90	253.92	2481.03	-183.30	-685.34	0.50	-37.76	709.21	
3844.71	22.90	253.92	3613.78	-315.87	-1145.09	0.00	0.00	1187.67	
4989.68	0.00	0.00	4728.50	-378.42	-1362.02	2.00	180.00	1413.44	
5105.41	0.35	153.42	4844.23	-378.73	-1361.86	0.30	153.42	1413.38	
8737.24	0.35	153.42	8476.00	-398.42	-1352.02	0.00	0.00	1409.50	



# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-12F PAD**

**NBU 1022-12E4BS**

**NBU 1022-12E4BS**

**Design: NBU 1022-12E4BS**

## **Standard Survey Report**

**16 October, 2012**

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b> US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b> Well NBU 1022-12E4BS
<b>Project:</b> UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b> 5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Site:</b> UINTAH_NBU 1022-12F PAD	<b>MD Reference:</b> 5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Well:</b> NBU 1022-12E4BS	<b>North Reference:</b> True
<b>Wellbore:</b> NBU 1022-12E4BS	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> NBU 1022-12E4BS	<b>Database:</b> edmp

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

<b>Site</b> UINTAH_NBU 1022-12F PAD			
<b>Site Position:</b>	<b>Northing:</b> 14,517,616.83 usft	<b>Latitude:</b>	39.965663
<b>From:</b> Lat/Long	<b>Easting:</b> 2,091,757.52 usft	<b>Longitude:</b>	-109.389248
<b>Position Uncertainty:</b> 0.00 ft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b>	1.03 °

<b>Well</b> NBU 1022-12E4BS			
<b>Well Position</b>	<b>+N/-S</b> 0.00 ft	<b>Northing:</b> 14,517,627.82 usft	<b>Latitude:</b> 39.965694
	<b>+E/-W</b> 0.00 ft	<b>Easting:</b> 2,091,740.79 usft	<b>Longitude:</b> -109.389307
<b>Position Uncertainty</b> 0.00 ft		<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 5,164.00 ft

<b>Wellbore</b> NBU 1022-12E4BS					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/7/2012	10.91	65.84	52,235

<b>Design</b> NBU 1022-12E4BS					
<b>Audit Notes:</b>					
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b>	22.00		
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	22.00	0.00	0.00	253.16	

<b>Survey Program</b> Date 10/16/2012					
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
170.00	2,354.00	Survey #1 (NBU 1022-12E4BS)	MWD	MWD - STANDARD	
2,465.00	8,735.00	Survey #2 (NBU 1022-12E4BS)	MWD	MWD - STANDARD	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00
170.00	0.26	131.06	170.00	-0.22	0.25	-0.18	0.18	0.18	0.00
198.00	0.18	55.21	198.00	-0.24	0.34	-0.25	0.99	-0.29	-270.89
227.00	0.35	105.84	227.00	-0.24	0.46	-0.37	0.94	0.59	174.59
253.00	0.18	42.82	253.00	-0.23	0.56	-0.47	1.20	-0.65	-242.39
282.00	0.26	192.15	282.00	-0.26	0.58	-0.48	1.47	0.28	514.93
311.00	0.53	255.34	311.00	-0.36	0.44	-0.32	1.63	0.93	217.90
368.00	1.93	246.37	367.98	-0.81	-0.70	0.90	2.47	2.46	-15.74
458.00	3.61	259.91	457.88	-1.91	-4.88	5.22	1.99	1.87	15.04
548.00	5.80	255.78	547.57	-3.53	-12.07	12.58	2.46	2.43	-4.59

