

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

FORM 3

AMENDED REPORT 

<b>APPLICATION FOR PERMIT TO DRILL</b>						<b>1. WELL NAME and NUMBER</b> NBU 1022-8B4AS	
<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> UTU 01196C			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input 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>	919 FNL 1693 FEL	NWNE	8	10.0 S	22.0 E	S	
<b>Top of Uppermost Producing Zone</b>	744 FNL 1518 FEL	NWNE	8	10.0 S	22.0 E	S	
<b>At Total Depth</b>	744 FNL 1518 FEL	NWNE	8	10.0 S	22.0 E	S	
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 744			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 400	
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 380			<b>26. PROPOSED DEPTH</b> MD: 9015 TVD: 9000	
<b>27. ELEVATION - GROUND LEVEL</b> 5185			<b>28. BOND NUMBER</b> WYB000291			<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> Danielle Piernot			<b>TITLE</b> Regulatory Analyst			<b>PHONE</b> 720 929-6156	
<b>SIGNATURE</b>			<b>DATE</b> 08/17/2009			<b>EMAIL</b> danielle.piernot@anadarko.com	
<b>API NUMBER ASSIGNED</b> 43047506410000			<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	9015		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade I-80 Buttress	9015	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	2210		
<b>Pipe</b>	<b>Grade</b>	<b>Length</b>	<b>Weight</b>			
	Grade J-55 LT&C	2210	36.0			

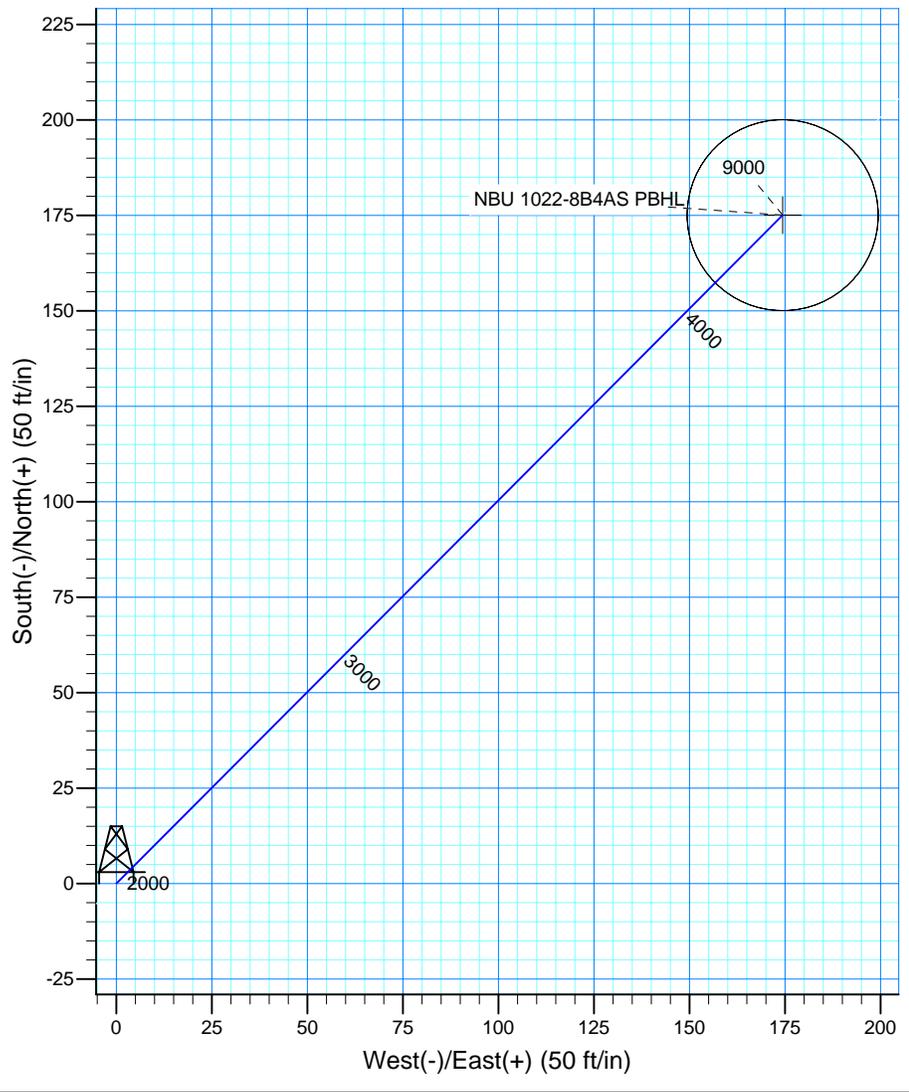
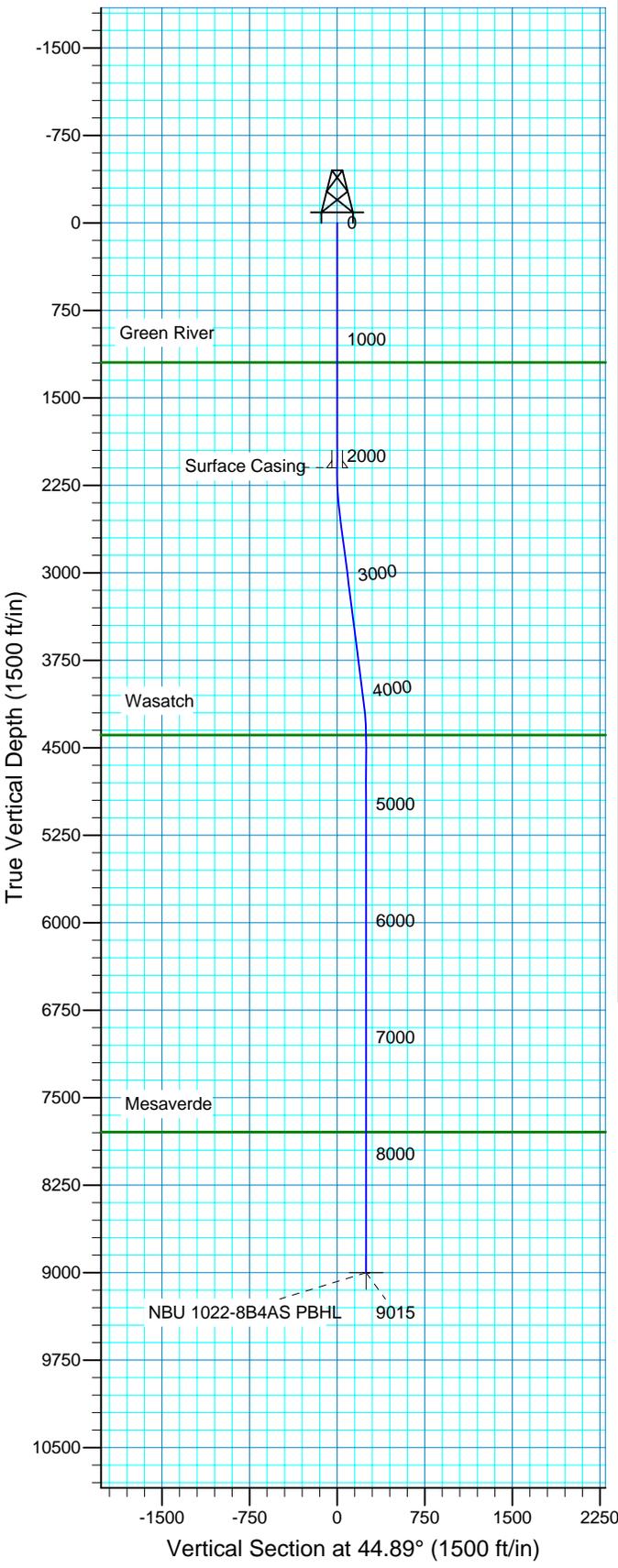


WELL DETAILS: NBU 1022-8B4AS

Ground Level: GL 5183' & RKB 18' @ 5201.00ft  
 +N/-S    +E/-W    Northing    Easting    Latitude    Longitude  
 0.00    0.00    602003.24    2571825.09    39° 58' 5.690 N    109° 27' 34.540 W



Azimuths to True North  
 Magnetic North: 11.35°  
 Magnetic Field  
 Strength: 52583.6snT  
 Dip Angle: 65.92°  
 Date: 1/7/2009  
 Model: IGRF2005-10



FORMATION TOP DETAILS			Plan: Plan #1 (NBU 1022-8B4AS/OH)	
TVDPath	MDPath	Formation	Created By:	Date:
1197.00	1197.00	Green River	Laura Turner	2009-01-07
4392.00	4406.95	Wasatch	PROJECT DETAILS: Uintah County, UT NAD27	
7796.00	7810.95	Mesaverde	Geodetic System: US State Plane 1927 (Exact solution)	
			Datum: NAD 1927 (NADCON CONUS)	
			Ellipsoid: Clarke 1866	
			Zone: Utah Central 4302	
			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	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
2440.59	7.22	44.89	2439.95	10.72	10.68	3.00	44.89	15.13	
4166.36	7.22	44.89	4152.05	164.32	163.71	0.00	0.00	231.95	
4406.95	0.00	0.00	4392.00	175.04	174.39	3.00	180.00	247.09	
9014.95	0.00	0.00	9000.00	175.04	174.39	0.00	0.00	247.09	NBU 1022-8B4AS PBHL

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

**Uintah County, UT NAD27  
NBU 1022-8B Pad  
NBU 1022-8B4AS  
OH**

**Plan: Plan #1**

## **Standard Planning Report**

**07 January, 2009**

## Scientific Drilling Planning Report

<b>Database:</b> EDM2003.16 MultiuserDB	<b>Local Co-ordinate Reference:</b> Well NBU 1022-8B4AS
<b>Company:</b> Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b> GL 5183' & RKB 18' @ 5201.00ft
<b>Project:</b> Uintah County, UT NAD27	<b>MD Reference:</b> GL 5183' & RKB 18' @ 5201.00ft
<b>Site:</b> NBU 1022-8B Pad	<b>North Reference:</b> True
<b>Well:</b> NBU 1022-8B4AS	<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 1022-8B Pad, Sec 8 T10S R21E		
<b>Site Position:</b>	<b>Northing:</b> 602,016.99ft	<b>Latitude:</b> 39° 58' 5.840 N
<b>From:</b> Lat/Long	<b>Easting:</b> 2,571,762.48ft	<b>Longitude:</b> 109° 27' 35.340 W
<b>Position Uncertainty:</b> 0.00 ft	<b>Slot Radius:</b> in	<b>Grid Convergence:</b> 1.31 °

<b>Well</b> NBU 1022-8B4AS, 919' FNL 1693' FEL			
<b>Well Position</b>	<b>+N/-S</b> 0.00 ft	<b>Northing:</b> 602,003.24 ft	<b>Latitude:</b> 39° 58' 5.690 N
	<b>+E/-W</b> 0.00 ft	<b>Easting:</b> 2,571,825.09 ft	<b>Longitude:</b> 109° 27' 34.540 W
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 5,183.00 ft

<b>Wellbore</b> OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	1/7/2009	11.35	65.92	52,584

<b>Design</b> Plan #1
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<b>Audit Notes:</b>		
<b>Version:</b>	<b>Phase:</b> PLAN	<b>Tie On Depth:</b> 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	44.89

<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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,440.59	7.22	44.89	2,439.95	10.72	10.68	3.00	3.00	0.00	44.89	
4,166.36	7.22	44.89	4,152.05	164.32	163.71	0.00	0.00	0.00	0.00	
4,406.95	0.00	0.00	4,392.00	175.04	174.39	3.00	-3.00	0.00	180.00	
9,014.95	0.00	0.00	9,000.00	175.04	174.39	0.00	0.00	0.00	0.00	NBU 1022-8B4AS F

# Scientific Drilling

## Planning Report

<b>Database:</b>	EDM2003.16 MultiuserDB	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5183' & RKB 18' @ 5201.00ft
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5183' & RKB 18' @ 5201.00ft
<b>Site:</b>	NBU 1022-8B Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-8B4AS	<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
1,197.00	0.00	0.00	1,197.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Green River</b>									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing</b>									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	3.00	44.89	2,299.95	1.85	1.85	2.62	3.00	3.00	0.00
2,400.00	6.00	44.89	2,399.63	7.41	7.38	10.46	3.00	3.00	0.00
2,440.59	7.22	44.89	2,439.95	10.72	10.68	15.13	3.00	3.00	0.00
2,500.00	7.22	44.89	2,498.89	16.01	15.95	22.60	0.00	0.00	0.00
2,600.00	7.22	44.89	2,598.10	24.91	24.82	35.16	0.00	0.00	0.00
2,700.00	7.22	44.89	2,697.31	33.81	33.68	47.73	0.00	0.00	0.00
2,800.00	7.22	44.89	2,796.52	42.71	42.55	60.29	0.00	0.00	0.00
2,900.00	7.22	44.89	2,895.72	51.61	51.42	72.85	0.00	0.00	0.00
3,000.00	7.22	44.89	2,994.93	60.51	60.29	85.42	0.00	0.00	0.00
3,100.00	7.22	44.89	3,094.14	69.41	69.15	97.98	0.00	0.00	0.00
3,200.00	7.22	44.89	3,193.35	78.31	78.02	110.54	0.00	0.00	0.00
3,300.00	7.22	44.89	3,292.55	87.21	86.89	123.11	0.00	0.00	0.00
3,400.00	7.22	44.89	3,391.76	96.11	95.75	135.67	0.00	0.00	0.00
3,500.00	7.22	44.89	3,490.97	105.01	104.62	148.24	0.00	0.00	0.00
3,600.00	7.22	44.89	3,590.18	113.91	113.49	160.80	0.00	0.00	0.00
3,700.00	7.22	44.89	3,689.38	122.81	122.36	173.36	0.00	0.00	0.00
3,800.00	7.22	44.89	3,788.59	131.72	131.22	185.93	0.00	0.00	0.00
3,900.00	7.22	44.89	3,887.80	140.62	140.09	198.49	0.00	0.00	0.00
4,000.00	7.22	44.89	3,987.01	149.52	148.96	211.05	0.00	0.00	0.00
4,100.00	7.22	44.89	4,086.22	158.42	157.83	223.62	0.00	0.00	0.00
4,166.36	7.22	44.89	4,152.05	164.32	163.71	231.95	0.00	0.00	0.00
4,200.00	6.21	44.89	4,185.46	167.11	166.49	235.89	3.00	-3.00	0.00
4,300.00	3.21	44.89	4,285.11	172.92	172.28	244.09	3.00	-3.00	0.00
4,400.00	0.21	44.89	4,385.05	175.03	174.38	247.08	3.00	-3.00	0.00
4,406.95	0.00	0.00	4,392.00	175.04	174.39	247.09	3.00	-3.00	0.00
<b>Wasatch</b>									
4,500.00	0.00	0.00	4,485.05	175.04	174.39	247.09	0.00	0.00	0.00

## Scientific Drilling

### Planning Report

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<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5183' & RKB 18' @ 5201.00ft
<b>Site:</b>	NBU 1022-8B Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-8B4AS	<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)
4,600.00	0.00	0.00	4,585.05	175.04	174.39	247.09	0.00	0.00	0.00
4,700.00	0.00	0.00	4,685.05	175.04	174.39	247.09	0.00	0.00	0.00
4,800.00	0.00	0.00	4,785.05	175.04	174.39	247.09	0.00	0.00	0.00
4,900.00	0.00	0.00	4,885.05	175.04	174.39	247.09	0.00	0.00	0.00
5,000.00	0.00	0.00	4,985.05	175.04	174.39	247.09	0.00	0.00	0.00
5,100.00	0.00	0.00	5,085.05	175.04	174.39	247.09	0.00	0.00	0.00
5,200.00	0.00	0.00	5,185.05	175.04	174.39	247.09	0.00	0.00	0.00
5,300.00	0.00	0.00	5,285.05	175.04	174.39	247.09	0.00	0.00	0.00
5,400.00	0.00	0.00	5,385.05	175.04	174.39	247.09	0.00	0.00	0.00
5,500.00	0.00	0.00	5,485.05	175.04	174.39	247.09	0.00	0.00	0.00
5,600.00	0.00	0.00	5,585.05	175.04	174.39	247.09	0.00	0.00	0.00
5,700.00	0.00	0.00	5,685.05	175.04	174.39	247.09	0.00	0.00	0.00
5,800.00	0.00	0.00	5,785.05	175.04	174.39	247.09	0.00	0.00	0.00
5,900.00	0.00	0.00	5,885.05	175.04	174.39	247.09	0.00	0.00	0.00
6,000.00	0.00	0.00	5,985.05	175.04	174.39	247.09	0.00	0.00	0.00
6,100.00	0.00	0.00	6,085.05	175.04	174.39	247.09	0.00	0.00	0.00
6,200.00	0.00	0.00	6,185.05	175.04	174.39	247.09	0.00	0.00	0.00
6,300.00	0.00	0.00	6,285.05	175.04	174.39	247.09	0.00	0.00	0.00
6,400.00	0.00	0.00	6,385.05	175.04	174.39	247.09	0.00	0.00	0.00
6,500.00	0.00	0.00	6,485.05	175.04	174.39	247.09	0.00	0.00	0.00
6,600.00	0.00	0.00	6,585.05	175.04	174.39	247.09	0.00	0.00	0.00
6,700.00	0.00	0.00	6,685.05	175.04	174.39	247.09	0.00	0.00	0.00
6,800.00	0.00	0.00	6,785.05	175.04	174.39	247.09	0.00	0.00	0.00
6,900.00	0.00	0.00	6,885.05	175.04	174.39	247.09	0.00	0.00	0.00
7,000.00	0.00	0.00	6,985.05	175.04	174.39	247.09	0.00	0.00	0.00
7,100.00	0.00	0.00	7,085.05	175.04	174.39	247.09	0.00	0.00	0.00
7,200.00	0.00	0.00	7,185.05	175.04	174.39	247.09	0.00	0.00	0.00
7,300.00	0.00	0.00	7,285.05	175.04	174.39	247.09	0.00	0.00	0.00
7,400.00	0.00	0.00	7,385.05	175.04	174.39	247.09	0.00	0.00	0.00
7,500.00	0.00	0.00	7,485.05	175.04	174.39	247.09	0.00	0.00	0.00
7,600.00	0.00	0.00	7,585.05	175.04	174.39	247.09	0.00	0.00	0.00
7,700.00	0.00	0.00	7,685.05	175.04	174.39	247.09	0.00	0.00	0.00
7,800.00	0.00	0.00	7,785.05	175.04	174.39	247.09	0.00	0.00	0.00
7,810.95	0.00	0.00	7,796.00	175.04	174.39	247.09	0.00	0.00	0.00
<b>Mesaverde</b>									
7,900.00	0.00	0.00	7,885.05	175.04	174.39	247.09	0.00	0.00	0.00
8,000.00	0.00	0.00	7,985.05	175.04	174.39	247.09	0.00	0.00	0.00
8,100.00	0.00	0.00	8,085.05	175.04	174.39	247.09	0.00	0.00	0.00
8,200.00	0.00	0.00	8,185.05	175.04	174.39	247.09	0.00	0.00	0.00
8,300.00	0.00	0.00	8,285.05	175.04	174.39	247.09	0.00	0.00	0.00
8,400.00	0.00	0.00	8,385.05	175.04	174.39	247.09	0.00	0.00	0.00
8,500.00	0.00	0.00	8,485.05	175.04	174.39	247.09	0.00	0.00	0.00
8,600.00	0.00	0.00	8,585.05	175.04	174.39	247.09	0.00	0.00	0.00
8,700.00	0.00	0.00	8,685.05	175.04	174.39	247.09	0.00	0.00	0.00
8,800.00	0.00	0.00	8,785.05	175.04	174.39	247.09	0.00	0.00	0.00
8,900.00	0.00	0.00	8,885.05	175.04	174.39	247.09	0.00	0.00	0.00
9,000.00	0.00	0.00	8,985.05	175.04	174.39	247.09	0.00	0.00	0.00
9,014.95	0.00	0.00	9,000.00	175.04	174.39	247.09	0.00	0.00	0.00
<b>NBU 1022-8B4AS PBHL</b>									

## Scientific Drilling

### Planning Report

<b>Database:</b>	EDM2003.16 MultiuserDB	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5183' & RKB 18' @ 5201.00ft
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5183' & RKB 18' @ 5201.00ft
<b>Site:</b>	NBU 1022-8B Pad	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-8B4AS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
NBU 1022-8B4AS PB - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,000.00	175.04	174.39	602,182.21	2,571,995.45	39° 58' 7.420 N	109° 27' 32.300 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,100.00	2,100.00	Surface Casing	9.625	13.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,197.00	1,197.00	Green River		0.00		
4,406.95	4,392.00	Wasatch		0.00		
7,810.95	7,796.00	Mesaverde		0.00		

**NBU 1022-8B4AS**

Pad: NBU 1022-8B

Surface: 919' FNL 1,693' FEL (NW/4NE/4)

BHL: 744' FNL 1,518' FEL (NW/4NE/4)

Sec. 8 T10S R22E

Uintah, Utah

Mineral Lease: UTU 01196C

**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	1,197'	
Birds Nest	1,549'	Water
Mahogany	2,008'	Water
Wasatch	4,392'	Gas
Mesaverde	6,897'	Gas
MVU2	7,796'	Gas
MVL1	8,406'	Gas
TVD	9,000'	
TD	9,015'	

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 9,000' TVD, approximately equals 5,374 psi (calculated at 0.60 psi/foot).

