

**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 1022-7F4BS
<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> ML 23609	<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	1884 FNL 878 FWL	SWNW	7	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	2064 FNL 1977 FWL	SENW	7	10.0 S	22.0 E	S
At Total Depth	2064 FNL 1977 FWL	SENW	7	10.0 S	22.0 E	S

<b>21. COUNTY</b> UINTAH	<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 1977	<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 294
<b>24. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 482	<b>25. PROPOSED DEPTH</b> MD: 9418    TVD: 9242	
<b>26. ELEVATION - GROUND LEVEL</b> 5243	<b>27. BOND NUMBER</b> 22013542	<b>28. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> Permit #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 - 2440	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 - 9418	11.6	I-80 Buttress	12.0	Premium Lite High Strength	290	3.38	11.0
							50/50 Poz	1040	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> Andy Lytle	<b>TITLE</b> Regulatory Analyst	<b>PHONE</b> 720 929-6100
<b>SIGNATURE</b>	<b>DATE</b> 12/29/2010	<b>EMAIL</b> andrew.lytle@anadarko.com

<b>API NUMBER ASSIGNED</b> 43047514420000	<b>APPROVAL</b>   Permit Manager
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**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-7F4BS**

Surface: 1884 FNL / 878 FWL SWNW  
 BHL: 2064 FNL / 1977 FWL SENW

Section 7 T10S R22E

Unitah County, Utah  
 Mineral Lease: UT ST ML 23609

**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	1277	
Birds Nest	1634	Water
Mahogany	1993	Water
Wasatch	4509	Gas
Mesaverde	7112	Gas
MVU2	8014	Gas
MVL1	8612	Gas
TVD	9242	
TD	9418	

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 9,242' TVD, approximately equals 5,662 psi (calculated at 0.61 psi/foot).

Maximum anticipated surface pressure equals approximately 3,629 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

8. **Anticipated Starting Dates:**

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.* 4 of 4

***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**

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'				3,390	1,880	348,000
SURFACE	8-5/8"	0 to 2,440	28.00	IJ-55	LTC	0.89	1.65	5.04
PRODUCTION	4-1/2"	0 to 9,418	11.60	I-80	BTC	2.08	1.10	2.92

\*Burst on surface casing is controlled by fracture gradient as shoe with gas gradient above. D.F. = 2.21

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

2) MASP (Prod Casing) = Pore Pressure at TD - (0.22 psi/ft-partial evac gradient x TD)  
 (Burst Assumptions: TD = 12.0 ppg) 0.22 psi/ft = gradient for partially evac wellbore  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)  
**MASP 3,629 psi**

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD  
 (Burst Assumptions: TD = 12.0 ppg) 0.61 psi/ft = bottomhole gradient  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)  
**MABHP 5,662 psi**

**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
<b>Option 1</b>							
	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
SURFACE		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>					
<b>Option 2</b>	LEAD	1,940'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	180	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	4,008'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	290	10%	11.00	3.38
	TAIL	5,410'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,040	10%	14.30	1.31

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

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

**ADDITIONAL INFORMATION**

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

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

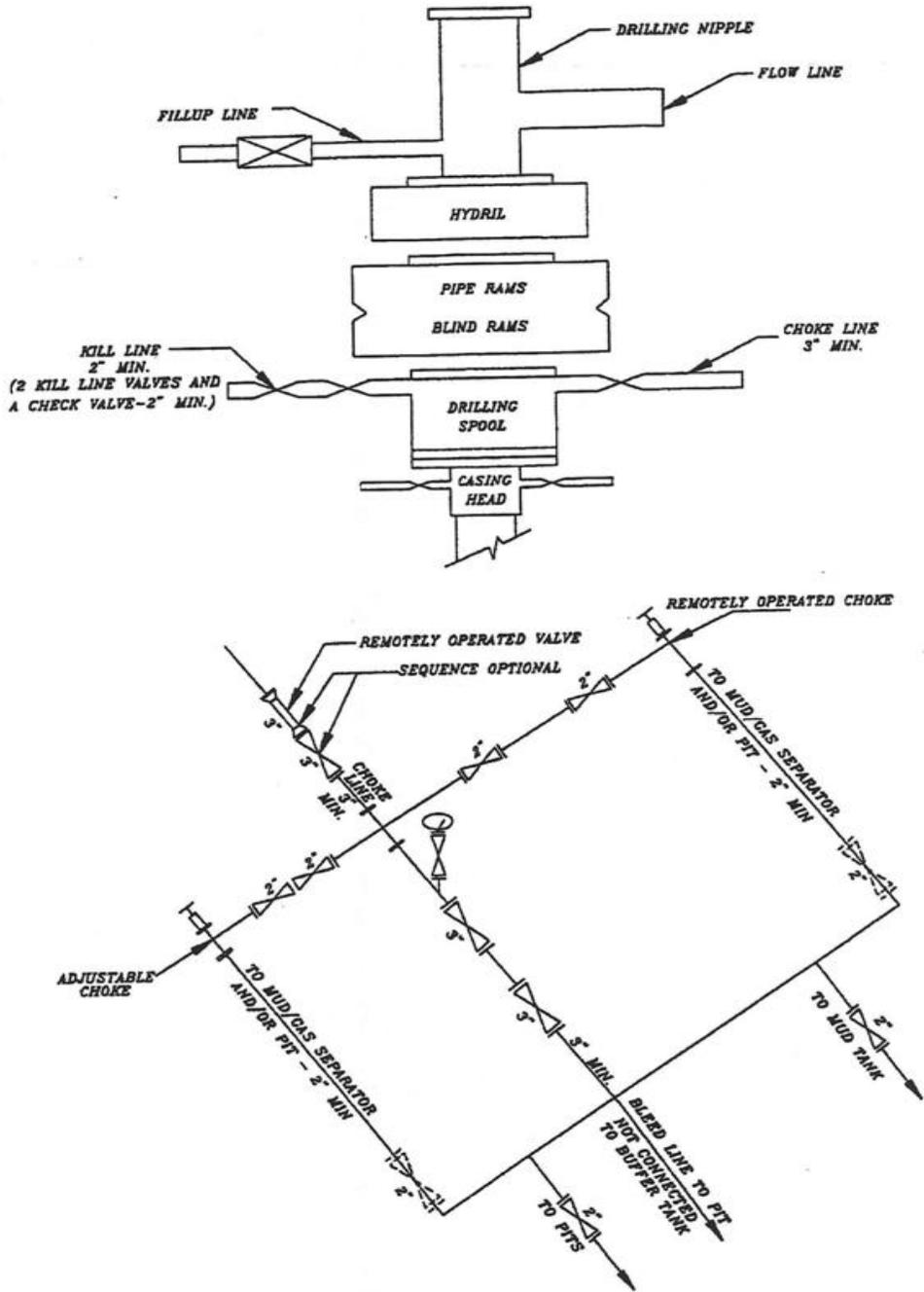
Surveys will be taken at 1,000' minimum intervals.

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

**DRILLING ENGINEER:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
 Emile Goodwin / Perry Daughtrey

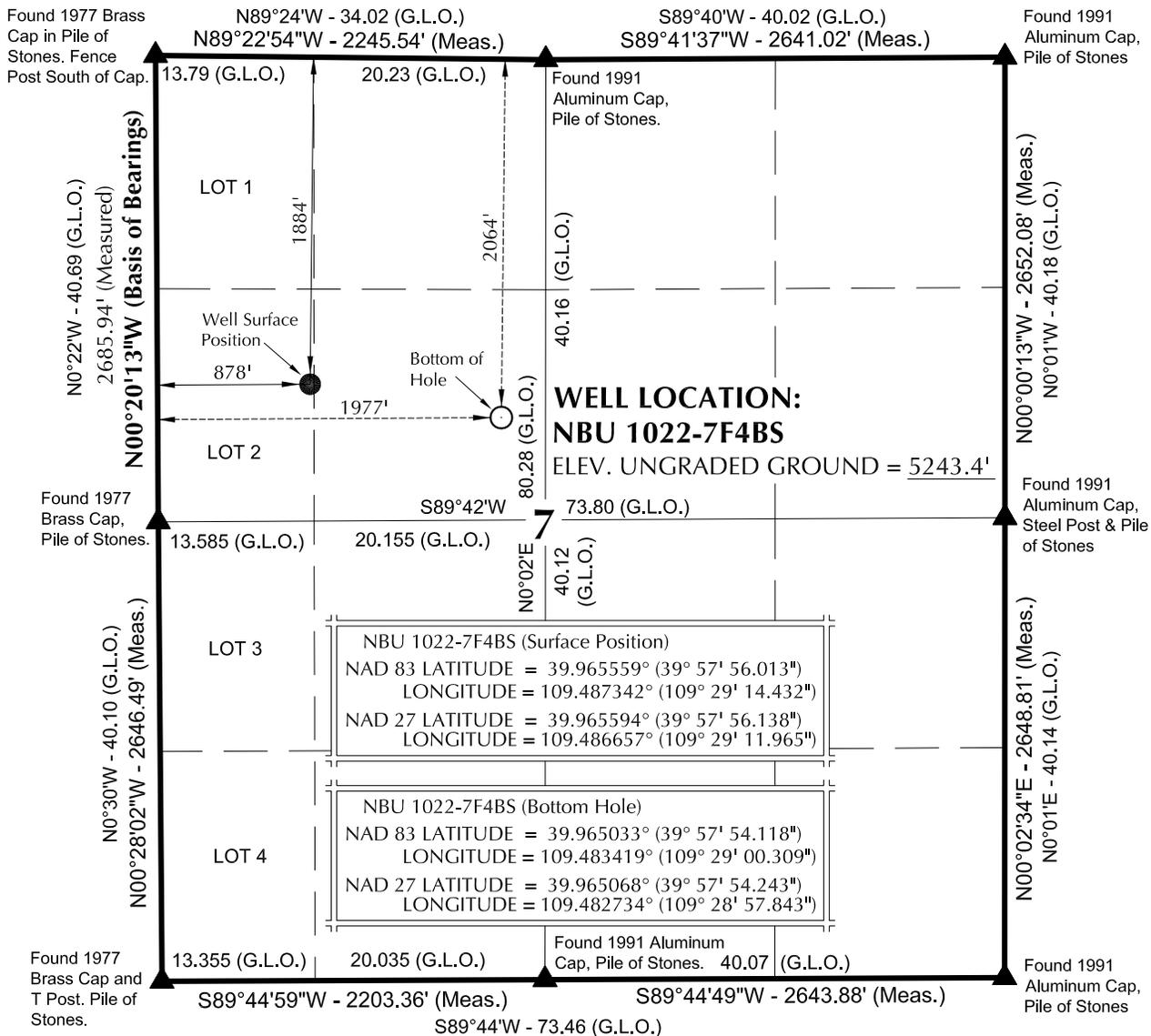
**DRILLING SUPERINTENDENT:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
 John Merkel / Lovel Young

### EXHIBIT A NBU 1022-7F4BS



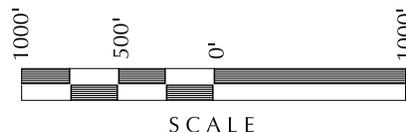
**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

# 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 S80°05'46"E 1116.52' 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.

PROF. JOHN R. LAUGH  
 No. 6028691  
 JOHN R. LAUGH  
 PROFESSIONAL AND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH

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

**WELL PAD: NBU 1022-7E**

**NBU 1022-7F4BS  
 WELL PLAT**

**2064' FNL, 1977' FWL (Bottom Hole)  
 SE ¼ NW ¼ OF SECTION 7, 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

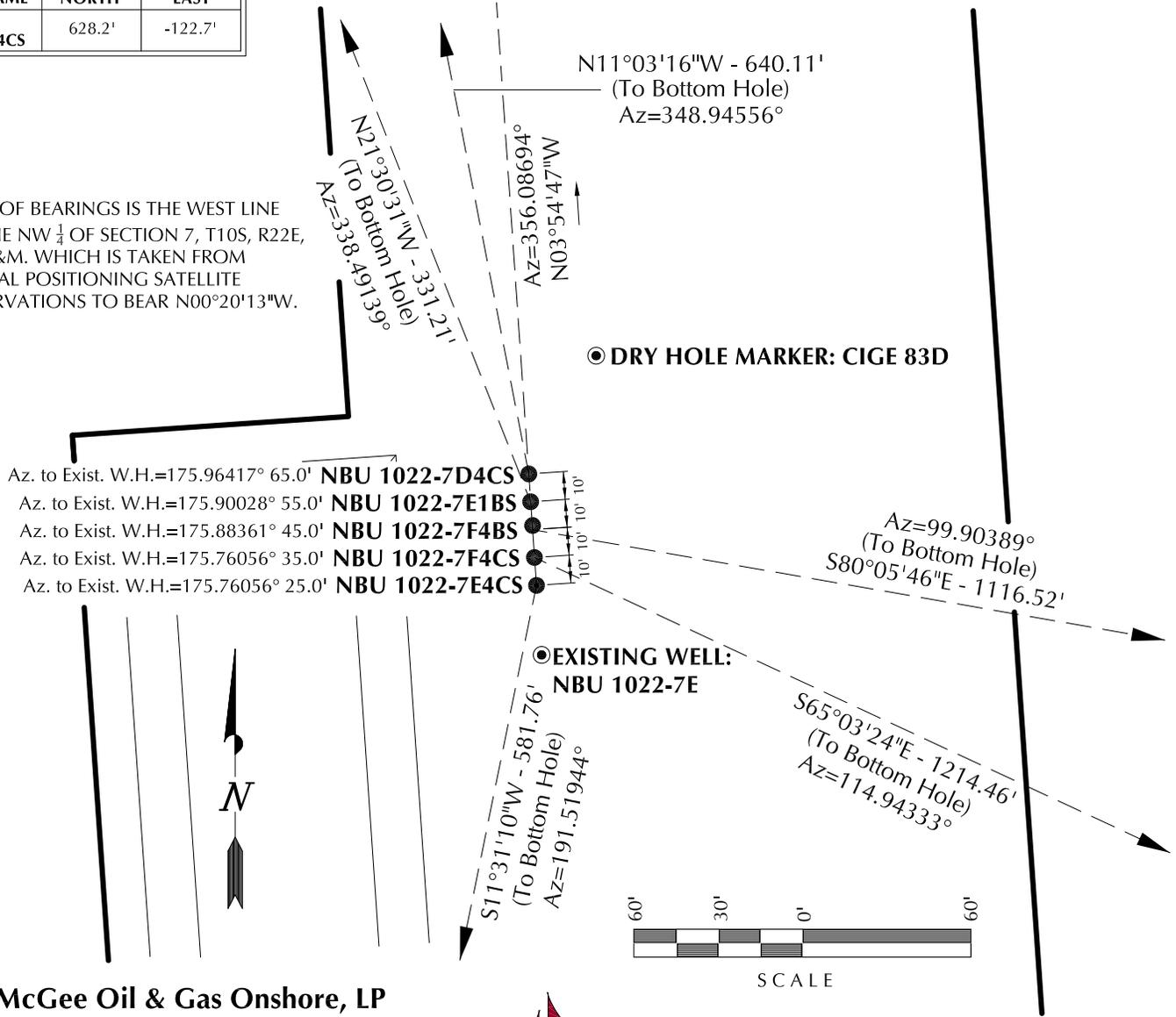
DATE SURVEYED: 10-22-10	SURVEYED BY: M.S.B.	SHEET NO: <b>3</b>
DATE DRAWN: 10-28-10	DRAWN BY: B.M.	
SCALE: 1" = 1000'	Date Last Revised: 12-14-10 M.W.W.	3 OF 17

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1022-7E4CS	39°57'55.816"	109°29'14.414"	39°57'55.941"	109°29'11.947"	1904' FNL	39°57'50.184"	109°29'15.904"	39°57'50.309"	109°29'13.437"	2475' FNL
NBU 1022-7F4CS	39°57'55.915"	109°29'14.424"	39°57'56.040"	109°29'11.957"	1894' FNL	39°57'50.858"	109°29'00.283"	39°57'50.983"	109°28'57.817"	2394' FNL
NBU 1022-7F4BS	39°57'56.013"	109°29'14.432"	39°57'56.138"	109°29'11.965"	1884' FNL	39°57'54.118"	109°29'00.309"	39°57'54.243"	109°28'57.843"	2064' FNL
NBU 1022-7E1BS	39°57'55.112"	109°29'14.441"	39°57'56.237"	109°29'11.974"	1874' FNL	39°57'59.156"	109°29'16.001"	39°57'59.281"	109°29'13.534"	1567' FNL
NBU 1022-7D4CS	39°57'56.211"	109°29'14.449"	39°57'56.336"	109°29'11.983"	1864' FNL	39°58'02.417"	109°29'16.027"	39°58'02.542"	109°29'13.560"	1237' FNL
NBU 1022-7E	39°57'55.570"	109°29'14.390"	39°57'55.695"	109°29'11.924"	1929' FNL	39°57'59.156"	109°29'16.001"	39°57'59.281"	109°29'13.534"	1567' FNL
CIGE 83D	39°57'56.629"	109°29'14.140"	39°57'56.754"	109°29'11.673"	1821' FNL	39°57'56.629"	109°29'14.140"	39°57'56.754"	109°29'11.673"	1821' FNL

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 1022-7E4CS	-570.0'	-116.2'	NBU 1022-7F4CS	-512.2'	1101.2'	NBU 1022-7F4BS	-192.0'	1099.9'	NBU 1022-7E1BS	308.1'	-121.4'
NBU 1022-7D4CS	628.2'	-122.7'									

BASIS OF BEARINGS IS THE WEST LINE OF THE NW 1/4 OF SECTION 7, T10S, R22E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°20'13"W.



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

**WELL PAD - NBU 1022-7E**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1022-7E4CS,  
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 1022-7D4CS  
LOCATED IN SECTION 7, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH.



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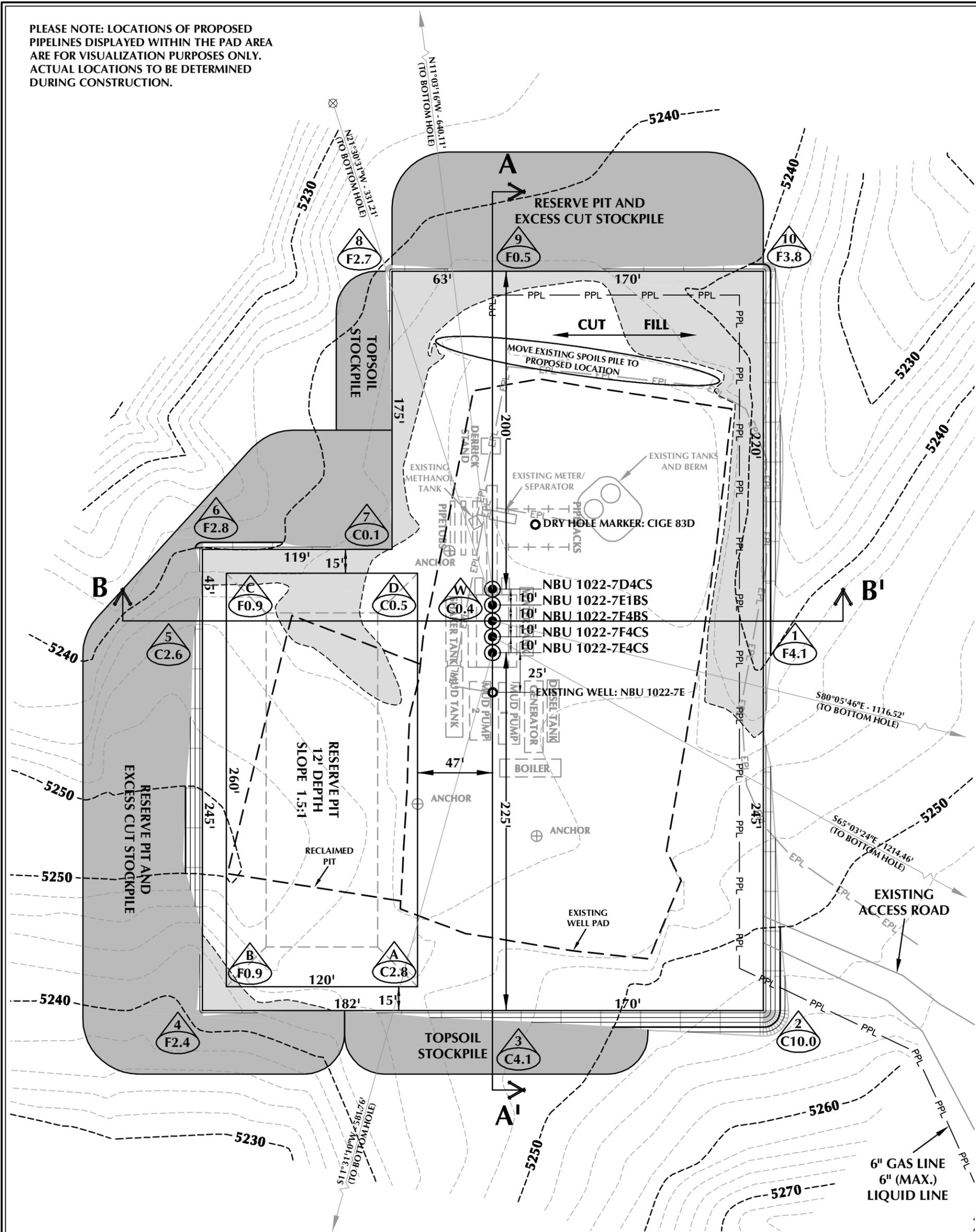
**TIMBERLINE**

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

(435) 789-1365

DATE SURVEYED: 10-22-10	SURVEYED BY: M.S.B.	SHEET NO: <b>6</b> 6 OF 17
DATE DRAWN: 10-28-10	DRAWN BY: B.M.	
SCALE: 1" = 60'	Date Last Revised: 12-14-10 M.W.W.	

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 1022-7E DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5243.4'  
 FINISHED GRADE ELEVATION = 5243.0'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.50 ACRES  
 TOTAL DAMAGE AREA = 6.38 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-7E**  
 WELL PAD - LOCATION LAYOUT  
 NBU 1022-7E4CS,  
 NBU 1022-7F4CS, NBU 1022-7F4BS,  
 NBU 1022-7E1BS & NBU 1022-7D4CS  
 LOCATED IN SECTION 7, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 8,588 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,113 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,731 C.Y.  
 EXCESS MATERIAL = 6,475 C.Y.

