

**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 922-36A4BS	
<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> 720 929-6587	
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> mary.mondragon@anadarko.com	
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> ML 22650			<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>	1795 FNL 1522 FEL	SWNE	36	9.0 S	22.0 E	S	
<b>Top of Uppermost Producing Zone</b>	980 FNL 630 FEL	NENE	36	9.0 S	22.0 E	S	
<b>At Total Depth</b>	980 FNL 630 FEL	NENE	36	9.0 S	22.0 E	S	
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 630			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 203	
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 380			<b>26. PROPOSED DEPTH</b> MD: 8875 TVD: 8600	
<b>27. ELEVATION - GROUND LEVEL</b> 4965			<b>28. BOND NUMBER</b> 22013542			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> Permit #43-8496	
<b>ATTACHMENTS</b>							
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>							
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER				<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN			
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)				<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER			
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)				<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP			
<b>NAME</b> Kathy Schneebeck-Dulnoan			<b>TITLE</b> Staff Regulatory Analyst			<b>PHONE</b> 720 929-6007	
<b>SIGNATURE</b>			<b>DATE</b> 05/03/2009			<b>EMAIL</b> Kathy.SchneebeckDulnoan@anadarko.com	
<b>API NUMBER ASSIGNED</b> 43047503940000			<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	8875		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade I-80 LT&C	8875	11.6			

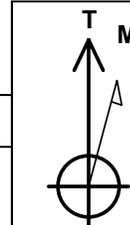
<b>Proposed Hole, Casing, and Cement</b>						
<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Top (MD)</b>	<b>Bottom (MD)</b>		
Surf	12.25	9.625	0	2200		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade J-55 LT&C	2200	36.0			





**Scientific Drilling**  
Rocky Mountain Operations

Site: NBU 922-36G Pad  
Well: NBU 922-36A4BS  
Wellbore: OH  
Design: Plan #1

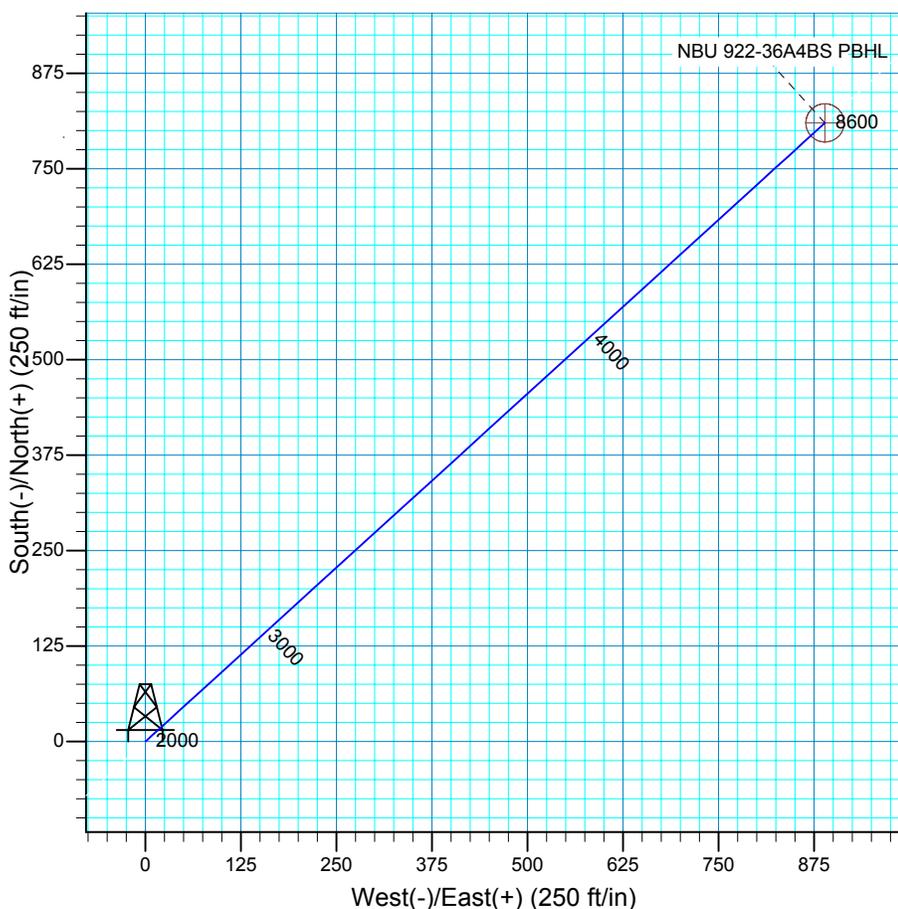
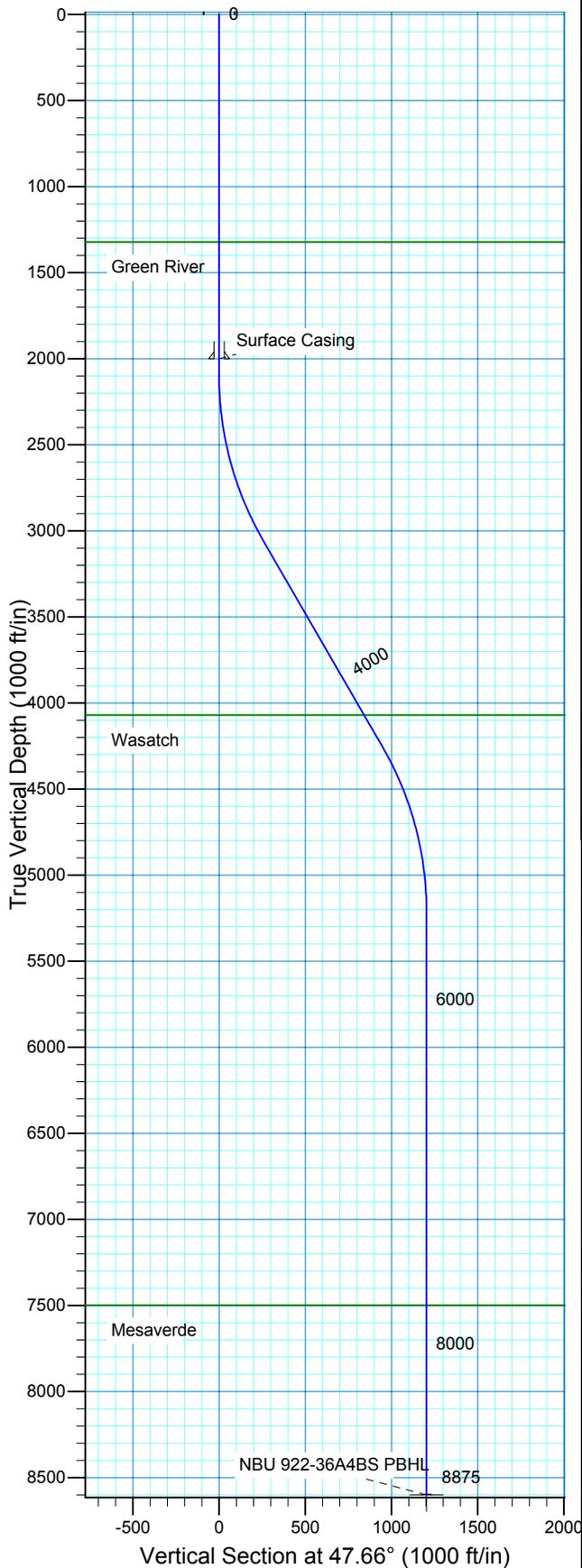


Azimuths to True North  
Magnetic North: 11.29°

Magnetic Field  
Strength: 52586.9snT  
Dip Angle: 65.95°  
Date: 2009-04-07  
Model: IGRF200510

WELL DETAILS: NBU 922-36A4BS

GL 4960' &RKB 18' @ 4978.00ft 4960.00  
+N/-S 0.00 +E/-W 0.00 Northing 612190.70 Easting 2592873.97 Latitude 39° 59' 41.517 N Longitude 109° 23' 1.155 W



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1322.00	1322.00	Green River
4070.00	4272.10	Wasatch
7498.00	7773.35	Mesaverde

Plan: Plan #1 (NBU 922-36A4BS/OH)	
Created By: Julie Cruse	Date: 2009-04-07
PROJECT DETAILS: Uintah County, UT NAD27	
Geodetic System: US State Plane 1927 (Exact solution)	
Datum: NAD 1927 (NADCON CONUS)	
Ellipsoid: Clarke 1866	
Zone: Utah Central 4302	
Location: Sec 36 T9S R22E	
System Datum: Mean Sea Level	
Local North: True	

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00		
3100.00	30.00	47.66	3054.93	172.32	189.15	3.00	47.66	255.87		
4482.46	30.00	47.66	4252.17	637.84	700.11	0.00	0.00	947.10		
5482.46	0.00	0.00	5207.10	810.16	889.26	3.00	180.00	1202.97		
8875.35	0.00	0.00	8600.00	810.16	889.26	0.00	0.00	1202.97		NBU 922-36A4BS PBHL



**Scientific Drilling**  
Rocky Mountain Operations

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

**Uintah County, UT NAD27  
NBU 922-36G Pad  
NBU 922-36A4BS  
OH**

**Plan: Plan #1**

## **Standard Planning Report**

**07 April, 2009**



**Scientific Drilling**  
Planning Report

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 922-36A4BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Site:</b>	NBU 922-36G Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 922-36A4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Uintah County, UT NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Utah Central 4302		

<b>Site</b>	NBU 922-36G Pad, Sec 36 T9S R22E				
<b>Site Position:</b>		<b>Northing:</b>	612,190.71 ft	<b>Latitude:</b>	39° 59' 41.517 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,592,873.97 ft	<b>Longitude:</b>	109° 23' 1.155 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in	<b>Grid Convergence:</b>	1.36 °

<b>Well</b>	NBU 922-36A4BS, 1795' FNL 1522' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	612,190.70 ft	<b>Latitude:</b>	39° 59' 41.517 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,592,873.97 ft	<b>Longitude:</b>	109° 23' 1.155 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,960.00 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</b>
			(°)	(°)	(nT)
	IGRF200510	2009-04-07	11.29	65.95	52,587

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	47.66

<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	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	30.00	47.66	3,054.93	172.32	189.15	3.00	3.00	0.00	47.66	
4,482.46	30.00	47.66	4,252.17	637.84	700.11	0.00	0.00	0.00	0.00	
5,482.46	0.00	0.00	5,207.10	810.16	889.26	3.00	-3.00	0.00	180.00	
8,875.35	0.00	0.00	8,600.00	810.16	889.26	0.00	0.00	0.00	0.00	NBU 922-36A4BS PB



# Scientific Drilling

## Planning Report

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 922-36A4BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Site:</b>	NBU 922-36G Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 922-36A4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,322.00	0.00	0.00	1,322.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Green River</b>									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	3.00	47.66	2,199.95	1.76	1.93	2.62	3.00	3.00	0.00
2,300.00	6.00	47.66	2,299.63	7.05	7.73	10.46	3.00	3.00	0.00
2,400.00	9.00	47.66	2,398.77	15.84	17.38	23.51	3.00	3.00	0.00
2,500.00	12.00	47.66	2,497.08	28.11	30.85	41.74	3.00	3.00	0.00
2,600.00	15.00	47.66	2,594.31	43.83	48.11	65.08	3.00	3.00	0.00
2,700.00	18.00	47.66	2,690.18	62.95	69.10	93.48	3.00	3.00	0.00
2,800.00	21.00	47.66	2,784.43	85.43	93.77	126.85	3.00	3.00	0.00
2,900.00	24.00	47.66	2,876.81	111.20	122.06	165.12	3.00	3.00	0.00
3,000.00	27.00	47.66	2,967.06	140.19	153.88	208.16	3.00	3.00	0.00
3,100.00	30.00	47.66	3,054.93	172.32	189.15	255.87	3.00	3.00	0.00
3,200.00	30.00	47.66	3,141.53	205.99	226.11	305.87	0.00	0.00	0.00
3,300.00	30.00	47.66	3,228.13	239.67	263.07	355.87	0.00	0.00	0.00
3,400.00	30.00	47.66	3,314.74	273.34	300.03	405.87	0.00	0.00	0.00
3,500.00	30.00	47.66	3,401.34	307.01	336.99	455.87	0.00	0.00	0.00
3,600.00	30.00	47.66	3,487.94	340.69	373.95	505.87	0.00	0.00	0.00
3,700.00	30.00	47.66	3,574.54	374.36	410.91	555.87	0.00	0.00	0.00
3,800.00	30.00	47.66	3,661.15	408.03	447.87	605.87	0.00	0.00	0.00
3,900.00	30.00	47.66	3,747.75	441.71	484.83	655.87	0.00	0.00	0.00
4,000.00	30.00	47.66	3,834.35	475.38	521.79	705.87	0.00	0.00	0.00
4,100.00	30.00	47.66	3,920.96	509.05	558.76	755.87	0.00	0.00	0.00
4,200.00	30.00	47.66	4,007.56	542.73	595.72	805.87	0.00	0.00	0.00
4,272.10	30.00	47.66	4,070.00	567.01	622.37	841.92	0.00	0.00	0.00
<b>Wasatch</b>									
4,300.00	30.00	47.66	4,094.16	576.40	632.68	855.87	0.00	0.00	0.00
4,400.00	30.00	47.66	4,180.76	610.07	669.64	905.87	0.00	0.00	0.00
4,482.46	30.00	47.66	4,252.17	637.84	700.11	947.10	0.00	0.00	0.00
4,500.00	29.47	47.66	4,267.41	643.70	706.55	955.80	3.00	-3.00	0.00
4,600.00	26.47	47.66	4,355.71	675.29	741.22	1,002.70	3.00	-3.00	0.00



**Scientific Drilling**  
Planning Report

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<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4960' &RKB 18' @ 4978.00ft
<b>Site:</b>	NBU 922-36G Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 922-36A4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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)
4,700.00	23.47	47.66	4,446.35	703.72	772.42	1,044.92	3.00	-3.00	0.00
4,800.00	20.47	47.66	4,539.08	728.91	800.08	1,082.33	3.00	-3.00	0.00
4,900.00	17.47	47.66	4,633.63	750.81	824.11	1,114.84	3.00	-3.00	0.00
5,000.00	14.47	47.66	4,729.76	769.34	844.45	1,142.36	3.00	-3.00	0.00
5,100.00	11.47	47.66	4,827.20	784.46	861.05	1,164.81	3.00	-3.00	0.00
5,200.00	8.47	47.66	4,925.67	796.12	873.85	1,182.12	3.00	-3.00	0.00
5,300.00	5.47	47.66	5,024.92	804.30	882.82	1,194.26	3.00	-3.00	0.00
5,400.00	2.47	47.66	5,124.67	808.96	887.94	1,201.19	3.00	-3.00	0.00
5,482.46	0.00	0.00	5,207.10	810.16	889.26	1,202.97	3.00	-3.00	0.00
5,500.00	0.00	0.00	5,224.65	810.16	889.26	1,202.97	0.00	0.00	0.00
5,600.00	0.00	0.00	5,324.65	810.16	889.26	1,202.97	0.00	0.00	0.00
5,700.00	0.00	0.00	5,424.65	810.16	889.26	1,202.97	0.00	0.00	0.00
5,800.00	0.00	0.00	5,524.65	810.16	889.26	1,202.97	0.00	0.00	0.00
5,900.00	0.00	0.00	5,624.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,000.00	0.00	0.00	5,724.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,100.00	0.00	0.00	5,824.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,200.00	0.00	0.00	5,924.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,300.00	0.00	0.00	6,024.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,400.00	0.00	0.00	6,124.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,500.00	0.00	0.00	6,224.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,600.00	0.00	0.00	6,324.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,700.00	0.00	0.00	6,424.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,800.00	0.00	0.00	6,524.65	810.16	889.26	1,202.97	0.00	0.00	0.00
6,900.00	0.00	0.00	6,624.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,000.00	0.00	0.00	6,724.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,100.00	0.00	0.00	6,824.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,200.00	0.00	0.00	6,924.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,300.00	0.00	0.00	7,024.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,400.00	0.00	0.00	7,124.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,500.00	0.00	0.00	7,224.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,600.00	0.00	0.00	7,324.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,700.00	0.00	0.00	7,424.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,773.35	0.00	0.00	7,498.00	810.16	889.26	1,202.97	0.00	0.00	0.00
<b>Mesaverde</b>									
7,800.00	0.00	0.00	7,524.65	810.16	889.26	1,202.97	0.00	0.00	0.00
7,900.00	0.00	0.00	7,624.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,000.00	0.00	0.00	7,724.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,100.00	0.00	0.00	7,824.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,200.00	0.00	0.00	7,924.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,300.00	0.00	0.00	8,024.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,400.00	0.00	0.00	8,124.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,500.00	0.00	0.00	8,224.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,600.00	0.00	0.00	8,324.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,700.00	0.00	0.00	8,424.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,800.00	0.00	0.00	8,524.65	810.16	889.26	1,202.97	0.00	0.00	0.00
8,875.35	0.00	0.00	8,600.00	810.16	889.26	1,202.97	0.00	0.00	0.00



## Scientific Drilling Planning Report

<b>Database:</b> EDM 2003.16 Multi User Db <b>Company:</b> Kerr McGee Oil and Gas Onshore LP <b>Project:</b> Uintah County, UT NAD27 <b>Site:</b> NBU 922-36G Pad <b>Well:</b> NBU 922-36A4BS <b>Wellbore:</b> OH <b>Design:</b> Plan #1	<b>Local Co-ordinate Reference:</b> Well NBU 922-36A4BS <b>TVD Reference:</b> GL 4960' &RKB 18' @ 4978.00ft <b>MD Reference:</b> GL 4960' &RKB 18' @ 4978.00ft <b>North Reference:</b> True <b>Survey Calculation Method:</b> Minimum Curvature	
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Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
NBU 922-36A4BS PBHL - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,600.00	810.16	889.26	613,021.68	2,593,743.82	39° 59' 49.524 N	109° 22' 49.728 W

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(ft)	(ft)		(in)	(in)	
2,000.00	2,000.00	Surface Casing	9.625	13.500	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,322.00	1,322.00	Green River		0.00		
4,272.10	4,070.00	Wasatch		0.00		
7,773.35	7,498.00	Mesaverde		0.00		

**NBU 922-36A4BS**

Pad: NBU 922-36G

Surface: 1,795' FNL, 1,522' FEL (SW/4NE/4)

BHL: 980' FNL 630' FEL (NE/4NE/4)

Sec. 36 T9S R22E

Uintah, Utah

Mineral Lease: ML22650

**ONSHORE ORDER NO. 1**

***DRILLING PROGRAM***

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 – Surface	
Green River	1,322'	
Birds Nest	1,482'	Water
Mahogany	2,000'	Water
Wasatch	4,070'	Gas
Mesaverde	6,498'	Gas
MVU2	7,498'	Gas
MVL1	8,053'	Gas
TVD	8,600'	
TD	8,875'	

**3. Pressure Control Equipment (Schematic Attached)**

*Please refer to the attached Drilling Program.*

**4. Proposed Casing & Cementing Program:**

*Please refer to the attached Drilling Program.*

**5. Drilling Fluids Program:**

*Please refer to the attached Drilling Program.*

**6. Evaluation Program:**

*Please refer to the attached Drilling Program.*

**7. Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 8,875' TD, approximately equals 5,437 psi (calculated at 0.61 psi/foot).

Maximum anticipated surface pressure equals approximately 3,377 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

**8. Anticipated Starting Dates:**

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

**9. Variances:**

*Please refer to the attached Drilling Program.*

*Onshore Order #2 – Air Drilling Variance*

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

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

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

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

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

***Background***

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

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

*The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.*

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

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

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

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

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

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

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

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

*Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.*

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

***Conclusion***

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

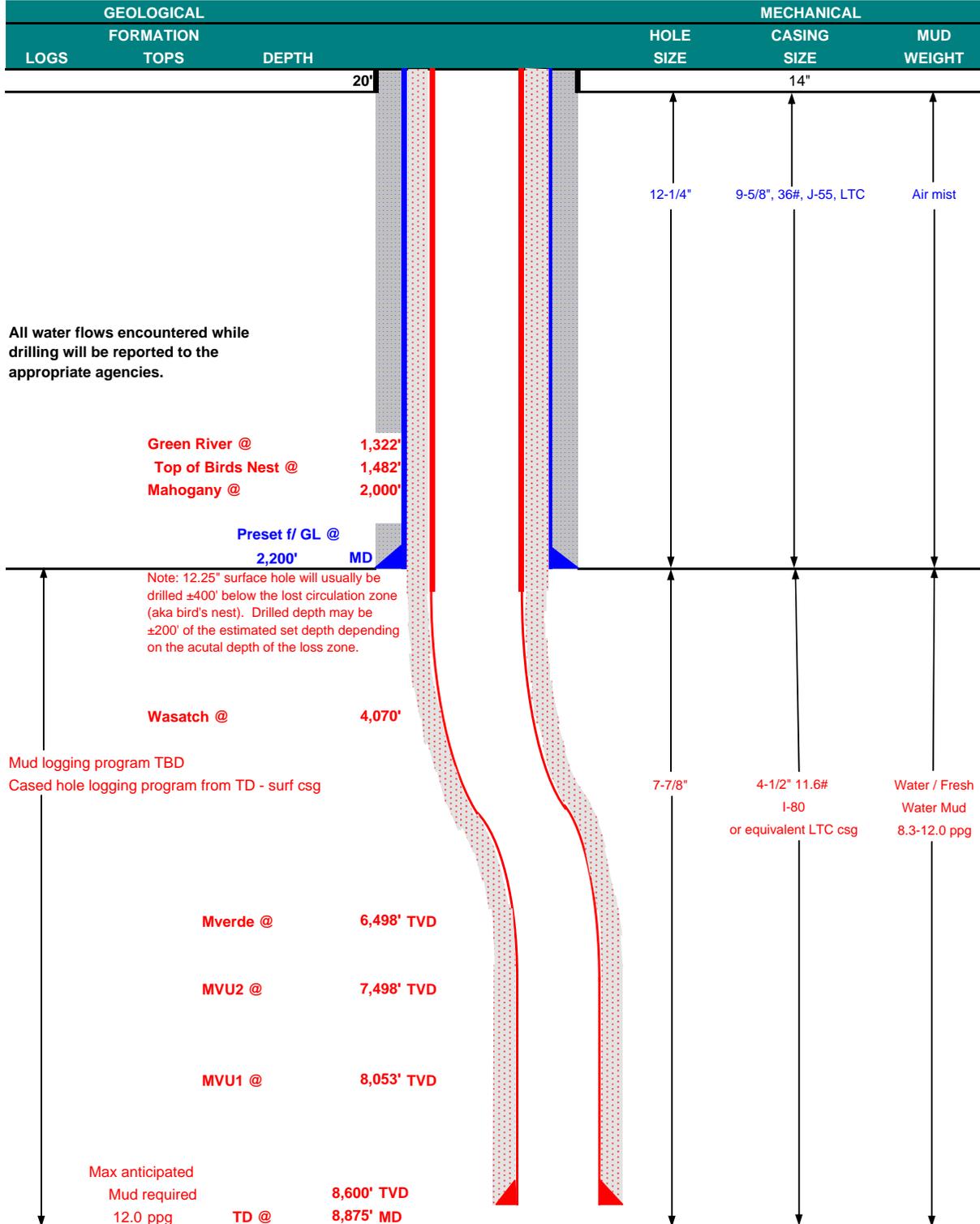
**10. Other Information:**

*Please refer to the attached Drilling Program.*



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	June 11, 2009			
WELL NAME	<b>NBU 922-36A4BS</b>		TD	8,600'	TVD	8,875' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	ELEVATION	4,965' GL      KB 4,980'
SURFACE LOCATION	SW/4 NE/4	1,795' FNL	1,522' FEL	Sec 36	T 9S	R 22E	
	Latitude:	39.994866	Longitude:	-109.383654		NAD 27	
BTM HOLE LOCATION	NE/4 NE/4	980' FNL	630' FEL	Sec 36	T 9S	R 22E	
	Latitude:	39.997090	Longitude:	-109.380480		NAD 27	
OBJECTIVE ZONE(S)	Wasatch/Mesaverde						
ADDITIONAL INFO	Regulatory Agencies: SITLA (Minerals), UDOGM (Surface), Tri-County Health Dept.						





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

### CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'				3,520	2,020	453,000
SURFACE	9-5/8"	0 to 2,200	36.00	J-55	LTC	0.98	1.96	7.28
						7,780	6,350	201,000
PRODUCTION	4-1/2"	0 to 8,875	11.60	I-80	LTC	2.24	1.18	2.24

- 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 3,377 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 5,437 psi**

### CEMENT PROGRAM

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	215	60%	15.60	1.18
	TOP OUT CMT (6 jobs) 1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele Premium cmt + 2% CaCl	380	0%	15.60	1.18
SURFACE Option 2	LEAD 1,700'	<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>				
		65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	400	35%	12.60	1.81
	TAIL 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	35%	15.60	1.18
	TOP OUT CMT as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION	LEAD 3,565'	Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	340	40%	11.00	3.38
	TAIL 5,310'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,300	40%	14.30	1.31

\*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained  
 \*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

### FLOAT EQUIPMENT & CENTRALIZERS

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

### ADDITIONAL INFORMATION

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

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

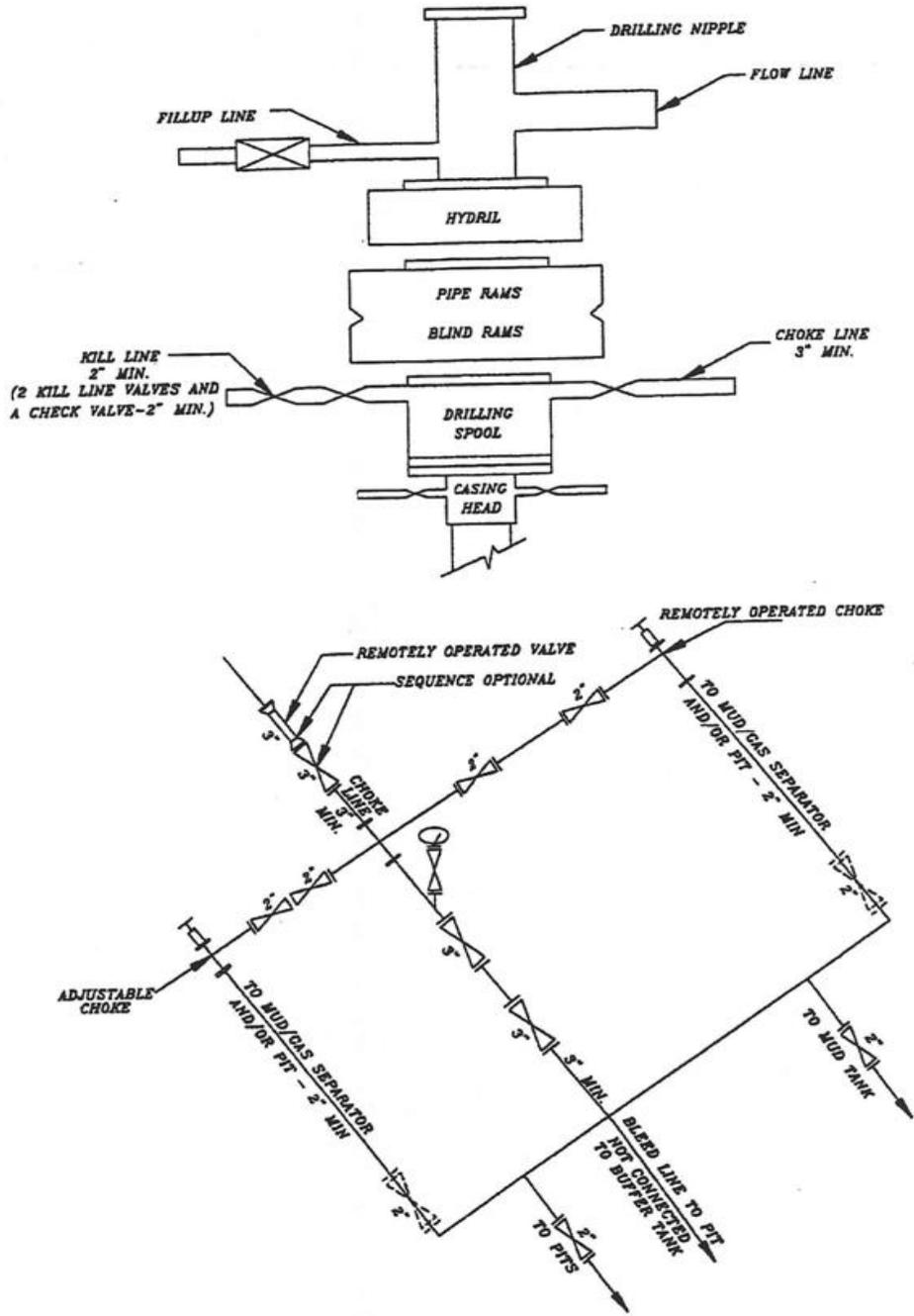
Surveys will be taken at 1,000' minimum intervals.