Maximum anticipated surface pressure equals approximately 3,394 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.*

***Variance for FIT Requirements***

*KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). The air rig operation utilizes a 5M BOPE when drilling. This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.*

***Conclusion***

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

**10. Other Information:**

*Please refer to the attached Drilling Program.*





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

### 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 2,210	36.00	J-55	LTC	1.01	1.95	7.25
PRODUCTION	4-1/2"	0 to 9,015	11.60	I-80	BTC	2.23	1.16	3.05

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

2) MASP (Prod Casing) = Pore Pressure at TD - (0.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD = 11.7 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 3,394 psi**

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

(Burst Assumptions: TD = 11.7 ppg)

0.6 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

**MABHP 5,374 psi**

### CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	215	60%	15.60	1.18
<b>Option 1</b>							
	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			<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>				
<b>Option 2</b>	LEAD	1,710'	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	3,885'	Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	370	40%	11.00	3.38
	TAIL	5,130'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,260	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:

John Huycke / Emile Goodwin

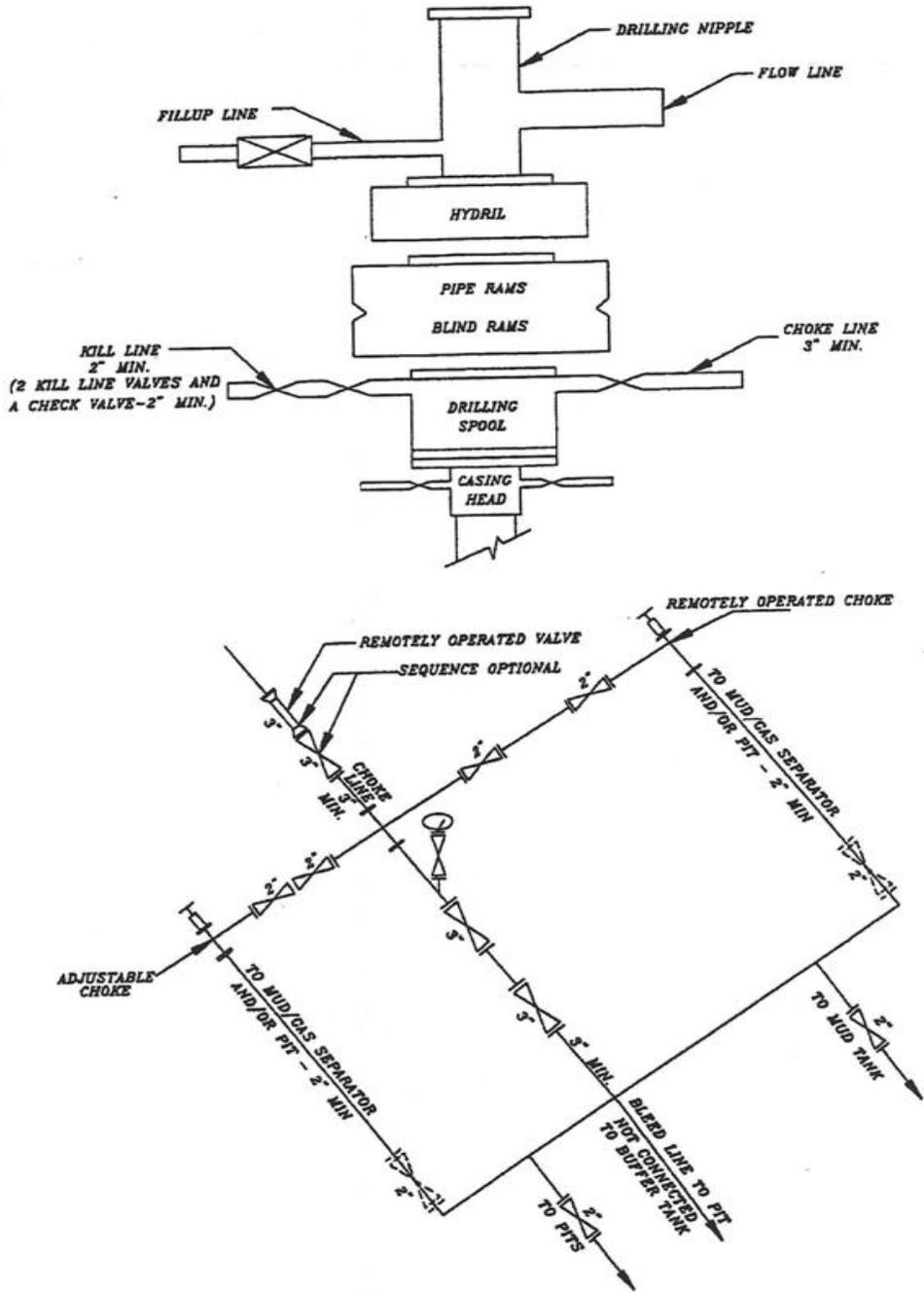
DATE:

DRILLING SUPERINTENDENT:

John Merkel / Lovel Young

DATE:

### EXHIBIT A NBU 1022-8B4AS



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

# WELL PAD INTERFERENCE PLAT

## DIRECTIONAL PAD – NBU 343

### SURFACE POSITION FOOTAGES:

NBU 1022-8C1CS  
955' FNL & 1742' FEL

NBU 1022-8C1AS  
943' FNL & 1725' FEL

NBU 1022-8B1DS  
931' FNL & 1709' FEL

NBU 1022-8B4AS  
919' FNL & 1693' FEL

BASIS OF BEARINGS IS THE EAST LINE OF THE NE 1/4 OF SECTION 8, T10S, R22E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°09'22"W.

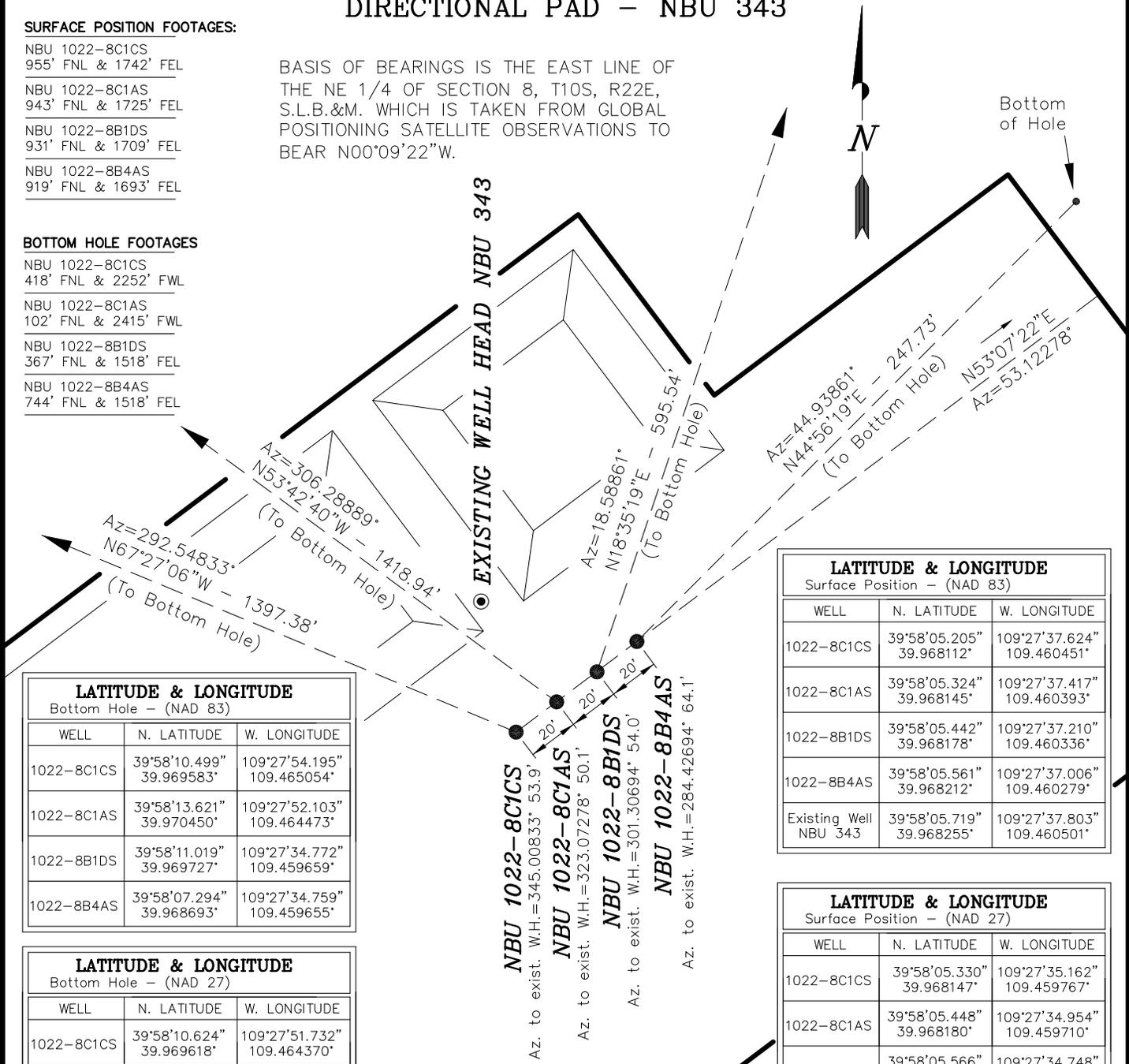
### BOTTOM HOLE FOOTAGES

NBU 1022-8C1CS  
418' FNL & 2252' FWL

NBU 1022-8C1AS  
102' FNL & 2415' FWL

NBU 1022-8B1DS  
367' FNL & 1518' FEL

NBU 1022-8B4AS  
744' FNL & 1518' FEL



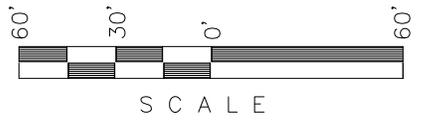
LATITUDE & LONGITUDE		
Bottom Hole – (NAD 83)		
WELL	N. LATITUDE	W. LONGITUDE
1022-8C1CS	39°58'10.499" 39.969583°	109°27'54.195" 109.465054°
1022-8C1AS	39°58'13.621" 39.970450°	109°27'52.103" 109.464473°
1022-8B1DS	39°58'11.019" 39.969727°	109°27'34.772" 109.459659°
1022-8B4AS	39°58'07.294" 39.968693°	109°27'34.759" 109.459655°

LATITUDE & LONGITUDE		
Bottom Hole – (NAD 27)		
WELL	N. LATITUDE	W. LONGITUDE
1022-8C1CS	39°58'10.624" 39.969618°	109°27'51.732" 109.464370°
1022-8C1AS	39°58'13.746" 39.970485°	109°27'49.640" 109.463789°
1022-8B1DS	39°58'11.143" 39.969762°	109°27'32.310" 109.458975°
1022-8B4AS	39°58'07.419" 39.968727°	109°27'32.297" 109.458971°

LATITUDE & LONGITUDE		
Surface Position – (NAD 83)		
WELL	N. LATITUDE	W. LONGITUDE
1022-8C1CS	39°58'05.205" 39.968112°	109°27'37.624" 109.460451°
1022-8C1AS	39°58'05.324" 39.968145°	109°27'37.417" 109.460393°
1022-8B1DS	39°58'05.442" 39.968178°	109°27'37.210" 109.460336°
1022-8B4AS	39°58'05.561" 39.968212°	109°27'37.006" 109.460279°
Existing Well NBU 343	39°58'05.719" 39.968255°	109°27'37.803" 109.460501°

LATITUDE & LONGITUDE		
Surface Position – (NAD 27)		
WELL	N. LATITUDE	W. LONGITUDE
1022-8C1CS	39°58'05.330" 39.968147°	109°27'35.162" 109.459767°
1022-8C1AS	39°58'05.448" 39.968180°	109°27'34.954" 109.459710°
1022-8B1DS	39°58'05.566" 39.968213°	109°27'34.748" 109.459652°
1022-8B4AS	39°58'05.686" 39.968246°	109°27'34.544" 109.459596°
Existing Well NBU 343	39°58'05.844" 39.968290°	109°27'35.341" 109.459817°

RELATIVE COORDINATES		
From Surface Position to Bottom Hole		
WELL	NORTH	EAST
1022-8C1CS	536'	-1,291'
1022-8C1AS	840'	-1,144'
1022-8B1DS	564'	190'
1022-8B4AS	175'	175'



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

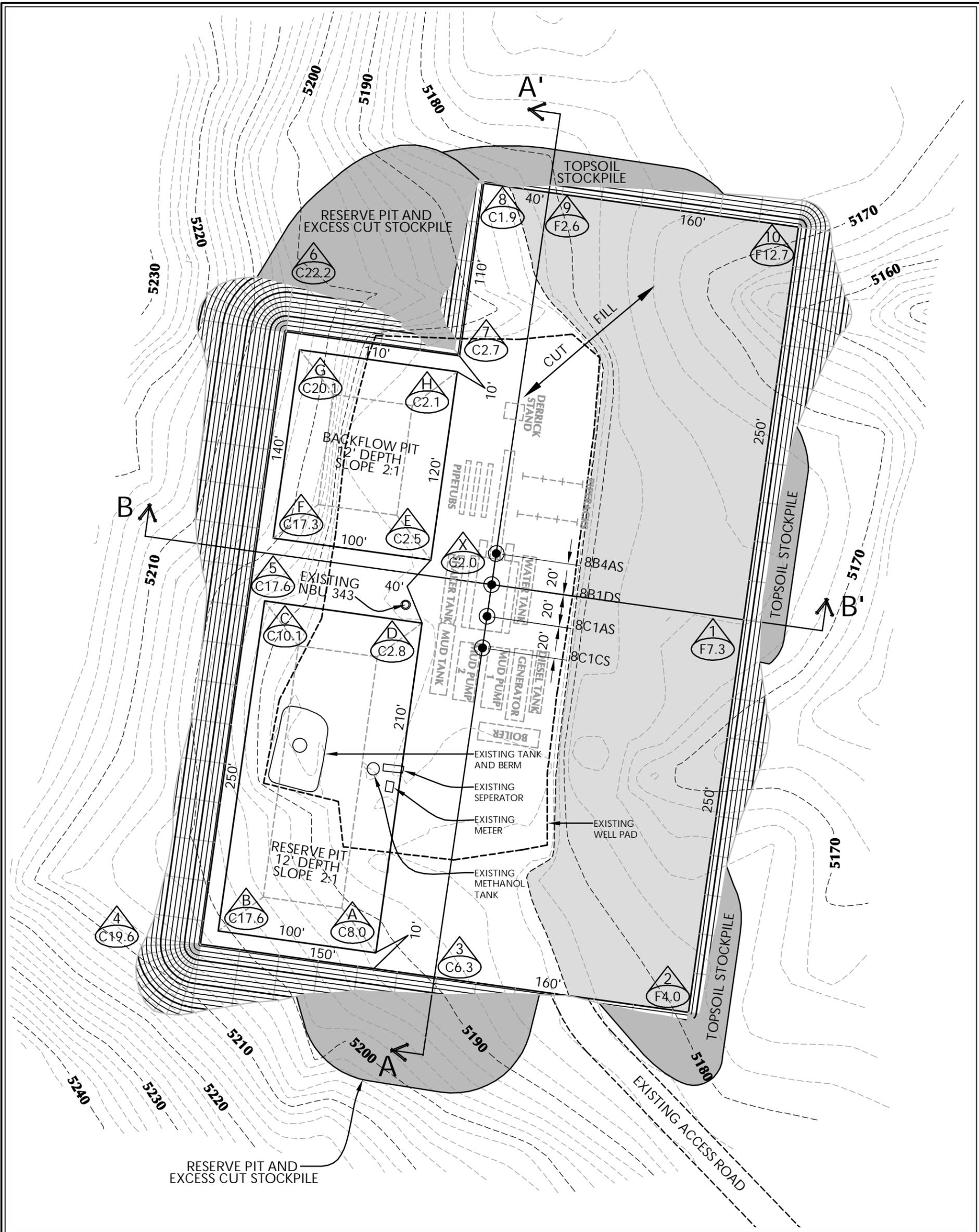
NBU 1022-8C1CS, NBU 1022-8C1AS,  
NBU 1022-8B1DS & NBU 1022-8B4AS  
LOCATED IN SECTION 8, T10S, R22E,  
S.L.B.&M. UTAH COUNTY, UTAH.

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

DATE SURVEYED: 09-18-08	SURVEYED BY: M.S.B.
DATE DRAWN: 10-03-08	DRAWN BY: M.W.W.
REVISED: 01-21-09	

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

SHEET  
**5**  
OF 13



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

**WELL PAD - LOCATION LAYOUT**  
NBU 1022-8C1CS, NBU 1022-8C1AS,  
NBU 1022-8B1DS, NBU 1022-8B4AS  
LOCATED IN SECTION 8, T.10S., R.22E.  
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"=60'	Date: 2/5/09	SHEET NO:
REVISED:	BY DATE	<b>6</b> 6 OF 13

**WELL PAD NBU 343 QUANTITIES**

EXISTING GRADE @ CENTER OF PAD = 5,185.3'  
FINISHED GRADE ELEVATION = 5,183.3'  
CUT SLOPES = 1.5:1  
FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 20,772 C.Y.  
TOTAL FILL FOR WELL PAD = 20,470 C.Y.  
TOPSOIL @ 6" DEPTH = 2,343 C.Y.  
EXCESS MATERIAL = 302 C.Y.  
TOTAL DISTURBANCE = 4.07 ACRES  
SHRINKAGE FACTOR = 1.10  
SWELL FACTOR = 1.00  
RESERVE PIT CAPACITY (2' OF FREEBOARD)  
+/- 23,600 BARRELS  
RESERVE PIT VOLUME  
+/- 6,370 CY  
BACKFLOW PIT CAPACITY (2' OF FREEBOARD)  
+/- 12,050 BARRELS  
BACKFLOW PIT VOLUME  
+/- 3,330 CY

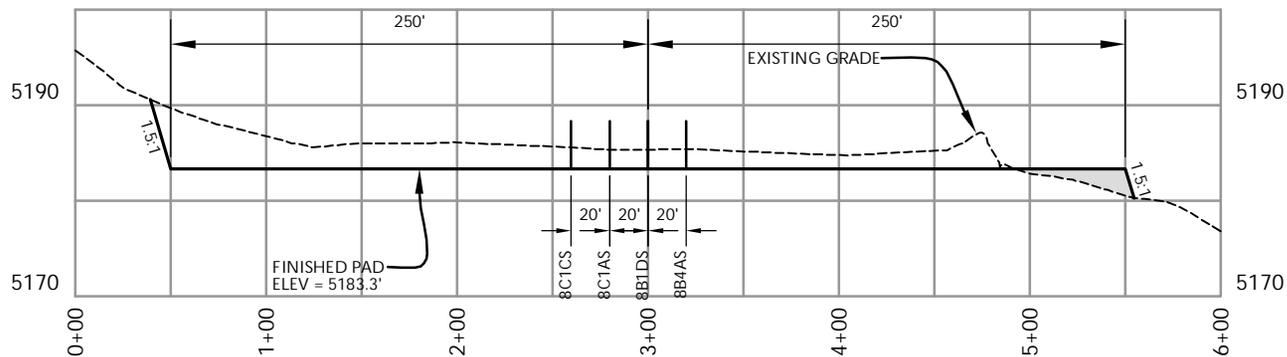
**WELL PAD LEGEND**

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

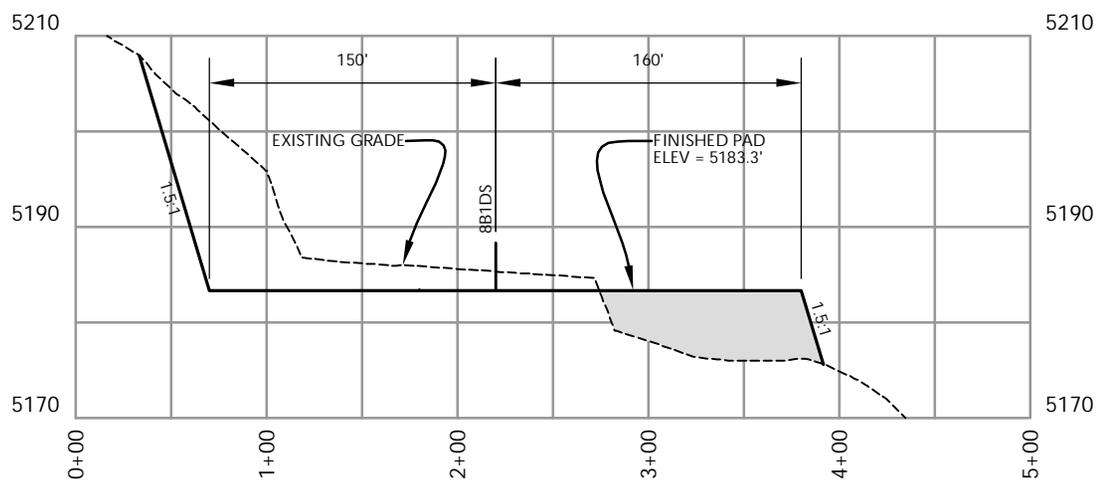


HORIZONTAL 0 30 60 1" = 60'  
2' CONTOURS

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



CROSS SECTION A-A'