**RESERVE PIT QUANTITIES**

TOTAL CUT FOR RESERVE PIT  
 +/- 11,020 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 42,290 BARRELS



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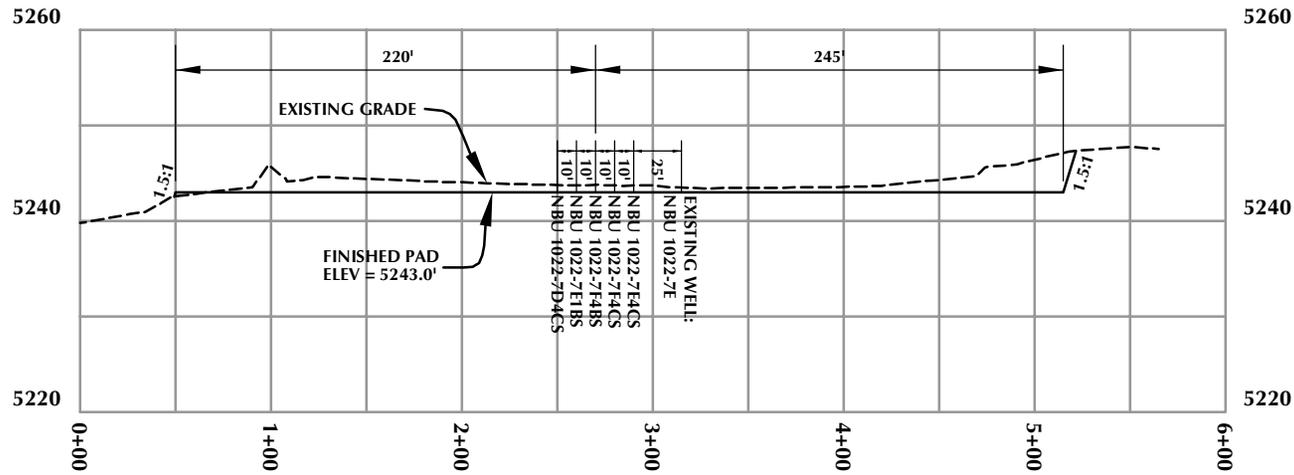
**WELL PAD LEGEND**

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

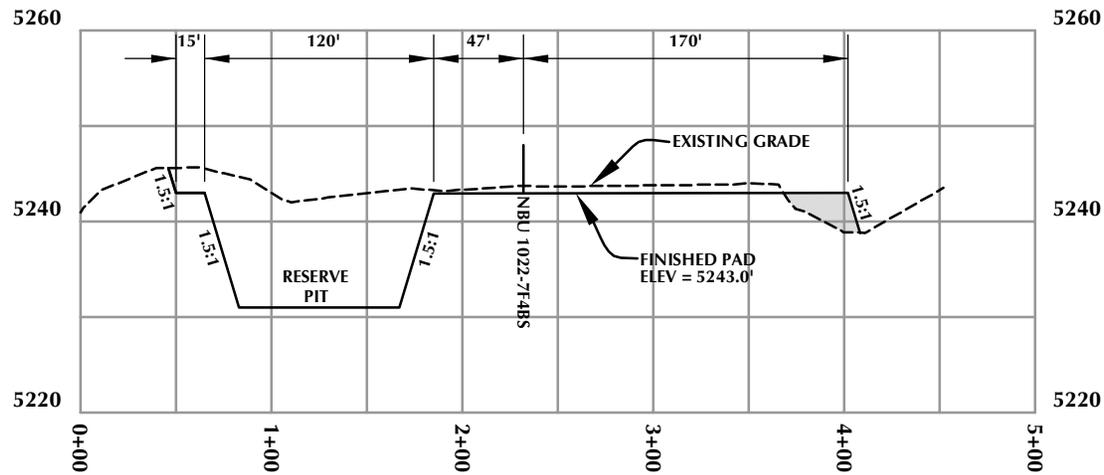


HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

SCALE: 1"=60' DATE: 11/5/10 SHEET NO: 7 OF 17  
 REVISED: 1/12/11 JID



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

WELL PAD - NBU 1022-7E

WELL PAD - CROSS SECTIONS  
NBU 1022-7E4CS,

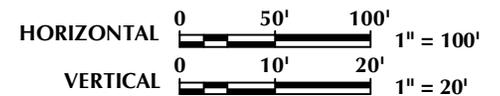
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 1022-7D4CS  
LOCATED IN SECTION 7, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH



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



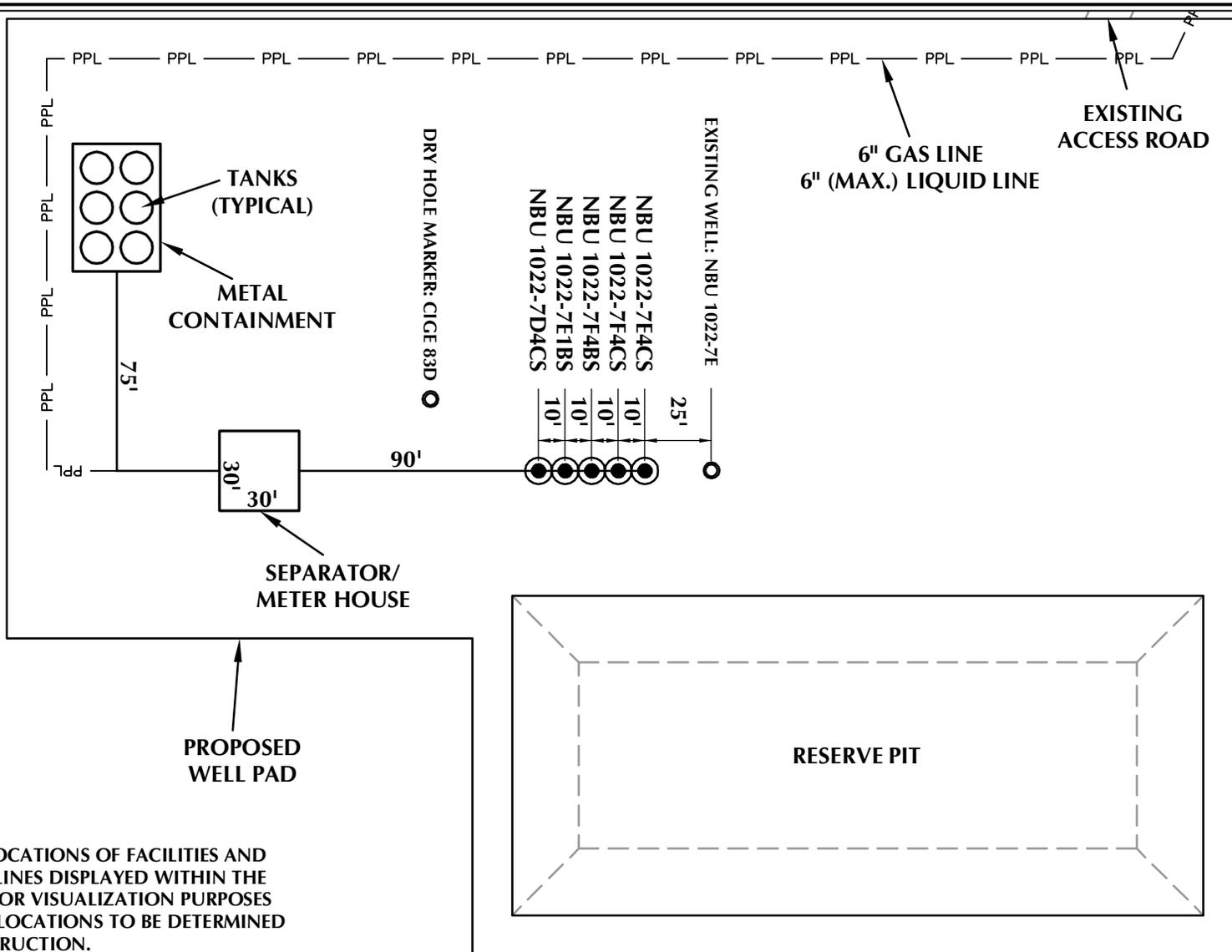
Scale: 1"=60'

Date: 11/5/10

SHEET NO:

**8**

8 OF 17



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



**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
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**WELL PAD LEGEND**

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



HORIZONTAL 1" = 60'

<b>WELL PAD - NBU 1022-7E</b>
<b>WELL PAD - FACILITIES LAYOUT</b> NBU 1022-7E4CS, NBU 1022-7F4CS, NBU 1022-7F4BS, NBU 1022-7E1BS & NBU 1022-7D4CS LOCATED IN SECTION 7, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

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

Scale: 1"=60' Date: 11/5/10  
REVISED:

SHEET NO:  
**9**  
9 OF 17

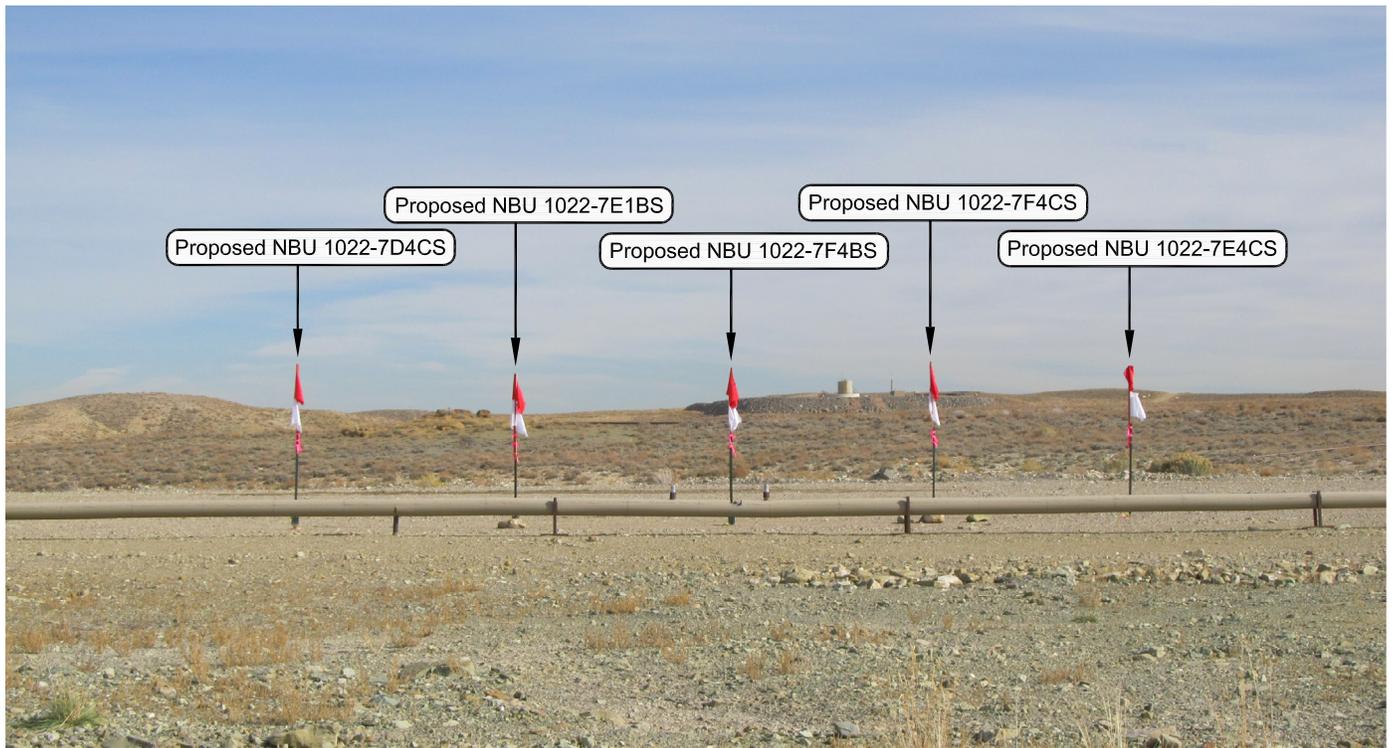


PHOTO VIEW: FROM CORNER #5 TO LOCATION STAKE

CAMERA ANGLE: EASTERLY

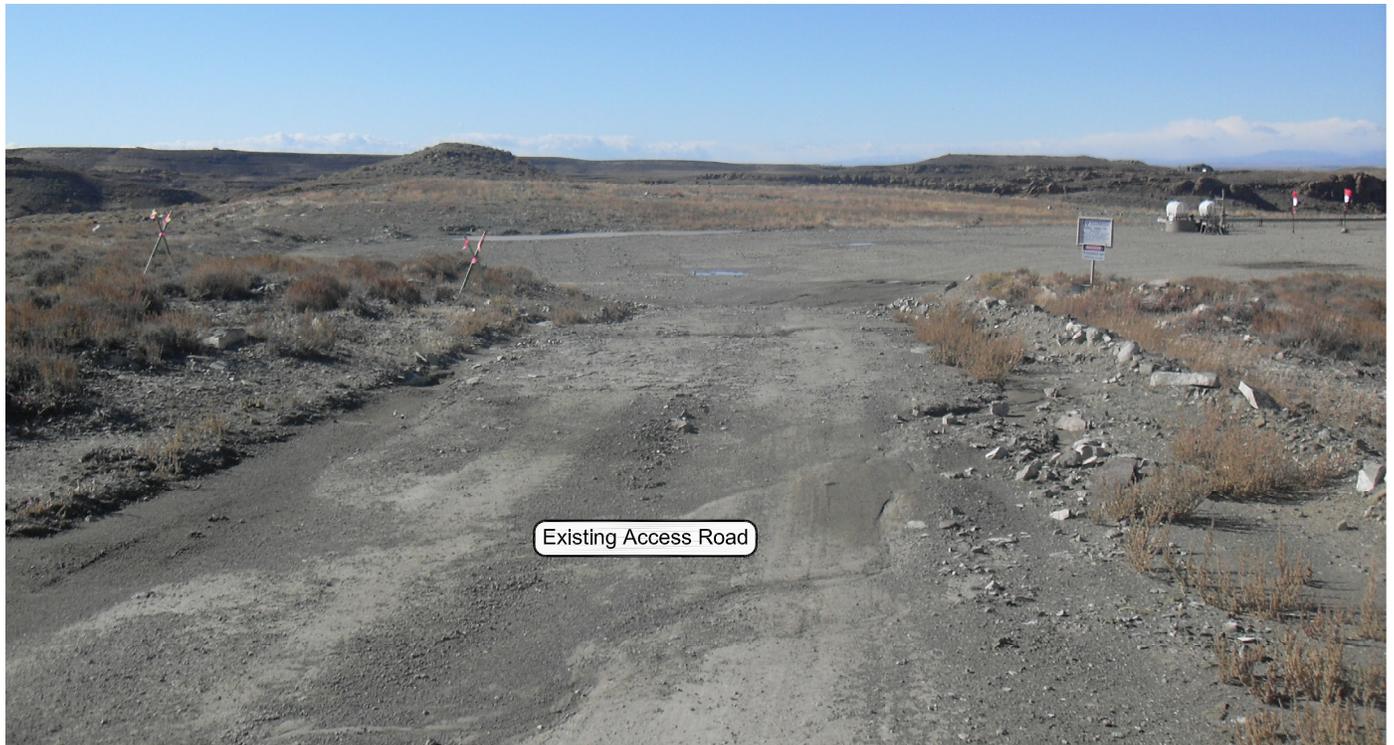


PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: WESTERLY

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

**WELL PAD - NBU 1022-7E**

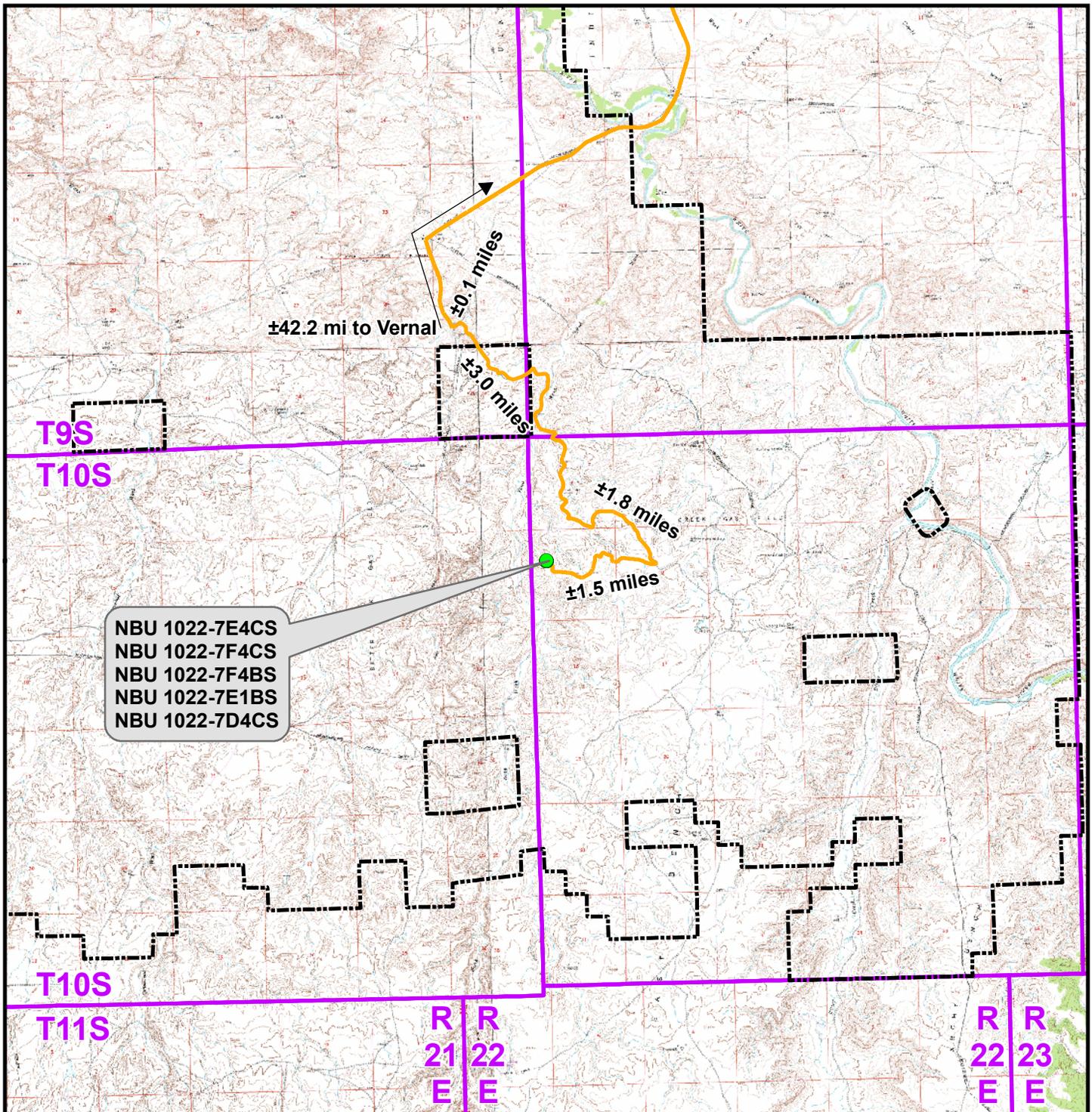
LOCATION PHOTOS  
NBU 1022-7E4CS,  
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 1022-7D4CS  
LOCATED IN SECTION 7, T10S, R22E,  
S.L.B.&M., Uintah County, Utah.



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

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

DATE PHOTOS TAKEN: 10-22-10	PHOTOS TAKEN BY: M.S.B.	SHEET NO: <b>10</b>
DATE DRAWN: 10-28-10	DRAWN BY: B.M.	
Date Last Revised:		10 OF 17



**Legend**

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

Distance From Well Pad - NBU 1022-7E To Unit Boundary: ±7,242ft

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

**WELL PAD - NBU 1022-7E**

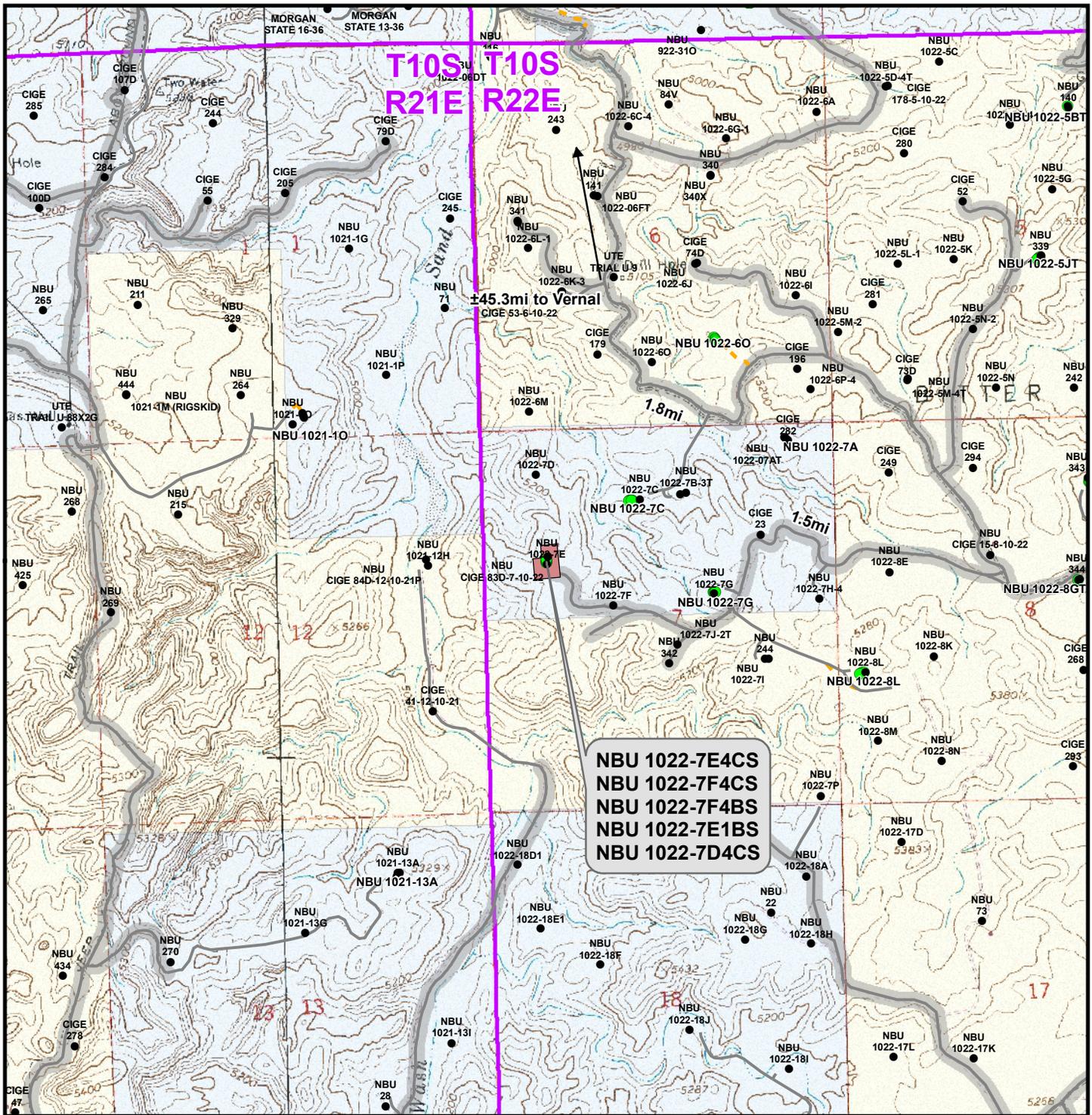
**TOPO A**  
 NBU 1022-7E4CS,  
 NBU 1022-7F4CS, NBU 1022-7F4BS,  
 NBU 1022-7E1BS & NBU 922-7D4CS  
 LOCATED IN SECTION 7, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: JFE	Date: 5 Nov 2010	<b>11</b>
Revised:	Date:	



**NBU 1022-7E4CS**  
**NBU 1022-7F4CS**  
**NBU 1022-7F4BS**  
**NBU 1022-7E1BS**  
**NBU 1022-7D4CS**

**Legend**

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

Total Proposed Road Length: ±0ft

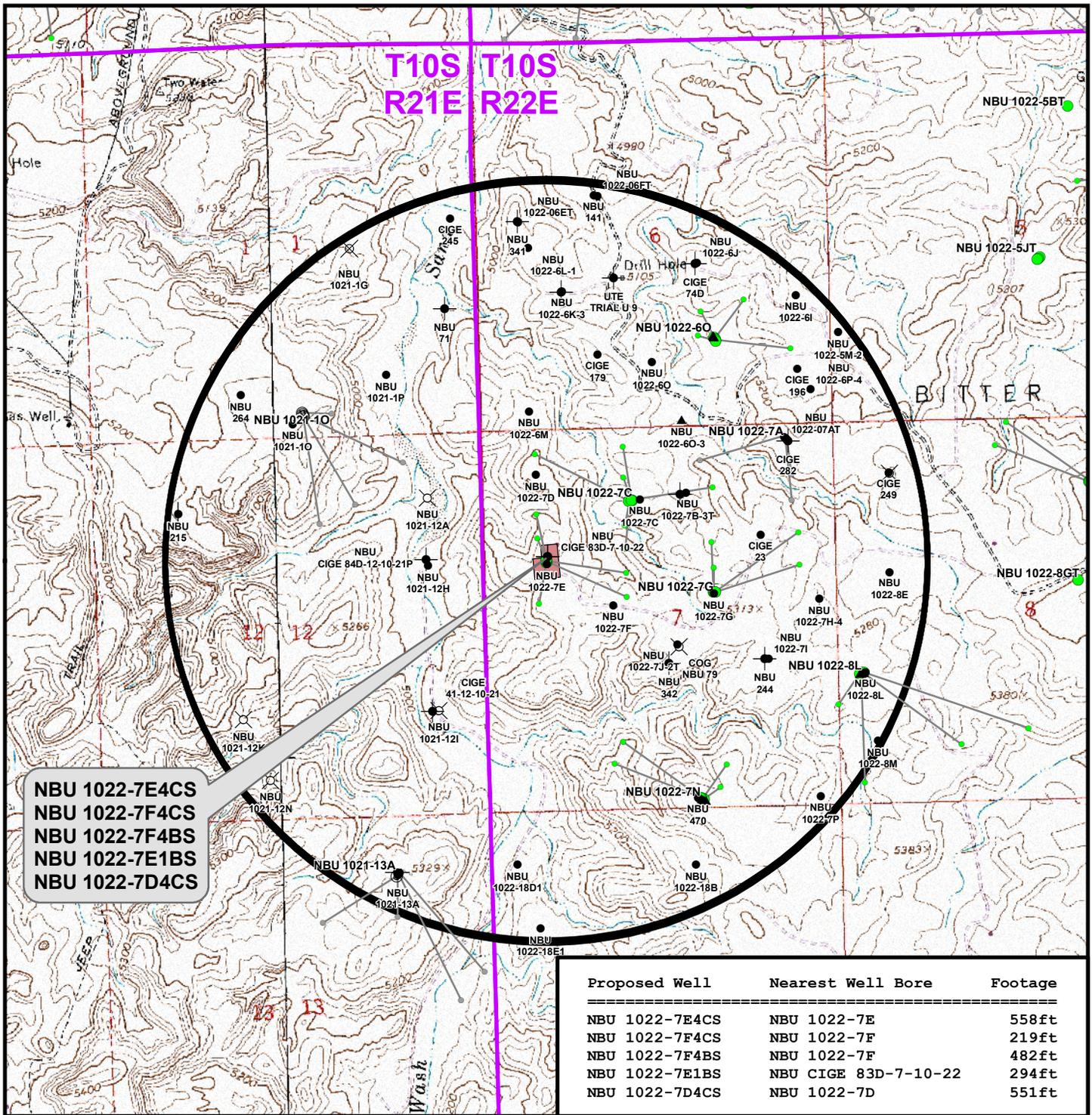
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-7E**