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

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

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

### EXHIBIT A NBU 922-36A4BS



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

# WELL PAD INTERFERENCE PLAT

## DIRECTIONAL PAD – NBU 318–36E

BASIS OF BEARINGS IS THE EAST LINE OF THE NE 1/4 OF SECTION 36, T9S, R22E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°14'31"W.



### BOTTOM HOLE FOOTAGES

NBU 922–36A4BS  
980' FNL & 630' FEL

NBU 922–36H2AS  
1360' FNL & 700' FEL

NBU 922–36H2DS  
1720' FNL & 795' FEL

RELATIVE COORDINATES		
From Surface Position to Bottom Hole		
WELL	NORTH	EAST
922–36A4BS	811'	889'
922–36H2AS	466'	799'
922–36H2DS	123'	696'

LATITUDE & LONGITUDE		
Bottom Hole – (NAD 83)		
WELL	N. LATITUDE	W. LONGITUDE
922–36A4BS	39°59'49.400" 39.997055°	109°22'52.179" 109.381161°
922–36H2AS	39°59'45.649" 39.996014°	109°22'53.062" 109.381406°
922–36H2DS	39°59'42.097" 39.995027°	109°22'54.267" 109.381741°

LATITUDE & LONGITUDE		
Bottom Hole – (NAD 27)		
WELL	N. LATITUDE	W. LONGITUDE
922–36A4BS	39°59'49.524" 39.997090°	109°22'49.728" 109.380480°
922–36H2AS	39°59'45.773" 39.996048°	109°22'50.612" 109.380725°
922–36H2DS	39°59'42.221" 39.995061°	109°22'51.816" 109.381060°

**NBU 922–36A4BS**  
Az. to D.H.M. = 151.86250° 86.7'

**NBU 922–36G1T**  
Az. to D.H.M. = 152.88611° 66.8'

**NBU 922–36H2AS**  
Az. to D.H.M. = 154.82194° 46.8'

**NBU 922–36H2DS**  
Az. to D.H.M. = 159.59028° 27.1'

**EXISTING E.O.G. DRY HOLE MARKER NBU 318–36E**  
(Well bore buried, position determined with metal detector)

### SURFACE POSITION FOOTAGES:

NBU 922–36A4BS  
1795' FNL & 1522' FEL

NBU 922–36G1T  
1812' FNL & 1512' FEL

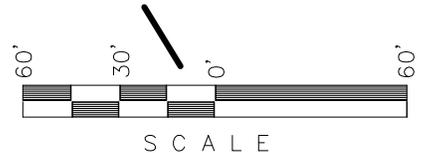
NBU 922–36H2AS  
1829' FNL & 1501' FEL

NBU 922–36H2DS  
1846' FNL & 1491' FEL

NBU 318–36E (Dry Hole Marker)  
1871' FNL & 1482' FEL

LATITUDE & LONGITUDE		
Surface Position – (NAD 83)		
WELL	N. LATITUDE	W. LONGITUDE
922–36A4BS	39°59'41.393" 39.994831°	109°23'03.606" 109.384335°
922–36G1T	39°59'41.225" 39.994785°	109°23'03.472" 109.384298°
922–36H2AS	39°59'41.056" 39.994738°	109°23'03.337" 109.384260°
922–36H2DS	39°59'40.888" 39.994691°	109°23'03.203" 109.384223°
Existing Well NBU 318–36E	39°59'40.637" 39.994621°	109°23'03.082" 109.384189°

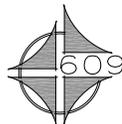
LATITUDE & LONGITUDE		
Surface Position – (NAD 27)		
WELL	N. LATITUDE	W. LONGITUDE
922–36A4BS	39°59'41.517" 39.994866°	109°23'01.155" 109.383654°
922–36G1T	39°59'41.349" 39.994819°	109°23'01.021" 109.383617°
922–36H2AS	39°59'41.180" 39.994772°	109°23'00.886" 109.383579°
922–36H2DS	39°59'41.012" 39.994725°	109°23'00.752" 109.383542°
Existing Well NBU 318–36E	39°59'40.761" 39.994656°	109°23'00.631" 109.383509°



**Kerr–McGee**  
**Oil & Gas Onshore, LP**

1099 18th Street – Denver, Colorado 80202

NBU 922–36A4BS, NBU 922–36G1T,  
NBU 922–36H2AS & NBU 922–36H2DS  
LOCATED IN SECTION 36, T9S, R22E,  
S.L.B.&M. UINTAH COUNTY, UTAH.

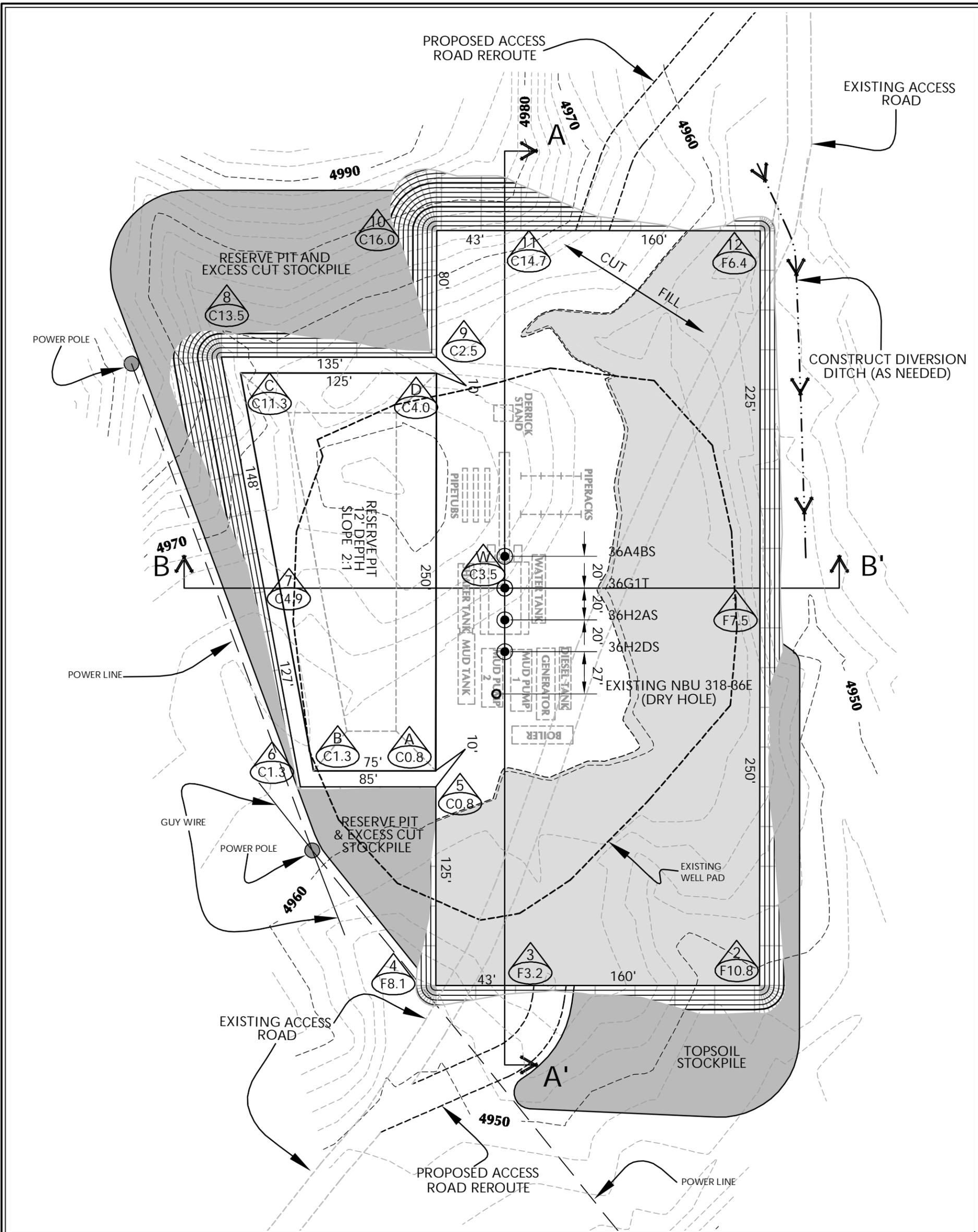


CONSULTING, LLC  
371 Coffeen Avenue  
Sheridan WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

DATE SURVEYED: 09-29-08	SURVEYED BY: M.S.B.
DATE DRAWN: 10-02-08	DRAWN BY: E.M.S.
	REVISED: 02-04-08

**Timberline** (435) 789-1365  
Engineering & Land Surveying, Inc.  
209 NORTH 300 WEST VERNAL, UTAH 84078

SHEET  
**5**  
OF 13



**WELL PAD NBU 318-36E QUANTITIES**

EXISTING GRADE @ CENTER OF WELL PAD = 4,963.6'  
 FINISHED GRADE ELEVATION = 4960.1'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 12,115 C.Y.  
 TOTAL FILL FOR WELL PAD = 9,224 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,693 C.Y.  
 EXCESS MATERIAL = 2,891 C.Y.  
 TOTAL DISTURBANCE = 3.34 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 28,590 BARRELS  
 RESERVE PIT VOLUME  
 +/- 7,690 CY

**WELL PAD LEGEND**

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



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

**KERR-MCGEE OIL & GAS**  
 ONSHORE L.P.  
 1099 18th Street - Denver, Colorado 80202

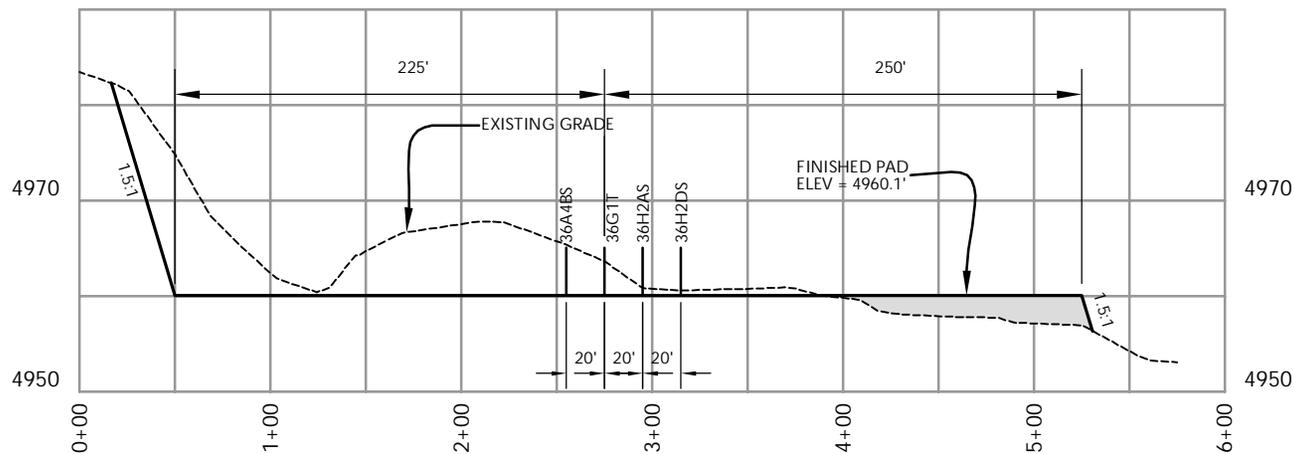


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 371 Coffeen Avenue  
 Sheridan WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

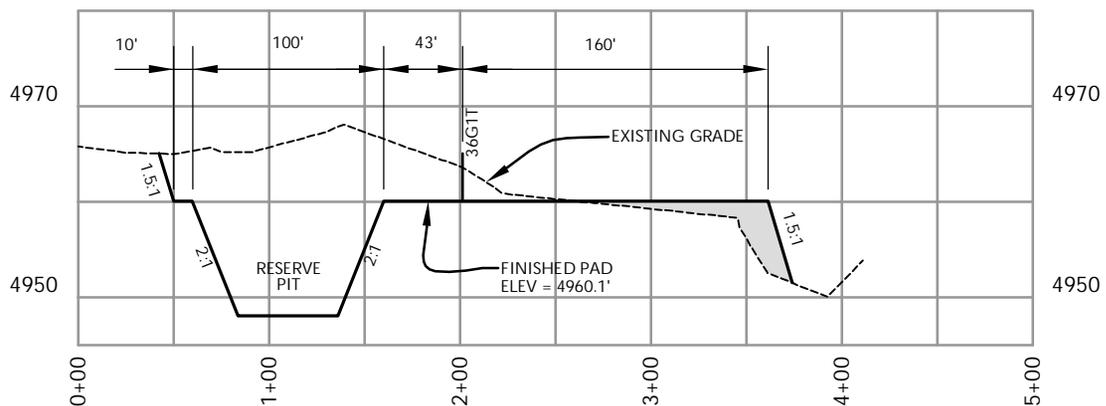
**WELL PAD - LOCATION LAYOUT**  
 NBU 922-36A4BS, NBU 922-36G1T,  
 NBU 922-36H2AS & NBU 922-36H2DS  
 LOCATED IN SECTION 36, T.9S., R.22E.  
 S.L.B.&M., UINTAH COUNTY, UTAH

Scale: 1"=60'	Date: 2/25/09	SHEET NO: <b>6</b> 6 OF 13
REVISED:		

**Timberline** (435) 789-1365  
 Engineering & Land Surveying, Inc.  
 38 WEST 100 NORTH VERNAL, UTAH 84078



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

NOTE: CROSS SECTION B-B' DEPICTS  
MAXIMUM RESERVE PIT DEPTH.

**KERR-MCGEE OIL & GAS  
ONSHORE L.P.**

1099 18th Street - Denver, Colorado 80202

**WELL PAD - CROSS SECTIONS**  
**NBU 922-36A4BS, NBU 922-36G1T,**  
**NBU 922-36H2AS & NBU 922-36H2DS**  
 LOCATED IN SECTION 36, T.9S., R.22E.  
 S.L.B.&M., UINTAH COUNTY, UTAH



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

Scale: 1"=100'

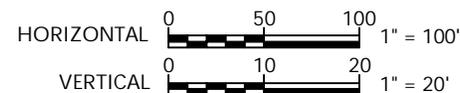
Date: 2/25/09

SHEET NO:

**7**

7 OF 13

REVISED:



**Timberline** (435) 789-1365  
**Engineering & Land Surveying, Inc.**  
 38 WEST 100 NORTH VERNAL, UTAH 84078

'APIWellNo:43047503940000'

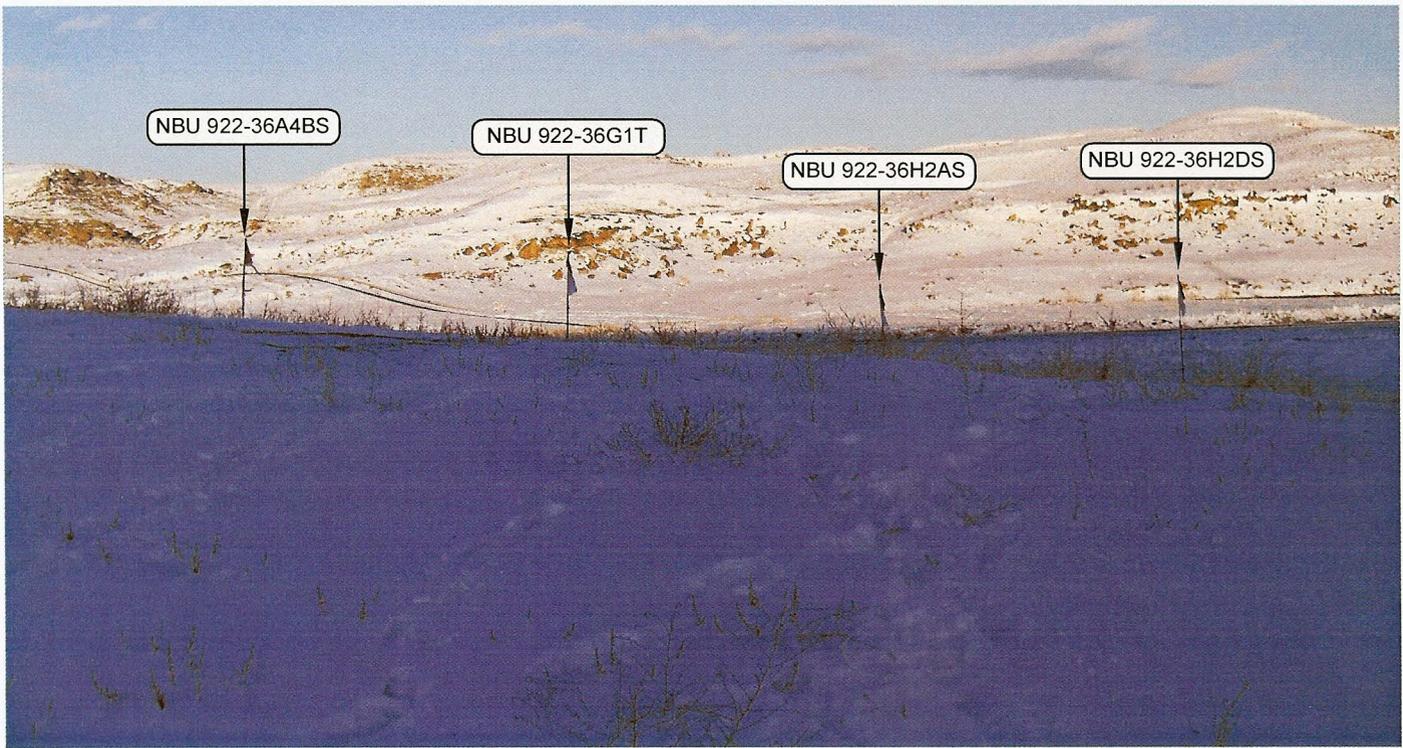


PHOTO VIEW: FROM CORNER 7 TO LOCATION STAKES

CAMERA ANGLE: NORTHEASTERLY

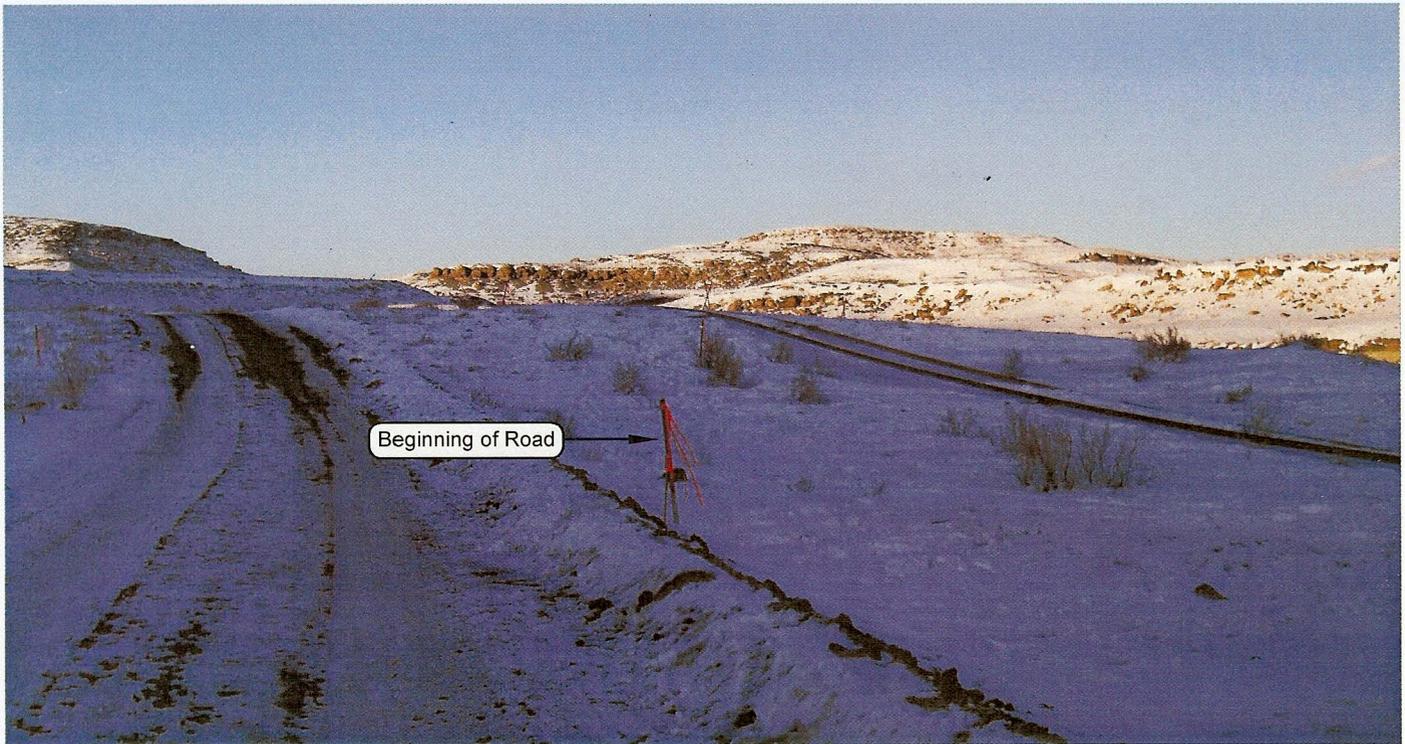


PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: NORTHWESTERLY

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



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

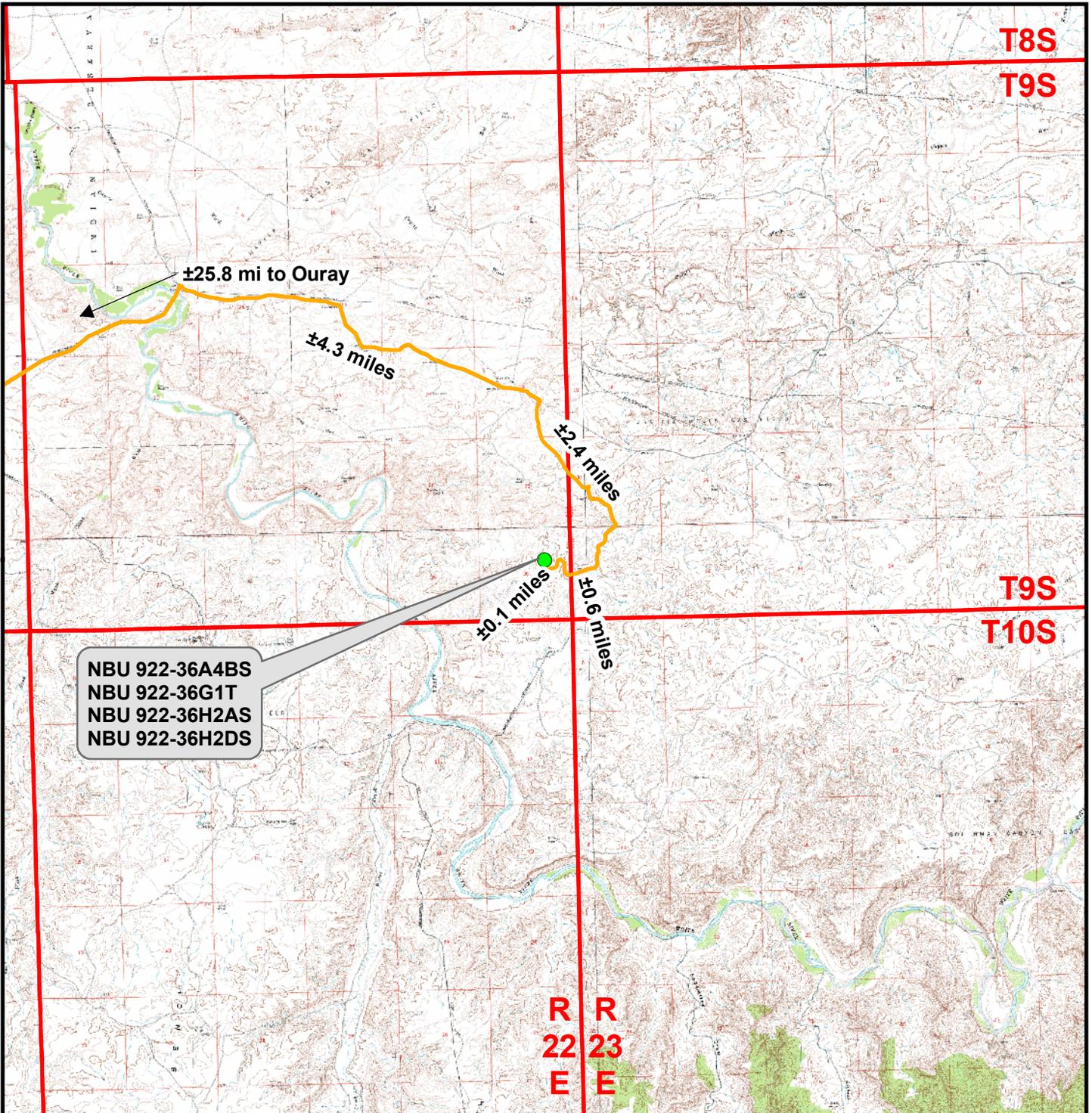
NBU 922-36A4BS, NBU 922-36G1T,  
 NBU 922-36H2AS & NBU 922-36H2DS  
 LOCATED IN SECTION 36, T9S, R22E,  
 S.L.B.&M. UINTAH COUNTY, UTAH.

