

**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 921-3514CS	
<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> 720 929-6007	
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> Kathy.SchneebeckDulnoan@anadarko.com	
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> ML 22582			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>	
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>	
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b>			<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>	
<b>20. LOCATION OF WELL</b>	<b>FOOTAGES</b>	<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>	
<b>LOCATION AT SURFACE</b>	2082 FSL 811 FEL	NESE	35	9.0 S	21.0 E	S	
<b>Top of Uppermost Producing Zone</b>	1577 FSL 497 FEL	NESE	35	9.0 S	21.0 E	S	
<b>At Total Depth</b>	1577 FSL 497 FEL	NESE	35	9.0 S	21.0 E	S	
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 497			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 321	
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 502			<b>26. PROPOSED DEPTH</b> MD: 9633 TVD: 9567	
<b>27. ELEVATION - GROUND LEVEL</b> 5059			<b>28. BOND NUMBER</b> 22013542			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> Permit #43-8496	

**ATTACHMENTS**

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

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

<b>NAME</b> Danielle Piernot	<b>TITLE</b> Regulatory Analyst	<b>PHONE</b> 720 929-6156
<b>SIGNATURE</b>	<b>DATE</b> 11/23/2010	<b>EMAIL</b> gnbregulatory@anadarko.com
<b>API NUMBER ASSIGNED</b> 43047513720000	<b>APPROVAL</b>   Permit Manager	

<b>Proposed Hole, Casing, and Cement</b>						
<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>		
Prod	7.875	4.5	0	9633		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade I-80 Buttress	9633	11.6			

**Proposed Hole, Casing, and Cement**

<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>		
Surf	11	8.625	0	2500		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade J-55 LT&C	2500	28.0			

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

### NBU 921-3514CS

Surface: 2082 FSL / 811 FEL NESE  
BHL: 1577 FSL / 497 FEL NESE

Section 35 T9S R21E

Unitah County, Utah  
Mineral Lease: ST UT ML 22582

### 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	1386	
Birds Nest	1673	Water
Mahogany	2050	Water
Wasatch	4640	Gas
Mesaverde	7346	Gas
MVU2	8233	Gas
MVL1	8788	Gas
TVD	9567	
TD	9633	

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 9,567' TVD, approximately equals 5,861 psi (calculated at 0.61 psi/foot).

Maximum anticipated surface pressure equals approximately 3,756 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 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 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. 16 of 24*

***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 2,500	28.00	IJ-55	LTC	0.87	1.61	4.92
PRODUCTION	4-1/2"	0 to 9,633	11.60	I-80	BTC	2.01	1.06	2.85

\*Burst on surface casing is controlled by fracture gradient as shoe with gas gradient above. D.F. = 2.15

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 3,756 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 5,861 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	2,000'	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	4,133'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	300	10%	11.00	3.38
	TAIL	5,500'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,060	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.

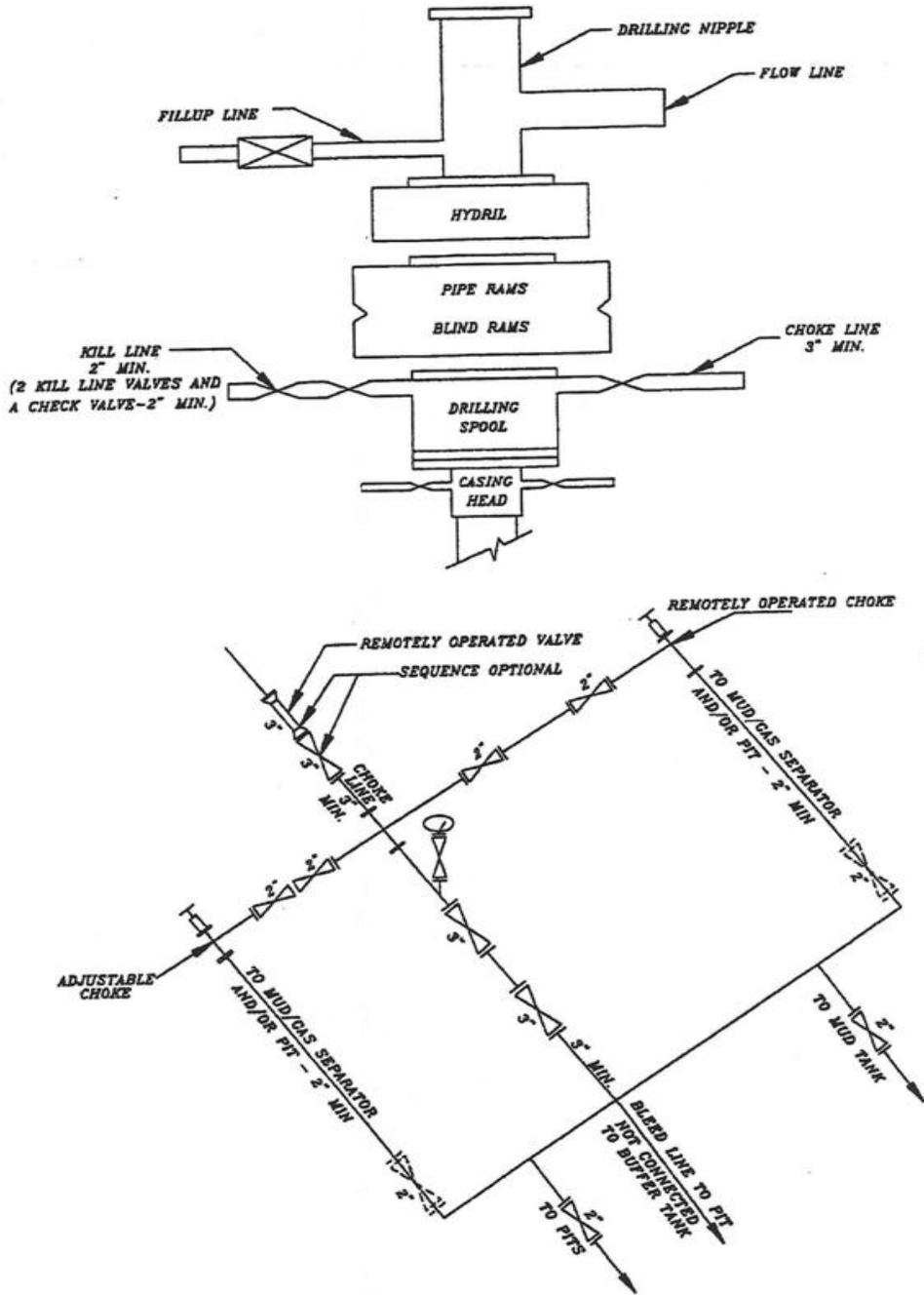
Surveys will be taken at 1,000' minimum intervals.

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

**DRILLING ENGINEER:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
 John Huycke / Emile Goodwin

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

### EXHIBIT A NBU 921-35I4CS



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

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

WEST - 80.00 (G.L.O.)

N89°47'37"W - 2646.18' (Meas.)

N89°47'25"W - 2645.99' (Meas.)

Found 1" Aluminum Cap on 5/8" Rebar. Pile of Stones.

Found Uintah County Aluminum Cap in Pile of Stones.

Found Uintah County Aluminum Cap in Pile of Stones.

NBU 921-3514CS (Surface Position)  
 NAD 83 LATITUDE = 39.991008° (39° 59' 27.629")  
 LONGITUDE = 109.512367° (109° 30' 44.521")  
 NAD 27 LATITUDE = 39.991043° (39° 59' 27.755")  
 LONGITUDE = 109.511680° (109° 30' 42.048")

NBU 921-3514CS (Bottom Hole)  
 NAD 83 LATITUDE = 39.989635° (39° 59' 22.686")  
 LONGITUDE = 109.511244° (109° 30' 40.479")  
 NAD 27 LATITUDE = 39.989670° (39° 59' 22.812")  
 LONGITUDE = 109.510557° (109° 30' 38.007")

Found 1 1/2" Aluminum Cap on 5/8" Rebar in Pile of Stones.

N00°21'17"W - 2645.28' (Meas.)

N00°03'41"W - 2641.51' (Meas.)

N00°12'59"E  
 2703.72' (Measured to C.C.) N00°03"W - 81.10 (G.L.O.)  
 2702.74' (Measured to True Corner)

Found Uintah County Surveyor 1 1/2" Aluminum Cap on 5/8" Rebar in Pile of Stones.

35

**WELL LOCATION:  
 NBU 921-3514CS**  
 ELEV. UNGRADED GROUND = 5058.9'

Well Surface Position

497'

2082'

1577'

1.51 (G.L.O.)  
 99.10'

2612.15' (Measured)

N00°00'34"E (Basis of Bearings)

N00°03"E - 79.80 (G.L.O.)

Found 1977 Brass Cap in Pile of Stones.

Found 1977 Brass Cap

2678.51' (Meas.)

S89°06'03"W

S89°06'W - 40.59 (G.L.O.)

LOT 4

LOT 3

LOT 2

LOT 1

2.50 (G.L.O.)  
 164.44'

Found 1977 Brass Cap in Pile of Stones.

2501.71'

S89°07'53"W - 2666.15' (Meas.)

S89°06'W - 40.39 (G.L.O.)

Found 1977 Brass Cap in Pile of Stones.

2.19 (G.L.O.)  
 144.58'

Found 1977 Brass Cap

2543.51'

S89°14'29"W - 2688.09' (Meas.)

S89°12'W - 40.73 (G.L.O.)

Found 1977 Brass Cap

1.51 (G.L.O.)  
 99.10'

Found 1977 Brass Cap

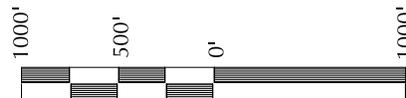
2579.41'

S89°06'03"W

S89°06'W - 40.59 (G.L.O.)

**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains.  
 1 chain = 66 feet.
- 3. The Bottom of hole bears S32°08'15"E 591.04' 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 1/4 of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



SCALE

**SURVEYOR'S CERTIFICATE**

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

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

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

**WELL PAD: NBU 921-351**

**NBU 921-3514CS  
 WELL PLAT**

**1577' FSL, 497' FEL (Bottom Hole)**

**NE 1/4 SE 1/4 OF SECTION 35, T9S, R21E,  
 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**

(435) 789-1365

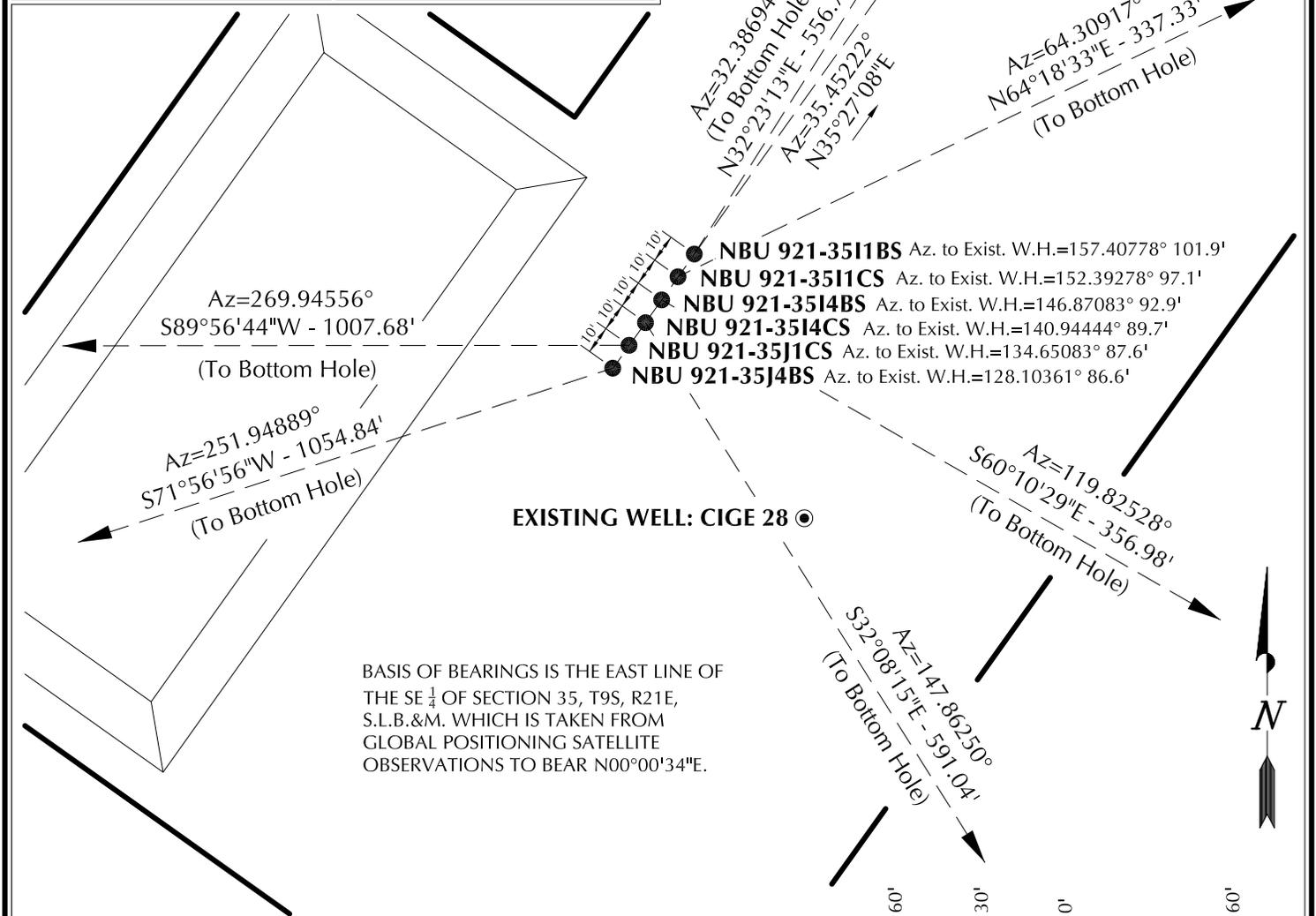
**ENGINEERING & LAND SURVEYING, INC.**  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 09-27-10	SURVEYED BY: D.J.S.	SHEET NO: <b>4</b>
DATE DRAWN: 09-29-10	DRAWN BY: M.W.W.	
SCALE: 1" = 1000'		4 OF 18

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 921-35I1BS	39°59'27.871"	109°30'44.298"	39°59'27.997"	109°30'41.825"	2106' FSL 794' FEL	39°59'32.518"	109°30'40.471"	39°59'32.644"	109°30'37.998"	2572' FSL 496' FEL
NBU 921-35I1CS	39°59'27.791"	109°30'44.373"	39°59'27.917"	109°30'41.900"	2098' FSL 800' FEL	39°59'29.237"	109°30'40.469"	39°59'29.363"	109°30'37.997"	2240' FSL 496' FEL
NBU 921-35I4BS	39°59'27.709"	109°30'44.447"	39°59'27.835"	109°30'41.974"	2090' FSL 806' FEL	39°59'25.957"	109°30'40.467"	39°59'26.083"	109°30'37.995"	1908' FSL 496' FEL
NBU 921-35I4CS	39°59'27.629"	109°30'44.521"	39°59'27.755"	109°30'42.048"	2082' FSL 811' FEL	39°59'22.686"	109°30'40.479"	39°59'22.812"	109°30'38.007"	1577' FSL 497' FEL
NBU 921-35J1CS	39°59'27.549"	109°30'44.595"	39°59'27.675"	109°30'42.123"	2074' FSL 817' FEL	39°59'27.534"	109°30'57.539"	39°59'27.660"	109°30'55.066"	2086' FSL 1825' FEL
NBU 921-35J4BS	39°59'27.469"	109°30'44.670"	39°59'27.595"	109°30'42.198"	2066' FSL 823' FEL	39°59'24.234"	109°30'57.550"	39°59'24.360"	109°30'55.077"	1752' FSL 1826' FEL
CIGE 28	39°59'26.941"	109°30'43.794"	39°59'27.067"	109°30'41.322"	2011' FSL 755' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 921-35I1BS	470.2'	298.2'	NBU 921-35I1CS	146.2'	304.0'	NBU 921-35I4BS	-177.5'	309.7'	NBU 921-35I4CS	-500.5'	314.4'
NBU 921-35J1CS	-1.0'	-1,007.7'	NBU 921-35J4BS	-326.9'	-1,002.9'						



BASIS OF BEARINGS IS THE EAST LINE OF THE SE ¼ OF SECTION 35, T9S, R21E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°00'34\"E.

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

**WELL PAD - NBU 921-35I**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 921-35I1BS, NBU 921-35I1CS, NBU 921-35I4BS, NBU 921-35I4CS, NBU 921-35J1CS & NBU 921-35J4BS LOCATED IN SECTION 35, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.

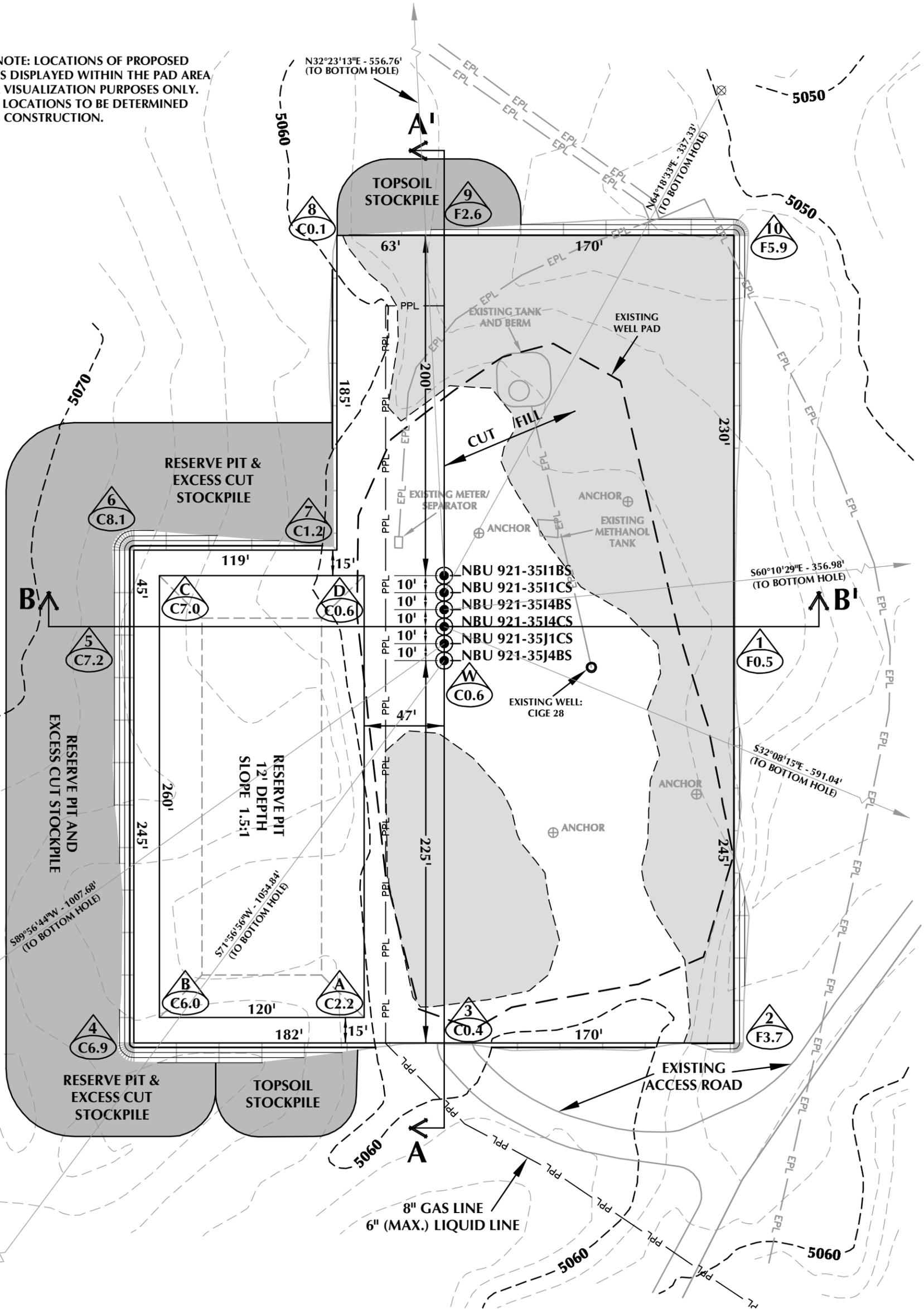


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Fax 307-674-0182

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

DATE SURVEYED: 09-27-10	SURVEYED BY: D.J.S.	SHEET NO: <b>7</b>
DATE DRAWN: 09-29-10	DRAWN BY: M.W.W.	
SCALE: 1" = 60'	Date Last Revised:	7 OF 18

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



**WELL PAD - NBU 921-35I DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5058.9'  
 FINISHED GRADE ELEVATION = 5058.3'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.56 ACRES  
 TOTAL DAMAGE AREA = 6.49 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 7,999 C.Y.  
 TOTAL FILL FOR WELL PAD = 4,064 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,651 C.Y.  
 EXCESS MATERIAL = 3,935 C.Y.