**TOPO B**  
**NBU 1022-7E4CS,**  
**NBU 1022-7F4CS, NBU 1022-7F4BS,**  
**NBU 1022-7E1BS & NBU 922-7D4CS**  
 LOCATED IN SECTION 7, 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:
Drawn: JFE	Date: 5 Nov 2010	<b>12</b>
Revised:	Date:	



**Legend**

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

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

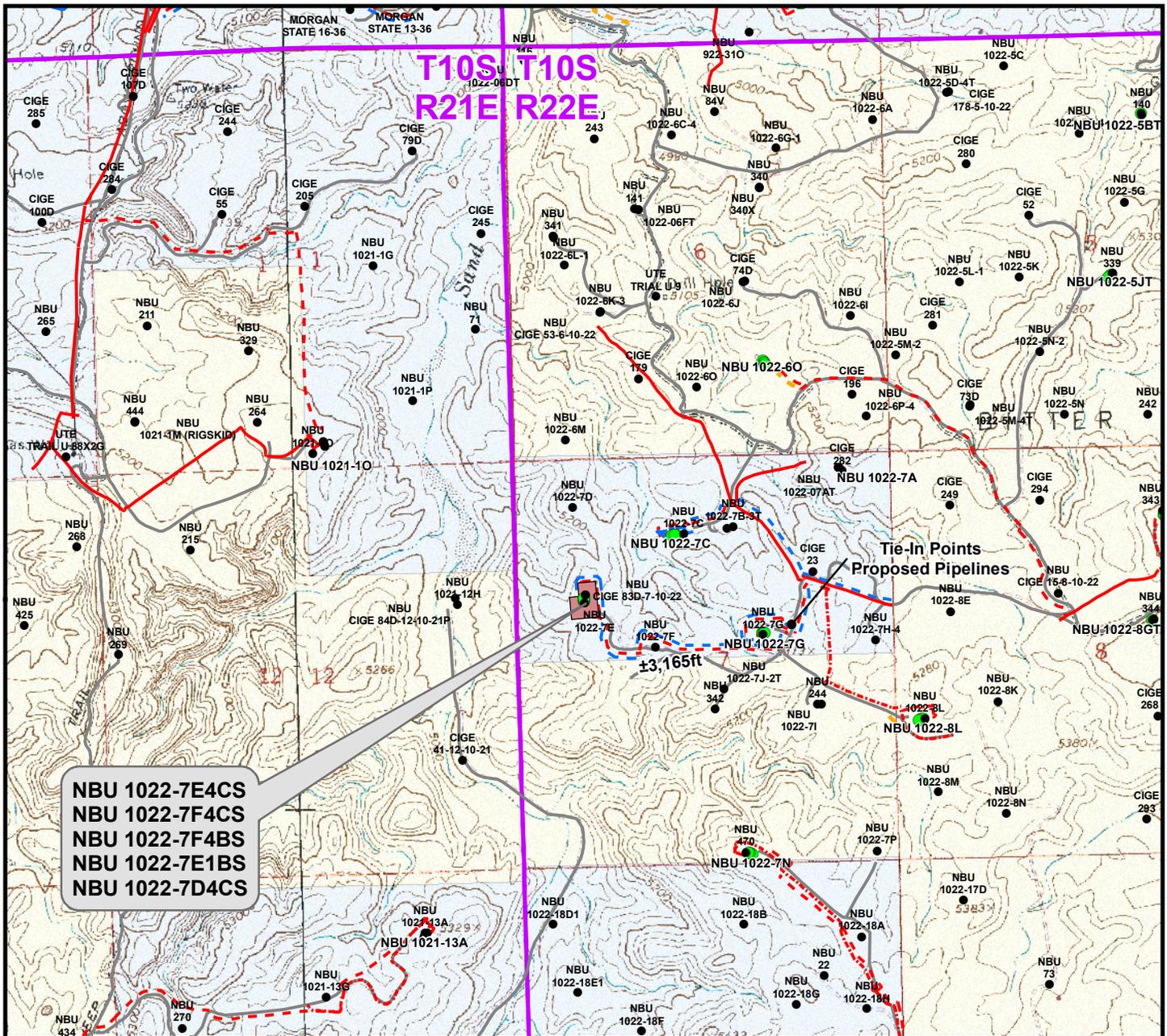
**WELL PAD - NBU 1022-7E**

**TOPO C**  
NBU 1022-7E4CS,  
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 1022-7D4CS  
LOCATED IN SECTION 7, 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:
Drawn: JFE	Date: 5 Nov 2010	13
Revised:	Date:	



**NBU 1022-7E4CS**  
**NBU 1022-7F4CS**  
**NBU 1022-7F4BS**  
**NBU 1022-7E1BS**  
**NBU 1022-7D4CS**

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±675ft
Proposed 6" (Max.) (Edge of Pad to 7G Intersection)	±3,165ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,840ft</b>

Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±675ft
Proposed 6" (Edge of Pad to 7G Intersection)	±3,165ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±3,840ft</b>

**Legend**

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

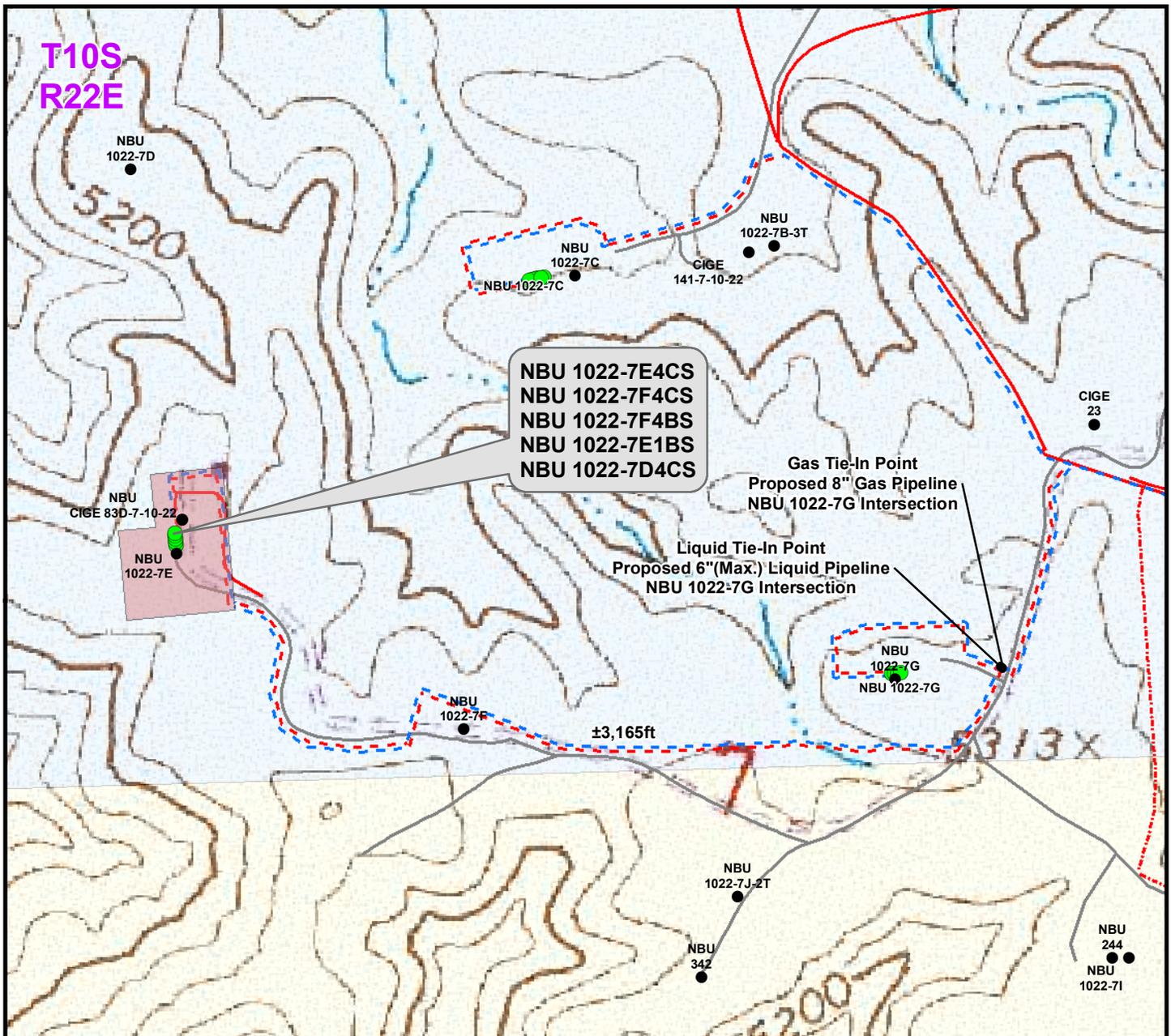
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-7E**

**TOPO D**  
 NBU 1022-7E4CS,  
 NBU 1022-7F4CS, NBU 1022-7F4BS,  
 NBU 1022-7E1BS & NBU 922-7D4CS  
 LOCATED IN SECTION 7, 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:
Drawn: JFE	Date: 5 Nov 2010	<b>14</b> 14 of 17
Revised:	Date:	



Proposed Liquid Pipeline	Length	Proposed Gas Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±675ft	Proposed 6" (Meter House to Edge of Pad)	±675ft
Proposed 6" (Max.) (Edge of Pad to 7G Intersection)	±3,165ft	Proposed 6" (Edge of Pad to 7G Intersection)	±3,165ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,840ft</b>	<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±3,840ft</b>

**Legend**

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

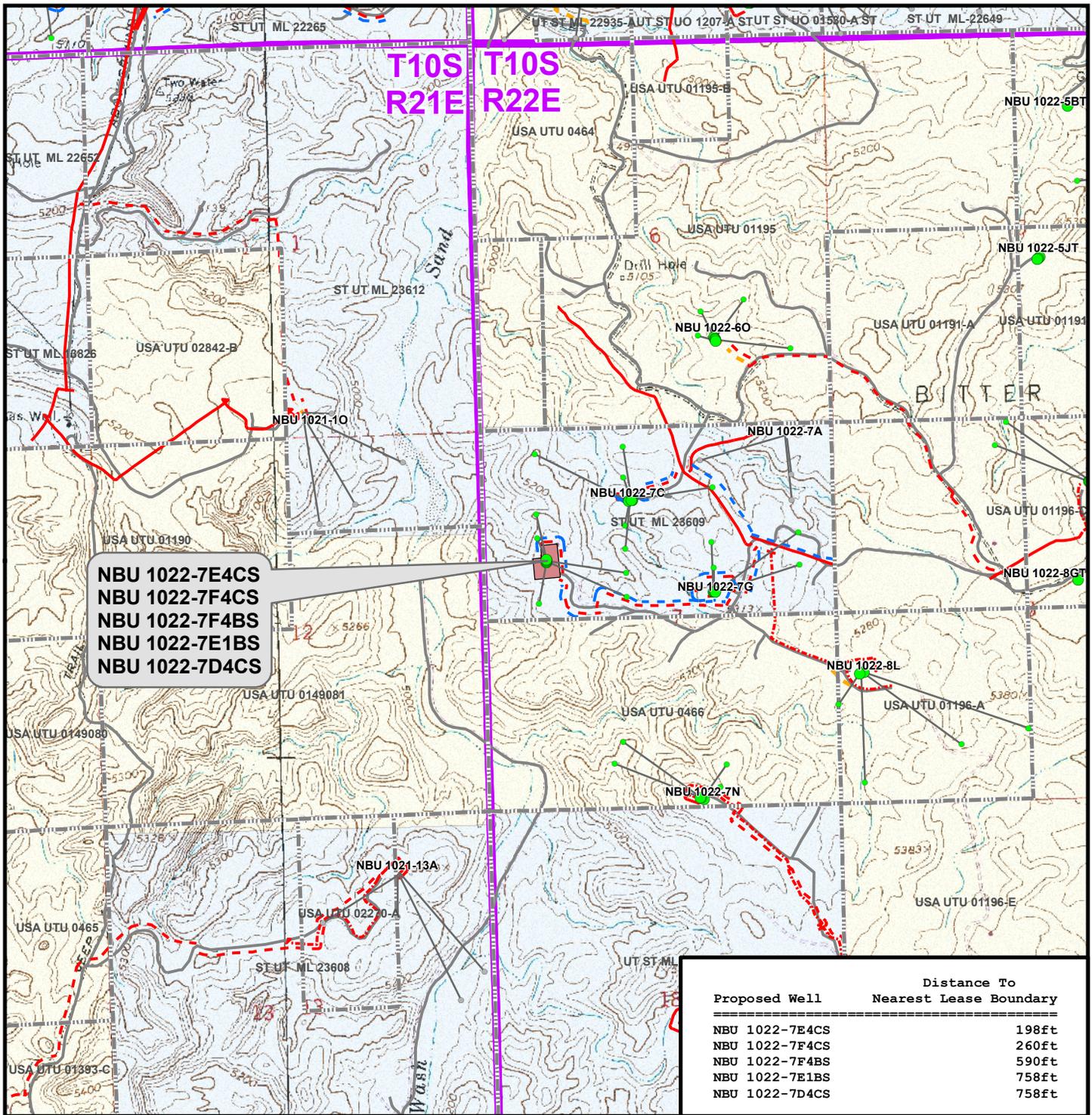
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-7E**

**TOPO D2 (PAD & PIPELINE DETAIL)**  
 NBU 1022-7E4CS,  
 NBU 1022-7F4CS, NBU 1022-7F4BS,  
 NBU 1022-7E1BS & NBU 922-7D4CS  
 LOCATED IN SECTION 7, 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" = 500ft	NAD83 USP Central	Sheet No:
Drawn: JFE	Date: 5 Nov 2010	<b>15</b>
Revised:	Date:	



**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 - To Be Upgraded
- 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 1022-7E**

**TOPO E**  
NBU 1022-7E4CS,  
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 922-7D4CS  
LOCATED IN SECTION 7, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
2155 North Main Street  
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Scale: 1" = 2,000ft	NAD83 USP Central
Drawn: JFE	Date: 5 Nov 2010
Revised:	Date:

Sheet No:  
**16** 16 of 17

**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD - NBU 1022-7E  
WELLS – NBU 1022-7E4CS,  
NBU 1022-7F4CS, NBU 1022-7F4BS,  
NBU 1022-7E1BS & NBU 1022-7D4CS  
Section 7, 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 18.7 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.1 miles to a second Class D County Road to the southeast. Exit right and proceed in a southeasterly then easterly then southerly direction along the second Class D County Road approximately 3.0 miles to a third Class D County Road to the southeast. Exit left and proceed in a southeasterly then northeasterly then southeasterly direction along the third Class D County Road approximately 1.8 miles to a fourth Class D Country Road to the west. Exit right and proceed in a westerly then southerly then westerly direction along the fourth Class D County Road approximately 1.5 to the proposed well pad.

Total distance from Vernal, Utah to the proposed well location is approximately 48.6 miles in a southerly direction.

API Well Number: 430475144 20000



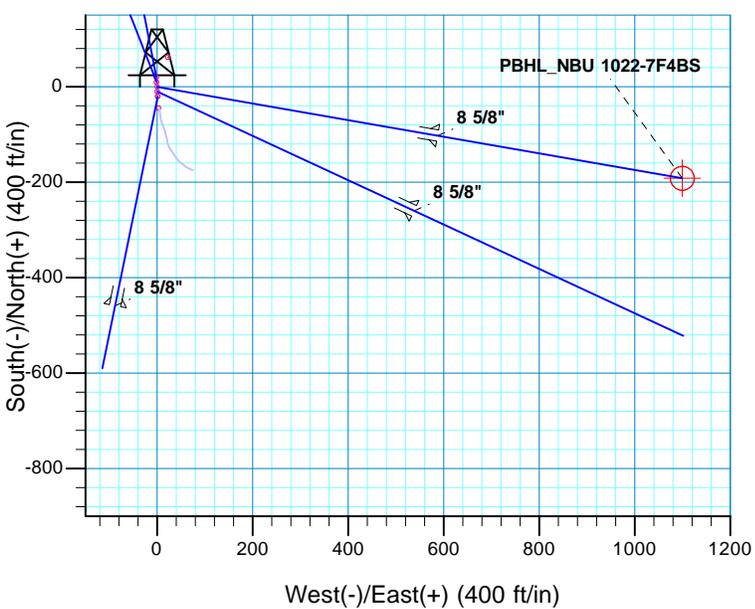
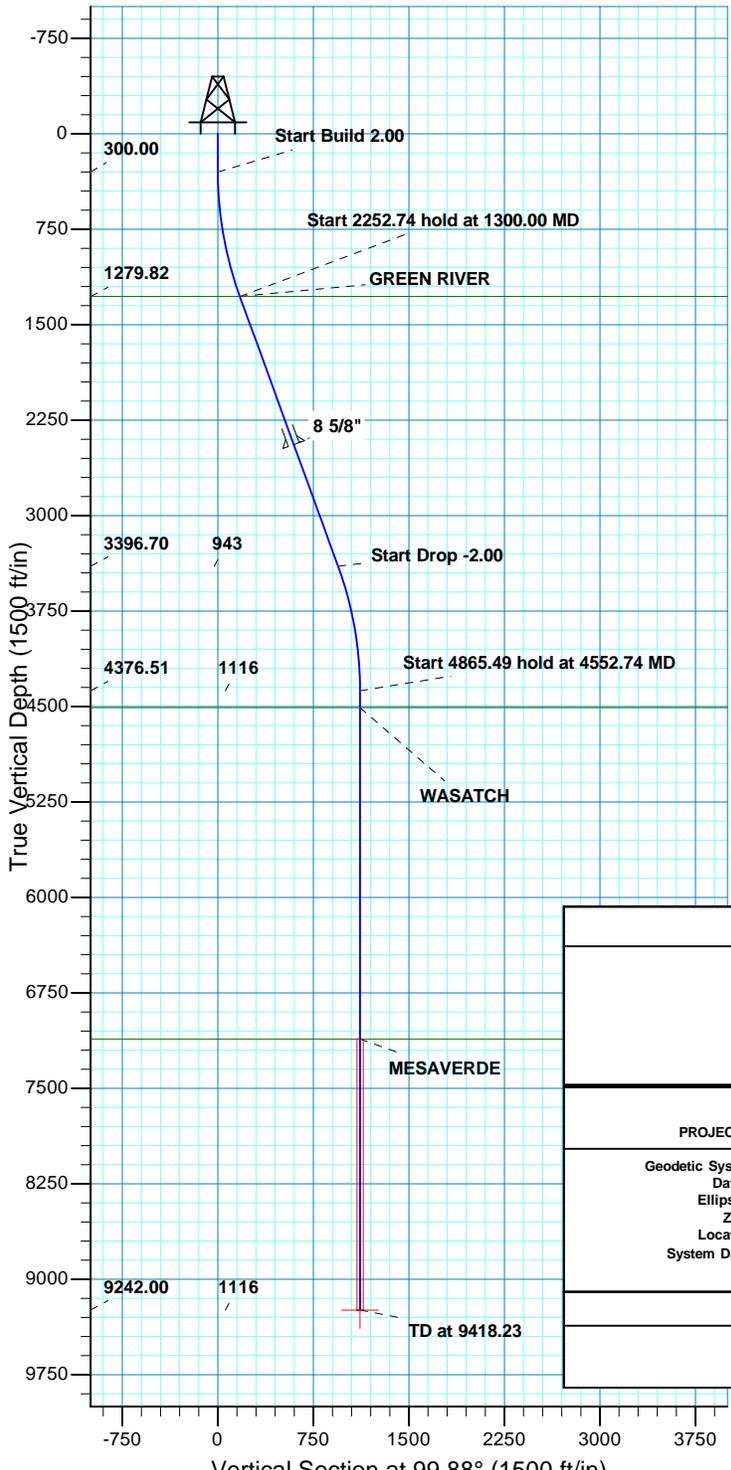
Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH\_NBU 1022-7E PAD  
 Well: P\_NBU 1022-7F4BS  
 Wellbore: P\_NBU 1022-7F4BS  
 Design: PLAN #1 12-1-10 RHS



WELL DETAILS: P_NBU 1022-7F4BS						
GL 5243' & KB 4' @ 5247.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	14517113.59	2064462.30	39° 57' 56.138 N	109° 29' 11.965 W	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
PBHL	9242.00	-191.55	1099.46	14516940.72	2065564.85	39° 57' 54.245 N
- plan hits target center						
Shape	Circle (Radius: 25.00)					

Azimuths to True North  
 Magnetic North: 11.13°

Magnetic Field  
 Strength: 52363.5snT  
 Dip Angle: 65.86°  
 Date: 12/01/2010  
 Model: IGRF2010



SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	
1300.00	20.00	99.88	1279.82	-29.65	170.20	2.00	99.88	172.77		
3552.74	20.00	99.88	3396.70	-161.90	929.25	0.00	0.00	943.25		
4552.74	0.00	0.00	4376.51	-191.55	1099.46	2.00	180.00	1116.02		
9418.23	0.00	0.00	9242.00	-191.55	1099.46	0.00	0.00	1116.02		PBHL_NBU 1022-7F4BS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N							FORMATION TOP DETAILS			
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 7 T10S R22E System Datum: Mean Sea Level							TVDPath	MDPath	Formation	
							1277.00	1297.00	GREEN RIVER	
							4509.00	4685.23	WASATCH	
			7112.00	7288.23	MESAVERDE					
CASING DETAILS										
TVD	MD	Name	Size							
2443.00	2537.84	8 5/8"	8.625							

RECEIVED: Dec. 29, 2010



# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-7E PAD**

**P\_NBU 1022-7F4BS**

**P\_NBU 1022-7F4BS**

**Plan: PLAN #1 12-1-10 RHS**

## **Standard Planning Report**

**16 December, 2010**





<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

<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 1022-7E PAD, SECTION 7 T10S R22E				
<b>Site Position:</b>	<b>Northing:</b>	14,517,093.59 usft	<b>Latitude:</b>	39° 57' 55.940 N	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,064,464.04 usft	<b>Longitude:</b>	109° 29' 11.947 W	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.97 °

<b>Well</b>	P_NBU 1022-7F4BS, 1884' FNL 878' FWL					
<b>Well Position</b>	<b>+N/-S</b>	20.03 ft	<b>Northing:</b>	14,517,113.59 usft	<b>Latitude:</b>	39° 57' 56.138 N
	<b>+E/-W</b>	-1.40 ft	<b>Easting:</b>	2,064,462.30 usft	<b>Longitude:</b>	109° 29' 11.965 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,243.00 ft

<b>Wellbore</b>	P_NBU 1022-7F4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/01/2010	11.13	65.86	52,363

<b>Design</b>	PLAN #1 12-1-10 RHS			
<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	99.88

<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	99.88	1,279.82	-29.65	170.20	2.00	2.00	0.00	99.88	
3,552.74	20.00	99.88	3,396.70	-161.90	929.25	0.00	0.00	0.00	0.00	
4,552.74	0.00	0.00	4,376.51	-191.55	1,099.46	2.00	-2.00	0.00	180.00	
9,418.23	0.00	0.00	9,242.00	-191.55	1,099.46	0.00	0.00	0.00	0.00	PBHL_NBU 1022-7F4