CROSS SECTION B-B'

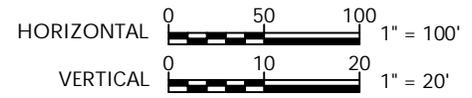
KERR-MCGEE OIL & GAS  
 ONSHORE L.P.  
 1099 18th Street - Denver, Colorado 80202



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

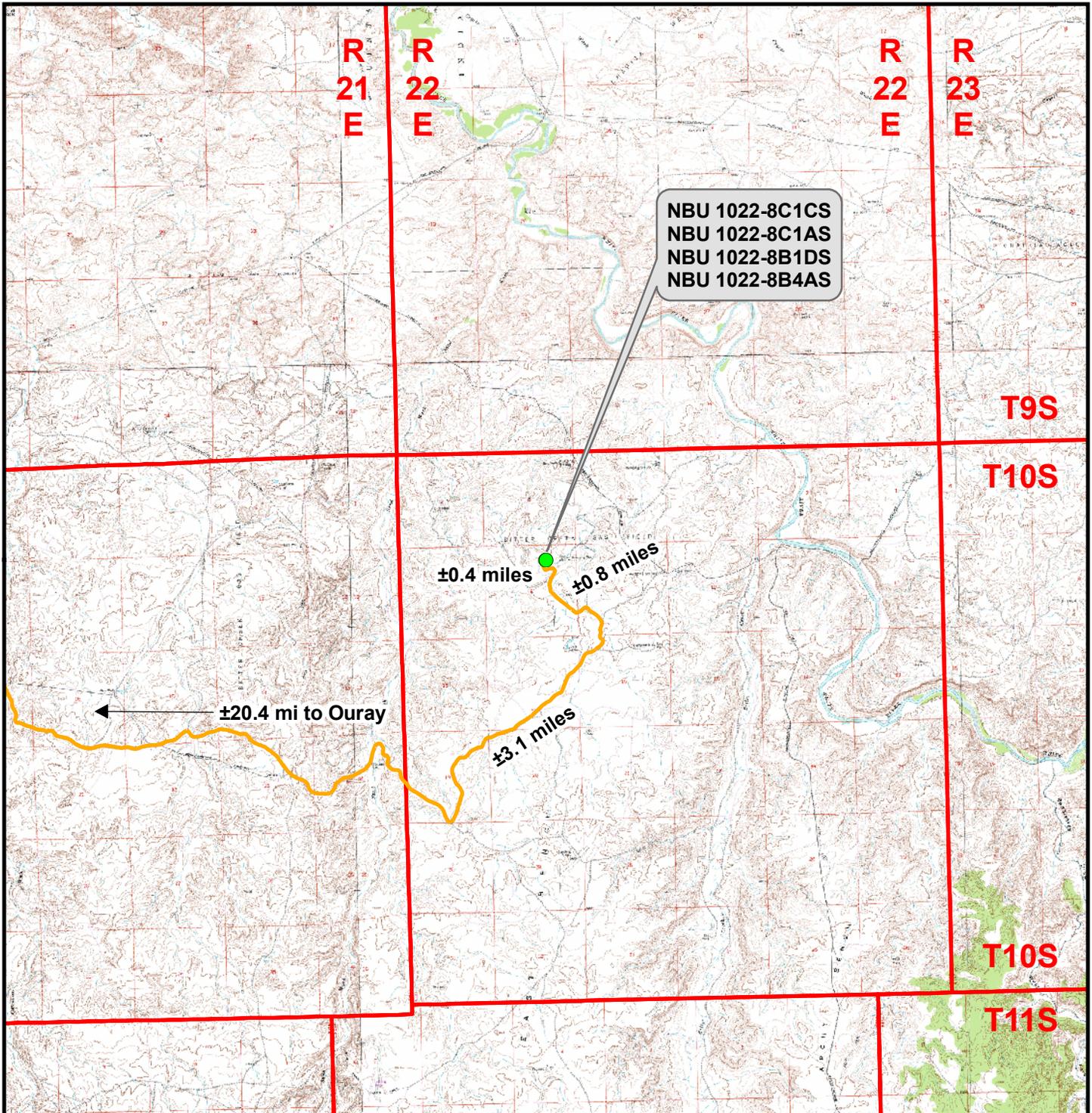
WELL PAD - CROSS SECTIONS  
 NBU 1022-8C1CS, NBU 1022-8C1AS,  
 NBU 1022-8B1DS, NBU 1022-8B4AS  
 LOCATED IN SECTION 8, T.10S., R.22E.  
 S.L.B.&M., Uintah County, Utah

Scale: 1"=100'	Date: 2/5/09	SHEET NO:
REVISED:	BY DATE	7 7 OF 13



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

API Well No: 43047506410000  
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**Legend**

- Proposed Well Location
- Access Route - Proposed

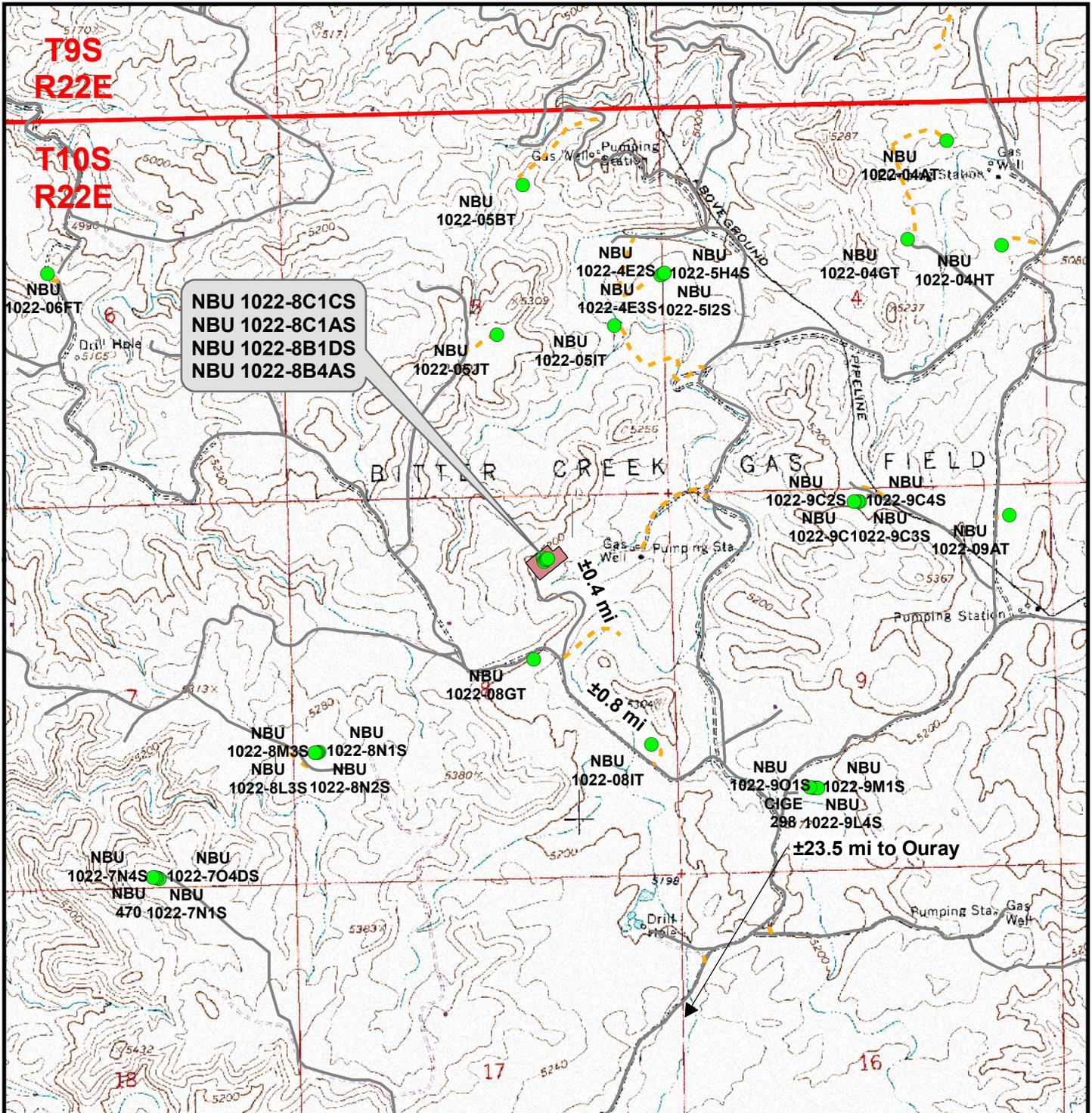
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**NBU 1022-8C1CS, NBU 1022-8C1AS,  
 NBU 1022-8B1DS & NBU 1022-8B4AS**  
**Topo A**  
**Located In Section 8, T10S, 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: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: JELO	Date: 6 Feb 2009	9
Revised:	Date:	



**Legend**

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

Total Proposed Road Length: ±0ft

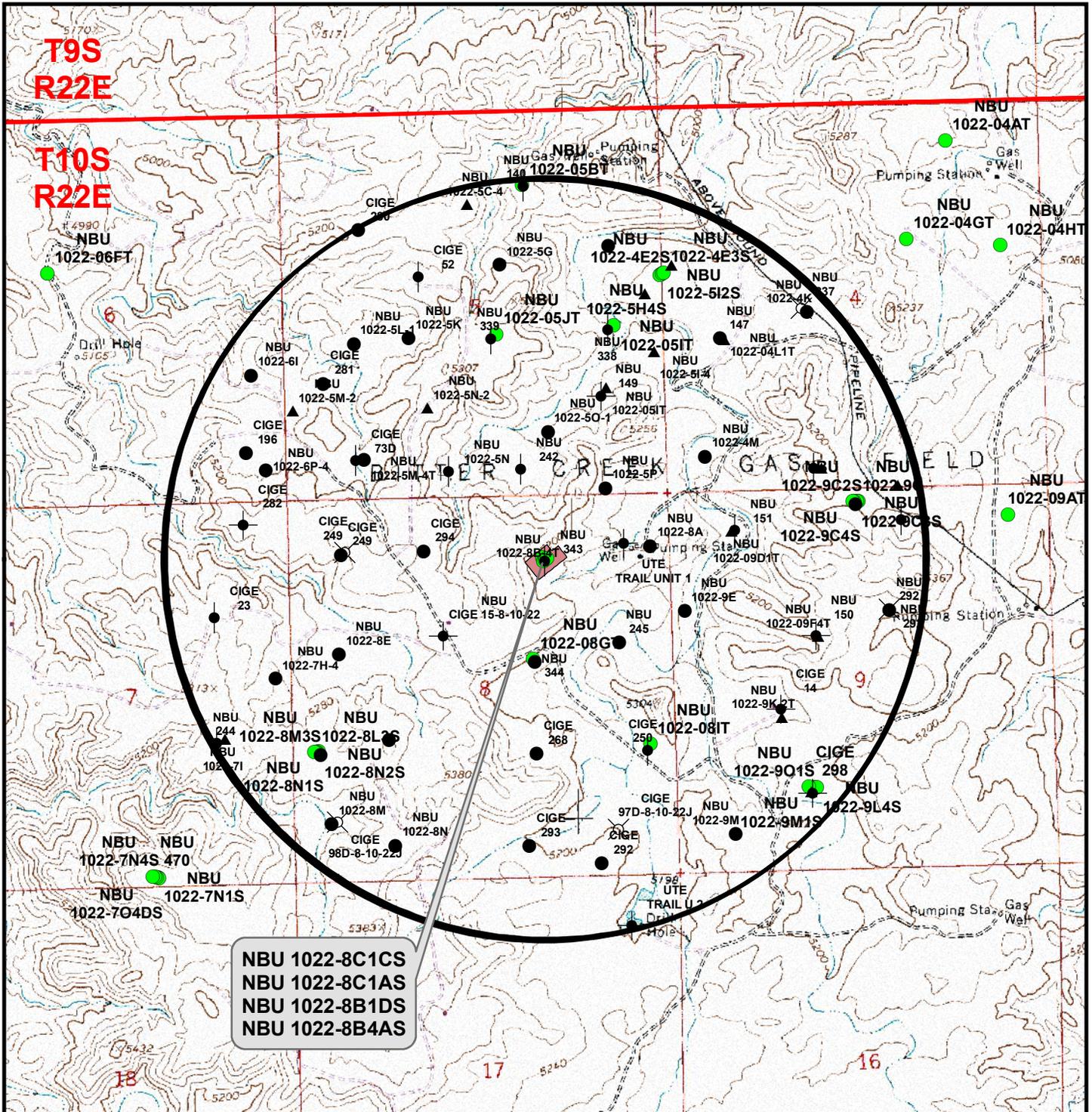
**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

**NBU 1022-8C1CS, NBU 1022-8C1AS,  
NBU 1022-8B1DS & NBU 1022-8B4AS**  
Topo B  
Located In Section 8, T10S, 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: 6 Feb 2009	10
Revised:	Date:	



NBU 1022-8C1CS  
 NBU 1022-8C1AS  
 NBU 1022-8B1DS  
 NBU 1022-8B4AS

**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
- ⊗ Location Abandoned
- Shut-In
- Well Pad
- ▲ Temporarily-Abandoned
- Spudded (Drilling commenced: Not yet complete)
- Plugged and Abandoned

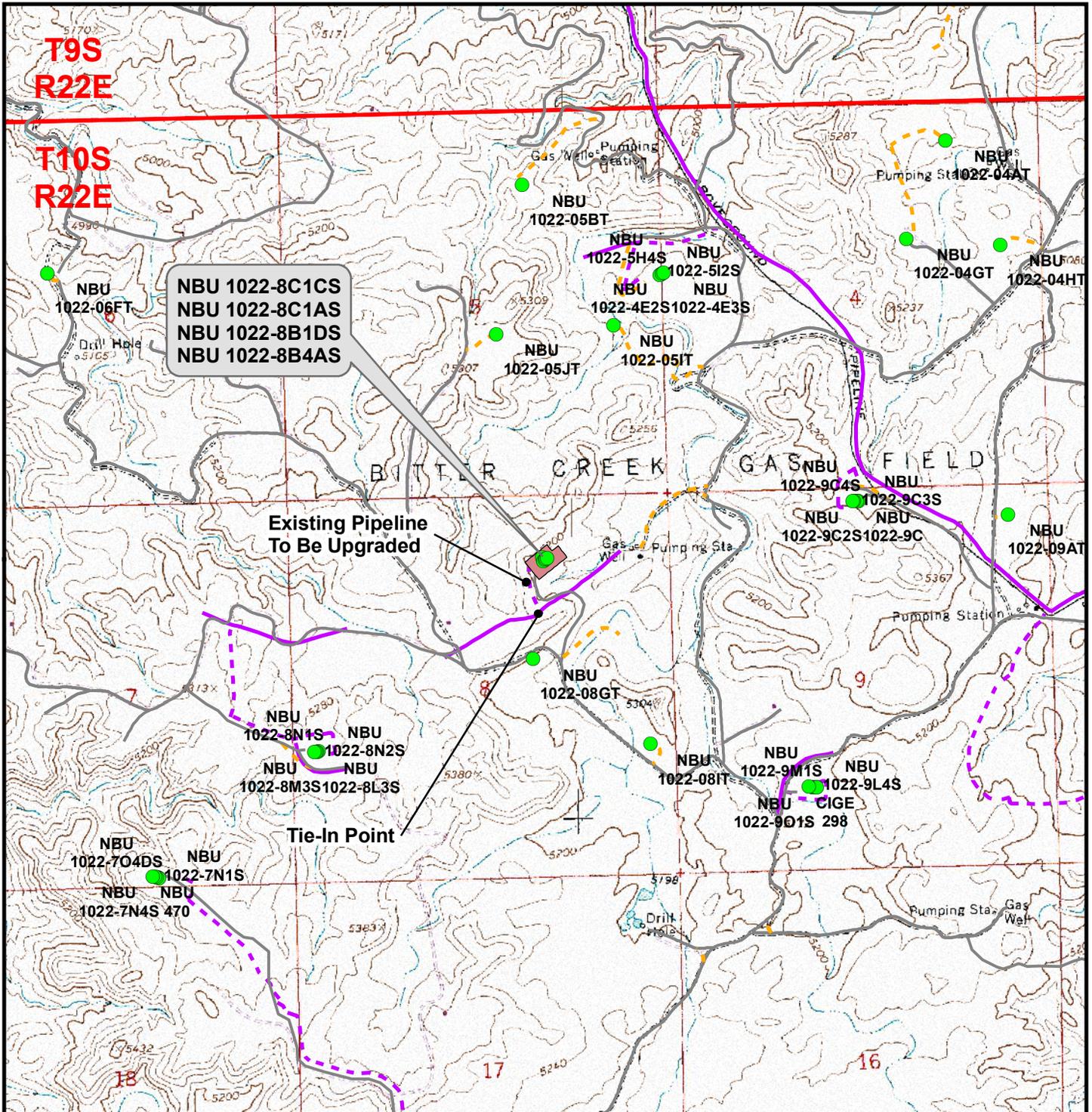
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**NBU 1022-8C1CS, NBU 1022-8C1AS,  
 NBU 1022-8B1DS & NBU 1022-8B4AS**  
 Topo C  
 Located In Section 8, T10S, 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: <b>11</b> of 13
Drawn: JELO	Date: 6 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: ±740ft  
 Proposed Pipeline Length Around Pad: ±660ft

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

**NBU 1022-8C1CS, NBU 1022-8C1AS,  
 NBU 1022-8B1DS & NBU 1022-8B4AS  
 Topo D**

**Located In Section 8, T10S, 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: 6 Feb 2009	<b>12</b> 12 of 13
Revised:	Date:	



PHOTO VIEW: TO LOCATION STAKE

CAMERA ANGLE: SOUTHWESTERLY

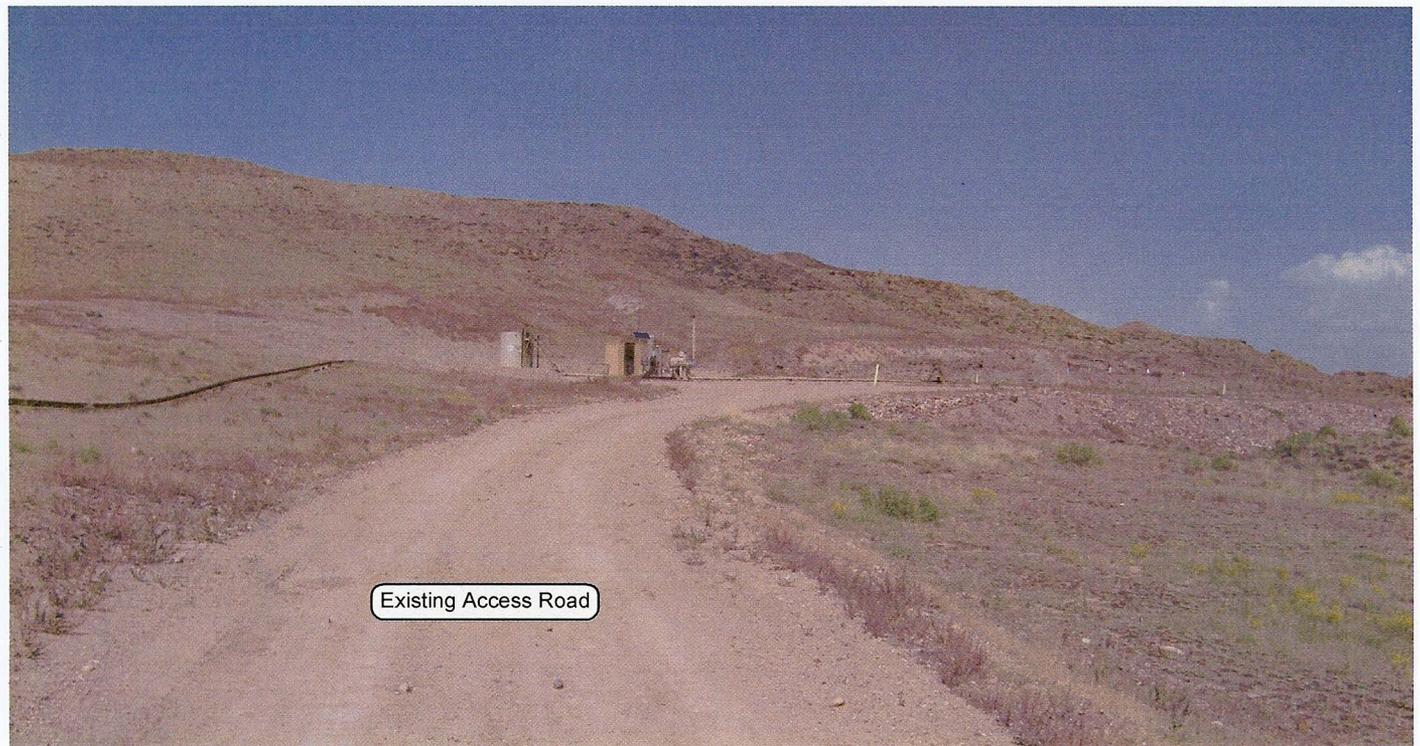


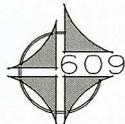
PHOTO VIEW: FROM EXISTING ROAD

CAMERA ANGLE: NORTHEASTERLY

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

1099 18th Street - Denver, Colorado 80202

NBU 1022-8C1CS, NBU 1022-8C1AS,  
NBU 1022-8B1DS & NBU 1022-8B4AS  
LOCATED IN SECTION 8, T10S, R22E,  
S.L.B.&M. UINTAH COUNTY, UTAH.