**RESERVE PIT QUANTITIES**

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

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

WELL PAD - NBU 921-35I

WELL PAD - LOCATION LAYOUT  
 NBU 921-351BS, NBU 921-351CS,  
 NBU 921-3514BS, NBU 921-3514CS,  
 NBU 921-351JCS & NBU 921-351JBS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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

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

(435) 789-1365

**WELL PAD LEGEND**

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



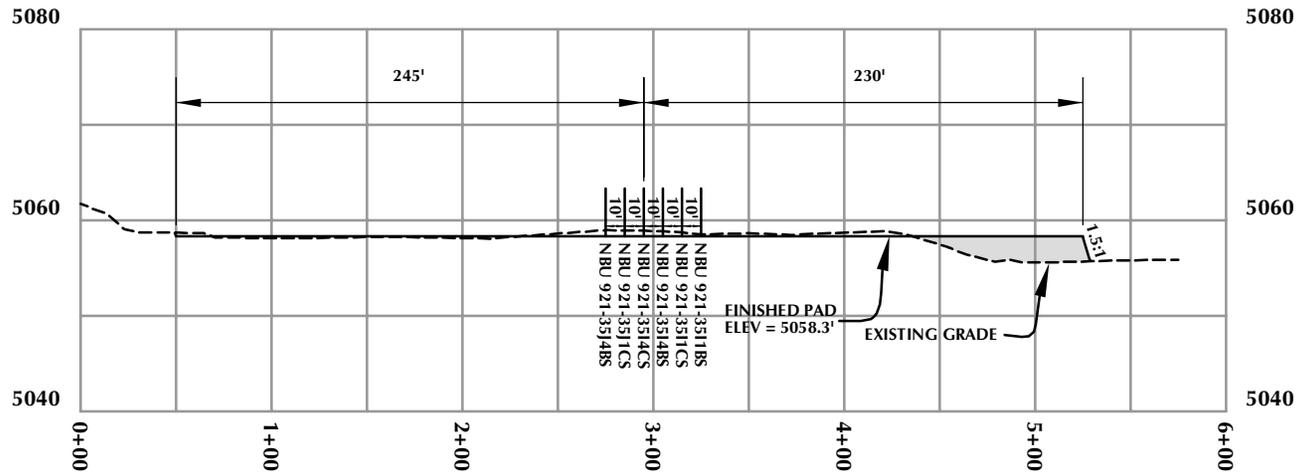
HORIZONTAL 0 30 60 1" = 60'  
 2' CONTOURS

Scale: 1"=60' Date: 10/15/10 SHEET NO:

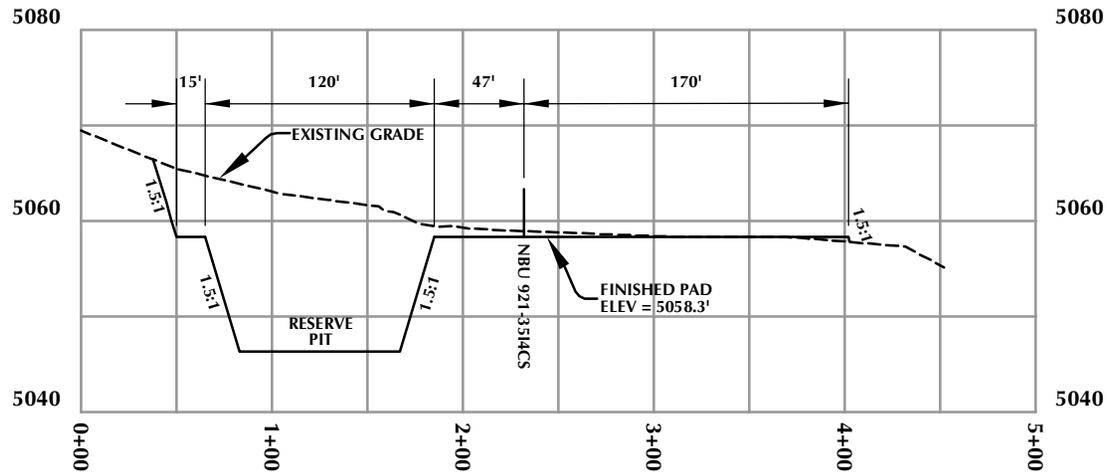
REVISED:

**8**

8 OF 18



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 921-351**

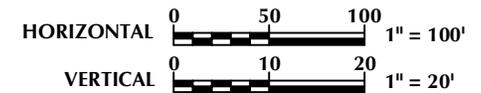
**WELL PAD - CROSS SECTIONS**  
NBU 921-3511BS, NBU 921-3511CS,  
NBU 921-3514BS, NBU 921-3514CS,  
NBU 921-3511CS & NBU 921-3514BS  
LOCATED IN SECTION 35, T9S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH



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2155 North Main Street  
Sheridan, WY 82801  
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**TIMBERLINE**  
ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365



Scale: 1"=100'

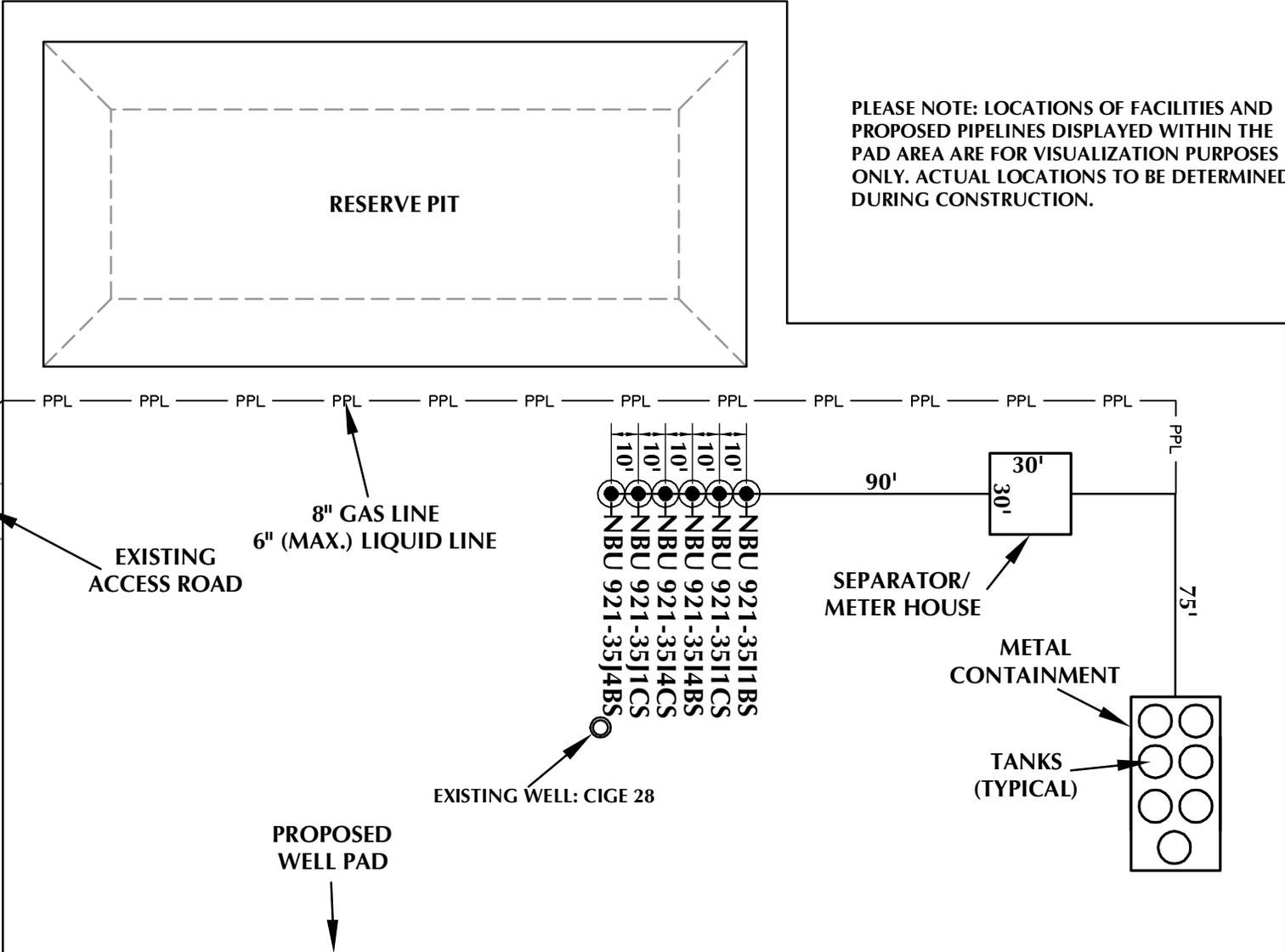
Date: 10/15/10

SHEET NO:

REVISED:

**9**

9 OF 18



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

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

**WELL PAD - NBU 921-351**

**WELL PAD - FACILITIES DIAGRAM**  
NBU 921-3511BS, NBU 921-3511CS,  
NBU 921-3514BS, NBU 921-3514CS,  
NBU 921-3511CS & NBU 921-3514BS  
LOCATED IN SECTION 35, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

**WELL PAD LEGEND**

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



HORIZONTAL 0 30' 60' 1" = 60'

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

(435) 789-1365

Scale: 1"=60'

Date: 10/19/10

SHEET NO:

REVISED:

**10** 10 OF 18

APW:unc:43047513720000: 10/19/2010 6:14:55 PM

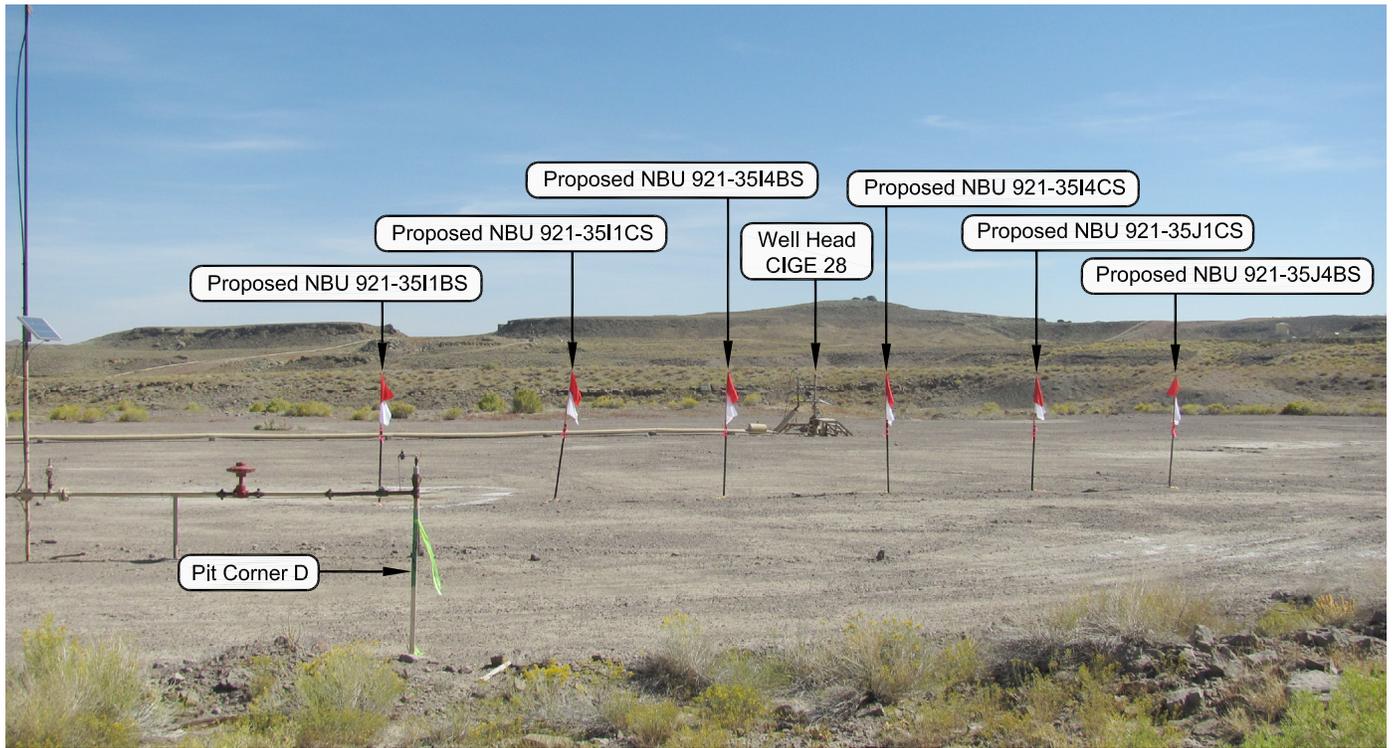


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: SOUTHEASTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: NORTHEASTERLY

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

**WELL PAD - NBU 921-351**

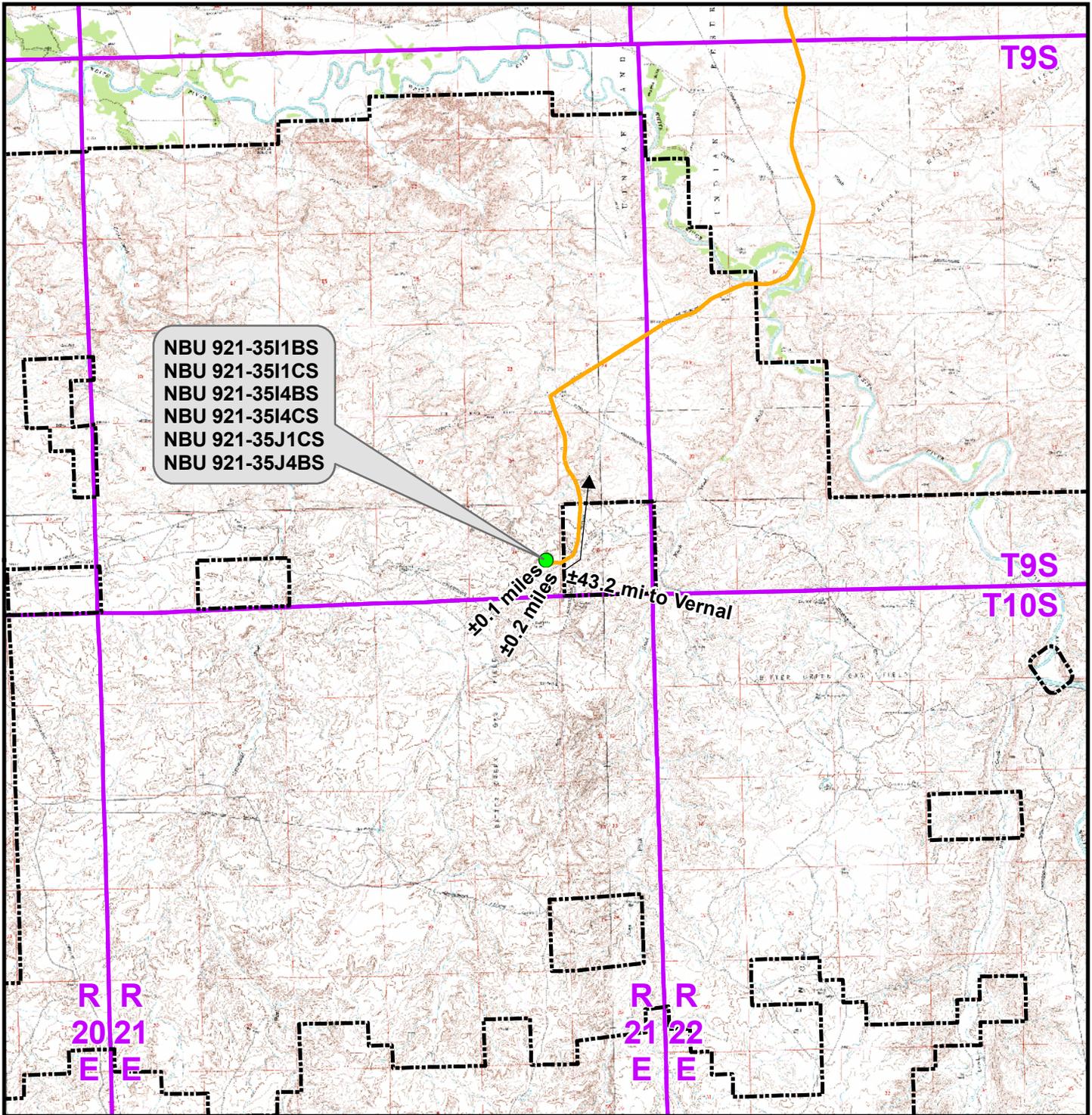
**LOCATION PHOTOS**  
 NBU 921-3511BS, NBU 921-3511CS,  
 NBU 921-3514BS, NBU 921-3514CS,  
 NBU 921-35J1CS & NBU 921-35J4BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah.



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

DATE PHOTOS TAKEN: 09-27-10	PHOTOS TAKEN BY: D.J.S.	SHEET NO: <b>11</b>
DATE DRAWN: 09-29-10	DRAWN BY: M.W.W.	
Date Last Revised:		11 OF 18



**Legend**

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

Distance From Well Pad - NBU 921-35I To Unit Boundary: ±794ft

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

**WELL PAD - NBU 921-35I**

**TOPO A**

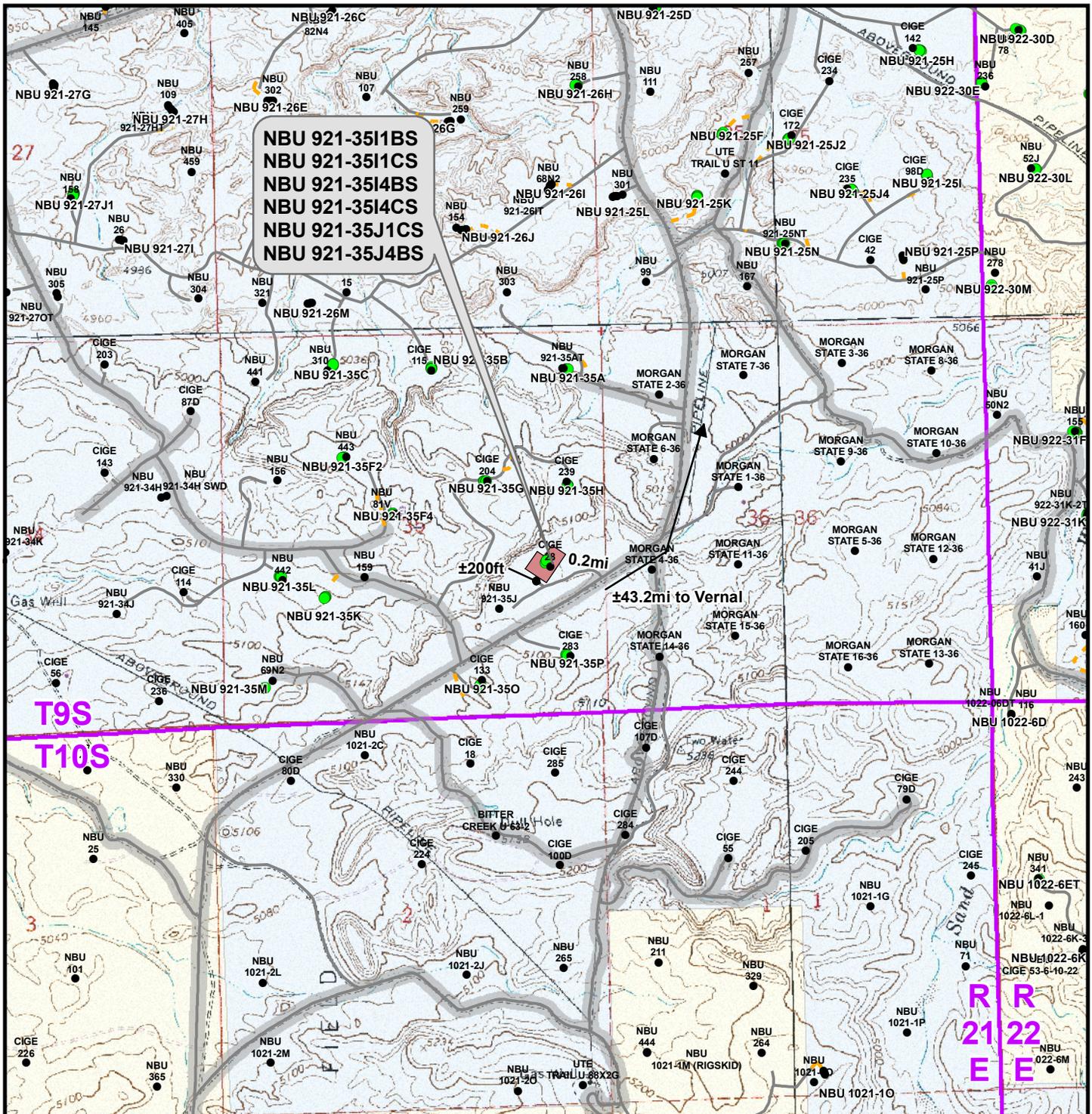
NBU 921-35I1BS, NBU 921-35I1CS,  
 NBU 921-35I4BS, NBU 921-35I4CS,  
 NBU 921-35J1CS & NBU 921-35J4BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: CPS	Date: 19 Oct 2010	<b>12</b>
Revised:	Date:	



**NBU 921-351BS  
 NBU 921-351CS  
 NBU 921-3514BS  
 NBU 921-3514CS  
 NBU 921-35J1CS  
 NBU 921-35J4BS**

**±200ft**  
**0.2mi**  
**±43.2mi to Vernal**

**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

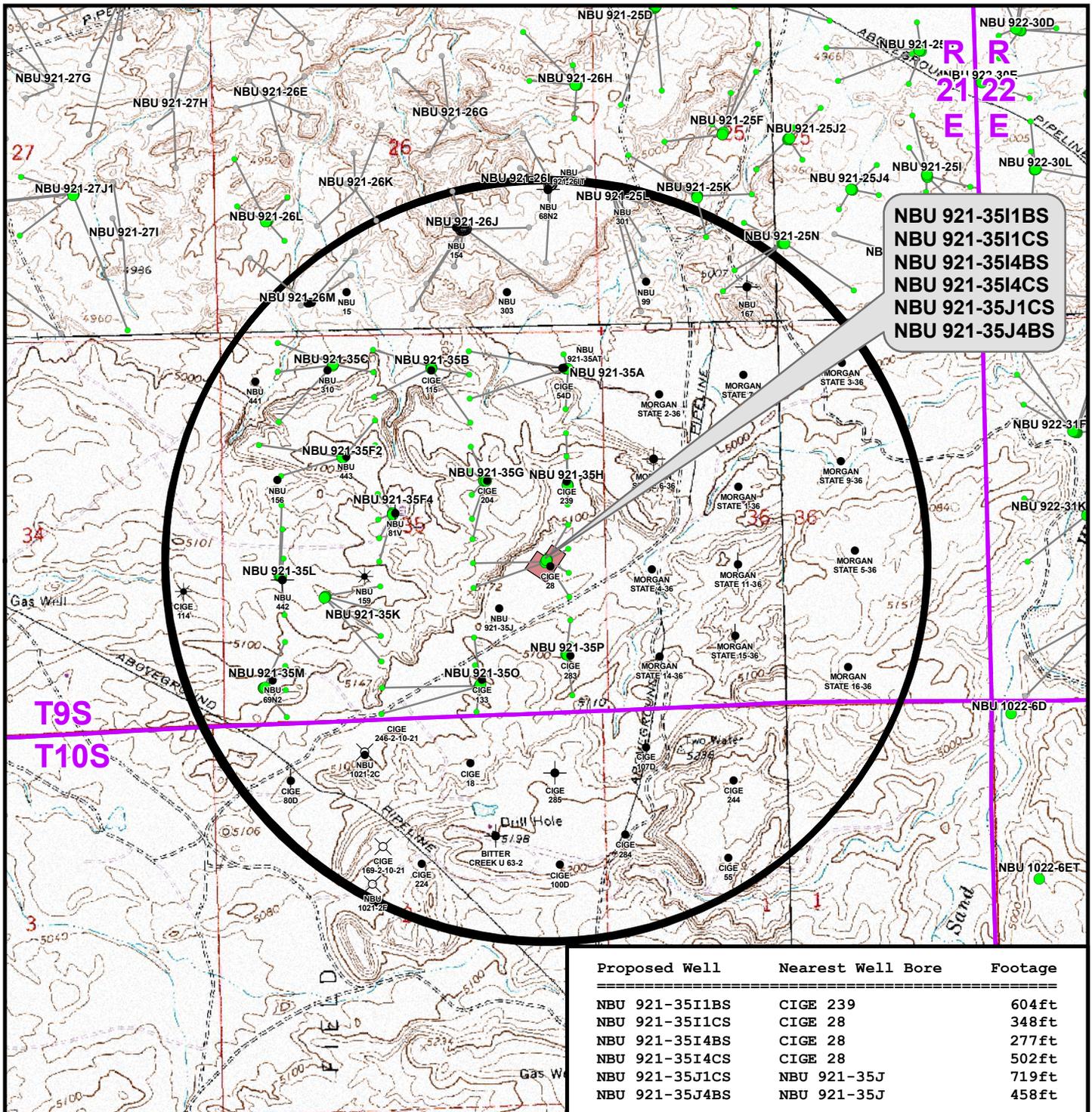
**WELL PAD - NBU 921-351**

**TOPO B**  
 NBU 921-3511BS, NBU 921-3511CS,  
 NBU 921-3514BS, NBU 921-3514CS,  
 NBU 921-35J1CS & NBU 921-35J4BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: <b>13</b>
Drawn: CPS	Date: 19 Oct 2010	<b>13</b> of 18
Revised:	Date:	



Proposed Well	Nearest Well Bore	Footage
NBU 921-35I1BS	CIGE 239	604ft
NBU 921-35I1CS	CIGE 28	348ft
NBU 921-35I4BS	CIGE 28	277ft
NBU 921-35I4CS	CIGE 28	502ft
NBU 921-35J1CS	NBU 921-35J	719ft
NBU 921-35J4BS	NBU 921-35J	458ft

Well locations derived from State of Utah, Dept. of Natural Resources, Division of Oil, Gas and Mining

**Legend**

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

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

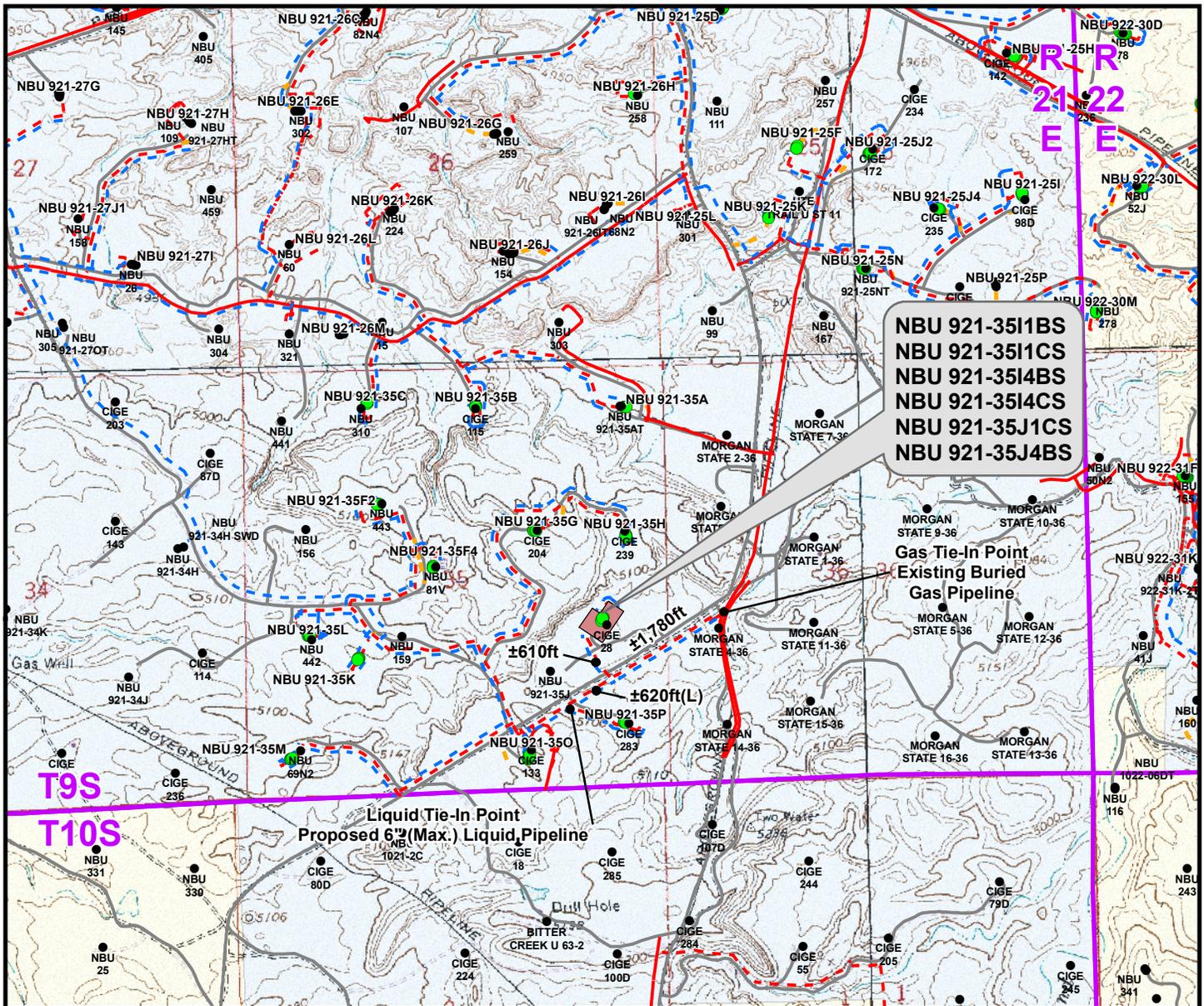
**WELL PAD - NBU 921-35I**

**TOPO C**  
NBU 921-35I1BS, NBU 921-35I1CS,  
NBU 921-35I4BS, NBU 921-35I4CS,  
NBU 921-35J1CS & NBU 921-35J4BS  
LOCATED IN SECTION 35, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: CPS	Date: 19 Oct 2010	14
Revised:	Date:	