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Start Build 2.00</b>										
400.00	2.00	99.88	399.98	-0.30	1.72	1.75	2.00	2.00	0.00	
500.00	4.00	99.88	499.84	-1.20	6.87	6.98	2.00	2.00	0.00	
600.00	6.00	99.88	599.45	-2.69	15.46	15.69	2.00	2.00	0.00	
700.00	8.00	99.88	698.70	-4.79	27.47	27.88	2.00	2.00	0.00	
800.00	10.00	99.88	797.47	-7.47	42.88	43.52	2.00	2.00	0.00	
900.00	12.00	99.88	895.62	-10.74	61.67	62.60	2.00	2.00	0.00	
1,000.00	14.00	99.88	993.06	-14.61	83.83	85.10	2.00	2.00	0.00	
1,100.00	16.00	99.88	1,089.64	-19.05	109.33	110.98	2.00	2.00	0.00	
1,200.00	18.00	99.88	1,185.27	-24.07	138.13	140.21	2.00	2.00	0.00	
1,297.00	19.94	99.88	1,277.00	-29.48	169.20	171.74	2.00	2.00	0.00	
<b>GREEN RIVER</b>										
1,300.00	20.00	99.88	1,279.82	-29.65	170.20	172.77	2.00	2.00	0.00	
<b>Start 2252.74 hold at 1300.00 MD</b>										
1,400.00	20.00	99.88	1,373.78	-35.52	203.90	206.97	0.00	0.00	0.00	
1,500.00	20.00	99.88	1,467.75	-41.39	237.59	241.17	0.00	0.00	0.00	
1,600.00	20.00	99.88	1,561.72	-47.26	271.29	275.37	0.00	0.00	0.00	
1,700.00	20.00	99.88	1,655.69	-53.13	304.98	309.58	0.00	0.00	0.00	
1,800.00	20.00	99.88	1,749.66	-59.01	338.68	343.78	0.00	0.00	0.00	
1,900.00	20.00	99.88	1,843.63	-64.88	372.37	377.98	0.00	0.00	0.00	
2,000.00	20.00	99.88	1,937.60	-70.75	406.07	412.18	0.00	0.00	0.00	
2,100.00	20.00	99.88	2,031.57	-76.62	439.76	446.38	0.00	0.00	0.00	
2,200.00	20.00	99.88	2,125.54	-82.49	473.45	480.59	0.00	0.00	0.00	
2,300.00	20.00	99.88	2,219.51	-88.36	507.15	514.79	0.00	0.00	0.00	
2,400.00	20.00	99.88	2,313.48	-94.23	540.84	548.99	0.00	0.00	0.00	
2,500.00	20.00	99.88	2,407.45	-100.10	574.54	583.19	0.00	0.00	0.00	
2,537.84	20.00	99.88	2,443.00	-102.32	587.29	596.13	0.00	0.00	0.00	
<b>8 5/8"</b>										
2,600.00	20.00	99.88	2,501.42	-105.97	608.23	617.39	0.00	0.00	0.00	
2,700.00	20.00	99.88	2,595.39	-111.84	641.93	651.60	0.00	0.00	0.00	
2,800.00	20.00	99.88	2,689.35	-117.71	675.62	685.80	0.00	0.00	0.00	
2,900.00	20.00	99.88	2,783.32	-123.58	709.32	720.00	0.00	0.00	0.00	
3,000.00	20.00	99.88	2,877.29	-129.45	743.01	754.20	0.00	0.00	0.00	
3,100.00	20.00	99.88	2,971.26	-135.32	776.70	788.40	0.00	0.00	0.00	
3,200.00	20.00	99.88	3,065.23	-141.19	810.40	822.61	0.00	0.00	0.00	
3,300.00	20.00	99.88	3,159.20	-147.06	844.09	856.81	0.00	0.00	0.00	
3,400.00	20.00	99.88	3,253.17	-152.93	877.79	891.01	0.00	0.00	0.00	
3,500.00	20.00	99.88	3,347.14	-158.80	911.48	925.21	0.00	0.00	0.00	
3,552.74	20.00	99.88	3,396.70	-161.90	929.25	943.25	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
3,600.00	19.05	99.88	3,441.24	-164.61	944.82	959.05	2.00	-2.00	0.00	
3,700.00	17.05	99.88	3,536.31	-169.93	975.35	990.04	2.00	-2.00	0.00	
3,800.00	15.05	99.88	3,632.41	-174.67	1,002.59	1,017.69	2.00	-2.00	0.00	
3,900.00	13.05	99.88	3,729.41	-178.84	1,026.51	1,041.98	2.00	-2.00	0.00	
4,000.00	11.05	99.88	3,827.20	-182.43	1,047.09	1,062.86	2.00	-2.00	0.00	
4,100.00	9.05	99.88	3,925.66	-185.42	1,064.29	1,080.32	2.00	-2.00	0.00	
4,200.00	7.05	99.88	4,024.66	-187.83	1,078.09	1,094.33	2.00	-2.00	0.00	
4,300.00	5.05	99.88	4,124.10	-189.64	1,088.48	1,104.88	2.00	-2.00	0.00	
4,400.00	3.05	99.88	4,223.85	-190.85	1,095.45	1,111.95	2.00	-2.00	0.00	
4,500.00	1.05	99.88	4,323.78	-191.47	1,098.98	1,115.53	2.00	-2.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,552.74	0.00	0.00	4,376.51	-191.55	1,099.46	1,116.02	2.00	-2.00	0.00	
<b>Start 4865.49 hold at 4552.74 MD</b>										
4,600.00	0.00	0.00	4,423.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
4,685.23	0.00	0.00	4,509.00	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
<b>WASATCH</b>										
4,700.00	0.00	0.00	4,523.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,623.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,723.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,823.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,923.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,023.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,123.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,223.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,323.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,423.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,523.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,623.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,723.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,823.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,923.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,023.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,123.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,223.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,323.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,423.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,523.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,623.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,723.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,823.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,923.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,023.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,288.23	0.00	0.00	7,112.00	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
<b>MESAVERDE</b>										
7,300.00	0.00	0.00	7,123.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,223.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,323.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,423.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,523.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,623.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,723.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,823.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,923.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,023.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,123.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,223.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,323.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,423.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,523.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,623.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,723.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,823.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,923.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,023.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,300.00	0.00	0.00	9,123.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,223.77	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
9,418.23	0.00	0.00	9,242.00	-191.55	1,099.46	1,116.02	0.00	0.00	0.00	
TD at 9418.23 - PBHL_NBU 1022-7F4BS										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NBU 1022-7F4BS - hit/miss target - Shape - Circle (radius 25.00)	0.00	0.00	9,242.00	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,537.84	2,443.00	8 5/8"	8.625	11.000		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,297.00	1,277.00	GREEN RIVER				
4,685.23	4,509.00	WASATCH				
7,288.23	7,112.00	MESAVERDE				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,300.00	1,279.82	-29.65	170.20	Start 2252.74 hold at 1300.00 MD	
3,552.74	3,396.70	-161.90	929.25	Start Drop -2.00	
4,552.74	4,376.51	-191.55	1,099.46	Start 4865.49 hold at 4552.74 MD	
9,418.23	9,242.00	-191.55	1,099.46	TD at 9418.23	



# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-7E PAD**

**P\_NBU 1022-7F4BS**

**P\_NBU 1022-7F4BS**

**Plan: PLAN #1 12-1-10 RHS**

## **Standard Planning Report - Geographic**

**16 December, 2010**





<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

<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 1022-7E PAD, SECTION 7 T10S R22E				
<b>Site Position:</b>	<b>Northing:</b>	14,517,093.59 usft	<b>Latitude:</b>	39° 57' 55.940 N	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,064,464.04 usft	<b>Longitude:</b>	109° 29' 11.947 W	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.97 °

<b>Well</b>	P_NBU 1022-7F4BS, 1884' FNL 878' FWL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,517,113.59 usft	<b>Latitude:</b>	39° 57' 56.138 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,064,462.30 usft	<b>Longitude:</b>	109° 29' 11.965 W
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,243.00 ft	

<b>Wellbore</b>	P_NBU 1022-7F4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/01/2010	11.13	65.86	52,363

<b>Design</b>	PLAN #1 12-1-10 RHS			
<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	99.88

<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	99.88	1,279.82	-29.65	170.20	2.00	2.00	0.00	99.88	
3,552.74	20.00	99.88	3,396.70	-161.90	929.25	0.00	0.00	0.00	0.00	
4,552.74	0.00	0.00	4,376.51	-191.55	1,099.46	2.00	-2.00	0.00	180.00	
9,418.23	0.00	0.00	9,242.00	-191.55	1,099.46	0.00	0.00	0.00	0.00	PBHL_NBU 1022-7F4



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,517,113.59	2,064,462.30	39° 57' 56.138 N	109° 29' 11.965 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,517,113.59	2,064,462.30	39° 57' 56.138 N	109° 29' 11.965 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,517,113.59	2,064,462.30	39° 57' 56.138 N	109° 29' 11.965 W	
300.00	0.00	0.00	300.00	0.00	0.00	14,517,113.59	2,064,462.30	39° 57' 56.138 N	109° 29' 11.965 W	
<b>Start Build 2.00</b>										
400.00	2.00	99.88	399.98	-0.30	1.72	14,517,113.32	2,064,464.02	39° 57' 56.135 N	109° 29' 11.943 W	
500.00	4.00	99.88	499.84	-1.20	6.87	14,517,112.51	2,064,469.19	39° 57' 56.127 N	109° 29' 11.877 W	
600.00	6.00	99.88	599.45	-2.69	15.46	14,517,111.16	2,064,477.80	39° 57' 56.112 N	109° 29' 11.767 W	
700.00	8.00	99.88	698.70	-4.79	27.47	14,517,109.27	2,064,489.84	39° 57' 56.091 N	109° 29' 11.612 W	
800.00	10.00	99.88	797.47	-7.47	42.88	14,517,106.85	2,064,505.29	39° 57' 56.065 N	109° 29' 11.414 W	
900.00	12.00	99.88	895.62	-10.74	61.67	14,517,103.90	2,064,524.14	39° 57' 56.032 N	109° 29' 11.173 W	
1,000.00	14.00	99.88	993.06	-14.61	83.83	14,517,100.41	2,064,546.37	39° 57' 55.994 N	109° 29' 10.888 W	
1,100.00	16.00	99.88	1,089.64	-19.05	109.33	14,517,096.40	2,064,571.93	39° 57' 55.950 N	109° 29' 10.561 W	
1,200.00	18.00	99.88	1,185.27	-24.07	138.13	14,517,091.87	2,064,600.82	39° 57' 55.901 N	109° 29' 10.191 W	
1,297.00	19.94	99.88	1,277.00	-29.48	169.20	14,517,086.99	2,064,631.97	39° 57' 55.847 N	109° 29' 9.792 W	
<b>GREEN RIVER</b>										
1,300.00	20.00	99.88	1,279.82	-29.65	170.20	14,517,086.83	2,064,632.98	39° 57' 55.845 N	109° 29' 9.779 W	
<b>Start 2252.74 hold at 1300.00 MD</b>										
1,400.00	20.00	99.88	1,373.78	-35.52	203.90	14,517,081.53	2,064,666.77	39° 57' 55.787 N	109° 29' 9.346 W	
1,500.00	20.00	99.88	1,467.75	-41.39	237.59	14,517,076.24	2,064,700.56	39° 57' 55.729 N	109° 29' 8.913 W	
1,600.00	20.00	99.88	1,561.72	-47.26	271.29	14,517,070.94	2,064,734.35	39° 57' 55.671 N	109° 29' 8.480 W	
1,700.00	20.00	99.88	1,655.69	-53.13	304.98	14,517,065.64	2,064,768.14	39° 57' 55.613 N	109° 29' 8.048 W	
1,800.00	20.00	99.88	1,749.66	-59.01	338.68	14,517,060.34	2,064,801.92	39° 57' 55.555 N	109° 29' 7.615 W	
1,900.00	20.00	99.88	1,843.63	-64.88	372.37	14,517,055.05	2,064,835.71	39° 57' 55.497 N	109° 29' 7.182 W	
2,000.00	20.00	99.88	1,937.60	-70.75	406.07	14,517,049.75	2,064,869.50	39° 57' 55.439 N	109° 29' 6.749 W	
2,100.00	20.00	99.88	2,031.57	-76.62	439.76	14,517,044.45	2,064,903.29	39° 57' 55.381 N	109° 29' 6.316 W	
2,200.00	20.00	99.88	2,125.54	-82.49	473.45	14,517,039.15	2,064,937.08	39° 57' 55.323 N	109° 29' 5.884 W	
2,300.00	20.00	99.88	2,219.51	-88.36	507.15	14,517,033.85	2,064,970.87	39° 57' 55.265 N	109° 29' 5.451 W	
2,400.00	20.00	99.88	2,313.48	-94.23	540.84	14,517,028.56	2,065,004.66	39° 57' 55.207 N	109° 29' 5.018 W	
2,500.00	20.00	99.88	2,407.45	-100.10	574.54	14,517,023.26	2,065,038.45	39° 57' 55.149 N	109° 29' 4.585 W	
2,537.84	20.00	99.88	2,443.00	-102.32	587.29	14,517,021.25	2,065,051.23	39° 57' 55.127 N	109° 29' 4.421 W	
<b>8 5/8"</b>										
2,600.00	20.00	99.88	2,501.42	-105.97	608.23	14,517,017.96	2,065,072.24	39° 57' 55.091 N	109° 29' 4.152 W	
2,700.00	20.00	99.88	2,595.39	-111.84	641.93	14,517,012.66	2,065,106.03	39° 57' 55.033 N	109° 29' 3.719 W	
2,800.00	20.00	99.88	2,689.35	-117.71	675.62	14,517,007.37	2,065,139.82	39° 57' 54.975 N	109° 29' 3.287 W	
2,900.00	20.00	99.88	2,783.32	-123.58	709.32	14,517,002.07	2,065,173.60	39° 57' 54.917 N	109° 29' 2.854 W	
3,000.00	20.00	99.88	2,877.29	-129.45	743.01	14,516,996.77	2,065,207.39	39° 57' 54.859 N	109° 29' 2.421 W	
3,100.00	20.00	99.88	2,971.26	-135.32	776.70	14,516,991.47	2,065,241.18	39° 57' 54.801 N	109° 29' 1.988 W	
3,200.00	20.00	99.88	3,065.23	-141.19	810.40	14,516,986.17	2,065,274.97	39° 57' 54.743 N	109° 29' 1.555 W	
3,300.00	20.00	99.88	3,159.20	-147.06	844.09	14,516,980.88	2,065,308.76	39° 57' 54.685 N	109° 29' 1.123 W	
3,400.00	20.00	99.88	3,253.17	-152.93	877.79	14,516,975.58	2,065,342.55	39° 57' 54.627 N	109° 29' 0.690 W	
3,500.00	20.00	99.88	3,347.14	-158.80	911.48	14,516,970.28	2,065,376.34	39° 57' 54.569 N	109° 29' 0.257 W	
3,552.74	20.00	99.88	3,396.70	-161.90	929.25	14,516,967.49	2,065,394.16	39° 57' 54.538 N	109° 29' 0.029 W	
<b>Start Drop -2.00</b>										
3,600.00	19.05	99.88	3,441.24	-164.61	944.82	14,516,965.04	2,065,409.77	39° 57' 54.511 N	109° 28' 59.829 W	
3,700.00	17.05	99.88	3,536.31	-169.93	975.35	14,516,960.24	2,065,440.38	39° 57' 54.459 N	109° 28' 59.437 W	
3,800.00	15.05	99.88	3,632.41	-174.67	1,002.59	14,516,955.96	2,065,467.70	39° 57' 54.412 N	109° 28' 59.087 W	
3,900.00	13.05	99.88	3,729.41	-178.84	1,026.51	14,516,952.20	2,065,491.69	39° 57' 54.370 N	109° 28' 58.779 W	
4,000.00	11.05	99.88	3,827.20	-182.43	1,047.09	14,516,948.96	2,065,512.33	39° 57' 54.335 N	109° 28' 58.515 W	
4,100.00	9.05	99.88	3,925.66	-185.42	1,064.29	14,516,946.26	2,065,529.57	39° 57' 54.305 N	109° 28' 58.294 W	
4,200.00	7.05	99.88	4,024.66	-187.83	1,078.09	14,516,944.09	2,065,543.42	39° 57' 54.282 N	109° 28' 58.117 W	
4,300.00	5.05	99.88	4,124.10	-189.64	1,088.48	14,516,942.45	2,065,553.84	39° 57' 54.264 N	109° 28' 57.983 W	
4,400.00	3.05	99.88	4,223.85	-190.85	1,095.45	14,516,941.36	2,065,560.82	39° 57' 54.252 N	109° 28' 57.894 W	
4,500.00	1.05	99.88	4,323.78	-191.47	1,098.98	14,516,940.80	2,065,564.36	39° 57' 54.246 N	109° 28' 57.849 W	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,552.74	0.00	0.00	4,376.51	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
<b>Start 4865.49 hold at 4552.74 MD</b>										
4,600.00	0.00	0.00	4,423.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
4,685.23	0.00	0.00	4,509.00	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
<b>WASATCH</b>										
4,700.00	0.00	0.00	4,523.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
4,800.00	0.00	0.00	4,623.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
4,900.00	0.00	0.00	4,723.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,000.00	0.00	0.00	4,823.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,100.00	0.00	0.00	4,923.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,200.00	0.00	0.00	5,023.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,300.00	0.00	0.00	5,123.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,400.00	0.00	0.00	5,223.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,500.00	0.00	0.00	5,323.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,600.00	0.00	0.00	5,423.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,700.00	0.00	0.00	5,523.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,800.00	0.00	0.00	5,623.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
5,900.00	0.00	0.00	5,723.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,000.00	0.00	0.00	5,823.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,100.00	0.00	0.00	5,923.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,200.00	0.00	0.00	6,023.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,300.00	0.00	0.00	6,123.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,400.00	0.00	0.00	6,223.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,500.00	0.00	0.00	6,323.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,600.00	0.00	0.00	6,423.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,700.00	0.00	0.00	6,523.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,800.00	0.00	0.00	6,623.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
6,900.00	0.00	0.00	6,723.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,000.00	0.00	0.00	6,823.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,100.00	0.00	0.00	6,923.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,200.00	0.00	0.00	7,023.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,288.23	0.00	0.00	7,112.00	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
<b>MESAVERDE</b>										
7,300.00	0.00	0.00	7,123.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,400.00	0.00	0.00	7,223.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,500.00	0.00	0.00	7,323.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,600.00	0.00	0.00	7,423.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,700.00	0.00	0.00	7,523.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,800.00	0.00	0.00	7,623.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
7,900.00	0.00	0.00	7,723.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,000.00	0.00	0.00	7,823.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,100.00	0.00	0.00	7,923.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,200.00	0.00	0.00	8,023.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,300.00	0.00	0.00	8,123.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,400.00	0.00	0.00	8,223.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,500.00	0.00	0.00	8,323.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,600.00	0.00	0.00	8,423.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,700.00	0.00	0.00	8,523.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,800.00	0.00	0.00	8,623.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
8,900.00	0.00	0.00	8,723.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
9,000.00	0.00	0.00	8,823.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
9,100.00	0.00	0.00	8,923.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
9,200.00	0.00	0.00	9,023.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	
9,300.00	0.00	0.00	9,123.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 1022-7F4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5243' & KB 4' @ 5247.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 1022-7F4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 1022-7F4BS		
<b>Design:</b>	PLAN #1 12-1-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,400.00	0.00	0.00	9,223.77	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W
9,418.23	0.00	0.00	9,242.00	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W
TD at 9418.23 - PBHL_NBU 1022-7F4BS									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1022-7F4BS - hit/miss target - Shape	0.00	0.00	9,242.00	-191.55	1,099.46	14,516,940.73	2,065,564.84	39° 57' 54.245 N	109° 28' 57.842 W
- plan hits target center - Circle (radius 25.00)									

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,537.84	2,443.00	8 5/8"	8.625	11.000		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,297.00	1,277.00	GREEN RIVER			
4,685.23	4,509.00	WASATCH			
7,288.23	7,112.00	MESAVERDE			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,300.00	1,279.82	-29.65	170.20	Start 2252.74 hold at 1300.00 MD	
3,552.74	3,396.70	-161.90	929.25	Start Drop -2.00	
4,552.74	4,376.51	-191.55	1,099.46	Start 4865.49 hold at 4552.74 MD	
9,418.23	9,242.00	-191.55	1,099.46	TD at 9418.23	

**NBU 1022-7D4CS**

Surface: 1864' FNL 877' FWL (SW/4NW/4)  
BHL: 1237' FNL 758' FWL (NW/4NW/4)

**NBU 1022-7E1BS**

Surface: 1874' FNL 878' FWL (SW/4NW/4)  
BHL: 1567' FNL 758' FWL (SW/4NW/4)

**NBU 1022-7E4CS**

Surface: 1904' FNL 880' FWL (SW/4NW/4)  
BHL: 2475' FNL 760' FWL (SW/4NW/4)

**NBU 1022-7F4BS**

Surface: 1884' FNL 878' FWL (SW/4NW/4)  
BHL: 2064' FNL 1977' FWL (SE/4NW/4)

**NBU 1022-7F4CS**

Surface: 1894' FNL 879' FWL (SW/4NW/4)  
BHL: 2394' FNL 1977' FWL (SE/4NW/4)

Pad: NBU 1022-7E Pad  
Section 7 T10S R22E  
Mineral Lease: ML 23609

Uintah County, Utah  
Operator: Kerr-McGee Oil & Gas Onshore LP

***MULTI-POINT SURFACE USE PLAN of OPERATIONS (SUPO)***

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

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

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

**A. Existing Roads:**

Existing roads consist of county roads and improved/unimproved lease roads. APC/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.

Where roads 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.

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

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

This pad will expand the existing pad for the NBU 1022-7E. The NBU 1022-7E well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of December 27, 2010.

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

Production facilities will be installed on the disturbed portion of each 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) aboveground 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.

Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of UDOGM.

Gathering facilities:

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

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 3,840'$  and the individual segments are broken up as follows:

$\pm 675'$  (0.1 miles) –New 6" buried gas pipeline from the meter to the edge of the pad.

$\pm 3,165'$  (0.6 miles) –New 6" buried gas pipeline from the edge of pad to the NBU 1022-7G intersection.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 3,840'$  and the individual segments are broken up as follows:

$\pm 675'$  (0.1 miles) –New 6" buried liquid pipeline from the separator to the edge of the pad.

$\pm 3,165'$  (0.6 miles) –New 6" buried liquid pipeline from the edge of pad to the NBU 1022-7G intersection.

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. Kerr-McGee 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, Kerr-McGee requests a temporary 45' construction right-of-way and 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, ownership, and to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

**D. Location and Type of Water Supply:**

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

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

Water will be hauled to location over the roads marked on Maps A and B.  
No water well is to be drilled on this lease.

**E. Source of Construction Materials:**

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

**F. Methods of 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.

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 to 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, accidental release, or in excess of reportable quantities will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule, and, where State wells are participatory to a Federal agreement, according to NTL-3A.

### **Materials Management**

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

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

**G. 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, 1983 (NAD83) 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 are not limited to: 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 APC/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.

**J. Surface/Mineral Ownership:**

SITLA

675 East 500 South, Suite 500

Salt Lake City, UT 84102

**K. Other Information:**

None

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

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

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

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

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

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

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

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



Andy Lytle

December 13, 2010  
Date



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

November 22, 2010

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 1022-7F4BS  
T10S-R22E  
Section 7: SENW  
Surface: 1884' FNL, 878' FWL  
Bottom Hole: 2064' FNL, 1977' 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 1022-7F4BS 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 that reads 'James C. Colligan III'.