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Site:</b>	UINTAH_NBU 1022-12F PAD	<b>MD Reference:</b>	5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Well:</b>	NBU 1022-12E4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-12E4BS	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
638.00	7.56	258.59	636.95	-5.81	-22.29	23.02	1.99	1.96	3.12
728.00	9.06	258.68	726.01	-8.38	-35.04	35.96	1.67	1.67	0.10
818.00	10.29	258.41	814.72	-11.38	-49.86	51.02	1.37	1.37	-0.30
908.00	12.13	255.95	903.00	-15.29	-66.91	68.47	2.11	2.04	-2.73
998.00	14.00	256.05	990.67	-20.21	-86.65	88.79	2.08	2.08	0.11
1,088.00	15.56	255.25	1,077.69	-25.91	-108.89	111.73	1.75	1.73	-0.89
1,178.00	17.90	253.41	1,163.87	-32.94	-133.82	137.63	2.67	2.60	-2.04
1,268.00	19.90	257.12	1,249.02	-40.30	-162.01	166.74	2.59	2.22	4.12
1,358.00	21.86	256.69	1,333.11	-47.57	-193.25	198.75	2.18	2.18	-0.48
1,448.00	22.29	254.63	1,416.51	-55.95	-226.02	232.54	0.98	0.48	-2.29
1,538.00	24.60	256.67	1,499.08	-64.80	-260.71	268.30	2.72	2.57	2.27
1,628.00	26.64	256.57	1,580.22	-73.80	-298.57	307.14	2.27	2.27	-0.11
1,718.00	26.15	255.37	1,660.84	-83.50	-337.38	347.10	0.80	-0.54	-1.33
1,808.00	26.91	253.93	1,741.36	-94.15	-376.14	387.29	1.11	0.84	-1.60
1,898.00	26.91	252.53	1,821.62	-105.90	-415.14	428.02	0.70	0.00	-1.56
1,988.00	25.24	253.67	1,902.46	-117.41	-452.99	467.57	1.94	-1.86	1.27
2,078.00	24.09	252.00	1,984.25	-128.48	-488.87	505.13	1.49	-1.28	-1.86
2,168.00	21.28	254.64	2,067.28	-138.49	-522.10	539.83	3.32	-3.12	2.93
2,258.00	21.90	254.28	2,150.96	-147.36	-554.00	572.93	0.70	0.69	-0.40
2,354.00	22.51	255.16	2,239.84	-156.92	-589.00	609.20	0.72	0.64	0.92
<b>TIE ON</b>									
2,465.00	20.88	252.04	2,342.98	-168.46	-628.36	650.21	1.80	-1.47	-2.81
<b>FIRST MWD SURVEY</b>									
2,560.00	20.27	252.62	2,431.92	-178.59	-660.17	683.60	0.68	-0.64	0.61
2,654.00	20.50	255.19	2,520.03	-187.67	-691.62	716.33	0.98	0.24	2.73
2,748.00	22.13	258.32	2,607.60	-195.46	-724.88	750.42	2.11	1.73	3.33
2,843.00	23.81	259.94	2,695.07	-202.43	-761.28	787.28	1.89	1.77	1.71
2,937.00	25.44	260.07	2,780.52	-209.23	-799.86	826.17	1.74	1.73	0.14
3,031.00	26.88	258.82	2,864.89	-216.83	-840.59	867.36	1.64	1.53	-1.33
3,126.00	25.38	255.69	2,950.18	-226.03	-881.39	909.08	2.14	-1.58	-3.29
3,220.00	25.31	253.82	3,035.13	-236.61	-920.21	949.29	0.85	-0.07	-1.99
3,315.00	24.56	253.94	3,121.28	-247.73	-958.69	989.34	0.79	-0.79	0.13
3,409.00	23.06	252.82	3,207.27	-258.57	-995.05	1,027.29	1.67	-1.60	-1.19
3,504.00	23.31	251.82	3,294.60	-269.93	-1,030.68	1,064.68	0.49	0.26	-1.05
3,599.00	21.44	252.82	3,382.45	-280.92	-1,065.13	1,100.84	2.01	-1.97	1.05
3,693.00	20.13	254.32	3,470.33	-290.37	-1,097.12	1,134.19	1.50	-1.39	1.60
3,788.00	19.75	253.69	3,559.63	-299.30	-1,128.26	1,166.59	0.46	-0.40	-0.66
3,883.00	19.19	254.57	3,649.20	-307.96	-1,158.72	1,198.25	0.67	-0.59	0.93
3,977.00	18.63	255.32	3,738.13	-315.87	-1,188.14	1,228.69	0.65	-0.60	0.80
4,072.00	19.25	256.57	3,827.98	-323.36	-1,218.05	1,259.49	0.78	0.65	1.32
4,167.00	16.69	254.57	3,918.34	-330.62	-1,246.44	1,288.77	2.77	-2.69	-2.11
4,261.00	15.25	254.69	4,008.71	-337.48	-1,271.37	1,314.62	1.53	-1.53	0.13
4,355.00	12.88	251.69	4,099.89	-344.04	-1,293.25	1,337.45	2.64	-2.52	-3.19