NBU 921-35I1BS  
 NBU 921-35I1CS  
 NBU 921-35I4BS  
 NBU 921-35I4CS  
 NBU 921-35J1CS  
 NBU 921-35J4BS

Gas Tie-In Point  
 Existing Buried  
 Gas Pipeline

Liquid Tie-In Point  
 Proposed 6" (Max.) Liquid Pipeline

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±520ft
Proposed 6" (Max.) (Edge of Pad to Road Intersection)	±610ft
Proposed 6" (Max.) (Road Intersection to 35P Intersection)	±620ft
Proposed 6" (Max.) (Road Intersection to Existing Buried Pipeline)	±1,780ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,530ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±520ft
Proposed 8" (Edge of Pad to 35P Intersection)	±610ft
Proposed 12" (35P Intersection to Existing Buried Pipeline)	±1,780ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,910ft</b>

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- 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 921-35I**

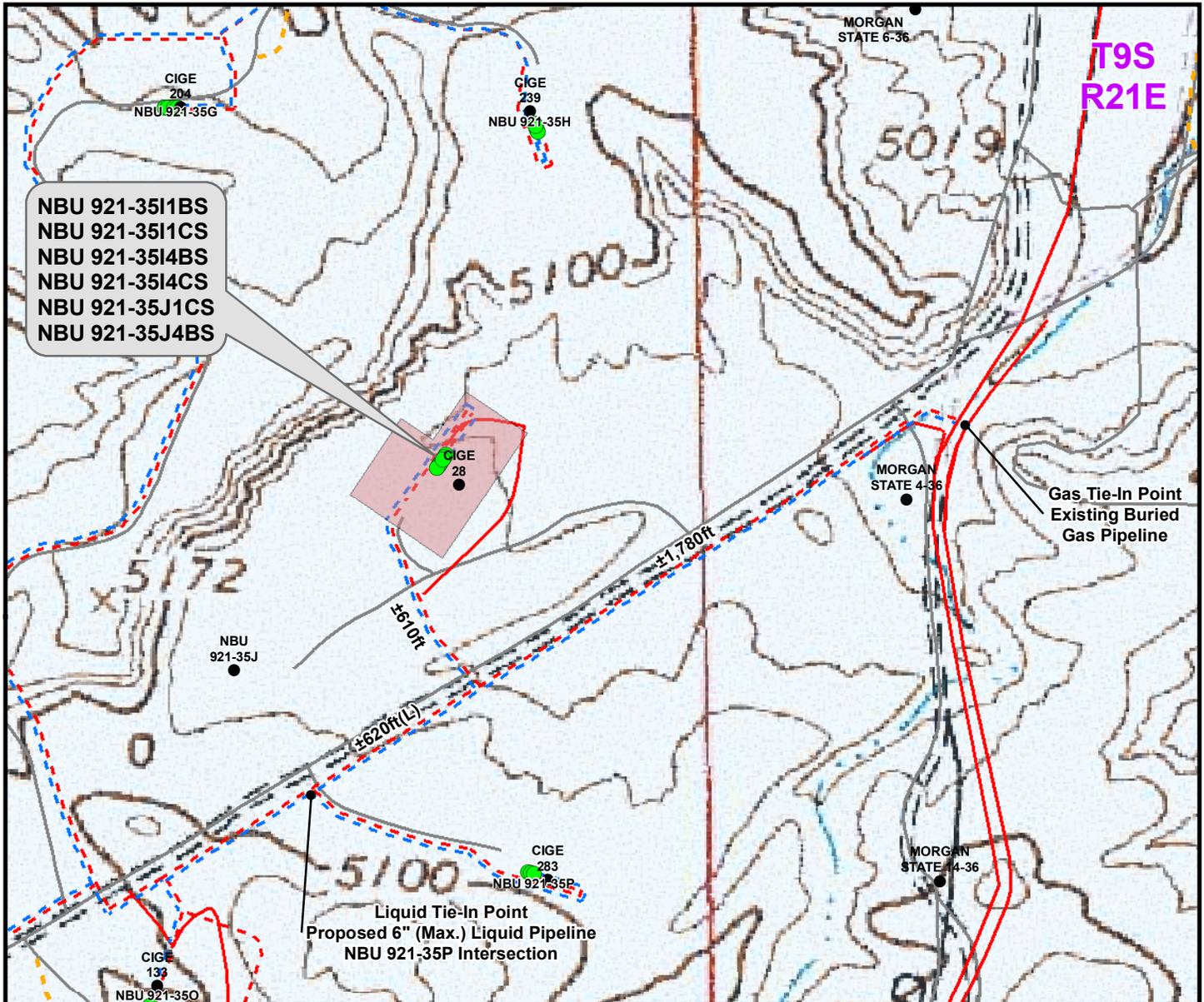
**TOPO D**

NBU 921-35I1BS, NBU 921-35I1CS,  
 NBU 921-35I4BS, NBU 921-35I4CS,  
 NBU 921-35J1CS & NBU 921-35J4BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH

**609**  
 CONSULTING, LLC  
 2155 North Main Street  
 Sheridan, WY 82801  
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Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: CPS	Date: 19 Oct 2010	<b>15</b>
Revised: TL	Date: 1 Nov 2010	



NBU 921-35I1BS  
 NBU 921-35I1CS  
 NBU 921-35I4BS  
 NBU 921-35I4CS  
 NBU 921-35J1CS  
 NBU 921-35J4BS

Liquid Tie-In Point  
 Proposed 6" (Max.) Liquid Pipeline  
 NBU 921-35P Intersection

Gas Tie-In Point  
 Existing Buried  
 Gas Pipeline

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±520ft
Proposed 6" (Max.) (Edge of Pad to Road Intersection)	±610ft
Proposed 6" (Max.) (Road Intersection to 35P Intersection)	±620ft
Proposed 6" (Max.) (Road Intersection to Existing Buried Pipeline)	±1,780ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,530ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±520ft
Proposed 8" (Edge of Pad to 35P Intersection)	±610ft
Proposed 12" (35P Intersection to Existing Buried Pipeline)	±1,780ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,910ft</b>

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- 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

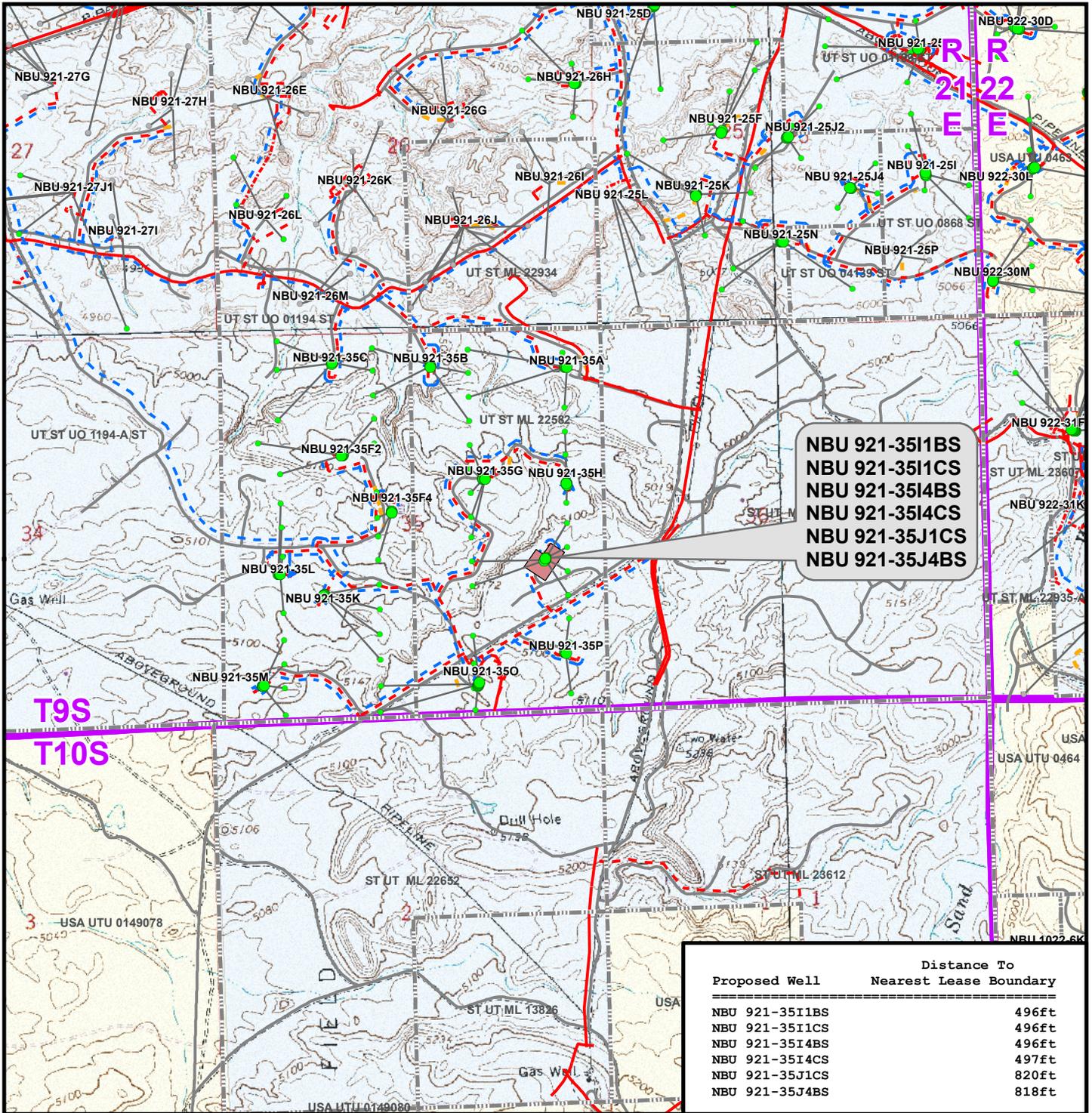
**WELL PAD - NBU 921-35I**

TOPO D2 (PAD & PIPELINE DETAIL)  
 NBU 921-35I1BS, NBU 921-35I1CS,  
 NBU 921-35I4BS, NBU 921-35I4CS,  
 NBU 921-35J1CS & NBU 921-35J4BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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 CONSULTING, LLC  
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Scale: 1" = 500ft	NAD83 USP Central	Sheet No:
Drawn: CPS	Date: 19 Oct 2010	<b>16</b>
Revised: TL	Date: 1 Nov 2010	



Proposed Well	Distance To Nearest Lease Boundary
NBU 921-351BS	496ft
NBU 921-351CS	496ft
NBU 921-3514BS	496ft
NBU 921-3514CS	497ft
NBU 921-351JCS	820ft
NBU 921-3514BS	818ft

**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 921-351**

**TOPO E**  
 NBU 921-351BS, NBU 921-351CS,  
 NBU 921-3514BS, NBU 921-3514CS,  
 NBU 921-351JCS & NBU 921-3514BS  
 LOCATED IN SECTION 35, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH

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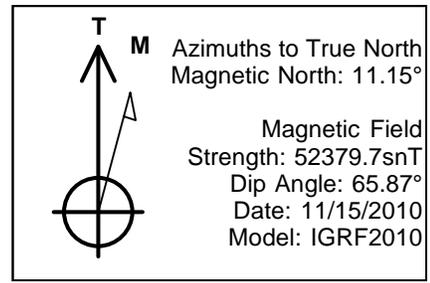


Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: CPS	Date: 19 Oct 2010	<b>17</b>
Revised: TL	Date: 1 Nov 2010	

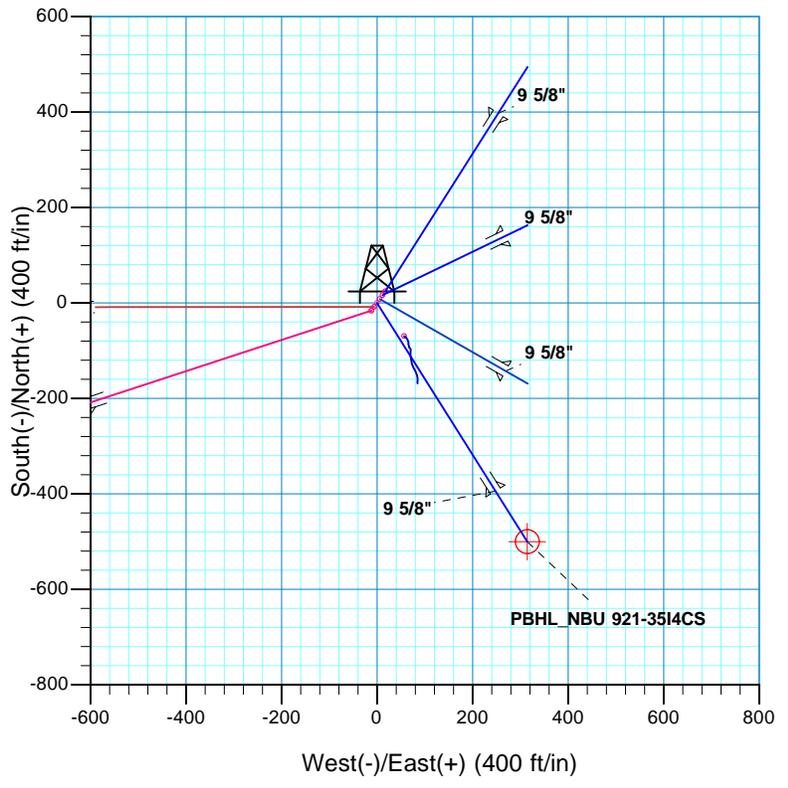
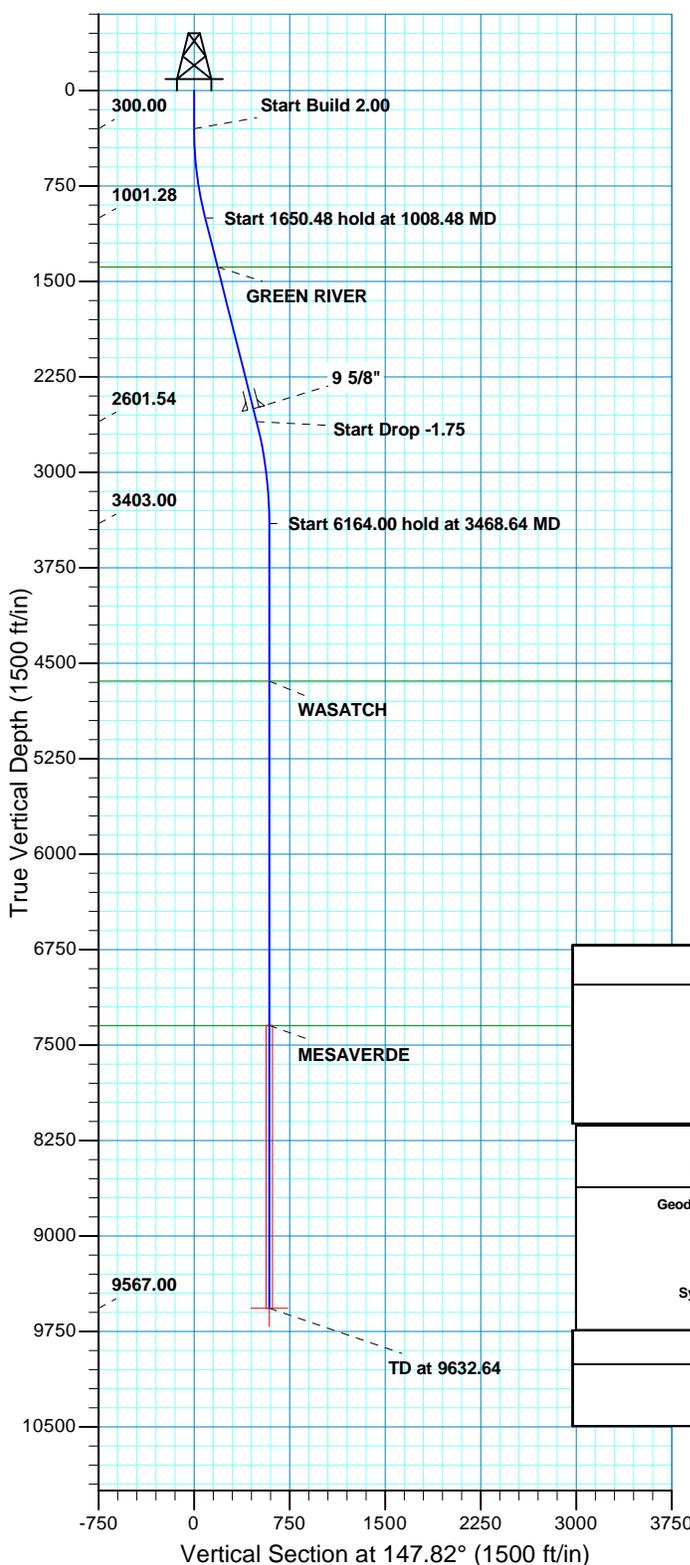
**Kerr-McGee Oil & Gas Onshore, LP**  
**WELL PAD – NBU 921-35I**  
**WELLS – NBU 921-35I1BS, NBU 921-35I1CS, NBU 921-35I4BS,**  
**NBU 921-35I4CS, NBU 921-35J1CS & NBU 921-35J4BS**  
**Section 35, T9S, R21E, S.L.B.&M.**

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 19.7 miles to a service road to the northwest. Exit right and proceed in a northwesterly then southwesterly direction along the service road approximately 0.2 miles to a second service road to the northwest. Exit right and proceed in a northwesterly direction along the second service road approximately 200 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 43.4 miles in a southerly direction.



WELL DETAILS: P_NBU 921-3514CS						
GL 5058' & KB 4' @ 5062.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	14526262.95	2057295.76	39° 59' 27.755 N	109° 30' 42.048 W	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude Longitude Shape
PBHL	9567.00	-500.05	314.62	14525768.22	2057618.68	39° 59' 22.812 N 109° 30' 38.005 W Circle (Radius: 25.00)
- plan hits target center						



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1008.48	14.17	147.82	1001.28	-73.77	46.41	2.00	147.82	87.16	
2658.96	14.17	147.82	2601.54	-415.74	261.57	0.00	0.00	491.18	
3468.64	0.00	0.00	3403.00	-500.05	314.62	1.75	180.00	590.79	
9632.64	0.00	0.00	9567.00	-500.05	314.62	0.00	0.00	590.79	PBHL_NBU 921-3514CS
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 35 T9S R21E System Datum: Mean Sea Level					TVDPath	MDPath	Formation		
					1386.00	1405.27	GREEN RIVER		
					4640.00	4705.64	WASATCH		
	7346.00	7411.64	MESAVERDE						
CASING DETAILS									
	TVD	MD	Name	Size					
	2500.00	2554.23	9 5/8"	9.625					



**Scientific Drilling**  
Rocky Mountain Operations

# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 921-35I PAD**

**P\_NBU 921-35I4CS**

**P\_NBU 921-35I4CS**

**Plan: PLAN #1 11-15-10 RHS**

## **Standard Planning Report**

**15 November, 2010**



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-35I4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-35I PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-35I4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-35I4CS		
<b>Design:</b>	PLAN #1 11-15-10 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 921-35I PAD, SECTION 35 T9S R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,526,246.73 usft	<b>Latitude:</b>	39° 59' 27.596 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,057,284.25 usft	<b>Longitude:</b>	109° 30' 42.199 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	P_NBU 921-35I4CS, 2082' FSL 811' FEL					
<b>Well Position</b>	<b>+N/-S</b>	16.03 ft	<b>Northing:</b>	14,526,262.95 usft	<b>Latitude:</b>	39° 59' 27.755 N
	<b>+E/-W</b>	11.77 ft	<b>Easting:</b>	2,057,295.75 usft	<b>Longitude:</b>	109° 30' 42.048 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,058.00 ft

<b>Wellbore</b>	P_NBU 921-35I4CS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/15/2010	11.15	65.87	52,380

<b>Design</b>	PLAN #1 11-15-10 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	147.82

<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	
1,008.48	14.17	147.82	1,001.28	-73.77	46.41	2.00	2.00	0.00	147.82	
2,658.96	14.17	147.82	2,601.54	-415.74	261.57	0.00	0.00	0.00	0.00	
3,468.64	0.00	0.00	3,403.00	-500.05	314.62	1.75	-1.75	0.00	180.00	
9,632.64	0.00	0.00	9,567.00	-500.05	314.62	0.00	0.00	0.00	0.00	PBHL_NBU 921-35I4