James C. Colligan III  
Landman

# 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)

January 3, 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
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(Proposed PZ WASATCH-MESA VERDE)

**NBU 1022-7C PAD**

43-047-51433	NBU 1022-7B4BS	Sec 07 T10S R22E 1051 FNL 2093 FWL
	BHL	Sec 07 T10S R22E 0908 FNL 1672 FEL

43-047-51434	NBU 1022-7C1BS	Sec 07 T10S R22E 1053 FNL 2083 FWL
	BHL	Sec 07 T10S R22E 0312 FNL 1981 FWL

43-047-51435	NBU 1022-7C4BS	Sec 07 T10S R22E 1055 FNL 2073 FWL
	BHL	Sec 07 T10S R22E 0743 FNL 1976 FWL

43-047-51436	NBU 1022-7D1CS	Sec 07 T10S R22E 1061 FNL 2044 FWL
	BHL	Sec 07 T10S R22E 0402 FNL 0763 FWL

43-047-51437	NBU 1022-7F1BS	Sec 07 T10S R22E 1059 FNL 2054 FWL
	BHL	Sec 07 T10S R22E 1403 FNL 1976 FWL

43-047-51438	NBU 1022-7F1CS	Sec 07 T10S R22E 1057 FNL 2063 FWL
	BHL	Sec 07 T10S R22E 1733 FNL 1976 FWL

**NBU 1022-7E PAD**

43-047-51439	NBU 1022-7D4CS	Sec 07 T10S R22E 1864 FNL 0877 FWL
	BHL	Sec 07 T10S R22E 1237 FNL 0758 FWL

43-047-51440	NBU 1022-7E1BS	Sec 07 T10S R22E 1874 FNL 0878 FWL
	BHL	Sec 07 T10S R22E 1567 FNL 0758 FWL

**RECEIVED: Jan. 04, 2011**

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-51441	NBU 1022-7E4CS	Sec 07 T10S R22E 1904 FNL 0880 FWL BHL Sec 07 T10S R22E 2475 FNL 0760 FWL
43-047-51442	NBU 1022-7F4BS	Sec 07 T10S R22E 1884 FNL 0878 FWL BHL Sec 07 T10S R22E 2064 FNL 1977 FWL
43-047-51443	NBU 1022-7F4CS	Sec 07 T10S R22E 1894 FNL 0879 FWL BHL Sec 07 T10S R22E 2394 FNL 1977 FWL

**NBU 1022-7G PAD**

43-047-51444	NBU 1022-7G1BS	Sec 07 T10S R22E 2361 FNL 1695 FEL BHL Sec 07 T10S R22E 1666 FNL 1702 FEL
43-047-51445	NBU 1022-7G4BS	Sec 07 T10S R22E 2361 FNL 1685 FEL BHL Sec 07 T10S R22E 2019 FNL 1680 FEL
43-047-51446	NBU 1022-7H1BS	Sec 07 T10S R22E 2361 FNL 1675 FEL BHL Sec 07 T10S R22E 1563 FNL 0495 FEL
43-047-51447	NBU 1022-7H4BS	Sec 07 T10S R22E 2361 FNL 1665 FEL BHL Sec 07 T10S R22E 2013 FNL 0490 FEL

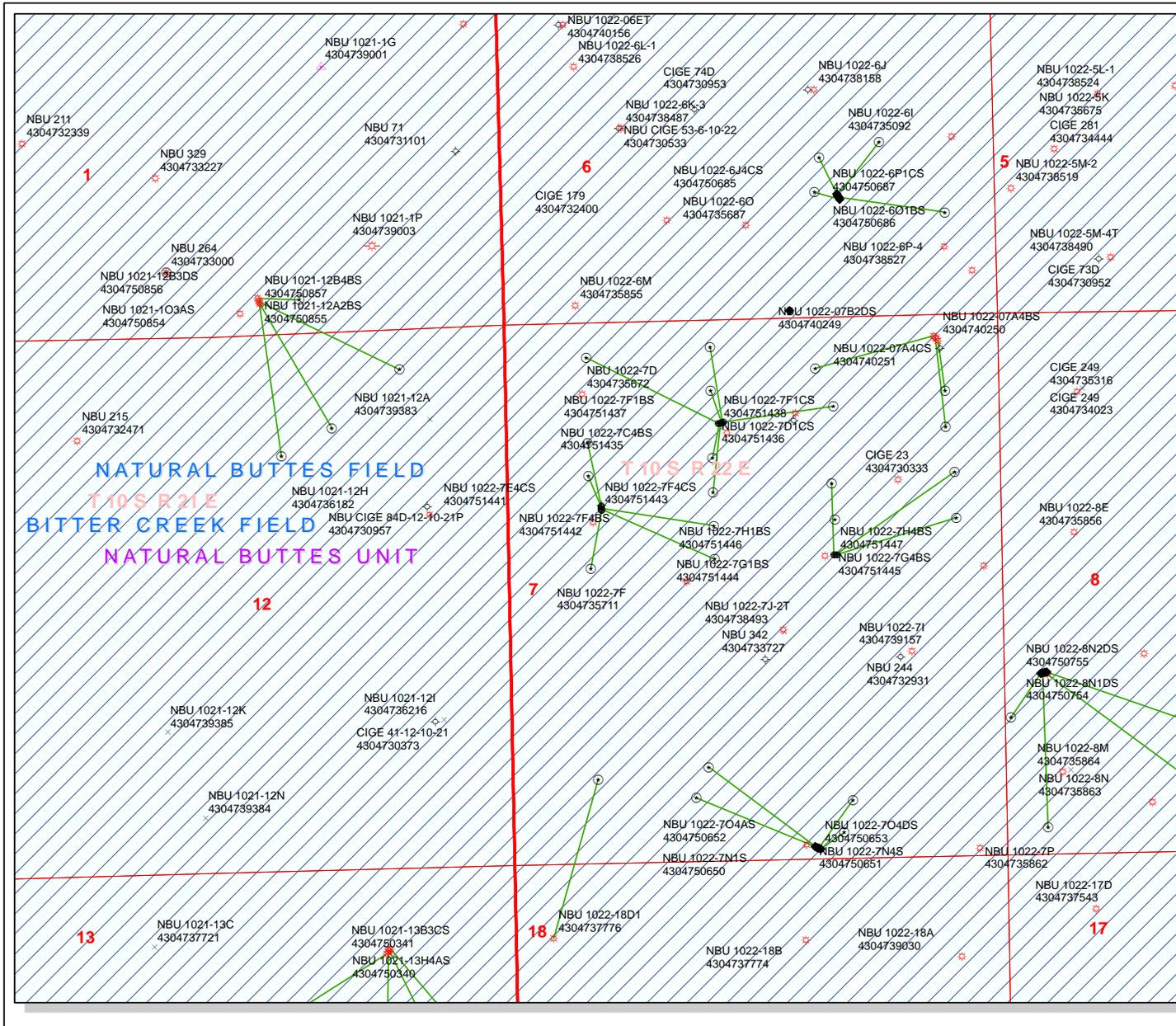
This office has no objection to permitting the wells at this time.

Michael L. Coulthard

Digitally signed by Michael L. Coulthard  
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US  
Date: 2011.01.03 11:20:53 -0700

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

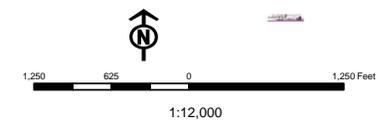
MCoulthard:mc:1-3-11



**API Number: 4304751442**  
**Well Name: NBU 1022-7F4BS**  
**Township 10.0 S Range 22.0 E Section 07**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason

Units STATUS	Wells Query Status
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
Unknown	SGW - Shut-in Gas Well
ABANDONED	SOW - Shut-in Oil Well
ACTIVE	TA - Temp. Abandoned
COMBINED	TW - Test Well
INACTIVE	WDW - Water Disposal
STORAGE	WIW - Water Injection Well
TERMINATED	WSW - Water Supply Well
Sections	
Township	



**From:** Jim Davis  
**To:** Bonner, Ed; Hill, Brad; Mason, Diana  
**CC:** Garrison, LaVonne; [andrew.lytle@anadarko.com](mailto:andrew.lytle@anadarko.com); [julie.jacobson@anadarko.com](mailto:julie.jacobson@anadarko.com)  
**Date:** 1/12/2011 12:12 PM  
**Subject:** Kerr Mc Gee approvals in 10S 22E Sec 7 (15)

The following APDs have been approved by SITLA under the following condition. Approval is granted under the condition that spot monitoring be conducted at the beginning of construction and thereafter as deemed needful by a registered paleontologist, as recommended in the paleo reports IPC #10-71 and IPC# 10-72. Arch clearance is granted without conditions.

4304751433 NBU 1022-7B4BS  
4304751434 NBU 1022-7C1BS  
4304751435 NBU 1022-7C4BS  
4304751436 NBU 1022-7D1CS  
4304751437 NBU 1022-7F1BS  
4304751438 NBU 1022-7F1CS  
4304751439 NBU 1022-7D4CS  
4304751440 NBU 1022-7E1BS  
4304751441 NBU 1022-7E4CS  
4304751442 NBU 1022-7F4BS  
4304751443 NBU 1022-7F4CS  
4304751444 NBU 1022-7G1BS  
4304751445 NBU 1022-7G4BS  
4304751446 NBU 1022-7H1BS  
4304751447 NBU 1022-7H4BS

Thanks.  
-Jim Davis

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

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-7F4BS			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2351	9242		
Previous Shoe Setting Depth (TVD)	40	2351		
Max Mud Weight (ppg)	8.3	12.0		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	5638	11.7		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	1018	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	736	NO <input type="text" value="air drill"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	501	NO <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)=	510	NO <input type="text" value="Reasonable depth in area"/>
Required Casing/BOPE Test Pressure=		2351	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=	5767	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4658	YES <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3734	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)=	4251	NO <input type="text" value="Reasonable"/>
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2351	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

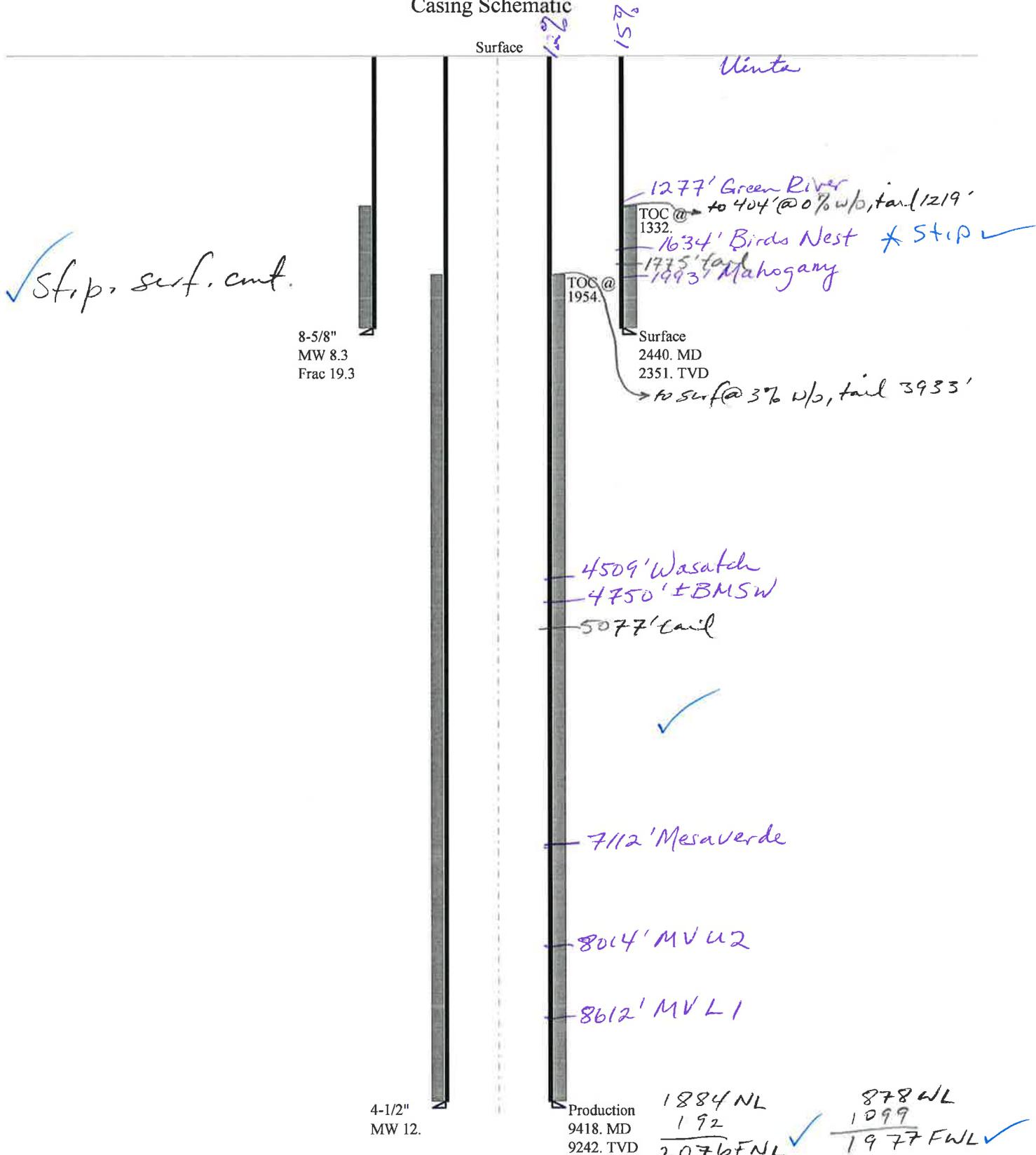
API Well Number: 43047514420000

\*Max Pressure Allowed @ Previous Casing Shoe=

psi \*Assumes 1psi/ft frac gradient

# 43047514420000 NBU 1022-7F4BS

## Casing Schematic



✓ Strip, surf, cont.

Uinta

1277' Green River

TOC @ 1332. → to 404' @ 0% w/p, tail 1219'

1634' Birds Nest \* Strip ✓

1735' tail

1993' Mahogany

TOC @ 1954.

Surface 2440. MD 2351. TVD

→ to surf @ 3% w/p, tail 3933'

4509' Wasatch

4750' ± BMSW

5077' Cail ✓

7112' Mesaverde

8014' MV U2

8612' MV L1

4-1/2"  
MW 12.

Production  
9418. MD  
9242. TVD

1884 NL

192

2076 FNL ✓

878 WL

1099

1977 FWL ✓

SE NW Sec 7-10.5-22 E

<b>43047514420000 NBU 1022-7F4BS</b>	
Well name:	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>
String type:	Surface
	Project ID: 43-047-51442
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: 107 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 1,332 ft

**Burst**

Max anticipated surface pressure: 2,147 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,429 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: 2,133 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 563 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 9,242 ft  
Next mud weight: 12,000 ppg  
Next setting BHP: 5,761 psi  
Fracture mud wt: 19,250 ppg  
Fracture depth: 2,440 ft  
Injection pressure: 2,440 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	2440	8.625	28.00	I-55	LT&C	2351	2440	7.892	96624

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	1017	1880	1.848	2429	3390	1.40	65.8	348	5.29 J

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

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

Date: February 1, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2351 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

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

Well name:	<b>43047514420000 NBU 1022-7F4BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-51442
Location:	UINTAH COUNTY		

**Design parameters:**

**Collapse**

Mud weight: 12.000 ppg  
 Internal fluid density: 1.000 ppg

**Burst**

Max anticipated surface pressure: 3,728 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP: 5,761 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor: 1.125

**Burst:**

Design factor: 1.00

**Tension:**

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

Tension is based on air weight.  
 Neutral point: 7,760 ft

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 203 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 1,954 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
 Departure at shoe: 1116 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	9418	4.5	11.60	I-80	LT&C	9242	9418	3.875	124318
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	5281	6360	1.204	5761	7780	1.35	107.2	212	1.98 J

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

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

Date: February 1, 2011  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 9242 ft, a mud weight of 12 ppg. An internal gradient of .052 psi/ft was used for collapse from TD to Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

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

## ON-SITE PREDRILL EVALUATION

### Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 1022-7F4BS  
**API Number** 43047514420000      **APD No** 3351      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** SWNW      **Sec** 7      **Tw** 10.0S      **Rng** 22.0E      1884      **FNL** 878      **FWL**  
**GPS Coord (UTM)** 629256 4424836      **Surface Owner**

#### Participants

See Other Comments:

#### Regional/Local Setting & Topography

This location is in the Natural Buttes Unit of Uintah County approximately 37 air miles and 48.6 road miles south of Vernal, Utah. It is accessed by existing State of Utah, Uintah County and oilfield development roads. No new road construction will be required.

The general area contains sub-drainages of lower Sand Wash. Sand Wash drainage enters the White River approximately 4 miles to the north of the site. The area is characterized by rolling benches to steep sided hills, which have exposed sand stone bedrock cliffs along the rims.

All drainages are ephemeral. No springs, seeps or streams exist in the area. An occasional pond constructed to supply water for cattle, sheep and antelope exists.

Five gas wells are proposed to be directionally drilled from this pad which extends the existing pad of the NBU 1022-7E producing gas well. The new wells are the NBU 1022-7D4CS, NBU 1022-7E1BS, NBU 1022-7F4BS, NBU 1022-7F4CS and NBU 1022-7E4CS. The pad is laid out in a north to south direction and the existing pad will be slightly extended in all directions. The location is along the top of a flattened ridge with little rise to obtain the needed fill. Most cutting will be light and on the south and east sides. The surface of the location will be lowered 0.4 feet. On corners 5, 6 and 8 the spoils will be rounded rather than piled on the steep slope. A small portion of the reserve pit is within a fill. A 2-foot freeboard and an outside 15-foot wide bench are provided. No stability concerns are anticipated. The main drainage in the area is approximately ¼ mile to the west. The selected site is the only location in the immediate area and should be suitable for drilling and operating the proposed wells.

Both the surface and minerals are owned by SITLA.

#### Surface Use Plan

##### **Current Surface Use**

Wildlfe 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> 465	Onsite	UNTA

**Ancillary Facilities** N

#### Waste Management Plan Adequate?

#### Environmental Parameters

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Vegetation is a sparse salt desert shrub type. About 8 inches of snow covered the area. Principal species expected include kochia weed, crested wheatgrass, slender wheatgrass, cheatgrass, halogeton, annuals weeds and curly mesquite grass. Fair vegetation appears to exist on the reclaimed pit site.

Antelope and small mammals and birds.

**Soil Type and Characteristics**

Soils are shallow and rocky.

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diversion Required?** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** 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 in the southeast corner of the location. Dimensions are 100' x 260' x 12' deep with 2' of freeboard and a 15' outer bench. Kerr McGee proposed to line the pit with a 30-mil liner and 2 layers of felt.

A small portion of the reserve pit is within a fill. A 2-foot freeboard and an outside 15-foot wide bench are provided. No stability concerns are anticipated.

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

**Other Observations / Comments**

Floyd Bartlett (DOGM), Sheila Wopsock, Clay Einerson, Charles Chase, Grizz Oleen, Andy Lytle, Matt Palmer, Roger Perry, Julie Jacobson and Duane Holmes (Kerr McGee), Mitch.Batty, John Slaugh, (Timberline Engineering and Land Surveying) and Jim Davis (SITLA).

Floyd Bartlett  
**Evaluator**

1/11/2011  
**Date / Time**

# Application for Permit to Drill Statement of Basis

3/28/2011

## Utah Division of Oil, Gas and Mining

Page 1

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
3351	43047514420000	LOCKED	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1022-7F4BS		<b>Unit</b>	NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	SWNW 7 10S 22E S 1884 FNL 878 FWL GPS Coord (UTM)			629262E	4424828N

### Geologic Statement of Basis

Kerr McGee proposes to set 2,440' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 4,750'. A search of Division of Water Rights records shows one water well within a 10,000 foot radius of the center of Section 7. The well is owned by the BLM, has a depth of 1,850 feet, and its listed use is for stock watering. 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

1/24/2011  
Date / Time

### Surface Statement of Basis

This location is in the Natural Buttes Unit of Uintah County approximately 37 air miles and 48.6 road miles south of Vernal, Utah. It is accessed by existing State of Utah, Uintah County and oilfield development roads. No new road construction will be required.

The general area contains sub-drainages of lower Sand Wash. Sand Wash drainage enters the White River approximately 4 miles to the north of the site. The area is characterized by rolling benches to steep sided hills, which have exposed sand stone bedrock cliffs along the rims.

All drainages are ephemeral. No springs, seeps or streams exist in the area. An occasional pond constructed to supply water for cattle, sheep and antelope exists.

Five gas wells are proposed to be directionally drilled from this pad which extends the existing pad of the NBU 1022-7E producing gas well. The new wells are the NBU 1022-7D4CS, NBU 1022-7E1BS, NBU 1022-7F4BS, NBU 1022-7F4CS and NBU 1022-7E4CS. The pad is laid out in a north to south direction and the existing pad will be slightly extended in all directions. The location is along the top of a flattened ridge with little rise to obtain the needed fill. Most cutting will be light and on the south and east sides. The surface of the location will be lowered 0.4 feet. On corners 5, 6 and 8 the spoils will be rounded rather than piled on the steep slope. A small portion of the reserve pit is within a fill. A 2-foot freeboard and an outside 15-foot wide bench are provided. No stability concerns are anticipated. The main drainage in the area is approximately ¼ mile to the west. The selected site is the only location in the immediate area and should be suitable for drilling and operating the proposed wells.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA attended the site evaluation and had no concerns with the proposal. Kerr McGee was told to consult with SITLA for reclamation standards including seeding mixes to be used.

Alex Hansen and Ben Williams of the Utah Division of Wildlife Resources were invited to attend. They stated they had a previously scheduled meeting for this date and neither attended.

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# Application for Permit to Drill Statement of Basis

3/28/2011

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

Page 2

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Floyd Bartlett  
**Onsite Evaluator**

1/11/2011  
**Date / Time**

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

<b>Category</b>	<b>Condition</b>
Pits	A synthetic liner with a minimum thickness of 30 mils with a double felt subliner shall be properly installed and maintained in the reserve pit.
Surface	The reserve pit shall be fenced upon completion of drilling operations.
Surface	The well site shall be bermed to prevent fluids from leaving the pad.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 12/29/2010**API NO. ASSIGNED:** 43047514420000**WELL NAME:** NBU 1022-7F4BS**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)**PHONE NUMBER:** 720 929-6100**CONTACT:** Andy Lytle**PROPOSED LOCATION:** SWNW 07 100S 220E**Permit Tech Review:** **SURFACE:** 1884 FNL 0878 FWL**Engineering Review:** **BOTTOM:** 2064 FNL 1977 FWL**Geology Review:** **COUNTY:** UINTAH**LATITUDE:** 39.96562**LONGITUDE:** -109.48651**UTM SURF EASTINGS:** 629262.00**NORTHINGS:** 4424828.00**FIELD NAME:** NATURAL BUTTES**LEASE TYPE:** 3 - State**LEASE NUMBER:** ML 23609**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:** Permit #43-8496
- RDCC Review:**
- Fee Surface Agreement**
- Intent to Commingle**

**Commingling Approved****LOCATION AND SITING:**

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

**Comments:** Presite Completed

**Stipulations:**

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



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 1022-7F4BS  
**API Well Number:** 43047514420000  
**Lease Number:** ML 23609  
**Surface Owner:** STATE  
**Approval Date:** 3/28/2011

**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> ML 23609
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-7F4BS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047514420000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1884 FNL 0878 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 07 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"/> 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"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 5/30/2011	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION	
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> OTHER	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL ON 05/30/2011 AT 0700 HRS.		
<b>Accepted by the          Utah Division of          Oil, Gas and Mining          FOR RECORD ONLY</b>		
<b>NAME (PLEASE PRINT)</b> Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/31/2011	

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
 Submitted By SHEILA WOPSOCH Phone Number 435.781.7024  
 Well Name/Number NBU 1022-7F4BS  
 Qtr/Qtr SWNW Section 7 Township 10S Range 22E  
 Lease Serial Number ML-23609  
 API Number 4304751442

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

Date/Time 05/29/2011 1300 HRS AM  PM

Casing – Please report time casing run starts, not cementing times.

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

RECEIVED

MAY 26 2011

DIV. OF OIL, GAS &amp; MINING

Date/Time 06/25/2011 0800 HRS AM  PM

BOPE

- Initial BOPE test at surface casing point  
 BOPE test at intermediate casing point  
 30 day BOPE test  
 Other

Date/Time \_\_\_\_\_ AM  PM

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT  
KENNY GATHINGS AT 435.781.7048 FOR MORE

ENTITY ACTION FORM

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

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751441	NBU 1022-7E4CS		SWNW	7	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<u>B</u>	99999	<u>2900</u>	5/30/2011		<u>5/31/11</u>		
Comments: MIRU PETE MARTIN BUCKET RIG. <u>WSTMVD</u> SPUD WELL ON 05/30/2011 AT 1300 HRS <u>BHL = SWNW</u>							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751443	NBU 1022-7F4CS		SWNW	7	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<u>B</u>	99999	<u>2900</u>	5/30/2011		<u>5/31/11</u>		
Comments: MIRU PETE MARTIN BUCKET RIG. <u>WSTMVD</u> SPUD WELL ON 05/30/2011 AT 1000 HRS. <u>BHL = SENW</u>							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751442	NBU 1022-7F4BS		SWNW	7	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<u>B</u>	99999	<u>2900</u>	5/30/2011		<u>5/31/11</u>		
Comments: MIRU PETE MARTIN BUCKET RIG. <u>WSTMVD</u> SPUD WELL ON 05/30/2011 AT 0700 HRS. <u>BHL = SENW</u>							

ACTION CODES:

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

SHEILA WOPSOCK

Name (Please Print)

Signature

REGULATORY ANALYST

Title

5/31/2011

Date

RECEIVED

MAY 31 2011

DIV. OF OIL, GAS & MINING

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 23609
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-7F4BS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047514420000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1884 FNL 0878 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 07 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: 6/19/2011	<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	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <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 JUNE 16, 2011. DRILLED SURFACE HOLE TO 2470'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.		
<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b>		
<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/20/2011	

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 139  
Submitted By KENNY MORRIS Phone Number  
435- 828-0984  
Well Name/Number NBU 1022-7F4BS  
Qtr/Qtr SWNW Section 7 Township 10S Range 22E  
Lease Serial Number ML23609  
API Number 43047514420000

Casing – Time casing run starts, not cementing times.