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

**LOCATION PHOTOS**

TAKEN BY: M.S.B.

DRAWN BY: M.W.W.

DATE TAKEN: 09-18-08

DATE DRAWN: 10-03-08

REVISED:

**Timberline**

(435) 789-1365

Engineering & Land Surveying, Inc.

38 WEST 100 NORTH VERNAL, UTAH 84078

SHEET

8

OF 13

**Kerr-McGee Oil & Gas Onshore, LP**  
**NBU 1022-8C1CS, NBU 1022-8C1AS, NBU 1022-8B1DS & NBU 1022-8B4AS**  
**Section 8, T10S, 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 DIRECTION ALONG THE GLEN BENCH ROAD APPROXIMATELY 5.2 MILES TO THE INTERSECTION OF THE BITTER CREEK ROAD (COUNTY B ROAD 4120). EXIT RIGHT AND PROCEED IN A SOUTHEASTERLY DIRECTION ALONG THE BITTER CREEK ROAD APPROXIMATELY 4.0 MILES TO A CLASS D COUNTY ROAD RUNNING NORTHEASTERLY. EXIT LEFT AND PROCEED IN A NORTHEASTERLY DIRECTION ALONG THE CLASS D COUNTY ROAD APPROXIMATELY 3.1 MILES TO A SECOND CLASS D COUNTY ROAD RUNNING NORTHWESTERLY. EXIT LEFT AND PROCEED NORTHWESTERLY ALONG THE SECOND CLASS D COUNTY ROAD APPROXIMATELY 0.8 MILES TO AN EXISTING SERVICE ROAD RUNNING NORTHERLY. EXIT RIGHT AND PROCEED IN A NORTHERLY DIRECTION ALONG THE SERVICE ROAD APPROXIMATELY 0.4 MILES TO THE EXISTING WELL PAD.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 55.4 MILES IN A SOUTHERLY DIRECTION.

**NBU 1022-8B1DS**

Surface: 931' FNL 1,709' FEL (NW/4NE/4)  
BHL: 367' FNL 1,518' FEL (NW/4NE/4)  
Mineral Lease: UTU 01196C

**NBU 1022-8B4AS**

Surface: 919' FNL 1,693' FEL (NW/4NE/4)  
BHL: 744' FNL 1,518' FEL (NW/4NE/4)  
Mineral Lease: UTU 01196C

**NBU 1022-8C1AS**

Surface: 943' FNL 1,725' FEL (NW/4NE/4)  
BHL: 102' FNL 2,415' FWL (NE/4NW/4)  
Mineral Lease: UTU 0466

**NBU 1022-8C1CS**

Surface: 955' FNL 1,742' FEL (NW/4NE/4)  
BHL: 418' FNL 2,252' FWL (NE/4NW/4)  
Mineral Lease: UTU 0466

Pad: NBU 1022-8B  
Sec. 8 T10S R22E

Uintah, Utah

**ONSHORE ORDER NO. 1**

***MULTI-POINT SURFACE USE & OPERATIONS PLAN  
SUBMITTED WITH SITE-SPECIFIC INFORMATION***

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) documents. An NOS was submitted on March 17, 2009 showing the surface locations in NW/4 NE/4 of Section 8 T10S R22E.

This Surface Use Plan of Operations (SUPO) or 13-point plan provides the site-specific information for the above-referenced wells. This information is to be incorporated by reference into the Master Development Plan (MDP) for Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee). The MDP is available upon request from the BLM-Vernal Field Office.

An on-site meeting was held on March 31, 2009. Present were:

- Verlyn Pindell, Dave Gordon – BLM;
- Kolby Kay – 609 Consulting, LLC
- Tony Kazeck, Raleen White, Sheila Upchego, Grizz Oleen, Hal Blanchard, Charles Chase and Jeff Samuels – Kerr-McGee.

**Directional Drilling:**

In accordance with Utah 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:**

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

**2. Planned Access Roads:**

*See MDP for additional details on road construction.*

No new access road is proposed. Please refer to the attached Topo Map B. No pipelines will be crossed with the new construction.

*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 and are typically shown on the attached Exhibits and Topo maps.*

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

Please refer to Topo Map C.

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

*See MDP for additional details on Existing and Proposed Facilities.*

This pad will expand the existing pad for the NBU 343, which is a shut-in well according to Utah Division of Oil, Gas and Mining (UDOGM) records.

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

**Approximately ±1,400' (±0.27 miles) of pipeline is proposed. The existing pipeline, as shown on Topo D, will be upgraded to accommodate anticipated production from the proposed wells. The upgraded pipeline will follow the same route as the existing pipeline.** Pipeline segments will be welded or zaplocked together on disturbed areas in or near the location, whenever possible, and dragged into place.

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

*See MDP for additional details on Location and Type of Water Supply.*

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

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

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

No water well is to be drilled on this lease.

6. **Source of Construction Materials:**

*See MDP for additional details on Source of Construction Materials.*

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

*See MDP for additional details on Methods of Handling Waste Materials.*

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:**

*See MDP for additional details on Ancillary Facilities.*

None are anticipated.

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

*See MDP for additional details on Well Site Layout.*

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

- Net wire (39-inch) 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.

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

*See MDP for additional details on Plans for Reclamation of the Surface.*

11. **Surface/Mineral Ownership:**

United States of America

Bureau of Land Management

170 South 500 East

Vernal, UT 84078

(435)781-4400

**12. Other Information:**

*See MDP for additional details on Other Information.*

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

Kathy Schneebeck Dulnoan  
Regulatory Analyst  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6007

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 Bureau of Land Management Nationwide Bond WYB000291.

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

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

August 13, 2009  
\_\_\_\_\_  
Date



## Kerr-McGee Oil & Gas Onshore LP

1099 18th Street, Suite 1800  
Denver, CO 80202-1918  
P.O. Box 173779  
Denver, CO 80217-3779  
720-929-6000

April 8, 2009

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

Re: Directional Drilling R649-3-11  
NBU 1022-8B4AS  
T10S-R22E  
Section 8: NWNE  
Surface: 919' FNL, 1693' FEL  
Bottom Hole: 744' FNL, 1518' FEL  
Uintah County, Utah

Dear Mrs. Mason:

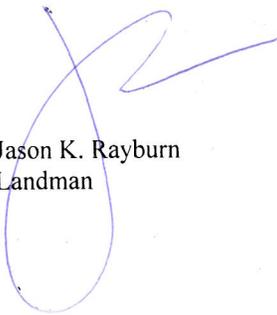
Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 1022-8B4AS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

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

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

  
Jason K. Rayburn  
Landman

CLASS I REVIEW OF KERR-MCGEE OIL AND GAS  
ONSHORE LP'S 55 PROPOSED WELL LOCATIONS  
IN TOWNSHIP 10S, RANGE 22E,  
SECTIONS 4, 7, 8, 9, 10, 18 AND 20,  
UINTAH COUNTY, UTAH

By:

Patricia Stavish

Prepared For:  
Bureau of Land Management  
Vernal Field Office  
and  
State of Utah  
School & Institutional Trust Lands Administration

Prepared Under Contract With:

Kerr-McGee Oil and Gas Onshore LP  
1368 South 1200 East  
Vernal, Utah 84078

Prepared By:

Montgomery Archaeological Consultants, Inc.  
P.O. Box 219  
Moab, Utah 84532

MOAC Report No. 08-321

February 20, 2009

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

Public Lands Policy Coordination Office  
Archaeological Survey Permit No. 117

**IPC #08-279**

# **Paleontological Reconnaissance Survey Report**

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**Survey of Kerr McGee's Proposed Directional Wells and Pipeline  
for "NBU #1022-8C1CS, 8C1AS, 8B1DS, &  
8B4AS" (Sec. 8, T 10 S, R 22 E)**

Archy Bench  
Topographic Quadrangle  
Uintah County, Utah

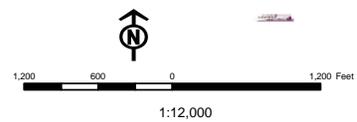
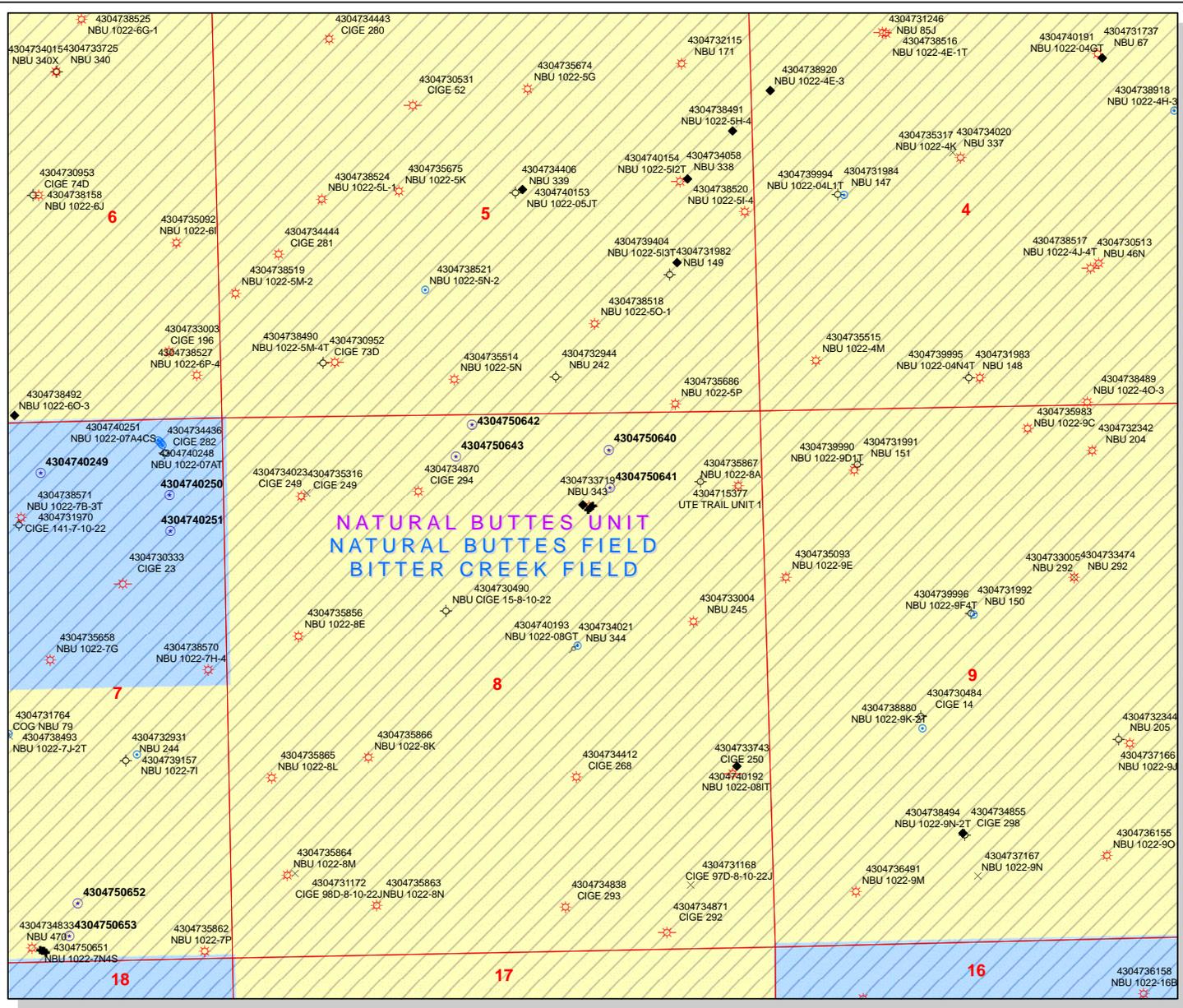
December 1, 2008

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

**API Number: 4304750641**  
**Well Name: NBU 1022-8B4AS**  
**Township 10.0 S Range 22.0 E Section 8**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason

<b>Units STATUS</b>	<b>Wells Query Events</b>
<ul style="list-style-type: none"> <li>ACTIVE</li> <li>EXPLORATORY</li> <li>GAS STORAGE</li> <li>NF PP OIL</li> <li>NF SECONDARY</li> <li>PI OIL</li> <li>PP GAS</li> <li>PP GEOTHERM</li> <li>PP OIL</li> <li>SECONDARY</li> <li>TERMINATED</li> </ul>	<ul style="list-style-type: none"> <li>&lt;-all other values&gt;</li> <li>GIS_STAT_TYPE</li> <li>&lt;Null&gt;</li> <li>APD</li> <li>DRL</li> <li>GI</li> <li>GS</li> <li>LA</li> <li>NEW</li> <li>OPS</li> <li>PA</li> <li>PW</li> <li>POW</li> <li>RET</li> <li>SGW</li> <li>SOW</li> <li>TA</li> <li>TW</li> <li>WD</li> <li>WI</li> <li>WS</li> </ul>
<b>Fields STATUS</b>	
<ul style="list-style-type: none"> <li>ACTIVE</li> <li>COMBINED</li> <li>Sections</li> </ul>	



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

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

IN REPLY REFER TO:  
3160  
(UT-922)

August 28, 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)		
43-047-50640	NBU 1022-8B1DS	Sec 08 T10S R22E 0931 FNL 1709 FEL
	BHL	Sec 08 T10S R22E 0367 FNL 1518 FEL
43-047-50641	NBU 1022-8B4AS	Sec 08 T10S R22E 0919 FNL 1693 FEL
	BHL	Sec 08 T10S R22E 0744 FNL 1518 FEL
43-047-50642	NBU 1022-8C1AS	Sec 08 T10S R22E 0943 FNL 1725 FEL
	BHL	Sec 08 T10S R22E 0102 FNL 2415 FWL
43-047-50643	NBU 1022-8C1CS	Sec 08 T10S R22E 0955 FNL 1742 FEL
	BHL	Sec 08 T10S R22E 0418 FNL 2252 FWL
43-047-50644	NBU 922-30C3S	Sec 30 T09S R22E 1253 FNL 0663 FWL
	BHL	Sec 30 T09S R22E 1238 FNL 1154 FWL
43-047-50645	NBU 922-30D3AS	Sec 30 T09S R22E 1232 FNL 0607 FWL
	BHL	Sec 30 T09S R22E 0680 FNL 0382 FWL
43-047-50646	NBU 921-30C3CS	Sec 30 T09S R21E 0783 FNL 0920 FWL
	BHL	Sec 30 T09S R21E 0993 FNL 1985 FWL
43-047-50647	NBU 921-30D2DS	Sec 30 T09S R21E 0747 FNL 0871 FWL
	BHL	Sec 30 T09S R21E 0460 FNL 0665 FWL

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50648	NBU 921-30D3DS	Sec 30 T09S R21E 0759 FNL 0887 FWL BHL Sec 30 T09S R21E 1152 FNL 0665 FWL
43-047-50649	NBU 921-30E2AS	Sec 30 T09S R21E 0771 FNL 0903 FWL BHL Sec 30 T09S R21E 1522 FNL 0665 FWL
43-047-50650	NBU 1022-7N1S	Sec 07 T10S R22E 0089 FSL 1920 FEL BHL Sec 07 T10S R22E 0895 FSL 1870 FWL
43-047-50651	NBU 1022-7N4S	Sec 07 T10S R22E 0097 FSL 1938 FEL BHL Sec 07 T10S R22E 0595 FSL 1740 FWL
43-047-50652	NBU 1022-7O4AS	Sec 07 T10S R22E 0081 FSL 1902 FEL BHL Sec 07 T10S R22E 0550 FSL 1560 FEL
43-047-50653	NBU 1022-7O4DS	Sec 07 T10S R22E 0074 FSL 1883 FEL BHL Sec 07 T10S R22E 0230 FSL 1650 FEL
43-047-50655	NBU 922-30D3DS	Sec 30 T09S R22E 1226 FNL 0588 FWL BHL Sec 30 T09S R22E 1314 FNL 0352 FWL
43-047-50656	NBU 922-30E2AS	Sec 30 T09S R22E 1246 FNL 0645 FWL BHL Sec 30 T09S R22E 1636 FNL 0352 FWL
43-047-50678	NBU 922-31G4BS	Sec 31 T09S R22E 2317 FSL 0188 FEL BHL Sec 31 T09S R22E 1994 FNL 1808 FEL
43-047-50679	NBU 922-31G4CS	Sec 31 T09S R22E 2316 FSL 0198 FEL BHL Sec 31 T09S R22E 2353 FNL 1796 FEL
43-047-50680	NBU 922-31I1AS	Sec 31 T09S R22E 2317 FSL 0178 FEL BHL Sec 31 T09S R22E 2483 FSL 0243 FEL
43-047-50681	NBU 922-31I1DS	Sec 31 T09S R22E 2317 FSL 0168 FEL BHL Sec 31 T09S R22E 2137 FSL 0264 FEL
43-047-50682	NBU 921-12J	Sec 12 T09S R21E 1959 FSL 2051 FEL
43-047-50684	NBU 1022-6I3AS	Sec 06 T10S R22E 1160 FSL 1584 FEL BHL Sec 06 T10S R22E 1684 FSL 1167 FEL
43-047-50685	NBU 1022-6J4CS	Sec 06 T10S R22E 1178 FSL 1593 FEL BHL Sec 06 T10S R22E 1535 FSL 1760 FEL
43-047-50686	NBU 1022-6O1BS	Sec 06 T10S R22E 1124 FSL 1567 FEL BHL Sec 06 T10S R22E 1197 FSL 1811 FEL

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50687	NBU 1022-6P1CS	Sec 06 T10S R22E 1142 FSL 1575 FEL BHL Sec 06 T10S R22E 0989 FSL 0541 FEL
43-047-50691	NBU 921-29A3AS	Sec 29 T09S R21E 0299 FNL 2630 FEL BHL Sec 29 T09S R21E 0700 FNL 0885 FEL
43-047-50692	NBU 921-29A3DS	Sec 29 T09S R21E 0303 FNL 2628 FWL BHL Sec 29 T09S R21E 1193 FNL 0885 FEL
43-047-50694	NBU 921-29A2AS	Sec 29 T09S R21E 0296 FNL 2611 FEL BHL Sec 29 T09S R21E 0209 FNL 0885 FEL
43-047-50693	NBU 921-29B2CS	Sec 29 T09S R21E 0307 FNL 2608 FWL BHL Sec 29 T09S R21E 0443 FNL 2635 FEL
43-047-50695	NBU 921-12N	Sec 12 T09S R21E 0441 FSL 2236 FWL
43-047-50698	NBU 921-19F	Sec 19 T09S R21E 2236 FNL 2285 FWL
43-047-50699	NBU 921-17C	Sec 17 T09S R21E 0656 FNL 2004 FWL
43-047-50700	NBU 921-17D	Sec 17 T09S R21E 0985 FNL 0418 FWL
43-047-50701	NBU 921-17G	Sec 17 T09S R21E 1500 FNL 2262 FEL
43-047-50702	NBU 921-17H	Sec 17 T09S R21E 2100 FNL 0553 FEL
43-047-50703	NBU 921-18P	Sec 18 T09S R21E 1080 FSL 0197 FEL
43-047-50704	NBU 921-19E	Sec 19 T09S R21E 2061 FNL 0842 FWL

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

/s/ Michael L. Coulthard

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

Fluid Chron

MCoulthard:mc:8-28-09

**WORKSHEET  
APPLICATION FOR PERMIT TO DRILL**

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**APD RECEIVED:** 8/17/2009

**API NO. ASSIGNED:** 43047506410000

**WELL NAME:** NBU 1022-8B4AS

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

**PHONE NUMBER:** 720 929-6156

**CONTACT:** Danielle Piernot

**PROPOSED LOCATION:** NWNE 8 100S 220E

**Permit Tech Review:**

**SURFACE:** 0919 FNL 1693 FEL

**Engineering Review:**

**BOTTOM:** 0744 FNL 1518 FEL

**Geology Review:**

**COUNTY:** UINTAH

**LATITUDE:** 39.96815

**LONGITUDE:** -109.45958

**UTM SURF EASTINGS:** 631557.00

**NORTHINGS:** 4425148.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 1 - Federal

**LEASE NUMBER:** UTU 01196C

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

**SURFACE OWNER:** 1 - Federal

**COALBED METHANE:** NO

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**RECEIVED AND/OR REVIEWED:**

- PLAT**
- Bond:** FEDERAL - WYB000291
- 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:**  
1 - Exception Location - dmason  
3 - Commingle - ddoucet  
4 - Federal Approval - dmason  
15 - Directional - dmason  
17 - Oil Shale 190-5(b) - dmason



JON M. HUNTSMAN, JR.  
*Governor*

GARY R. HERBERT  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-8B4AS  
**API Well Number:** 43047506410000  
**Lease Number:** UTU 01196C  
**Surface Owner:** FEDERAL  
**Approval Date:** 8/31/2009

**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

**Exception Location:**

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

**Commingle:**

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

**General:**

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

**Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

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.