**LOCATION PHOTOS**

TAKEN BY: M.S.B.		DATE TAKEN: 09-29-08
DRAWN BY: E.M.S.		DATE DRAWN: 10-02-08
		REVISED: 02-04-09

**Timberline** (435) 789-1365  
 Engineering & Land Surveying, Inc.  
 209 NORTH 300 WEST VERNAL, UTAH 84078

**SHEET**  
**8**  
**OF 13**



NBU 922-36A4BS  
 NBU 922-36G1T  
 NBU 922-36H2AS  
 NBU 922-36H2DS

**Legend**

- Proposed Well Location
- Access Route - Proposed

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

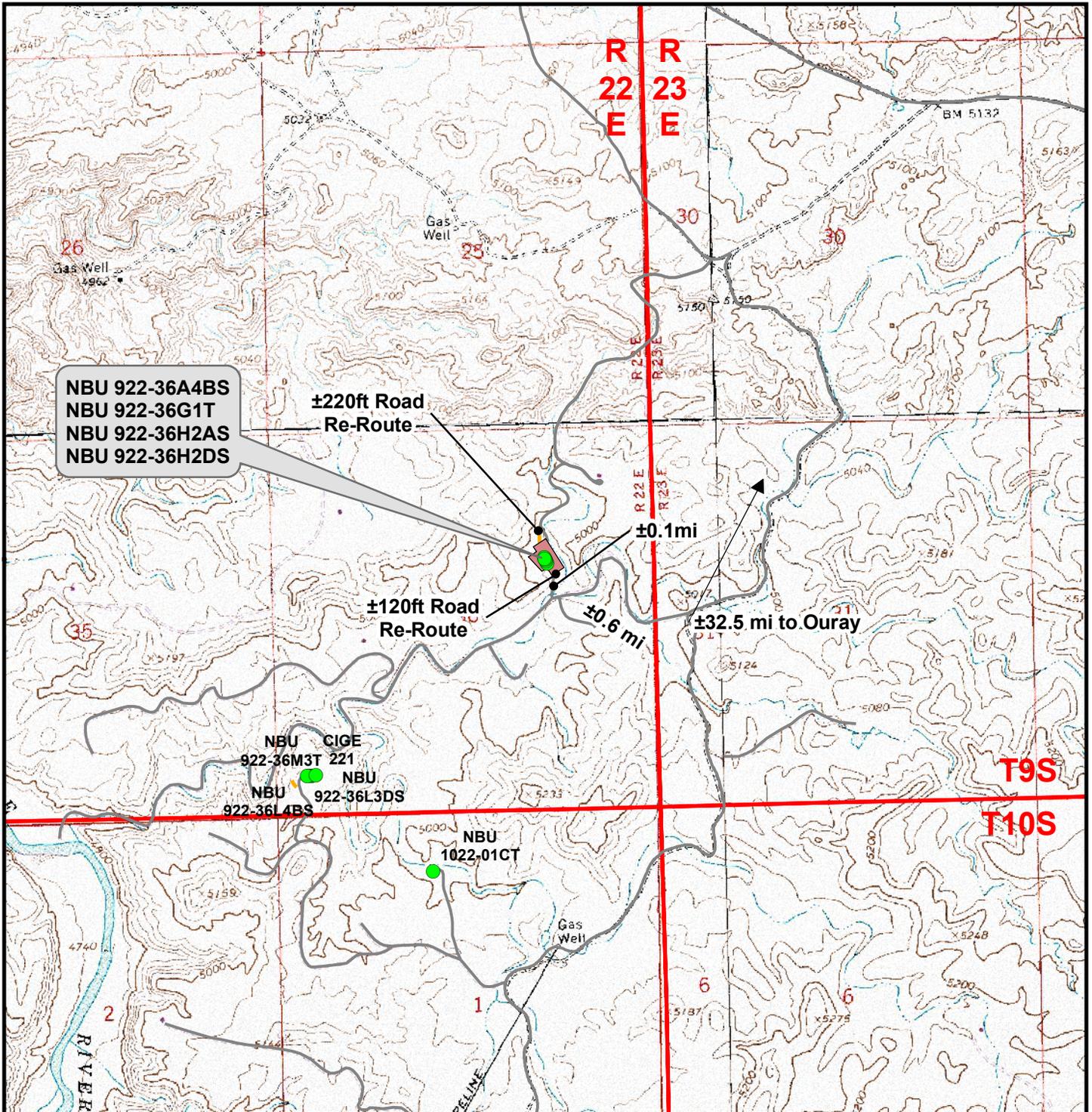
**NBU 922-36A4BS, NBU 922-36G1T,  
 NBU 922-36H2AS & NBU 922-36H2DS  
 Topo A**

**Located In Section 36, T9S, R22E  
 S.L.B.&M., Uintah County, Utah**

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



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: JELO	Date: 24 Feb 2009	9
Revised:	Date:	



**Legend**

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

Total Proposed Road Length: ±340ft

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

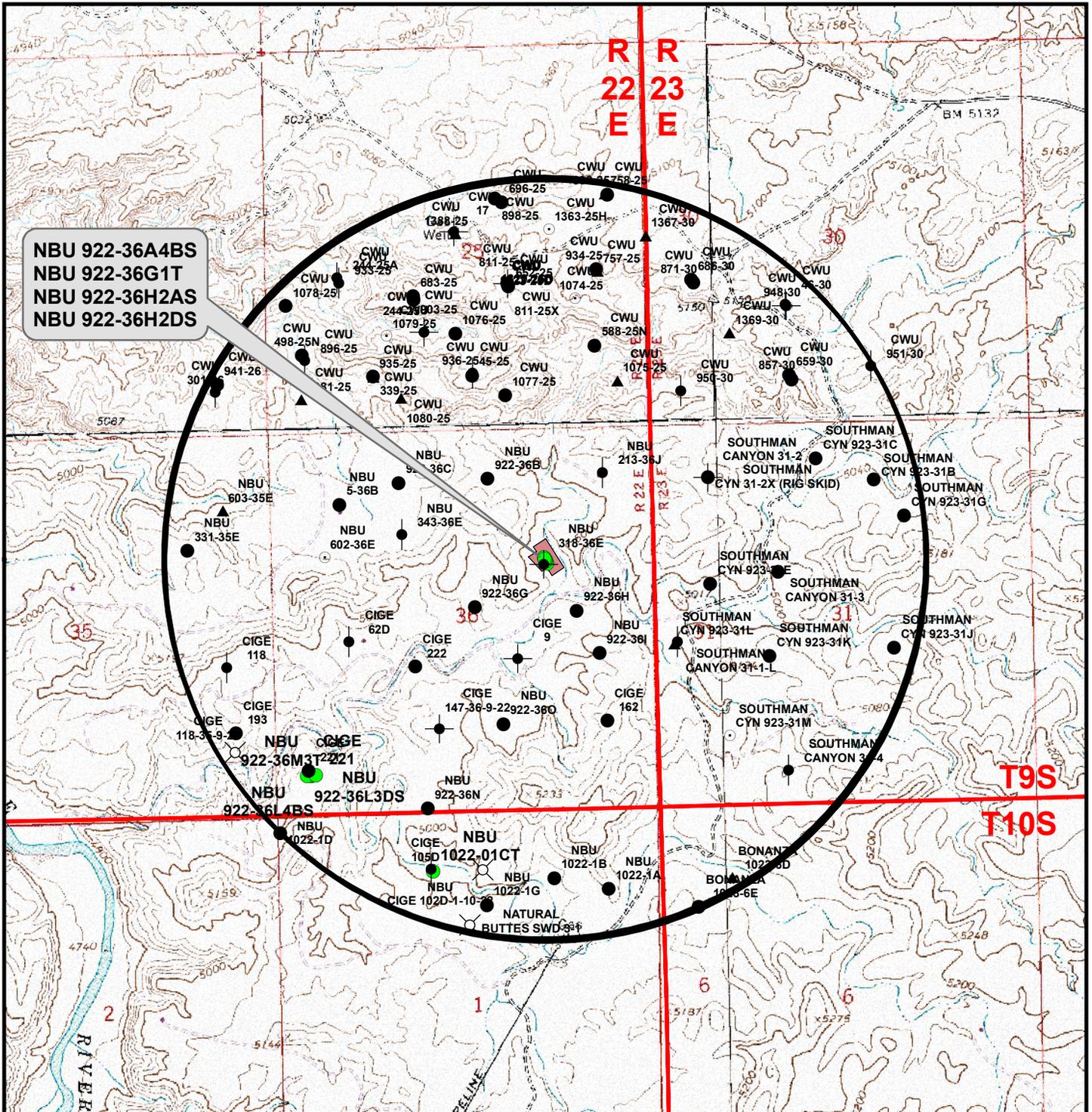
**NBU 922-36A4BS, NBU 922-36G1T,  
NBU 922-36H2AS & NBU 922-36H2DS**  
Topo B  
Located In Section 36, T9S, R22E  
S.L.B.&M., Uintah County, Utah



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



Scale: 1" = 2000ft	NAD83 USP Central	Sheet No:
Drawn: JELO	Date: 24 Feb 2009	<b>10</b>
Revised:	Date:	



**Legend**

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

- Well - Proposed
- Well - 1 Mile Radius
- Producing
- ▲ Approved permit (APD); not yet spudded
- Spudded (Drilling commenced: Not yet complete)
- ⊗ Location Abandoned
- Temporarily-Abandoned
- ⊕ Plugged and Abandoned
- Well Pad
- Shut-In

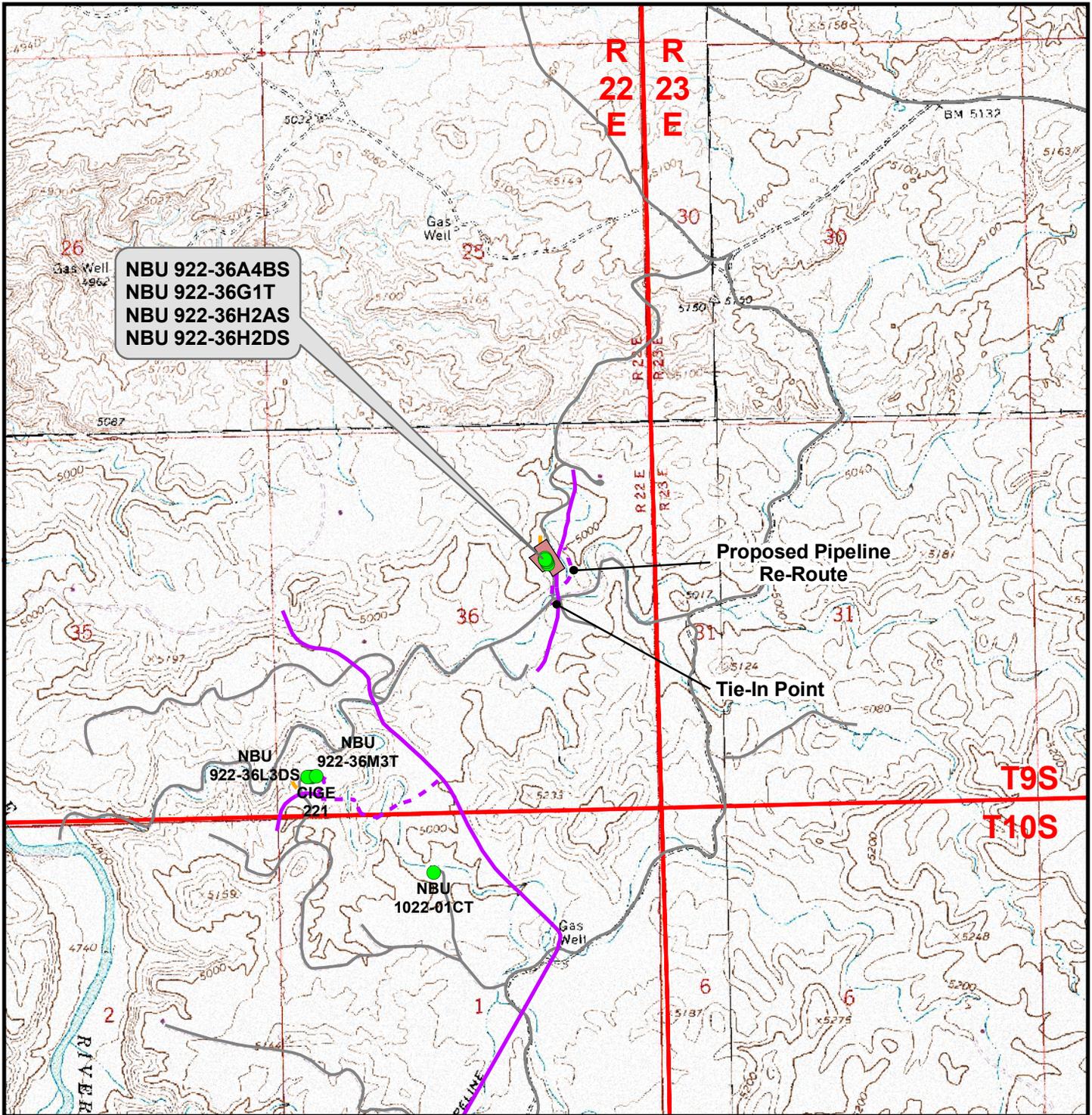
**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

**NBU 922-36A4BS, NBU 922-36G1T,  
NBU 922-36H2AS & NBU 922-36H2DS**  
Topo C  
Located In Section 36, T9S, R22E  
S.L.B.&M., Uintah County, Utah

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



Scale: 1" = 2000ft	NAD83 USP Central	Sheet No: <b>11</b> 11 of 13
Drawn: JELO	Date: 24 Feb 2009	
Revised:	Date:	



**Legend**

- Well - Proposed
- Well Pad
- Road - Proposed
- Pipeline - Proposed
- Road - Existing
- Pipeline - Existing

Proposed Pipeline Length From Tie-In Point To Edge Of Pad: ±1,020ft  
 Proposed Pipeline Length Around Pad: ±660ft

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

**NBU 922-36A4BS, NBU 922-36G1T,  
 NBU 922-36H2AS & NBU 922-36H2DS**  
 Topo D

**Located In Section 36, T9S, R22E  
 S.L.B.&M., Uintah County, Utah**



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



Scale: 1" = 2000ft	NAD83 USP Central	Sheet No:
Drawn: JELo	Date: 24 Feb 2009	12
Revised:	Date:	

**Kerr-McGee Oil & Gas Onshore, LP**  
**NBU 922-36A4BS, NBU 922-36G1T, NBU 922-36H2AS & NBU 922-36H2DS**  
**Section 36, T9S, R22E, S.L.B.&M.**

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 13.9 MILES TO THE JUNCTION OF STATE HIGHWAY 88. EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG STATE HIGHWAY 88 APPROXIMATELY 16.8 MILES TO OURAY, UTAH. FROM OURAY, PROCEED IN A SOUTHERLY DIRECTION ALONG THE SEEP RIDGE ROAD (COUNTY B ROAD 2810) APPROXIMATELY 11.2 MILES TO THE INTERSECTION OF THE GLEN BENCH ROAD (COUNTY B ROAD 3260). EXIT LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY, THEN NORTHEASTERLY DIRECTION ALONG THE GLEN BENCH ROAD APPROXIMATELY 14.6 MILES TO THE INTERSECTION OF THE CHAPETA WELLS ROAD (COUNTY B ROAD 3410) WHICH ROAD INTERSECTION IS APPROXIMATELY 400 FEET NORTHEAST OF THE MOUNTAIN FUEL BRIDGE, AT THE WHITE RIVER. EXIT RIGHT AND PROCEED IN A SOUTHEASTERLY DIRECTION APPROXIMATELY 4.3 MILES ALONG THE CHAPETA WELLS ROAD TO THE INTERSECTION OF THE ATCHEE WASH ROAD (COUNTY B ROAD 4240). EXIT RIGHT AND PROCEED IN A SOUTHEASTERLY, THEN SOUTHERLY DIRECTION ALONG THE ATCHEE WASH ROAD APPROXIMATELY 2.4 MILES TO AN EXISTING SERVICE ROAD TO THE WEST. EXIT RIGHT AND PROCEED IN A WESTERLY, THEN NORTHERLY, THEN SOUTHWESTERLY DIRECTION ALONG THE SERVICE ROAD APPROXIMATELY 0.6 MILES TO THE EXISTING ACCESS ROAD. EXIT RIGHT AND PROCEED IN A NORTHERLY DIRECTION ALONG THE ACCESS ROAD APPROXIMATELY 0.1 MILES TO NBU 318-36E WELL PAD.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 63.9 MILES IN A SOUTHERLY DIRECTION.

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

**NBU 922-36A4BS**

Surface: 1,795' FNL, 1,522' FEL (SW/4NE/4)  
BHL: 980' FNL 630' FEL (NE/4NE/4)

**NBU 922-36G1T**

Surface: 1,812' FNL, 1,512' FEL (SW/4NE/4)

**NBU 922-36H2AS**

Surface: 1,829' FNL, 1,501' FEL (SW/4NE/4)  
BHL: 1,360' FNL 700' FEL (SE/4NE/4)

**NBU 922-36H2DS**

Surface: 1,846' FNL, 1,491' FEL (SW/4NE/4)  
BHL: 1,720' FNL 795' FEL (SE/4NE/4)

Section 36 Township 9 South Range 22 East  
Pad: NBU 922-36G  
Uintah, Utah  
Minerals: State – ML22650  
Surface: State

**ONSHORE ORDER NO. 1**

***MULTI-POINT SURFACE USE & OPERATIONS PLAN***

**Directional Drilling:**

In accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, this well will be directionally drilled in order to access portions of our lease which are otherwise inaccessible due to topography.

**1. Existing Roads:**

Refer to Topo Map A for directions to the location.

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

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

All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

**2. Planned Access Roads:**

Approximately ±0.0 mi. of new access road is proposed. Please refer to the attached Topo Map B.

The upgraded and new portions of the access road will be crowned and ditched with a running surface of 18 feet and a maximum disturbed width of 30 feet. Appropriate water control will be installed to control erosion.

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

The access road was centerline flagged during time of staking.

Surfacing material may be necessary, depending upon weather conditions.

Surface disturbance and vehicular traffic will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

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

Please refer to Topo Map C.

**4. Location of Existing & Proposed Facilities:**

*The following guidelines will apply if the well is productive.*

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks, and/or heater/treater). These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank, and be independent of the back cut.

All permanent (on-site six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earthtone color to match one of the standard environmental colors, as determined by the five state Rocky Mountain Inter-Agency Committee.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The required color is Shadow Gray, a non-reflective earthtone.

Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

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

Water for drilling purposes will be obtained from Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim #43-8496, Application #53617.

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.

**6. Source of Construction Materials:**

Surface and subsoil materials in the immediate area will be utilized.

Any gravel will be obtained from a commercial source.

**7. Methods of Handling Waste Materials:**

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations, the liquid contents of the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break, or allow discharge of liquids.

A plastic reinforced liner and felt will be used; it will be a minimum of 20 mil thick, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit. Any spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical porta-toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash will be burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling of this well.

Any produced water from the proposed well will be contained in a water tank and will then be hauled By truck to one of the pre-approved disposal sites: RNI in Sec. 5 T9S R22E, NBU #159 in Sec. 35 T9S R21E, Ace Oilfield in Sec. 2 T6S R20E, MC&MC in Sec. 12 T6S R19E, Pipeline Facility in Sec. 36 T9S R20E, Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E, Bonanza Evaporation Pond in Sec. 2 T10S R23E.

**8. Ancillary Facilities:**

None are anticipated.

**9. Well Site Layout: (See Location Layout Diagram)**

The attached Location Layout Diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s), and surface material stockpile(s).

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

The reserve pit will be lined, and when the reserve pit is closed, the pit liner will be buried below plow depth.

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

39 inch net wire will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.

The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.

Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.

Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

The reserve pit fencing will be on three sides during drilling operations, and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.

Location size may change prior to the drilling of the well due to current rig availability. If the proposed location is not large enough to accommodate the drilling rig the location will be re-surveyed and a Form 9 shall be submitted.

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

*Producing Location:*

Immediately upon well completion, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 43 CFR 3162.7-1.

A plastic, nylon reinforced liner will be used, it shall be torn and perforated before backfilling of the reserve pit.

Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations.

The reserve pit and that portion of the location not needed for production facilities/operations will be recontoured to the approximate natural contours. The reserve pit will be reclaimed within 90 days from the date of well completion, weather permitting.

To prevent surface water(s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface three feet above surrounding ground surface to allow the reclaimed pit area to drain effectively.

Upon completion of backfilling, leveling, and recontouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

*Dry Hole/Abandoned Location:*

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and re-establishment of vegetation as specified.

All disturbed surfaces will be recontoured to the approximate natural contours, with reclamation of the well pad and access road to be performed as soon as practical after final abandonment. Reseeding operations will be performed after completion of other reclamation operations.

**Kerr-McGee Oil & Gas Onshore LP**  
NBU 922-36A4BS/ 36G1T/ 36H2AS/ 36H2DS

Page 6  
Surface Use and Operations Plan

**11. Surface/Mineral Ownership:**

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

**12. Other Information:**

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, the approved Plan of Operations, and any applicable Notice of Lessees. The Operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The Operator will control noxious weeds along Rights-Of-Way for roads, pipelines, well sites, or other applicable facilities.

A Class III archaeological survey report and paleontological survey report is attached.

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

Kathy Schneebeck Dulnoan  
Staff Regulatory Analyst  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6226

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

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

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

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

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by State Surety Bond 22013542.

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.

\_\_\_\_\_  
Kathy Schneebeck Dulnoan

April 20, 2009  
Date

**IPC #09-53**

# **Paleontological Reconnaissance Survey Report**

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**Survey of Kerr McGee's Proposed Multi-Well Pad, Road Re-Route  
and Pipeline for "NBU #922-36A4BS, G1T, H2AS & H2DS"  
(Sec. 36, T 9 S, R 22 E)**

Archy Bench  
Topographic Quadrangle  
Uintah County, Utah

March 25, 2009

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

## INTRODUCTION

At the request of Raleen White of Kerr McGee Oil & Gas Onshore LP and authorized by James Kirkland of the Office of the State Paleontologist, a paleontological reconnaissance survey of Kerr McGee's proposed multi-well pad, road re-route and pipeline for "NBU #922-36A4BS, G1T, H2AS, & H2DS" (Sec. 36, T 9 S, R 22 E) was conducted by David Alderks and Jason Klimek on March 18, 2009. The survey was conducted under Utah Paleontological Investigations Permit #07-356. This survey to collect any paleontological materials discovered during the construction processes in danger of damage or destruction was done to meet requirements of the National Environmental Policy Act of 1969, and other State and Federal laws and regulations that protect paleontological resources.

## FEDERAL AND STATE REQUIREMENTS

As mandated by the State of Utah, paleontologically-sensitive geologic formations on State lands that may be impacted due to ground disturbance require paleontological evaluation. This requirement complies with:

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

BLM, 2008: BLM IM 2009-011 Assessment and Mitigation of Potential Impacts to Paleontological Resources. USDI – BLM Washington Office directive, October 29, 2008 replaces the Condition Classification System from Handbook H-8270-1. The following section outlines the new Potential Fossil Yield Classification (PFYC) System. Geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential.

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

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

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

## LOCATION

Kerr McGee's proposed multi-well pad, road re-route and pipeline for "NBU #922-36A4BS, G1T, H2AS, & H2DS" (Sec. 36, T 9 S, R 22 E) is located on lands managed by the State of Utah Trust Lands Administration (SITLA) in the Coyote Wash area, about 2 miles east of the White River, and some 17 miles southwest of Bonanza, Utah. The project area can be found on the Archy Bench 7.5 minute U. S. Geological Survey Quadrangle Map, Uintah County, Utah.

## PREVIOUS WORK

The basins of western North America have long produced some of the richest fossil collections in the world. Early Cenozoic sediments are especially well represented throughout the western interior. Paleontologists started field work in Utah's Uinta Basin as early as 1870 (Betts, 1871; Marsh, 1871, 1875a, 1875b). The Uinta Basin is located in the northeastern corner

of Utah and covers approximately 31,000 sq. km (12,000 sq. miles) ranging in elevation from 1,465 to 2,130 m (4,800 to 7,000 ft) (Marsell, 1964; Hamblin et al., 1987). Middle to late Eocene time marked a period of dramatic change in the climate, flora, (Stucky, 1992) and fauna (Black and Dawson, 1966) of North America.

## **GEOLOGICAL AND PALEONTOLOGICAL OVERVIEW**

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

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

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

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

The Duchesne River Formation of the Uinta Basin in northeastern Utah is composed of a succession of fluvial and flood plain deposits composed of mud, silt and sandstone. The source area for these late Eocene deposits is from the Uinta Mountains indicated by paleocurrent data (Anderson and Picard, 1972). In Peterson's (1931c) paper, the name "Duchesne Formation" was applied to the formation and it was later changed to the "Duchesne River Formation" by Kay

(1934). The formation is divided up into four members: the Brennan Basin, Dry Gulch Creek, LaPoint, and Starr Flat (Anderson and Picard, 1972). Debates concerning the Duchesne River Formation, as to whether its age was late Eocene or early Oligocene, have surfaced throughout the literature of the last century (Wood et al., 1941; Scott 1945). Recent paleo-magnetostratigraphic work (Prothero, 1996) shows that the Duchesne River Formation is late Eocene in time.

## FIELD METHODS

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

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

## PROJECT AREA

The project area is situated in the Wagonhound Member (Uinta B) of the Uinta Formation. The proposed well pad "NBU #922-36A4BS, G1T, H2AS & H2DS" is situated in the SE/NE quarter-quarter section of Sec. 36, T 9 S, R 22 E, and is approached by a proposed access road and pipeline from the south and a proposed access road from the north (Figure 1). The pad is staked on a small gentle hill and is surrounded by high outcrops to the north, west, and south with a prominent drainage forming the eastern edge of the area. The pit is staked on the western side of the pad. The geology of the proposed area consists of several beds of gray and maroon siltstones (approximately 8-14 inches in thickness) separated by layers of gray and green mudstone (approximately 1-4 feet in thickness). The area is also strewn with several large tan sandstone boulders that have tumbled down from a thick (about 12 feet) paleochannel that caps the outcrops that surround the north, west and south sides of the pad. A large area of the pad consists of previously disturbed materials.

The shattered fossilized remains of an unidentifiable turtle were discovered within an outcrop of gray mudstone on the northern end of the pad. Isolated fragments of bone were also discovered along the outcrops on the northern and western sides of the pad. Ichnofossils consisting of invertebrate burrows (*Planolites*) were discovered within the brown sandstone and gray siltstones throughout the area.

**SURVEY RESULTS**

<b>PROJECT</b>	<b>GEOLOGY</b>	<b>PALEONTOLOGY</b>
<p>“NBU #922-36A4BS, G1T, H2AS, &amp; H2DS” (Sec. 36, T 4 S, R22 E)</p>	<p>The pad is staked on a small gentle hill and is surrounded by high outcrops to the north, west, and south with a prominent drainage forming the eastern edge of the area. The pit is staked on the western side of the pad. The geology of the proposed area consists of several beds of gray and maroon siltstones (approximately 8-14 inches in thickness) separated by layers of gray and green mudstone (approximately 1-4 feet in thickness). The area is also strewn with several large tan sandstone boulders that have tumbled down from a thick (about 12 feet) paleochannel that caps the outcrops that surround the north, west and south sides of the pad. A large area of the pad consists of previously disturbed materials.</p>	<p>The shattered fossilized remains of an unidentifiable turtle were discovered within an outcrop of gray mudstone on the northern end of the pad. Isolated fragments of bone were also discovered along the outcrops on the northern and western sides of the pad. Ichnofossils consisting of invertebrate burrows (<i>Planolites</i>) were discovered within the brown sandstone and gray siltstones throughout the area. <b>Class 3a</b></p>

**RECOMMENDATIONS**

A reconnaissance survey was conducted for Kerr McGee’s proposed multi-well pad, road re-route, and pipeline for “NBU #922-36A4BS, G1T, H2AS, & H2DS” (Sec. 36, T 9 S, R 22 E). The well pad and the associated re-route road and pipeline covered in this report showed little to no signs of vertebrate fossils. Therefore, we recommend that no paleontological restrictions should be placed on the development of the projects included in this report.