- Production Casing
- Other

Date/Time 8/9/2011 18:00 AM  PM

BOPE

- Initial BOPE test at surface casing point
- Other

Date/Time \_ \_\_\_\_\_ AM  PM

**RECEIVED**  
AUG 08 2011  
DIV. OF OIL, GAS & MINING

Rig Move

Location To: RIG SKID TO NBU1022-7D4CS =BLACKHAWK

Date/Time 8/10/2011 07:00 AM  PM

Remarks BOP TEST NOTICE TO FOLLOW F/7D4CS

\_\_\_\_\_  
\_\_\_\_\_

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 23609	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-7F4BS		
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047514420000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>4. LOCATION OF WELL FOOTAGES AT SURFACE:</b> 1884 FNL 0878 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 07 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: 8/10/2011	<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 ROTARY RIG. FINISHED DRILLING FROM 2470' TO 9445' ON AUGUST 9, 2011. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED ENSIGN RIG 139 ON AUGUST 10, 2011 @ 06:00 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>			
<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst	
<b>SIGNATURE</b> N/A	<b>DATE</b> 8/10/2011		

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 139  
Submitted By KENNY MORRIS Phone Number  
435- 828-0984  
Well Name/Number NBU 1022-7F4BS  
Qtr/Qtr SWNW Section 7 Township 10S Range 22E  
Lease Serial Number ML23609  
API Number 43047514420000

Casing – Time casing run starts, not cementing times.

- Production Casing
- Other

Date/Time 8/9/2011 18:00 AM  PM

BOPE

- Initial BOPE test at surface casing point
- Other

Date/Time \_ \_\_\_\_\_ AM  PM

**RECEIVED**  
AUG 08 2011  
DIV. OF OIL, GAS & MINING

Rig Move

Location To: RIG SKID TO NBU1022-7D4CS =BLACKHAWK

Date/Time 8/10/2011 07:00 AM  PM

Remarks BOP TEST NOTICE TO FOLLOW F/7D4CS

\_\_\_\_\_  
\_\_\_\_\_

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 23609	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-7F4BS		
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047514420000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>4. LOCATION OF WELL FOOTAGES AT SURFACE:</b> 1884 FNL 0878 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNW Section: 07 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: 10/11/2011	<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 10/11/2011 AT 11:15 HRS. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.			
<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b>			
<b>NAME (PLEASE PRINT)</b> Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst	
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/17/2011		

**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**

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> OTHER _____		7. UNIT or CA AGREEMENT NAME UTU63047A	
b. TYPE OF WORK: NEW WELL <input checked="" type="checkbox"/> HORIZ. LATS. <input type="checkbox"/> DEEP-EN <input type="checkbox"/> RE-ENTRY <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER _____		8. WELL NAME and NUMBER: NBU 1022-7F4BS	
2. NAME OF OPERATOR: KERR MCGEE OIL & GAS ONSHORE, L.P.		9. API NUMBER: 4304751442	
3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY DENVER STATE CO ZIP 80217		PHONE NUMBER: (720) 929-6100	
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: SWNW 1884 FNL 878 FWL S7, T10S, R22E  AT TOP PRODUCING INTERVAL REPORTED BELOW: SENW 2070 FNL 1988 FWL S7, T10S, R22E  AT TOTAL DEPTH: SENW 2081 FNL 1988 FWL S7, T10S, R22E		10. FIELD AND POOL, OR WILDCAT NATURAL BUTTES	
		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWNW 7 10S 22E S	
		12. COUNTY UINTAH	13. STATE UTAH

14. DATE SPUNDED: 5/30/2011	15. DATE T.D. REACHED: 8/9/2011	16. DATE COMPLETED: 10/11/2011	ABANDONED <input type="checkbox"/> READY TO PRODUCE <input checked="" type="checkbox"/>	17. ELEVATIONS (DF, RKB, RT, GL): 5243 GL
18. TOTAL DEPTH: MD 9,455 TVD 9,299	19. PLUG BACK T.D.: MD 9,383 TVD 9,227	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) SYNTHETIC TRIPLE COMBO-RSL/SM-CBL/GR/CT			23. WAS WELL CORED? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit analysis) WAS DST RUN? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit report) DIRECTIONAL SURVEY? NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> (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	2,449		880		0	
7 7/8"	4 1/2" I-80	11.6#	0	9,426		1,440		1886	

**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"	8,770							

**26. PRODUCING INTERVALS**

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) MESAVERDE	7,634	9,261		
(B) WSMVD				
(C)				
(D)				

**27. PERFORATION RECORD**

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
7,634 9,261	0.36	139	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
7634 - 9261	PUMP 4413 BBLs SLICK H2O & 72,568 LBS 30/50 OTTAWA SAND 6 STAGES

**29. ENCLOSED ATTACHMENTS:**

- |   |  |                                       |  |
|---|--|---------------------------------------|--|
| <input type="checkbox"/> ELECTRICAL/MECHANICAL LOGS                         | <input type="checkbox"/> GEOLOGIC REPORT | <input type="checkbox"/> DST REPORT   | <input checked="" type="checkbox"/> DIRECTIONAL SURVEY |
| <input type="checkbox"/> SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION | <input type="checkbox"/> CORE ANALYSIS   | <input type="checkbox"/> OTHER: _____ |  |

**30. WELL STATUS:**

**PROD RECEIVED**

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED: 10/11/2011		TEST DATE: 10/13/2011		HOURS TESTED: 24		TEST PRODUCTION RATES: →		OIL – BBL: 0	GAS – MCF: 2,607	WATER – BBL: 900	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 1,850	CSG. PRESS. 2,700	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL: 0	GAS – MCF: 2,607	WATER – BBL: 900	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.)

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	1,363
				BIRD'S NEST	1,702
				MAHOGANY	2,195
				WASATCH	4,679
				MESAVERDE	7,285

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. Attached is the chronological well history, perforation report & final survey. The Rig Release Sundry Notice submitted 8/10/2011 had a typo and TD was reported at 9445 instead of actual TD of 9455'.

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

NAME (PLEASE PRINT) JAIME SCHARNOWSKE

TITLE REGULATORY ANALYST

SIGNATURE *Jaime Scharnowske*

DATE 11-11-11

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 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011		Spud Date: 6/16/2011	
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD		Rig Name No: ENSIGN 139/139, PROPETRO 11/11	
Event: DRILLING		Start Date: 4/11/2011		End Date: 8/10/2011	
Active Datum: RKB @5,257.00usft (above Mean Sea Level)			UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
6/16/2011	0:00 - 1:30	1.50	MIRU	01	C	P		MOVE RIG OFF THE NBU 1022-7F4CS
	1:30 - 3:30	2.00	MIRU	01	B	P		DRESS THE TOP OF CONDUCTOR. INSTALL DIVERTER HEAD AND BLOOIE LINE. BUILD DITCH. MOVE RIG OVER HOLE AND RIG UP, SET CATWALK AND PIPE RACKS
	3:30 - 4:00	0.50	DRLSUR	06	A	P		P/U 1.83 DEG BENT HOUSING HUNTING MTR SN 8014 . 7/8 LOBE .17 RPM. M/U 12.25" Q507 SN 7133202 4TH RUN, W/ 7-18'S. INSTALL RUBBER
	4:00 - 5:00	1.00	ALL	19	A	X		ATTEMPT T/SPUD 12 1/4" SURF. HOLE,NO SUCCESS(JUNK IN HOLE)
	5:00 - 5:30	0.50	ALL	19	A	X		REMOVE RUBBER,L/D 1-6" DC,MM & 12 1/4"BIT
	5:30 - 9:00	3.50	ALL	21	D	X		WAIT ON 12 1/4" MILL & JUNK BASKET & X OVER
	9:00 - 9:30	0.50	ALL	19	A	X		M/U 12 1/4" MILL,JUNK BASKET & X OVER,P/U 2- 6 1/2" DCS,INSTALL RUBBER
	9:30 - 11:00	1.50	ALL	19	A	X		MILL ON JUNK F/40' T/44',WORK JUNK BASKET ON BOTTEM
	11:00 - 12:00	1.00	ALL	19	A	X		TOH,L/D JUNK BASKET & 12 1/4" MILL(HAND DROPPED TABLE LIFTING EYE IN HOLE)
	12:00 - 13:30	1.50	ALL	21	D	X		WAIT ON MAGNET
	13:30 - 14:00	0.50	ALL	19	A	X		M/U 11" MAGNET,P/U 2- 6 1/2" DCS,INSTALL RUBBER
	14:00 - 14:30	0.50	ALL	19	A	X		WORK MAGNET ON BOTTEM,TOH,RETRIEVED TABLE LIFTING EYE & A LARGE AMOUNT OF MISC. METAL,RUN MAGNET T/BOTTEM,2ND RUN,WORK MAGNET ON BOTTEM.TOH MAGNET CLEAN
	14:30 - 15:00	0.50	ALL	19	A	X		L/D MAGNET & X OVER SUB
	15:00 - 15:30	0.50	DRLSUR	06	A	P		P/U 1.83 DEG BENT HOUSING HUNTING MTR SN 8014 . 7/8 LOBE .17 RPM. M/U 12.25" Q507 SN 7014657 1ST RUN, W/ 7-18'S. INSTALL RUBBER
	15:30 - 17:00	1.50	DRLSUR	02	B	P		SPUD SURFACE 06/16/2011 @ 15:30 HRS. DRILL 12.1/4" SURFACE HOLE F/40'-210' (170' @ 113'/HR) PSI ON/ OFF 690/450, UP/ DOWN/ ROT 27/22/25. 532 GPM, 45 RPM ON TOP DRIVE,90 RPM ON MM, 15-18K WOB
	17:00 - 17:30	0.50	DRLSUR	06	A	P		TOH L/D 12 14" BIT
	17:30 - 20:00	2.50	DRLSUR	06	A	P		M/U 11" BIT.P/U DIR TOOLS & SCRIBE,TIH T/210'
	20:00 - 0:00	4.00	DRLSUR	02	D	P		DRILL/ SLIDE 11" SURFACE HOLE F/ 210'-770' (560' @ 140'/HR) PSI ON/ OFF,1140/830, UP/ DOWN/ ROT 52/42/50. 130 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRCULATING RESERVE PIT
6/17/2011	0:00 - 7:00	7.00	DRLSUR	02	D	P		DRILL/ SLIDE 11" SURFACE HOLE F/770'-1490' (720' @ 111'/HR) PSI ON/ OFF,1250/1050, UP/ DOWN/ ROT 64/44/52. 130 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRCULATING RESERVE PIT
	7:00 - 8:00	1.00	ALL	22	A	X		WORK STUCK PIPE @ 1490',WORK PIPE FREE(COULD NOT ROTATE)TOH T/1400'

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-7F4BS ( YELLOW )		Spud Conductor: 5/30/2011		Spud Date: 6/16/2011	
Project: UTAH-UINTAH			Site: NBU 1022-7E PAD		Rig Name No: ENSIGN 139/139, PROPETRO 11/11
Event: DRILLING			Start Date: 4/11/2011		End Date: 8/10/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)			UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
6/18/2011	8:00 - 18:00	10.00	ALL	08	B	Z		MAIN HYDRAULIC PUMPS FAILED ON TOP HEAD, WAIT ON PARTS & MECHANIC, REPLACE MAIN HYDRAULIC PUMPS (CIRC HOLE DURING REPAIRS), COULD NOT ROTATE
	18:00 - 22:00	4.00	ALL	08	B	Z		TOH, L/D BHA, DIR TOOLS & MM
	22:00 - 0:00	2.00	ALL	08	B	Z		WAIT ON MECHANIC & NEW TOP HEAD F/RIG
	0:00 - 13:00	13.00	ALL	08	B	Z		INSTALL NEW TOP HEAD IN RIG
	13:00 - 16:00	3.00	ALL	08	B	Z		P/U MM, M/U 11" BIT P/U DIR. TOOLS & SCRIBE T/H T/1390'
6/19/2011	16:00 - 0:00	8.00	DRLSUR	02	D	P		DRILL/ SLIDE 11" SURFACE HOLE F/1490'-2060' (570' @ 71'/HR) PSI ON/ OFF, 1550/1370, UP/ DOWN/ ROT 80/52/65. 130 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE, 90 RPM ON MM, CIRCULATING RESERVE PIT
	0:00 - 6:30	6.50	DRLSUR	02	D	P		DRILL/ SLIDE 11" SURFACE HOLE F/2060'-2470' (410' @ 63'/HR) PSI ON/ OFF, 1350/1200, UP/ DOWN/ ROT 80/65/75. 130 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE, 90 RPM ON MM, LOST PARTIAL RETURNS @ 2070', RUN AIR AS NEEDED T/ MAINTAIN CIRC. & RESERVE PIT LEVEL (TD 11" DIR. SURF. HOLE)
	6:30 - 8:30	2.00	DRLSUR	05	C	P		CIRC & COND HOLE F/LD & 8 5/8" 28# SURF. CSG RUN
	8:30 - 12:00	3.50	DRLSUR	06	D	P		L/D DRILLSTRING, BHA & DIR TOOLS
	12:00 - 13:00	1.00	CSG	12	A	P		MOVE CATWALK AND PIPE RACKS, MOVE CSG OVER TO WORK AREA, R/U T/RUN 8 5/8" 28# SURF. CSG
	13:00 - 16:00	3.00	CSG	12	C	P		HOLD SAFETY MEETING, RUN FLOAT SHOE, SHOE JNT, BAFFLE & 54 JNTS 8 5/8" 28# LT&C CSG W/THE SHOE SET @ 2439' & THE BAFFLE @ 2393'
	16:00 - 17:00	1.00	CSG	12	B	P		INSTALL CEMENT HEAD, R/U PRO PETRO CEMENTERS
	17:00 - 18:30	1.50	CSG	12	E	P		HOLD SAFETY MEETING. TEST LINES TO 2000 PSI. PUMP 135 BBLS OF 8.4# H2O AHEAD, NO RETURNS PUMP 20 BBLS OF 8.4# GEL WATER AHEAD. PUMP 180 SX (122.4 BBLS) 11# 3.82 YIELD LEAD CEMENT, PUMP 200 SX (41 BBLS) OF 15.8# 1.15 YIELD TAIL (2% CALC. 1/4# /SK OF FLOCELE). DROP PLUG ON FLY AND DISPLACE W/146 BBLS OF 8.4# H2O. LIFT PRESSURE WAS 400 PSI, BUMP PLUG AND HOLD 900 PSI FOR 5 MIN. FLOAT HELD, NO RETURNS THRU OUT JOB, NO CEMENT TO SURF.
	18:30 - 19:00	0.50	CSG	12	F	P		TOP OUT W/175 SKS 15.8 PPG, CLASS "G" CEMENT W/4% CACL2 & 1/4# /SK FLOCELE, NO CEMENT TO SURF
	19:00 - 21:00	2.00	CSG	13	A	P		WAIT ON CEMENT
	21:00 - 21:30	0.50	CSG	12	F	P		TOP OUT W/225 SKS 15.8 PPG, CLASS "G" CEMENT W/4% CACL2 & 1/4# /SK FLOCELE, NO CEMENT TO SURF (RELEASE RIG @ 21:30 06/19/2011), 06/21/2011, TOP W/100 SKS 15.8 PPG 1.15 CUFT/SK YIELD CLASS "G" CEMENT, W 4% CACL2, CEMENT TO SURF. STAYED @ SURF.

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

Well: NBU 1022-7F4BS ( YELLOW) Spud Conductor: 5/30/2011 Spud Date: 6/16/2011  
 Project: UTAH-UINTAH Site: NBU 1022-7E PAD Rig Name No: ENSIGN 139/139, PROPETRO 11/11  
 Event: DRILLING Start Date: 4/11/2011 End Date: 8/10/2011  
 Active Datum: RKB @5,257.00usft (above Mean Sea Level) UWI: SW/NW/010/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	21:30 - 21:30	0.00	CSG					CONDUCTOR CASING: Cond. Depth set: 40' Cement sx used: 28  SPUD DATE/TIME: 6/16/2011 15:30  SURFACE HOLE: Surface From depth: 40' Surface To depth: 2,470 Total SURFACE hours: 29.50 Surface Casing size: 8 5/8" 28# # of casing joints ran: 55 Casing set MD: 2,439.0 # sx of cement: 180/200/500 Cement blend (ppg): 11.0/15.8/15.8 Cement yield (ft3/sk): 3.82/1.15/1.15 # of bbls to surface: Describe cement issues: NONE Describe hole issues: NONE
8/2/2011	16:30 - 17:30	1.00	DRLPRO	01	C	P		R/D & SKID RIG TO NBU 1022-7F4BS & R/U R.U.R.T
	17:30 - 18:30	1.00	DRLPRO	14	A	P		N/U B.O.P'S
	18:30 - 20:30	2.00	DRLPRO	09	A	P		SLIP & CUT DRILL LINE
	20:30 - 0:00	3.50	DRLPRO	15	A	P		TEST B.O.P'S - BLINDS-PIPE-2"- 4" - HCR - CHOKE MAINFOLD - 250 LOW - 5000 HIGH - ANNULAR 250 LOW - HIGH 2500 - CASING 1500 PSI.
8/3/2011	0:00 - 0:30	0.50	DRLPRO	15	A	P		FINISH TESTING B.O.P'S
	0:30 - 7:30	7.00	DRLPRO	06	A	P		P/U MOTOR - BIT & SCRIBE DIR TOOLS & T.I.H,LEVEL DERRICK,TIH,TAG CEMENT @ 2390
	7:30 - 9:30	2.00	DRLPRO	02	F	P		DRILL SHOE TRACK
	9:30 - 11:30	2.00	DRLPRO	02	D	P		DIR DRILL F/2480 TO 2755=275 AVG 137 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 1120,PSI 900/1300,TORQ 4/6K,SLIDE 20%
	11:30 - 12:00	0.50	DRLPRO	07	A	P		RIG SERVICE
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DIR DRILL F/2755 TO 3990=1235 AVG 103 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 1120,PSI 1200/1600,TORQ 4/6K,SLIDE 20%
8/4/2011	0:00 - 11:30	11.50	DRLPRO	02	D	P		DIR DRILL F/3990 TO 5018=1028 AVG 89 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 110 ,PSI 1200/1600,TORQ 6/8K,SLIDE 8%
	11:30 - 12:00	0.50	DRLPRO	07	A	P		RIG SERVICE
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DIR DRILL F/5018 TO 6080=1062 AVG 88 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 1120,PSI 1200/1600,TORQ 6/8K,SLIDE 2 %
8/5/2011	0:00 - 11:00	11.00	DRLPRO	02	D	P		DIR DRILL F/ 6080 TO 6738=647 AVG 59 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 110,PSI 1500/1800,TORQ 7/10K,SLIDE 0 %
	11:00 - 11:30	0.50	DRLPRO	07	A	P		RIG SERVICE
	11:30 - 0:00	12.50	DRLPRO	02	D	P		DIR DRILL F/6738 TO 7150 =412 AVG 32 ,WOB 18/ 20,RPM 40/126,GPM 550 ,STKS 96,PSI 1500/1750,TORQ 8/12K,SLIDE 6%
8/6/2011	0:00 - 11:30	11.50	DRLPRO	02	D	P		DIR DRILL F/ 7150 TO 7554 =404 AVG 35 ,WOB 20,RPM 40/126,GPM 480 ,STKS 94,PSI 1500/1750,TORQ 8/12K,SLIDE 27' 6%

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

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011		Spud Date: 6/16/2011	
Project: UTAH-UINTAH			Site: NBU 1022-7E PAD		Rig Name No: ENSIGN 139/139, PROPETRO 11/11
Event: DRILLING			Start Date: 4/11/2011		End Date: 8/10/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)			UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	11:30 - 12:00	0.50	DRLPRO	07	A	P		RIG SERVICE,CHANGE FLOW METER
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DIR DRILL F/7554 TO 8000 =446 AVG 37 ,WOB 20,RPM 40/126,GPM 480 ,STKS 94,PSI 1500/1750,TORQ 8/12K,SLIDE 8%
8/7/2011	0:00 - 12:00	12.00	DRLPRO	02	D	P		DIR DRILL F/8000 TO 8368 =368 AVG 30 ,WOB 22,RPM 40/126,GPM 480 ,STKS 94,PSI 1800/2000,TORQ 9/13K,SLIDE 15%
	12:00 - 12:30	0.50	DRLPRO	07	A	P		CHANGE TOP DRIVE & AIR COMP FILTERS
	12:30 - 20:30	8.00	DRLPRO	06	A	S		FLOW CHECK,PUMP OUT 8 STNDS @80K OVER,TOOH F/BHA CHANGE
	20:30 - 20:30	0.00	DRLPRO	06	A	P		CHECK DERRICK LEVEL -OK,P/U BHA#2 SCRIBE DIR TOOLS,TIH,BREAK CIRC @2440 & 5100,WASH 90' TO BTM
8/8/2011	0:00 - 4:30	4.50	DRLPRO	06	A	P		TIH W/ BHA #2,WASH 90' TO BOTTOM NO FILL,FUNCTION TEST BOP
	4:30 - 11:00	6.50	DRLPRO	02	D	P		DIR DRILL F/ 8368 TO 8646=278 AVG 47,WOB 20,RPM 40/126,GPM 440 ,STKS 90,PSI 1800/2000,TORQ 10/14K,SLIDE 4%,FUNCTION TEST CROWN O MATIC & FLOOR SAVOR
	11:00 - 11:30	0.50	DRLPRO	07	A	P		RIG SERVICE
	11:30 - 0:00	12.50	DRLPRO	02	D	P		DIR DRILL F/ 8646 TO 9350=704 AVG 56 ,WOB 20,RPM 40/74,GPM 440 ,STKS 90,PSI 1800/2000,TORQ 10/14K,SLIDE 2%,MW 11.6/42 5%LCM
8/9/2011	0:00 - 2:30	2.50	DRLPRO	02	D	P		DIR DRILL F/9350 TO TD 9455=105 AVG 42 ,WOB 20,RPM 40/74,GPM 440 ,STKS 90,PSI 1800/2000,TORQ 10/14K,SLIDE 2%,MW 11.6/42 5%LCM
	2:30 - 6:00	3.50	DRLPRO	06	E	P		PUMP OUT 10 STNDS,SHORTTRIP BACK TO 8100',TIH
	6:00 - 8:00	2.00	DRLPRO	05	C	P		CIRC BTMS UP TWICE,F/TOOH & RUN CSG
	8:00 - 16:00	8.00	DRLPRO	06	A	P		PUMP OUT 8 STNDS,STRAIGHT PULL 80K OVER,TOOH STND BACK DIR TOOLS
	16:00 - 16:30	0.50	DRLPRO	14	B	P		PULL WEARRING
	16:30 - 0:00	7.50	CSG	12	C	P		SM W/ FRANKS,R/U RUN 224 JTS & 2 MARKERS 11.6# 4.5 I-80 BTC CSG TO SHOE DEPTH 9440,FC9397,MAKERS 7131/4622' MD
8/10/2011	0:00 - 1:30	1.50	CSG	12	C	P		FINISH CSG RUN TO 9440 SHOE DEPTH
	1:30 - 3:00	1.50	CSG	12	E	P		PUMP 10/SPACER,10/SCAV,LEAD 425SX 12# 2.3YLD,TAIL 1015SX 14.3# 1.31 YLD,DISPLACE 146 BBLs,FINALLIFT 2520,BUMPPUG & FLOATS HELD,5 BBL CEMENT BACK TO RES PIT
	3:00 - 3:30	0.50	RDMO	14	A	P		SET C-222 CSG SLIPS @ 100K CSG TENSION,NDBOP,RUFFCUT CSG
	3:30 - 6:00	2.50	RDMO	01	E	P		CLEAN PITS,RIG RELEASE @0600AM 8/10/2011 TO NBU1022-7D4CS

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011	Spud Date: 6/16/2011
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD	Rig Name No: ENSIGN 139/139, PROPETRO 11/11
Event: DRILLING		Start Date: 4/11/2011	End Date: 8/10/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)		UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
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6:00 - 6:00 0.00 RDMO 01 E P

**CONDUCTOR CASING:**  
 Cond. Depth set: 40  
 Cement sx used: 28  
  
 SPUD DATE/TIME: 6/16/2011 15:30

**SURFACE HOLE:**  
 Surface From depth: 40  
 Surface To depth: 2,470  
 Total SURFACE hours: 29.50  
 Surface Casing size: 8 5/8  
 # of casing joints ran: 55  
 Casing set MD: 2,439.0  
 # sx of cement: 780  
 Cement blend (ppg.): 15.8  
 Cement yield (ft3/sk): 1.15  
 # of bbls to surface: 0  
 Describe cement issues: 0  
 Describe hole issues: NONE