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-12E4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Site:</b>	UINTAH_NBU 1022-12F PAD	<b>MD Reference:</b>	5164' GL + 26' RKB @ 5190.00ft (H&P 298)
<b>Well:</b>	NBU 1022-12E4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-12E4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-12E4BS	<b>Database:</b>	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,449.00	11.56	247.07	4,191.76	-351.00	-1,311.87	1,357.29	1.75	-1.40	-4.91	
4,543.00	10.06	250.57	4,284.09	-357.40	-1,328.28	1,374.86	1.74	-1.60	3.72	
4,638.00	7.63	250.57	4,377.95	-362.26	-1,342.06	1,389.45	2.56	-2.56	0.00	
4,732.00	6.31	237.19	4,471.26	-367.13	-1,352.29	1,400.65	2.22	-1.40	-14.23	
4,827.00	6.38	218.57	4,565.69	-374.09	-1,359.97	1,410.02	2.16	0.07	-19.60	
4,921.00	5.69	223.24	4,659.17	-381.57	-1,366.42	1,418.36	0.90	-0.73	4.97	
5,016.00	2.88	197.94	4,753.90	-387.27	-1,370.38	1,423.80	3.50	-2.96	-26.63	
5,110.00	1.75	181.94	4,847.82	-390.95	-1,371.15	1,425.61	1.37	-1.20	-17.02	
5,204.00	2.06	176.69	4,941.77	-394.07	-1,371.10	1,426.47	0.38	0.33	-5.59	
5,299.00	2.06	177.44	5,036.71	-397.48	-1,370.93	1,427.29	0.03	0.00	0.79	
5,393.00	2.25	160.32	5,130.65	-400.91	-1,370.23	1,427.62	0.71	0.20	-18.21	
5,487.00	1.63	148.57	5,224.59	-403.79	-1,368.91	1,427.19	0.78	-0.66	-12.50	
5,582.00	1.69	147.69	5,319.55	-406.12	-1,367.46	1,426.47	0.07	0.06	-0.93	
5,676.00	0.56	119.32	5,413.53	-407.52	-1,366.32	1,425.79	1.30	-1.20	-30.18	
5,771.00	0.50	103.57	5,508.53	-407.84	-1,365.51	1,425.11	0.17	-0.06	-16.58	
5,865.00	0.69	113.07	5,602.52	-408.16	-1,364.59	1,424.32	0.23	0.20	10.11	
5,960.00	0.94	117.32	5,697.51	-408.74	-1,363.37	1,423.32	0.27	0.26	4.47	
6,054.00	0.81	135.44	5,791.50	-409.57	-1,362.22	1,422.46	0.32	-0.14	19.28	
6,148.00	1.63	117.44	5,885.48	-410.66	-1,360.57	1,421.19	0.95	0.87	-19.15	
6,243.00	1.81	98.82	5,980.44	-411.51	-1,357.89	1,418.87	0.61	0.19	-19.60	
6,337.00	1.31	74.69	6,074.40	-411.46	-1,355.38	1,416.46	0.87	-0.53	-25.67	
6,431.00	2.50	35.44	6,168.35	-409.50	-1,353.16	1,413.77	1.81	1.27	-41.76	
6,525.00	3.06	359.57	6,262.25	-405.32	-1,351.99	1,411.43	1.91	0.60	-38.16	
6,620.00	2.69	356.82	6,357.13	-400.56	-1,352.13	1,410.19	0.42	-0.39	-2.89	
6,714.00	2.25	0.94	6,451.04	-396.51	-1,352.22	1,409.11	0.50	-0.47	4.38	
6,809.00	2.19	357.94	6,545.97	-392.84	-1,352.26	1,408.07	0.14	-0.06	-3.16	
6,903.00	2.13	354.32	6,639.91	-389.30	-1,352.50	1,407.28	0.16	-0.06	-3.85	
6,998.00	1.63	359.69	6,734.85	-386.20	-1,352.68	1,406.55	0.56	-0.53	5.65	
7,092.00	1.31	355.82	6,828.82	-383.79	-1,352.76	1,405.94	0.36	-0.34	-4.12	
7,187.00	0.69	4.94	6,923.81	-382.13	-1,352.79	1,405.49	0.67	-0.65	9.60	
7,281.00	0.31	73.07	7,017.81	-381.50	-1,352.50	1,405.02	0.68	-0.40	72.48	
7,375.00	0.75	110.94	7,111.80	-381.64	-1,351.68	1,404.28	0.57	0.47	40.29	
7,470.00	0.50	246.32	7,206.80	-382.03	-1,351.48	1,404.20	1.22	-0.26	142.51	
7,565.00	0.63	219.57	7,301.79	-382.60	-1,352.20	1,405.05	0.31	0.14	-28.16	
7,659.00	0.50	215.94	7,395.79	-383.33	-1,352.77	1,405.81	0.14	-0.14	-3.86	
7,754.00	0.63	210.07	7,490.78	-384.12	-1,353.27	1,406.52	0.15	0.14	-6.18	
7,848.00	0.63	198.32	7,584.78	-385.06	-1,353.69	1,407.19	0.14	0.00	-12.50	
7,943.00	1.13	172.44	7,679.77	-386.48	-1,353.73	1,407.64	0.66	0.53	-27.24	
8,037.00	1.38	168.69	7,773.75	-388.51	-1,353.39	1,407.90	0.28	0.27	-3.99	
8,132.00	1.75	126.82	7,868.71	-390.50	-1,352.00	1,407.15	1.23	0.39	-44.07	
8,226.00	2.25	116.57	7,962.66	-392.19	-1,349.20	1,404.96	0.65	0.53	-10.90	
8,321.00	2.19	116.69	8,057.58	-393.83	-1,345.91	1,402.29	0.06	-0.06	0.13	
8,415.00	2.38	124.32	8,151.51	-395.74	-1,342.70	1,399.77	0.38	0.20	8.12	
8,510.00	2.25	121.07	8,246.43	-397.82	-1,339.47	1,397.28	0.19	-0.14	-3.42	