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

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

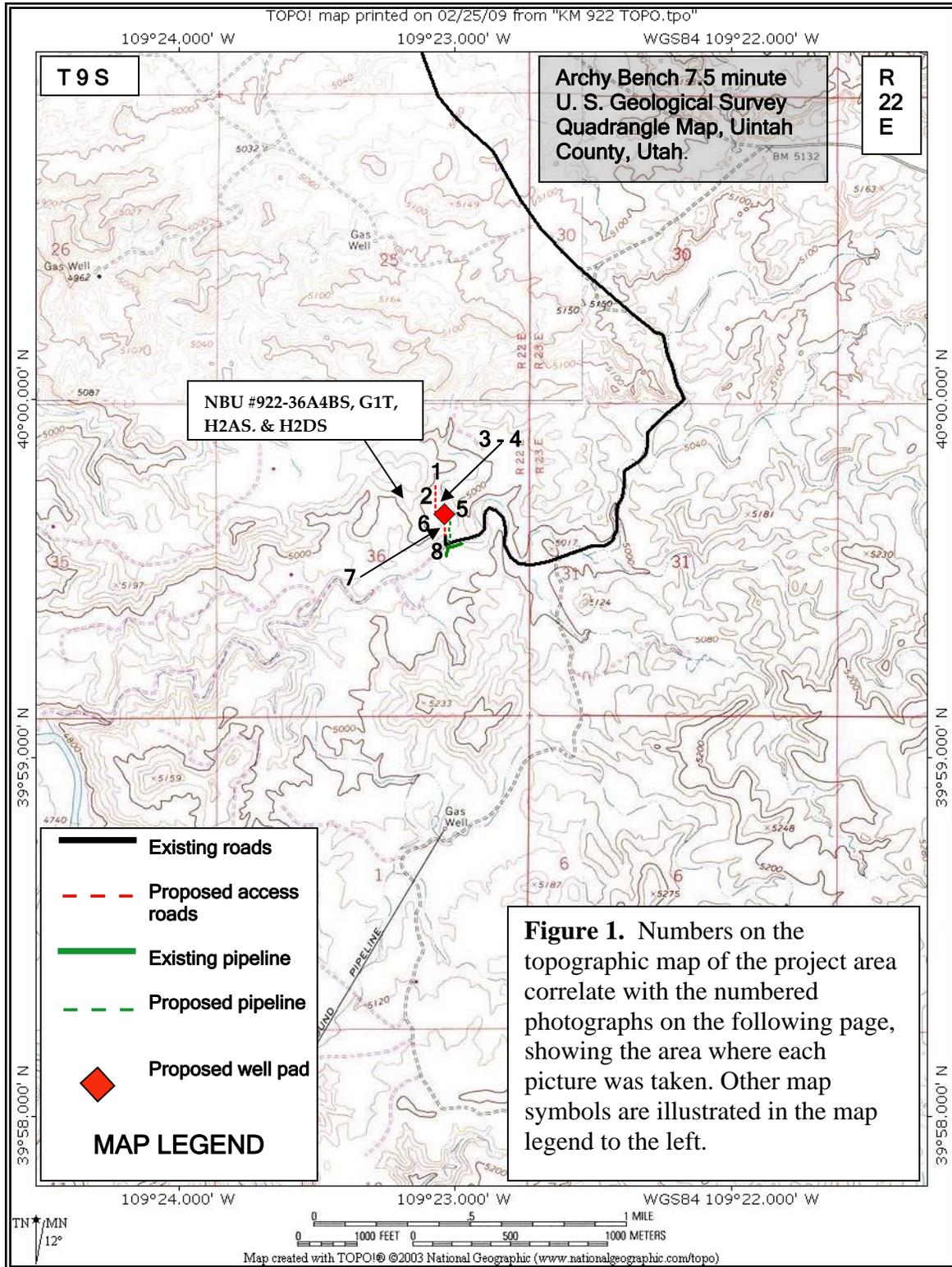


Figure 1. *continued...*



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

May 4, 2009

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 922-36A4BS  
T9S-R22E  
Section 36: SWNE/NENE  
Surface: 1795' FNL, 1522' FEL  
Bottom Hole: 980' FNL, 630' 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 the Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 922-36A4BS 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 'Jessy Pink'.

Jessy Pink  
Landman



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
P.O. Box 45155  
Salt Lake City, Utah 84145-0155

**IN REPLY REFER TO:**

**3160  
(UT-922)**

May 8, 2009

Memorandum

To: Assistant District Manager Minerals, Vernal District  
From: Michael Coulthard, Petroleum Engineer  
Subject: 2009 Plan of Development Natural Buttes Unit Uintah  
County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2009 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50383	NBU 921-25M3DS	Sec 25 T09S R21E 1855 FSL 0231 FWL
	BHL	Sec 25 T09S R21E 0244 FSL 0587 FWL
43-047-50384	NBU 921-25M2DS	Sec 25 T09S R21E 1860 FSL 0251 FWL
	BHL	Sec 25 T09S R21E 0740 FSL 0623 FWL
43-047-50385	NBU 921-25M2AS	Sec 25 T09S R21E 1865 FSL 0270 FWL
	BHL	Sec 25 T09S R21E 1245 FSL 0643 FWL
43-047-50386	NBU 921-25L4BS	Sec 25 T09S R21E 1870 FSL 0290 FWL
	BHL	Sec 25 T09S R21E 1733 FSL 0677 FWL
43-047-50387	NBU 1022-14F4S	Sec 14 T10S R22E 1435 FNL 1470 FWL
	BHL	Sec 14 T10S R22E 2035 FNL 2255 FWL
43-047-50388	NBU 1022-14F2T	Sec 14 T10S R22E 1407 FNL 1417 FWL
43-047-50389	NBU 1022-14D3S	Sec 14 T10S R22E 1397 FNL 1400 FWL
	BHL	Sec 14 T10S R22E 0900 FNL 0410 FWL
43-047-50390	NBU 1022-14C4S	Sec 14 T10S R22E 1426 FNL 1453 FWL
	BHL	Sec 14 T10S R22E 1290 FNL 1975 FWL

43-047-50391 NBU 922-36H2DS Sec 36 T09S R22E 1846 FNL 1491 FEL  
 BHL Sec 36 T09S R22E 1720 FNL 0795 FEL

43-047-50392 NBU 922-36H2AS Sec 36 T09S R22E 1829 FNL 1501 FEL  
 BHL Sec 36 T09S R22E 1360 FNL 0700 FEL

43-047-50393 NBU 922-36G1T Sec 36 T09S R22E 1812 FNL 1512 FEL

43-047-50394 NBU 922-36A4BS Sec 36 T09S R22E 1795 FNL 1522 FEL  
 BHL Sec 36 T09S R22E 0980 FNL 0630 FEL

43-047-50395 NBU 922-31O1AS Sec 31 T09S R22E 2314 FSL 0128 FEL  
 BHL Sec 31 T09S R22E 1098 FSL 1494 FEL

43-047-50396 NBU 922-31J3AS Sec 31 T09S R22E 2313 FSL 0148 FEL  
 BHL Sec 31 T09S R22E 1871 FSL 1973 FEL

43-047-50397 NBU 922-31I4AS Sec 31 T09S R22E 2315 FSL 0088 FEL  
 BHL Sec 31 T09S R22E 1743 FSL 0153 FEL

43-047-50398 NBU 922-31I3CS Sec 31 T09S R22E 2314 FSL 0108 FEL  
 BHL Sec 31 T09S R22E 1341 FSL 1125 FEL

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:5-8-09

**From:** Jim Davis  
**To:** Bonner, Ed; Mason, Diana  
**Date:** 6/1/2009 2:12 PM  
**Subject:** Kerr McGee Approvals (16)

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

- NBU 922-36A4BS (4304750394)
- NBU 922-36G1T (4304750393)
- NBU 922-36H2AS (4304750392)
- NBU 922-36H2DS (4304750391)

- NBU 921-25M3DS (4304750383)
- NBU 921-25M2DS (4304750384)
- NBU 921-25M2AS (4304750385)
- NBU 921-25L4BS (4304750386)

- NBU 922-31O1AS (4304750395)
- NBU 922-31J3AS (4304750396)
- NBU 922-31I3CS (4304750398)
- NBU 922-31I4AS (4304750397)

- NBU 1022-19P1AS (4304750418)
- NBU 1022-20M4CS (4304750422)
- NBU 1022-20M1DS (4304750421)
- NBU 1022-20M4DS (4304750423)

-Jim

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

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 922-36A4BS 4304750394		
String	Surf	Prod	
Casing Size(")	9.625	4.500	
Setting Depth (TVD)	2200	8600	
Previous Shoe Setting Depth (TVD)	20	2200	
Max Mud Weight (ppg)	8.4	11.6	
BOPE Proposed (psi)	500	5000	
Casing Internal Yield (psi)	3250	7780	
Operators Max Anticipated Pressure (psi)	5253	11.7	

Calculations	Surf String	9.625	"
Max BPH (psi)	$.052 * \text{Setting Depth} * \text{MW} =$	961	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	$\text{Max BHP} - (0.12 * \text{Setting Depth}) =$	697	NO
MASP (Gas/Mud) (psi)	$\text{Max BHP} - (0.22 * \text{Setting Depth}) =$	477	YES OK
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	$\text{Max BHP} - .22 * (\text{Setting Depth} - \text{Previous Shoe Depth}) =$	481	NO Reasonable depth in area
Required Casing/BOPE Test Pressure=		2200	psi
*Max Pressure Allowed @ Previous Casing Shoe=		20	psi *Assumes 1psi/ft frac gradient

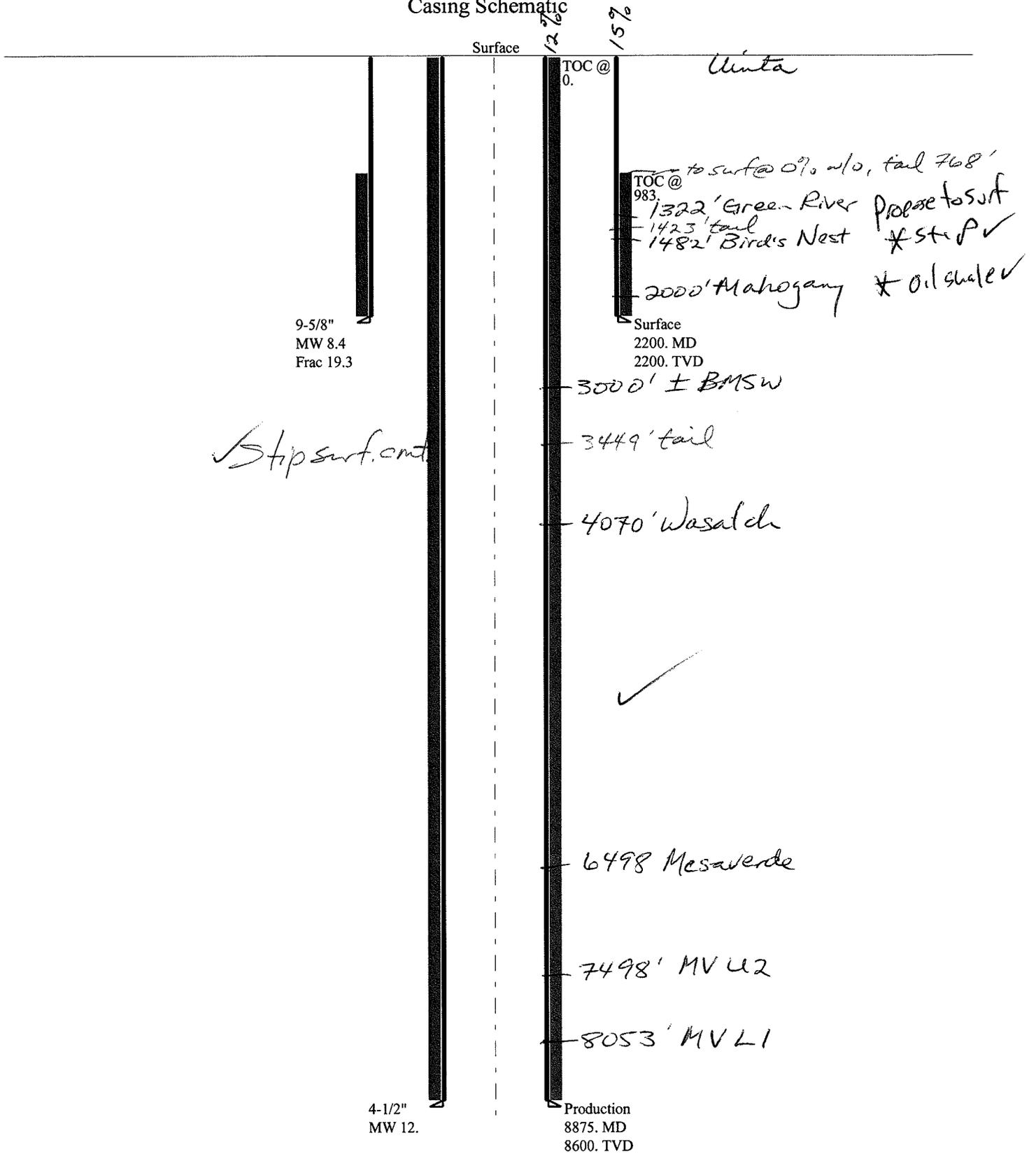
Calculations	Prod String	4.500	"
Max BPH (psi)	$.052 * \text{Setting Depth} * \text{MW} =$	5188	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	$\text{Max BHP} - (0.12 * \text{Setting Depth}) =$	4156	YES
MASP (Gas/Mud) (psi)	$\text{Max BHP} - (0.22 * \text{Setting Depth}) =$	3296	YES OK
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	$\text{Max BHP} - .22 * (\text{Setting Depth} - \text{Previous Shoe Depth}) =$	3780	NO Reasonable
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2200	psi *Assumes 1psi/ft frac gradient

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

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

# 43047503940000 NBU 922-36A4BS

## Casing Schematic



Well name:	<b>43047503940000 NBU 922-36A4BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-50394
Location:	UINTAH	COUNTY	

**Design parameters:**

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

**Minimum design factors:**

**Collapse:**  
 Design factor 1.125

**Burst:**  
 Design factor 1.00

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 105 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
 Cement top: 983 ft

**Burst**

Max anticipated surface pressure: 1,936 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 2,200 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
 Neutral point: 1,926 ft

**Directional Info - Build & Drop**

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

**Re subsequent strings:**

Next setting depth: 8,600 ft  
 Next mud weight: 12.000 ppg  
 Next setting BHP: 5,361 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 2,200 ft  
 Injection pressure: 2,200 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	2200	9.625	36.00	J-55	LT&C	2200	2200	8.796	17989

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	960	1948	2.029	2200	3520	1.60	79.2	453	5.72 J

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

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

Date: June 11, 2009  
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2200 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.  
 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>43047503940000 NBU 922-36A4BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-50394
Location:	UINTAH COUNTY		

**Design parameters:**

**Collapse**

Mud weight: 11.600 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: 194 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
 Cement top: Surface

**Burst**

Max anticipated surface pressure: 3,290 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP 5,182 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
 Neutral point: 7,384 ft

**Directional Info - Build & Drop**

Kick-off point 2100 ft  
 Departure at shoe: 1203 ft  
 Maximum dogleg: 3 °/100ft  
 Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	8875	4.5	11.60	I-80	LT&C	8600	8875	3.875	117150
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	5182	6360	1.227	5182	7780	1.50	99.8	212	2.13 J

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

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

Date: June 10, 2009  
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 8600 ft, a mud weight of 11.6 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 922-36A4BS  
**API Number** 43047503940000      **APD No** 1491      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** SWNE      **Sec** 36      **Tw** 9.0S      **Rng** 22.0E      1795      **FNL** 1522      **FEL**  
**GPS Coord (UTM)** 637985 4428230      **Surface Owner**

**Participants**

Floyd Bartlett (DOGM), Jim Davis (SITLA), Raleen White, Griz Oleen, Clay Einerson, Charles Chase and Tony Kzneck (Kerr McGee), Ben Williams (UDWR) and Kolby Kay (Timberline Engineering and Land Surveying).

**Regional/Local Setting & Topography**

The general area is in the southeast portion of the Natural Buttes Unit, which contains the White River and rugged drainages that drain into the White River. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River varies from ¼ mile to 2 miles. The side drainages are dry except for ephemeral flows. No seeps or springs are known to exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 43 air miles to the northwest. Access from Vernal is approximately 63.9 road miles following Utah State, Uintah County and oilfield development roads to the location.

The proposed 4 well pad for the NBU 922-36A4BS, NBU 922-36G1T, NBU 922-36H2AS, NBU 922-36H2DS encompasses the previous NBU 318-36B reclaimed dry hole location. The old location will be extended in all directions. It covers a small bowl and mound along the south side of a draw which limits extending the pad to the north. A new powerline restricts any additional movement of the pad to the south. The spoils from the reserve pit will fill a draw beyond the northwest side of the pad. When the pit is closed a diversion is needed along the west edge of the location running northerly then easterly joining the existing drainage. At Location Corner 1, fill should not extend into the bottom of the draw so as to unduly restrict any flows. On the south, spoils will also be extended toward the powerline. The dry hole lacks a surface marker. The sub-surface marker and well bore must not be disturbed. The powerline also must be avoided.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA attended the pre-site and was agreeable to the modifications. He had no additional concerns regarding the proposal.

**Surface Use Plan**

**Current Surface Use**

- Grazing
- Recreational
- Wildlfe Habitat
- Existing Well Pad

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0	<b>Width</b> 338 <b>Length</b> 475	Onsite	UNTA

**Ancillary Facilities** N

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

The area is mostly barren of vegetation. A few greasewood and halogeton plants exist. .

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

**Soil Type and Characteristics**

Deep sandy clay loam.

**Erosion Issues** N

**Sedimentation Issues** Y

. When the pit is closed a diversion is needed along the west edge of the location running northerly then easterly joining the existing drainage.

**Site Stability Issues** N

**Drainage Diverson Required?** Y

. When the pit is closed a diversion is needed along the west edge of the location running northerly then easterly joining the existing drainage.

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** Y **Paleo Potential Observed?** N **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>	Present	15
<b>Final Score</b>		55

1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned in an area of cut in the west side of the location. It has been reduced in width at the south end so as to avoid the powerline. Dimensions are 75' to 125' feet wide by 250' long and 12' deep. Because the length of time the reserve pit will be used and the roughness of the terrain, Kerr McGee committed to line it with a 30-mil.liner and an appropriate thickness of felt sub-liner to cushion the rock

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

**Other Observations / Comments**

Floyd Bartlett  
**Evaluator**

5/20/2009  
**Date / Time**

# Application for Permit to Drill Statement of Basis

6/25/2009

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

Page 1

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
1491	43047503940000	LOCKED	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 922-36A4BS		<b>Unit</b>	NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	SWNE 36 9S 22E S 1795 FNL 1522 FEL GPS Coord (UTM)			637978E	4428231N

**Geologic Statement of Basis**

Kerr McGee proposes to set 2,250' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 3,000'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the proposed location . 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 production casing cement should be brought up above the base of the moderately saline ground water in order to isolate it from fresher waters up hole. The proposed casing and cement should adequately protect any usable ground water.

Brad Hill  
**APD Evaluator**

6/3/2009  
**Date / Time**

**Surface Statement of Basis**

The general area is in the southeast portion of the Natural Buttes Unit, which contains the White River and rugged drainages that drain into the White River. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River varies from ¼ mile to 2 miles. The side drainages are dry except for ephemeral flows. No seeps or springs are known to exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 43 air miles to the northwest. Access from Vernal is approximately 63.9 road miles following Utah State, Uintah County and oilfield development roads to the location.

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Both the surface and minerals are owned by SITLA. Jim Davis of SITLA attended the pre-site and was agreeable to the modifications. He had no additional concerns regarding the proposal.

Ben Williams of the Utah Division of Wildlife Resources also attended the pre-site. Mr. Williams stated no wildlife values would be significantly affected by drilling and operating the wells at this location.

Floyd Bartlett  
**Onsite Evaluator**

5/20/2009  
**Date / Time**

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# Application for Permit to Drill Statement of Basis

6/25/2009

Utah Division of Oil, Gas and Mining

Page 2

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## Conditions of Approval / Application for Permit to Drill

<b>Category</b>	<b>Condition</b>
Pits	A synthetic liner with a minimum thickness of 30 mils shall be properly installed and maintained in the reserve pit.
Surface	Drainages adjacent to the proposed pad shall be diverted around the location.
Surface	The reserve pit shall be fenced upon completion of drilling operations.

**WORKSHEET  
APPLICATION FOR PERMIT TO DRILL**

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**APD RECEIVED:** 5/3/2009

**API NO. ASSIGNED:** 43047503940000

**WELL NAME:** NBU 922-36A4BS

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

**PHONE NUMBER:** 720 929-6007

**CONTACT:** Kathy Schneebeck-Dulnoan

**PROPOSED LOCATION:** SWNE 36 090S 220E

**Permit Tech Review:**

**SURFACE:** 1795 FNL 1522 FEL

**Engineering Review:**

**BOTTOM:** 0980 FNL 0630 FEL

**Geology Review:**

**COUNTY:** UINTAH

**LATITUDE:** 39.99489

**LONGITUDE:** -109.38377

**UTM SURF EASTINGS:** 637978.00

**NORTHINGS:** 4428231.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 3 - State

**LEASE NUMBER:** ML 22650

**PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE

**SURFACE OWNER:** 3 - State

**COALBED METHANE:** NO

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**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

**Commingle Approved**

**LOCATION AND SITING:**

- R649-2-3.  
**Unit:** NATURAL BUTTES
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit  
**Board Cause No:** Cause 173-14  
**Effective Date:** 12/2/1999  
**Siting:** 460' fr u bdry & uncomm. tract
- R649-3-11. Directional Drill

**Comments:** Presite Completed

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



JON M. HUNTSMAN, JR.  
*Governor*

GARY R. HERBERT  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 922-36A4BS  
**API Well Number:** 43047503940000  
**Lease Number:** ML 22650  
**Surface Owner:** STATE  
**Approval Date:** 6/30/2009

**Issued to:**

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

**Authority:**

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

**Duration:**

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

**Commingling:**

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

**General:**

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

**Conditions of Approval:**

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

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

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

Surface casing shall be cemented to the surface.

**Notification Requirements:**

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

- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to spudding the well - contact Carol Daniels
- Within 24 hours of any emergency changes made to the approved drilling program - contact Dustin Doucet
- Prior to commencing operations to plug and abandon the well - contact Dan Jarvis

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

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

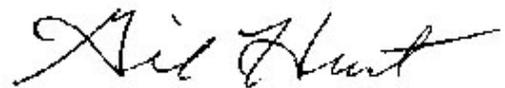
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voice mail message if the person is not available to take the call):

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

**Reporting Requirements:**

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

**Approved By:**



Gil Hunt  
Associate Director, Oil & Gas

**DIVISION OF OIL, GAS AND MINING**

**SPUDDING INFORMATION**

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

Well Name: NBU 922-36A4BS

Api No: 43-047-50394 Lease Type: STATE

Section 36 Township 09S Range 22E County UINTAH

Drilling Contractor PETE MARTIN DRLG RIG # BUCKET

**SPUDDED:**

Date 07/31/2009

Time 2:45 PM

How DRY

**Drilling will Commence:** \_\_\_\_\_

Reported by JAMES GOBER

Telephone # (435) 828-1724

Date 08/03/2009 Signed CHD

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22650
<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 922-36A4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047503940000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1795 FNL 1522 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNE Section: 36 Township: 09.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 7/31/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'.  
 RAN 14" 36.7# CONDUCTOR PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 07/31/2009 AT 14:45 HRS.

Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
**FOR RECORD ONLY**  
 August 04, 2009

<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 8/4/2009

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22650
<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 922-36A4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047503940000
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<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 8/8/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
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	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**  
 MIRU PROPETRO AIR RIG ON 08/06/2009. DRILLED 12-1/4" SURFACE HOLE TO 2090'. RAN 9-5/8" 36# J-55 SURFACE CASING. CMT TAIL W/350 SX PRE CLASS G @ 15.8 PPG, 1.15 YIELD. BUMPED PLUG, FLOATS HELD, NO CMT TO SURFACE. TOP JOB W/150 SX @ 15.8 PPG, 1.15 YIELD. WORT.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 August 11, 2009

<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 8/11/2009

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
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	<b>COUNTY:</b> UINTAH
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<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 9/26/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
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	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

FINISHED DRILLING FROM 2090' TO 8982' ON 09/24/2009. RAN 4-1/2" 11.6# I-80 PRODUCTION CSG. 40 BBLS WATER. LEAD CMT W/535 SX CLASS G PREMIUM LITE @ 12.3 PPG, 2.17 YIELD. TAILED CMT W/1190 SX CLASS 50/50 POZ @ 14.3 PPG, 1.31 YIELD. WASH LINES, DROP PLUG & DISPLACE W/139 BBLS WATER W/CLAYSTAY & MAGNACIDE TO BUMP PLUG W/2500 PSI. HAD 15 BBLS CMT TO SURFACE. FLOATS HELD. RELEASE ENSIGN 145 RIG ON 09/26/2009 AT 23:59 HRS.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 September 28, 2009

<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 9/28/2009

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22650
<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 922-36A4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047503940000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1795 FNL 1522 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNE Section: 36 Township: 09.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 11/9/2009	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input checked="" type="checkbox"/> <b>PRODUCTION START OR RESUME</b>	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 11/9/2009 AT 2:00 P.M. PLEASE REFER TO THE ATTACHED CHRONOLOGICAL WELL HISTORY.

Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
**FOR RECORD ONLY**  
 November 10, 2009

<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 11/10/2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 922-36A4BS [RED]	Spud Conductor: 7/31/2009	Spud Date: 8/6/2009
Project: UTAH-UINTAH	Site: NBU 922-36G PAD	Rig Name No: PROPETRO/, ENSIGN 145/145
Event: DRILLING	Start Date: 7/21/2009	End Date: 9/26/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)	UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
8/6/2009	16:30 - 19:30	3.00	MIRU	01	B	P		RURT
	19:30 - 20:30	1.00	DRLSUR	02	A	P		HAMMER DRILL F/40 TO 180'
	20:30 - 22:30	2.00	DRLSUR	06	A	P		POOH,P/U DIR TOOLS & BHA, TIH
	22:30 - 0:00	1.50	DRLSUR	02	D	P		DIR DRILL F/180 TO 240
8/7/2009	0:00 - 20:30	20.50	DRLSUR	02	D	P		DRILL F/ 240' TO 2090'
	20:30 - 21:00	0.50	DRLSUR	05	A	P		CIRC HOLE CLEAN TO RUN 9 5/8 CSG.
	21:00 - 0:00	3.00	DRLSUR	06	A	P		TOH TO RUN 9 5/8 CSG
8/8/2009	0:00 - 1:30	1.50	DRLSUR	06	A	P		TOH TO RUN 9 5/8 CASING, L/D MWD TOOLS
	1:30 - 4:30	3.00	DRLSUR	12	C	P		RUN 47 JTS 9 5/8 CSG. # 36 J-55 LT&C SHOE @ 2065 F/C @ 2023'
	4:30 - 6:00	1.50	DRLSUR	05	A	P		CIRC 9 5/8 CSG.
	6:00 - 6:30	0.50	DRLSUR	01	E	P		RIG DOWN ,RIG UP CMT, 9 5/8 CSG.TAIL
9/19/2009	6:30 - 6:30	0.00	DRLSUR	01	E	P		RIG RELEASED @ 06:30 8/8/2009
	13:00 - 14:00	1.00	RDMO	01	E	P		RIG DOWN FLOW LINES, FLARE LINES AND PREPARE TO WALK THE RIG.
	14:00 - 14:30	0.50	MIRU	01	C	P		WALK THE RIG, CENTER OVER THE WELL AND LEVEL SAME.
	14:30 - 15:00	0.50	DRLPRO	14	A	P		RIG UP FLOW LINES, FLARE LINES, NU BOP'S AND PRPARE TO TEST THE BOP'S.
	15:00 - 19:00	4.00	DRLPRO	15	A	P		TEST BLIND RAMS, PIPE RAMS, FLOOR VALVES, CHOKE AND ALL RELATED VALVES TO 250 AND 5000 PSI. TEST HYDRIL TO 250 AND 2500 PSI. TEST CASING TO 1500 PSI FOR 30 MINUTES.
	19:00 - 19:30	0.50	DRLPRO	14	B	P		INSTALL WEAR BUSHING
	19:30 - 22:30	3.00	DRLPRO	06	A	P		PU BHA, 7 7/8" FMHX555ZM PDC ON 1.83 DEG. BH, 7/8 LOBE, 3.5 STAGE MOTOR AND MWD EQUIPMENT ON 769' HWDP, TIH WITH SAME.
	22:30 - 23:00	0.50	DRLPRO	02	F	P		DRILL SHOE TRACK
	23:00 - 0:00	1.00	DRLPRO	02	D	P		DRILL/SLIDE 2090'-2152' (62') 62'/HR, 10-18K WOB, 130 BIT RPM, 454 GPM, PP 950 TO 1250, DIFF 1000 TO 300.
	9/20/2009	0:00 - 10:30	10.50	DRLPRO	02	D	P	
10:30 - 11:00		0.50	DRLPRO	07	A	P		SERVICE RIG, FUNCTION COM, F/S
11:00 - 0:00		13.00	DRLPRO	02	D	P		DRILL/SLIDE 3213'-4388' (1175') 90.38'/HR 18-22K WOB, 140 BIT RPM, 460 GPM 1650-2100 PSI. 300-500 DIFF. 46% SLIDE AVG, MW 8.4, VIS 26 BGG-300-575, FLARE 1'-3'
9/21/2009	0:00 - 15:00	15.00	DRLPRO	02	D	P		DRILL/SLIDE 4388'-6021' (1633') 108.8'/HR 18-26K WOB, 140 BIT RPM, 460 GPM 1620-2180 PSI. 300-500 DIFF. MW 8.4, VIS 26 BGG-300-575, INTERMITTENT FLARE 1'-3'. SLIDE 17.5%.
	15:00 - 15:30	0.50	DRLPRO	07	A	P		SERVICE RIG,
	15:30 - 0:00	8.50	DRLPRO	02	D	P		DRILL/SLIDE 6021'-6576' (555') 69.3'/HR 18-26K WOB, 140 BIT RPM, 460 GPM 1850-2350 PSI. 300-500 DIFF. MW 8.4, VIS 26 BGG-80-475, SLIDE 17.5%.
9/22/2009	0:00 - 12:00	12.00	DRLPRO	02	D	P		DRILL/SLIDE 6576'-7470' (894') 74.5'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2750 PSI. 300-500 DIFF. START MUD UP @ 7000', MW 9.9, VIS 36 BGG-80-390, SLIDE 15%
	12:00 - 12:30	0.50	DRLPRO	07	A	P		SERVICE RIG, FUNCTION HYD, CHECK COM.