**PRODUCTION:**  
 Rig Move/Skid start date/time: 8/2/2011 16:30  
 Rig Move/Skid finish date/time: 8/2/2011 17:30  
 Total MOVE hours: 1.0  
 Prod Rig Spud date/time: 8/3/2011 7:30  
 Rig Release date/time: 8/10/2011 6:00  
 Total SPUD to RR hours: 166.5  
 Planned depth MD 9,449  
 Planned depth TVD 9,292  
 Actual MD: 9,455  
 Actual TVD: 9,297  
 Open Wells \$:  
 AFE \$:  
 Open wells \$/ft:

**PRODUCTION HOLE:**  
 Prod. From depth: 2,480  
 Prod. To depth: 9,455  
 Total PROD hours: 115.5  
 Log Depth: NO LOGS  
 Float Collar Top Depth: 9384  
 Production Casing size: 4.5 11.6# I-80 BTC  
 # of casing joints ran: 226  
 Casing set MD: 9,426.0  
 Stage 1  
 # sx of cement: 425/1015  
 Cement density (ppg.): 12.0/14.3  
 Cement yield (ft3/sk): 2.30/1.31  
 Stage 2  
 # sx of cement:  
 Cement density (ppg.):  
 Cement yield (ft3/sk):  
 Top Out Cmt  
 # sx of cement:  
 Cement density (ppg.):  
 Cement yield (ft3/sk):

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

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011	Spud Date: 6/16/2011
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD	Rig Name No: ENSIGN 139/139, PROPETRO 11/11
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
								Est. TOC (Lead & Tail) or 2 Stage : LEAD/TAIL 0/4150 Describe cement issues: FINALLIFT 2520,W/5BBLs CEMENT TO RES PIT Describe hole issues: LOST 70 BBL AFTER BITTRIP 5% LCM  DIRECTIONAL INFO: KOP: 210 Max angle: 21.31@1530' Departure: 1129@8432 Max dogleg MD: 2.4@1749

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 1022-7F4BS (YELLOW)	Wellbore No.	OH
Well Name	NBU 1022-7F4BS	Wellbore Name	NBU 1022-7F4BS
Report No.	1	Report Date	9/30/2011
Project	UTAH-UINTAH	Site	NBU 1022-7E PAD
Rig Name/No.		Event	COMPLETION
Start Date	9/30/2011	End Date	10/11/2011
Spud Date	6/16/2011	Active Datum	RKB @5,257.00usft (above Mean Sea Level)
UWI	SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0		

1.3 General

Contractor	CASED HOLE SOLUTIONS	Job Method	PERFORATE	Supervisor	DAVE DANIELS
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

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	7,634.0 (usft)-9,261.0 (usft)	Start Date/Time	10/1/2011 12:00AM
No. of Intervals	21	End Date/Time	10/1/2011 12:00AM
Total Shots	0	Net Perforation Interval	39.00 (usft)
Avg Shot Density	0.00 (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 /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/1/2011 12:00AM	MESAVERDE/			7,634.0	7,637.0			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 /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/1/2011 12:00AM	MESAVERDE/			7,712.0	7,715.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			7,840.0	7,841.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			7,881.0	7,882.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			7,910.0	7,912.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,014.0	8,016.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,066.0	8,068.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,176.0	8,178.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,202.0	8,204.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,226.0	8,228.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,544.0	8,545.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,614.0	8,618.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,698.0	8,700.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,786.0	8,787.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,824.0	8,825.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,852.0	8,854.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,934.0	8,935.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			8,949.0	8,950.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			9,053.0	9,055.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			9,229.0	9,231.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/1/2011 12:00AM	MESAVERDE/			9,259.0	9,261.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

3 Plots

**US ROCKIES REGION**

**Operation Summary Report**

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011	Spud Date: 6/16/2011
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD	Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION		Start Date: 9/30/2011	End Date: 10/11/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)		UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/NW/0/878/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/27/2011	7:00 - 15:00	8.00	COMP	33	C	P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 0 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 25 PSI. 1ST PSI TEST T/ 7000 PSI. HELD FOR 30 MIN LOST 44 PSI. PSI T/ 7000 PSI, SURFACE CSG WOULD BURP GAS & H2O FOR A FEW SECONDS THEN STOP. SUFACE WAS DOING THIS OFF & ON DURING TESTING. BLEED PSI OFF WELL. SURFACE BURPED FOR 10 MIN AND THEN QUIT. LEFT SURFACE OPEN FOR 3.5 HRS, THEN RETESTED T/ 7000 PSI T/ OBSERVE SURFACE. HELD 7000 PSI FOR 30 MIN, LOST 56 PSI. SLIGHT GAS ESCAPING BUT KNOW FLOW.
10/3/2011	7:00 - 18:00	11.00	COMP	36	B	P		PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER STG 1 PERF DESIGN. POOH. X-OVER FOR FRAC CREW.  FRAC STG 1)WHP 293 PSI, BRK 3678 PSI @ 4.7 BPM. ISIP 2257 PSI, FG .69. CALC PERFS OPEN @ 48.7 BPM @ 5314 PSI = 81% HOLES OPEN. ISIP 2424 PSI, FG .70, NPI 167 PSI. MP 6162 PSI, MR 51.4 BPM, AP 5392 PSI, AR 49.6 BPM SWI, X-OVER FOR WL.  PERF STG 2)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8980'. P/U PERF AS PER STG 2 PERF DESIGN. POOH. X-OVER FOR FRAC CREW.  FRAC STG 2)WHP 1050 PSI, BRK 2579 PSI @ 4.6 BPM. ISIP 2018 PSI, FG .67. CALC PERFS OPEN @ 47.3 BPM @ 4399 PSI = 100% HOLES OPEN. ISIP 2049 PSI, FG .67, NPI 31 PSI. MP 5546 PSI, MR 51.5 BPM, AP 4646 PSI, AR 51 BPM. SWI, X-OVER FOR WL.  PERF STG 3)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 & 120 DEG PHASING. RIH SET CBP @ 8730' P/U PERF AS PER DESIGN. POOH. SWIFN. HSM. HIGH PSI LINES & WIRE LINE SAFETY.
10/4/2011	6:45 - 7:00	0.25	COMP	48		P		

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

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011	Spud Date: 8/16/2011
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD	Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION		Start Date: 9/30/2011	End Date: 10/11/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)		UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 18:00	11.00	COMP	36	B	P		<p>FRAC STG 3)WHP 1561 PSI, BRK 4334 PSI @ 4.6 BPM. ISIP 2524 PSI, FG .73. CALC PERFS OPEN @ 51 BPM @ 4445 PSI = 100% HOLES OPEN. ISIP 2422 PSI, FG .72, NPI -82 PSI. MP 5005 PSI, MR 52.1 BPM, AP 4458 PSI, AR 50.9 BPM, SWI, X-OVER FOR WL.</p> <p>PERF STG 4)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8258' P/U PERF AS PER DESIGN. POOH, X-OVER FOR FRAC CREW.</p> <p>FRAC STG 4)WHP 673 PSI, BRK 5600 PSI @ 4.6 BPM. ISIP 2185 PSI, FG .71. CALC PERFS OPEN @ 50.8 BPM @ 4567 PSI = 100% HOLES OPEN. ISIP 2855 PSI, FG .79, NPI 670 PSI. MP 5527 PSI, MR 51.5 BPM, AP 4963 PSI, AR 51 BPM, SWI, X-OVER FOR WL.</p> <p>PERF STG 5)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8098' P/U PERF AS PER DESIGN. POOH, X-OVER FOR FRAC CREW.</p> <p>FRAC STG 5)WHP 734 PSI, BRK 2911 PSI @ 4.6 BPM. ISIP 2299 PSI, FG .73. CALC PERFS OPEN @ 50.6 BPM @ 4789 PSI = 100% HOLES OPEN. ISIP 2676 PSI, FG .77, NPI 377 PSI. MP 5158 PSI, MR 51.4 BPM, AP 4627 PSI, AR 51 BPM, SWI, X-OVER FOR WL.</p> <p>PERF STG 6)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 &amp; 120 DEG PHASING. RIH SET CBP @ 7871' P/U PERF AS PER DESIGN. POOH, X-OVER FOR FRAC CREW.</p> <p>FRAC STG 6)WHP 1613 PSI, BRK 2883 PSI @ 6.5 BPM. ISIP 2424 PSI, FG .75. CALC PERFS OPEN @ 50 BPM @ 5493 PSI = 94% HOLES OPEN. ISIP 2555 PSI, FG .77, NPI 131 PSI. MP 6229 PSI, MR 51.5 BPM, AP 5165 PSI, AR 51 BPM, SWI, X-OVER FOR WL. DONE FRACING THIS WELL.</p> <p>PU 4 1/2 8K HAL CBP. RIH SET CBP @ 7584'. POOH. SWI.</p> <p>TOTAL SAND = 72,568 LBS</p>

**US ROCKIES REGION**

**Operation Summary Report**

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011	Spud Date: 6/16/2011
Project: UTAH-UINTAH		Site: NBU 1022-7E PAD	Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION		Start Date: 9/30/2011	End Date: 10/11/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)		UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation																																								
10/10/2011	6:45 - 7:00	0.25	COMP	48		P		TOTAL CLFL = 4413 BBLS HSM & JSA W/ROYAL WELL SERVICE																																								
	7:00 - 18:00	11.00	COMP	30	A	P		7RDMO NBU 1022-7F4CS. MIRU, NBU 1022-7F4BS. SPOT EQUIP. SICP 0 PSI. NDWH, NU BOPs. RU FLOOR & TBG EQUIP. PREP & TALLY TBG. PU 3 7/8 BIT, POBS & XN NIPPLE. RIH ON 238 JTS NEW 2 3/8 TBG. TAG FILL @ 7550'. LD 1 JTS. RD TBG EQUIP. RU PWR SWVL & PMP. EST CIRC. PT CSG & RAMS TO 3000 PSI & HOLD 15 MIN. (0 PSI LOSS) RIH TAG FILL @ 7550'. C/O SND & D/O CBPs.																																								
								<table border="0"> <tr> <td>HALCO CBP @</td> <td>C/O FILL</td> <td>D/O CBP</td> <td>DIFF</td> </tr> <tr> <td>PSI</td> <td>FCP</td> <td></td> <td></td> </tr> <tr> <td>CBP #1 @ 7580'</td> <td>30 FT</td> <td>07 MIN</td> <td>400</td> </tr> <tr> <td>PSI 50 PSI</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CBP #2 @ 7870'</td> <td>21 FT</td> <td>07 MIN</td> <td>200</td> </tr> <tr> <td>PSI 100 PSI</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CBP #3 @ 8102'</td> <td>12 FT</td> <td>08 MIN</td> <td>600</td> </tr> <tr> <td>PSI 200 PSI</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CBP #4 @ 8258'</td> <td>17 FT</td> <td>06 MIN</td> <td>300</td> </tr> <tr> <td>PSI 250 PSI</td> <td></td> <td></td> <td></td> </tr> </table>	HALCO CBP @	C/O FILL	D/O CBP	DIFF	PSI	FCP			CBP #1 @ 7580'	30 FT	07 MIN	400	PSI 50 PSI				CBP #2 @ 7870'	21 FT	07 MIN	200	PSI 100 PSI				CBP #3 @ 8102'	12 FT	08 MIN	600	PSI 200 PSI				CBP #4 @ 8258'	17 FT	06 MIN	300	PSI 250 PSI			
HALCO CBP @	C/O FILL	D/O CBP	DIFF																																													
PSI	FCP																																															
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PSI 50 PSI																																																
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PSI 100 PSI																																																
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PSI 200 PSI																																																
CBP #4 @ 8258'	17 FT	06 MIN	300																																													
PSI 250 PSI																																																
								RIH W/1 JTS. EOT @ 8289'. CIRC CLEAN W/20 BBLS. LET CSG FLOW TO PIT FOR 30 MIN & CLEAN UP. SWI - SDFN. PREP TO CONT. TO D/O 2 CBPs & LND TBG IN AM.																																								
10/11/2011	6:45 - 7:00	0.25	COMP	48		P		HSM & JSA W/ROYAL WELL SERVICE																																								

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

Well: NBU 1022-7F4BS (YELLOW)		Spud Conductor: 5/30/2011		Spud Date: 6/16/2011	
Project: UTAH-UINTAH			Site: NBU 1022-7E PAD		Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION			Start Date: 9/30/2011		End Date: 10/11/2011
Active Datum: RKB @5,257.00usft (above Mean Sea Level)			UWI: SW/NW/0/10/S/22/E/7/0/0/26/PM/N/1884/W/0/878/0/0		

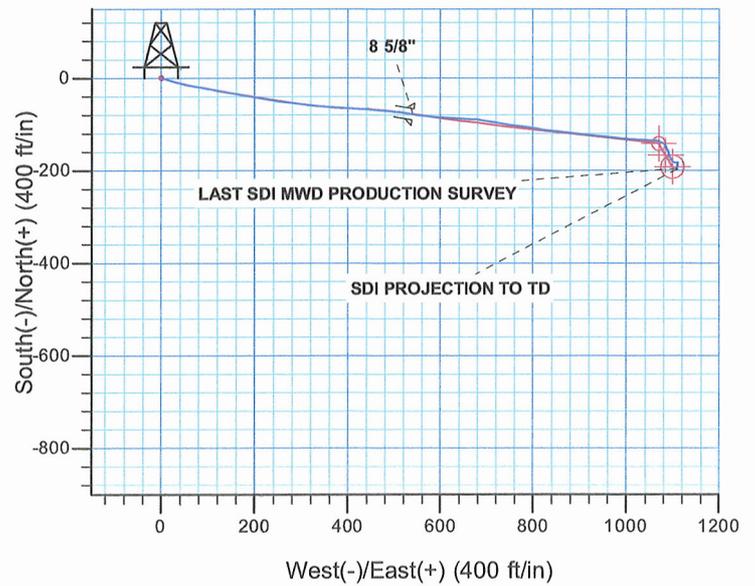
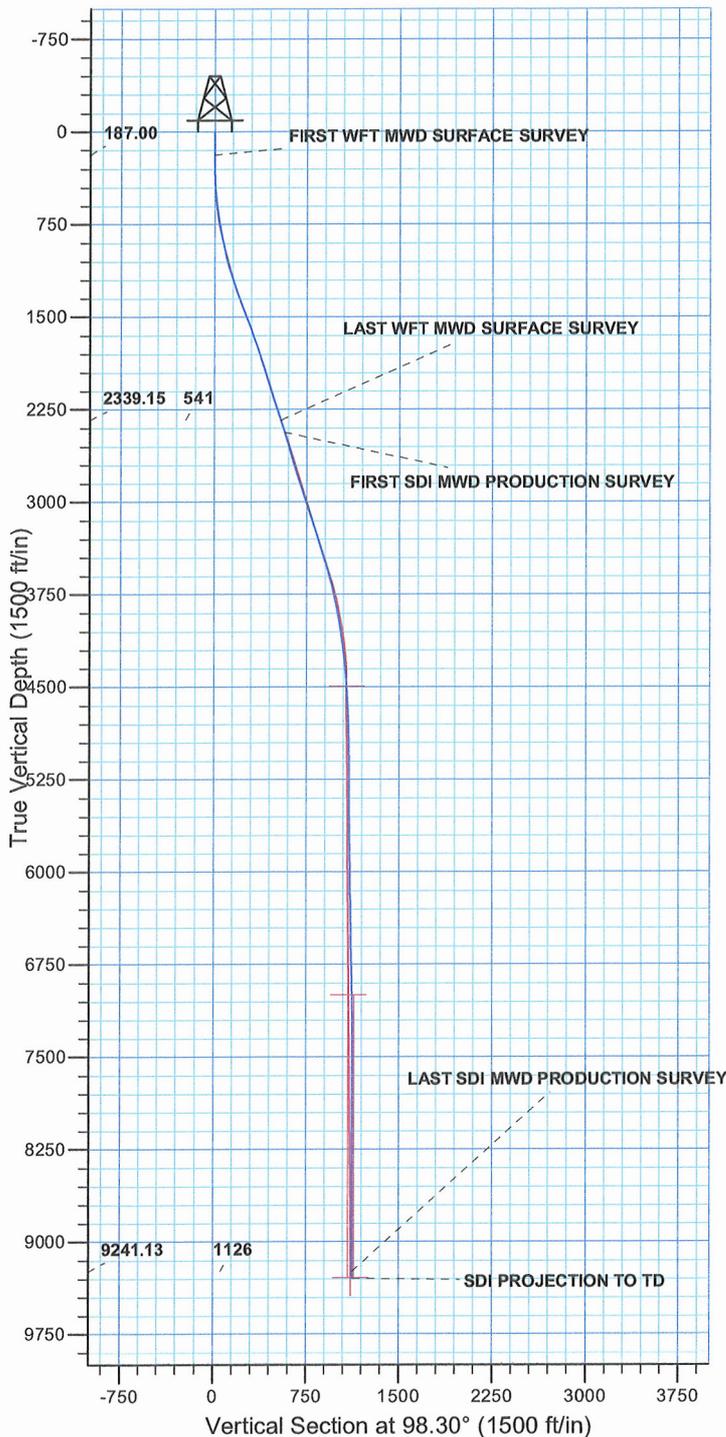
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 11:00	4.00	COMP	44	C	P		<p>SICP 3000 PSI. EOT @ 8289'. RIH TAG FILL @ 0000'. C/O SND &amp; D/O CBPs</p> <p>HALCO CBP @ C/O FILL D/O CBP DIFF PSI FCP</p> <p>CBP #5 @ 8734' 26 FT 04 MIN 400 PSI 800 PSI</p> <p>CBP #6 @ 8980' 30 FT 05 MIN 500 PSI 650 PSI</p> <p>RIH &amp; TAG FILL @ 9315'. C/O TO 9393'. (PBSD @ 9395'). FCP = 550 PSI. PMP 20 BBLS TMAC &amp; CIRC WELL CLEAN. ND PWR SWVL, NU TBG EQUIP. LD 20 JTS ON FLOAT, (38 TOTAL ON FLOAT). LND TBG ON HNGR W/276 JTS NEW 2 3/8" 4.7# L80 TBG @ 8769.39'. RD FLOOR &amp; TBG EQUIP. ND BOP, DROP BALL, NUWH. PMP OFF BIT W/40 BBLS TMAC @ 1100 PSI. WAIT 30 MIN FOR BIT TO FALL TO BTM. TURN WELL TO F.B.C.</p> <p>KB 14' HANGER 0.83' XN NIPPLE 1.33' TBG 276 JTS = 8752.44' XN NIPPLE @ 8767.27' EOT @ 8769.39' (314 JTS DLVRD - 38 JTS RTND)</p> <p>TWTR = 3984 BBLS TWR = 1188 BBLS TWLTR = 2796 SICP = 1250 PSI, SITP = 0 PSI.</p>
	11:15 - 11:15	0.00	PROD	50				<p>WELL TURNED TO SALES @ 1115 HR ON 10/11/2011 - 1240 MCFD, 1920 BWPD, CP 2500#, FTP 1800#, CK 20/64"</p>

WELL DETAILS: NBU 1022-7F4BS					
GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14517113.59	2064462.30	39° 57' 56.138 N	109° 29' 11.965 W



**Azimuths to True North**  
Magnetic North: 11.06°

**Magnetic Field**  
Strength: 52303.7snT  
Dip Angle: 65.84°  
Date: 07/08/2011  
Model: IGRF2010



PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 7 T10S R22E
System Datum: Mean Sea Level



**Scientific Drilling**  
Rocky Mountain Operations

## **US ROCKIES REGION PLANNING**

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

UINTAH\_NBU 1022-7E PAD

NBU 1022-7F4BS

OH

Design: OH

## **Standard Survey Report**

10 August, 2011

**Anadarko**   
Petroleum Corporation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-7F4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>MD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Well:</b>	NBU 1022-7F4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

<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 1022-7E PAD, SECTION 7 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,517,093.59 usft	<b>Latitude:</b>	39° 57' 55.940 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,064,464.04 usft	<b>Longitude:</b>	109° 29' 11.947 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.97 °

<b>Well</b>	NBU 1022-7F4BS, 1884' FNL 878' FWL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,517,113.59 usft	<b>Latitude:</b>	39° 57' 56.138 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,064,462.30 usft	<b>Longitude:</b>	109° 29' 11.965 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,243.00 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	07/08/11	11.06	65.84	52,304

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	98.30	

<b>Survey Program</b>	<b>Date</b>	08/10/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
10.00	2,420.00	Survey #1 WFT MWD SURFACE (OH)	MWD	MWD - Standard	
2,521.00	9,455.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	0.51	354.77	187.00	0.78	-0.07	-0.18	0.29	0.29	0.00
<b>FIRST WFT MWD SURFACE SURVEY</b>									
271.00	0.74	87.44	270.99	1.18	0.44	0.26	1.09	0.27	110.32
360.00	2.22	114.63	359.96	0.49	2.58	2.48	1.80	1.66	30.55
450.00	4.31	108.97	449.81	-1.34	7.36	7.48	2.35	2.32	-6.29
540.00	5.81	106.84	539.46	-3.76	14.92	15.31	1.68	1.87	-2.37
630.00	7.38	107.97	628.86	-6.86	24.78	25.51	1.75	1.74	1.26
720.00	9.00	105.59	717.94	-10.54	37.06	38.19	1.84	1.80	-2.64

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-7F4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>MD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Well:</b>	NBU 1022-7F4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

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)	
810.00	10.63	103.47	806.62	-14.36	51.91	53.44	1.85	1.81	-2.36	
900.00	12.00	100.22	894.87	-17.96	69.19	71.06	1.68	1.52	-3.61	
990.00	13.75	100.59	982.60	-21.58	88.92	91.10	1.95	1.94	0.41	
1,080.00	15.75	98.84	1,069.63	-25.42	111.50	114.00	2.28	2.22	-1.94	
1,170.00	17.00	100.97	1,155.98	-29.81	136.49	139.36	1.54	1.39	2.37	
1,260.00	18.19	100.84	1,241.77	-34.95	163.20	166.54	1.32	1.32	-0.14	
1,350.00	19.63	98.97	1,326.91	-39.95	191.93	195.69	1.74	1.60	-2.08	
1,440.00	20.75	100.59	1,411.38	-45.24	222.54	226.74	1.39	1.24	1.80	
1,530.00	21.31	97.72	1,495.39	-50.36	254.42	259.02	1.30	0.62	-3.19	
1,620.00	20.31	97.31	1,579.52	-54.55	286.12	290.99	1.12	-1.11	-0.46	
1,710.00	20.25	97.09	1,663.94	-58.46	317.07	322.18	0.11	-0.07	-0.24	
1,800.00	18.25	94.47	1,748.90	-61.48	346.57	351.82	2.42	-2.22	-2.91	
1,890.00	18.63	92.59	1,834.28	-63.23	374.99	380.19	0.78	0.42	-2.09	
1,980.00	18.31	93.22	1,919.65	-64.67	403.46	408.57	0.42	-0.36	0.70	
2,070.00	16.50	92.47	2,005.52	-66.02	430.35	435.37	2.03	-2.01	-0.83	
2,160.00	17.00	96.97	2,091.71	-68.16	456.18	461.24	1.54	0.56	5.00	
2,250.00	18.91	93.97	2,177.32	-70.77	483.79	488.94	2.36	2.12	-3.33	
2,340.00	17.44	98.34	2,262.83	-73.74	511.68	516.97	2.23	-1.63	4.86	
2,420.00	17.45	99.71	2,339.15	-77.50	535.37	540.95	0.51	0.01	1.71	
<b>LAST WFT MWD SURFACE SURVEY</b>										
2,521.00	15.74	97.03	2,435.94	-81.73	563.89	569.79	1.85	-1.69	-2.65	
<b>FIRST SDI MWD PRODUCTION SURVEY</b>										
2,612.00	16.70	92.80	2,523.32	-83.88	589.20	595.14	1.67	1.05	-4.65	
2,702.00	16.51	91.56	2,609.57	-84.86	614.90	620.71	0.45	-0.21	-1.38	
2,792.00	16.36	94.63	2,695.89	-86.23	640.32	646.06	0.98	-0.17	3.41	
2,883.00	16.82	95.56	2,783.11	-88.54	666.20	672.00	0.58	0.51	1.02	
2,973.00	18.17	97.65	2,868.94	-91.67	693.07	699.04	1.65	1.50	2.32	
3,064.00	19.57	98.53	2,955.05	-95.82	722.21	728.47	1.57	1.54	0.97	
3,154.00	19.75	99.41	3,039.80	-100.54	752.11	758.75	0.38	0.20	0.98	
3,245.00	18.90	98.92	3,125.68	-105.34	781.84	788.86	0.95	-0.93	-0.54	
3,335.00	18.18	97.93	3,211.00	-109.54	810.15	817.48	0.87	-0.80	-1.10	
3,426.00	16.71	95.33	3,297.82	-112.71	837.24	844.74	1.83	-1.62	-2.86	
3,516.00	17.00	97.41	3,383.95	-115.61	863.17	870.82	0.74	0.32	2.31	
3,607.00	17.50	97.97	3,470.86	-119.22	889.91	897.80	0.58	0.55	0.62	
3,698.00	15.65	96.04	3,558.07	-122.41	915.67	923.75	2.12	-2.03	-2.12	
3,788.00	15.48	96.56	3,644.77	-125.06	939.67	947.88	0.24	-0.19	0.58	
3,878.00	12.75	94.89	3,732.05	-127.28	961.50	969.81	3.07	-3.03	-1.86	
3,969.00	12.31	96.13	3,820.88	-129.17	981.15	989.52	0.57	-0.48	1.36	
4,060.00	10.46	95.07	3,910.09	-130.94	999.03	1,007.47	2.05	-2.03	-1.16	
4,150.00	8.88	93.58	3,998.81	-132.10	1,014.10	1,022.55	1.78	-1.76	-1.66	
4,241.00	7.91	94.28	4,088.83	-133.00	1,027.35	1,035.79	1.07	-1.07	0.77	
4,331.00	7.30	92.96	4,178.04	-133.76	1,039.24	1,047.66	0.70	-0.68	-1.47	
4,422.00	6.60	91.99	4,268.37	-134.24	1,050.24	1,058.62	0.78	-0.77	-1.07	