**Notification Requirements:**

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

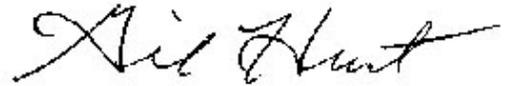
- Within 24 hours following the spudding of the well – contact Carol Daniels at 801-538-5284 (please leave a voicemail message if not available)  
OR  
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at <https://oilgas.ogm.utah.gov>

**Reporting Requirements:**

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

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

**Approved By:**



Gil Hunt  
Associate Director, Oil & Gas

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196C
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047506410000
<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> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 8/31/2010  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input checked="" type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>

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

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

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

**Date:** August 31, 2010  
**By:** 

<b>NAME (PLEASE PRINT)</b> Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 8/30/2010



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

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43047506410000**

**API:** 43047506410000

**Well Name:** NBU 1022-8B4AS

**Location:** 0919 FNL 1693 FEL QTR NWNE SEC 08 TWP 100S RNG 220E MER S

**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued:** 8/31/2009

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- If located on private land, has the ownership changed, if so, has the surface agreement been updated?  Yes  No
- Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?  Yes  No
- Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?  Yes  No
- Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?  Yes  No
- Has the approved source of water for drilling changed?  Yes  No
- Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?  Yes  No
- Is bonding still in place, which covers this proposed well?  Yes  No

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

**Signature:** Danielle Piernot

**Date:** 8/30/2010

**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE,

**Date:** August 31, 2010

**By:** 

# RECEIVED

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

AUG 19 2009  
me

FORM APPROVED  
OMB No. 1004-0136  
Expires July 31, 2010

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. UTU01196C
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator KERRMCGEE OIL&GAS ONSHORE LP Contact: DANIELLE E PIERNOT Email: Danielle.Piernot@anadarko.com		7. If Unit or CA Agreement, Name and No. 891008900A
3a. Address PO BOX 173779 DENVER, CO 80202-3779		8. Lease Name and Well No. NBU 1022-8B4AS
3b. Phone No. (include area code) Ph: 720-929-6156 Fx: 720-929-7156		9. API Well No. 43 017 50101
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNE 919FNL 1693FEL 39.96821 N Lat, 109.46028 W Lon At proposed prod. zone NWNE 744FNL 1518FEL 39.96869 N Lat, 109.45966 W Lon		10. Field and Pool, or Exploratory NATURAL BUTTES
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 25 MILES SOUTHEAST OF OURAY, UTAH		11. Sec., T., R., M., or Blk. and Survey or Area Sec 8 T10S R22E Mer SLB
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 744 FEET	16. No. of Acres in Lease 400.00	12. County or Parish UINTAH
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. APPROXIMATELY 380 FEET	19. Proposed Depth 9015 MD 9000 TVD	13. State UT
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5185 GL	22. Approximate date work will start 08/31/2009	17. Spacing Unit dedicated to this well
		20. BLM/BIA Bond No. on file WYB000291
		23. Estimated duration 60-90 DAYS

### 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature (Electronic Submission)	Name (Printed/Typed) DANIELLE E PIERNOT Ph: 720-929-6156	Date 08/17/2009
Title REGULATORY ANALYST		
Approved by (Signature) 	Name (Printed/Typed) Jerry Kenczka	Date APR 07 2011
Title Assistant Field Manager Lands & Mineral Resources	Office VERNAL FIELD OFFICE	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Electronic Submission #73328 verified by the BLM Well Information System  
For KERRMCGEE OIL&GAS ONSHORE LP, sent to the Vernal



# RECEIVED

APR 13 2011

DIV. OF OIL, GAS & MINING

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

095XS 03500

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UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
VERNAL FIELD OFFICE

170 South 500 East

VERNAL, UT 84078

(435) 781-4401



**CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL**

Company:	Kerr McGee Oil & Gas Onshore, LP	Location:	NWNE, Sec. 8, T10S, R22E (S) NWNE, Sec. 8, T10S, R22E (B)
Well No:	Bonanza 1022-8B4AS	Lease No:	UTU-01196C
API No:	43-047-50641	Agreement:	Natural Buttes Unit

OFFICE NUMBER: (435) 781-4400

OFFICE FAX NUMBER: (435) 781-3420

**A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR  
FIELD REPRESENTATIVE TO INSURE COMPLIANCE**

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. **This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.**

**NOTIFICATION REQUIREMENTS**

Location Construction (Notify Environmental Scientist)	- Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify Environmental Scientist)	- Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	- Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to running casing and cementing all casing strings to: <a href="mailto:ut_vn_opreport@blm.gov">ut_vn_opreport@blm.gov</a> .
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	- Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

***SURFACE USE PROGRAM  
CONDITIONS OF APPROVAL (COAs)***

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO<sub>x</sub> per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO<sub>x</sub> per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontologic material before construction can continue.

**SITE SPECIFIC COAs:**

- During operation, if any vertebrate paleontological resources are discovered, in accordance with **Section 6 of Form 3100-11** and **43 CFR 3162.1**, all operations affecting such sights shall be immediately suspended, and all discoveries shall be left intact until authorized to proceed by the Authorized Officer. The appropriate Authorized Officer of the Vernal BLM office shall be notified within 48 hours of the discovery, and a decision as to the preferred alternative/course of action will be rendered.
- Kerr McGee will adhere to all applicant committed conservation measures and conservation recommendations that are stated in the USFWS's "Final Biological Opinion for the Anadarko Petroleum Corporation Natural Buttes Unit and Bonanza Area Natural Gas Development Project.
- The operator will follow the Green River District Reclamation Guidelines for Reclamation.
- The operator will control noxious weeds along the well pad, access road, and the pipeline route by spraying or mechanical removal. On BLM administered land, a Pesticides Use Proposal (PUP) will be submitted and approved prior to the application of herbicides or pesticides or possibly hazardous chemicals.

***DOWNHOLE PROGRAM  
CONDITIONS OF APPROVAL (COAs)***

**SITE SPECIFIC DOWNHOLE COAs:**

- A copy of Kerr McGee's Standard Operating Practices (SOP version: dated 7/17/08 and approved 7/28/08) shall be on location.

**All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to.** The following items are emphasized:

**DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS**

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.
- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- **Cement baskets shall not be run on surface casing.**
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.

- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- **Please submit an electronic copy of all other logs run on this well in LAS format to UT\_VN\_Wellogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.**
- There shall be no deviation from the proposed drilling, completion, and/or work-over program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

## **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at [www.ONRR.gov](http://www.ONRR.gov).
- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:
  - Operator name, address, and telephone number.
  - Well name and number.
  - Well location (¼¼, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - Unit agreement and/or participating area name and number, if applicable.
  - Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196C
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well		<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047506410000
<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> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S		<b>COUNTY:</b> UINTAH
		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 7/12/2011  <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:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input checked="" type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>Kerr-McGee Oil &amp; Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.</p>		
		<p><b>Approved by the Utah Division of Oil, Gas and Mining</b></p> <p><b>Date:</b> <u>07/12/2011</u></p> <p><b>By:</b> </p>
<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 7/12/2011



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

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43047506410000**

**API:** 43047506410000

**Well Name:** NBU 1022-8B4AS

**Location:** 0919 FNL 1693 FEL QTR NWNE SEC 08 TWP 100S RNG 220E MER S

**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued:** 8/31/2009

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- If located on private land, has the ownership changed, if so, has the surface agreement been updated?  Yes  No
  
- Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?  Yes  No
  
- Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?  Yes  No
  
- Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?  Yes  No
  
- Has the approved source of water for drilling changed?  Yes  No
  
- Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?  Yes  No
  
- Is bonding still in place, which covers this proposed well?  Yes  No

**Signature:** Andy Lytle

**Date:** 7/12/2011

**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

<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> UTU 01196C	
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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.	
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<b>1. TYPE OF WELL</b> Gas Well	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	
<b>9. API NUMBER:</b> 43047506410000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 <span style="float: right;"><b>PHONE NUMBER:</b> 720 929-6511</span>	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 1/26/2012	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
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	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

MIRU TRIPPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'.  
 RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD  
 WELL ON 01/26/2012 AT 1630 HRS.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 January 30, 2012

<b>NAME (PLEASE PRINT)</b> Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/30/2012	

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
 Submitted By SHEILA WOPSOCK Phone Number 435.781.7024  
 Well Name/Number NBU 1022-8B4AS  
 Qtr/Qtr NW/NE Section 8 Township 10S Range 22E  
 Lease Serial Number UTU-01196C  
 API Number 4304750641

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

Date/Time 01/26/2012 1400 HRS. AM  PM

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

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

Date/Time 02/10/2012 0800 HRS AM  PM

BOPE

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

RECEIVED  
 JAN 25 2012  
 DIV. OF OIL, GAS & MINING

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

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT  
LOVEL YOUNG AT 435.781.7051 FOR MORE

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

FORM 6

**ENTITY ACTION FORM**

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

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304750641	NBU 1022-8B4AS		NWNE	8	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
A	99999	2900	1/26/2012		1/31/12		
Comments: MIRU TRIPPLE A BUCKET RIG. WSMVD SPUD WELL ON 01/26/2012 AT 1630 HRS. BHL NWNE							

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		
Comments:							

Well 3

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

**ACTION CODES:**

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

SHEILA WOPSOCK

Name (Please Print)

Signature

REGULATORY ANALYST

Title

1/30/2012

Date

**RECEIVED**

JAN 30 2012

DIV. OF OIL, GAS & MINING

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
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<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS	
<b>9. API NUMBER:</b> 43047506410000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>	
<b>1. TYPE OF WELL</b> Gas Well	<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	
<b>COUNTY:</b> Uintah	
<b>STATE:</b> UTAH	

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
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<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 2/13/2012	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
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	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

MIRU AIR RIG ON FEBRUARY 11, 2012. DRILLED SURFACE HOLE TO 2435'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.

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

**FOR RECORD ONLY**

February 13, 2012

<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> 2/13/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196C
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047506410000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6514
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES  <b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: <b>3/13/2012</b>  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>

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The operator requests approval to deepen the well to the Blackhawk formation (part of the Mesaverde Group). The Operator also requests approval for closed loop drilling option, a surface casing change, and a production casing change. All other aspects of the previously approved drilling plan will not change. Please see the attachment. Thank you.

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

**Date:** March 22, 2012

**By:** *Derek Quist*

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 3/13/2012	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-8B4AS**

Surface: 919 FNL / 1693 FEL      NWNE  
 BHL: 744 FNL / 1518 FEL      NWNE

Section 8 T10S R22E

Unitah County, Utah  
 Mineral Lease: UTU-01196C

**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	1,165'	
Birds Nest	1,546'	Water
Mahogany	1,995'	Water
Wasatch	4,390'	Gas
Mesaverde	6,884'	Gas
Sego	9,040'	Gas
Castlegate	9,125'	Gas
Blackhawk	9,551'	Gas
TVD	10,151'	
TD	10,165'	

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

Please refer to the attached Drilling Program

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

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

6. **Evaluation Program:**

Please refer to the attached Drilling Program

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 10151' TVD, approximately equals  
6,700 psi (0.66 psi/ft = actual bottomhole gradient)

---

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

Maximum anticipated surface pressure equals approximately 4,513 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

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

**8. Anticipated Starting Dates:**

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

**9. Variances:**

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

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

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

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

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

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

**Background**

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

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may

be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

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

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

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

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

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

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

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

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

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

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

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

**Variance for FIT Requirements**

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

**Conclusion**

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

10. **Other Information:**

Please refer to the attached Drilling Program.





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

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	DQX
								TENSION	
CONDUCTOR	14"	0-40'							
SURFACE	8-5/8"	0 to 2,450	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
						2.20	1.64	5.79	N/A
PRODUCTION	4-1/2"	0 to 5,000	11.60	HCP-110	DQX	10,690	8,650	279,000	367,174
						1.19	1.26		3.89
						1.19	1.26	5.81	

**Surface Casing:**

(Burst Assumptions: TD = 13.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

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

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi) 0.66 psi/ft = bottomhole gradient

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

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE Option 2	LEAD	1,950'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	180	35%	11.00	3.82
	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	3,885'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	300	35%	12.00	3.38
	TAIL	6,280'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,480	35%	14.30	1.31

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well. 1 centralizer on the first 3 joints and one every third joint thereafter.

**ADDITIONAL INFORMATION**

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

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

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

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

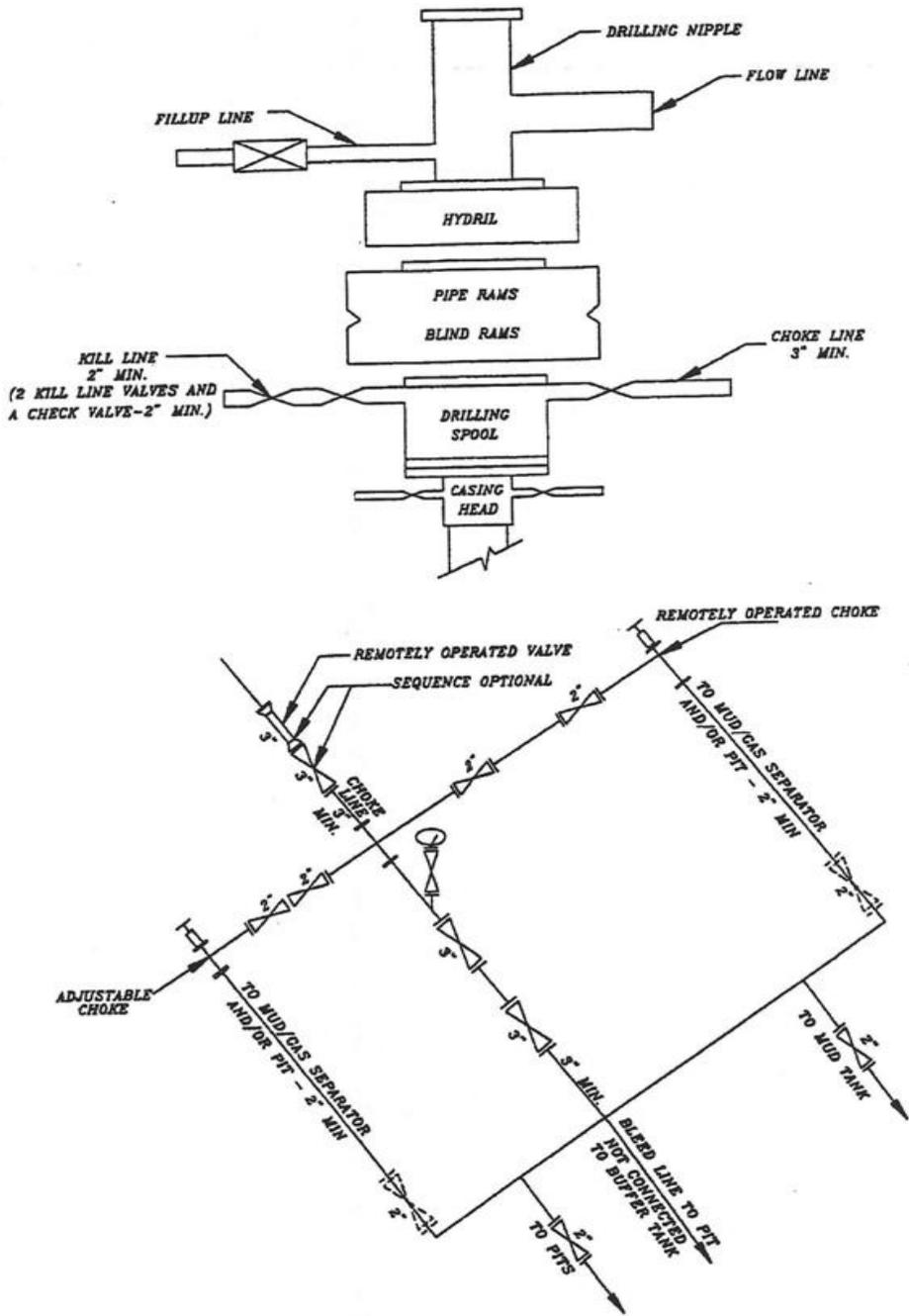
DRILLING ENGINEER: \_\_\_\_\_  
Nick Spence / Danny Showers / Chad Loesel

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

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

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

### EXHIBIT A NBU 1022-8B4AS



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

Requested Drilling Options:

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

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

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	
<b>1. TYPE OF WELL</b> Gas Well	<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196C
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>PHONE NUMBER:</b> 720 929-6511	<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	<b>9. API NUMBER:</b> 43047506410000
	<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"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 4/21/2012	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input checked="" type="checkbox"/> OTHER	OTHER: ACTS PIT - RIG REL.

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

MIRU ROTARY RIG. FINISHED DRILLING FROM 2435' TO 10,180' ON APRIL 19, 2012. RAN 4-1/2" 11.6# P-110 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED SST RIG 54 ON APRIL 21, 2012 @ 10:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES. THE PIT ON THIS LOCATION WILL BE REFURBISHED AND UTILIZED AS PART OF THE ACTS SYSTEM.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 May 04, 2012**

<b>NAME (PLEASE PRINT)</b> Gina Becker	<b>PHONE NUMBER</b> 720 929-6086	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 4/24/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU 01196C	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-8B4AS	
<b>9. API NUMBER:</b> 43047506410000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> Uintah	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

<b>1. TYPE OF WELL</b> Gas Well	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0919 FNL 1693 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 08 Township: 10.0S Range: 22.0E Meridian: S	

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 6/5/2012	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input checked="" type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON JUNE 5, 2012 AT 1430 HOURS. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 June 05, 2012

<b>NAME (PLEASE PRINT)</b> Jenn Hawkins	<b>PHONE NUMBER</b> 720 929-6247	<b>TITLE</b> Staff Operations Specialist III
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/5/2012	

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

5. Lease Serial No.  
UTU01196C

1a. Type of Well  Oil Well  Gas Well  Dry  Other  
b. Type of Completion  New Well  Work Over  Deepen  Plug Back  Diff. Resvr.  
Other \_\_\_\_\_

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.  
UTU63047A

2. Name of Operator  
KERR MCGEE OIL & GAS ONSHORE  
Contact: CARA MAHLER  
Mail: cara.mahler@anadarko.com

8. Lease Name and Well No.  
NBU 1022-8B4AS ✓

3. Address 1099 18TH STREET, SUITE 1800  
DENVER, CO 80202

3a. Phone No. (include area code)  
Ph: 720-929-6029

9. API Well No.  
43-047-50641

4. Location of Well (Report location clearly and in accordance with Federal requirements)\*  
At surface NWNE 919FNL 1693FEL 39.968211 N Lat, 109.460280 W Lon  
At top prod interval reported below NWNE 730FNL 1519FEL  
At total depth NWNE 754FNL 1444FEL *BHL by HSM*

10. Field and Pool, or Exploratory  
NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey  
or Area Sec 8 T10S R22E Mer SLB

12. County or Parish  
UINTAH

13. State  
UT

14. Date Spudded  
01/26/2012

15. Date T.D. Reached  
04/19/2012

16. Date Completed  
 D & A  Ready to Prod.  
06/05/2012

17. Elevations (DF, KB, RT, GL)\*  
5183 GL

18. Total Depth: MD 10180  
TVD 10164

19. Plug Back T.D.: MD 10136  
TVD 10120

20. Depth Bridge Plug Set: MD  
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)  
BHV-SD/DSN/ACTR-CBL/GR/CCL/TEMP-RCBL

22. Was well cored?  No  Yes (Submit analysis)  
Was DST run?  No  Yes (Submit analysis)  
Directional Survey?  No  Yes (Submit analysis)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
20.000	14.000 STL	36.7	0	40		28			
11.000	8.625 IJ-55	28.0	0	2416		600		0	
7.875	4.500 P-110	11.6	0	10180		2085		0	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.375	8649							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) MESAVERDE	7032	9730	7032 TO 9730	0.360	211	OPEN
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
7032 TO 9730	PUMP 11,984 BBLs SLICK H2O & 273,481 LBS 30/50 OTTAWA SAND

RECEIVED  
JUL 31 2012

DIV. OF OIL, GAS & MINING

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
06/05/2012	06/12/2012	24	▶	0.0	2249.0	240.0			FLOWS FROM WELL
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
20/64	SI 1640	2355.0	▶	0	2249	240		PGW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			▶						
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
	SI		▶						

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

29. Disposition of Gas(Sold, used for fuel, vented, etc.)  
SOLD

30. 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.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				GREEN RIVER	1172
				BIRD'S NEST	1544
				MAHOGANY	1899
				WASATCH	4421
				MESAVERDE	6816

32. Additional remarks (include plugging procedure):

A remedial top down cement job was performed 5/14/12 with 490 sx cement to bring cement to surface. A CBL log was run after remedial work was done. The first 164? of the surface hole was drilled with a 12 ?? bit. The remainder of surface hole was drilled with an 11? bit. DQX csg was run from surface to 5092'; LTC csg was run from 5092? to 10,181?. Attached is the chronological well history, perforation report & final survey.