**RECEIVED** November 10, 2009

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

Well: NBU 922-36A4BS [RED] Spud Conductor: 7/31/2009 Spud Date: 8/6/2009  
 Project: UTAH-UINTAH Site: NBU 922-36G PAD Rig Name No: PROPETRO/, ENSIGN 145/145  
 Event: DRILLING Start Date: 7/21/2009 End Date: 9/26/2009  
 Active Datum: RKB @4,978.00ft (above Mean Sea Level) UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/23/2009	12:30 - 23:00	10.50	DRLPRO	02	D	P		DRILL/SLIDE 7470'- 7853' (383') 36.4'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 9.9-10.9, VIS 44, BGG-80-250, CG 400, MUD CUT TO 10.7. SLIDE 15%
	23:00 - 0:00	1.00	DRLPRO	02	D	P		SLIDE 7853'-7863' (10') 10'/HR. 25-35K WOB,
	0:00 - 2:00	2.00	DRLPRO	02	D	P		ROTATE 7863'-7943' (80') 40'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 11.0, VIS 44, BGG-80-250, CG 400,
	2:00 - 3:00	1.00	DRLPRO	02	D	P		SLIDE 7943'-7953' (10') 10'/HR.
	3:00 - 4:30	1.50	DRLPRO	02	D	P		ROTATE 7953'-7998' (45') 30'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 11.0, VIS 44, BGG-80-250, CG 400, IT
	4:30 - 5:30	1.00	DRLPRO	05	C	P		STALLING OUT NUMEROUS TIMES, UNABLE TO GET WT TO BIT.
	5:30 - 12:30	7.00	DRLPRO	06	A	P		CIRCULATE BOTTOMS UP. MIX AND PUMP A SLUG.
	12:30 - 15:00	2.50	DRLPRO	06	A	P		POOH FOR NEW BIT AND MOTOR. LAY DOWN MOTOR AND BIT.
	15:00 - 17:30	2.50	DRLPRO	09	A	P		PU HTC Q506HX PDC ON A 1.5 DEG, BH, 7/8 LOBE, 3.2 STAGE, 0.167 RPG MUD MOTOR AND TIH TO THE SHOE, BREAK CIRC.
	17:30 - 22:00	4.50	DRLPRO	06	A	P		SLIP AND CUT 330' DRILL LINE.
9/24/2009	22:00 - 0:00	2.00	DRLPRO	02	D	P		TIH, WASH AND REAM 90' TO BOTTOM. TRIP GAS 2600 UNITS W/ 5' FLARE. MUD CUT 11.2 TO 10.9.
	0:00 - 10:30	10.50	DRLPRO	02	D	P		ROTATE/SLIDE 7998'-8101' (103')51.5'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2300-2800 PSI. 300-500 DIFF. MW 11.5, VIS 44, BGG-45-195, CG 245-315, MAX GAS 2190 INTERMITTENT 3-5' FLARE.
	10:30 - 11:00	0.50	DRLPRO	07	A	P		ROTATE 8101'-8555' (454') 43.2'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2300-2800 PSI. 300-500 DIFF. MW 11.9, VIS 44, BGG-45-195, CG 245-315, MAX GAS 2190
	11:00 - 22:30	11.50	DRLPRO	02	D	P		SERVICE RIG
	22:30 - 23:30	1.00	DRLPRO	05	C	P		ROTATE 8555'-8982 (427') 37.1'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2650-2950 PSI. 150-300 DIFF. MW 12.2, VIS 44, BGG-150-400, CG 400-1500, MAX GAS 2350, 10'-13' FLARE ON CONNECTION.
9/25/2009	23:30 - 0:00	0.50	DRLPRO	06	E	P		CIRCULATE BOTTOMS UP.
	0:00 - 2:00	2.00	DRLPRO	06	E	P		START WIPER TRIP TO THE SHOE.
	2:00 - 4:00	2.00	DRLPRO	08	B	Z		POOH, ROTATE AND PUMP OUT FIRST 3 STANDS, ROTATE OUT TO 7930'
	4:00 - 7:30	3.50	DRLPRO	06	E	P		REPAIR OIL LEAK ON THE IDM, REPAIR BROKEN FITTING ON THE TOP DRIVE.
	7:30 - 13:30	6.00	DRLPRO	06	E	P		CONTINUE POOH, ROTATE OUT TO 7310' THEN STRAIGHT PULL AFTER THAT.
	13:30 - 15:30	2.00	DRLPRO	05	C	P		TIH , FILL @ 4005', 6150, TIH TO TIGHT SPOT AT 6676' WITH NO RETURNS, CIRC. CIRC. AND MIX LCM, FULL RETURNS LOST 45 BBLS, TIH TO 6730' W&R TIGHT HOLE @ 6730' & 6804', CIRC. BU TO CLEAN HOLE, TIH, W&R TIGHT HOLE 7456', 7586', FIISH IN THE HOLE AND WASH 95' TO BOTTOM. PRECAUTIONARY.
	15:30 - 0:00	8.50	DRLPRO	06	A	P		CIRCUALATE BOTTOMS UP, TRIP GAS 2600 UNITS, MUD CUT TO 10.2 PPG FROM 12.3. MIX AND PUMP A SLUG.
							POOH, PUMP OUT FIRST 10 STANDS AND RACK IN DERRICK. LDDS, 950' AT REPORT TIME.	

**RECEIVED** November 10, 2009

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH		Site: NBU 922-36G PAD		Rig Name No: PROPETRO/, ENSIGN 145/145	
Event: DRILLING		Start Date: 7/21/2009		End Date: 9/26/2009	
Active Datum: RKB @4,978.00ft (above Mean Sea Level)			UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	PAU	MD From (ft)	Operation
9/26/2009	0:00 - 2:00	2.00	DRLPRO	06	A	P		FINISH LDDS, LD BHA.
	2:00 - 2:30	0.50	DRLPRO	14	B	P		PULL THE WEAR BUSHING.
	2:30 - 9:00	6.50	DRLPRO	11	D	P		HELD SAFETY MEETING WITH HALLIBURTON, RU AND RIH WITH TRIPLE COMBO AND LOG FROM 8985'-SHOE, RUN GR TO SURFACE. RD.
	9:00 - 10:00	1.00	DRLPRO	12	A	P		HELD SAFETY MEETING WITH CSG.CREW. RU SAME.
	10:00 - 18:30	8.50	DRLPRO	12	C	P		RUN CSG. AS FOLLOWS: FLOAT SHOE, 1 JT. CSG. FLOAT COLLAR, 104 JTS. I-80 BTC, CSG. MARKER JT. SET AT 4446', 101 JTS. 4 1/2" 11.6 PPF I-80 BTC CSG. OAL 8977', SET AT 8977'. CENTRALIZED WITH 15 BOW SPRINGS, 1 ON FIRST 3 JTS. THEN EVERY 3RD JT. INSTALL LANDING JOINT.
	18:30 - 20:00	1.50	DRLPRO	05	D	P		CIRCULATE BOTTOMS UP WITH RIG PUMP, HELD SAFETY MEETING WITH BJ CMT.
	20:00 - 22:30	2.50	DRLPRO	12	E	P		SWITCH TO BJ, TEST LINES TO 4500 CEMENT 4 1/2" AS FOLLOWS: 40 BBLS WATER, LEAD W/ 535 SKS PL2 MIXED @ 12.2 PPG, YIELD 2.37, TAIL W/ 1190 SKS 50:50 POZ MIXED @ 14.3PPG, YIELD 1.31, WASH LINES, DROP PLUG & DISPLACE W/139 BBLS WATER W/ CLAYSTAY & MAGNACIDE TO BUMP PLUG W/ 3500 PSI. HAD 15 BBLS CEMENT TO SURFACE.
	22:30 - 23:00	0.50	DRLPRO	12	B	P		RELEASE PSI, FLOATS HELD WASH STACK, LAND CASING W/ 70K (40K W/O BLOCKS) RD BJ, PULL LANDING JT.
	23:00 - 0:00	1.00	DRLPRO	14	A	P		ND BOP, CLEAN PITS WITH EXTRA CREW. RELEASE RIG AT 23:59 HRS. 9-26-2009

**RECEIVED** November 10, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 922-36A4BS [RED]	Spud Conductor: 7/31/2009	Spud Date: 8/6/2009
Project: UTAH-UINTAH	Site: NBU 922-36G PAD	Rig Name No:
Event: COMPLETION	Start Date: 11/7/2009	End Date: 11/7/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)	UWI: 0/9/S/22/E/36/O/SWNE/26/PM/N/1,795.00/E/0/1,522.00/O/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
10/30/2009	7:00 - 7:15	0.25	COMP	48		P		JSA SAFETY MTG
	7:15 - 16:30	9.25	COMP	47	A	P		ROAD RIG FROM BITTER CREEK 6D TO LOC, MIRU, N/D WELL HEAD, N/U BPOPS, P/U 3-7/8 BIT W/ 2-3/8 TBG [L-80] 181 JTS EOT @ 5701' SWIFN. HSM, REVIEW JSA
10/31/2009	7:00 - 7:15	0.25	COMP	48		P		WELL NUMBERS MIXEED UP, POOH L/D TGB W/ BIT, R/D SERVICE UNIT MOVE OVER RIG UP
	7:15 - 13:30	6.25	COMP	47	A	P		N/D WELL HEAD, N/U BOPS, P/U 3-7/8 BIT, TALLEY & P/U 2-3/8 TBG , TAG FILL @ 8916', P/U PWR SWWL EST CIRC, C/O FROM 8916' TO 8968' , CIRC WELL CLEAN, R/D PWR SWWL, L/D 64 JNTS ON FLOAT, SWIFN.
	13:30 - 19:00	5.50	COMP	47	C	P		HSM, REVIEW JSA
11/2/2009	7:00 - 7:15	0.25	COMP	48		P		CONTINUE TO POOH L/D TBG.
	7:15 - 10:00	2.75	COMP	47	B	P		HSM, WORKING W/ WIRELINE
	7:00 - 7:15	0.25	COMP	48		P		N/U FRAC VALVES, P/T CSG TO 7500#, MIRU CASED HOLE SOLUTIONS, P/U RIIH W/ 3-3/8 EXPAND, 23 GRM, 0.36" HOLE, PERF MESAVERDE, 8928'-8931' 4 SPF, 90° PH, 12 HOLES. 8887'-8890' 4 SPF, 90° PH, 12 HOLES. 8844'-8846' 4 SPF, 90° PH, 8 HOLES. 8800'-8802' 4 SPF, 90° PH, 8 HOLES. 8772'-8774' 4 SPF, 90° PH, 8 HOLES. POOH SWIFN.
11/3/2009	7:00 - 7:15	0.25	COMP	48		P		HSM, PRE FRAC & WIRE LINE

**RECEIVED** November 10, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 922-36A4BS [RED] Spud Conductor: 7/31/2009 Spud Date: 8/6/2009  
 Project: UTAH-UINTAH Site: NBU 922-36G PAD Rig Name No:  
 Event: COMPLETION Start Date: 11/7/2009 End Date: 11/7/2009  
 Active Datum: RKB @4,978.00ft (above Mean Sea Level) UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 17:30	10.25	COMP	36	E	P		<p>FRAC MESAVERDE 8772'-8931' [48 HOLES]</p> <p>STG #1] WHP=1174#, BRK DN PERFS @ 33739#, INJ PSI=4331#, INJT RT=50, ISIP=2278#, FG=.69, PUMP 2213 BBLS SLK WTR W/ 76546# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2677#, FG=.74, AR=50.1, AP=3908#, MR=51.6, MP=6135#, NPI=399#, 48/48 CALC PERFS OPEN. 100%</p> <p>STG #2] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 8529', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8497'-8499' 4 SPF, 90* PH, 8 HOLES. 8480'-8482' 4 SPF, 90* PH, 8 HOLES. 8444'-8448' 4 SPF, 90* PH, 16 HOLES. 8388'-8390' 4 SPF, 90* PH, 8 HOLES. [40 HOLES]</p> <p>WHP=1665#, BRK DN PERFS @ 6254#, INJ PSI=4900#, INJT RT=51, ISIP=2367#, FG=.71, PUMP 2171 BBLS SLK WTR W/ 81224# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2623#, FG=.74, AR=50.6, AP=4110#, MR=51.6, MP=6870#, NPI=256#, 38/40 CALC PERFS OPEN. 95%</p> <p>STG #3] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8294'-8298' 4 SPF, 90* PH, 16 HOLES. 8262'-8268' 4 SPF, 90* PH, 24 HOLES. [40 HOLES]</p> <p>WHP=#, BRK DN PERFS @ #, INJ PSI=#, INJT RT=, ISIP=#, FG=., PUMP BBLS SLK WTR W/ # 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=#, FG=., AR=#, AP=#, MR=, MP=#, NPI=#, /40 CALC PERFS OPEN.</p> <p>STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8090'-8094' 4 SPF, 90* PH, 16 HOLES. 8040'-8042' 3 SPF, 120* PH, 6 HOLES. 7968'-7970' 4 SPF, 90* PH, 8 HOLES. 7938'-7940' 3 SPF, 120* PH, 6 HOLES. 7894'-7896' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]</p> <p>WHP=#, BRK DN PERFS @ #, INJ PSI=#, INJT RT=, ISIP=#, FG=., PUMP BBLS SLK WTR W/ # 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=#, FG=., AR=#, AP=#, MR=, MP=#, NPI=#, /40 CALC PERFS OPEN.</p>
11/4/2009	7:00 - 7:15	0.25	COMP	48		P		HSM,

**RECEIVED** November 10, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 922-36A4BS [RED] Spud Conductor: 7/31/2009 Spud Date: 8/6/2009  
 Project: UTAH-UINTAH Site: NBU 922-36G PAD Rig Name No:  
 Event: COMPLETION Start Date: 11/7/2009 End Date: 11/7/2009  
 Active Datum: RKB @4,978.00ft (above Mean Sea Level) UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 18:00	10.75	COMP	36	E	P		FRAC STG #3] MESAVERDE 8262'-8298' [40 HOLES]  WHP=1320#, BRK DN PERFS @ 3059#, INJ PSI=4600#, INJT RT=50, ISIP=2065#, FG=.68, PUMP 1394 BBLS SLK WTR W/ 55510# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2878#, FG=.78, AR=50.4, AP=4285#, MR=51.2, MP=5580#, NPI=813#, 35/40 CALC PERFS OPEN. 88%  STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8090'-8094' 4 SPF, 90* PH, 16 HOLES. 8040'-8042' 3 SPF, 120* PH, 6 HOLES. 7968'-7970' 4 SPF, 90* PH, 8 HOLES. 7938'-7940' 3 SPF, 120* PH, 6 HOLES. 7894'-7896' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]  WHP=800#, BRK DN PERFS @ 4183#, INJ PSI=3550#, INJT RT=52.5, ISIP=2065#, FG=.69, PUMP 2326 BBLS SLK WTR W/ 88121# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2073#, FG=.69, AR=52.4, AP=3396#, MR=53.3, MP=4568#, NPI=8#, 44/44 CALC PERFS OPEN. 100%  STG #5] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @ 7867', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7834'-7837' 4 SPF, 90* PH, 12 HOLES. 7760'-7762' 3 SPF, 120* PH, 6 HOLES. 7710'-7712' 3 SPF, 120* PH, 6 HOLES. 7655'-7658' 4 SPF, 90* PH, 12 HOLES. 7628'-7630' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]  WHP=923#, BRK DN PERFS @ 3573#, INJ PSI=4250#, INJT RT=50, ISIP=1834#, FG=.67, PUMP 1254 BBLS SLK WTR W/ 47535# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2250#, FG=.72, AR=49.9, AP=3491#, MR=51.6, MP=5302#, NPI=416#, 35/44 CALC PERFS OPEN. 80%  STG #6] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @ 7498', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7462'-7468' 4 SPF, 90* PH, 24 HOLES. 7382'-7386' 4 SPF, 90* PH, 16 HOLES. [40 HOLES]  WHP=573#, BRK DN PERFS @ 3270#, INJ PSI=3740#, INJT RT=46, ISIP=1107#, FG=.58, PUMP 711 BBLS SLK WTR W/ 25239# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2363#, FG=.75, AR=48.3, AP=3817#, MR=51.4, MP=5432#, NPI=1256#, 25/40 CALC PERFS OPEN. 63% HSM,
11/5/2009	7:00 - 7:15	0.25	COMP	48		P		

**RECEIVED** November 10, 2009

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 922-36A4BS [RED] Spud Conductor: 7/31/2009 Spud Date: 8/6/2009  
 Project: UTAH-UINTAH Site: NBU 922-36G PAD Rig Name No:  
 Event: COMPLETION Start Date: 11/7/2009 End Date: 11/7/2009  
 Active Datum: RKB @4,978.00ft (above Mean Sea Level) UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 17:00	9.75	COMP	36		P		FRAC STG #7] MESAVERDE 6876'-7136' [44 HOLES]  STG #7] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @ 7166', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7134'-7136' 4 SPF, 90* PH, 8 HOLES. 7036'-7038; 4 SPF, 90* PH, 8 HOLES. 7006'-7008' 4 SPF, 90* PH, 8 HOLES. 6949;-6951' 4 SPF, 90* PH, 8 HOLES. 6902'-6904' 4 SPF, 90* PH, 8 HOLES. 6876'-6877' 4 SPF, 90* PH, 4 HOLES. [44 HOLES]  WHP=0#, BRK DN PERFS @ 2426#, INJ PS=3331#, INJT RT=50, ISIP=1562#, FG=66, PUMP 1682 BBLS SLK WTR W/ 67176# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2138#, FG=.74, AR=50.3, AP=3260#, MR=50.7, MP=4047#, NPI=576#, 44/44 CALC PERFS OPEN. 100%  STG #8] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @ 6635', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 6595'-6605' 4 SPF, 90* PH, 40 HOLES. [40 HOLES  WHP=568#, BRK DN PERFS @ 2182#, INJ PS=3644#, INJT RT=52, ISIP=1150#, FG=61, PUMP 759 BBLS SLK WTR W/ 24965# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2517#, FG=.81, AR=51.5, AP=3810#, MR=52.4, MP=5341#, NPI=1367#, 32/40 CALC PERFS OPEN. 80%  P/U HALIBURTON 8K CBP FOR KILL PLUG & SET @ 6545' SWI. MIRU, ND FRAC VALVE, RU BOP'S SDFN DRILLING PLUGS PU TBG RIH TO 6545' TAG PLUG, RU PWR SWIVIL, DRILL PLUGS. PLUG #1 6545' 20' SAND 12 MIN 200# KICK PLUG #2 6635' 30' SAND 10 MIN 400# KICK PLUG#3 7166' 25' SAND 10 MIN 200# KICK PLUG #4 7498' 20' SAND 10 MIN 600# KICK PLUG #5 7867' 30' sand 12 MIN 400# KICK PLUG #6 8124' 20' SAND 10 MIN 500# KICK PLUG #7 8328' 30' SAND 10 MIN 900# KICK PLUG #8 8529' 25' SAND 9 MIN 500# KICK RIH TO 8933, CLEAN OUT NO FILL, LD 27 JTS TO 8353' LAND TBG. 267 JTS, 8353' XN SN. ND BOP'S NU WH, POBS. TURN TO FLOW BACK @ 5:30PM RDMO TO NBU 922-36G1T 7 AM FLBK REPORT: CP 2250#, TP 1750#, 20/64" CK, 60 BWPH, HEAVYSAND, LIGHT GAS TTL BBLS RECOVERED: 3195 BBLS LEFT TO RECOVER: 9565 7 AM FLBK REPORT: CP 3150#, TP 2050#, 20/64" CK, 38 BWPH, HEAVY SAND, 1951 GAS TTL BBLS RECOVERED: 4234 BBLS LEFT TO RECOVER: 8526 WELL TURNED TO SALE @ 1300 HR ON 11/9/09 - FTP 2000#, CP 2600#, 1100 MCFD, 50 BWPD, 20/64 CK
11/6/2009	12:00 - 17:00	5.00	COMP	44		P		
11/7/2009	7:00 - 7:30	0.50	COMP	48		P		
	7:30 - 17:30	10.00	COMP	44		P		
11/8/2009	7:00 -			33	A			
11/9/2009	7:00 -			33	A			
	13:00 -		PROD	50				

**RECEIVED** November 10, 2009

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

AMENDED REPORT  FORM 8  
(highlight changes)

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**ML 22650**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME

8. WELL NAME and NUMBER:  
**NBU 922-36A4BS**

9. API NUMBER:  
**4304750394**

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

11. QTR/QTR, SECTION, TOWNSHIP, RANGE,  
MERIDIAN:  
**SWNE 36 9S 22E**

12. COUNTY  
**UINTAH**

13. STATE  
**UTAH**

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

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

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

2. NAME OF OPERATOR:  
**KERR MCGEE OIL & GAS ONSHORE LP**

3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY **DENVER** STATE **CO** ZIP **80217** PHONE NUMBER: **(720) 929-6100**

4. LOCATION OF WELL (FOOTAGES)  
AT SURFACE: **SWNE 1795 FNL & 1522 FEL**  
AT TOP PRODUCING INTERVAL REPORTED BELOW: **NENE 977 FNL & 631 FEL SEC.36-9S-22E**  
**0979 FNL 0636 FEL**  
AT TOTAL DEPTH: **NENE 980 FNL & 636 FEL SEC.36-9S-22E**

14. DATE SPUDDED: **7/31/2009** 15. DATE T.D. REACHED: **9/24/2009** 16. DATE COMPLETED: **11/9/2009** ABANDONED  READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL):  
**4965' GL**

18. TOTAL DEPTH: MD **8,982**  
TVD **8.782**

19. PLUG BACK T.D.: MD **8,931**  
TVD **8731**

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)  
**✓GR/CBL-ACRT/DSN/SDL(BHV)**

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#		40		28			
12 1/4"	9 5/8 J-55	36#		2,074		500			
7 7/8"	4 1/2 I-80	11.6#		8,976		1725			

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"	8.353							

26. PRODUCING INTERVALS **WSMVD**

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) MESAVERDE	6,595	8,931		
(B)				
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
6,595 8,931	0.36	340	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
			Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6,595-8,931	PMP 12,510 BBLs SLICK H2O & 466,316 LBS 30/50 SD.

29. ENCLOSED ATTACHMENTS:

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

30. WELL STATUS:  
**PROD**

**RECEIVED**

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED: 11/9/2009		TEST DATE: 11/18/2009		HOURS TESTED: 24		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF: 2,194	WATER - BBL: 351	PROD. METHOD: FLOWING
CHOKE SIZE: 18/64	TBG. PRESS. 1,493	CSG. PRESS. 2,158	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF: 2,194	WATER - BBL: 351	INTERVAL STATUS: PROD

INTERVAL B (As shown in item #26)

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

INTERVAL C (As shown in item #26)

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

INTERVAL D (As shown in item #26)

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

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

SOLD

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
GREEN RIVER	1,179				
MAHOGAN Y	1,831				
WASATCH	4,465	6,594			
MESAVERDE	6,635	8,947			

35. ADDITIONAL REMARKS (Include plugging procedure)

ATTACHED TO THIS COMPLETION REPORT IS THE CHRONOLOGICAL WELL HISTORY AND EOWR.