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-3514CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-3514CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-3514CS		
<b>Design:</b>	PLAN #1 11-15-10 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	147.82	399.98	-1.48	0.93	1.75	2.00	2.00	0.00	
500.00	4.00	147.82	499.84	-5.91	3.72	6.98	2.00	2.00	0.00	
600.00	6.00	147.82	599.45	-13.28	8.36	15.69	2.00	2.00	0.00	
700.00	8.00	147.82	698.70	-23.60	14.85	27.88	2.00	2.00	0.00	
800.00	10.00	147.82	797.47	-36.84	23.18	43.52	2.00	2.00	0.00	
900.00	12.00	147.82	895.62	-52.99	33.34	62.60	2.00	2.00	0.00	
1,000.00	14.00	147.82	993.06	-72.03	45.32	85.10	2.00	2.00	0.00	
1,008.48	14.17	147.82	1,001.28	-73.77	46.41	87.16	2.00	2.00	0.00	
<b>Start 1650.48 hold at 1008.48 MD</b>										
1,100.00	14.17	147.82	1,090.02	-92.74	58.35	109.56	0.00	0.00	0.00	
1,200.00	14.17	147.82	1,186.97	-113.46	71.38	134.04	0.00	0.00	0.00	
1,300.00	14.17	147.82	1,283.93	-134.17	84.42	158.52	0.00	0.00	0.00	
1,400.00	14.17	147.82	1,380.89	-154.89	97.45	183.00	0.00	0.00	0.00	
1,405.27	14.17	147.82	1,386.00	-155.99	98.14	184.29	0.00	0.00	0.00	
<b>GREEN RIVER</b>										
1,500.00	14.17	147.82	1,477.85	-175.61	110.49	207.48	0.00	0.00	0.00	
1,600.00	14.17	147.82	1,574.80	-196.33	123.53	231.96	0.00	0.00	0.00	
1,700.00	14.17	147.82	1,671.76	-217.05	136.56	256.44	0.00	0.00	0.00	
1,800.00	14.17	147.82	1,768.72	-237.77	149.60	280.92	0.00	0.00	0.00	
1,900.00	14.17	147.82	1,865.68	-258.49	162.63	305.40	0.00	0.00	0.00	
2,000.00	14.17	147.82	1,962.63	-279.21	175.67	329.88	0.00	0.00	0.00	
2,100.00	14.17	147.82	2,059.59	-299.93	188.70	354.36	0.00	0.00	0.00	
2,200.00	14.17	147.82	2,156.55	-320.65	201.74	378.83	0.00	0.00	0.00	
2,300.00	14.17	147.82	2,253.51	-341.37	214.78	403.31	0.00	0.00	0.00	
2,400.00	14.17	147.82	2,350.46	-362.09	227.81	427.79	0.00	0.00	0.00	
2,500.00	14.17	147.82	2,447.42	-382.81	240.85	452.27	0.00	0.00	0.00	
2,554.23	14.17	147.82	2,500.00	-394.04	247.92	465.55	0.00	0.00	0.00	
<b>9 5/8"</b>										
2,600.00	14.17	147.82	2,544.38	-403.53	253.88	476.75	0.00	0.00	0.00	
2,658.96	14.17	147.82	2,601.54	-415.74	261.57	491.18	0.00	0.00	0.00	
<b>Start Drop -1.75</b>										
2,700.00	13.45	147.82	2,641.40	-424.04	266.79	500.98	1.75	-1.75	0.00	
2,800.00	11.70	147.82	2,739.00	-442.46	278.38	522.75	1.75	-1.75	0.00	
2,900.00	9.95	147.82	2,837.21	-458.36	288.38	541.54	1.75	-1.75	0.00	
3,000.00	8.20	147.82	2,935.96	-471.71	296.78	557.31	1.75	-1.75	0.00	
3,100.00	6.45	147.82	3,035.14	-482.51	303.58	570.06	1.75	-1.75	0.00	
3,200.00	4.70	147.82	3,134.66	-490.73	308.75	579.78	1.75	-1.75	0.00	
3,300.00	2.95	147.82	3,234.43	-496.38	312.30	586.45	1.75	-1.75	0.00	
3,400.00	1.20	147.82	3,334.36	-499.44	314.23	590.07	1.75	-1.75	0.00	
3,468.64	0.00	0.00	3,403.00	-500.05	314.62	590.79	1.75	-1.75	-215.35	
<b>Start 6164.00 hold at 3468.64 MD</b>										
3,500.00	0.00	0.00	3,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-3514CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-3514CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-3514CS		
<b>Design:</b>	PLAN #1 11-15-10 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)	
4,000.00	0.00	0.00	3,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,705.64	0.00	0.00	4,640.00	-500.05	314.62	590.79	0.00	0.00	0.00	
<b>WASATCH</b>										
4,800.00	0.00	0.00	4,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,411.64	0.00	0.00	7,346.00	-500.05	314.62	590.79	0.00	0.00	0.00	
<b>MESAVERDE</b>										
7,500.00	0.00	0.00	7,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,634.36	-500.05	314.62	590.79	0.00	0.00	0.00	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-3514CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-3514CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-3514CS		
<b>Design:</b>	PLAN #1 11-15-10 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)	
8,800.00	0.00	0.00	8,734.36	-500.05	314.62	590.79	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,834.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,934.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,034.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,134.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,234.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,334.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,434.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,534.36	-500.05	314.62	590.79	0.00	0.00	0.00	
9,632.64	0.00	0.00	9,567.00	-500.05	314.62	590.79	0.00	0.00	0.00	
PBHL_NBU 921-3514CS										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NBU 921-3514CS - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,567.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,554.23	2,500.00	9 5/8"	9.625	12.250		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,405.27	1,386.00	GREEN RIVER				
4,705.64	4,640.00	WASATCH				
7,411.64	7,346.00	MESAVERDE				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,008.48	1,001.28	-73.77	46.41	Start 1650.48 hold at 1008.48 MD	
2,658.96	2,601.54	-415.74	261.57	Start Drop -1.75	
3,468.64	3,403.00	-500.05	314.62	Start 6164.00 hold at 3468.64 MD	
9,632.64	9,567.00	-500.05	314.62	TD at 9632.64	



**Scientific Drilling**  
Rocky Mountain Operations

# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 921-35I PAD**

**P\_NBU 921-35I4CS**

**P\_NBU 921-35I4CS**

**Plan: PLAN #1 11-15-10 RHS**

## **Standard Planning Report - Geographic**

**15 November, 2010**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-35I4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-35I PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-35I4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-35I4CS		
<b>Design:</b>	PLAN #1 11-15-10 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 921-35I PAD, SECTION 35 T9S R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,526,246.73 usft	<b>Latitude:</b>	39° 59' 27.596 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,057,284.25 usft	<b>Longitude:</b>	109° 30' 42.199 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	P_NBU 921-35I4CS, 2082' FSL 811' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,526,262.95 usft	<b>Latitude:</b>	39° 59' 27.755 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,057,295.75 usft	<b>Longitude:</b>	109° 30' 42.048 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,058.00 ft

<b>Wellbore</b>	P_NBU 921-35I4CS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/15/2010	11.15	65.87	52,380

<b>Design</b>	PLAN #1 11-15-10 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	147.82

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,008.48	14.17	147.82	1,001.28	-73.77	46.41	2.00	2.00	0.00	147.82	
2,658.96	14.17	147.82	2,601.54	-415.74	261.57	0.00	0.00	0.00	0.00	
3,468.64	0.00	0.00	3,403.00	-500.05	314.62	1.75	-1.75	0.00	180.00	
9,632.64	0.00	0.00	9,567.00	-500.05	314.62	0.00	0.00	0.00	0.00	PBHL_NBU 921-35I4

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-3514CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-3514CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-3514CS		
<b>Design:</b>	PLAN #1 11-15-10 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	14,526,262.95	2,057,295.75	39° 59' 27.755 N	109° 30' 42.048 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,526,262.95	2,057,295.75	39° 59' 27.755 N	109° 30' 42.048 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,526,262.95	2,057,295.75	39° 59' 27.755 N	109° 30' 42.048 W	
300.00	0.00	0.00	300.00	0.00	0.00	14,526,262.95	2,057,295.75	39° 59' 27.755 N	109° 30' 42.048 W	
<b>Start Build 2.00</b>										
400.00	2.00	147.82	399.98	-1.48	0.93	14,526,261.49	2,057,296.71	39° 59' 27.740 N	109° 30' 42.036 W	
500.00	4.00	147.82	499.84	-5.91	3.72	14,526,257.11	2,057,299.57	39° 59' 27.696 N	109° 30' 42.000 W	
600.00	6.00	147.82	599.45	-13.28	8.36	14,526,249.81	2,057,304.33	39° 59' 27.624 N	109° 30' 41.941 W	
700.00	8.00	147.82	698.70	-23.60	14.85	14,526,239.60	2,057,310.99	39° 59' 27.522 N	109° 30' 41.857 W	
800.00	10.00	147.82	797.47	-36.84	23.18	14,526,226.51	2,057,319.54	39° 59' 27.391 N	109° 30' 41.750 W	
900.00	12.00	147.82	895.62	-52.99	33.34	14,526,210.53	2,057,329.97	39° 59' 27.231 N	109° 30' 41.620 W	
1,000.00	14.00	147.82	993.06	-72.03	45.32	14,526,191.69	2,057,342.26	39° 59' 27.043 N	109° 30' 41.466 W	
1,008.48	14.17	147.82	1,001.28	-73.77	46.41	14,526,189.96	2,057,343.39	39° 59' 27.026 N	109° 30' 41.452 W	
<b>Start 1650.48 hold at 1008.48 MD</b>										
1,100.00	14.17	147.82	1,090.02	-92.74	58.35	14,526,171.20	2,057,355.64	39° 59' 26.838 N	109° 30' 41.298 W	
1,200.00	14.17	147.82	1,186.97	-113.46	71.38	14,526,150.70	2,057,369.02	39° 59' 26.633 N	109° 30' 41.131 W	
1,300.00	14.17	147.82	1,283.93	-134.17	84.42	14,526,130.20	2,057,382.40	39° 59' 26.429 N	109° 30' 40.963 W	
1,400.00	14.17	147.82	1,380.89	-154.89	97.45	14,526,109.71	2,057,395.78	39° 59' 26.224 N	109° 30' 40.796 W	
1,405.27	14.17	147.82	1,386.00	-155.99	98.14	14,526,108.63	2,057,396.48	39° 59' 26.213 N	109° 30' 40.787 W	
<b>GREEN RIVER</b>										
1,500.00	14.17	147.82	1,477.85	-175.61	110.49	14,526,089.21	2,057,409.16	39° 59' 26.019 N	109° 30' 40.628 W	
1,600.00	14.17	147.82	1,574.80	-196.33	123.53	14,526,068.71	2,057,422.54	39° 59' 25.814 N	109° 30' 40.461 W	
1,700.00	14.17	147.82	1,671.76	-217.05	136.56	14,526,048.21	2,057,435.92	39° 59' 25.609 N	109° 30' 40.293 W	
1,800.00	14.17	147.82	1,768.72	-237.77	149.60	14,526,027.71	2,057,449.30	39° 59' 25.405 N	109° 30' 40.126 W	
1,900.00	14.17	147.82	1,865.68	-258.49	162.63	14,526,007.21	2,057,462.68	39° 59' 25.200 N	109° 30' 39.958 W	
2,000.00	14.17	147.82	1,962.63	-279.21	175.67	14,525,986.71	2,057,476.06	39° 59' 24.995 N	109° 30' 39.791 W	
2,100.00	14.17	147.82	2,059.59	-299.93	188.70	14,525,966.21	2,057,489.44	39° 59' 24.790 N	109° 30' 39.623 W	
2,200.00	14.17	147.82	2,156.55	-320.65	201.74	14,525,945.72	2,057,502.82	39° 59' 24.585 N	109° 30' 39.456 W	
2,300.00	14.17	147.82	2,253.51	-341.37	214.78	14,525,925.22	2,057,516.20	39° 59' 24.381 N	109° 30' 39.288 W	
2,400.00	14.17	147.82	2,350.46	-362.09	227.81	14,525,904.72	2,057,529.58	39° 59' 24.176 N	109° 30' 39.121 W	
2,500.00	14.17	147.82	2,447.42	-382.81	240.85	14,525,884.22	2,057,542.96	39° 59' 23.971 N	109° 30' 38.953 W	
2,554.23	14.17	147.82	2,500.00	-394.04	247.92	14,525,873.10	2,057,550.21	39° 59' 23.860 N	109° 30' 38.862 W	
<b>9 5/8"</b>										
2,600.00	14.17	147.82	2,544.38	-403.53	253.88	14,525,863.72	2,057,556.34	39° 59' 23.766 N	109° 30' 38.786 W	
2,658.96	14.17	147.82	2,601.54	-415.74	261.57	14,525,851.63	2,057,564.23	39° 59' 23.645 N	109° 30' 38.687 W	
<b>Start Drop -1.75</b>										
2,700.00	13.45	147.82	2,641.40	-424.04	266.79	14,525,843.43	2,057,569.58	39° 59' 23.563 N	109° 30' 38.620 W	
2,800.00	11.70	147.82	2,739.00	-442.46	278.38	14,525,825.20	2,057,581.48	39° 59' 23.381 N	109° 30' 38.471 W	
2,900.00	9.95	147.82	2,837.21	-458.36	288.38	14,525,809.47	2,057,591.75	39° 59' 23.224 N	109° 30' 38.342 W	
3,000.00	8.20	147.82	2,935.96	-471.71	296.78	14,525,796.26	2,057,600.37	39° 59' 23.092 N	109° 30' 38.234 W	
3,100.00	6.45	147.82	3,035.14	-482.51	303.58	14,525,785.58	2,057,607.34	39° 59' 22.985 N	109° 30' 38.147 W	
3,200.00	4.70	147.82	3,134.66	-490.73	308.75	14,525,777.44	2,057,612.65	39° 59' 22.904 N	109° 30' 38.081 W	
3,300.00	2.95	147.82	3,234.43	-496.38	312.30	14,525,771.86	2,057,616.30	39° 59' 22.848 N	109° 30' 38.035 W	
3,400.00	1.20	147.82	3,334.36	-499.44	314.23	14,525,768.82	2,057,618.28	39° 59' 22.818 N	109° 30' 38.010 W	
3,468.64	0.00	0.00	3,403.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
<b>Start 6164.00 hold at 3468.64 MD</b>										
3,500.00	0.00	0.00	3,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
3,600.00	0.00	0.00	3,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
3,700.00	0.00	0.00	3,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
3,800.00	0.00	0.00	3,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
3,900.00	0.00	0.00	3,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,000.00	0.00	0.00	3,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-35I4CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-35I PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-35I4CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-35I4CS		
<b>Design:</b>	PLAN #1 11-15-10 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	
4,100.00	0.00	0.00	4,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,200.00	0.00	0.00	4,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,300.00	0.00	0.00	4,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,400.00	0.00	0.00	4,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,500.00	0.00	0.00	4,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,600.00	0.00	0.00	4,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,700.00	0.00	0.00	4,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,705.64	0.00	0.00	4,640.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
<b>WASATCH</b>										
4,800.00	0.00	0.00	4,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
4,900.00	0.00	0.00	4,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,000.00	0.00	0.00	4,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,100.00	0.00	0.00	5,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,200.00	0.00	0.00	5,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,300.00	0.00	0.00	5,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,400.00	0.00	0.00	5,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,500.00	0.00	0.00	5,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,600.00	0.00	0.00	5,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,700.00	0.00	0.00	5,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,800.00	0.00	0.00	5,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
5,900.00	0.00	0.00	5,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,000.00	0.00	0.00	5,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,100.00	0.00	0.00	6,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,200.00	0.00	0.00	6,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,300.00	0.00	0.00	6,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,400.00	0.00	0.00	6,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,500.00	0.00	0.00	6,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,600.00	0.00	0.00	6,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,700.00	0.00	0.00	6,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,800.00	0.00	0.00	6,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
6,900.00	0.00	0.00	6,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,000.00	0.00	0.00	6,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,100.00	0.00	0.00	7,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,200.00	0.00	0.00	7,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,300.00	0.00	0.00	7,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,400.00	0.00	0.00	7,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,411.64	0.00	0.00	7,346.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
<b>MESAVERDE</b>										
7,500.00	0.00	0.00	7,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,600.00	0.00	0.00	7,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,700.00	0.00	0.00	7,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,800.00	0.00	0.00	7,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
7,900.00	0.00	0.00	7,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,000.00	0.00	0.00	7,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,100.00	0.00	0.00	8,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,200.00	0.00	0.00	8,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,300.00	0.00	0.00	8,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,400.00	0.00	0.00	8,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,500.00	0.00	0.00	8,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,600.00	0.00	0.00	8,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,700.00	0.00	0.00	8,634.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
8,800.00	0.00	0.00	8,734.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_NBU 921-3514CS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5058' & KB 4' @ 5062.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NBU 921-3514CS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NBU 921-3514CS		
<b>Design:</b>	PLAN #1 11-15-10 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	
8,900.00	0.00	0.00	8,834.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,000.00	0.00	0.00	8,934.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,100.00	0.00	0.00	9,034.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,200.00	0.00	0.00	9,134.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,300.00	0.00	0.00	9,234.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,400.00	0.00	0.00	9,334.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,500.00	0.00	0.00	9,434.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,600.00	0.00	0.00	9,534.36	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
9,632.64	0.00	0.00	9,567.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	
<b>PBHL_NBU 921-3514CS</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NBU 921-3514CS - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,567.00	-500.05	314.62	14,525,768.22	2,057,618.67	39° 59' 22.812 N	109° 30' 38.005 W	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,554.23	2,500.00	9 5/8"	9.625	12.250		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,405.27	1,386.00	GREEN RIVER				
4,705.64	4,640.00	WASATCH				
7,411.64	7,346.00	MESAVERDE				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,008.48	1,001.28	-73.77	46.41	Start 1650.48 hold at 1008.48 MD	
2,658.96	2,601.54	-415.74	261.57	Start Drop -1.75	
3,468.64	3,403.00	-500.05	314.62	Start 6164.00 hold at 3468.64 MD	
9,632.64	9,567.00	-500.05	314.62	TD at 9632.64	

**NBU 921-35I1BS**

Surface: 2,106' FSL 794' FEL (NE/4SE/4)  
BHL: 2,572' FSL 496' FEL (NE/4SE/4)

**NBU 921-35I1CS**

Surface: 2,098' FSL 800' FEL (NE/4SE/4)  
BHL: 2,240' FSL 496' FEL (NE/4SE/4)

**NBU 921-35I4BS**

Surface: 2,090' FSL 806' FEL (NE/4SE/4)  
BHL: 1,908' FSL 496' FEL (NE/4SE/4)

**NBU 921-35I4CS**

Surface: 2,082' FSL 811' FEL (NE/4SE/4)  
BHL: 1,577' FSL 497' FEL (NE/4SE/4)

**NBU 921-35J1CS**

Surface: 2,074' FSL 817' FEL (NE/4SE/4)  
BHL: 2,086' FSL 1,825' FEL (NW/4SE/4)

**NBU 921-35J4BS**

Surface: 2,066' FSL 823' FEL (NE/4SE/4)  
BHL: 1,752' FSL 1,826' FEL (NW/4SE/4)

Pad: NBU 921-35I  
Section 35 T9S R21E  
Mineral Lease: ML 22582

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 CIGE 28. This well location is a producing vertical well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of November 11, 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  $\pm 2,910'$  and the individual segments are broken up as follows:

- $\pm 520'$  (0.1 miles) –New 8” buried gas pipeline from the meter to the edge of the pad.
- $\pm 610'$  (0.1 miles) –New 8” buried gas pipeline from the edge of pad to the NBU 921-35P pad intersection.
- $\pm 1,780'$  (0.3 miles) –New 12” buried gas pipeline from the NBU 921-35P pad intersection to the existing buried pipeline.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 3,530'$  and the individual segments are broken up as follows:

- $\pm 520'$  (0.1 miles) –New 6” buried liquid pipeline from the separator to the edge of the pad.
- $\pm 610'$  (0.1 miles) –New 6” buried liquid pipeline from the edge of pad to the road intersection.
- $\pm 620'$  (0.1 miles) –New 6” buried liquid pipeline from the road intersection to the NBU 921-35P pad intersection.
- $\pm 1,780'$  (0.3 miles) –New 6” buried liquid pipeline from the road intersection to the existing buried pipeline.

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:**

A Class I literature survey was conducted by Montgomery Archaeological Consultants, Inc. (MOAC). For additional details please refer to report MOAC 10-141.

A paleontological reconnaissance was conducted by Intermountain Paleo-Consulting (IPC). For additional details please refer to report IPC 10-20.

A biological field survey was completed by Grasslands Consulting, Inc. on July 13, 2010 and August 10, 2010. For additional details please refer to report GCI-306.

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

Danielle Piernot  
Regulatory Analyst I  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6156

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.



Danielle Piernot

November 18, 2010

Date



Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
DENVER, CO 80217-3779

October 27, 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 921-35I4CS  
T9S-R21E  
Section 35: NESE (Surf), NESE (Bottom)  
Surface: 2082' FSL, 811' FEL  
Bottom Hole: 1577' FSL, 497' FEL  
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 921-35I4CS 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.

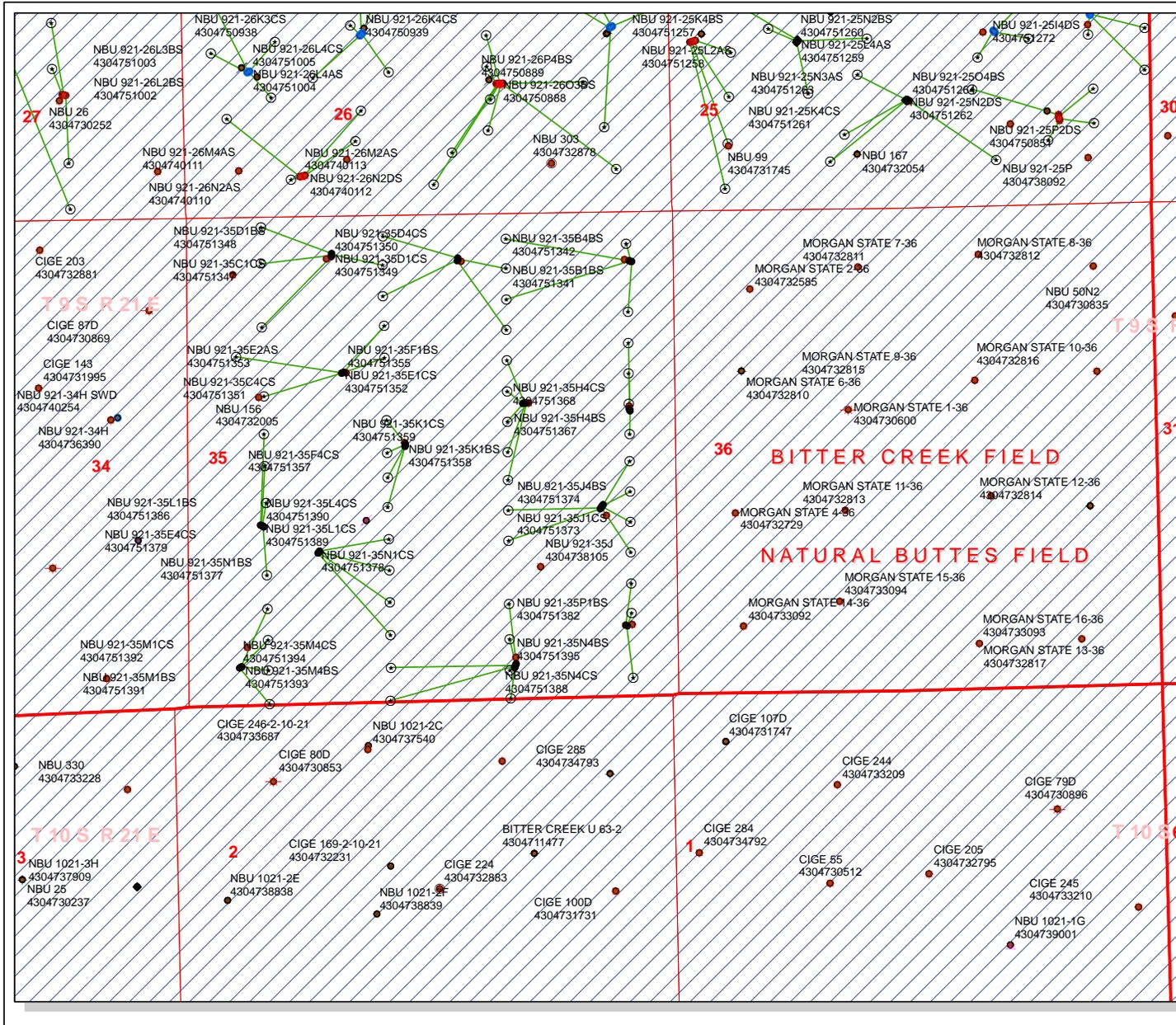
Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

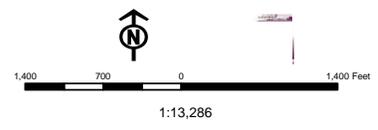
A handwritten signature in blue ink that reads 'Joe Matney'.

Joe Matney  
Sr. Staff Landman



**API Number: 4304751372**  
**Well Name: NBU 921-35I4CS**  
**Township 09.0 S Range 21.0 E Section 35**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.  
 Map Prepared:  
 Map Produced by Diana Mason

- |   |  |
|---|--|
| <b>Units</b>  | <b>Wells Query</b>   |
| <b>STATUS</b>   | <ul style="list-style-type: none"> <li>✕ - call other values-</li> <li>◆ APD - Approved Permit</li> <li>⊙ DRL - Spudded (Drilling Commenced)</li> <li>⊙ NF PP OIL</li> <li>⊙ NF SECONDARY</li> <li>⊙ PI OIL</li> <li>⊙ PP GAS</li> <li>⊙ PP GEOTHERML</li> <li>⊙ PP OIL</li> <li>⊙ SECONDARY</li> <li>⊙ TERMINATED</li> </ul>  |
| <b>Fields</b>   | <ul style="list-style-type: none"> <li>⊙ LA - Location Abandoned</li> <li>⊙ LOC - New Location</li> <li>⊙ OPS - Operation Suspended</li> <li>⊙ PA - Plugged Abandoned</li> <li>⊙ PGW - Producing Gas Well</li> <li>⊙ POW - Producing Oil Well</li> <li>⊙ RET - Retired APD</li> <li>⊙ SGW - Shut-in Gas Well</li> <li>⊙ SOW - Shut-in Oil Well</li> <li>⊙ TA - Temp. Abandoned</li> <li>⊙ TW - Test Well</li> <li>⊙ WDW - Water Disposal</li> <li>⊙ WWI - Water Injection Well</li> <li>⊙ WSW - Water Supply Well</li> </ul> |
| <ul style="list-style-type: none"> <li>▭ Sections</li> <li>▭ Township</li> <li>⊙ Bottom Hole Location - AGRC</li> </ul> |  |



# 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)

December 1, 2010

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2010 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 2010 within the Natural Buttes Unit, Uintah County, Utah.