# Andarko Petroleum Corporation

## Survey Report

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-12F PAD  
**Well:** NBU 1022-12E4BS  
**Wellbore:** NBU 1022-12E4BS  
**Design:** NBU 1022-12E4BS

**Local Co-ordinate Reference:** Well NBU 1022-12E4BS  
**TVD Reference:** 5164' GL + 26' RKB @ 5190.00ft (H&P 298)  
**MD Reference:** 5164' GL + 26' RKB @ 5190.00ft (H&P 298)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** edmp

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,604.00	2.06	126.57	8,340.37	-399.78	-1,336.53	1,395.03	0.30	-0.20	5.85
8,665.00	2.56	129.07	8,401.32	-401.29	-1,334.60	1,393.62	0.84	0.82	4.10
<b>LAST MWD SURVEY</b>									
8,735.00	2.56	129.07	8,471.25	-403.26	-1,332.17	1,391.86	0.00	0.00	0.00
<b>PROJECTION TO TD</b>									

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**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,354.00	2,239.84	-156.92	-589.00	TIE ON
2,465.00	2,342.98	-168.46	-628.36	FIRST MWD SURVEY
8,665.00	8,401.32	-401.29	-1,334.60	LAST MWD SURVEY
8,735.00	8,471.25	-403.26	-1,332.17	PROJECTION TO TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_