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

NAME (PLEASE PRINT) ANDY LYTLE TITLE REGULATORY ANALYST  
 SIGNATURE  DATE 12/2/2009

This report must be submitted within 30 days of

- completing or plugging a new well
- reentering a previously plugged and abandoned well
- drilling horizontal laterals from an existing well bore
- significantly deepening an existing well bore below the previous bottom-hole depth
- recompleting to a different producing formation
- 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 Phone: 801-538-5340  
 1594 West North Temple, Suite 1210  
 Box 145801 Fax: 801-359-3940  
 Salt Lake City, Utah 84114-5801

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

Well: NBU 922-36A4BS [RED]	Spud Conductor: 7/31/2009	Spud Date: 8/6/2009
Project: UTAH-UINTAH	Site: NBU 922-36G PAD	Rig Name No: PROPETRO/, ENSIGN 145/145
Event: DRILLING	Start Date: 7/21/2009	End Date: 9/26/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)		UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
8/6/2009	16:30 - 19:30	3.00	MIRU	01	B	P		RURT
	19:30 - 20:30	1.00	DRLSUR	02	A	P		HAMMER DRILL F/40 TO 180'
	20:30 - 22:30	2.00	DRLSUR	06	A	P		POOH,P/U DIR TOOLS & BHA, TIH
	22:30 - 0:00	1.50	DRLSUR	02	D	P		DIR DRILL F/180 TO 240
8/7/2009	0:00 - 20:30	20.50	DRLSUR	02	D	P		DRILL F/ 240' TO 2090'
	20:30 - 21:00	0.50	DRLSUR	05	A	P		CIRC HOLE CLEAN TO RUN 9 5/8 CSG.
	21:00 - 0:00	3.00	DRLSUR	06	A	P		TOH TO RUN 9 5/8 CSG
8/8/2009	0:00 - 1:30	1.50	DRLSUR	06	A	P		TOH TO RUN 9 5/8 CASING, L/D MWD TOOLS
	1:30 - 4:30	3.00	DRLSUR	12	C	P		RUN 47 JTS 9 5/8 CSG. # 36 J-55 LT&C SHOE @ 2065 F/C @ 2023'
	4:30 - 6:00	1.50	DRLSUR	05	A	P		CIRC 9 5/8 CSG.
	6:00 - 6:30	0.50	DRLSUR	01	E	P		RIG DOWN ,RIG UP CMT,9 5/8 CSG.TAIL
9/19/2009	6:30 - 6:30	0.00	DRLSUR	01	E	P		RIG RELEASED @ 06:30 8/8/2009
	13:00 - 14:00	1.00	RDMO	01	E	P		RIG DOWN FLOW LINES, FLARE LINES AND PREPARE TO WALK THE RIG.
	14:00 - 14:30	0.50	MIRU	01	C	P		WALK THE RIG, CENTER OVER THE WELL AND LEVEL SAME.
	14:30 - 15:00	0.50	DRLPRO	14	A	P		RIG UP FLOW LINES, FLARE LINES, NU BOP'S AND PRPARE TO TEST THE BOP'S.
	15:00 - 19:00	4.00	DRLPRO	15	A	P		TEST BLIND RAMS, PIPE RAMS, FLOOR VALVES, CHOKE AND ALL RELATED VALVES TO 250 AND 5000 PSI. TEST HYDRIL TO 250 AND 2500 PSI. TEST CASING TO 1500 PSI FOR 30 MINUTES.
	19:00 - 19:30	0.50	DRLPRO	14	B	P		INSTALL WEAR BUSHING
	19:30 - 22:30	3.00	DRLPRO	06	A	P		PU BHA, 7 7/8" FMHX555ZM PDC ON 1.83 DEG. BH, 7/8 LOBE, 3.5 STAGE MOTOR AND MWD EQUIPMENT ON 769' HWDP, TIH WITH SAME.
	22:30 - 23:00	0.50	DRLPRO	02	F	P		DRILL SHOE TRACK
	23:00 - 0:00	1.00	DRLPRO	02	D	P		DRILL/SLIDE 2090'-2152' (62') 62'/HR, 10-18K WOB, 130 BIT RPM, 454 GPM, PP 950 TO 1250, DIFF 1000 TO 300.
	9/20/2009	0:00 - 10:30	10.50	DRLPRO	02	D	P	
10:30 - 11:00		0.50	DRLPRO	07	A	P		SERVICE RIG, FUNCTION COM, F/S
11:00 - 0:00		13.00	DRLPRO	02	D	P		DRILL/SI;IDE 3213'-4388' (1175') 90.38'/HR 18-22K WOB, 140 BIT RPM, 460 GPM 1650-2100 PSI. 300-500 DIFF. 46% SLIDE AVG, MW 8.4, VIS 26 BGG-300-575, FLARE 1'-3'
9/21/2009	0:00 - 15:00	15.00	DRLPRO	02	D	P		DRILL/SI;IDE 4388'-6021' (1633') 108.8'/HR 18-26K WOB, 140 BIT RPM, 460 GPM 1620-2180 PSI. 300-500 DIFF. MW 8.4, VIS 26 BGG-300-575, INTERMITTENT FLARE 1'-3'. SLIDE 17.5%.
	15:00 - 15:30	0.50	DRLPRO	07	A	P		SERVICE RIG,
	15:30 - 0:00	8.50	DRLPRO	02	D	P		DRILL/SI;IDE 6021'-6576' (555') 69.3'/HR 18-26K WOB, 140 BIT RPM, 460 GPM 1850-2350 PSI. 300-500 DIFF. MW 8.4, VIS 26 BGG-80-475, SLIDE 17.5%.
9/22/2009	0:00 - 12:00	12.00	DRLPRO	02	D	P		DRILL/SLIDE 6576'-7470' (894') 74.5'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2750 PSI. 300-500 DIFF. START MUD UP @ 7000', MW 9.9, VIS 36 BGG-80-390, SLIDE 15%
	12:00 - 12:30	0.50	DRLPRO	07	A	P		SERVICE RIG, FUNCTION HYD, CHECK COM.

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH			Site: NBU 922-36G PAD		Rig Name No: PROPETRO/, ENSIGN 145/145
Event: DRILLING			Start Date: 7/21/2009		End Date: 9/26/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)			UWI: 0/9/S/22/E/36/O/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/23/2009	12:30 - 23:00	10.50	DRLPRO	02	D	P		DRILL/SLIDE 7470'- 7853' (383') 36.4'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 9.9-10.9, VIS 44, BGG-80-250, CG 400, MUD CUT TO 10.7. SLIDE 15%
	23:00 - 0:00	1.00	DRLPRO	02	D	P		SLIDE 7853'-7863' (10') 10'/HR. 25-35K WOB,
	0:00 - 2:00	2.00	DRLPRO	02	D	P		ROTATE 7863'-7943' (80') 40'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 11.0, VIS 44, BGG-80-250, CG 400,
	2:00 - 3:00	1.00	DRLPRO	02	D	P		SLIDE 7943'-7953' (10') 10'/HR.
	3:00 - 4:30	1.50	DRLPRO	02	D	P		ROTATE 7953'-7998' (45') 30'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2250-2650 PSI. 200-400 DIFF. MW 11.0, VIS 44, BGG-80-250, CG 400, IT
	4:30 - 5:30	1.00	DRLPRO	05	C	P		STALLING OUT NUMEROUS TIMES, UNABLE TO GET WT TO BIT.
	5:30 - 12:30	7.00	DRLPRO	06	A	P		CIRCULATE BOTTOMS UP. MIX AND PUMP A SLUG.
	12:30 - 15:00	2.50	DRLPRO	06	A	P		POOH FOR NEW BIT AND MOTOR. LAY DOWN MOTOR AND BIT.
	15:00 - 17:30	2.50	DRLPRO	09	A	P		PU HTC Q506HX PDC ON A 1.5 DEG, BH, 7/8 LOBE, 3.2 STAGE, 0.167 RPG MUD MOTOR AND TIH TO THE SHOE, BREAK CIRC.
	17:30 - 22:00	4.50	DRLPRO	06	A	P		SLIP AND CUT 330' DRILL LINE.
9/24/2009	22:00 - 0:00	2.00	DRLPRO	02	D	P		TIH, WASH AND REAM 90' TO BOTTOM. TRIP GAS 2600 UNITS W/ 5' FLARE. MUD CUT 11.2 TO 10.9.
	0:00 - 10:30	10.50	DRLPRO	02	D	P		ROTATE/SLIDE 7998'-8101' (103')51.5'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2300-2800 PSI. 300-500 DIFF. MW 11.5, VIS 44, BGG-45-195, CG 245-315, MAX GAS 2190 INTERMITTENT 3-5' FLARE.
	10:30 - 11:00	0.50	DRLPRO	07	A	P		ROTATE 8101'-8555' (454') 43.2'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2300-2800 PSI. 300-500 DIFF. MW 11.9, VIS 44, BGG-45-195, CG 245-315, MAX GAS 2190
	11:00 - 22:30	11.50	DRLPRO	02	D	P		SERVICE RIG
	22:30 - 23:30	1.00	DRLPRO	05	C	P		ROTATE 8555'-8982 (427') 37.1'/HR. 18-24K WOB, 140 BIT RPM, 460 GPM 2650-2950 PSI. 150-300 DIFF. MW 12.2, VIS 44, BGG-150-400, CG 400-1500, MAX GAS 2350, 10'-13' FLARE ON CONNECTION.
	23:30 - 0:00	0.50	DRLPRO	06	E	P		CIRCULATE BOTTOMS UP.
	0:00 - 2:00	2.00	DRLPRO	06	E	P		START WIPER TRIP TO THE SHOE.
	2:00 - 4:00	2.00	DRLPRO	08	B	Z		POOH, ROTATE AND PUMP OUT FIRST 3 STANDS, ROTATE OUT TO 7930'
	4:00 - 7:30	3.50	DRLPRO	06	E	P		REPAIR OIL LEAK ON THE IDM, REPAIR BROKEN FITTING ON THE TOP DRIVE.
	7:30 - 13:30	6.00	DRLPRO	06	E	P		CONTINUE POOH, ROTATE OUT TO 7310' THEN STRAIGHT PULL AFTER THAT.
9/25/2009	13:30 - 15:30	2.00	DRLPRO	05	C	P		TIH , FILL @ 4005', 6150, TIH TO TIGHT SPOT AT 6676' WITH NO RETURNS, CIRC. CIRC. AND MIX LCM, FULL RETURNS LOST 45 BBLs, TIH TO 6730' W&R TIGHT HOLE @ 6730' & 6804', CIRC. BU TO CLEAN HOLE, TIH, W&R TIGHT HOLE 7456', 7586', FIISH IN THE HOLE AND WASH 95' TO BOTTOM. PRECAUTIONARY.
	15:30 - 0:00	8.50	DRLPRO	06	A	P		CIRCUALATE BOTTOMS UP, TRIP GAS 2600 UNITS, MUD CUT TO 10.2 PPG FROM 12.3. MIX AND PUMP A SLUG.
								POOH, PUMP OUT FIRST 10 STANDS AND RACK IN DERRICK. LDDS, 950' AT REPORT TIME.

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH			Site: NBU 922-36G PAD		Rig Name No: PROPETRO/, ENSIGN 145/145
Event: DRILLING			Start Date: 7/21/2009		End Date: 9/26/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)			UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
9/26/2009	0:00 - 2:00	2.00	DRLPRO	06	A	P		FINISH LDDS, LD BHA.
	2:00 - 2:30	0.50	DRLPRO	14	B	P		PULL THE WEAR BUSHING.
	2:30 - 9:00	6.50	DRLPRO	11	D	P		HELD SAFETY MEETING WITH HALLIBURTON, RU AND RIH WITH TRIPLE COMBO AND LOG FROM 8985'-SHOE, RUN GR TO SURFACE. RD.
	9:00 - 10:00	1.00	DRLPRO	12	A	P		HELD SAFETY MEETING WITH CSG.CREW. RU SAME.
	10:00 - 18:30	8.50	DRLPRO	12	C	P		RUN CSG. AS FOLLOWS: FLOAT SHOE, 1 JT. CSG. FLOAT COLLAR, 104 JTS. I-80 BTC, CSG. MARKER JT. SET AT 4446', 101 JTS. 4 1/2" 11.6 PPF I-80 BTC CSG. OAL 8977', SET AT 8977'. CENTRALIZED WITH 15 BOW SPRINGS, 1 ON FIRST 3 JTS. THEN EVERY 3RD JT. INSTALL LANDING JOINT.
	18:30 - 20:00	1.50	DRLPRO	05	D	P		CIRCULATE BOTTOMS UP WITH RIG PUMP, HELD SAFETY MEETING WITH BJ CMT.
	20:00 - 22:30	2.50	DRLPRO	12	E	P		SWITCH TO BJ, TEST LINES TO 4500 CEMENT 4 1/2" AS FOLLOWS: 40 BBLS WATER, LEAD W/ 535 SKS PL2 MIXED @ 12.2 PPG, YIELD 2.37, TAIL W/ 1190 SKS 50:50 POZ MIXED @ 14.3PPG, YIELD 1.31, WASH LINES, DROP PLUG & DISPLACE W/139 BBLS WATER W/ CLAYSTAY & MAGNACIDE TO BUMP PLUG W/ 3500 PSI. HAD 15 BBLS CEMENT TO SURFACE.
	22:30 - 23:00	0.50	DRLPRO	12	B	P		RELEASE PSI, FLOATS HELD
	23:00 - 0:00	1.00	DRLPRO	14	A	P		WASH STACK, LAND CASING W/ 70K (40K W/O BLOCKS) RD BJ, PULL LANDING JT.
								ND BOP, CLEAN PITS WITH EXTRA CREW. RELEASE RIG AT 23:59 HRS. 9-26-2009

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

Well: NBU 922-36A4BS [RED]	Spud Conductor: 7/31/2009	Spud Date: 8/6/2009
Project: UTAH-UINTAH	Site: NBU 922-36G PAD	Rig Name No:
Event: COMPLETION	Start Date: 11/7/2009	End Date: 11/7/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)	UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
10/30/2009	7:00 - 7:15	0.25	COMP	48		P		JSA SAFETY MTG
	7:15 - 16:30	9.25	COMP	47	A	P		ROAD RIG FROM BITTER CREEK 6D TO LOC, MIRU, N/D WELL HEAD, N/U BPOPS, P/U 3-8 BIT W/ 2-3/8 TBG [L-80] 181 JTS EOT @ 5701' SWIFN.
10/31/2009	7:00 - 7:15	0.25	COMP	48		P		HSM, REVIEW JSA
	7:15 - 13:30	6.25	COMP	47	A	P		WELL NUMBERS MIXED UP, POOH L/D TGB W/ BIT, R/D SERVICE UNIT MOVE OVER RIG UP
	13:30 - 19:00	5.50	COMP	47	C	P		N/D WELL HEAD, N/U BOPS, P/U 3-7/8 BIT, TALLEY & P/U 2-3/8 TBG, TAG FILL @ 8916', P/U PWR SWVL EST CIRC, C/O FROM 8916' TO 8968', CIRC WELL CLEAN, R/D PWR SWVL, L/D 64 JNTS ON FLOAT, SWIFN.
11/2/2009	7:00 - 7:15	0.25	COMP	48		P		HSM, REVIEW JSA
	7:15 - 10:00	2.75	COMP	47	B	P		CONTINUE TO POOH L/D TBG.
	7:00 - 7:15	0.25	COMP	48		P		HSM, WORKING W/ WIRELINE
11/2/2009	7:15 - 16:00	8.75	COMP	47	A	P		N/U FRAC VALVES, P/T CSG TO 7500#, MIRU CASED HOLE SOLUTIONS, P/U RIIH W/ 3-3/8 EXPAND, 23 GRM, 0.36" HOLE, PERF MESAVERDE, 8928'-8931' 4 SPF, 90* PH, 12 HOLES. 8887'-8890' 4 SPF, 90* PH, 12 HOLES. 8844'-8846' 4 SPF, 90* PH, 8 HOLES. 8800'-8802' 4 SPF, 90* PH, 8 HOLES. 8772'-8774' 4 SPF, 90* PH, 8 HOLES. POOH SWIFN.
	11/3/2009	7:00 - 7:15	0.25	COMP	48		P	HSM, PRE FRAC & WIRE LINE

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH		Site: NBU 922-36G PAD		Rig Name No:	
Event: COMPLETION		Start Date: 11/7/2009		End Date: 11/7/2009	
Active Datum: RKB @4,978.00ft (above Mean Sea Level)		UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0			

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 17:30	10.25	COMP	36	E	P		<p>FRAC MESAVERDE 8772'-8931' [48 HOLES]</p> <p>STG #1] WHP=1174#, BRK DN PERFS @ 33739#, INJ PSI=4331#, INJT RT=50, ISIP=2278#, FG=.69, PUMP 2213 BBLs SLK WTR W/ 76546# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2677#, FG=.74, AR=50.1, AP=3908#, MR=51.6, MP=6135#, NPI=399#, 48/48 CALC PERFS OPEN. 100%</p> <p>STG #2] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 8529', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8497'-8499' 4 SPF, 90* PH, 8 HOLES. 8480'-8482' 4 SPF, 90* PH, 8 HOLES. 8444'-8448' 4 SPF, 90* PH, 16 HOLES. 8388'-8390' 4 SPF, 90* PH, 8 HOLES. [40 HOLES]</p> <p>WHP=1665#, BRK DN PERFS @ 6254#, INJ PSI=4900#, INJT RT=51, ISIP=2367#, FG=.71, PUMP 2171 BBLs SLK WTR W/ 81224# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2623#, FG=.74, AR=50.6, AP=4110#, MR=51.6, MP=6870#, NPI=256#, 38/40 CALC PERFS OPEN. 95%</p> <p>STG #3] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8294'-8298' 4 SPF, 90* PH, 16 HOLES. 8262'-8268' 4 SPF, 90* PH, 24 HOLES. [40 HOLES]</p> <p>WHP=#, BRK DN PERFS @ #, INJ PSI=#, INJT RT=, ISIP=#, FG=., PUMP BBLs SLK WTR W/ # 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=#, FG=., AR=, AP=#, MR=, MP=#, NPI=#, /40 CALC PERFS OPEN.</p> <p>STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8090'-8094' 4 SPF, 90* PH, 16 HOLES. 8040'-8042' 3 SPF, 120* PH, 6 HOLES. 7968'-7970' 4 SPF, 90* PH, 8 HOLES. 7938'-7940' 3 SPF, 120* PH, 6 HOLES. 7894'-7896' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]</p> <p>WHP=#, BRK DN PERFS @ #, INJ PSI=#, INJT RT=, ISIP=#, FG=., PUMP BBLs SLK WTR W/ # 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=#, FG=., AR=, AP=#, MR=, MP=#, NPI=#, /40 CALC PERFS OPEN.</p>
11/4/2009	7:00 - 7:15	0.25	COMP	48		P		HSM,

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009	Spud Date: 8/6/2009
Project: UTAH-UINTAH		Site: NBU 922-36G PAD	Rig Name No:
Event: COMPLETION		Start Date: 11/7/2009	End Date: 11/7/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)		UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 18:00	10.75	COMP	36	E	P		<p>FRAC STG #3] MESAVERDE 8262'-8298' [40 HOLES]</p> <p>WHP=1320#, BRK DN PERFS @ 3059#, INJ PSI=4600#, INJT RT=50, ISIP=2065#, FG=.68, PUMP 1394 BBLs SLK WTR W/ 55510# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2878#, FG=.78, AR=50.4, AP=4285#, MR=51.2, MP=5580#, NPI=813#, 35/40 CALC PERFS OPEN. 88%</p> <p>STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ ', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 8090'-8094' 4 SPF, 90* PH, 16 HOLES. 8040'-8042' 3 SPF, 120* PH, 6 HOLES. 7968'-7970' 4 SPF, 90* PH, 8 HOLES. 7938'-7940' 3 SPF, 120* PH, 6 HOLES. 7894'-7896' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]</p> <p>WHP=800#, BRK DN PERFS @ 4183#, INJ PSI=3550#, INJT RT=52.5, ISIP=2065#, FG=.69, PUMP 2326 BBLs SLK WTR W/ 88121# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2073#, FG=.69, AR=52.4, AP=3396#, MR=53.3, MP=4568#, NPI=8#, 44/44 CALC PERFS OPEN. 100%</p> <p>STG #5] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 7867', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7834'-7837' 4 SPF, 90* PH, 12 HOLES. 7760'-7762' 3 SPF, 120* PH, 6 HOLES. 7710'-7712' 3 SPF, 120* PH, 6 HOLES. 7655'-7658' 4 SPF, 90* PH, 12 HOLES. 7628'-7630' 4 SPF, 90* PH, 8 HOLES. [44 HOLES]</p> <p>WHP=923#, BRK DN PERFS @ 3573#, INJ PSI=4250#, INJT RT=50, ISIP=1834#, FG=.67, PUMP 1254 BBLs SLK WTR W/ 47535# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2250#, FG=.72, AR=49.9, AP=3491#, MR=51.6, MP=5302#, NPI=416#, 35/44 CALC PERFS OPEN. 80%</p> <p>STG #6] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 7498', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7462'-7468' 4 SPF, 90* PH, 24 HOLES. 7382'-7386' 4 SPF, 90* PH, 16 HOLES. [40 HOLES]</p> <p>WHP=573#, BRK DN PERFS @ 3270#, INJ PSI=3740#, INJT RT=46, ISIP=1107#, FG=.58, PUMP 711 BBLs SLK WTR W/ 25239# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2363#, FG=.75, AR=48.3, AP=3817#, MR=51.4, MP=5432#, NPI=1256#, 25/40 CALC PERFS OPEN. 63% HSM,</p>
11/5/2009	7:00 - 7:15	0.25	COMP	48		P		

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH			Site: NBU 922-36G PAD		Rig Name No:
Event: COMPLETION			Start Date: 11/7/2009		End Date: 11/7/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)			UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 17:00	9.75	COMP	36		P		<p>FRAC STG #7] MESAVERDE 6876'-7136' [44 HOLES]</p> <p>STG #7] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 7166', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 7134'-7136' 4 SPF, 90* PH, 8 HOLES. 7036'-7038; 4 SPF, 90* PH, 8 HOLES. 7006'-7008' 4 SPF, 90* PH, 8 HOLES. 6949;-6951' 4 SPF, 90* PH, 8 HOLES. 6902'-6904' 4 SPF, 90* PH, 8 HOLES. 6876'-6877' 4 SPF, 90* PH, 4 HOLES. [44 HOLES]</p> <p>WHP=0#, BRK DN PERFS @ 2426#, INJ PS=3331#, INJT RT=50, ISIP=1562#, FG=.66, PUMP 1682 BBLS SLK WTR W/ 67176# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2138#, FG=.74, AR=50.3, AP=3260#, MR=50.7, MP=4047#, NPI=576#, 44/44 CALC PERFS OPEN. 100%</p> <p>STG #8] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @ 6635', PERF MESAVERDE USING 3-3/8 EXPEND, 23 GRM, 0.36" HOLE, 6595'-6605' 4 SPF, 90* PH, 40 HOLES. [40 HOLES]</p> <p>WHP=568#, BRK DN PERFS @ 2182#, INJ PS=3644#, INJT RT=52, ISIP=1150#, FG=.61, PUMP 759 BBLS SLK WTR W/ 24965# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2517#, FG=.81, AR=51.5, AP=3810#, MR=52.4, MP=5341#, NPI=1367#, 32/40 CALC PERFS OPEN. 80%</p>
11/6/2009	12:00 - 17:00	5.00	COMP	44		P		<p>P/U HALIBURTON 8K CBP FOR KILL PLUG &amp; SET @ 6545' SWI.</p>
11/7/2009	7:00 - 7:30	0.50	COMP	48		P		<p>MIRU, ND FRAC VALVE, RU BOP'S SDFN</p>
	7:30 - 17:30	10.00	COMP	44		P		<p>DRILLING PLUGS</p> <p>PU TBG RIH TO 6545' TAG PLUG, RU PWR SWIVIL, DRILL PLUGS.</p> <p>PLUG #1 6545' 20' SAND 12 MIN 200# KICK</p> <p>PLUG #2 6635' 30' SAND 10 MIN 400# KICK</p> <p>PLUG#3 7166' 25' SAND 10 MIN 200# KICK</p> <p>PLUG #4 7498' 20' SAND 10 MIN 600# KICK</p> <p>PLUG #5 7867' 30' sand 12 MIN 400# KICK</p> <p>PLUG #6 8124' 20' SAND 10 MIN 500# KICK</p> <p>PLUG #7 8328' 30' SAND 10 MIN 900# KICK</p> <p>PLUG #8 8529' 25' SAND 9 MIN 500# KICK</p> <p>KICK</p> <p>RIH TO 8933, CLEAN OUT NO FILL, LD 27 JTS TO 8353' LAND TBG.</p> <p>267 JTS, 8353' XN SN. ND BOP'S NU WH, POBS. TURN TO FLOW BACK</p>
11/8/2009	7:00 -			33	A			<p>@ 5:30PM RDMO TO NBU 922-36G1T</p> <p>7 AM FLBK REPORT: CP 2250#, TP 1750#, 20/64" CK, 60 BWPH, HEAVYSAND, LIGHT GAS</p> <p>TTL BBLS RECOVERED: 3195</p> <p>BBLS LEFT TO RECOVER: 9565</p>
11/9/2009	7:00 -			33	A			<p>7 AM FLBK REPORT: CP 3150#, TP 2050#, 20/64" CK, 38 BWPH, HEAVY SAND, 1951 GAS</p> <p>TTL BBLS RECOVERED: 4234</p> <p>BBLS LEFT TO RECOVER: 8526</p>
	13:00 -		PROD	50				<p>WELL TURNED TO SALE @ 1300 HR ON 11/9/09 - FTP 2000#, CP 2600#, 1100 MCFD, 50 BWPD, 20/64 CK</p>

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009	
Project: UTAH-UINTAH			Site: NBU 922-36G PAD		Rig Name No:
Event: COMPLETION			Start Date: 11/7/2009		End Date: 11/7/2009
Active Datum: RKB @4,978.00ft (above Mean Sea Level)			UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
11/10/2009	7:00 -			33	A			7 AM FLBK REPORT: CP 3000#, TP 2100#, 18/64" CK, 25 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 4929 BBLS LEFT TO RECOVER: 7831
11/11/2009	7:00 -			33	A			7 AM FLBK REPORT: CP 2850#, TP 2050#, 18/64" CK, 15 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 5376 BBLS LEFT TO RECOVER: 7384
11/12/2009	7:00 -			33	A			7 AM FLBK REPORT: CP 2700#, TP 1950#, 18/64" CK, 12 BWPH, TRACE SAND, - GAS TTL BBLS RECOVERED: 5727 BBLS LEFT TO RECOVER: 7033
11/18/2009	7:00 -		PROD	50				WELL IP'D 11/18/09 - 2194 MCFD, 351 BWPD, CP 2158#, FTP 1493#, CK 18/64", LP 89#, 24 HRS



# **ANADARKO PETROLEUM CORP.**

**UINTAH COUNTY, UTAH (nad 27)**

**NBU 922-36G PAD**

**NBU 922-36A4BS**

**NBU 922-36A4BS**

**Survey: Survey #2**

## **Standard Survey Report**

**25 September, 2009**



**Weatherford®**

Azimuths to True North  
Magnetic North: 11.26°

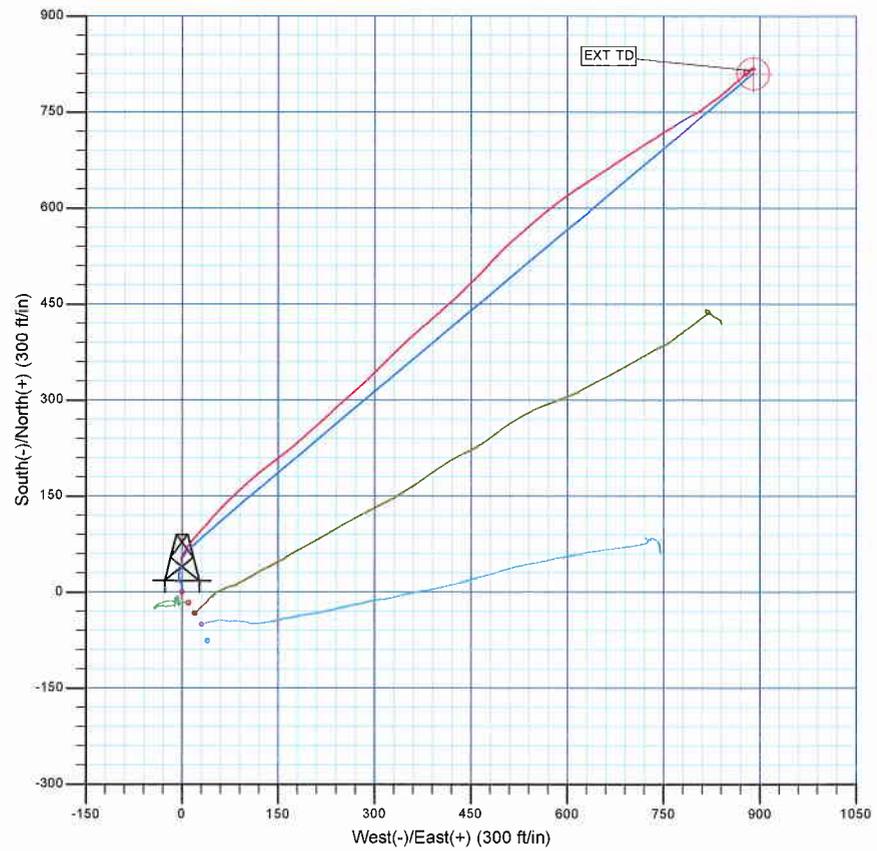
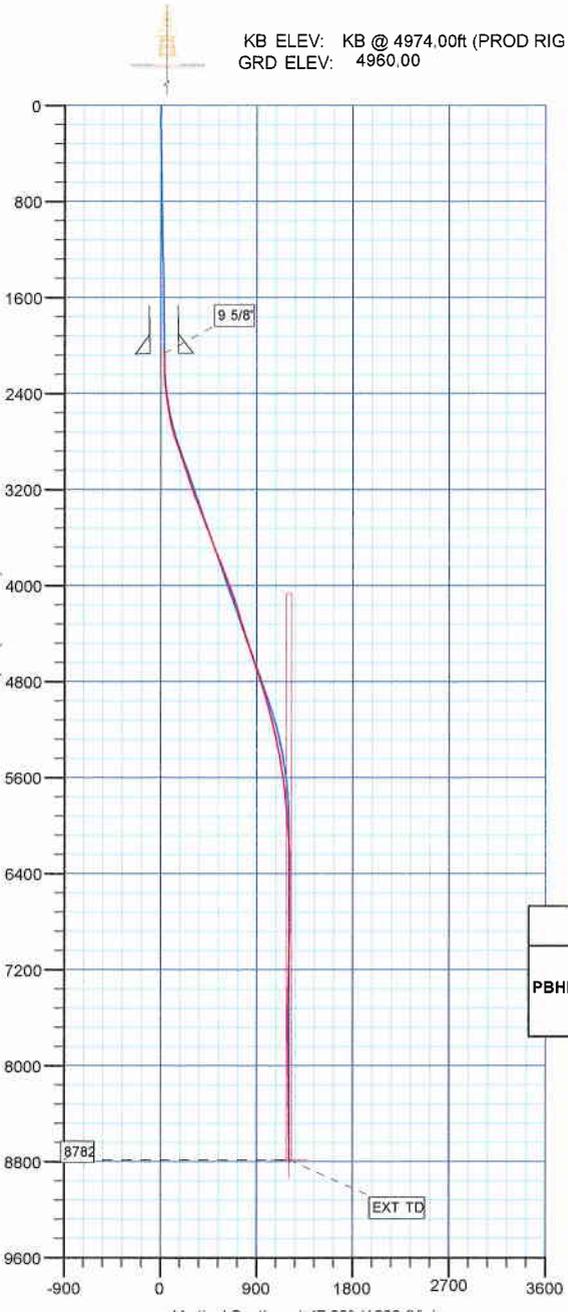
Magnetic Field  
Strength: 52527.2snT  
Dip Angle: 65.95°  
Date: 9/15/2009  
Model: BGGM2009