33. Circle enclosed attachments:

- 1. Electrical/Mechanical Logs (1 full set req'd.)
- 2. Geologic Report
- 3. DST Report
- 4. Directional Survey
- 5. Sundry Notice for plugging and cement verification
- 6. Core Analysis
- 7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

**Electronic Submission #144098 Verified by the BLM Well Information System.  
For KERR MCGEE OIL & GAS ONSHORE L, sent to the Vernal**

Name (please print) CARA MAHLER Title AUTHORIZED REPRESENTATIVE

Signature (Electronic Submission) Date 07/27/2012

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\***

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4S GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
2/11/2012	4:00 - 9:00	5.00	MIRU	01	C	P		MIRU /// CHANGE OUT #2 PUMP WHILE SKID RIG /// HOWCROFT 2 TRUCKS /// CAPSTAR 5 HANDS & 1 FORKLIFT /// DERRICK IN AIR @08:30 /// RELEASE TRUCKS @ 09:00
	9:00 - 10:00	1.00	PRPSPD	14	A	P		WELD ON CONDUCTOR & RIG UP FLOWLINE
	10:00 - 11:30	1.50	PRPSPD	08	A	Z		TEAR APART CSG RUNNING TOOL & REPAIR /// REPAIR SWIVEL LOCK
	11:30 - 12:30	1.00	PRPSPD	06	A	P		PU 12.25" SURFACE BIT & 8" MM
	12:30 - 13:30	1.00	DRLSUR	02	B	P		SPUD 12.25" SURFACE HOLE F/ 40'- 164'
	13:30 - 14:00	0.50	DRLSUR	06	A	P		TOOH & LD 12.25" BIT
	14:00 - 15:30	1.50	DRLSUR	06	A	P		PU 11" BIT & DIR TOOLS & SCRIBE /// TIH
	15:30 - 0:00	8.50	DRLSUR	02	D	P		DIR. DRILL 11" SURFACE HOLE F/ 164'- 1312' /// ROP= 1148' @ 135 FPH /// WOB= 24-28K /// RPM=55/110 /// SPP= 1300/1000 /// GPM= 650 /// LOST 75% RETURNS @ 750' /// AIR ON @ 800 CFM
2/12/2012	0:00 - 11:30	11.50	DRLSUR	02	D	P		DIR. DRILL 11" SURFACE HOLE F/1312'-2435' /// ROP= 1123' @ 98 FPH /// WOB= 24-28K /// RPM=55/110 /// SPP= 1300/1000 /// GPM= 650 /// LOST 75% RETURNS @ 750' /// AIR ON @ 800 CFM
	11:30 - 12:00	0.50	DRLSUR	07	A	P		SERVICE RIG & EQUIPMENT
	12:00 - 12:30	0.50	DRLSUR	05	A	P		C&C FOR 8-5/8" CSG
	12:30 - 15:00	2.50	DRLSUR	06	A	P		LDDS & DIR TOOLS
	15:00 - 17:00	2.00	CSG	12	A	P		PJSM // RUN 54 JT'S_28#_J-55_LT&C CSG / SHOE SET AT 2407' /// BAFFLE @ 2361'
	17:00 - 17:30	0.50	CSG	05	A	P		CIRC 8-5/8" SURFACE CSG @ 2407'
	17:30 - 18:30	1.00	CSG	12	E	P		PJSM /// TEST LINES TO 2000 PSI /// PUMP 140 BBL'S WATER /// PUMP 20 BBL'S GEL WATER FLUSH /// TAIL= 300 SX CLASS G CMT @ 15.8 WT & 1.15 YIELD // DROP PLUG & DISPLACE W/ 146 BBL'S WATER /// PLUG DN @ 18:36 2/12/2012 /// BUMP PLUG W/ 620 PSI /// FINAL LIFT = 410 PSI /// CHECK FLOATS - HELD W/ 1 BBL BACK /// NO CIRC & NO CMT TO SURFACE
	18:30 - 19:00	0.50	CSG	12	E	P		PUMP 1st TOP OUT W/ 150 SX CLSAA G CMT @ 15.8 WT & 1.15 YIELD
	19:00 - 20:00	1.00	CSG	14	A	P		CUT OFF CONDUCTOR & HANG OFF 8.625" SURFACE CSG
	20:00 - 21:30	1.50	CSG	12	E	P		PUMP 2nd TOP OUT W/ 150 SX CMT @ 15.8 WT & 1.15 YIELD /// NO CMT TO SURFACE
	21:30 - 0:00	2.50	CSG	01	E	P		RIG DN & CLEAN PITS /// RELEASE RIG @ 00:00 2/13/2012 TO THE NBU 1022-9B4CS
4/14/2012	19:00 - 21:00	2.00	DRLPRO	01	C	P		RIG DOWN & SKID RIG / RIG UP / SST HAD EXTRA 5 MAN CREW FOR RIG SKID
	21:00 - 22:00	1.00	DRLPRO	14	A	P		NIPPLE UP BOP & FLOWLINE
	22:00 - 0:00	2.00	DRLPRO	14	A	P		NIPPLE UP SWACO / PULL BEARING PACK ON ROTATING HEAD.

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

Well: NBU 1022-8B4AS GREEN		Spud Date: 2/11/2012	
Project: UTAH-UINTAH		Site: NBU 1022-8B PAD	Rig Name No: SST 54/54, CAPSTAR 310/310
Event: DRILLING		Start Date: 11/15/2011	End Date: 4/21/2012
Active Datum: RKB @5,201.01ft (above Mean Sea Level)		UWM: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
4/15/2012	0:00 - 3:30	3.50	DRLPRO	15	A	P		SET TEST PLUG & TEST BOPE / ANNULAR 250 LOW 2500 PSI HIGH / PIPE & BLIND RAMS, KILL LINE VAVLES, CHOKE LINE VALVES, CHOKE LINE, CHOKE MANIFOLD VALVES, FLOOR VALVES, & IBOP 250 LOW 5000 PSI / HIGH PULLED TEST PLUG & TESTED CASING TO 1500 PSI FOR 30 MINUTES. FUNCTION BOTH CHOKES WITH PRESSURE.
	3:30 - 4:00	0.50	DRLPRO	15	A	P		INSTALL WEAR BUSHING
	4:00 - 5:00	1.00	DRLPRO	15	A	P		INSTALL NEW BEARING PACK IN ROTATING HEAD & TEST SWACO PMD EQUIPMENT TO 1000 PSI.
	5:00 - 7:00	2.00	DRLPRO	06	A	P		PICK UP MOTOR & BHA / SCRIBE MWD & TRIP IN HOLE / TAG CEMENT @ 2323'
	7:00 - 8:30	1.50	DRLPRO	02	F	P		DRLG SHOE TRACK 2323' TO 2421' / CLEAN OUT TO 2435'.
	8:30 - 16:30	8.00	DRLPRO	02	D	P		DRLG ROTATE/SLIDE/SURVEY 2435' TO 3763' / 1328' @ 166 FPH WOB 24K TD RPM 70 MM RPM 96 PUMPING 598 GPM / 170SPM PSI ON/OFF 2425/2175 / DIFF 250 TORQUE ON/OFF 7550/6830 MUD WT 8.4 / VIS 27 NOV RUNNING BOTH CENTRIFUGES ON DEWATER SWACO OFF LINE PU 125 / SO 95 / ROT 105 SLIDE 33' IN 15 MINUTES = 3% OF FOOTAGE DRILLED / 2.5% OF TIME DRILLED. ROTATE 1295' IN 465 MINUTES = 97% OF FOOTAGE DRILLED / 97.5% OF TIME DRILLED MIX 40 VIS/3% LCM SWEEPS EACH 500' NO FLARE 20' NORTH & 7' WEST OF THE LINE
	16:30 - 17:00	0.50	DRLPRO	07	A	P		RIG SERVICE / FUNCTION BOP
	17:00 - 0:00	7.00	DRLPRO	02	D	P		DRLG ROTATE/SLIDE/SURVEY 3763' TO 4821' / 1058' @ 151.1 FPH WOB 24K TD RPM 70 MM RPM 96 PUMPING 598 GPM / 170 SPM PSI ON/OFF 2450/2100 / DIFF 350 TORQUE ON/OFF 7550/6830 MUD WT 8.4 / VIS 27 NOV RUNNING RUNNING BOTH CENTRIFUGES ON DEWATER SWACO OFF LINE PU 132 / SO 105 / ROT 132 SLIDE 74' IN 50 MINUTES = 7% OF FOOTAGE DRILLED, 11.9% OF TIME DRILLED ROTATE 984' IN 370 MINUTES = 93.01% OF FOOTAGE DRILLED, 88.1% OF TIME DRILLED. MIX 40 VIS/3% LCM PILLS & SWEEP HOLE EVERY 500'. NO FLARE 14' NORTH & 7' WESST OF THE LINE.

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

Spud Date: 2/11/2012

Well: NBU 1022-8B4AS GREEN

Project: UTAH-UJINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NWN/E/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
4/16/2012	0:00 - 9:00	9.00	DRLPRC	02	D	P		DRLG ROTATE/SLIDE/SURVEY 4821' TO 6242' 1421' @ 157.9 FPH WOB 254K TD RPM 70 MM RPM 96 PUMPING 598 PGM / 170SPM PSI ON/OFF 2530/2330 / DIFF 200 TORQUE ON/OFF 10620/9450 MUD WT 8.9 / VIS 29 NOV RUNNING BOTH CENTRIFUGES ON DEWATER SWACO OFF LINE PU 150 / SO 125 / ROT 140 SLIDE 45' IN 30 MINUTES = 3% OF FOOTAGE & 5% OF TIME DRILLED. PUMP 40 VIS / 3% LCM SWEEPS EACH 500' NO FLARE 12' NORTH & 8' WEST OF THE LINE
	9:00 - 9:30	0.50	DRLPRC	07	A	P		RIG SERVICE / FUNCTION BOP
	9:30 - 11:00	1.50	DRLPRC	02	D	P		DRLG ROTATE/SURVEY 6242' TO 6433' 191' @ 127.3 FPH WOB 24K TD RPM 70 MM RPM 96 PUMPING 598 GPM / 170 SPM PSI ON/OFF 2530/2330 / DIFF 200 TORQUE ON/OFF 10620/9460 MUD WT 8.9 / VIS 31 NOV RUNNING BOTH CENTRIFUGES ON DEWATER SWACO OFF LINE PU 150 / SO 125 / ROT 140 NO SLIDE ROTATE 191' IN 1.5 HRS = 127.3 FPH NO FLARE 12' NORTH & 7' WEST OF THE LINE
	11:00 - 11:30	0.50	DRLPRC	08	A	Z		RIG REPAIR / REPLACE PLUG IN ON MAIN LINE TO DOGHOUSE

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	11:30 - 0:00	12.50	DRLPRC	02	D	P		DRLG ROTATE/SLIDE/SURVEY 6433' TO 7488' 1055' @ 84.4 FPH WOB 24K TD RPM 70 / 60 MM RPM 96 / 90 PUMPING 563 GPM / 160 SPM PSI ON/OFF 2615/2330 / DIFF 285 TORQUE ON/OFF 9670/9460 MUD WT 9.2 / VIS 35 NOV RUNNING BOTH CENTRIFUGES CONVENTIONAL. SWACO ON LINE @ 6908' HOLDING 208 PSI BACK PRESSURE WHILE DRILLING, 440 SHUT IN PSI ON CONNECTIONS FOR SPLINTERING SHALE & LARGER CUTTINGS PU 190 / SO 140 / ROT 150 SLIDE 70' IN 70 MINUTES = 5.95% OF FOOTAGE DRILLED & 9.46% OF TIME DRILLED ROTATE 1178' IN 740 MINUTES = 94.05% OF FOOTAGE DRILLED & 90.54% OF TIME DRILLED NO FLARE
4/17/2012	0:00 - 8:00	8.00	DRLPRO	02	D	P		21' NORTH AND 7' SOUTH OF THE LINE. DRLG ROTATE/SURVEY 7488' TO 8102' / 614' @ 76.8 FPH WOB 24K TD RPM 60 MM RPM 90 PUMPING 563 GPM / 160 SPM PSI ON/OFF 2820/2670 / DIFF 150 TORQUE ON/OFF 9520/8810 MUD WT 9.5 / VIS 35 NOV RUNNING ONE CENTRIFUGE CONVENTIONAL & ONE ON DEWATER. SWACO HOLDING 200 PSI BACK PRESSURE WHILE DRILLING, 400 SHUT IN ON CONNECTION. PU 190 / SO 140 / ROT 150 NO SLIDE. ROTATE 100% / 614' @ 76.8 FPH HOLE SEEPING 10 TO 15 BBL/HR / MIXING 10 SX LCM PER HR. NO FLARE
	8:00 - 8:30	0.50	DRLPRO	05	C	P		22' NORTH & 3' WEST OF THE LINE CIRCULATE & CONDITION / PUMP DRY JOB
	8:30 - 12:00	3.50	DRLPRO	06	E	P		WPER TRIP TO 4000' / NO DRAG / WASH 90' TO BOTTOM / 5' OF FILL

**US ROCKIES REGION  
Operation Summary Report**

Spud Date: 2/11/2012

Well: NBU 1022-8B4AS GREEN

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	12:00 - 15:30	3.50	DRLPRO	02	D	P		DRLG ROTATE/SURVEY 8102' TO 8435' 333' @ 95.1 FPH WOB 20K TD RPM 60 MM RPM 90 PUMPING 563 GPM / 160 SPM PSI ON/OFF 3050/2700 / DIFF 350 TORQUE ON/OFF 11320/9620 MUD WT 9.7 / VIS 35 / TALKED W/ KENNY G. NOV RUNNING ONE CENTRFUGE CONVENTIONAL / ONE CENTRIFUGE DOWN FOR REPAIR SWACO OFF LINE NO SLIDE ROTATE 100% / 333' @ 95.1 FPH HOLE SEEPING 15 BBL/HR / MIXING 10 SX LCM/HR NO FLARE 17' NORTH & 5' EAST OF THE LINE
	15:30 - 16:00	0.50	DRLPRO	07	A	P		RIG SERVICE / FUNCTION BOP
	16:00 - 0:00	8.00	DRLPRO	02	D	P		DRLG ROTATE/SLIDE/SURVEY 8435' TO 8858' / 423' @ 52.9 FPH WOB 18K TD RPM 70 MM RPM 90 PUMPING 563 GPM / 160 SPM PSI ON/OFF 3150/2900 DIFF 250 TORQUE ON/OFF 12,810/ 10,800 MUD WT 9.6 / VIS 46 NOV OFF LINE SWACO HOLDING 200 PSI BACK PRESSURE WHILE DRILLING / 300 SHUT IN ON CONNECTIONS SLIDE 25' IN 50 MINUTES = 5.9% OF FOOTAGE DRILLED / 11.1% OF TIME DRILLED. ROTATE 398' IN 400 MINUTES = 94.1% OF FOOTAGE DRILLED / 88.9% OF TIME DRILLED HOLE SEEPING 15 BBL/HR / MIXING 20 SX LCM / HR 15' FLARE STARTING @ 8531' 15' NORTH & 17' EAST OF THE LINE
4/18/2012	0:00 - 14:30	14.50	DRLPRO	02	D	P		DRLG ROTATE/SURVEY 8853' TO 9578' / 720' @ 49.7 FPH WOB 18 TO 22K TD RPM 50 TO 60 MM RPM 90 PUMPING 563 GPM / 160 SPM PSI ON/OFF 3230/3030 / DIFF 200 TORQUE ON/OFF 13870/11980 MUD WT 9.9 / VIS 50 NOV OFF LINE / ONE CENTRIFUGE BROKEN SWACO HOLDING 260 PSI BACK PRESSURE WHILE DRILLING / 380 PSI SHUT IN ON CONNECTIONS PU 225 / SO 165 / ROT 185 NO SLIDE ROTATE 720' IN 14.5 HRS = 49.7 FPH HOLE SEEPING 10 BBL/HR . BUILD VOLUME FROM STORAGE / MIXING 15 SX LCM/HR 6 TO 10' FLARE 5' NORTH & 50' EAST OF THE LINE

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

Well: NBU 1022-8B4AS GREEN		Spud Date: 2/11/2012	
Project: UTAH-UINTAH	Site: NBU 1022-8B PAD	Rig Name No: SST 54/54, CAPSTAR 310/310	
Event: DRILLING	Start Date: 11/15/2011	End Date: 4/21/2012	
Active Datum: RKB @5,201.01ft (above Mean Sea Level)	UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	14:30 - 15:00	0.50	DRLPRO	07	A	P		RIG SERVICE / FUNCTION BOP
	15:00 - 18:30	3.50	DRLPRO	02	D	P		DRLG ROTATE/SURVEY 9578' TO 9862'. 284' @ 81.1 FPH WOB 18 TO 22K TD RPM 50 TO 60 MM RPM 60 PUMPING 563 GPM / 160SPM PSI ON/OFF 3490/3265 / DIFF 225 TORQUE ON/OFF 13680/11980 MUD WT 10.5 / VIS 41 NOV OFF LINE SWACO HOLDING 280 PSI BACK PRESSURE WHILE DRILLING / 400 SHUT IN ON CONNECTION PU 225, SO 165 ROT 185 NO SLIDE ROTATE 284' IN 3.5 HRS = 81.1 FPH HOLE SEEPING 10 BBL/HR BUILD VOLUME FROM STORAGE MIXING 15 SX LCM/HR . 6 TO 10" FLARE. 2' SOUTH & 61.5' EAST OF THE LINE.

**US ROCKIES REGION  
Operation Summary Report**

Spud Date: 2/11/2012

Well: NBU 1022-8B4AS GREEN

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	18:30 - 0:00	5.50	DRLPRO	22	N	X		WHILE DRILLING THROUGH SWACO CHOKE BACK PRESSURE WENT FROM 260 PSI TO 330 PSI / OBSERVED A PIT GAIN OF 30 BBLs WITHIN 10 MINUTES / HAD SWACO START CLOSING CHOKE DOWN TO MAINTAIN EXCESSIVE PIT GAIN / BACK PRESSURE INCREASED TO 1220 PSI AND THEN STARTED DROPPING BACK TO 840 PSI / GAS CUT MUD FLOW WAS STEADILY INCREASING AND A BUTTERFLY VALVE ON THE FLOW LINE INTO THE GAS BUSTER SLAMMED SHUT / WHILE GETTING THE VALVE BACK OPEN (WELL STILL FLOWING) ANNULAR PRESSURE INCREASED TO 2000 PSI / PIPE RAMS WERE CLOSED AND FLOW WAS DIVERTED TO CHOKE MANIFOLD FOR WELL CONTROL / TALKED WITH KENNY GATHINGS / HAD TO OPEN BOTH CHOKES ON MANIFOLD TO 100% AND WHILE PUMPING INTO WELL THROUGH DRILL PIPE TO MAINTAIN PIT VOLUME AT APPROXIMATELY 420 BBLs ANNULAR PRESSURE GRADUALLY DROPPED FROM 2300 PSI TO 1200 PSI / DURING THESE EVENTS SEVERAL ATTEMPTS TO GET A SHUT IN DRILL PIPE PRESSURE WERE MADE WITH NO RESULTS / WHILE PUMPING 11.5 PPG MUD DID NOT SEE A PRESSURE DROP ON THE ANNULAR SO THE MUD WEIGHT WAS INCREASED TO 11.8 PPG TO KILL WELL / LOST 30 BBL MUD DURING THIS TIME / TALKED WITH KENNY GATHINGS / BY PASSED SHAKERS AND INCREASED LCM TO 8% / WHEN 11.8 PPG MUD RETURNED TO SURFACE WE STILL HAD 5' - 10' FLARE / WELL WAS TAKEN OFF CHOKES AND WE RETURNED TO DRILLING / NOTE: WITH THE WELL ON BOTH RIG CHOKES THE ANNULAR PRESSURE SHOWED APPROXIMATELY 1200 PSI AND THE MANIFOLD PRESSURE SHOWED 350 PSI. WE WILL INVESTIGATE CHOKE LINES AND VALVES FOR POSSIBLE BLOCKAGE ON UP COMING MOVE.
4/19/2012	0:00 - 1:00	1.00	DRLPRO	05	B	P		CIRCULATE GAS OUT / MUD WT 12.0 / CASING PRESSURE 0 / TAKE WELL OFF CHOKES / CIRCULATE HOLE CLEAN THROUGH SWACO HOLDING 100 PSI BACK PRESSURE