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

### **NBU 921-35F2 Pad**

43-047-51355	NBU 921-35F1BS	Sec 35 T09S R21E 1684 FNL 1709 FWL
	BHL	Sec 35 T09S R21E 1531 FNL 2146 FWL

### **NBU 921-35F4 PAD**

43-047-51356	NBU 921-35F4BS	Sec 35 T09S R21E 2473 FNL 2358 FWL
	BHL	Sec 35 T09S R21E 2210 FNL 2158 FWL

43-047-51357	NBU 921-35F4CS	Sec 35 T09S R21E 2483 FNL 2358 FWL
	BHL	Sec 35 T09S R21E 2567 FNL 2159 FWL

43-047-51358	NBU 921-35K1BS	Sec 35 T09S R21E 2493 FNL 2358 FWL
	BHL	Sec 35 T09S R21E 2484 FSL 2161 FWL

43-047-51359	NBU 921-35K1CS	Sec 35 T09S R21E 2503 FNL 2357 FWL
	BHL	Sec 35 T09S R21E 2163 FSL 2155 FWL

### **NBU 921-35G Pad**

43-047-51360	NBU 921-35G1BS	Sec 35 T09S R21E 2053 FNL 1633 FEL
	BHL	Sec 35 T09S R21E 1583 FNL 1819 FEL

43-047-51361	NBU 921-35G1CS	Sec 35 T09S R21E 2053 FNL 1653 FEL
	BHL	Sec 35 T09S R21E 1916 FNL 1820 FEL

43-047-51362	NBU 921-35G4BS	Sec 35 T09S R21E 2053 FNL 1643 FEL
	BHL	Sec 35 T09S R21E 2250 FNL 1822 FEL

API #	WELL NAME			LOCATION						
(Proposed PZ WASATCH-MESA VERDE)										
43-047-51363	NBU 921-35G4CS	Sec	35	T09S	R21E	2053	FNL	1623	FEL	
	BHL	Sec	35	T09S	R21E	2583	FNL	1823	FEL	
43-047-51364	NBU 921-35J1BS	Sec	35	T09S	R21E	2053	FNL	1613	FEL	
	BHL	Sec	35	T09S	R21E	2419	FSL	1824	FEL	
<b>NBU 921-35H PAD</b>										
43-047-51365	NBU 921-35H1BS	Sec	35	T09S	R21E	2143	FNL	0486	FEL	
	BHL	Sec	35	T09S	R21E	1411	FNL	0494	FEL	
43-047-51366	NBU 921-35H1CS	Sec	35	T09S	R21E	2133	FNL	0490	FEL	
	BHL	Sec	35	T09S	R21E	1743	FNL	0495	FEL	
43-047-51367	NBU 921-35H4BS	Sec	35	T09S	R21E	2124	FNL	0493	FEL	
	BHL	Sec	35	T09S	R21E	2075	FNL	0495	FEL	
43-047-51368	NBU 921-35H4CS	Sec	35	T09S	R21E	2152	FNL	0483	FEL	
	BHL	Sec	35	T09S	R21E	2407	FNL	0495	FEL	
<b>NBU 921-35I PAD</b>										
43-047-51369	NBU 921-35I1BS	Sec	35	T09S	R21E	2106	FSL	0794	FEL	
	BHL	Sec	35	T09S	R21E	2572	FSL	0496	FEL	
43-047-51370	NBU 921-35I1CS	Sec	35	T09S	R21E	2098	FSL	0800	FEL	
	BHL	Sec	35	T09S	R21E	2240	FSL	0496	FEL	
43-047-51371	NBU 921-35I4BS	Sec	35	T09S	R21E	2090	FSL	0806	FEL	
	BHL	Sec	35	T09S	R21E	1908	FSL	0496	FEL	
43-047-51372	NBU 921-35I4CS	Sec	35	T09S	R21E	2082	FSL	0811	FEL	
	BHL	Sec	35	T09S	R21E	1577	FSL	0497	FEL	
43-047-51373	NBU 921-35J1CS	Sec	35	T09S	R21E	2074	FSL	0817	FEL	
	BHL	Sec	35	T09S	R21E	2086	FSL	1825	FEL	
43-047-51374	NBU 921-35J4BS	Sec	35	T09S	R21E	2066	FSL	0823	FEL	
	BHL	Sec	35	T09S	R21E	1752	FSL	1826	FEL	
<b>NBU 921-35K PAD</b>										
43-047-51375	NBU 921-35K4BS	Sec	35	T09S	R21E	1710	FSL	1409	FWL	
	BHL	Sec	35	T09S	R21E	1814	FSL	2165	FWL	
43-047-51376	NBU 921-35K4CS	Sec	35	T09S	R21E	1702	FSL	1403	FWL	
	BHL	Sec	35	T09S	R21E	1469	FSL	2163	FWL	
43-047-51377	NBU 921-35N1BS	Sec	35	T09S	R21E	1694	FSL	1397	FWL	
	BHL	Sec	35	T09S	R21E	1124	FSL	2161	FWL	
43-047-51378	NBU 921-35N1CS	Sec	35	T09S	R21E	1686	FSL	1392	FWL	
	BHL	Sec	35	T09S	R21E	0771	FSL	2162	FWL	

API #	WELL NAME	LOCATION							
<b>NBU 921-35L PAD</b>									
43-047-51379	NBU 921-35E4CS	Sec 35	T09S	R21E	2016	FSL	0768	FWL	
	BHL	Sec 35	T09S	R21E	2343	FNL	0823	FWL	
43-047-51386	NBU 921-35L1BS	Sec 35	T09S	R21E	2013	FSL	0778	FWL	
	BHL	Sec 35	T09S	R21E	2658	FSL	0826	FWL	
43-047-51389	NBU 921-35L1CS	Sec 35	T09S	R21E	2009	FSL	0787	FWL	
	BHL	Sec 35	T09S	R21E	2255	FSL	0835	FWL	
43-047-51390	NBU 921-35L4CS	Sec 35	T09S	R21E	2005	FSL	0796	FWL	
	BHL	Sec 35	T09S	R21E	1470	FSL	0832	FWL	
<b>NBU 921-35P PAD</b>									
43-047-51380	NBU 921-35P4CS	Sec 35	T09S	R21E	0781	FSL	0557	FEL	
	BHL	Sec 35	T09S	R21E	0208	FSL	0489	FEL	
43-047-51381	NBU 921-35P1CS	Sec 35	T09S	R21E	0778	FSL	0547	FEL	
	BHL	Sec 35	T09S	R21E	0913	FSL	0497	FEL	
43-047-51382	NBU 921-35P1BS	Sec 35	T09S	R21E	0785	FSL	0566	FEL	
	BHL	Sec 35	T09S	R21E	1245	FSL	0497	FEL	
<b>NBU 921-35O PAD</b>									
43-047-51383	NBU 921-35O4CS	Sec 35	T09S	R21E	0360	FSL	1780	FEL	
	BHL	Sec 35	T09S	R21E	0026	FSL	1826	FEL	
43-047-51384	NBU 921-35O4BS	Sec 35	T09S	R21E	0370	FSL	1777	FEL	
	BHL	Sec 35	T09S	R21E	0336	FSL	1833	FEL	
43-047-51385	NBU 921-35O1CS	Sec 35	T09S	R21E	0398	FSL	1766	FEL	
	BHL	Sec 35	T09S	R21E	0674	FSL	1828	FEL	
43-047-51387	NBU 921-35O1BS	Sec 35	T09S	R21E	0407	FSL	1763	FEL	
	BHL	Sec 35	T09S	R21E	1059	FSL	1833	FEL	
43-047-51388	NBU 921-35N4CS	Sec 35	T09S	R21E	0379	FSL	1773	FEL	
	BHL	Sec 35	T09S	R21E	0051	FSL	2153	FWL	
43-047-51395	NBU 921-35N4BS	Sec 35	T09S	R21E	0388	FSL	1770	FEL	
	BHL	Sec 35	T09S	R21E	0410	FSL	2164	FWL	
<b>NBU 921-35M PAD</b>									
43-047-51391	NBU 921-35M1BS	Sec 35	T09S	R21E	0469	FSL	0526	FWL	
	BHL	Sec 35	T09S	R21E	1096	FSL	0830	FWL	
43-047-51392	NBU 921-35M1CS	Sec 35	T09S	R21E	0474	FSL	0534	FWL	
	BHL	Sec 35	T09S	R21E	0760	FSL	0830	FWL	

API #	WELL NAME	LOCATION
43-047-51393	NBU 921-35M4BS	Sec 35 T09S R21E 0478 FSL 0543 FWL BHL Sec 35 T09S R21E 0423 FSL 0831 FWL
43-047-51394	NBU 921-35M4CS	Sec 35 T09S R21E 0464 FSL 0517 FWL BHL Sec 35 T09S R21E 0055 FSL 0834 FWL

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

Michael L. Coulthard

Digitally signed by Michael L. Coulthard  
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US  
Date: 2010.12.01 10:03:00 -07'00'

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

MCoulthard:mc:12-1-10

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 921-35I4CS 4304751372			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2447	9567		
Previous Shoe Setting Depth (TVD)	40	2447		
Max Mud Weight (ppg)	8.3	12.0		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	5836	11.7		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	1060	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	766	NO <input type="text" value="air drill"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	522	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)=	530	NO <input type="text" value="Reasonable depth in area"/>
Required Casing/BOPE Test Pressure=		2373	psi
*Max Pressure Allowed @ Previous Casing Shoe=		40	psi *Assumes 1psi/ft frac gradient

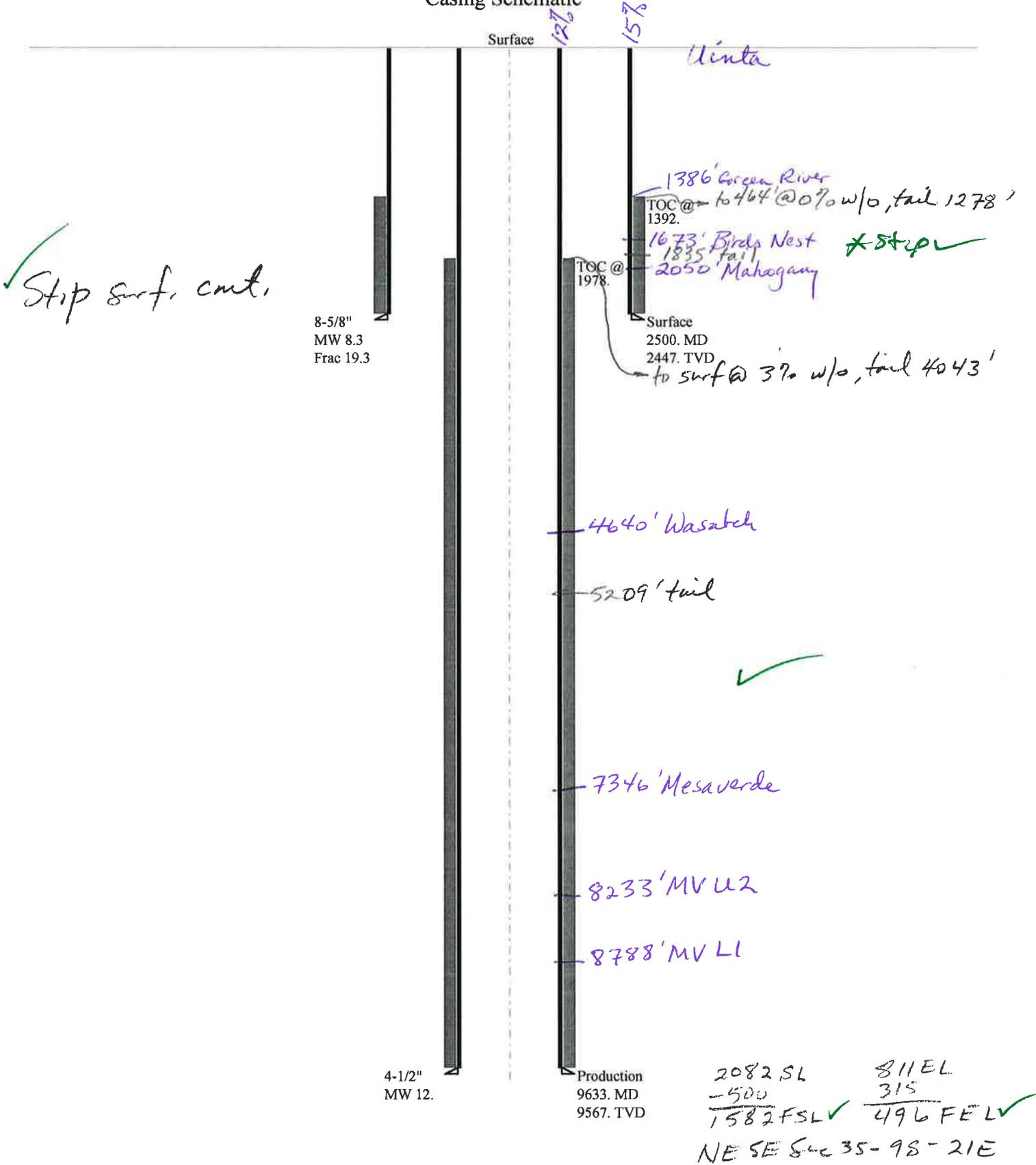
Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	5970	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4822	YES <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3865	YES <input type="text" value="OK"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4404	NO <input type="text" value="Reasonable"/>
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2447	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
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient

# 43047513720000 NBU 921-35I4CS

## Casing Schematic



Well name:	<b>43047513720000 NBU 921-3514CS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-51372
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: 108 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 1,392 ft

**Burst**

Max anticipated surface pressure: 2,200 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,494 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: 2,190 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 452 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 14.17 °

**Re subsequent strings:**

Next setting depth: 9,567 ft  
Next mud weight: 12.000 ppg  
Next setting BHP: 5,964 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,500 ft  
Injection pressure: 2,500 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	2500	8.625	28.00	I-55	LT&C	2447	2500	7.892	98996
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	1059	1880	1.775	2494	3390	1.36	68.5	348	5.08 J

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

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

Date: December 14, 2010  
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2447 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Well name:	<b>43047513720000 NBU 921-35I4CS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-51372
Location:	UINTAH	COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 12.000 ppg  
 Internal fluid density: 1.000 ppg

**Burst**

Max anticipated surface pressure: 3,859 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP: 5,964 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: 7,917 ft

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 208 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 1,978 ft

**Directional Info - Build & Drop**

Kick-off point: 300 ft  
 Departure at shoe: 591 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	9633	4.5	11.60	I-80	LT&C	9567	9633	3.875	127156
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	5467	6360	1.163	5964	7780	1.30	111	212	1.91 J

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

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

Date: December 14, 2010  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 9567 ft, a mud weight of 12 ppg. An internal gradient of .052 psi/ft was used for collapse from TD to TD. 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

**From:** Jim Davis  
**To:** Bonner, Ed; Hill, Brad; Mason, Diana  
**CC:** Curry, Kristine; Danielle Piernot; Garrison, LaVonne; Hayden, Martha;...  
**Date:** 12/22/2010 5:49 AM  
**Subject:** Kerr McGee APD approvals in 9S 21E Sec 35  
**Attachments:** KMG approvals 921-35 on 12.22.2010.xls

The following wells have been approved by SITLA under the following arch and paleo stipulations. This is a long list, so I'm attaching a spreadsheet with the same information.

A note on arch and paleo stipulations: Wells that have an arch note "non-significant site" do not need to be avoided or mitigated. Only those that say "needs to be avoided".

The paleo reports make recommendations for "spot paleo monitoring" or "full paleo monitoring". It is my understanding that Kerr McGee is taking these stipulations and doing full monitoring in either case, in an abundance of caution.

-Jim Davis

Well Name	API	Paleo Stipulations	Arch Stipulations
Kerr-McGee's NBU 921-35A1BS (U-07-MQ-1437b,i,p,s)		API #4304751339	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35A4CS (U-07-MQ-1437b,i,p,s)		API #4304751340	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35B1BS (U-07-MQ-1437b,i,p,s)		API #4304751341	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35B4BS (U-07-MQ-1437b,i,p,s)		API #4304751342	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35B1CS (U-07-MQ-1437b,i,p,s; eligible site 42Un6461, just south of proposed pipeline needs to be avoided)		API #4304751343	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35B4CS (U-07-MQ-1437b,i,p,s; eligible site 42Un6461, just south of proposed pipeline needs to be avoided)		API #4304751344	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35C1BS (U-07-MQ-1437b,i,p,s; eligible site 42Un6461, just south of proposed pipeline needs to be avoided)		API #4304751345	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35C4BS (U-07-MQ-1437b,i,p,s; eligible site 42Un6461, just south of proposed pipeline needs to be avoided)		API #4304751346	IPC 10-98 Spot Paleo Monitoring
Kerr-McGee's NBU 921-35C1CS (U-07-MQ-1437b,i,p,s)		API #4304751347	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35D1BS (U-07-MQ-1437b,i,p,s)		API #4304751348	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35D1CS (U-07-MQ-1437b,i,p,s)		API #4304751349	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35D4CS (U-07-MQ-1437b,i,p,s)		API #4304751350	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35C4CS (U-07-MQ-1437b,i,p,s)		API #4304751351	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35E1CS (U-07-MQ-1437b,i,p,s)		API #4304751352	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35E2AS (U-07-MQ-1437b,i,p,s)		API #4304751353	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35F1BS (U-07-MQ-1437b,i,p,s)		API #4304751355	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35F4BS (U-07-MQ-1437b,i,p,s)		API #4304751356	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35F4CS (U-07-MQ-1437b,i,p,s)		API #4304751357	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35K1BS		API #4304751358	IPC 10-97 Full Paleo Monitoring (U-07-MQ-1437b,i,p,s)

MQ-1437b,i,p,s)			
Kerr-McGee's NBU 921-35K1CS	API #4304751359	IPC 10-97 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35G1BS	API #4304751360	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un2395, adjacent to the road)
Kerr-McGee's NBU 921-35G1CS	API #4304751361	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un2395, adjacent to the road)
Kerr-McGee's NBU 921-35G4BS	API #4304751362	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un2395, adjacent to the road)
Kerr-McGee's NBU 921-35G4CS	API #4304751363	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un2395, adjacent to the road)
Kerr-McGee's NBU 921-35J1S	API #4304751364	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un2395, adjacent to the road)
Kerr-McGee's NBU 921-35H1BS	API #4304751365	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35H1CS	API #4304751366	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35H4BS	API #4304751367	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35H4CS	API #4304751368	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35I1BS	API #4304751369	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35I1CS	API #4304751370	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35I4BS	API #4304751371	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35I4CS	API #4304751372	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35J1CS	API #4304751373	IPC 10-98 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35J4BS	API #4304751374	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35K4BS	API #4304751375	IPC 10-99 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35K4CS	API #4304751376	IPC 10-99 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35N1BS	API #4304751377	IPC 10-99 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35N1CS	API #4304751378	IPC 10-99 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35E4CS	API #4304751379	IPC 10-99 Spot Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35P4CS	API #4304751380	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35P1CS	API #4304751381	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35P1BS	API #4304751382	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s)
Kerr-McGee's NBU 921-35O4CS	API #4304751383	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)
Kerr-McGee's NBU 921-35O4BS	API #4304751384	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)
Kerr-McGee's NBU 921-35O1CS	API #4304751385	IPC 10-100 Full Paleo Monitoring	(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)
Kerr-McGee's NBU 921-35L1BS	API #4304751386	IPC 10-99 Spot Paleo Monitoring	

(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35O1BS	API #4304751387	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)		
Kerr-McGee's NBU 921-35N4CS	API #4304751388	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)		
Kerr-McGee's NBU 921-35L1CS	API #4304751389	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35L4CS	API #4304751390	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M1BS	API #4304751391	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M1CS	API #4304751392	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M4BS	API #4304751393	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M4CS	API #4304751394	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35N4BS	API #4304751395	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant site, 42Un1836, adjacent to pipeline)		

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 921-35I4CS  
**API Number** 43047513720000      **APD No** 3205      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** NESE      **Sec** 35      **Tw** 9.0S      **Rng** 21.0E      2082      FSL 811      FEL  
**GPS Coord (UTM)** 627063 4427611      **Surface Owner**

**Participants**

See other comments:

**Regional/Local Setting & Topography**

The general area is within the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 37 air miles and 43.4 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs, furnishing water for antelope or livestock.

The NBU 921-35I pad will be enlarged to include six gas wells to be directionally drilled. They are the NBU 921-35I1BS, NBU 921-35I1CS, NBU 921-35I4BS, NBU 921-35I4CS, NBU 921-35J1CS and NBU 921-35J4BS. The pad extends a small existing pad containing the CIGE 28 producing gas well in all directions. Terrain in the area is moderately gentle. To the south is a high rocky ridge with exposed bedrock cliffs and boulders. Also to the south is a swale and road which will not be affected. No drainages intersect the location and no diversions are needed. A major tributary of Sand Wash is about 1/8 mile to the east of the site and the White River about 3 miles down drainage. The selected site appears to be suitable for enlarging a pad, drilling and operating the proposed wells and is the only suitable site in the immediate area.

Both the surface and minerals are owned by SITLA.

**Surface Use Plan**

**Current Surface Use**

- Grazing
- Wildlife Habitat
- Existing Well Pad

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0	<b>Width</b> 352 <b>Length</b> 475	Onsite	UNTA

**Ancillary Facilities** N

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Vegetation is a poor desert shrub type, which includes rabbit brush, Indian ricegrass, horsebrush, stipa commata, greasewood, broom snakeweed, shadscale and halogeton.

Antelope, sheep during the winter, rabbits, coyotes, and small mammals, birds and raptors.

**Soil Type and Characteristics**

Surface soils are a shallow rocky sandy loam.

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diversion Required?** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

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

**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 proposed reserve pit is 120' x 260' x 12' deep located in a cut on the southwest corner of the location. Kerr McGee plans a 30-mil liner with a double felt sub-liner.

**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, Lovell Young, Grizz Oleen, Charles Chase, Colby Sutton, Doyle Holmes, Claudia Sass, (Kerr McGee), Mitch Batty, John Slaugh, (Timberline Engineering and Land Surveying), Jim Davis (SITLA) and Ben Williams, (UDWR).

Floyd Bartlett  
**Evaluator**

11/30/2010  
**Date / Time**

# Application for Permit to Drill

## Statement of Basis

12/27/2010

Utah Division of Oil, Gas and Mining

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<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
3205	43047513720000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 921-35I4CS	<b>Unit</b>		NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES	<b>Type of Work</b>		DRILL	
<b>Location</b>	NESE 35 9S 21E S 2082 FSL 811 FEL		GPS Coord (UTM)	627068E	4427604N

### Geologic Statement of Basis

Kerr McGee proposes to set 2,500' 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 2,450'. A search of Division of Water Rights records shows one water well within a 10,000 foot radius of the center of Section 35. The well is listed as 2,640 feet deep and used for drilling water. 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. The proposed casing and cement should adequately protect. Any usable ground water.

Brad Hill  
**APD Evaluator**

12/20/2010  
**Date / Time**

### Surface Statement of Basis

The general area is within the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 37 air miles and 43.4 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs, furnishing water for antelope or livestock.

The NBU 921-35I pad will be enlarged to include six gas wells to be directionally drilled. They are the NBU 921-35I1BS, NBU 921-35I1CS, NBU 921-35I4BS, NBU 921-35I4CS, NBU 921-35J1CS and NBU 921-35J4BS. The pad extends a small existing pad containing the CIGE 28 producing gas well in all directions. Terrain in the area is moderately gentle. To the south is a high rocky ridge with exposed bedrock cliffs and boulders. Also to the south is a swale and road which will not be affected. No drainages intersect the location and no diversions are needed. A major tributary of Sand Wash is about 1/8 mile to the east of the site and the White River about 3 miles down drainage. The selected site appears to be suitable for enlarging a pad, drilling and operating the proposed wells and is the only suitable site in the immediate area.

Both the surface and minerals are owned by SITLA. Jim Davis represented SITLA at the pre-site investigation. Mr. Davis had no concerns pertaining to this location excepted as covered above. SITLA provided a seed mix to be used when reclaiming the site.

Ben Williams represented the Utah Division of Wildlife Resources. Mr. Williams stated the area is classified as crucial yearlong antelope habitat but recommended no restrictions for this species. No other wildlife will be significantly affected.

Floyd Bartlett  
**Onsite Evaluator**

11/30/2010  
**Date / Time**

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# Application for Permit to Drill Statement of Basis

12/27/2010

Utah Division of Oil, Gas and Mining

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## 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:** 11/23/2010

**API NO. ASSIGNED:** 43047513720000

**WELL NAME:** NBU 921-35I4CS

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

**PHONE NUMBER:** 720 929-6156

**CONTACT:** Danielle Piernot

**PROPOSED LOCATION:** NESE 35 090S 210E

**Permit Tech Review:**

**SURFACE:** 2082 FSL 0811 FEL

**Engineering Review:**

**BOTTOM:** 1577 FSL 0497 FEL

**Geology Review:**

**COUNTY:** UINTAH

**LATITUDE:** 39.99096

**LONGITUDE:** -109.51164

**UTM SURF EASTINGS:** 627068.00

**NORTHINGS:** 4427604.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 3 - State

**LEASE NUMBER:** ML 22582

**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 921-3514CS  
**API Well Number:** 43047513720000  
**Lease Number:** ML 22582  
**Surface Owner:** STATE  
**Approval Date:** 12/27/2010

**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.

Surface casing shall be cemented to the surface.