WELL DETAILS: NBU 922-36A4BS						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	14528279.64	2093132.21	4960.00	39° 59' 41.517 N	109° 23' 1.155 W

FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
4065.00	4175.50	WASATCH
7493.00	7695.50	MESAVERDE

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
2047.00	1.41	357.20	2046.24	47.81	-0.26	0.00	0.00	32.00	
2165.00	1.41	357.20	2164.21	50.71	-0.40	0.00	0.00	33.85	
2858.01	21.62	49.85	2840.18	142.54	97.83	3.00	55.60	168.32	
5121.66	21.62	49.85	4944.61	680.25	735.25	0.00	0.00	1001.64	
6202.50	0.00	0.00	6000.00	810.17	889.26	2.00	180.00	1202.98	
8982.50	0.00	0.00	8780.00	810.17	889.26	0.00	0.00	1202.98	PBHL_922-36A4BS

CASING DETAILS			
TVD	MD	Name	Size
2064.24	2065.00	9 5/8"	9.62



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8780.00	810.17	889.26	14529105.81	2094006.63	39° 59' 49.525 N	109° 22' 49.727 W	Circle (Radius: 25.00)	

<b>Company:</b> ANADARKO PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b> Well NBU 922-36A4BS
<b>Project:</b> UINTAH COUNTY, UTAH (nad 27)	<b>TVD Reference:</b> KB @ 4974.00ft (PROD RIG KB)
<b>Site:</b> NBU 922-36G PAD	<b>MD Reference:</b> KB @ 4974.00ft (PROD RIG KB)
<b>Well:</b> NBU 922-36A4BS	<b>North Reference:</b> True
<b>Wellbore:</b> NBU 922-36A4BS	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> NBU 922-36A4BS	<b>Database:</b> EDM 2003.21 Single User Db

<b>Project</b>	UINTAH COUNTY, UTAH (nad 27),		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b> NBU 922-36G PAD, SECTION 36 T9S R22E			
<b>Site Position:</b>		<b>Northing:</b>	14,528,229.13 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,093,164.49 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in
		<b>Latitude:</b>	39° 59' 41.012 N
		<b>Longitude:</b>	109° 23' 0.752 W
		<b>Grid Convergence:</b>	1.04 °

<b>Well</b> NBU 922-36A4BS			
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 14,528,279.64 ft
	+E/-W	0.00 ft	<b>Easting:</b> 2,093,132.21 ft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	39° 59' 41.517 N
		<b>Longitude:</b>	109° 23' 1.155 W
		<b>Ground Level:</b>	4,960.00 ft

<b>Wellbore</b> NBU 922-36A4BS			
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	BGGM2009	9/15/2009	11.28
			<b>Dip Angle (°)</b>
			65.95
			<b>Field Strength (nT)</b>
			52,527

<b>Design</b> NBU 922-36A4BS			
<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>
	0.00	0.00	0.00
			<b>Direction (°)</b>
			47.66

<b>Survey Program</b>			
	<b>Date</b>	9/25/2009	
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
157.00	2,047.00	Survey #1 (NBU 922-36A4BS)	MWD
2,119.00	8,982.00	Survey #2 (NBU 922-36A4BS)	MWD
			<b>Description</b>
			MWD - Standard
			MWD - Standard

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)
2,047.00	1.41	357.20	2,046.24	47.81	-0.26	32.01	0.00	0.00	0.00
2,119.00	1.22	335.33	2,118.22	49.39	-0.63	32.80	0.74	-0.26	-30.37
2,164.00	1.38	331.97	2,163.21	50.30	-1.08	33.08	0.39	0.36	-7.47
2,210.00	2.51	4.34	2,209.19	51.80	-1.26	33.95	3.33	2.46	70.37
2,255.00	3.13	22.66	2,254.13	53.91	-0.72	35.78	2.41	1.38	40.71
2,300.00	5.06	31.28	2,299.02	56.74	0.79	38.80	4.49	4.29	19.16
2,346.00	6.38	30.03	2,344.79	60.69	3.12	43.18	2.88	2.87	-2.72
2,391.00	8.06	33.28	2,389.43	65.49	6.10	48.62	3.84	3.73	7.22
2,436.00	8.13	32.28	2,433.98	70.82	9.53	54.74	0.35	0.16	-2.22
2,481.00	9.44	35.91	2,478.45	76.50	13.40	61.43	3.16	2.91	8.07
2,527.00	10.75	40.66	2,523.74	82.81	18.41	69.38	3.37	2.85	10.33
2,572.00	11.75	41.91	2,567.87	89.40	24.20	78.10	2.29	2.22	2.78

Company: ANADARKO PETROLEUM CORP.  
 Project: UINTAH COUNTY, UTAH (nad 27)  
 Site: NBU 922-36G PAD  
 Well: NBU 922-36A4BS  
 Wellbore: NBU 922-36A4BS  
 Design: NBU 922-36A4BS

Local Co-ordinate Reference: Well NBU 922-36A4BS  
 TVD Reference: KB @ 4974.00ft (PROD RIG KB)  
 MD Reference: KB @ 4974.00ft (PROD RIG KB)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 2003.21 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,617.00	12.69	41.78	2,611.85	96.50	30.55	87.58	2.09	2.09	-0.29
2,662.00	14.88	42.28	2,655.55	104.46	37.74	98.25	4.87	4.87	1.11
2,708.00	16.06	40.03	2,699.89	113.70	45.80	110.44	2.88	2.57	-4.89
2,753.00	18.75	42.16	2,742.82	123.83	54.66	123.81	6.14	5.98	4.73
2,798.00	20.56	43.41	2,785.20	134.93	64.95	138.89	4.13	4.02	2.78
2,844.00	21.63	46.53	2,828.12	146.63	76.65	155.42	3.37	2.33	6.78
2,889.00	21.50	48.53	2,869.97	157.80	88.85	171.96	1.66	-0.29	4.44
2,980.00	21.06	48.16	2,954.76	179.75	113.53	204.98	0.51	-0.48	-0.41
3,070.00	20.94	53.53	3,038.79	200.10	138.51	237.15	2.14	-0.13	5.97
3,161.00	20.13	50.91	3,124.01	219.64	163.74	268.96	1.35	-0.89	-2.88
3,252.00	21.19	48.66	3,209.16	240.38	188.24	301.04	1.46	1.16	-2.47
3,342.00	24.06	48.04	3,292.23	263.39	214.10	335.66	3.20	3.19	-0.69
3,433.00	22.50	46.78	3,375.81	287.72	240.59	371.62	1.80	-1.71	-1.38
3,523.00	23.94	48.78	3,458.52	311.55	266.87	407.10	1.82	1.60	2.22
3,614.00	22.31	45.78	3,542.21	335.76	293.14	442.83	2.21	-1.79	-3.30
3,704.00	22.94	44.78	3,625.29	360.13	317.74	477.42	0.82	0.70	-1.11
3,795.00	23.56	45.78	3,708.90	385.40	343.27	513.31	0.81	0.68	1.10
3,886.00	25.69	49.66	3,791.62	410.86	371.34	551.20	2.94	2.34	4.26
3,976.00	23.44	48.41	3,873.47	435.37	399.60	588.60	2.57	-2.50	-1.39
4,067.00	23.31	46.28	3,957.00	459.83	426.15	624.70	0.94	-0.14	-2.34
4,157.00	22.81	46.16	4,039.81	484.22	451.60	659.94	0.56	-0.56	-0.13
4,248.00	21.02	41.98	4,124.24	508.57	475.25	693.82	2.61	-1.97	-4.59
4,338.00	17.39	43.77	4,209.21	530.29	495.35	723.31	4.09	-4.03	1.99
4,429.00	19.17	48.29	4,295.62	550.05	515.92	751.82	2.50	1.96	4.97
4,520.00	20.62	48.87	4,381.19	570.54	539.14	782.78	1.61	1.59	0.64
4,610.00	20.42	49.61	4,465.48	591.13	563.04	814.32	0.36	-0.22	0.82
4,701.00	20.11	54.53	4,550.85	610.50	587.87	845.72	1.90	-0.34	5.41
4,791.00	20.03	54.62	4,635.39	628.40	613.04	876.38	0.10	-0.09	0.10
4,882.00	20.43	56.89	4,720.78	646.10	639.05	907.53	0.97	0.44	2.49
4,973.00	20.70	56.58	4,805.98	663.63	665.77	939.09	0.32	0.30	-0.34
5,063.00	19.27	57.06	4,890.55	680.47	691.52	969.46	1.60	-1.59	0.53
5,154.00	17.65	57.62	4,976.87	696.03	715.77	997.86	1.79	-1.78	0.62
5,244.00	16.60	56.66	5,062.88	710.40	738.03	1,024.00	1.21	-1.17	-1.07
5,335.00	15.41	58.55	5,150.35	723.85	759.21	1,048.71	1.43	-1.31	2.08
5,426.00	14.69	59.21	5,238.23	736.07	779.43	1,071.89	0.81	-0.79	0.73
5,516.00	13.43	59.71	5,325.53	747.18	798.26	1,093.29	1.41	-1.40	0.56
5,607.00	11.91	54.08	5,414.31	758.02	814.99	1,112.96	2.15	-1.67	-6.19
5,697.00	10.36	55.49	5,502.62	768.05	829.18	1,130.21	1.75	-1.72	1.57
5,788.00	8.82	47.47	5,592.35	777.41	841.07	1,145.29	2.24	-1.69	-8.81
5,879.00	7.79	48.36	5,682.39	786.22	850.82	1,158.43	1.14	-1.13	0.98
5,969.00	6.72	49.51	5,771.67	793.69	859.38	1,169.80	1.20	-1.19	1.28
6,060.00	6.01	50.92	5,862.11	800.15	867.13	1,179.87	0.80	-0.78	1.55
6,150.00	5.42	49.02	5,951.66	805.91	874.00	1,188.83	0.69	-0.66	-2.11
6,241.00	4.82	51.13	6,042.30	811.13	880.22	1,196.94	0.69	-0.66	2.32
6,331.00	4.32	55.67	6,132.01	815.41	885.96	1,204.07	0.69	-0.56	5.04
6,422.00	1.00	112.38	6,222.91	817.04	889.53	1,207.81	4.24	-3.65	62.32
6,512.00	1.22	104.73	6,312.89	816.50	891.18	1,208.66	0.29	0.24	-8.50
6,603.00	1.07	332.44	6,403.89	817.01	891.72	1,209.41	2.30	-0.16	-145.37
6,694.00	0.75	329.08	6,494.87	818.27	891.02	1,209.74	0.36	-0.35	-3.69
6,784.00	0.57	330.50	6,584.87	819.17	890.50	1,209.96	0.20	-0.20	1.58
6,875.00	0.23	289.07	6,675.87	819.62	890.11	1,209.97	0.47	-0.37	-45.53
6,965.00	0.75	213.91	6,765.86	819.19	889.61	1,209.31	0.81	0.58	-83.51
7,056.00	1.22	265.81	6,856.85	818.63	888.31	1,207.97	1.05	0.52	57.03
7,147.00	1.35	235.35	6,947.83	817.95	886.46	1,206.15	0.75	0.14	-33.47

**Company:** ANADARKO PETROLEUM CORP.  
**Project:** UINTAH COUNTY, UTAH (nad 27)  
**Site:** NBU 922-36G PAD  
**Well:** NBU 922-36A4BS  
**Wellbore:** NBU 922-36A4BS  
**Design:** NBU 922-36A4BS

**Local Co-ordinate Reference:** Well NBU 922-36A4BS  
**TVD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**MD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.21 Single User Db

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,237.00	1.31	210.98	7,037.80	816.46	885.06	1,204.11	0.63	-0.04	-27.08
7,328.00	1.67	206.91	7,128.77	814.39	883.92	1,201.87	0.41	0.40	-4.47
7,418.00	1.96	195.31	7,218.73	811.73	882.92	1,199.35	0.52	0.32	-12.89
7,509.00	1.19	239.53	7,309.70	809.75	881.70	1,197.11	1.52	-0.85	48.59
7,599.00	1.50	232.91	7,399.67	808.57	879.95	1,195.02	0.38	0.34	-7.36
7,690.00	1.00	250.91	7,490.65	807.59	878.25	1,193.10	0.69	-0.55	19.78
7,781.00	1.19	251.78	7,581.63	807.04	876.60	1,191.51	0.21	0.21	0.96
7,871.00	1.06	330.91	7,671.62	807.47	875.31	1,190.85	1.60	-0.14	87.92
7,962.00	1.88	1.90	7,762.59	809.70	874.95	1,192.08	1.22	0.90	34.05
8,053.00	1.44	5.65	7,853.55	812.33	875.11	1,193.98	0.50	-0.48	4.12
8,143.00	1.00	13.53	7,943.53	814.22	875.41	1,195.47	0.52	-0.49	8.76
8,234.00	0.56	32.28	8,034.52	815.36	875.83	1,196.55	0.55	-0.48	20.60
8,325.00	0.38	20.03	8,125.52	816.02	876.17	1,197.25	0.23	-0.20	-13.46
8,415.00	0.38	65.28	8,215.52	816.43	876.55	1,197.80	0.32	0.00	50.28
8,506.00	0.75	104.03	8,306.52	816.41	877.40	1,198.41	0.56	0.41	42.58
8,596.00	0.75	98.41	8,396.51	816.18	878.55	1,199.11	0.08	0.00	-6.24
8,687.00	1.06	96.16	8,487.50	816.00	879.98	1,200.05	0.34	0.34	-2.47
8,778.00	1.25	86.53	8,578.48	815.97	881.81	1,201.38	0.30	0.21	-10.58
8,868.00	1.31	87.91	8,668.46	816.07	883.81	1,202.93	0.07	0.07	1.53
8,928.00	1.22	104.12	8,728.44	815.94	885.12	1,203.80	0.61	-0.15	27.02
<b>EXT TD</b>									
8,982.00	1.22	104.12	8,782.43	815.66	886.23	1,204.44	0.00	0.00	0.00

### Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,982.00	8,782.43	815.66	886.23	EXT TD

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



# **ANADARKO PETROLEUM CORP.**

**UINTAH COUNTY, UTAH (nad 27)**

**NBU 922-36G PAD**

**NBU 922-36A4BS**

**NBU 922-36A4BS**

**Survey: Survey #2**

## **Survey Report - Geographic**

**25 September, 2009**



**Weatherford®**

<b>Company:</b>	ANADARKO PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well NBU 922-36A4BS
<b>Project:</b>	UINTAH COUNTY, UTAH (nad 27)	<b>TVD Reference:</b>	KB @ 4974.00ft (PROD RIG KB)
<b>Site:</b>	NBU 922-36G PAD	<b>MD Reference:</b>	KB @ 4974.00ft (PROD RIG KB)
<b>Well:</b>	NBU 922-36A4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 922-36A4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 922-36A4BS	<b>Database:</b>	EDM 2003.21 Single User Db

<b>Project</b>	UINTAH COUNTY, UTAH (nad 27),		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 922-36G PAD, SECTION 36 T9S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,528,229.13 ft	<b>Latitude:</b>	39° 59' 41.012 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,093,164.49 ft	<b>Longitude:</b>	109° 23' 0.752 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in	<b>Grid Convergence:</b>	1.04 °

<b>Well</b>	NBU 922-36A4BS					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,528,279.64 ft	<b>Latitude:</b>	39° 59' 41.517 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,093,132.21 ft	<b>Longitude:</b>	109° 23' 1.155 W
<b>Position Uncertainty</b>	0.00 ft		<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,960.00 ft

<b>Wellbore</b>	NBU 922-36A4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2009	9/15/2009	11.28	65.95	52,527

<b>Design</b>	NBU 922-36A4BS				
<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	47.66	

<b>Survey Program</b>	<b>Date</b>	9/25/2009			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
157.00	2,047.00	Survey #1 (NBU 922-36A4BS)	MWD	MWD - Standard	
2,119.00	8,982.00	Survey #2 (NBU 922-36A4BS)	MWD	MWD - Standard	

**Company:** ANADARKO PETROLEUM CORP.  
**Project:** UINTAH COUNTY, UTAH (nad 27)  
**Site:** NBU 922-36G PAD  
**Well:** NBU 922-36A4BS  
**Wellbore:** NBU 922-36A4BS  
**Design:** NBU 922-36A4BS

**Local Co-ordinate Reference:** Well NBU 922-36A4BS  
**TVD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**MD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.21 Single User Db

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
2,047.00	1.41	357.20	2,046.24	47.81	-0.26	14,528,327.44	2,093,131.08	39° 59' 41.990 N	109° 23' 1.158 W
2,119.00	1.22	335.33	2,118.22	49.39	-0.63	14,528,329.01	2,093,130.69	39° 59' 42.005 N	109° 23' 1.163 W
2,164.00	1.38	331.97	2,163.21	50.30	-1.08	14,528,329.92	2,093,130.22	39° 59' 42.014 N	109° 23' 1.169 W
2,210.00	2.51	4.34	2,209.19	51.80	-1.26	14,528,331.41	2,093,130.01	39° 59' 42.029 N	109° 23' 1.171 W
2,255.00	3.13	22.66	2,254.13	53.91	-0.72	14,528,333.53	2,093,130.52	39° 59' 42.050 N	109° 23' 1.164 W
2,300.00	5.06	31.28	2,299.02	56.74	0.79	14,528,336.39	2,093,131.97	39° 59' 42.078 N	109° 23' 1.145 W
2,346.00	6.38	30.03	2,344.79	60.69	3.12	14,528,340.38	2,093,134.23	39° 59' 42.117 N	109° 23' 1.115 W
2,391.00	8.06	33.28	2,389.43	65.49	6.10	14,528,345.23	2,093,137.12	39° 59' 42.164 N	109° 23' 1.077 W
2,436.00	8.13	32.28	2,433.98	70.82	9.53	14,528,350.62	2,093,140.46	39° 59' 42.217 N	109° 23' 1.032 W
2,481.00	9.44	35.91	2,478.45	76.50	13.40	14,528,356.37	2,093,144.22	39° 59' 42.273 N	109° 23' 0.983 W
2,527.00	10.75	40.66	2,523.74	82.81	18.41	14,528,362.77	2,093,149.11	39° 59' 42.335 N	109° 23' 0.918 W
2,572.00	11.75	41.91	2,567.87	89.40	24.20	14,528,369.47	2,093,154.79	39° 59' 42.401 N	109° 23' 0.844 W
2,617.00	12.69	41.78	2,611.85	96.50	30.55	14,528,376.68	2,093,161.01	39° 59' 42.471 N	109° 23' 0.762 W
2,662.00	14.88	42.28	2,655.55	104.46	37.74	14,528,384.77	2,093,168.05	39° 59' 42.549 N	109° 23' 0.670 W
2,708.00	16.06	40.03	2,699.89	113.70	45.80	14,528,394.16	2,093,175.94	39° 59' 42.641 N	109° 23' 0.566 W
2,753.00	18.75	42.16	2,742.82	123.83	54.66	14,528,404.45	2,093,184.62	39° 59' 42.741 N	109° 23' 0.453 W
2,798.00	20.56	43.41	2,785.20	134.93	64.95	14,528,415.73	2,093,194.70	39° 59' 42.851 N	109° 23' 0.320 W
2,844.00	21.63	46.53	2,828.12	146.63	76.65	14,528,427.64	2,093,206.19	39° 59' 42.966 N	109° 23' 0.170 W
2,889.00	21.50	48.53	2,869.97	157.80	88.85	14,528,439.03	2,093,218.18	39° 59' 43.077 N	109° 23' 0.013 W
2,980.00	21.06	48.16	2,954.76	179.75	113.53	14,528,461.42	2,093,242.46	39° 59' 43.294 N	109° 22' 59.696 W
3,070.00	20.94	53.53	3,038.79	200.10	138.51	14,528,482.22	2,093,267.07	39° 59' 43.495 N	109° 22' 59.375 W
3,161.00	20.13	50.91	3,124.01	219.64	163.74	14,528,502.22	2,093,291.94	39° 59' 43.688 N	109° 22' 59.051 W
3,252.00	21.19	48.66	3,209.16	240.38	188.24	14,528,523.39	2,093,316.06	39° 59' 43.893 N	109° 22' 58.736 W
3,342.00	24.06	48.04	3,292.23	263.39	214.10	14,528,546.88	2,093,341.50	39° 59' 44.120 N	109° 22' 58.404 W
3,433.00	22.50	46.78	3,375.81	287.72	240.59	14,528,571.68	2,093,367.54	39° 59' 44.361 N	109° 22' 58.063 W
3,523.00	23.94	48.78	3,458.52	311.55	266.87	14,528,595.98	2,093,393.39	39° 59' 44.596 N	109° 22' 57.726 W
3,614.00	22.31	45.78	3,542.21	335.76	293.14	14,528,620.67	2,093,419.22	39° 59' 44.836 N	109° 22' 57.388 W
3,704.00	22.94	44.78	3,625.29	360.13	317.74	14,528,645.47	2,093,443.37	39° 59' 45.077 N	109° 22' 57.072 W
3,795.00	23.56	45.78	3,708.90	385.40	343.27	14,528,671.20	2,093,468.43	39° 59' 45.326 N	109° 22' 56.744 W
3,886.00	25.69	49.66	3,791.62	410.86	371.34	14,528,697.16	2,093,496.04	39° 59' 45.578 N	109° 22' 56.383 W
3,976.00	23.44	48.41	3,873.47	435.37	399.60	14,528,722.19	2,093,523.85	39° 59' 45.820 N	109° 22' 56.020 W
4,067.00	23.31	46.28	3,957.00	459.83	426.15	14,528,747.12	2,093,549.95	39° 59' 46.062 N	109° 22' 55.679 W
4,157.00	22.81	46.16	4,039.81	484.22	451.60	14,528,771.97	2,093,574.96	39° 59' 46.303 N	109° 22' 55.352 W
4,248.00	21.02	41.98	4,124.24	508.57	475.25	14,528,796.75	2,093,598.15	39° 59' 46.544 N	109° 22' 55.048 W
4,338.00	17.39	43.77	4,209.21	530.29	495.35	14,528,818.83	2,093,617.86	39° 59' 46.758 N	109° 22' 54.789 W
4,429.00	19.17	48.29	4,295.62	550.05	515.92	14,528,838.96	2,093,638.07	39° 59' 46.954 N	109° 22' 54.525 W
4,520.00	20.62	48.87	4,381.19	570.54	539.14	14,528,859.86	2,093,660.91	39° 59' 47.156 N	109° 22' 54.227 W
4,610.00	20.42	49.61	4,465.48	591.13	563.04	14,528,880.89	2,093,684.43	39° 59' 47.360 N	109° 22' 53.920 W
4,701.00	20.11	54.53	4,550.85	610.50	587.87	14,528,900.70	2,093,708.91	39° 59' 47.551 N	109° 22' 53.600 W
4,791.00	20.03	54.62	4,635.39	628.40	613.04	14,528,919.06	2,093,733.75	39° 59' 47.728 N	109° 22' 53.277 W
4,882.00	20.43	56.89	4,720.78	646.10	639.05	14,528,937.23	2,093,759.43	39° 59' 47.903 N	109° 22' 52.943 W
4,973.00	20.70	56.58	4,805.98	663.63	665.77	14,528,955.24	2,093,785.84	39° 59' 48.076 N	109° 22' 52.599 W
5,063.00	19.27	57.06	4,890.55	680.47	691.52	14,528,972.54	2,093,811.27	39° 59' 48.243 N	109° 22' 52.268 W
5,154.00	17.65	57.62	4,976.87	696.03	715.77	14,528,988.53	2,093,835.24	39° 59' 48.397 N	109° 22' 51.957 W
5,244.00	16.60	56.66	5,062.88	710.40	738.03	14,529,003.31	2,093,857.24	39° 59' 48.539 N	109° 22' 51.671 W
5,335.00	15.41	58.55	5,150.35	723.85	759.21	14,529,017.14	2,093,878.17	39° 59' 48.672 N	109° 22' 51.399 W
5,426.00	14.69	59.21	5,238.23	736.07	779.43	14,529,029.72	2,093,898.17	39° 59' 48.792 N	109° 22' 51.139 W
5,516.00	13.43	59.71	5,325.53	747.18	798.26	14,529,041.18	2,093,916.79	39° 59' 48.902 N	109° 22' 50.897 W
5,607.00	11.91	54.08	5,414.31	758.02	814.99	14,529,052.32	2,093,933.32	39° 59' 49.009 N	109° 22' 50.682 W
5,697.00	10.36	55.49	5,502.62	768.05	829.18	14,529,062.61	2,093,947.33	39° 59' 49.108 N	109° 22' 50.499 W
5,788.00	8.82	47.47	5,592.35	777.41	841.07	14,529,072.17	2,093,959.04	39° 59' 49.201 N	109° 22' 50.347 W
5,879.00	7.79	48.36	5,682.39	786.22	850.82	14,529,081.16	2,093,968.63	39° 59' 49.288 N	109° 22' 50.221 W
5,969.00	6.72	49.51	5,771.67	793.69	859.38	14,529,088.79	2,093,977.06	39° 59' 49.362 N	109° 22' 50.111 W
6,060.00	6.01	50.92	5,862.11	800.15	867.13	14,529,095.39	2,093,984.69	39° 59' 49.426 N	109° 22' 50.012 W
6,150.00	5.42	49.02	5,951.66	805.91	874.00	14,529,101.27	2,093,991.45	39° 59' 49.483 N	109° 22' 49.923 W