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4AS GREEN Spud Date: 2/11/2012  
 Project: UTAH-UJINTAH Site: NBU 1022-8B PAD Rig Name No: SST 54/54, CAPSTAR 310/310  
 Event: DRILLING Start Date: 11/15/2011 End Date: 4/21/2012  
 Active Datum: RKB @5,201.01ft (above Mean Sea Level) UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	1:00 - 9:30	8.50	DRLPRO	02	D	P		DRLG ROTATE/SURVEY / 9862' TO 10,180' / 318' @ .37.4 FPH WOB 20 TO 22K TD RPM 60 MM RPM 84 PUMPING 527 GPM / 150 SPM PSI ON/OFF 3595/3185 / DIFF 410 TORQUE ON/OFF 9825/8120 MUD WT 12.1 / VIS 38 NOV OFF LINE SWACO OFF LINE PU 220 / SO 165 / ROT 180 NO SLIDE ROTATE 318' IN 8.5 HRS = 37.4 FPH NO FLARE WHILE DRLG / 6' CONNECTION FLARE 10' SOUTH 73' EAST OF CENTER CIRCULATE AND CONDITION MUD
	9:30 - 11:30	2.00	DRLPRO	05	A	P		
	11:30 - 18:00	6.50	DRLPRO	06	E	P		WIPER TRIP TO CASING SHOE @ 2407' NO DRAG / 5' OF FILL
	18:00 - 21:00	3.00	DRLPRO	05		P		CIRCULATE & CONDITION HOLE / 30' FLARE BOTTOMS UP
	21:00 - 0:00	3.00	DRLPRO	06	D	P		LAY DOWN DP
4/20/2012	0:00 - 6:00	6.00	DRLPRO	06	D	P		LAY DOWN DP / PULL ROTATING RUBBER
	6:00 - 12:30	6.50	DRLPRO	11	D	P		PJSM / RIG UP HALLIBURTON AND RUN TRIPLE COMBO OPEN HOLE LOGS / LOGGERS DEPTH 10,178' / DRILLERS DEPTH 10,180'. PULL BEARING PACK FROM ROTATING HEAD. PULL WEAR BUSHING
	12:30 - 13:30	1.00	DRLPRO	06	D	P		
	13:30 - 14:00	0.50	DRLPRO	06	D	P		
	14:00 - 0:00	10.00	DRLPRO	12	C	P		PSJM / RIG UP FRANKS WESTATES & RUN 10,189.45' OF 4.5" CASING. 119 JTS OF 4.5", 11.6#, P110, LT&C AND 119 JTS OF 4.5", 11.6#, P110, DQX CASING WITH WEATHERFORD GUIDE SHOE AND FLOAT COLLAR LOCATED ONE JT ABOVE SHOE. 20 CENTRALIZERS SPACED 10' ABOVE SHOE, 2ND & 3RD COLLARS AND EVERY 3RD COLLAR TO 7950'. TWO MARKER JTS LOCATED @ 9668' & 7017'. ONE CROSS OVER JT LOCATED 5091'. WASHED 3 JTS TO BOTTOM. LAY DOWN TAG JT. LANDED CASING @ 10180' KB
4/21/2012	0:00 - 1:00	1.00	DRLPRO	12	C	P		FINISH RUNNING 4.5" PRODUCTION CASING
	1:00 - 2:30	1.50	DRLPRO	05	D	P		CIRCULATE CASING WITH RIG PUMP / 15' FLARE BOTTOMS UP

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

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: SST 54/54, CAPSTAR 310/310

Event: DRILLING

Start Date: 11/15/2011

End Date: 4/21/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	2:30 - 5:30	3.00	DRLPRO	12	E	P		PJSM / RIG UP BJ AND CEMENT CASING WITH 580 SX PREMIUM LITE II CEMENT WITH 6% GEL, 0.6% R-3, 0.4% SMS, 1/4#/SX CELLO FLAKE, 5#/SX KOL SEAL, & 0.4% FL-52. TAILED IN WITH 1505 SX OF 50:50 POZ MIX WITH 2% GEL, 10% SALT, 0.2% R-3, & 5 #/BBL STATIC FREE. TESTED LINES TO 5000 PSI. DROPPED BOTTOM PLUG AND PUMPED 5 BBL FRESH WATER AND 40 BBL OF SEAL BOND AND BARITE FLUSH AHEAD OF CEMENT. MIXED LEAD CEMENT @ 13.0 PPG WITH YIELD OF 1.77 CF/SX. MIXED TAIL CEMENT @ 14.7 PPG WITH YIELD OF 1.31 CF/SX. HOLE CIRCULATED GOOD THROUGH OUT JOB. DROPPED TOP PLUG & DISPLACED WITH 157 BBL FRESH WATER WITH 0.1 GAL/BBL CLAY CARE & 0.01 GAL/BLL ALDACIDE G. CIRCULATED 21 BBL CEMENT TO SURFACE. FINAL LIFT PRESSURE WAS 2981 PSI. BUMPED PLUG TO 3592 PSI. FLOATS HELD. PLUG DOWN @ 05:00, 4/21/2012.
	5:30 - 10:00	4.50	DRLPRO	14	A	P		NIPPLE DOWN & SET SLIPS WITH 115M / CUT OFF CASING / CLEAN MUD TANKS / RELEASE RIG @ 10:00 AM, 4/21/2012

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 1022-8B4AS GREEN	Wellbore No.	OH
Well Name	NBU 1022-8B4AS	Wellbore Name	NBU 1022-8B4AS
Report No.	1	Report Date	5/11/2012
Project	UTAH-UJINTAH	Site	NBU 1022-8B PAD
Rig Name/No.		Event	COMPLETION
Start Date	5/11/2012	End Date	6/5/2012
Spud Date	2/11/2012	Active Datum	RKB @5,201.00usft (above Mean Sea Level)
UWI	NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0		

1.3 General

Contractor		Job Method		Supervisor	
Perforated Assembly		Conveyed Method			

1.4 Initial Conditions

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

1.5 Summary

Gross Interval	7,032.0 (usft)-9,730.0 (usft)	Start Date/Time	5/14/2012 12:00AM
No. of Intervals	39	End Date/Time	5/14/2012 12:00AM
Total Shots	211	Net Perforation Interval	64.00 (usft)
Avg Shot Density	3.30 (shot/ft)	Final Surface Pressure	
		Final Press Date	

2 Intervals

2.1 Perforated Interval

Date	Formation/Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
5/14/2012 12:00AM	MESAVERDE/			7,032.0	7,034.0	4.00		0.360	EXP/	3.375	90.00			23.00 PRODUCTION	N

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
5/14/2012 12:00AM	MESAVERDE/			7,090.0	7,094.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,155.0	7,157.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,190.0	7,194.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,257.0	7,259.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,288.0	7,290.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,304.0	7,306.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,320.0	7,322.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,424.0	7,425.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,496.0	7,498.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,524.0	7,526.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,546.0	7,548.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,650.0	7,651.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,677.0	7,678.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,714.0	7,715.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,790.0	7,792.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,854.0	7,856.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			7,899.0	7,900.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,122.0	8,123.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,172.0	8,173.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,220.0	8,222.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,274.0	8,277.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
5/14/2012 12:00AM	MESAVERDE/			8,376.0	8,377.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,432.0	8,433.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,458.0	8,459.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,477.0	8,478.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,565.0	8,567.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,631.0	8,632.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,654.0	8,655.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,691.0	8,692.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,708.0	8,709.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,727.0	8,728.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,765.0	8,766.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,782.0	8,783.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,820.0	8,821.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			8,874.0	8,876.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			9,666.0	9,668.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			9,712.0	9,714.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
5/14/2012 12:00AM	MESAVERDE/			9,728.0	9,730.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

## 3 Plots

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4AS GREEN		Spud Date: 2/11/2012	
Project: UTAH-UINTAH		Site: NBU 1022-8B PAD	Rig Name No: GWS 1/1, GWS 1/1
Event: COMPLETION		Start Date: 5/11/2012	End Date: 6/5/2012
Active Datum: RKB @5,201.01ft (above Mean Sea Level)		UWI: NWN/E/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
5/11/2012	10:00 - 11:30	1.50	COMP	33		P		RU HOT OILER, NO PSI ON SURFACE FILLED SURFACE WITH 12 BBLS H2O PUMPED 5 BBLS INTO SURFACE @ 1- 1 1/2 BPM 650 PSI, ISIP 600, BLED WELL DOWN
5/14/2012	10:00 - 13:30	3.50	COMP	51		P		RU HALCO, ESTABLISH INJECTION RATE DOWN SURFACE CSG PUMP 10 BBLS @ 1.5 BPM @ 1000 PSI. PUMPED 12 BBLS SUPER FLUSH SPACER, & 5 BBLS FRESH WATER. MIXED & PUMPED 490 SKS, ( 174 BBLS SLURRY) CLASS G CEMENT SQUEEZE SYSTEM @ 12.5 PPG YIELD, 2.26 FT3/SK, WATER 12.9 GAL/SK. DISPLACED WITH 3 BBLS TO DISPLACE PUMP & LINES, SWI WITH 580 PSI ON SURFACE
5/23/2012	7:30 - 9:30	2.00	COMP	33		P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 15 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 38 PSI. 1ST PSI TEST T/ 9000 PSI. HELD FOR 30 MIN LOST 83 PSI. NO COMMUNICATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL. SWFW
5/24/2012	7:00 - 12:00	5.00	COMP	37		P		PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SWFW
5/25/2012	-							
5/26/2012	-							
5/29/2012	8:30 - 18:00	9.50	COMP	36	B	P		FRAC STG 1)WHP 1793 PSI, BRK 4233 PSI @ 4.7 BPM. ISIP 3125 PSI, FG .76. CALC HOLES OPEN @ 51.8 BPM @ 5858 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN) ISIP 3497 PSI, FG .80, NPI 372 PSI. MP 7164 PSI, MR 52.4 BPM, AP 5694 PSI, AR 52.1 BPM PUMPED 30/50 SAND IN THIS STAGE X-OVER FOR W L  PERF STG 2)PU 4 1/2 8K HAL CBP. RIH SET CBP @ 8906. POOH. BLEED OFF WELL PSI. X-OVER APC FRAC VALVES. PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH PERF AS PER DESIGN. POOH. SWIFN. HSM. HIGHT PSI LINES & WL SAFETY.
5/30/2012	6:45 - 7:00	0.25	COMP	48		P		

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

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: GWS 1/1, GWS 1/1

Event: COMPLETION

Start Date: 5/11/2012

End Date: 6/5/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:00 - 18:00	11.00	COMP	36	B	P		<p>FRAC STG 2)WHP 1422 PSI, BRK 2986 PSI @ 4.2 BPM. ISIP 2127 PSI, FG .68.            CALC HOLES OPEN @ 52.1 BPM @ 5409 PSI = 91% HOLES OPEN. (22/24 HOLES OPEN)            ISIP 2521 PSI, FG .73, NPI 394 PSI.            MP 6002 PSI, MR 52.4 BPM, AP 4741 PSI, AR 51.6 BPM            PUMPED 30/50 OTTAWA SAND IN THIS STAGE            X-OVER FOR W L</p> <p>PERF STG 3)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8681' P/U PERF AS PER DESIGN. POOH.            X-OVER FOR FRAC CREW.</p> <p>FRAC STG 3)WHP 2026 PSI, BRK 2880 PSI @ 4.0 BPM. ISIP 2297 PSI, FG .71.            CALC HOLES OPEN @ 50 BPM @ 4249 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN)            ISIP 2713 PSI, FG .76, NPI 416 PSI.            MP 4962 PSI, MR 50.6 BPM, AP 4389 PSI, AR 50.3 BPM            PUMPED 30/50 OTTAWA SAND IN THIS STAGE            X-OVER FOR W L</p> <p>PERF STG 4)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8307' P/U PERF AS PER DESIGN. POOH.            X-OVER FOR FRAC CREW.</p> <p>FRAC STG 4)WHP 585 PSI, BRK 2094 PSI @ 4.1 BPM. ISIP 1448 PSI, FG .62.            CALC HOLES OPEN @ 52.2 BPM @ 3964 PSI = 100% HOLES OPEN. (21/21 HOLES OPEN)            ISIP 2253 PSI, FG .71, NPI 805 PSI.            MP 4945 PSI, MR 52.4 BPM, AP 4059 PSI, AR 50.6 BPM            PUMPED 30/50 OTTAWA SAND IN THIS STAGE            X-OVER FOR W L</p> <p>PERF STG 5)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 7930' P/U PERF AS PER DESIGN. POOH.            X-OVER FOR FRAC CREW.</p> <p>FRAC STG 5)WHP 588 PSI, BRK 2034 PSI @ 4.0 BPM. ISIP 1228 PSI, FG .60.            CALC HOLES OPEN @ 50 BPM @ 3935 PSI = 97% HOLES OPEN. (23/24 HOLES OPEN)            ISIP 2494 PSI, FG .76, NPI 1266 PSI.            MP 4588 PSI, MR 50.7 BPM, AP 3978 PSI, AR 50.2 BPM            PUMPED 30/50 OTTAWA SAND IN THIS STAGE            X-OVER FOR W L</p> <p>PERF STG 6)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN,</p>

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: GWS 1/1, GWS 1/1

Event: COMPLETION

Start Date: 5/11/2012

End Date: 6/5/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NWN/E/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
								23 GM, .36 HOLE SIZE. 90 & 120 DEG PHASING. RIH SET CBP @ 7578' P/U PERF AS PER DESIGN. POOH. X-OVER FOR FRAC CREW.
								FRAC STG 6)WHP 1083 PSI, BRK 2053 PSI @ 3.8 BPM. ISIP 1373 PSI, FG .62. CALC HOLES OPEN @ 50.4 BPM @ 4069 PSI = 100% HOLES OPEN. (22/22 HOLES OPEN) ISIP 2527 PSI, FG .78, NPI 1154 PSI. MP 5492 PSI, MR 50.7 BPM, AP 4541 PSI, AR 50.4 BPM PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L
5/31/2012	6:45 - 7:00	0.25	COMP	48		P		PERF STG 7)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 7352' P/U PERF AS PER DESIGN. POOH. SWMFN.
	7:00 - 18:00	11.00	COMP	36	B	P		HSM. RIG DOWN, SLIPS, TRIPS, & FALLS.
								FRAC STG 7)WHP 841 PSI, BRK 1966 PSI @ 4.4 BPM. ISIP 1418 PSI, FG .63. CALC HOLES OPEN @ 50.4 BPM @ 4091 PSI = 96% HOLES OPEN. (23/24 HOLES OPEN) ISIP 1852 PSI, FG .69, NPI 434 PSI. MP 5419 PSI, MR 50.3 BPM, AP 4856 PSI, AR 50.1 BPM PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L
								PERF STG 8)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 7224' P/U PERF AS PER DESIGN. POOH. X-OVER FOR FRAC CREW.
								FRAC STG 8)WHP 590 PSI, BRK 2162 PSI @ 3.9 BPM. ISIP 1396 PSI, FG .63. CALC HOLES OPEN @ 50.3 BPM @ 3680 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN) ISIP 1876 PSI, FG .70, NPI 480 PSI. MP 4671 PSI, MR 50.5 BPM, AP 4036 PSI, AR 50.3 BPM PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L
								PERF STG 9)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 7124' P/U PERF AS PER DESIGN. POOH.

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

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: GWS 1/1, GWS 1/1

Event: COMPLETION

Start Date: 5/11/2012

End Date: 6/5/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
6/1/2012	7:00 - 18:00	11.00	COMP	36	B	P		FRAC STG 9)WHP 910 PSI, BRK 2521 PSI @ 3.0 BPM. ISIP 1133 PSI, FG .60. CALC HOLES OPEN @ 44.7 BPM @ 3588 PSI = 85% HOLES OPEN. (20/24 HOLES OPEN) ISIP 1991 PSI, FG .72, NPI 858 PSI. MP 5201 PSI, MR 46.6 BPM, AP 3576 PSI, AR 31.4 BPM PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L  PU 4 1/2 8K HAL CBP. RIH SET KILL PLUG @ 6986' POOH.  TOTAL SAND = 273,481 LBS TOTAL CLFL = 11,984 BBLS
6/4/2012	7:00 - 7:30	0.50	COMP	48		P		HSM, R/U RIG. 0 PSI ON WELL
	7:30 - 10:30	3.00	COMP	47	A	P		MIRU, N/D WH, N/U BOPS
	10:30 - 17:00	6.50	COMP	31	I	P		P/U 3 7/8" SBB, POBS, RIH W/ 215 JTS 2 3/8" L-80 TBG, ' R/U PWR SWWL, BRK CIRC CONV, PSI TEST BOPS TO 3500# W/ RIG PUMP
6/5/2012	7:00 - 7:30	0.50	COMP	48		P		HSM, LANDING WELL UNDER PSI 500 PSI SICP, 0 SITP

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-8B4AS GREEN

Spud Date: 2/11/2012

Project: UTAH-UINTAH

Site: NBU 1022-8B PAD

Rig Name No: GWS 1/1, GWS 1/1

Event: COMPLETION

Start Date: 5/11/2012

End Date: 6/5/2012

Active Datum: RKB @5,201.01ft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:30 - 15:00	7.50	COMP	44	C	P		<p>EOT @ 6830' P/U 2 JTS ON PWR SWWL, TAG KILL PLUG @ 6892'</p> <p>( DRLG CBP #1 ) 6892', DRILL OUT HALIBURTON 8K CBP IN 10 MIN, 600 # DIFF, RIH TAG @ 7094', C/O 30' SAND, FCP = 0#,</p> <p>( DRLG CBP #2 ) 7124', DRILL OUT HALIBURTON 8K CBP IN 5 MIN, 300# DIFF, RIH TAG @ 7194', C/O 30' SAND, FCP = 0 #,</p> <p>( DRLG CBP #3 ) 7224', DRILL OUT HALIBURTON 8K CBP IN 8 MIN, 400 # DIFF, RIH TAG @ 7322', C/O 33' SAND, FCP = 0 #,</p> <p>( DRLG CBP #4 ) 7355', DRILL OUT HALIBURTON 8K CBP IN 10 MIN, 300 # DIFF, RIH TAG @ 7548', C/O 19' SAND, FCP = 100 #,</p> <p>( DRLG CBP #5 ) 7567', DRILL OUT HALIBURTON 8K CBP IN 15 MIN, 400 # DIFF, RIH TAG @ 7900', C/O 30' SAND, FCP = 300 #,</p> <p>( DRLG CBP #6 ) 7930', DRILL OUT HALIBURTON 8K CBP IN 10 MIN, 500 # DIFF, RIH TAG @ 8277', C/O 30' SAND, FCP = 500 #,</p> <p>( DRLG CBP #7 ) 8307', DRILL OUT HALIBURTON 8K CBP IN 10 MIN, 600 # DIFF, RIH TAG @ 8655', C/O 19' SAND, FCP = 450 #,</p> <p>( DRLG CBP #8 ) 8674', DRILL OUT HALIBURTON 8K CBP IN 15 MIN, 600 # DIFF, FCP = 500#, RIH TAG @ 8876', C/O 30' SAND, FCP = 450 #,</p> <p>( DRLG CBP #9 ) 8906', DRILL OUT HALIBURTON 8K CBP IN 10 MIN, 700 # DIFF, FCP = 700#, RIH TO 9900'</p> <p>POOH LAY DN 17 JTS ON TRAILER, LAND TBG W/ TBG HANGER, W/ 272 JTS 2 3/8" L-80 TBG, @ 8649.03'</p> <p>N/D BOPS, DROP BALL DN TBG, N/U WH, PRESSURE TEST FLOW LINES TO 4000#, W/ RIG PUMP. PUMP BIT OFF AT 2700 # TURN WELL OVER TO FLOW BACK CREW &amp; PRODUCTION. FTP = 1850 #, SICP = 2150#,</p> <p>KB = 18.00' HANGER = .83' 262 JTS 2 3/8" L-80 TBG = 8628.00' XN-NIPPLE 1.875" = 2.20'</p>

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

Well: NBU 1022-8B4AS GREEN		Spud Date: 2/11/2012	
Project: UTAH-UINTAH	Site: NBU 1022-8B PAD	Rig Name No: GWS 1/1, GWS 1/1	
Event: COMPLETION	Start Date: 5/11/2012	End Date: 6/5/2012	
Active Datum: RKB @5,201.01ft (above Mean Sea Level)		UWI: NW/NE/0/10/S/22/E/8/0/0/26/PM/N/919/E/0/1693/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
								EOT = 8649.03'
								322 JTS 2 3/8" L-80 TBG DELIVERD 272 JTS 2 3/8" L-80 TBG USED 50 JTS 2 3/8" L-80 TBG RETURNED
								OLTR = 11984 BBLS REC = 2000 BBLS LTR = 9984 BBLS
	14:30 - 15:00	0.50	COMP	50				3 PM SDFN, TO WINDY TO RIG DOWN WELL TURNED TO SALES @ 14:30 HR ON 6/5/2012, 2400 MCFD, 1920 BWPD, 2200@ FCP, 2000# FTP, 20/64" CK.
6/12/2012	7:00 -			50				WELL IP'D ON 6/12/12 - 2249 MCFD, 0 BOPD, 240 BWPD, CP 2355#, FTP 1640#, CK 20/64", LP 109#, 24 HRS

Project: UTAH - UTM (feet), NAD27, Zone 12N  
 Site: UINTAH NBU 1022-8B PAD  
 Well: NBU 1022-8B4AS  
 Wellbore: NBU 1022-8B4AS  
 Section:  
 SHL:  
 Design: NBU 1022-8B4AS (wp01)  
 Latitude: 39.968246  
 Longitude: -109.459596  
 GL: 5185.40  
 KB: 18' RKB + GL @ 5203.40ft (SST 54)

FORMATION TOP DETAILS			
TVDPath	MDPath		Formation
1169.00	1174.05		GREEN RIVER
1550.00	1557.52		BIRDS NEST
1999.00	2009.39		MAJOGANCY MARKER
4394.00	4407.37		WASATCH
4994.00	5007.37		TOP OF THE CYLINDER
6888.00	6901.39		MESAVERDE
9044.00	9057.41		SEGO
9129.00	9142.41		CASTLEGATE
9555.00	9568.42		BLACKHAWK

WELL DETAILS: NBU 1022-8B4AS							
+N/-S	+E/-W	Northing	Ground Level: Easting	5185.40 Latitude	39.968246	Longitude	Slot
0.00	0.00	14518209.16	2072028.55			-109.459596	