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

**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 <https://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

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# CAPSTAR #310  
 Submitted By SHEILA WOPSOCK Phone Number 435.781.7024  
 Well Name/Number NBU 921-3514CS  
 Qtr/Qtr NESE Section 35 Township 9S Range 21E  
 Lease Serial Number ML-22582  
 API Number 4304751372

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

Date/Time 05/20/2011 1300 HRS AM  PM

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

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

Date/Time 06/02/2011 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

<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 22582			
<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 921-3514CS				
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047513720000				
<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> 2082 FSL 0811 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NESE Section: 35 Township: 09.0S Range: 21.0E 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 checked="" type="checkbox"/> SPUD REPORT Date of Spud: 5/22/2011  <input type="checkbox"/> DRILLING REPORT Report Date:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <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           </td> <td style="width: 33%; vertical-align: top;"> <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           </td> <td style="width: 33%; vertical-align: top;"> <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"/> </td> </tr> </table>		<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"/>
<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 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 05/22/2011 AT 1530 HRS.					
<b>NAME (PLEASE PRINT)</b> Sheila Wopsock		<b>PHONE NUMBER</b> 435 781-7024			
<b>SIGNATURE</b> N/A		<b>TITLE</b> Regulatory Analyst  <b>DATE</b> 5/26/2011			

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

FORM 6

**ENTITY ACTION FORM**

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

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751374	NBU 921-35J4BS		NESE	35	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900	5/20/2011			5/31/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 05/20/2011 AT 1500 HRS. <i>BHL = NWSE</i>							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751373	NBU 921-35J1CS		NESE	35	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900	5/21/2011			5/31/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 05/21/2011 AT 1330 HRS. <i>BHL = NWSE</i>							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751372	NBU 921-35I4CS		NESE	35	9S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900				5/31/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 05/22/2011 AT 1530 HRS. <i>BHL = NESE</i>							

**ACTION CODES:**

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

SHEILA WOPSOCK

Name (Please Print)

Signature

REGULATORY ANALYST

Title

5/26/2011

Date

**RECEIVED**

**MAY 26 2011**

DIV. OF OIL, GAS & MINING

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22582
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 921-3514CS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047513720000	
<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> 2082 FSL 0811 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NESE Section: 35 Township: 09.0S Range: 21.0E 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: 6/4/2011	<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 2. DRILLED SURFACE HOLE TO 2560'. 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> 6/6/2011	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22582
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 921-3514CS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047513720000	
<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> 2082 FSL 0811 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NESE Section: 35 Township: 09.0S Range: 21.0E 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: 8/18/2011	<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.		
<p>MIRU ROTARY RIG. FINISHED DRILLING FROM 2560' TO 9623' ON AUGUST 17, 2011. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED PIONEER RIG 54 ON AUGUST 18, 2011 @ 20:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.</p>		
<p><b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b></p>		
<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> 8/19/2011	

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# PIONEER 54  
Submitted By DARWYNE CADY Phone Number 435- 790-2921  
Well Name/Number NBU 921-3514CS  
Qtr/Qtr NE/4 SE/4 Section 35 Township 9S Range 21E  
Lease Serial Number ML 22582  
API Number 43047513720000

Casing – Time casing run starts, not cementing times.

- Production Casing  
 Other

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

BOPE

- Initial BOPE test at surface casing point  
 Other

Date/Time 8/12/11 1 AM  PM

Rig Move

Location To: \_\_\_\_\_

Date/Time \_ \_ AM  PM

Remarks

RECEIVED  
AUG 15 2011  
DIV. OF OIL, GAS & MINING

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# PIONEER 54  
Submitted By DARWYNE CADY Phone Number 435- 790-2921  
Well Name/Number NBU 921-3514CS  
Qtr/Qtr NE/4 SE/4 Section 35 Township 9S Range 21E  
Lease Serial Number ML 22582  
API Number 43047513720000

Casing – Time casing run starts, not cementing times.

- Production Casing  
 Other

Date/Time \_ 8/17/11 14:00 AM  PM

BOPE

- Initial BOPE test at surface casing point  
 Other

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

Rig Move

Location To: \_\_\_\_\_

Date/Time \_ \_ AM  PM

RECEIVED

AUG 17 2011

DIV. OF OIL, GAS & MINING

Remarks

**Carol Daniels - STATE NOTICE NBU 921-35I4CS**

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**From:** "Anadarko - Pioneer 54"  
**To:** "Carol Daniels"  
**Date:** 8/17/2011 5:09 PM  
**Subject:** STATE NOTICE NBU 921-35I4CS

---

PROD CASING

---

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# PIONEER 54  
Submitted By DARWYNE CADY Phone Number 435- 790-2921  
Well Name/Number NBU 921-35I4CS  
Qtr/Qtr NE/4 SE/4 Section 35 Township 9S Range 21E  
Lease Serial Number ML 22582  
API Number 43047513720000

Casing – Time casing run starts, not cementing times.

Production Casing  
Other

Date/Time 8/18/11 04:00 AM PM

BOPE

Initial BOPE test at surface casing point  
Other

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

**RECEIVED**  
**AUG 18 2011**

DIV. OF OIL, GAS & MINING

Rig Move

Location To: \_\_\_\_

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22582
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>1. TYPE OF WELL</b> Gas Well		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>8. WELL NAME and NUMBER:</b> NBU 921-3514CS
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>9. API NUMBER:</b> 43047513720000
<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> 2082 FSL 0811 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NESE Section: 35 Township: 09.0S Range: 21.0E 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"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE <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"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> OTHER	
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> APD EXTENSION	
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="text"/>	
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 10/26/2011		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 10/26/2011 AT 2045 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> 10/27/2011	

**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**

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**ML 22582**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

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

8. WELL NAME and NUMBER:  
**NBU 921-3514CS**

9. API NUMBER:  
**4304751372**

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

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:  
**NESE 35 9S 21E S**

12. COUNTY  
**UINTAH**

13. STATE  
**UTAH**

14. DATE SPUDDED: **5/22/2011**

15. DATE T.D. REACHED: **8/17/2011**

16. DATE COMPLETED: **10/26/2011** ABANDONED  READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL):  
**5058 GL**

18. TOTAL DEPTH: MD **9,623** TVD **9,562**

19. PLUG BACK T.D.: MD **9,565** TVD **9,504**

20. IF MULTIPLE COMPLETIONS, HOW MANY? \*

21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)  
**CBL/VD/GR/CCL-CMI/GR/CCL-RSL/SM/GR/CCL-SYNTHETIC TRIPLE COMBO**

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

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

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,589		730		0	
7 7/8"	4 1/2" I-80	11.6#	0	9,608		1,395		1900	

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"	8,651							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) MESAVERDE	7,695	9,076			7,695 9,076	0.36	120	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B) WSMVD								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
7695 - 9076	PUMP 3,747 BBLs SLICK H2O & 66,875 LBS 30/50 OTTAWA SAND 5 STAGES

29. ENCLOSED ATTACHMENTS:

ELECTRICAL/MECHANICAL LOGS       GEOLOGIC REPORT       DST REPORT       DIRECTIONAL SURVEY

SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION       CORE ANALYSIS       OTHER: \_\_\_\_\_

30. WELL STATUS:  
**PROD**

31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED: 10/26/2011		TEST DATE: 10/28/2011		HOURS TESTED: 24		TEST PRODUCTION RATES: →		OIL - BBL: 0	GAS - MCF: 1,975	WATER - BBL: 480	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 2,200	CSG. PRESS. 3,700	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 1,975	WATER - BBL: 480	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	1,414
				BIRD'S NEST	1,692
				MAHOGANY	2,231
				WASATCH	4,727
				MESAVERDE	7,403

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/2" bit. The remainder of surface hole was drilled with an 11" bit. Attached is the chronological well history, perforation report & final survey.

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

NAME (PLEASE PRINT) JAIME SCHARNOWSKE TITLE REGULATORY ANALYST  
 SIGNATURE Jaime Scharnowsk DATE 11/22/2011

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

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-3514CS (YELLOW)	Spud Conductor: 5/22/2011	Spud Date: 6/2/2011
Project: UTAH-UINTAH	Site: NBU 921-351 PAD	Rig Name No: PROPETRO 11/11, PIONEER 54/54
Event: DRILLING	Start Date: 8/12/2011	End Date: 8/18/2011
Active Datum: RKB @5,077.00usft (above Mean Sea Level)	UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
6/2/2011	6:30 - 11:00	4.50	MIRU	01	B	P		DRESS TOP OF CONDUCTOR. INSTALL DIVERTER HEAD AND BOWME LINE. BUILD DITCH. MOVE RIG OVER HOLE AND RIG UP.. SET CATWALK AND PIPE RACKS. RIG UP AND PRIME PIT PUMP AND MUD PUMP.
	11:00 - 11:30	0.50	PRPSPD	01	B	P		P/U 1.83 DEG BENT HOUSING HUNTING MTR SN 8060 . 7/8 LOBE .17 RPM. M/U 12.25" Q507 SN 7133232 9TH RUN, W/ 7-18'S. INSTALL RUBBER
	11:30 - 13:30	2.00	DRLSUR	02	A	P		SPUD SURFACE 06/02/2011 @ 11:30 HRS. DRILL 12.25" SURFACE HOLE F/40'-210' (170' @ 85'/HR) PSI ON/ OFF 690/410, UP/ DOWN/ ROT 27/22/25. 500 GPM, 45 RPM ON TOP DRIVE, 15-18K WOB
	13:30 - 15:30	2.00	DRLSUR	06	A	P		TOOH, LD 12.25" BIT, PU 11" HUGHES, SN 7024086 2ND RUN, PU AND ORIENT DIR TOOLS,
	15:30 - 20:00	4.50	DRLSUR	02	C	P		DRILL/ SLIDE 11" SURFACE HOLE F/ 210'-790' (580' @ 129'/HR) PSI ON/ OFF 1130/890, UP/ DOWN/ ROT 55/45/51. 136 SPM, 553 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE, CIRCULATING RESERVE PIT
	20:00 - 20:45	0.75	DRLSUR	06	A	P		TOOH TO BHA
	20:45 - 0:00	3.25	MAINT	08	B	Z		REPLACE CLUTCH ON MUD PUMP
6/3/2011	0:00 - 0:30	0.50	MAINT	08	B	Z		REPAIR CLUTCH ON MUD PUMP
	0:30 - 0:00	23.50	DRLSUR	02	C	P		DRILL/ SLIDE 11" SURFACE HOLE F/ 790'- 2525' (1745' @ 74'/HR) PSI ON/ OFF 1580/1420, UP/ DOWN/ ROT 89/55/70. 136 SPM, 553 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE, CIRCULATING RESERVE PIT
6/4/2011	0:00 - 0:30	0.50	DRLSUR	02	C	P		DRILL/ SLIDE 11" SURFACE HOLE F/2525'- 2560' (35' @ 70'/HR) PSI ON/ OFF 1580/1420, UP/ DOWN/ ROT 89/55/70. 136 SPM, 553 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE, CIRCULATING RESERVE PIT
	0:30 - 2:00	1.50	DRLSUR	05	F	P		CIRC AND COND HOLE CLEAN
	2:00 - 6:00	4.00	DRLSUR	06	A	P		LDDS AND DIR BHA
	6:00 - 6:30	0.50	CSG	12	A	P		RIG UP TO RUN 58 JTS OF 8.625" SURFACE CSG, MOVE CATWALK AND PIPE RACKS, MOVE CSG OVER TO WORK AREA
	6:30 - 10:00	3.50	CSG	12	C	P		HELD SAFETY MEETING, RUN CSG. RAN 58 JTS OF 8-5/8", 28#, J-55, 8 RND CSG W/ LTC THREADS. LANDED FLOAT SHOE @ 2530.26' KB. RAN BAFFLE PLATE IN TOP OF SHOE JT LANDED 2484.66' KB. FILL CSG @ 500', 1500', AND 2530'. RUN 200' OF 1" DOWN BACK SIDE

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

Well: NBU 921-3514CS (YELLOW)	Spud Conductor: 5/22/2011	Spud Date: 6/2/2011
Project: UTAH-UINTAH	Site: NBU 921-351 PAD	Rig Name No: PROPETRO 11/11, PIONEER 54/54
Event: DRILLING	Start Date: 8/12/2011	End Date: 8/18/2011
Active Datum: RKB @5,077.00usft (above Mean Sea Level)		UWI: NE/SE/09/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	10:00 - 16:00	6.00	CSG	12	C	P		<p>HOLD SAFETY MEETING. INSTALL CEMENT HEAD. PSI TEST TO 2000 PSI. PUMP 80 BBLs OF 8.3# H2O AHEAD. PUMP 20 BBLs OF 8.4# GEL WATER AHEAD. PUMP 180 SX(122.4 BBLs) 11# 3.82 YIELD LEAD CEMENT, PUMP 200 SX (40 BBLs) OF 15.8# 1.15 YIELD TAIL(2% CALC, 1/4#/SK OF FLOCELE). FULL CIRC. DROP PLUG ON FLY AND DISPLACE W/ 152 BBLs OF 8.3# H2O. LIFT PRESSURE WAS 600 PSI, BUMP PLUG AND HOLD 900 PSI FOR 5 MIN. FLOAT HELD.</p> <p>* TOP OUT, PUMP 100 SX (20.5 BBLs) OF 15.8# 1.15 YIELD TAIL(4 % CALC, 1/4#/SK OF FLOCELE) DOWN 1".</p> <p>* PUMP 250 SX (81.9 BBLs) OF 15.8# 1.15 YIELD TAIL(4 % CALC, 1/4#/SK OF FLOCELE)DOWN BACK SIDE.</p> <p>CMT STAYED AT SURFACE.</p> <p>RIG DOWN AND RELEASE RIG AND CEMENTERS 16:00 HRS.</p>
8/12/2011	8:00 - 9:30	1.50	DRLPRO	01	C	P		SKID RIG TO NBU-921-3514CS
	9:30 - 12:30	3.00	DRLPRO	14	A	P		N/BOPE AND STRATA EQUIPMENT
	12:30 - 20:00	7.50	DRLPRO	15	A	P		TEST BOPE AND STRATA EQUIPMENT
	20:00 - 20:30	0.50	DRLPRO	14	B	P		250-5000 PSI CSG 1500 30 MIN INSALL W/BUSHING
	20:30 - 22:30	2.00	DRLPRO	06	A	P		M/U BHA ORIENT MWD TOOLS RIH TO 2387'
	22:30 - 0:00	1.50	DRLPRO	14	B	P		INSTALL STRATA ROT RUBBER
8/13/2011	0:00 - 0:30	0.50	DRLPRO	09	A	P		SLIP AND CUT DRLG LINE 50'
	0:30 - 4:00	3.50	DRLPRO	02	F	P		DRLG CMT F/2469' TO FC @ 2484' SHOE TRACK-SHOE @ 2530' RAT HOLE TO 2575'
	4:00 - 16:30	12.50	DRLPRO	02	D	P		DRLG F/ 2575' TO 4093'-1518' @ 121.44' PH WOB / 22-24 - RPM 60, MM 128 SPM 160- GPM 600 TRQ ON/OFF = 8-6 K PSI ON /OFF = 1800-1200 PU/SO/RT =135/95/110 SLIDE = 163' IN 2.68 HRS = 60.82' PH ROT = 1355' IN 9.82 HRS = 137.98' PH MW 8.4, VIS 26 NO FLARE 40'N -16.5W TARGET CENTER
	16:30 - 17:00	0.50	DRLPRO	07	A	P		RIG SERVICE

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

Well: NBU 921-35I4CS (YELLOW) Spud Conductor: 5/22/2011 Spud Date: 6/2/2011  
 Project: UTAH-UINTAH Site: NBU 921-35I PAD Rig Name No: PROPETRO 11/11, PIONEER 54/54  
 Event: DRILLING Start Date: 8/12/2011 End Date: 8/18/2011  
 Active Datum: RKB @5,077.00usft (above Mean Sea Level) UWI: NE/SE/09/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	17:00 - 0:00	7.00	DRLPRO	02	D	P		DRLG F/ 4093' TO 5042'-949' @ 135.57' PH WOB / 22-24 - RPM 60, MM 128 SPM 160- GPM 600 TRQ ON/OFF = 8-6 K PSI ON /OFF = 2000-1400 PU/SO/RT =175/115/135 SLIDE = 1.34 HRS-69'-51.49' PH ROT = 5.66 HRS-880'-155.47' PH MW 8.4, VIS 26 15' DRILLING FLARE 30' BTMS UP FLAIR 39'N 16.5 W TARGET CENTER
8/14/2011	0:00 - 16:00	16.00	DRLPRO	02	D	P		DRLG F/ 5042' TO 6464'-1422' @ 88.87' PH WOB / 22-24 - RPM 60, MM 128 SPM 160- GPM 600 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2000-1500 PU/SO/RT =185/135/150 SLIDE = .83 HRS-47'-56.62' PH ROT = 15.17 HRS-1375'-90.63' PH MW 8.4, VIS 26 10' DRILLING FLARE 20' BTMS UP FLAIR 24.5'N 6' W TARGET CENTER RIG SERVICE
	16:00 - 16:30	0.50	DRLPRO	07	A	P		
	16:30 - 0:00	7.50	DRLPRO	02	D	P		DRLG F/ 6464' TO 6760'-296' @ 39.46' PH WOB / 22-24 - RPM 60, MM 128 SPM 160- GPM 600 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2000-1500 PU/SO/RT =189/135/150 SLIDE = 1.48 HRS-27'-18.24' PH ROT = 6.02 HRS-269'-44.68' PH MW 8.4, VIS 26 10' DRILLING FLARE 20' BTMS UP FLAIR 22.09' N-5.10' W TARGET CENTER
8/15/2011	0:00 - 15:00	15.00	DRLPRO	02	D	P		DRLG F/ 6760' TO 7223'-463' @ 30.86' PH WOB / 22-24 - RPM 60, MM 128 SPM 160- GPM 600 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2000-1500 PU/SO/RT =172/140/160 SLIDE = 0 HRS ROT = 15 HRS-463'-30.86' PH MW 8.4, VIS 26 DISPLACE HOLE TO 9.5 33 VISC MUD FOR TOH 10' DRILLING FLARE 20' BTMS UP FLAIR 6.5' N-3.5' W TARGET CENTER POOH FOR BIT ROP DOWN CHANGE BIT-MOTOR-RIH TO 2000' INSTALL STRATA ROT RUBBER RIH TO 7130' HOLE GOOD
	15:00 - 18:00	3.00	DRLPRO	06	A	P		
	18:00 - 20:00	2.00	DRLPRO	06	A	P		
	20:00 - 21:00	1.00	DRLPRO	14	B	P		
	21:00 - 23:30	2.50	DRLPRO	06	A	P		

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-35I4CS (YELLOW) Spud Conductor: 5/22/2011 Spud Date: 6/2/2011  
 Project: UTAH-UINTAH Site: NBU 921-35I PAD Rig Name No: PROPETRO 11/11, PIONEER 54/54  
 Event: DRILLING Start Date: 8/12/2011 End Date: 8/18/2011  
 Active Datum: RKB @5,077.00usft (above Mean Sea Level) UWI: NE/SE/O9/S/21/E/35/O/0/26/PM/S/2082/E/O/81/1/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	23:30 - 0:00	0.50	DRLPRO	03	D	P		REAM F/7130' TO 7223' DISPLACE HOLE WITH WATER PUMP MUD TO UPRIGHT
8/16/2011	0:00 - 17:30	17.50	DRLPRO	02	D	P		DRLG F/ 7223' TO 8742'-1519' @ 86.8' PH WOB / 22-24 - RPM 60, MM 128 SPM 140- GPM 530 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2400-1900 PU/SO/RT =225/145/175 SLIDE = 2.49-HRS-106'-42.57' PH ROT = 15.01-HRS-1413'-94.13' PH DISPLACE HOLE TO 9.5 33 VISC MUD @ 8200' 100 PSI ON ANN 15' DRILLING FLARE 20' BTMS UP FLAIR 28' N-5' W TARGET CENTER ROTATE TO TD RIG SERVICE
	17:30 - 18:00	0.50	DRLPRO	07	A	P		
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRLG F/ 8747' TO 9026'-279' @ 46.5' PH WOB / 22-24 - RPM 60, MM 128 SPM 140- GPM 530 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2400-1900 PU/SO/RT =230/1150/180 SLIDE = 0 HRS ROT = 6-HRS-279'-46.5' PH DISPLACE HOLE TO 9.5 33 VISC MUD @ 8200' 100 PSI ON ANN 15' DRILLING FLARE 20' BTMS UP FLAIR 14.6' N-3.17' W TARGET CENTER ROTATE TO TD
8/17/2011	0:00 - 9:00	9.00	DRLPRO	02	D	P		DRLG F/ 9026' TO 9623'-597' @ 66.33' PH WOB / 22-24 - RPM 60, MM 128 SPM 140- GPM 530 TRQ ON/OFF = 9-8 K PSI ON /OFF = 2400-1900 PU/SO/RT =230/1150/180 SLIDE = 0 HRS ROT = 9-HRS-597'-86.33' PH DISPLACE HOLE TO 9.5 33 VISC MUD @ 8200' 100 PSI ON ANN 15' DRILLING FLARE 20' BTMS UP FLAIR 14.6' N-3.17' W TARGET CENTER TD
	9:00 - 9:30	0.50	DRLPRO	05	J	P		CHECK BTM HOLE PSI FOR TRIP 10.3 PPG
	9:30 - 13:30	4.00	DRLPRO	05	C	P		PUMP HIGH VISC SWEEP CIRC HOLE CLEAN RAISE MW TO 11, VIS TO 50, 10.7+ RETURNS
	13:30 - 20:00	6.50	DRLPRO	06	E	P		WIPER TRIP UP TO 3500', TIGHT BACKREAM 5' @ 9130', WORK THROUGH TIGHT SPOT @ 4600', FILL PIPE, TIH NO PROBLEMS, WASH 60' TO BOTTOM, 5' FILL, F/T ANN & PIPE RAMS

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-3514CS (YELLOW) Spud Conductor: 5/22/2011 Spud Date: 6/2/2011  
 Project: UTAH-UINTAH Site: NBU 921-351 PAD Rig Name No: PROPETRO 11/11, PIONEER 54/54  
 Event: DRILLING Start Date: 8/12/2011 End Date: 8/18/2011  
 Active Datum: RKB @5,077.00usft (above Mean Sea Level) UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/18/2011	20:00 - 22:00	2.00	DRLPRO	05	C	P		CIRC & COND HOLE TO RUN CASING, PUMP HIGH VIS SWEEP, 10-15' FLARE 30 MIN'S INTO CIRC ON BOTTOMS UP OF 45 MIN'S, 15 MIN'S EARLY, F/ 10 MIN'S ON BUSTER, 7 BBL GAIN, MW 10.9 IN & OUT, VIS 45 NO BACKGROUND FLARE OFF BUSTER
	22:00 - 0:00	2.00	DRLPRO	06	A	P		POOH TO RUN PROD CASING, NO PROBLEMS
	0:00 - 2:00	2.00	DRLPRO	06	A	P		FINISH POOH, NO PROBLEMS, F/T PIPE & BLIND RAMS, L/D DIR TOOLS, BIT & MM
	2:00 - 2:30	0.50	DRLPRO	14	B	P		REMOVE WEARBUSHING
	2:30 - 12:00	9.50	DRLPRO	12	C	P		HPJSM W/ RIG & CASING CREWS, R/U & RUN 227 JTS 4.5" I-80 BT&C PROD CASING
								WASATCH MARKER @ 4719' MASA MARKER @ 7434' SHOE @ 9608', F/C @ 9563', R/D
	12:00 - 13:30	1.50	DRLPRO	05	D	P		CIRC OUT GAS, 20' FLARE 10 MIN INTO CIRC F/ 15 MIN'S, ON BUSTER, OFF BUSTER NO FLARE 10.9 MW IN & OUT, VIS 45
	13:30 - 16:30	3.00	DRLPRO	12	E	P		HPJSM W/ RIG & BJ CREWS, R/U & PSI TEST LINES TO 6000#, 10 BBLs WATER, 20 SKS SCAV @ 10.2 PPG, LEAD 345 SKS 11.2 PPG 2.99 YLD, TAIL 1050 SKS 14.3 PPG 1.31 YLD, DROP PLUG & DISPLACE W/ 148 BBLs WATER, BUMP PLUG @ 3000 PSI 600 OVER FINAL LIFT OF 2300 PSI, EST TOP OF TAIL 4200', FLOATS HELD, FULL RETURNS THOUGHOUT JOB W/ NO CEMENT TO SURFACE, 1.5 BACK TO TRUCK, PLUG BACK TO 9563'
18:30 - 20:00	3.50	DRLPRO	14	A	P		SET C-22 SLIPS W/ 125K, N/D, P/U STACK & MAKE ROUGH CUT, CLEAN PITS, PREPARE TO SKID RIG & RELEASE RIG TO THE NBU 921-3514BS @ 20:00 8/18/11	