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-7E PAD  
**Well:** NBU 1022-7F4BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-7F4BS  
**TVD Reference:** GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)  
**MD Reference:** GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,512.00	5.84	93.71	4,357.84	-134.71	1,059.98	1,068.32	0.87	-0.84	1.91
4,603.00	4.66	102.54	4,448.46	-135.82	1,068.21	1,076.62	1.57	-1.30	9.70
4,693.00	3.87	117.39	4,538.21	-138.01	1,074.47	1,083.14	1.50	-0.88	16.50
4,784.00	2.78	127.22	4,629.05	-140.76	1,078.96	1,087.98	1.35	-1.20	10.80
4,874.00	2.73	133.92	4,718.95	-143.56	1,082.24	1,091.63	0.36	-0.06	7.44
4,965.00	2.42	150.34	4,809.86	-146.74	1,084.75	1,094.57	0.88	-0.34	18.04
5,056.00	2.37	154.48	4,900.78	-150.10	1,086.51	1,096.80	0.20	-0.05	4.55
5,146.00	2.65	154.16	4,990.69	-153.65	1,088.22	1,099.00	0.31	0.31	-0.36
5,237.00	1.14	164.33	5,081.64	-156.42	1,089.38	1,100.55	1.69	-1.66	11.18
5,327.00	0.70	177.16	5,171.63	-157.83	1,089.65	1,101.02	0.54	-0.49	14.26
5,418.00	0.74	184.87	5,262.62	-158.97	1,089.63	1,101.16	0.12	0.04	8.47
5,508.00	0.73	146.88	5,352.62	-160.03	1,089.89	1,101.58	0.53	-0.01	-42.21
5,599.00	0.97	155.54	5,443.61	-161.22	1,090.53	1,102.38	0.30	0.26	9.52
5,689.00	0.74	170.74	5,533.60	-162.48	1,090.94	1,102.97	0.36	-0.26	16.89
5,780.00	1.01	162.65	5,624.59	-163.83	1,091.27	1,103.49	0.33	0.30	-8.89
5,870.00	0.68	170.19	5,714.58	-165.11	1,091.60	1,104.00	0.39	-0.37	8.38
5,961.00	0.88	168.20	5,805.57	-166.33	1,091.83	1,104.41	0.22	0.22	-2.19
6,052.00	1.04	147.60	5,896.55	-167.71	1,092.42	1,105.19	0.42	0.18	-22.64
6,142.00	0.97	145.17	5,986.54	-169.03	1,093.29	1,106.24	0.09	-0.08	-2.70
6,233.00	1.09	148.99	6,077.53	-170.40	1,094.18	1,107.32	0.15	0.13	4.20
6,323.00	1.06	141.13	6,167.51	-171.78	1,095.14	1,108.47	0.17	-0.03	-8.73
6,414.00	1.14	158.79	6,258.49	-173.28	1,096.00	1,109.53	0.38	0.09	19.41
6,504.00	1.11	153.17	6,348.48	-174.89	1,096.71	1,110.47	0.13	-0.03	-6.24
6,595.00	1.28	156.45	6,439.46	-176.61	1,097.52	1,111.52	0.20	0.19	3.60
6,685.00	1.58	156.07	6,529.43	-178.67	1,098.42	1,112.71	0.33	0.33	-0.42
6,776.00	1.23	127.77	6,620.40	-180.41	1,099.70	1,114.23	0.84	-0.38	-31.10
6,866.00	1.41	113.26	6,710.38	-181.44	1,101.49	1,116.14	0.42	0.20	-16.12
6,957.00	1.40	119.95	6,801.35	-182.44	1,103.48	1,118.26	0.18	-0.01	7.35
7,047.00	2.02	82.06	6,891.31	-182.77	1,106.00	1,120.80	1.40	0.69	-42.10
7,138.00	1.97	85.96	6,982.26	-182.44	1,109.15	1,123.87	0.16	-0.05	4.29
7,228.00	1.00	116.87	7,072.23	-182.68	1,111.39	1,126.12	1.36	-1.08	34.34
7,319.00	0.75	230.65	7,163.22	-183.42	1,111.64	1,126.48	1.62	-0.27	125.03
7,410.00	0.66	199.34	7,254.22	-184.29	1,111.01	1,125.97	0.43	-0.10	-34.41
7,500.00	0.59	199.62	7,344.21	-185.22	1,110.68	1,125.78	0.08	-0.08	0.31
7,591.00	0.70	199.31	7,435.20	-186.18	1,110.34	1,125.59	0.12	0.12	-0.34
7,681.00	0.70	195.00	7,525.20	-187.23	1,110.01	1,125.42	0.06	0.00	-4.79
7,772.00	0.62	139.28	7,616.19	-188.14	1,110.19	1,125.72	0.68	-0.09	-61.23
7,862.00	0.65	145.08	7,706.19	-188.93	1,110.80	1,126.44	0.08	0.03	6.44
7,953.00	0.14	70.54	7,797.19	-189.32	1,111.20	1,126.89	0.69	-0.56	-81.91
8,043.00	0.09	219.26	7,887.19	-189.33	1,111.26	1,126.95	0.25	-0.06	165.24
8,134.00	0.26	42.25	7,978.18	-189.24	1,111.35	1,127.03	0.38	0.19	-194.52
8,224.00	0.03	5.45	8,068.18	-189.06	1,111.49	1,127.14	0.26	-0.26	-40.89
8,315.00	0.11	110.99	8,159.18	-189.07	1,111.58	1,127.23	0.13	0.09	115.98
8,407.00	0.17	94.00	8,251.18	-189.11	1,111.80	1,127.45	0.08	0.07	-18.47

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-7F4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>MD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Well:</b>	NBU 1022-7F4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,497.00	0.25	33.31	8,341.18	-188.96	1,112.04	1,127.67	0.25	0.09	-67.43
8,588.00	0.21	149.37	8,432.18	-188.93	1,112.23	1,127.86	0.43	-0.04	127.54
8,678.00	0.97	252.10	8,522.18	-189.31	1,111.59	1,127.28	1.15	0.84	114.14
8,769.00	0.92	214.68	8,613.17	-190.15	1,110.44	1,126.26	0.67	-0.05	-41.12
8,859.00	0.84	202.59	8,703.16	-191.35	1,109.78	1,125.78	0.22	-0.09	-13.43
8,950.00	0.60	213.46	8,794.15	-192.36	1,109.26	1,125.41	0.30	-0.26	11.95
9,040.00	0.81	189.12	8,884.14	-193.39	1,108.90	1,125.20	0.40	0.23	-27.04
9,131.00	0.54	191.55	8,975.14	-194.44	1,108.71	1,125.17	0.30	-0.30	2.67
9,221.00	0.36	156.09	9,065.13	-195.11	1,108.74	1,125.29	0.36	-0.20	-39.40
9,312.00	0.54	155.26	9,156.13	-195.77	1,109.03	1,125.68	0.20	0.20	-0.91
9,397.00	0.67	118.36	9,241.13	-196.37	1,109.64	1,126.36	0.47	0.15	-43.41
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
9,455.00	0.67	118.36	9,299.12	-196.69	1,110.24	1,127.00	0.00	0.00	0.00
<b>SDI PROJECTION TO TD</b>									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
187.00	187.00	0.78	-0.07	FIRST WFT MWD SURFACE SURVEY
2,420.00	2,339.15	-77.50	535.37	LAST WFT MWD SURFACE SURVEY

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



**Scientific Drilling**  
Rocky Mountain Operations

## **US ROCKIES REGION PLANNING**

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

UINTAH\_NBU 1022-7E PAD

NBU 1022-7F4BS

OH

**Survey: Survey #2 SDI MWD PRODUCTION**

## **Survey Report - Geographic**

10 August, 2011

**Anadarko**   
Petroleum Corporation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-7F4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>MD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Well:</b>	NBU 1022-7F4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

<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 1022-7E PAD, SECTION 7 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,517,093.59 usft	<b>Latitude:</b>	39° 57' 55.940 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,064,464.04 usft	<b>Longitude:</b>	109° 29' 11.947 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.97 °

<b>Well</b>	NBU 1022-7F4BS, 1884' FNL 878' FWL				
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b>	14,517,113.59 usft	<b>Latitude:</b> 39° 57' 56.138 N
	+E/-W	0.00 ft	<b>Easting:</b>	2,064,462.30 usft	<b>Longitude:</b> 109° 29' 11.965 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 5,243.00 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	07/08/11	11.06	65.84	52,304

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	98.30	

<b>Survey Program</b>	<b>Date</b>	08/10/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
10.00	2,420.00	Survey #1 WFPT MWD SURFACE (OH)	MWD	MWD - Standard	
2,521.00	9,455.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,420.00	17.45	99.71	2,339.15	-77.50	535.37	14,517,045.19	2,064,998.90	39° 57' 55.372 N	109° 29' 5.088 W
2,521.00	15.74	97.03	2,435.94	-81.73	563.89	14,517,041.44	2,065,027.49	39° 57' 55.330 N	109° 29' 4.722 W
<b>FIRST SDI MWD PRODUCTION SURVEY</b>									
2,612.00	16.70	92.80	2,523.32	-83.88	589.20	14,517,039.72	2,065,052.84	39° 57' 55.309 N	109° 29' 4.397 W
2,702.00	16.51	91.56	2,609.57	-84.86	614.90	14,517,039.18	2,065,078.55	39° 57' 55.300 N	109° 29' 4.067 W
2,792.00	16.36	94.63	2,695.89	-86.23	640.32	14,517,038.24	2,065,103.99	39° 57' 55.286 N	109° 29' 3.740 W
2,883.00	16.82	95.56	2,783.11	-88.54	666.20	14,517,036.37	2,065,129.90	39° 57' 55.263 N	109° 29' 3.408 W
2,973.00	18.17	97.65	2,868.94	-91.67	693.07	14,517,033.70	2,065,156.82	39° 57' 55.232 N	109° 29' 3.063 W
3,064.00	19.57	98.53	2,955.05	-95.82	722.21	14,517,030.04	2,065,186.02	39° 57' 55.191 N	109° 29' 2.688 W
3,154.00	19.75	99.41	3,039.80	-100.54	752.11	14,517,025.83	2,065,216.01	39° 57' 55.144 N	109° 29' 2.304 W
3,245.00	18.90	98.92	3,125.68	-105.34	781.84	14,517,021.53	2,065,245.81	39° 57' 55.097 N	109° 29' 1.922 W

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-7E PAD  
**Well:** NBU 1022-7F4BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-7F4BS  
**TVD Reference:** GL 5243' & KB 14' @ 5257.00ft (ENSGN 139)  
**MD Reference:** GL 5243' & KB 14' @ 5257.00ft (ENSGN 139)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,335.00	18.18	97.93	3,211.00	-109.54	810.15	14,517,017.82	2,065,274.19	39° 57' 55.056 N	109° 29' 1.559 W
3,426.00	16.71	95.33	3,297.82	-112.71	837.24	14,517,015.10	2,065,301.32	39° 57' 55.024 N	109° 29' 1.211 W
3,516.00	17.00	97.41	3,383.95	-115.61	863.17	14,517,012.65	2,065,327.30	39° 57' 54.996 N	109° 29' 0.878 W
3,607.00	17.50	97.97	3,470.86	-119.22	889.91	14,517,009.49	2,065,354.10	39° 57' 54.960 N	109° 29' 0.534 W
3,698.00	15.65	96.04	3,558.07	-122.41	915.67	14,517,006.74	2,065,379.91	39° 57' 54.928 N	109° 29' 0.203 W
3,788.00	15.48	96.56	3,644.77	-125.06	939.67	14,517,004.49	2,065,403.95	39° 57' 54.902 N	109° 28' 59.895 W
3,878.00	12.75	94.89	3,732.05	-127.28	961.50	14,517,002.65	2,065,425.82	39° 57' 54.880 N	109° 28' 59.614 W
3,969.00	12.31	96.13	3,820.88	-129.17	981.15	14,517,001.09	2,065,445.50	39° 57' 54.861 N	109° 28' 59.362 W
4,060.00	10.46	95.07	3,910.09	-130.94	999.03	14,516,999.62	2,065,463.40	39° 57' 54.844 N	109° 28' 59.132 W
4,150.00	8.88	93.58	3,998.81	-132.10	1,014.10	14,516,998.72	2,065,478.49	39° 57' 54.833 N	109° 28' 58.939 W
4,241.00	7.91	94.28	4,088.83	-133.00	1,027.35	14,516,998.04	2,065,491.76	39° 57' 54.824 N	109° 28' 58.769 W
4,331.00	7.30	92.96	4,178.04	-133.76	1,039.24	14,516,997.49	2,065,503.65	39° 57' 54.816 N	109° 28' 58.616 W
4,422.00	6.60	91.99	4,268.37	-134.24	1,050.24	14,516,997.19	2,065,514.66	39° 57' 54.811 N	109° 28' 58.475 W
4,512.00	5.84	93.71	4,357.84	-134.71	1,059.98	14,516,996.88	2,065,524.41	39° 57' 54.807 N	109° 28' 58.349 W
4,603.00	4.66	102.54	4,448.46	-135.82	1,068.21	14,516,995.92	2,065,532.65	39° 57' 54.796 N	109° 28' 58.244 W
4,693.00	3.87	117.39	4,538.21	-138.01	1,074.47	14,516,993.84	2,065,538.95	39° 57' 54.774 N	109° 28' 58.163 W
4,784.00	2.78	127.22	4,629.05	-140.76	1,078.96	14,516,991.17	2,065,543.48	39° 57' 54.747 N	109° 28' 58.106 W
4,874.00	2.73	133.92	4,718.95	-143.56	1,082.24	14,516,988.42	2,065,546.81	39° 57' 54.719 N	109° 28' 58.064 W
4,965.00	2.42	150.34	4,809.86	-146.74	1,084.75	14,516,985.29	2,065,549.38	39° 57' 54.688 N	109° 28' 58.031 W
5,056.00	2.37	154.48	4,900.78	-150.10	1,086.51	14,516,981.95	2,065,551.20	39° 57' 54.654 N	109° 28' 58.009 W
5,146.00	2.65	154.16	4,990.69	-153.65	1,088.22	14,516,978.43	2,065,552.97	39° 57' 54.619 N	109° 28' 57.987 W
5,237.00	1.14	164.33	5,081.64	-156.42	1,089.38	14,516,975.68	2,065,554.17	39° 57' 54.592 N	109° 28' 57.972 W
5,327.00	0.70	177.16	5,171.83	-157.83	1,089.65	14,516,974.27	2,065,554.47	39° 57' 54.578 N	109° 28' 57.968 W
5,418.00	0.74	184.87	5,262.62	-158.97	1,089.63	14,516,973.13	2,065,554.46	39° 57' 54.567 N	109° 28' 57.969 W
5,508.00	0.73	146.88	5,352.62	-160.03	1,089.89	14,516,972.08	2,065,554.75	39° 57' 54.556 N	109° 28' 57.965 W
5,599.00	0.97	155.54	5,443.61	-161.22	1,090.53	14,516,970.90	2,065,555.40	39° 57' 54.545 N	109° 28' 57.957 W
5,689.00	0.74	170.74	5,533.60	-162.48	1,090.94	14,516,969.64	2,065,555.83	39° 57' 54.532 N	109° 28' 57.952 W
5,780.00	1.01	162.65	5,624.59	-163.83	1,091.27	14,516,968.30	2,065,556.19	39° 57' 54.519 N	109° 28' 57.948 W
5,870.00	0.68	170.19	5,714.58	-165.11	1,091.60	14,516,967.03	2,065,556.54	39° 57' 54.506 N	109° 28' 57.943 W
5,961.00	0.88	168.20	5,805.57	-166.33	1,091.83	14,516,965.81	2,065,556.79	39° 57' 54.494 N	109° 28' 57.940 W
6,052.00	1.04	147.60	5,896.55	-167.71	1,092.42	14,516,964.44	2,065,557.40	39° 57' 54.480 N	109° 28' 57.933 W
6,142.00	0.97	145.17	5,986.54	-169.03	1,093.29	14,516,963.14	2,065,558.30	39° 57' 54.467 N	109° 28' 57.922 W
6,233.00	1.09	148.99	6,077.53	-170.40	1,094.18	14,516,961.78	2,065,559.21	39° 57' 54.454 N	109° 28' 57.910 W
6,323.00	1.06	141.13	6,167.51	-171.78	1,095.14	14,516,960.42	2,065,560.19	39° 57' 54.440 N	109° 28' 57.898 W
6,414.00	1.14	158.79	6,258.49	-173.28	1,096.00	14,516,958.93	2,065,561.07	39° 57' 54.425 N	109° 28' 57.887 W
6,504.00	1.11	153.17	6,348.48	-174.89	1,096.71	14,516,957.33	2,065,561.82	39° 57' 54.409 N	109° 28' 57.878 W
6,595.00	1.28	156.45	6,439.46	-176.61	1,097.52	14,516,955.63	2,065,562.65	39° 57' 54.392 N	109° 28' 57.867 W
6,685.00	1.58	156.07	6,529.43	-178.67	1,098.42	14,516,953.59	2,065,563.59	39° 57' 54.372 N	109° 28' 57.856 W
6,776.00	1.23	127.77	6,620.40	-180.41	1,099.70	14,516,951.87	2,065,564.90	39° 57' 54.355 N	109° 28' 57.839 W
6,866.00	1.41	113.26	6,710.38	-181.44	1,101.49	14,516,950.87	2,065,566.70	39° 57' 54.345 N	109° 28' 57.816 W
6,957.00	1.40	119.95	6,801.35	-182.44	1,103.48	14,516,949.91	2,065,568.71	39° 57' 54.335 N	109° 28' 57.791 W
7,047.00	2.02	82.06	6,891.31	-182.77	1,106.00	14,516,949.62	2,065,571.24	39° 57' 54.332 N	109° 28' 57.758 W
7,138.00	1.97	85.96	6,982.26	-182.44	1,109.15	14,516,950.00	2,065,574.38	39° 57' 54.335 N	109° 28' 57.718 W
7,228.00	1.00	116.87	7,072.23	-182.68	1,111.39	14,516,949.80	2,065,576.63	39° 57' 54.332 N	109° 28' 57.689 W
7,319.00	0.75	230.65	7,163.22	-183.42	1,111.64	14,516,949.06	2,065,576.89	39° 57' 54.325 N	109° 28' 57.686 W
7,410.00	0.66	199.34	7,254.22	-184.29	1,111.01	14,516,948.18	2,065,576.27	39° 57' 54.317 N	109° 28' 57.694 W
7,500.00	0.59	199.62	7,344.21	-185.22	1,110.68	14,516,947.25	2,065,575.96	39° 57' 54.307 N	109° 28' 57.698 W
7,591.00	0.70	199.31	7,435.20	-186.18	1,110.34	14,516,946.28	2,065,575.63	39° 57' 54.298 N	109° 28' 57.703 W
7,681.00	0.70	195.00	7,525.20	-187.23	1,110.01	14,516,945.22	2,065,575.33	39° 57' 54.287 N	109° 28' 57.707 W
7,772.00	0.62	139.28	7,616.19	-188.14	1,110.19	14,516,944.32	2,065,575.52	39° 57' 54.278 N	109° 28' 57.705 W
7,862.00	0.65	145.08	7,706.19	-188.93	1,110.80	14,516,943.54	2,065,576.14	39° 57' 54.271 N	109° 28' 57.697 W
7,953.00	0.14	70.54	7,797.19	-189.32	1,111.20	14,516,943.16	2,065,576.55	39° 57' 54.267 N	109° 28' 57.692 W
8,043.00	0.09	219.26	7,887.19	-189.33	1,111.26	14,516,943.14	2,065,576.61	39° 57' 54.267 N	109° 28' 57.691 W
8,134.00	0.26	42.25	7,978.18	-189.24	1,111.35	14,516,943.24	2,065,576.70	39° 57' 54.268 N	109° 28' 57.690 W
8,224.00	0.03	5.45	8,068.18	-189.06	1,111.49	14,516,943.42	2,065,576.84	39° 57' 54.269 N	109° 28' 57.688 W

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-7F4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Site:</b>	UINTAH_NBU 1022-7E PAD	<b>MD Reference:</b>	GL 5243' & KB 14' @ 5257.00ft (ENSIGN 139)
<b>Well:</b>	NBU 1022-7F4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,315.00	0.11	110.99	8,159.18	-189.07	1,111.58	14,516,943.41	2,065,576.92	39° 57' 54.269 N	109° 28' 57.687 W
8,407.00	0.17	94.00	8,251.18	-189.11	1,111.80	14,516,943.37	2,065,577.14	39° 57' 54.269 N	109° 28' 57.684 W
8,497.00	0.25	33.31	8,341.18	-188.96	1,112.04	14,516,943.53	2,065,577.38	39° 57' 54.270 N	109° 28' 57.681 W
8,588.00	0.21	149.37	8,432.18	-188.93	1,112.23	14,516,943.56	2,065,577.57	39° 57' 54.271 N	109° 28' 57.678 W
8,678.00	0.97	252.10	8,522.18	-189.31	1,111.59	14,516,943.17	2,065,576.94	39° 57' 54.267 N	109° 28' 57.687 W
8,769.00	0.92	214.68	8,613.17	-190.15	1,110.44	14,516,942.32	2,065,575.80	39° 57' 54.259 N	109° 28' 57.701 W
8,859.00	0.84	202.59	8,703.16	-191.35	1,109.78	14,516,941.10	2,065,575.16	39° 57' 54.247 N	109° 28' 57.710 W
8,950.00	0.60	213.46	8,794.15	-192.36	1,109.26	14,516,940.08	2,065,574.66	39° 57' 54.237 N	109° 28' 57.716 W
9,040.00	0.81	189.12	8,884.14	-193.39	1,108.90	14,516,939.05	2,065,574.31	39° 57' 54.227 N	109° 28' 57.721 W
9,131.00	0.54	191.55	8,975.14	-194.44	1,108.71	14,516,937.99	2,065,574.14	39° 57' 54.216 N	109° 28' 57.724 W
9,221.00	0.36	156.09	9,065.13	-195.11	1,108.74	14,516,937.32	2,065,574.18	39° 57' 54.210 N	109° 28' 57.723 W
9,312.00	0.54	155.26	9,156.13	-195.77	1,109.03	14,516,936.67	2,065,574.49	39° 57' 54.203 N	109° 28' 57.719 W
9,397.00	0.67	118.36	9,241.13	-196.37	1,109.64	14,516,936.08	2,065,575.11	39° 57' 54.197 N	109° 28' 57.712 W
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
9,455.00	0.67	118.36	9,299.12	-196.69	1,110.24	14,516,935.77	2,065,575.71	39° 57' 54.194 N	109° 28' 57.704 W
<b>SDI PROJECTION TO TD</b>									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,521.00	2,435.94	-81.73	563.89	FIRST SDI MWD PRODUCTION SURVEY
9,397.00	9,241.13	-196.37	1,109.64	LAST SDI MWD PRODUCTION SURVEY
9,455.00	9,299.12	-196.69	1,110.24	SDI PROJECTION TO TD

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