**Company:** ANADARKO PETROLEUM CORP.  
**Project:** Uintah County, Utah (nad 27)  
**Site:** NBU 922-36G PAD  
**Well:** NBU 922-36A4BS  
**Wellbore:** NBU 922-36A4BS  
**Design:** NBU 922-36A4BS

**Local Co-ordinate Reference:** Well NBU 922-36A4BS  
**TVD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**MD Reference:** KB @ 4974.00ft (PROD RIG KB)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 2003.21 Single User Db

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,241.00	4.82	51.13	6,042.30	811.13	880.22	14,529,106.60	2,093,997.57	39° 59' 49.534 N	109° 22' 49.843 W
6,331.00	4.32	55.67	6,132.01	815.41	885.96	14,529,110.99	2,094,003.24	39° 59' 49.577 N	109° 22' 49.770 W
6,422.00	1.00	112.38	6,222.91	817.04	889.53	14,529,112.68	2,094,006.77	39° 59' 49.593 N	109° 22' 49.724 W
6,512.00	1.22	104.73	6,312.89	816.50	891.18	14,529,112.17	2,094,008.44	39° 59' 49.587 N	109° 22' 49.703 W
6,603.00	1.07	332.44	6,403.89	817.01	891.72	14,529,112.69	2,094,008.97	39° 59' 49.592 N	109° 22' 49.696 W
6,694.00	0.75	329.08	6,494.87	818.27	891.02	14,529,113.94	2,094,008.25	39° 59' 49.605 N	109° 22' 49.705 W
6,784.00	0.57	330.50	6,584.87	819.17	890.50	14,529,114.82	2,094,007.71	39° 59' 49.614 N	109° 22' 49.711 W
6,875.00	0.23	289.07	6,675.87	819.62	890.11	14,529,115.27	2,094,007.31	39° 59' 49.618 N	109° 22' 49.716 W
6,965.00	0.75	213.91	6,765.86	819.19	889.61	14,529,114.83	2,094,006.81	39° 59' 49.614 N	109° 22' 49.723 W
7,056.00	1.22	265.81	6,856.85	818.63	888.31	14,529,114.24	2,094,005.53	39° 59' 49.608 N	109° 22' 49.739 W
7,147.00	1.35	235.35	6,947.83	817.95	886.46	14,529,113.53	2,094,003.69	39° 59' 49.602 N	109° 22' 49.763 W
7,237.00	1.31	210.98	7,037.80	816.46	885.06	14,529,112.02	2,094,002.32	39° 59' 49.587 N	109° 22' 49.781 W
7,328.00	1.67	206.91	7,128.77	814.39	883.92	14,529,109.92	2,094,001.22	39° 59' 49.566 N	109° 22' 49.796 W
7,418.00	1.96	195.31	7,218.73	811.73	882.92	14,529,107.25	2,094,000.27	39° 59' 49.540 N	109° 22' 49.809 W
7,509.00	1.19	239.53	7,309.70	809.75	881.70	14,529,105.25	2,093,999.08	39° 59' 49.521 N	109° 22' 49.824 W
7,599.00	1.50	232.91	7,399.67	808.57	879.95	14,529,104.03	2,093,997.35	39° 59' 49.509 N	109° 22' 49.847 W
7,690.00	1.00	250.91	7,490.65	807.59	878.25	14,529,103.03	2,093,995.67	39° 59' 49.499 N	109° 22' 49.869 W
7,781.00	1.19	251.78	7,581.63	807.04	876.60	14,529,102.44	2,093,994.03	39° 59' 49.494 N	109° 22' 49.890 W
7,871.00	1.06	330.91	7,671.62	807.47	875.31	14,529,102.85	2,093,992.73	39° 59' 49.498 N	109° 22' 49.906 W
7,962.00	1.88	1.90	7,762.59	809.70	874.95	14,529,105.07	2,093,992.33	39° 59' 49.520 N	109° 22' 49.911 W
8,053.00	1.44	5.65	7,853.55	812.33	875.11	14,529,107.71	2,093,992.45	39° 59' 49.546 N	109° 22' 49.909 W
8,143.00	1.00	13.53	7,943.53	814.22	875.41	14,529,109.60	2,093,992.71	39° 59' 49.565 N	109° 22' 49.905 W
8,234.00	0.56	32.28	8,034.52	815.36	875.83	14,529,110.76	2,093,993.11	39° 59' 49.576 N	109° 22' 49.900 W
8,325.00	0.38	20.03	8,125.52	816.02	876.17	14,529,111.42	2,093,993.44	39° 59' 49.583 N	109° 22' 49.895 W
8,415.00	0.38	65.28	8,215.52	816.43	876.55	14,529,111.83	2,093,993.81	39° 59' 49.587 N	109° 22' 49.891 W
8,506.00	0.75	104.03	8,306.52	816.41	877.40	14,529,111.83	2,093,994.66	39° 59' 49.586 N	109° 22' 49.880 W
8,596.00	0.75	98.41	8,396.51	816.18	878.55	14,529,111.62	2,093,995.82	39° 59' 49.584 N	109° 22' 49.865 W
8,687.00	1.06	96.16	8,487.50	816.00	879.98	14,529,111.47	2,093,997.24	39° 59' 49.582 N	109° 22' 49.847 W
8,778.00	1.25	86.53	8,578.48	815.97	881.81	14,529,111.47	2,093,999.07	39° 59' 49.582 N	109° 22' 49.823 W
8,868.00	1.31	87.91	8,668.46	816.07	883.81	14,529,111.61	2,094,001.08	39° 59' 49.583 N	109° 22' 49.797 W
8,928.00	1.22	104.12	8,728.44	815.94	885.12	14,529,111.50	2,094,002.39	39° 59' 49.582 N	109° 22' 49.780 W
EXT TD									
8,982.00	1.22	104.12	8,782.43	815.66	886.23	14,529,111.24	2,094,003.51	39° 59' 49.579 N	109° 22' 49.766 W

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,982.00	8,782.43	815.66	886.23	EXT TD

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

<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 22650																														
<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 922-36A4BS																															
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047503940000																															
<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> 1795 FNL 1522 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNE Section: 36 Township: 09.0S Range: 22.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH																															
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA																																
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>																															
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 6/28/2011  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;"><input type="checkbox"/> ACIDIZE</td> <td style="width: 33%; border: none;"><input type="checkbox"/> ALTER CASING</td> <td style="width: 33%; border: none;"><input checked="" type="checkbox"/> CASING REPAIR</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> CHANGE TO PREVIOUS PLANS</td> <td style="border: none;"><input type="checkbox"/> CHANGE TUBING</td> <td style="border: none;"><input type="checkbox"/> CHANGE WELL NAME</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> CHANGE WELL STATUS</td> <td style="border: none;"><input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS</td> <td style="border: none;"><input type="checkbox"/> CONVERT WELL TYPE</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> DEEPEN</td> <td style="border: none;"><input type="checkbox"/> FRACTURE TREAT</td> <td style="border: none;"><input type="checkbox"/> NEW CONSTRUCTION</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> OPERATOR CHANGE</td> <td style="border: none;"><input type="checkbox"/> PLUG AND ABANDON</td> <td style="border: none;"><input type="checkbox"/> PLUG BACK</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> PRODUCTION START OR RESUME</td> <td style="border: none;"><input type="checkbox"/> RECLAMATION OF WELL SITE</td> <td style="border: none;"><input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> REPERFORATE CURRENT FORMATION</td> <td style="border: none;"><input type="checkbox"/> SIDETRACK TO REPAIR WELL</td> <td style="border: none;"><input type="checkbox"/> TEMPORARY ABANDON</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> TUBING REPAIR</td> <td style="border: none;"><input type="checkbox"/> VENT OR FLARE</td> <td style="border: none;"><input type="checkbox"/> WATER DISPOSAL</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> WATER SHUTOFF</td> <td style="border: none;"><input type="checkbox"/> SI TA STATUS EXTENSION</td> <td style="border: none;"><input type="checkbox"/> APD EXTENSION</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> WILDCAT WELL DETERMINATION</td> <td style="border: none;"><input checked="" type="checkbox"/> OTHER</td> <td style="border: none;">OTHER: <input style="width: 100px;" type="text" value="Wellhead Repair"/></td> </tr> </table>		<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input checked="" 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 type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input checked="" type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text" value="Wellhead Repair"/>
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12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. The operator requests approval to conduct wellhead/casing repair operations on the subject well location. Please find the attached procedure for the proposed repair work on the subject well location.																																
		<b>Approved by the          Utah Division of          Oil, Gas and Mining</b>  <b>Date:</b> 07/11/2011 <b>By:</b> <u><i>Dark K. Quist</i></u>																														
<b>NAME (PLEASE PRINT)</b> Gina Becker	<b>PHONE NUMBER</b> 720 929-6086	<b>TITLE</b> Regulatory Analyst II																														
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/28/2011																															

**WORKORDER #:**

**Name:** NBU 922-36A4BS - [922-36G PAD]  
**Surface Location:** SWNE Sec. 36, T9S, R22E  
 Uintah County, UT

6/23/2011

**API:** 4304750394      **LEASE#:** ML-22650

**ELEVATIONS:** 4965' GL      4973' KB

**TOTAL DEPTH:** 8982'      **PBTD:** 8931'

**SURFACE CASING:** 9 5/8", 36# J-55 @ 2074'

**PRODUCTION CASING:** 4 1/2", 11.6#, I-80 @ 8976'  
 TOC @ Surface per CBL

**PERFORATIONS:** Mesaverde 6595' - 8931'

Tubular/Borehole	Drift inches	Collapse psi	Burst psi	Capacities		
				Gal./ft.	Cuft/ft.	Bbl./ft.
2.375" 4.7# J-55 tbg.	1.901	8100	7700	0.1624	0.02171	0.00387
4.5" 11.6# I-80	3.875	6350	7780	0.6528	0.0872	0.0155
9.625" 36# J-55	8.921	2020	3520	3.247	0.434	0.0773
<b>Annular Capacities</b>						
2.375" tbg. X 4 1/2" 11.6# csg				0.4227	0.0565	0.01

**GEOLOGICAL TOPS:**

1179' Green River  
 1831' Mahogany  
 4465' Wasatch  
 6635' Mesaverde

## **NBU 922-36A4BS- WELLHEAD REPAIR PROCEDURE**

### **PREP-WORK PRIOR TO MIRU:**

1. Dig out down to the 2" surface casing valve or to the valve on the riser off the surface casing.
2. Install a tee with 2 valves, with a pressure gauge and sensor on one valve.
3. Open casing valve and record pressures.
4. Install nipple and steel hose on the other valve, the relief valve,. Do not use hammer unions. No impact equipment or tools to be used for any of this installation. Extend hose and hard piping to a downwind location at least 100' from the wellhead. Consider installing a manifold so that vent area could be in two locations approx. 90 degrees apart from the wellhead.
5. Open the relief valve and blow well down to the atmosphere.
6. Make a determination of amount of gas flow, either by installation of a choke nipple, bucket test or other.
7. Shut well in. Observe for rate of build-up by utilizing sensor data. Do not build-up for more than 24 hours. Vent gas through the vent line and leave open to the atmosphere.

### **WORKOVER PROCEDURE:**

1. MIRU workover rig.
2. Kill well with 10# brine / KCL (dictated by well pressure ).
3. Remove tree, install double BOP with blind and 2 3/8" pipe rams, with accumulator closing unit and manual back-ups. Function test BOP system.
4. POOH w/ tubing laying down extra tubing.
5. Rig up wireline service. RIH and set CBP @ ~6545'. Dump bail 4 sx cement on top of plug. POOH and RD wireline service. TIH w/ tubing and seating nipple. Land tubing ±60' above cement. RDMO.
6. Monitor well pressures. If surface casing is dead. MIRU. ND WH and NU BOP. POOH w/ tubing.
7. Depending on conditions at wellsite, continue with either CUT/PATCH Procedure or BACK-OFF Procedure.

**CUT/PATCH PROCEDURE:**

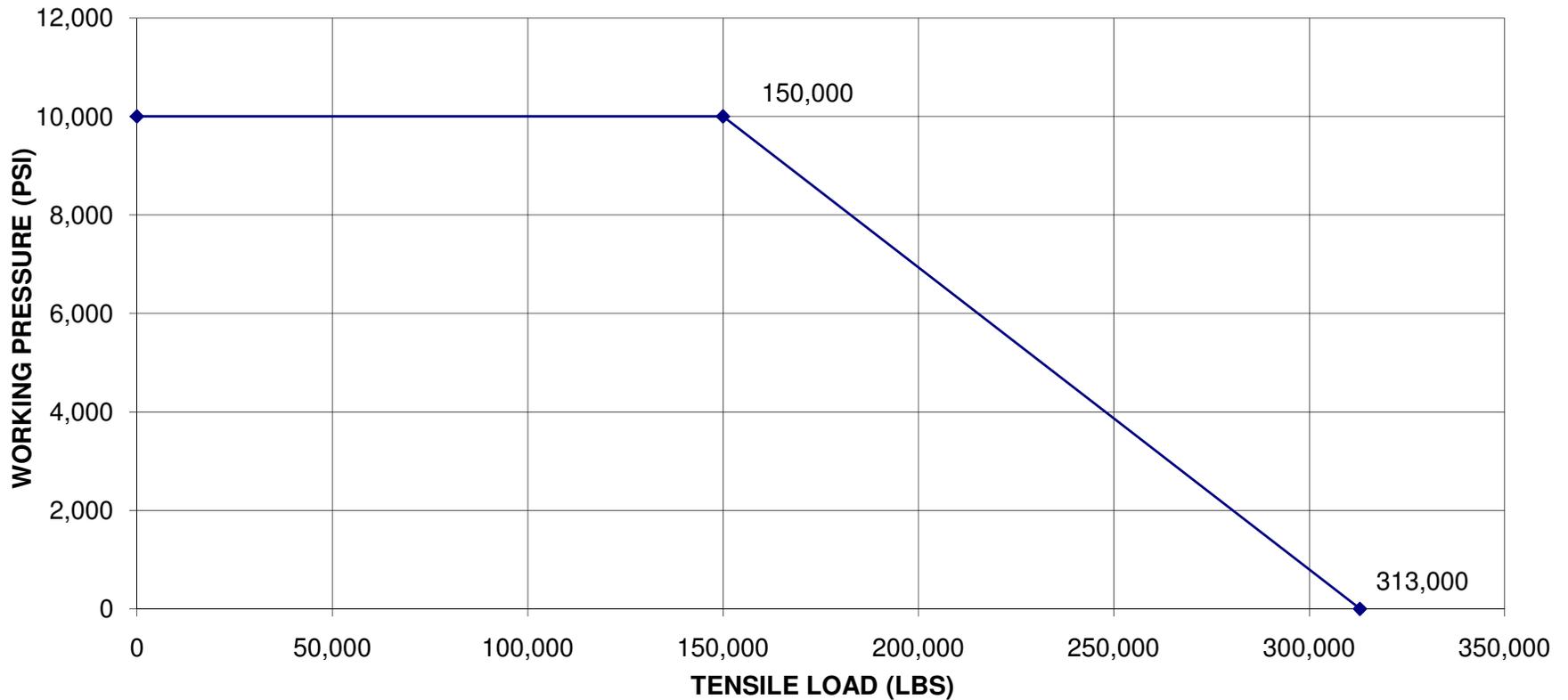
1. PU internal casing cutters and RIH. Cut casing at +/- 30' from surface.
2. POOH, LD cutters and casing.
3. PU 7 3/8" overshoot with 4 1/2" right hand standard wicker grapple, 1 - 4 3/4" drill collar with 3 1/2" IF threads, pup joint, manual bumper sub, and crossovers. If casing cut is deeper than ±30' utilize >7000 ft-lb torque pipe as needed. Pull a minimum of 10,000# to keep grapple engaged if cement top is high (<~900'). If cement top is low (>~900'), more weight will be required to put casing in neutral. Torque casing string to ±7000 ft-lbs, count number of turns to make-up, and document in the daily report. Ensure that tongs are safely anchored to rig and that all personnel are at a safe working distance from the tongs during torque-up and torque release. After initial make-up, place pipe torque to neutral and mark pipe. Place ±7000 ft-lbs on casing a second time, count turns, then return pipe torque to neutral and count turns. Repeat if torque-up turns do not equal torque release turns. Once torque-in equals torque-out, release overshoot, POOH, and lay down.
4. TIH w/ skirted mill and dress off the fish top for approximately 1/2 hour. TOO. H.
5. PU & RIH w/ 4 1/2" 10k external casing patch on 4 1/2" P-110 casing. Ensure that sliding sleeve assembly shifts ±3' and casing tags no-go portion of patch. NOTE: Shear pins will shear at 3500 to 4500 lbs.
6. Latch fish, PU to 100,000# tension. RU B&C. Cycle pressure test to 3500 psi.
7. Install slips. Land casing w/ 80,000# tension.
8. Cut-off and dress 4 1/2" casing stub.
9. NUWH. PU 3 7/8" bit, POBS and RIH. D/O cement and plug ~6495'. Clean out to PBSD (8931').
10. POOH, land tbg and pump off POBS.
11. NUWH, RDMO. Turn well over to production ops.

**BACK-OFF PROCEDURE:**

1. PU internal casing cutters and RIH. Cut casing at +/- 6' from surface.
2. POOH, LD cutters and casing.
3. PU 4 1/2" overshoot. RIH, latch fish. Pick string weight to neutral.
4. MIRU casing crew and wireline services. RIH and shoot string shot at casing collar @ ± 46'.
5. Back-off casing, POOH.

6. PU new casing joint with buttress threads and entry guide and RIH. Tag casing top. Thread into casing and torque up to  $\pm 7000$  ft-lbs, count number of additional turns to make-up, and document in the daily report. Ensure that tongs are safely anchored to rig and that all personnel are at a safe working distance from the tongs during torque-up and torque release. After initial make-up, place pipe torque to neutral and mark pipe. Place  $\pm 7000$  ft-lbs on casing a second time, count turns, then return pipe torque to neutral and count turns. Repeat if torque-up turns do not equal torque release turns. Once torque-in equals torque-out go to step 7.
7. PU 100,000# tension string weight. RU B&C. Cycle pressure test to 3500 psi.
8. Install slips. Land casing w/ 80,000# tension.
9. Cut-off and dress 4 1/2" casing stub.
10. NUWH. PU 3 7/8" bit, POBS and RIH. D/O cement and plug ~6495'. Clean out to PBSD (8931').
11. POOH, land tbg and pump off POBS.
12. NUWH, RDMO. Turn well over to production ops.

**STRENGTH DATA FOR LOGAN 5.88" OD "L" TYPE CSG PATCH  
4-1/2 CASING, 10K PSI MAX WP 125K YIELD MAT'L  
LOGAN ASSEMBLY NO. 510L-005 -000**



COLLAPSE PRESSURE:  
11,222 PSI @ 0 TENSILE  
8,634 PSI @ 220K TENSILE

Tensile Strength @ Yield:  
Tensile Strength w/ 0 Int. Press.= 472,791lbs.  
Tensile Strength w/ 10K Int. Press.= 313,748lbs.

DATA BY SLS 11/16/2009

**RECEIVED** Jun. 28, 2011



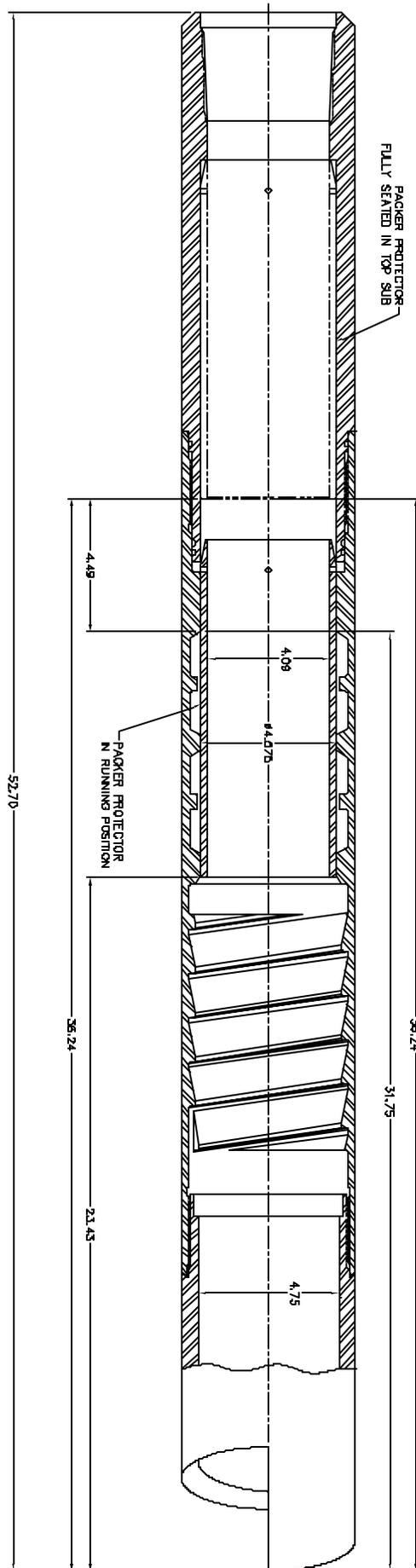
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## **Logan High Pressure Casing Patches Assembly Procedure**

All parts should be thoroughly greased before being assembled.

1. Install all four Logan Type "L" Packers in the spaces provided in the Casing Patch Bowl. Refer to diagram provided for proper installation.
2. Install Packer Protector from the Basket Grapple end of the Bowl. The beveled end of the Packer Protector goes in first. Carefully push the Packer Protector through the four Type "L" Packers.
3. Align Shear Pin Holes in Packer Protector so that the holes have just passed into the counter bore at the Top Sub end, refer to diagram. The Packer Protector is provided with four Shear Pin Holes. Use only two holes, 180 degrees apart and install the pins.
4. Screw the Basket Grapple in from the lower end of the Bowl, using left-hand rotation. The Tang Slot in the Basket Grapple must land in line with the slot in the Bowl.
5. Insert the Basket Grapple Control into the end of the Bowl. Align Tang on the Basket Grapple Control with the Tang Slot of the Bowl and Basket Grapple. This secures the Bowl and the Basket Grapple together.
6. Install the Cutlipped Guide into the lower end of the Bowl.
7. Install O-Rings on the two five-foot long Extensions. Screw the first Extension into the top end of the Bowl. Screw the second Extension into the top end of the first Extension.
8. Install O-Ring on Top Sub. Screw Top Sub into top end of second Extension.

Follow recommended Make-Up Torque as provided in chart.



510L-005-001 4-1/2" LOGAN HP CASING PATCH

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22650
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well		<b>8. WELL NAME and NUMBER:</b> NBU 922-36A4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047503940000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1795 FNL 1522 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWNE Section: 36 Township: 09.0S Range: 22.0E Meridian: S		<b>COUNTY:</b> UINTAH
		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 8/22/2011  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input checked="" 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 type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> APD EXTENSION  <input type="checkbox"/> WILDCAT WELL DETERMINATION <input checked="" type="checkbox"/> OTHER	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>The operator has concluded the wellhead/casing repairs on the subject well location. Please see the attached chronological history for the details of the operations.</p> <div style="text-align: right;"> <p><b>Accepted by the Utah Division of Oil, Gas and Mining</b></p> <p><b>FOR RECORD ONLY</b></p> <p>January 27, 2012</p> </div>		
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 1/24/2012

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

Well: NBU 922-36A4BS [RED]		Spud Conductor: 7/31/2009		Spud Date: 8/6/2009				
Project: UTAH-UINTAH			Site: NBU 922-36G PAD			Rig Name No: SWABBCO 6/6		
Event: WELL WORK EXPENSE			Start Date: 8/17/2011			End Date: 8/22/2011		
Active Datum: RKB @4,978.00ft (above Mean Sea Leve			UWI: 0/9/S/22/E/36/0/SWNE/26/PM/N/1,795.00/E/0/1,522.00/0/0					
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
8/17/2011	7:00 - 7:15	0.25	WO/REP	48		P		JSA=PINCH POINTS
	7:15 - 17:00	9.75	WO/REP	30		P		MI R/U RIG SPOT EQUIP N/U PMP CNTRL TBNG W / 20BBLS TMAC ND WELL HEAD NU BOPS R/U FLOOR & TBNG EQUIP CNTRL CSNG W/ 20 BBLS TMAC UN LAND TBNG & POOH W/ 267 JTS 2-3/8" J-55 L/D BHA MIRU WIRE LINE P/U GUAGE RING RIH TO 6600' POOH PU CIBP RIH SET @ 6520' POOH PU DUMP BAILER W/2 SKS CMNT RIH & DUMP CMNT POOH R/D WIRELINE FILL HOLE W / TMAC TEST CIBP TO 500 PSI SIW SDFN
8/18/2011	7:00 - 7:15	0.25	WO/REP	48		P		JSA= FISHING SAFETY
	7:15 - 18:00	10.75	WO/REP	30		P		0 PSI ON WELL ND BOPS & W/H PU INT CUTTERCU CSG BELOW HNGR PULL ALL OUT OF HOLE RUN PLUMB BOB IN HOLE TAG @ 41' PU INT CUTTER CUT CSG @ 21' F/ SURFACE PULL CUTTER PU OVERSHOT RIH PULL PIECE OUT LD PU SKIRTED MILL RIH DRESS FISH TOP PU RIH W/ LOGAN PATCH RUN OVER CSG PULL 90000# NU TESTER PRESS TO 3500# 30 MIN CONDENSATE PRESENT CALL OUT EXT CUTTER & CUT CSG NU W/H & BOPS SIW SDFN
8/19/2011	7:00 - 7:15	0.25	WO/REP	48		P		JSA= FOAMING
	7:15 - 17:00	9.75	WO/REP	30		P		0 PSI ON WELL PU 3-7/8" ROCK BIT RIH TAG CEM @ 6500' PU PWR SWVL NU FOAM UNIT EST CIRC D/O CEM & CIBP @ 6520' IN 40 MIN CIRC CLEAN CONTINUE TO RIH TAG FILL @ 8897' EST CIRC COULDNT MAKE HOLE CIRC CLEAN LD 18 JNTS POOH LD BHA SIW SDFW
8/22/2011	7:00 - 7:15	0.25	WO/REP	48		P		JSA= WELL CONTROL
	7:15 - 17:00	9.75	WO/REP	30		P		SIWP= 1100# OPEN WELL TO FBT TO RELEASE PRESS CONTROL WELL W/ 20 BBLS TMAC PU 1.87 XN NPL RIH W/ 135 JNTS RIH W/ BROACH TO XN CONTINUE TO RIH LAND TUBING ON HNGR W/ 267 JNTS PU RIH W/ BROACH TO 4500' RD FLOOR & TUBING EQUIP ND BOPS NU W/H SIW RD RIG MOVE TO 36G1T PREP TO POOH SDFN

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

FORM 6

**ENTITY ACTION FORM**

Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator Account Number: N 2995  
 Address: P.O. Box 173779  
city DENVER  
state CO zip 80217 Phone Number: (720) 929-6100

**Well 1**

API Number	Well Name	QQ	Sec	Twp	Rng	County
4304750394	NBU 922-36A4BS	SWNE	36	9S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number		Spud Date		Entity Assignment Effective Date
<i>B</i>	99999	<i>2900</i>		7/31/2009		<i>8/13/09</i>
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL LOCATION ON 07/31/2009 AT 14:45 HRS. <i>BHL = NENE</i>						

**Well 2**

API Number	Well Name	QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number		Spud Date		Entity Assignment Effective Date
<b>Comments:</b>						

**Well 3**

API Number	Well Name	QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number		Spud Date		Entity Assignment Effective Date
<b>Comments:</b>						

**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)

ANDY LYTLE

Name (Please Print)

Signature

REGULATORY ANALYST

Title

8/3/2009

Date

**RECEIVED**

**AUG 03 2009**

DIV. OF OIL, GAS & MINING