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US ROCKIES REGION

## 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	NBU 921-35I4CS (YELLOW)	Wellbore No.	OH
Well Name	NBU 921-35I4CS	Wellbore Name	NBU 921-35I4CS
Report No.	1	Report Date	10/14/2011
Project	UTAH-UINTAH	Site	NBU 921-35I PAD
Rig Name/No.		Event	COMPLETION
Start Date	10/7/2011	End Date	10/25/2011
Spud Date	6/2/2011	Active Datum	RKB @5,077.00usft (above Mean Sea Level)
UWI	NE/SE/O9/S/21/E/35/O/0/26/PM/S/2082/E/O/811/O/0		

### 1.3 General

Contractor		Job Method	PERFORATE	Supervisor	
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	7,695.0 (usft)-9,076.0 (usft)	Start Date/Time	10/17/2011 12:00AM
No. of Intervals	25	End Date/Time	10/17/2011 12:00AM
Total Shots	0	Net Perforation Interval	34.00 (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	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/17/2011 12:00AM	MESAVERDE/ 1			7,695.0	7,696.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

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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
10/17/2011 12:00AM	MESAVERDE/			7,766.0	7,767.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			7,788.0	7,790.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			7,842.0	7,844.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			7,878.0	7,880.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,116.0	8,118.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,260.0	8,262.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,294.0	8,296.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,395.0	8,396.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,444.0	8,445.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,487.0	8,488.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,529.0	8,530.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,562.0	8,563.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,602.0	8,603.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,629.0	8,630.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/17/2011 12:00AM	MESAVERDE/			8,674.0	8,675.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,707.0	8,708.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,736.0	8,737.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,754.0	8,755.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,790.0	8,792.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			8,894.0	8,896.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			9,007.0	9,008.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			9,041.0	9,042.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			9,055.0	9,056.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/17/2011 12:00AM	MESAVERDE/			9,074.0	9,076.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

3 Plots

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-35I4CS (YELLOW)	Spud Conductor: 5/22/2011	Spud Date: 6/2/2011
Project: UTAH-UINTAH	Site: NBU 921-35I PAD	Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION	Start Date: 10/7/2011	End Date: 10/25/2011
Active Datum: RKB @5,077.00usft (above Mean Sea Level)	UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
10/7/2011	7:00 - 15:00	8.00	COMP	33	C	P		MIRU B&C TESTERS, FILL SURFACE CSG, P/T 4-1/2 CSG, 1,000# W/ 0# LOSS IN 15 MIN. 3,500# W/ 19# LOSS IN 15 MIN. 7,000# W/ 69# LOSS IN 30 MIN. [GOOD TEST NO COMMUNICATION W/ SURFACE.
10/17/2011	6:45 - 7:00	0.25	COMP	48		P		HSM, REVIEW FRAC INTRUCTIONS / MIRU CSAED HOLE SOLUTIONS / SUPERIOR FRAC EQUIP.
	7:00 - 7:00	0.00	COMP	36	B	P		PERF & FRAC FOLLOWING WELL AS PER DESIGN W/ 30/50 MESH SAND & SLK WTR. ALL CBP'S ARE HALIBURTON 8K CBP'S. REFER TO STIM PJR FOR FLIUD, SAND AND CHEMICAL VOLUME PUM'D STG #1] PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW.  FRAC STG #1] WHP=1,103#, BRK DN PERFS=3,208#, @=4.7 BPM, INJ RT=50, INJ PSI=5,450#, INITIAL ISIP=2,654#, INITIAL FG=.73, FINAL ISIP=2,874#, FINAL FG=.76, AVERAGE RATE=50.1, AVERAGE PRESSURE=5,189#, MAX RATE=4.7, MAX PRESSURE=6,222#, NET PRESSURE INCREASE=220#, 24/24 CALC PERFS OPEN. X OVER TO WIRE LINE  PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,822', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWMFN.
10/18/2011	6:45 - 7:00	0.25	COMP	48		P		HSM, STAYING AWAY FROM HIGH PRESSURE LINES

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-3514CS (YELLOW)		Spud Conductor: 5/22/2011		Spud Date: 6/2/2011	
Project: UTAH-UINTAH			Site: NBU 921-351 PAD		Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION			Start Date: 10/7/2011		End Date: 10/25/2011
Active Datum: RKB @5,077.00usft (above Mean Sea Level)			UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 17:00	10.00	COMP	36	B	P		<p>FRAC STG #2] WHP=2,100#, BRK DN PERFS=4,222#, @=4.5 BPM, INJ RT=50, INJ PSI=5,450#, INITIAL ISIP=2,577#, INITIAL FG=.73, FINAL ISIP=2,706#, FINAL FG=.75, AVERAGE RATE=49.9, AVERAGE PRESSURE=4,922#, MAX RATE=50.8, MAX PRESSURE=5,436#, NET PRESSURE INCREASE=149#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=8,660', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #3] WHP=1,515#, BRK DN PERFS=3,006#, @=4.3 BPM, INJ RT=49.8, INJ PSI=5,741#, INITIAL ISIP=2,009#, INITIAL FG=.67, FINAL ISIP=2,476#, FINAL FG=.73, AVERAGE RATE=50, AVERAGE PRESSURE=5,042#, MAX RATE=50.6, MAX PRESSURE=6,137#, NET PRESSURE INCREASE=467#, 18/24 75% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=8,326', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWFVN. HSM, PINCH POINTS &amp; R/D</p>
10/19/2011	6:45 - 7:00	0.25		48		P		

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-3514CS (YELLOW)		Spud Conductor: 5/22/2011		Spud Date: 8/2/2011	
Project: UTAH-UINTAH		Site: NBU 921-351 PAD		Rig Name No: ROYAL WELL SERVICE 2/2	
Event: COMPLETION		Start Date: 10/7/2011		End Date: 10/25/2011	
Active Datum: RKB @5,077.00usft (above Mean Sea Level)			UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 7:00	0.00	COMP	36	B	P		<p>FRAC STG #4] WHP=1,910#, BRK DN PERFS=3,854#, @=4.6 BPM, INJ RT=45.4, INJ PSI=5,380#, INITIAL ISIP=2,107#, INITIAL FG=.70, FINAL ISIP=2,459#, FINAL FG=.74, AVERAGE RATE=49.5, AVERAGE PRESSURE=5,455#, MAX RATE=50.4, MAX PRESSURE=6,335#, NET PRESSURE INCREASE=352#, 17/24 72% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,910', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #5] WHP=717#, BRK DN PERFS=5,337#, @=4.5 BPM, INJ RT=45.8, INJ PSI=4,648#, INITIAL ISIP=1,976#, INITIAL FG=.69, FINAL ISIP=2,478#, FINAL FG=.76, AVERAGE RATE=49.9, AVERAGE PRESSURE=4,666#, MAX RATE=50.4, MAX PRESSURE=6,353#, NET PRESSURE INCREASE=502#, 20/24 85% CALC PERFS OPEN. X OVER TO WIRE LINE</p> <p>PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=' , PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=7,645'</p> <p>TOTAL FLUID PUMP'D=3,747 BBLS TOTAL SAND PUMP'D=66,875# HSM &amp; JSA W/ROYAL WELL SERVICE</p>
10/25/2011	6:45 - 7:00	0.25	COMP	48		P		

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**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-3514CS (YELLOW)		Spud Conductor: 5/22/2011		Spud Date: 6/2/2011	
Project: UTAH-UINTAH			Site: NBU 921-351 PAD		Rig Name No: ROYAL WELL SERVICE 2/2
Event: COMPLETION			Start Date: 10/7/2011		End Date: 10/25/2011
Active Datum: RKB @5,077.00usft (above Mean Sea Level)			UWI: NE/SE/0/9/S/21/E/35/0/0/26/PM/S/2082/E/0/811/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 17:30	10.50	COMP	30	A	P		<p>MIRU RIG - SPOT EQUIP. SICP 0 PSI. NDWH, NU BOPs. RU FLOOR &amp; TBG EQUIP. PREP &amp; TALLY TBG. PU 3 7/8" BIT, POBS &amp; XN NIPPLE. RIH ON 241 JTS 2 3/8" TBG. TAG FILL @ 7642'. LD 2 JTS TBG. RD TBG EQUIP, RU PWR SWVL &amp; PMP. EST CIRC. PT CSG &amp; BOPs TO 3000 PSI &amp; HOLD 15 MIN. (0 PSI LOSS) C/O SND &amp; D/O CBPs</p> <p>HALCO CBP @ C/O FILL D/O CBP DIFF PSI FCP</p> <p>CBP #1 @ 7645' 03 FT 08 MIN 500 PSI 050 PSI</p> <p>CBP #2 @ 7920' 22 FT 05 MIN 900 PSI 300 PSI</p> <p>CBP #3 @ 8324' 20 FT 12 MIN 500 PSI 400 PSI</p> <p>CBP #4 @ 8660' 23 FT 03 MIN 900 PSI 500 PSI</p> <p>CBP #5 @ 8822' 26 FT 03 MIN 400 PSI 500 PSI</p> <p>C/O TO 9222'. (BTM PERF @ 9076' - PBTD @ 9564'). FCP = 650 PSI. PMP 20 BBLS TMAC &amp; CIRC WELL CLEAN. ND PWR SWVL, NU TBG EQUIP. LD 18 JTS ON FLOAT, (42 TOTAL ON FLOAT). LND TBG ON HNGR W/272 JTS NEW 2 3/8" 4.7# L80 TBG @ 8651.15'. RD FLOOR &amp; TBG EQUIP. ND BOP, DROP BALL, NUWH. PMP OFF BIT W/10 BBLS TMAC @ 2200 PSI. WAIT 30 MIN FOR BIT TO FALL TO BTM. TURN WELL TO F.B.C.</p> <p>KB 19' HANGER 0.83' XN NIPPLE 1.33' TBG 272 JTS = 8628.94' XN NIPPLE @ 8648.99' EOT @ 8651.15' (000 JTS DLVRD - 00 JTS RTND)</p> <p>TWTR = 3907 BBLS TWR = 1470 BBLS TWLTR = 2437 SICP = 1250 PSI, SITP = 0 PSI.</p>

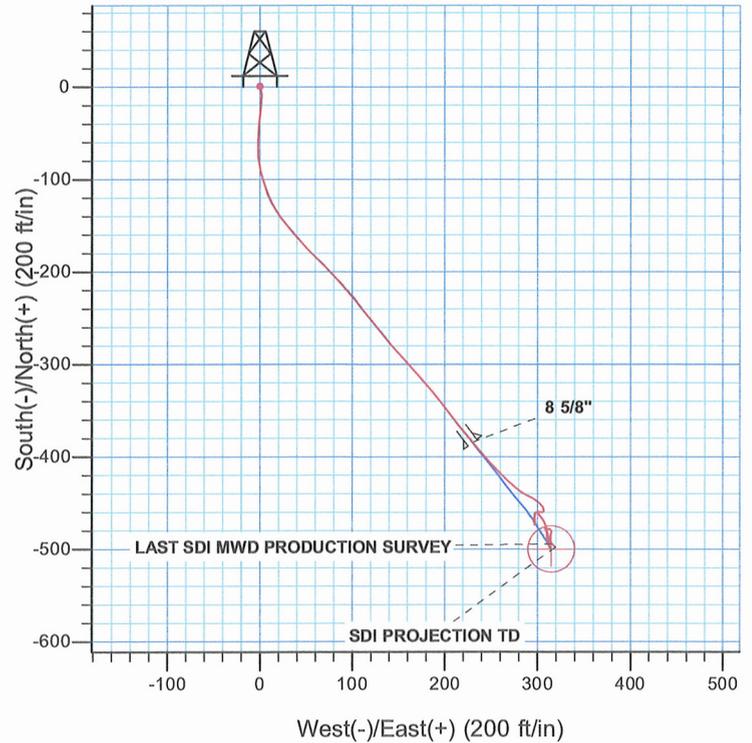
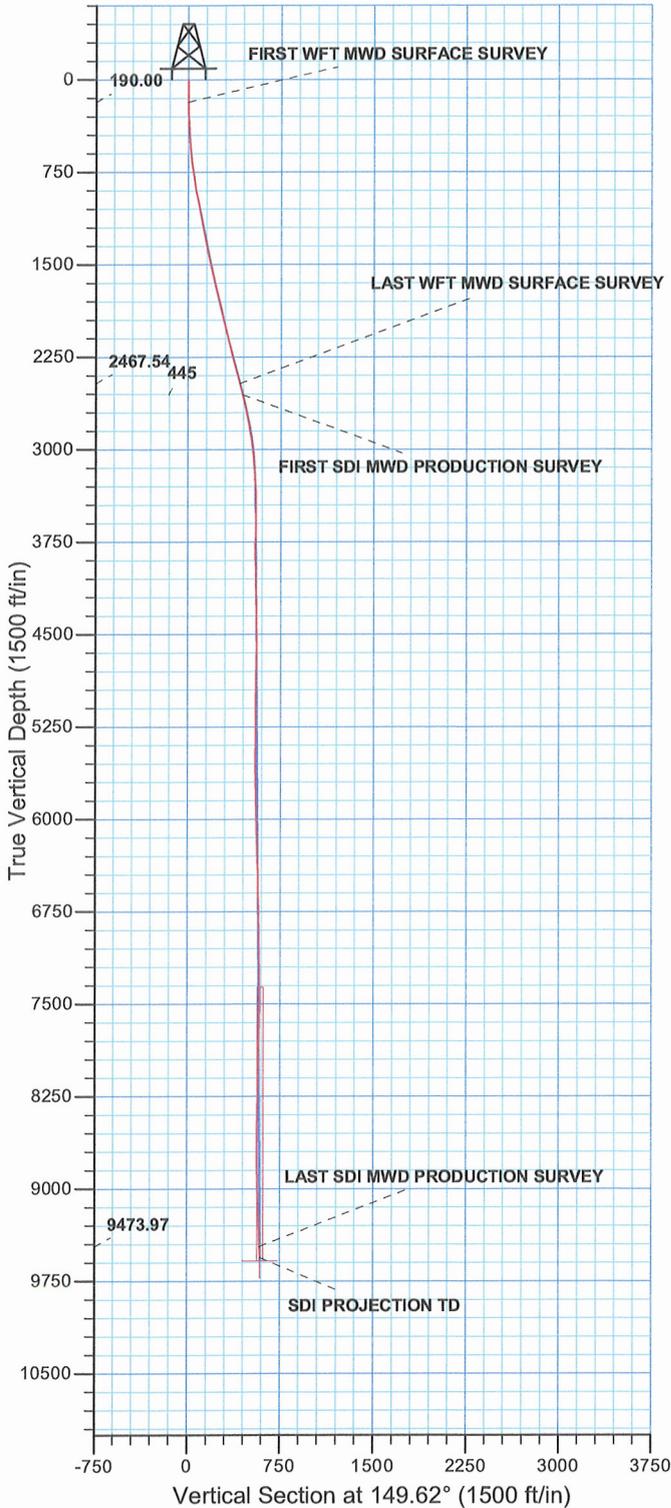
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WELL DETAILS: NBU 921-35I4CS					
GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14526262.94	2057295.77	39° 59' 27.755 N	109° 30' 42.048 W



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

**Magnetic Field**  
**Strength: 52310.3snT**  
**Dip Angle: 65.86°**  
**Date: 2011/07/27**  
**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 35 T9S R21E
System Datum: Mean Sea Level

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Design: OH (NBU 921-35I4CS/OH)
Created By: RobertScott Date: 14:35, October 05 2011



**Scientific Drilling**  
Rocky Mountain Operations

## **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 921-35I PAD**

**NBU 921-35I4CS**

**OH**

**Design: OH**

## **Standard Survey Report**

**05 October, 2011**

**Anadarko**   
Petroleum Corporation

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**DEC 05 2011**

**DIV. OF OIL, GAS & MINING**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 921-35I4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Site:</b>	UINTAH_NBU 921-35I PAD	<b>MD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Well:</b>	NBU 921-35I4CS	<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 921-35I PAD, SECTION 35 T9S R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,526,246.73 usft	<b>Latitude:</b>	39° 59' 27.596 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,057,284.25 usft	<b>Longitude:</b>	109° 30' 42.199 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	NBU 921-35I4CS, 2082' FSL 811' FEL					
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b>	14,526,262.94 usft	<b>Latitude:</b>	39° 59' 27.755 N
	+E/-W	0.00 ft	<b>Easting:</b>	2,057,295.76 usft	<b>Longitude:</b>	109° 30' 42.048 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,058.00 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	2011/07/27	11.06	65.86	52,310

<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	149.62	

<b>Survey Program</b>	<b>Date</b>	2011/10/05			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
15.00	2,515.00	Survey #1 WFT MWD SURFACE (OH)	MWD	MWD - Standard	
2,611.00	9,623.00	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
15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00
190.00	0.21	93.15	190.00	-0.02	0.32	0.18	0.12	0.12	0.00
<b>FIRST WFT MWD SURFACE SURVEY</b>									
274.00	1.70	163.45	273.99	-1.22	0.83	1.47	1.95	1.77	83.69
361.00	3.00	174.86	360.91	-4.73	1.40	4.78	1.58	1.49	13.11
455.00	4.88	177.86	454.69	-11.17	1.77	10.53	2.01	2.00	3.19
545.00	6.31	188.61	544.26	-19.89	1.17	17.75	1.96	1.59	11.94
635.00	7.81	186.24	633.57	-30.86	-0.23	26.50	1.70	1.67	-2.63
725.00	9.19	184.74	722.58	-44.10	-1.49	37.29	1.55	1.53	-1.67

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**DEC 05 2011**

Company: US ROCKIES REGION PLANNING  
 Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH\_NBU 921-35I PAD  
 Well: NBU 921-35I4CS  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well NBU 921-35I4CS  
 TVD Reference: GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)  
 MD Reference: GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: 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)	
815.00	10.13	182.86	811.30	-59.17	-2.48	49.79	1.10	1.04	-2.09	
905.00	10.69	173.99	899.83	-75.37	-2.00	64.01	1.88	0.62	-9.86	
995.00	11.00	166.86	988.23	-92.04	0.83	79.82	1.53	0.34	-7.92	
1,085.00	11.38	161.61	1,076.52	-108.83	5.58	96.71	1.21	0.42	-5.83	
1,175.00	11.69	152.49	1,164.71	-125.34	12.59	114.50	2.05	0.34	-10.13	
1,265.00	11.94	144.49	1,252.81	-141.01	22.21	132.88	1.84	0.28	-8.89	
1,355.00	12.19	137.36	1,340.82	-155.57	34.06	151.44	1.68	0.28	-7.92	
1,445.00	12.44	140.61	1,428.75	-170.06	46.64	170.30	0.82	0.28	3.61	
1,535.00	11.88	133.61	1,516.74	-183.94	59.50	188.78	1.75	-0.62	-7.78	
1,625.00	13.25	135.49	1,604.58	-197.68	73.44	207.69	1.59	1.52	2.09	
1,715.00	13.50	138.61	1,692.14	-212.92	87.62	228.00	0.85	0.28	3.47	
1,805.00	12.94	140.74	1,779.76	-228.60	100.94	248.27	0.82	-0.62	2.37	
1,895.00	13.69	140.74	1,867.34	-244.65	114.06	268.75	0.83	0.83	0.00	
1,985.00	14.69	141.11	1,954.59	-261.78	127.96	290.55	1.12	1.11	0.41	
2,075.00	13.75	139.24	2,041.83	-278.77	142.11	312.36	1.16	-1.04	-2.08	
2,165.00	14.38	136.74	2,129.13	-295.01	156.76	333.78	0.97	0.70	-2.78	
2,255.00	14.81	139.74	2,216.23	-311.92	171.85	356.00	0.97	0.48	3.33	
2,345.00	14.94	141.36	2,303.21	-329.76	186.53	378.82	0.48	0.14	1.80	
2,435.00	15.06	142.36	2,390.15	-348.08	200.91	401.90	0.32	0.13	1.11	
2,515.00	14.25	141.61	2,467.54	-364.03	213.37	421.96	1.04	-1.01	-0.94	
<b>LAST WFT MWD SURFACE SURVEY</b>										
2,611.00	13.54	141.31	2,560.73	-382.06	227.73	444.78	0.74	-0.74	-0.31	
<b>FIRST SDI MWD PRODUCTION SURVEY</b>										
2,706.00	13.01	138.15	2,653.20	-398.71	241.82	466.26	0.95	-0.56	-3.33	
2,801.00	10.90	137.18	2,746.13	-413.27	255.06	485.51	2.23	-2.22	-1.02	
2,896.00	9.06	132.47	2,839.69	-424.91	266.69	501.43	2.12	-1.94	-4.96	
2,991.00	8.27	130.59	2,933.61	-434.40	277.39	515.04	0.88	-0.83	-1.98	
3,085.00	7.65	117.76	3,026.71	-441.72	288.06	526.74	2.00	-0.66	-13.65	
3,180.00	5.45	120.75	3,121.08	-446.97	297.54	536.07	2.34	-2.32	3.15	
3,275.00	4.13	145.18	3,215.76	-452.08	303.37	543.43	2.53	-1.39	25.72	
3,370.00	2.11	151.42	3,310.61	-456.43	306.16	548.59	2.15	-2.13	6.57	
3,465.00	1.49	197.39	3,405.57	-459.14	306.63	551.17	1.60	-0.65	48.39	
3,559.00	1.14	270.60	3,499.55	-460.30	305.33	551.51	1.69	-0.37	77.88	
3,655.00	0.97	259.09	3,595.53	-460.44	303.57	550.74	0.28	-0.18	-11.99	
3,749.00	1.41	283.26	3,689.51	-460.33	301.67	549.68	0.70	0.47	25.71	
3,844.00	1.23	267.35	3,784.49	-460.11	299.51	548.40	0.43	-0.19	-16.75	
3,938.00	1.23	225.34	3,878.47	-460.86	297.78	548.18	0.94	0.00	-44.69	
4,033.00	1.23	195.10	3,973.45	-462.56	296.79	549.15	0.68	0.00	-31.83	
4,128.00	1.67	163.29	4,068.42	-464.87	296.93	551.21	0.95	0.46	-33.48	
4,223.00	1.41	179.63	4,163.39	-467.37	297.33	553.56	0.53	-0.27	17.20	
4,318.00	1.23	183.59	4,258.36	-469.56	297.27	555.42	0.21	-0.19	4.17	
4,412.00	1.14	172.60	4,352.34	-471.49	297.33	557.12	0.26	-0.10	-11.69	
4,508.00	0.62	189.65	4,448.33	-472.95	297.37	558.40	0.60	-0.54	17.76	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 921-3514CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>MD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Well:</b>	NBU 921-3514CS	<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)
4,602.00	0.62	245.99	4,542.32	-473.66	296.82	558.73	0.62	0.00	59.94
4,697.00	0.62	7.28	4,637.32	-473.36	296.41	558.27	1.14	0.00	127.67
4,792.00	0.44	354.89	4,732.32	-472.48	296.45	557.53	0.22	-0.19	-13.04
4,887.00	0.97	359.63	4,827.31	-471.32	296.41	556.50	0.56	0.56	4.99
4,982.00	0.62	342.67	4,922.30	-470.02	296.25	555.31	0.44	-0.37	-17.85
5,077.00	0.35	344.43	5,017.30	-469.25	296.02	554.52	0.28	-0.28	1.85
5,172.00	1.67	3.85	5,112.28	-467.59	296.03	553.10	1.42	1.39	20.44
5,266.00	1.49	11.50	5,206.24	-465.03	296.37	551.06	0.29	-0.19	8.14
5,361.00	1.41	23.45	5,301.21	-462.74	297.08	549.45	0.33	-0.08	12.58
5,456.00	1.06	25.47	5,396.19	-460.88	297.92	548.26	0.37	-0.37	2.13
5,551.00	0.88	93.77	5,491.18	-460.13	299.03	548.18	1.16	-0.19	71.89
5,645.00	0.70	101.06	5,585.17	-460.29	300.31	548.96	0.22	-0.19	7.76
5,740.00	1.23	164.60	5,680.16	-461.38	301.15	550.33	1.17	0.56	66.88
5,835.00	1.32	150.10	5,775.14	-463.32	301.97	552.41	0.35	0.09	-15.26
5,930.00	1.23	150.54	5,870.11	-465.15	303.02	554.53	0.10	-0.09	0.46
6,024.00	1.49	135.16	5,964.09	-466.90	304.38	556.72	0.47	0.28	-16.36
6,119.00	1.41	151.33	6,059.06	-468.80	305.81	559.08	0.44	-0.08	17.02
6,214.00	1.32	149.66	6,154.03	-470.77	306.92	561.35	0.10	-0.09	-1.76
6,309.00	1.85	160.30	6,248.99	-473.16	307.99	563.95	0.64	0.56	11.20
6,404.00	1.67	160.03	6,343.95	-475.90	308.98	566.82	0.19	-0.19	-0.28
6,499.00	1.06	166.89	6,438.92	-478.06	309.65	569.02	0.66	-0.64	7.22
6,594.00	1.23	177.88	6,533.90	-479.93	309.89	570.75	0.29	0.18	11.57
6,688.00	1.41	179.46	6,627.88	-482.10	309.94	572.65	0.20	0.19	1.68
6,784.00	1.41	192.47	6,723.85	-484.43	309.69	574.54	0.33	0.00	13.55
6,878.00	1.32	175.06	6,817.82	-486.64	309.54	576.36	0.45	-0.10	-18.52
6,974.00	1.32	158.10	6,913.80	-488.77	310.04	578.45	0.41	0.00	-17.67
7,068.00	1.06	167.94	7,007.78	-490.62	310.63	580.35	0.35	-0.28	10.47
7,163.00	1.67	171.46	7,102.75	-492.85	311.02	582.47	0.65	0.64	3.71
7,258.00	1.93	154.67	7,197.70	-495.67	311.91	585.35	0.62	0.27	-17.67
7,353.00	1.23	166.19	7,292.67	-498.10	312.84	587.92	0.81	-0.74	12.13
7,448.00	0.35	200.11	7,387.66	-499.36	312.98	589.08	1.01	-0.93	35.71
7,543.00	0.35	11.32	7,482.66	-499.35	312.94	589.05	0.73	0.00	180.22
7,638.00	2.15	352.43	7,577.63	-497.30	312.76	587.19	1.92	1.89	-19.88
7,733.00	2.29	6.40	7,672.56	-493.65	312.74	584.03	0.59	0.15	14.71
7,828.00	2.20	12.03	7,767.49	-489.98	313.33	581.16	0.25	-0.09	5.93
7,923.00	1.76	9.48	7,862.43	-486.76	313.95	578.69	0.47	-0.46	-2.68
8,018.00	1.41	1.48	7,957.39	-484.15	314.22	576.58	0.44	-0.37	-8.42
8,113.00	0.97	4.82	8,052.37	-482.18	314.32	574.93	0.47	-0.46	3.52
8,208.00	0.97	12.55	8,147.36	-480.59	314.56	573.68	0.14	0.00	8.14
8,303.00	1.06	298.64	8,242.35	-479.39	313.96	572.34	1.29	0.09	-77.80
8,397.00	1.06	294.42	8,336.33	-478.61	312.41	570.89	0.08	0.00	-4.49
8,493.00	0.97	292.13	8,432.32	-477.94	310.85	569.52	0.10	-0.09	-2.39
8,587.00	0.79	287.74	8,526.31	-477.44	309.49	568.40	0.20	-0.19	-4.67
8,682.00	0.62	295.21	8,621.30	-477.02	308.40	567.49	0.20	-0.18	7.86

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 921-35I4CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Site:</b>	UINTAH_NBU 921-35I PAD	<b>MD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Well:</b>	NBU 921-35I4CS	<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)
8,777.00	0.26	256.45	8,716.30	-476.85	307.73	567.00	0.47	-0.38	-40.80
8,871.00	0.88	161.44	8,810.29	-477.59	307.75	567.65	1.00	0.66	-101.07
8,966.00	0.97	153.62	8,905.28	-479.00	308.34	569.17	0.16	0.09	-8.23
9,061.00	1.14	139.20	9,000.26	-480.44	309.32	570.90	0.33	0.18	-15.18
9,156.00	1.67	157.05	9,095.24	-482.43	310.47	573.20	0.72	0.56	18.79
9,251.00	2.11	169.00	9,190.18	-485.42	311.35	576.22	0.62	0.46	12.58
9,346.00	2.11	161.18	9,285.12	-488.79	312.24	579.58	0.30	0.00	-8.23
9,535.00	2.55	137.27	9,473.97	-495.17	316.22	587.10	0.56	0.23	-12.65
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
9,623.00	2.55	137.27	9,561.88	-498.05	318.88	590.93	0.00	0.00	0.00
<b>SDI PROJECTION TD</b>									

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
190.00	190.00	-0.02	0.32	FIRST WFT MWD SURFACE SURVEY
2,515.00	2,467.54	-364.03	213.37	LAST WFT MWD SURFACE SURVEY
2,611.00	2,560.73	-382.06	227.73	FIRST SDI MWD PRODUCTION SURVEY
9,535.00	9,473.97	-495.17	316.22	LAST SDI MWD PRODUCTION SURVEY
9,623.00	9,561.88	-498.05	318.88	SDI PROJECTION TD

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

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**DEC 05 2011**



**Scientific Drilling**  
Rocky Mountain Operations

## **US ROCKIES REGION PLANNING**

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

UINTAH\_NBU 921-35I PAD

NBU 921-35I4CS

OH

Design: OH

## **Survey Report - Geographic**

05 October, 2011

**Anadarko**   
Petroleum Corporation

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DEC 05 2011

DIV. OF OIL, GAS & MINING

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 921-3514CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>MD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Well:</b>	NBU 921-3514CS	<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 921-351 PAD, SECTION 35 T9S R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,526,246.73 usft	<b>Latitude:</b>	39° 59' 27.596 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,057,284.25 usft	<b>Longitude:</b>	109° 30' 42.199 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	NBU 921-3514CS, 2082' FSL 811' FEL					
<b>Well Position</b>	+N-S	0.00 ft	<b>Northing:</b>	14,526,262.94 usft	<b>Latitude:</b>	39° 59' 27.755 N
	+E-W	0.00 ft	<b>Easting:</b>	2,057,295.76 usft	<b>Longitude:</b>	109° 30' 42.048 W
<b>Position Uncertainty</b>	0.00 ft		<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,058.00 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	2011/07/27	11.06	65.86	52,310

<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	149.62	

<b>Survey Program</b>	<b>Date</b>	2011/10/05			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
15.00	2,515.00	Survey #1 WFT MWD SURFACE (OH)	MWD	MWD - Standard	
2,611.00	9,623.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
0.00	0.00	0.00	0.00	0.00	0.00	14,526,262.94	2,057,295.76	39° 59' 27.755 N	109° 30' 42.048 W	
15.00	0.00	0.00	15.00	0.00	0.00	14,526,262.94	2,057,295.76	39° 59' 27.755 N	109° 30' 42.048 W	
190.00	0.21	93.15	190.00	-0.02	0.32	14,526,262.93	2,057,296.08	39° 59' 27.755 N	109° 30' 42.044 W	
<b>FIRST WFT MWD SURFACE SURVEY</b>										
274.00	1.70	163.45	273.99	-1.22	0.83	14,526,261.73	2,057,296.61	39° 59' 27.743 N	109° 30' 42.037 W	
361.00	3.00	174.86	360.91	-4.73	1.40	14,526,258.24	2,057,297.24	39° 59' 27.708 N	109° 30' 42.030 W	
455.00	4.88	177.86	454.69	-11.17	1.77	14,526,251.80	2,057,297.72	39° 59' 27.644 N	109° 30' 42.025 W	
545.00	6.31	188.61	544.26	-19.89	1.17	14,526,243.08	2,057,297.27	39° 59' 27.558 N	109° 30' 42.033 W	
635.00	7.81	186.24	633.57	-30.86	-0.23	14,526,232.08	2,057,296.05	39° 59' 27.450 N	109° 30' 42.051 W	
725.00	9.19	184.74	722.58	-44.10	-1.49	14,526,218.82	2,057,295.01	39° 59' 27.319 N	109° 30' 42.067 W	
815.00	10.13	182.86	811.30	-59.17	-2.48	14,526,203.74	2,057,294.27	39° 59' 27.170 N	109° 30' 42.080 W	

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 921-35I PAD  
**Well:** NBU 921-35I4CS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 921-35I4CS  
**TVD Reference:** GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)  
**MD Reference:** GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)  
**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
905.00	10.69	173.99	899.83	-75.37	-2.00	14,526,187.54	2,057,295.02	39° 59' 27.010 N	109° 30' 42.074 W
995.00	11.00	166.86	988.23	-92.04	0.83	14,526,170.93	2,057,298.12	39° 59' 26.845 N	109° 30' 42.037 W
1,085.00	11.38	161.61	1,076.52	-108.83	5.58	14,526,154.22	2,057,303.16	39° 59' 26.679 N	109° 30' 41.976 W
1,175.00	11.69	152.49	1,164.71	-125.34	12.59	14,526,137.83	2,057,310.45	39° 59' 26.516 N	109° 30' 41.886 W
1,265.00	11.94	144.49	1,252.81	-141.01	22.21	14,526,122.33	2,057,320.33	39° 59' 26.361 N	109° 30' 41.762 W
1,355.00	12.19	137.36	1,340.82	-155.57	34.06	14,526,107.96	2,057,332.41	39° 59' 26.217 N	109° 30' 41.610 W
1,445.00	12.44	140.61	1,428.75	-170.06	46.64	14,526,093.69	2,057,345.24	39° 59' 26.074 N	109° 30' 41.448 W
1,535.00	11.88	133.61	1,516.74	-183.94	59.50	14,526,080.02	2,057,358.33	39° 59' 25.937 N	109° 30' 41.283 W
1,625.00	13.25	135.49	1,604.58	-197.68	73.44	14,526,066.51	2,057,372.50	39° 59' 25.801 N	109° 30' 41.104 W
1,715.00	13.50	138.61	1,692.14	-212.92	87.62	14,526,051.51	2,057,386.93	39° 59' 25.650 N	109° 30' 40.922 W
1,805.00	12.94	140.74	1,779.76	-228.60	100.94	14,526,036.05	2,057,400.51	39° 59' 25.495 N	109° 30' 40.751 W
1,895.00	13.69	140.74	1,867.34	-244.65	114.06	14,526,020.23	2,057,413.89	39° 59' 25.336 N	109° 30' 40.582 W
1,985.00	14.69	141.11	1,954.59	-261.78	127.96	14,526,003.33	2,057,428.08	39° 59' 25.167 N	109° 30' 40.403 W
2,075.00	13.75	139.24	2,041.83	-278.77	142.11	14,525,986.59	2,057,442.51	39° 59' 24.999 N	109° 30' 40.222 W
2,165.00	14.38	136.74	2,129.13	-295.01	156.76	14,525,970.59	2,057,457.42	39° 59' 24.839 N	109° 30' 40.034 W
2,255.00	14.81	139.74	2,216.23	-311.92	171.85	14,525,953.93	2,057,472.79	39° 59' 24.671 N	109° 30' 39.840 W
2,345.00	14.94	141.36	2,303.21	-329.76	186.53	14,525,936.34	2,057,487.77	39° 59' 24.495 N	109° 30' 39.651 W
2,435.00	15.06	142.36	2,390.15	-348.08	200.91	14,525,918.26	2,057,502.46	39° 59' 24.314 N	109° 30' 39.466 W
2,515.00	14.25	141.61	2,467.54	-364.03	213.37	14,525,902.52	2,057,515.18	39° 59' 24.156 N	109° 30' 39.306 W
<b>LAST WFT MWD SURFACE SURVEY</b>									
2,611.00	13.54	141.31	2,560.73	-382.06	227.73	14,525,884.73	2,057,529.85	39° 59' 23.978 N	109° 30' 39.121 W
<b>FIRST SDI MWD PRODUCTION SURVEY</b>									
2,706.00	13.01	138.15	2,653.20	-398.71	241.82	14,525,868.32	2,057,544.21	39° 59' 23.814 N	109° 30' 38.940 W
2,801.00	10.90	137.18	2,746.13	-413.27	255.06	14,525,853.99	2,057,557.69	39° 59' 23.670 N	109° 30' 38.770 W
2,896.00	9.06	132.47	2,839.69	-424.91	266.69	14,525,842.55	2,057,569.51	39° 59' 23.555 N	109° 30' 38.621 W
2,991.00	8.27	130.59	2,933.61	-434.40	277.39	14,525,833.23	2,057,580.37	39° 59' 23.461 N	109° 30' 38.483 W
3,085.00	7.65	117.76	3,026.71	-441.72	288.06	14,525,826.10	2,057,591.16	39° 59' 23.389 N	109° 30' 38.346 W
3,180.00	5.45	120.75	3,121.08	-446.97	297.54	14,525,821.00	2,057,600.72	39° 59' 23.337 N	109° 30' 38.225 W
3,275.00	4.13	145.18	3,215.76	-452.08	303.37	14,525,815.99	2,057,606.64	39° 59' 23.286 N	109° 30' 38.150 W
3,370.00	2.11	151.42	3,310.61	-456.43	306.16	14,525,811.69	2,057,609.50	39° 59' 23.243 N	109° 30' 38.114 W
3,465.00	1.49	197.39	3,405.57	-459.14	306.63	14,525,808.98	2,057,610.01	39° 59' 23.216 N	109° 30' 38.108 W
3,559.00	1.14	270.60	3,499.55	-460.30	305.33	14,525,807.80	2,057,608.73	39° 59' 23.205 N	109° 30' 38.124 W
3,655.00	0.97	259.09	3,595.53	-460.44	303.57	14,525,807.63	2,057,606.98	39° 59' 23.203 N	109° 30' 38.147 W
3,749.00	1.41	283.26	3,689.51	-460.33	301.67	14,525,807.71	2,057,605.07	39° 59' 23.205 N	109° 30' 38.171 W
3,844.00	1.23	267.35	3,784.49	-460.11	299.51	14,525,807.90	2,057,602.91	39° 59' 23.207 N	109° 30' 38.199 W
3,938.00	1.23	225.34	3,878.47	-460.86	297.78	14,525,807.11	2,057,601.20	39° 59' 23.199 N	109° 30' 38.221 W
4,033.00	1.23	195.10	3,973.45	-462.56	296.79	14,525,805.40	2,057,600.24	39° 59' 23.182 N	109° 30' 38.234 W
4,128.00	1.67	163.29	4,068.42	-464.87	296.93	14,525,803.09	2,057,600.41	39° 59' 23.160 N	109° 30' 38.232 W
4,223.00	1.41	179.63	4,163.39	-467.37	297.33	14,525,800.60	2,057,600.86	39° 59' 23.135 N	109° 30' 38.227 W
4,318.00	1.23	183.59	4,258.36	-469.56	297.27	14,525,798.41	2,057,600.84	39° 59' 23.113 N	109° 30' 38.228 W
4,412.00	1.14	172.60	4,352.34	-471.49	297.33	14,525,796.48	2,057,600.93	39° 59' 23.094 N	109° 30' 38.227 W
4,508.00	0.62	189.65	4,448.33	-472.95	297.37	14,525,795.02	2,057,600.99	39° 59' 23.080 N	109° 30' 38.227 W
4,602.00	0.62	245.99	4,542.32	-473.66	296.82	14,525,794.31	2,057,600.45	39° 59' 23.073 N	109° 30' 38.234 W
4,697.00	0.62	7.28	4,637.32	-473.36	296.41	14,525,794.60	2,057,600.04	39° 59' 23.076 N	109° 30' 38.239 W
4,792.00	0.44	354.89	4,732.32	-472.48	296.45	14,525,795.47	2,057,600.06	39° 59' 23.084 N	109° 30' 38.239 W
4,887.00	0.97	359.63	4,827.31	-471.32	296.41	14,525,796.64	2,057,600.00	39° 59' 23.096 N	109° 30' 38.239 W
4,982.00	0.62	342.67	4,922.30	-470.02	296.25	14,525,797.93	2,057,599.82	39° 59' 23.109 N	109° 30' 38.241 W
5,077.00	0.35	344.43	5,017.30	-469.25	296.02	14,525,798.70	2,057,599.58	39° 59' 23.116 N	109° 30' 38.244 W
5,172.00	1.67	3.85	5,112.28	-467.59	296.03	14,525,800.36	2,057,599.56	39° 59' 23.133 N	109° 30' 38.244 W
5,266.00	1.49	11.50	5,206.24	-465.03	296.37	14,525,802.93	2,057,599.86	39° 59' 23.158 N	109° 30' 38.240 W
5,361.00	1.41	23.45	5,301.21	-462.74	297.08	14,525,805.22	2,057,600.53	39° 59' 23.181 N	109° 30' 38.230 W
5,456.00	1.06	25.47	5,396.19	-460.88	297.92	14,525,807.10	2,057,601.34	39° 59' 23.199 N	109° 30' 38.220 W
5,551.00	0.88	93.77	5,491.18	-460.13	299.03	14,525,807.87	2,057,602.43	39° 59' 23.206 N	109° 30' 38.205 W
5,645.00	0.70	101.06	5,585.17	-460.29	300.31	14,525,807.73	2,057,603.72	39° 59' 23.205 N	109° 30' 38.189 W
5,740.00	1.23	164.60	5,680.16	-461.38	301.15	14,525,806.65	2,057,604.58	39° 59' 23.194 N	109° 30' 38.178 W

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 921-3514CS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Site:</b>	UINTAH_NBU 921-351 PAD	<b>MD Reference:</b>	GL 5058' & KB 19' @ 5077.00ft (PIONEER 54)
<b>Well:</b>	NBU 921-3514CS	<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	
5,835.00	1.32	150.10	5,775.14	-463.32	301.97	14,525,804.73	2,057,605.43	39° 59' 23.175 N	109° 30' 38.168 W	
5,930.00	1.23	150.54	5,870.11	-465.15	303.02	14,525,802.91	2,057,606.50	39° 59' 23.157 N	109° 30' 38.154 W	
6,024.00	1.49	135.16	5,964.09	-466.90	304.38	14,525,801.19	2,057,607.89	39° 59' 23.140 N	109° 30' 38.137 W	
6,119.00	1.41	151.33	6,059.06	-468.80	305.81	14,525,799.31	2,057,609.35	39° 59' 23.121 N	109° 30' 38.118 W	
6,214.00	1.32	149.66	6,154.03	-470.77	306.92	14,525,797.36	2,057,610.50	39° 59' 23.101 N	109° 30' 38.104 W	
6,309.00	1.85	160.30	6,248.99	-473.16	307.99	14,525,794.99	2,057,611.61	39° 59' 23.078 N	109° 30' 38.090 W	
6,404.00	1.67	160.03	6,343.95	-475.90	308.98	14,525,792.27	2,057,612.65	39° 59' 23.051 N	109° 30' 38.077 W	
6,499.00	1.06	166.89	6,438.92	-478.06	309.65	14,525,790.12	2,057,613.35	39° 59' 23.029 N	109° 30' 38.069 W	
6,594.00	1.23	177.88	6,533.90	-479.93	309.89	14,525,788.25	2,057,613.62	39° 59' 23.011 N	109° 30' 38.066 W	
6,688.00	1.41	179.46	6,627.88	-482.10	309.94	14,525,786.09	2,057,613.71	39° 59' 22.989 N	109° 30' 38.065 W	
6,784.00	1.41	192.47	6,723.85	-484.43	309.69	14,525,783.75	2,057,613.50	39° 59' 22.966 N	109° 30' 38.068 W	
6,878.00	1.32	175.06	6,817.82	-486.64	309.54	14,525,781.54	2,057,613.38	39° 59' 22.944 N	109° 30' 38.070 W	
6,974.00	1.32	158.10	6,913.80	-488.77	310.04	14,525,779.42	2,057,613.92	39° 59' 22.923 N	109° 30' 38.064 W	
7,068.00	1.06	167.94	7,007.78	-490.62	310.63	14,525,777.57	2,057,614.54	39° 59' 22.905 N	109° 30' 38.056 W	
7,163.00	1.67	171.46	7,102.75	-492.85	311.02	14,525,775.35	2,057,614.97	39° 59' 22.883 N	109° 30' 38.051 W	
7,258.00	1.93	154.67	7,197.70	-495.67	311.91	14,525,772.55	2,057,615.90	39° 59' 22.855 N	109° 30' 38.040 W	
7,353.00	1.23	166.19	7,292.67	-498.10	312.84	14,525,770.13	2,057,616.87	39° 59' 22.831 N	109° 30' 38.028 W	
7,448.00	0.35	200.11	7,387.66	-499.36	312.98	14,525,768.87	2,057,617.04	39° 59' 22.819 N	109° 30' 38.026 W	
7,543.00	0.35	11.32	7,482.66	-499.35	312.94	14,525,768.88	2,057,616.99	39° 59' 22.819 N	109° 30' 38.027 W	
7,638.00	2.15	352.43	7,577.63	-497.30	312.76	14,525,770.93	2,057,616.78	39° 59' 22.839 N	109° 30' 38.029 W	
7,733.00	2.29	6.40	7,672.56	-493.65	312.74	14,525,774.58	2,057,616.70	39° 59' 22.875 N	109° 30' 38.029 W	
7,828.00	2.20	12.03	7,767.49	-489.98	313.33	14,525,778.26	2,057,617.23	39° 59' 22.911 N	109° 30' 38.022 W	
7,923.00	1.76	9.48	7,862.43	-486.76	313.95	14,525,781.49	2,057,617.79	39° 59' 22.943 N	109° 30' 38.014 W	
8,018.00	1.41	1.48	7,957.39	-484.15	314.22	14,525,784.11	2,057,618.02	39° 59' 22.969 N	109° 30' 38.010 W	
8,113.00	0.97	4.82	8,052.37	-482.18	314.32	14,525,786.08	2,057,618.09	39° 59' 22.989 N	109° 30' 38.009 W	
8,208.00	0.97	12.55	8,147.36	-480.59	314.56	14,525,787.67	2,057,618.30	39° 59' 23.004 N	109° 30' 38.006 W	
8,303.00	1.06	298.64	8,242.35	-479.39	313.96	14,525,788.86	2,057,617.69	39° 59' 23.016 N	109° 30' 38.013 W	
8,397.00	1.06	294.42	8,336.33	-478.61	312.41	14,525,789.61	2,057,616.12	39° 59' 23.024 N	109° 30' 38.033 W	
8,493.00	0.97	292.13	8,432.32	-477.94	310.85	14,525,790.26	2,057,614.55	39° 59' 23.030 N	109° 30' 38.053 W	
8,587.00	0.79	287.74	8,526.31	-477.44	309.49	14,525,790.73	2,057,613.18	39° 59' 23.035 N	109° 30' 38.071 W	
8,682.00	0.82	295.21	8,621.30	-477.02	308.40	14,525,791.13	2,057,612.09	39° 59' 23.040 N	109° 30' 38.085 W	
8,777.00	0.26	256.45	8,716.30	-476.85	307.73	14,525,791.29	2,057,611.41	39° 59' 23.041 N	109° 30' 38.094 W	
8,871.00	0.88	161.44	8,810.29	-477.59	307.75	14,525,790.56	2,057,611.45	39° 59' 23.034 N	109° 30' 38.093 W	
8,966.00	0.97	153.62	8,905.28	-479.00	308.34	14,525,789.16	2,057,612.06	39° 59' 23.020 N	109° 30' 38.086 W	
9,061.00	1.14	139.20	9,000.26	-480.44	309.32	14,525,787.74	2,057,613.06	39° 59' 23.006 N	109° 30' 38.073 W	
9,156.00	1.67	157.05	9,095.24	-482.43	310.47	14,525,785.77	2,057,614.25	39° 59' 22.986 N	109° 30' 38.058 W	
9,251.00	2.11	169.00	9,190.18	-485.42	311.35	14,525,782.79	2,057,615.17	39° 59' 22.957 N	109° 30' 38.047 W	
9,346.00	2.11	161.18	9,285.12	-488.79	312.24	14,525,779.43	2,057,616.12	39° 59' 22.923 N	109° 30' 38.036 W	
9,535.00	2.55	137.27	9,473.97	-495.17	316.22	14,525,773.12	2,057,620.21	39° 59' 22.860 N	109° 30' 37.984 W	
<b>LAST SDI MWD PRODUCTION SURVEY</b>										
9,623.00	2.55	137.27	9,561.88	-498.05	318.88	14,525,770.29	2,057,622.91	39° 59' 22.832 N	109° 30' 37.950 W	
<b>SDI PROJECTION TD</b>										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
190.00	190.00	-0.02	0.32	FIRST WFT MWD SURFACE SURVEY	
2,515.00	2,467.54	-364.03	213.37	LAST WFT MWD SURFACE SURVEY	

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