CASING DETAILS			
TVD	MD	Name	Size
2403.79	2416.00	8-5/8"	8-5/8

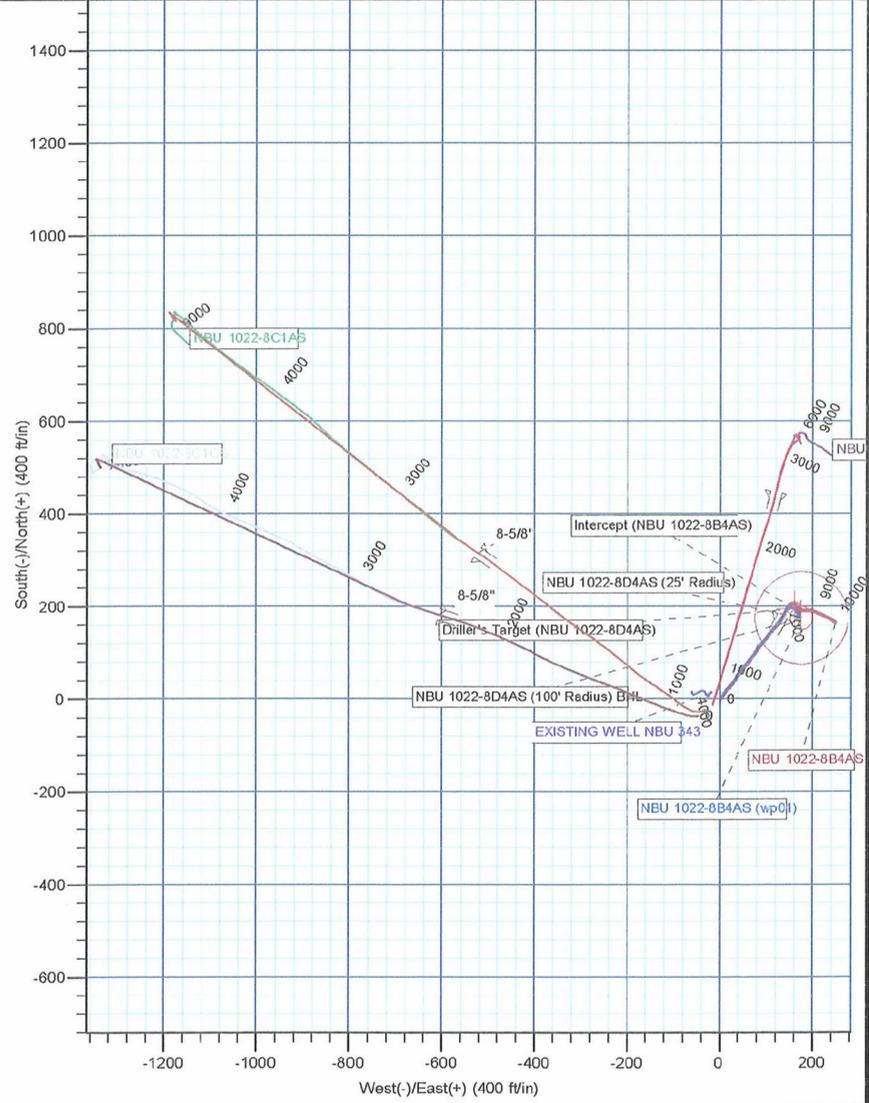
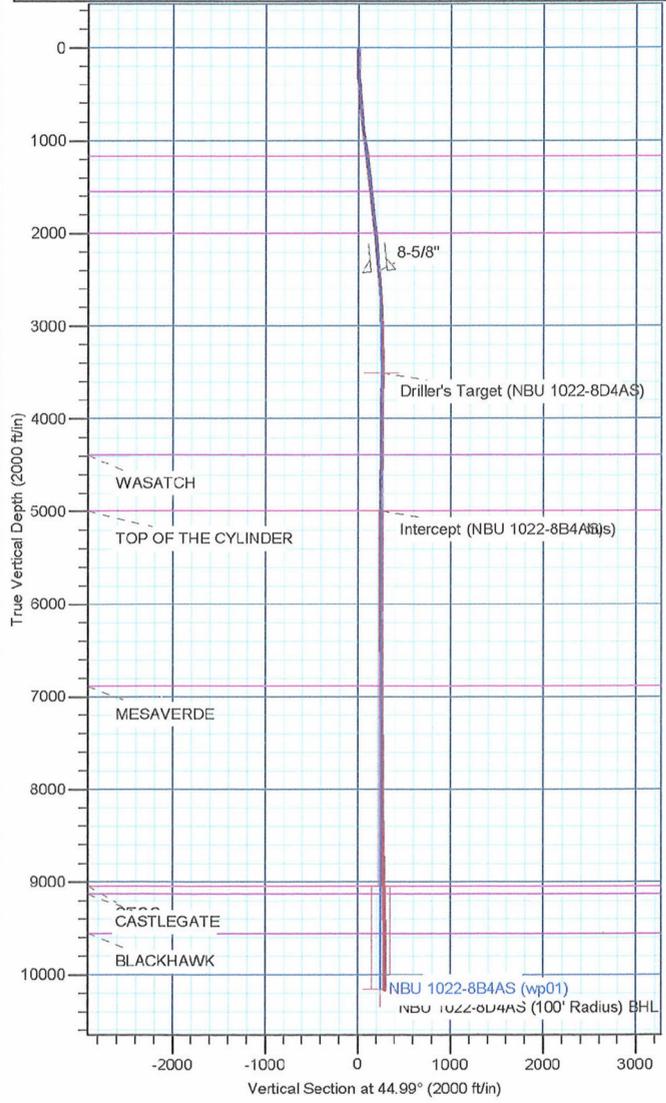
Azimuths to True North  
 Magnetic North: 10.96°  
 Magnetic Field  
 Strength: 52241.8snT  
 Dip Angle: 65.83°  
 Date: 3/12/2012  
 Model: IGRF2010

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Driller's Target (NBU 1022-8D4AS)	3504.00	195.19	160.15	14518407.09	2072185.31	39.968782	-109.459025	Circle (Radius: 15.00)
Intercept (NBU 1022-8B4AS)	4994.00	195.19	160.15	14518407.09	2072185.31	39.968782	-109.459025	Point
NBU 1022-8D4AS (25' Radius)	4994.00	175.19	175.15	14518387.34	2072200.66	39.968727	-109.458971	Circle (Radius: 25.00)
NBU 1022-8D4AS (100' Radius) BHL	10155.00	175.19	175.15	14518387.34	2072200.66	39.968727	-109.458971	Circle (Radius: 100.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
2398.00	5.45	30.04	2385.87	176.40	133.49	0.00	0.00	219.13
2548.00	5.45	30.04	2535.20	188.73	140.62	0.00	0.00	232.89
2817.81	1.64	109.50	2804.54	198.54	150.69	2.00	162.55	246.95
3517.37	0.00	0.00	3504.00	195.19	160.15	0.24	180.00	251.27
5007.37	0.00	0.00	4994.00	195.19	160.15	0.00	0.00	251.27
5100.75	0.28	143.13	5087.38	195.01	160.29	0.30	143.13	251.23
10168.43	0.28	143.13	10155.00	175.19	175.15	0.00	0.00	247.73



# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-8B PAD**

**NBU 1022-8B4AS**

**NBU 1022-8B4AS**

**Design: NBU 1022-8B4AS**

## **Standard Survey Report**

**23 April, 2012**

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Site:</b>	UINTAH_NBU 1022-8B PAD	<b>MD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Well:</b>	NBU 1022-8B4AS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-8B4AS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-8B4AS	<b>Database:</b>	edmp

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

<b>Site</b> UINTAH_NBU 1022-8B PAD			
<b>Site Position:</b>	<b>Northing:</b>	<b>Latitude:</b>	
	14,518,172.28 usft	39.968147	
<b>From:</b>	<b>Easting:</b>	<b>Longitude:</b>	
Lat/Long	2,071,981.26 usft	-109.459767	
<b>Position Uncertainty:</b>	<b>Slot Radius:</b>	<b>Grid Convergence:</b>	
0.00 ft	13-3/16 "	0.99 °	

<b>Well</b> NBU 1022-8B4AS			
<b>Well Position</b>	<b>Northing:</b>	<b>Latitude:</b>	
+N/-S	14,518,209.16 usft	39.968246	
+E/-W	2,072,028.55 usft	-109.459596	
<b>Position Uncertainty</b>	<b>Wellhead Elevation:</b>	<b>Ground Level:</b>	
0.00 ft	ft	5,185.40 ft	

<b>Wellbore</b> NBU 1022-8B4AS					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2012	10.96	65.83	52,242

<b>Design</b> NBU 1022-8B4AS					
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	9.00	0.00	0.00	44.99	

<b>Survey Program</b> Date 4/23/2012					
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
246.00	2,398.00	Survey #1 (NBU 1022-8B4AS)	MWD	MWD - STANDARD	
2,464.00	10,180.00	Survey #2 (NBU 1022-8B4AS)	MWD	MWD - STANDARD	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00
246.00	0.53	43.05	246.00	0.80	0.75	1.10	0.22	0.22	0.00
337.00	2.46	47.89	336.96	2.42	2.48	3.47	2.12	2.12	5.32
427.00	3.69	31.54	426.83	6.18	5.43	8.21	1.67	1.37	-18.17
521.00	4.19	29.70	520.61	11.74	8.72	14.47	0.55	0.53	-1.96
615.00	4.31	40.06	614.35	17.43	12.69	21.30	0.83	0.13	11.02
709.00	5.72	42.61	707.99	23.58	18.14	29.50	1.52	1.50	2.71
803.00	6.95	36.81	801.42	31.58	24.72	39.81	1.47	1.31	-6.17
898.00	7.56	36.28	895.65	41.22	31.86	51.67	0.65	0.64	-0.56
991.00	7.91	35.67	987.81	51.35	39.21	64.04	0.39	0.38	-0.66

# Anadarko Petroleum Corp

## Survey Report

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-8B PAD  
**Well:** NBU 1022-8B4AS  
**Wellbore:** NBU 1022-8B4AS  
**Design:** NBU 1022-8B4AS

**Local Co-ordinate Reference:** Well NBU 1022-8B4AS  
**TVD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**MD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** edmp

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,084.00	8.71	34.88	1,079.83	62.33	46.97	77.28	0.87	0.86	-0.85
1,177.00	7.30	39.45	1,171.92	72.67	54.75	90.10	1.66	-1.52	4.91
1,271.00	6.24	39.54	1,265.27	81.22	61.80	101.13	1.13	-1.13	0.10
1,365.00	6.07	36.55	1,358.72	89.15	68.01	111.13	0.39	-0.18	-3.18
1,460.00	6.68	34.09	1,453.14	97.76	74.10	121.52	0.70	0.64	-2.59
1,555.00	6.68	30.48	1,547.49	107.10	80.00	132.30	0.44	0.00	-3.80
1,651.00	6.60	40.15	1,642.85	116.13	86.39	143.20	1.17	-0.08	10.07
1,746.00	6.77	40.50	1,737.21	124.56	93.54	154.22	0.18	0.18	0.37
1,842.00	6.88	36.37	1,832.53	133.49	100.63	165.55	0.52	0.11	-4.30
1,935.00	5.72	38.48	1,924.96	141.61	106.81	175.66	1.27	-1.25	2.27
2,029.00	5.28	37.34	2,018.53	148.71	112.35	184.60	0.48	-0.47	-1.21
2,124.00	5.45	41.29	2,113.11	155.58	117.98	193.44	0.43	0.18	4.16
2,217.00	5.63	41.03	2,205.68	162.34	123.89	202.39	0.20	0.19	-0.28
2,313.00	5.28	32.59	2,301.25	169.61	129.36	211.41	0.91	-0.36	-8.79
2,398.00	5.45	30.04	2,385.87	176.40	133.49	219.13	0.34	0.20	-3.00
tie on									
2,464.00	5.30	28.03	2,451.58	181.80	136.49	225.07	0.36	-0.23	-3.05
2,559.00	4.34	28.98	2,546.25	188.82	140.29	232.72	1.01	-1.01	1.00
2,655.00	3.49	34.13	2,642.02	194.42	143.69	239.08	0.96	-0.89	5.36
2,751.00	2.88	38.87	2,737.87	198.71	146.84	244.35	0.69	-0.64	4.94
2,846.00	2.69	39.62	2,832.76	202.29	149.76	248.94	0.20	-0.20	0.79
2,941.00	2.13	86.24	2,927.69	204.12	152.95	252.49	2.08	-0.59	49.07
3,037.00	1.81	91.62	3,023.63	204.20	156.24	254.87	0.38	-0.33	5.60
3,132.00	1.56	95.12	3,118.59	204.04	159.03	256.73	0.28	-0.26	3.68
3,227.00	1.56	97.87	3,213.55	203.75	161.60	258.34	0.08	0.00	2.89
3,322.00	1.56	102.74	3,308.52	203.28	164.14	259.81	0.14	0.00	5.13
3,417.00	0.88	165.99	3,403.50	202.29	165.58	260.13	1.48	-0.72	66.58
3,513.00	0.94	165.99	3,499.49	200.81	165.95	259.34	0.06	0.06	0.00
3,608.00	1.13	165.12	3,594.47	199.15	166.38	258.47	0.20	0.20	-0.92
3,703.00	1.19	157.12	3,689.45	197.34	167.00	257.63	0.18	0.06	-8.42
3,799.00	1.31	147.37	3,785.43	195.49	167.98	257.02	0.25	0.13	-10.16
3,894.00	0.75	163.87	3,880.41	193.98	168.74	256.48	0.66	-0.59	17.37
3,990.00	0.94	165.99	3,976.40	192.61	169.10	255.78	0.20	0.20	2.21
4,085.00	1.00	160.37	4,071.39	191.08	169.57	255.02	0.12	0.06	-5.92
4,181.00	1.19	166.12	4,167.37	189.32	170.09	254.14	0.23	0.20	5.99
4,276.00	0.56	146.12	4,262.36	187.98	170.59	253.54	0.73	-0.66	-21.05
4,371.00	0.13	195.87	4,357.36	187.49	170.82	253.36	0.51	-0.45	52.37
4,466.00	0.69	311.74	4,452.36	187.77	170.36	253.23	0.80	0.59	121.97
4,561.00	0.50	309.74	4,547.35	188.41	169.62	253.16	0.20	-0.20	-2.11
4,656.00	0.38	277.24	4,642.35	188.72	168.98	252.93	0.29	-0.13	-34.21
4,751.00	0.13	271.12	4,737.35	188.76	168.56	252.67	0.26	-0.26	-6.44
4,846.00	0.88	328.62	4,832.34	189.38	168.08	252.76	0.86	0.79	60.53
4,941.00	0.75	324.84	4,927.33	190.51	167.34	253.04	0.15	-0.14	-3.98

# Anadarko Petroleum Corp

## Survey Report

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-8B PAD  
**Well:** NBU 1022-8B4AS  
**Wellbore:** NBU 1022-8B4AS  
**Design:** NBU 1022-8B4AS

**Local Co-ordinate Reference:** Well NBU 1022-8B4AS  
**TVD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**MD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** edmp

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,037.00	0.63	321.99	5,023.33	191.44	166.65	253.21	0.13	-0.13	-2.97
5,132.00	0.38	331.24	5,118.32	192.13	166.18	253.36	0.28	-0.26	9.74
5,228.00	0.19	325.87	5,214.32	192.54	165.94	253.48	0.20	-0.20	-5.59
5,323.00	0.25	339.24	5,309.32	192.87	165.77	253.60	0.08	0.06	14.07
5,419.00	0.06	350.74	5,405.32	193.11	165.69	253.71	0.20	-0.20	11.98
5,514.00	0.25	208.74	5,500.32	192.98	165.58	253.54	0.32	0.20	-149.47
5,610.00	0.31	197.36	5,596.32	192.55	165.41	253.11	0.08	0.06	-11.85
5,705.00	0.44	178.87	5,691.32	191.94	165.34	252.63	0.19	0.14	-19.46
5,800.00	0.75	178.62	5,786.31	190.95	165.36	251.95	0.33	0.33	-0.26
5,896.00	0.81	186.99	5,882.30	189.65	165.29	250.98	0.13	0.06	8.72
5,991.00	1.00	176.49	5,977.29	188.16	165.26	249.90	0.26	0.20	-11.05
6,087.00	0.63	160.49	6,073.28	186.82	165.49	249.12	0.45	-0.39	-16.67
6,182.00	0.38	45.37	6,168.28	186.55	165.89	249.21	0.91	-0.26	-121.18
6,278.00	0.44	84.37	6,264.28	186.81	166.48	249.82	0.29	0.06	40.63
6,373.00	0.56	102.99	6,359.27	186.74	167.29	250.34	0.21	0.13	19.60
6,469.00	0.69	106.74	6,455.27	186.47	168.31	250.87	0.14	0.14	3.91
6,564.00	0.81	116.12	6,550.26	186.01	169.46	251.35	0.18	0.13	9.87
6,659.00	0.69	32.12	6,645.25	186.20	170.36	252.13	1.06	-0.13	-88.42
6,754.00	0.81	34.12	6,740.25	187.24	171.04	253.35	0.13	0.13	2.11
6,848.00	0.88	53.62	6,834.24	188.22	172.00	254.71	0.31	0.07	20.74
6,944.00	0.94	62.62	6,930.22	189.02	173.29	256.19	0.16	0.06	9.38
7,039.00	0.25	99.24	7,025.22	189.34	174.19	257.05	0.79	-0.73	38.55
7,134.00	0.38	282.87	7,120.22	189.38	174.08	257.01	0.66	0.14	-185.65
7,230.00	1.75	315.49	7,216.20	190.49	172.75	256.85	1.50	1.43	33.98
7,325.00	1.56	320.87	7,311.16	192.53	170.91	257.00	0.26	-0.20	5.66
7,420.00	1.06	321.99	7,406.14	194.23	169.56	257.24	0.53	-0.53	1.18
7,613.00	0.38	11.24	7,599.12	196.26	168.58	257.99	0.45	-0.35	25.52
7,707.00	0.50	78.24	7,693.12	196.65	169.04	258.59	0.53	0.13	71.28
7,802.00	0.56	102.74	7,788.11	196.63	169.90	259.18	0.24	0.06	25.79
7,898.00	0.50	105.74	7,884.11	196.42	170.76	259.64	0.07	-0.06	3.13
7,993.00	0.69	114.74	7,979.10	196.06	171.68	260.04	0.22	0.20	9.47
8,089.00	1.00	129.49	8,075.09	195.29	172.85	260.32	0.39	0.32	15.36
8,184.00	1.50	123.87	8,170.07	194.07	174.53	260.64	0.54	0.53	-5.92
8,280.00	1.81	114.49	8,266.03	192.74	176.95	261.41	0.43	0.32	-9.77
8,375.00	1.94	110.37	8,360.98	191.56	179.82	262.61	0.20	0.14	-4.34
8,471.00	1.69	101.24	8,456.93	190.72	182.73	264.07	0.40	-0.26	-9.51
8,565.00	2.00	94.24	8,550.88	190.33	185.73	265.91	0.41	0.33	-7.45
8,660.00	2.31	85.74	8,645.82	190.35	189.29	268.44	0.47	0.33	-8.95
8,756.00	2.31	91.87	8,741.74	190.43	193.15	271.23	0.26	0.00	6.39
8,851.00	2.56	91.49	8,836.65	190.31	197.19	274.00	0.26	0.26	-0.40
8,947.00	2.81	102.37	8,932.55	189.75	201.63	276.75	0.59	0.26	11.33
9,041.00	2.81	108.37	9,026.44	188.53	206.07	279.02	0.31	0.00	6.38
9,136.00	2.56	111.99	9,121.33	187.00	210.24	280.89	0.32	-0.26	3.81

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Site:</b>	UINTAH_NBU 1022-8B PAD	<b>MD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Well:</b>	NBU 1022-8B4AS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-8B4AS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-8B4AS	<b>Database:</b>	edmp

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,232.00	2.38	117.37	9,217.24	185.28	214.00	282.34	0.31	-0.19	5.60
9,327.00	2.44	115.99	9,312.16	183.49	217.57	283.59	0.09	0.06	-1.45
9,422.00	2.56	113.62	9,407.07	181.75	221.33	285.02	0.17	0.13	-2.49
9,518.00	2.56	116.12	9,502.97	179.95	225.22	286.50	0.12	0.00	2.60
9,613.00	2.75	119.74	9,597.87	177.89	229.11	287.78	0.27	0.20	3.81
9,708.00	2.63	123.24	9,692.77	175.56	232.91	288.83	0.21	-0.13	3.68
9,804.00	2.44	123.12	9,788.67	173.24	236.46	289.70	0.20	-0.20	-0.13
9,899.00	2.25	123.62	9,883.59	171.10	239.71	290.48	0.20	-0.20	0.53
9,994.00	2.19	121.49	9,978.52	169.12	242.81	291.27	0.11	-0.06	-2.24
10,120.00	2.19	123.99	10,104.43	166.51	246.86	292.29	0.08	0.00	1.98
<b>last mwd survey</b>									
10,180.00	2.19	123.99	10,164.38	165.23	248.76	292.73	0.00	0.00	0.00
<b>projection</b>									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,398.00	2,385.87	176.40	133.49	tie on
10,120.00	10,104.43	166.51	246.86	last mwd survey
10,180.00	10,164.38	165.23	248.76	projection

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

# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-8B PAD**

**NBU 1022-8B4AS**

**NBU 1022-8B4AS**

**Design: NBU 1022-8B4AS**

## **Survey Report - Geographic**

**23 April, 2012**

# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Site:</b>	UINTAH_NBU 1022-8B PAD	<b>MD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Well:</b>	NBU 1022-8B4AS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-8B4AS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-8B4AS	<b>Database:</b>	edmp

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

<b>Site</b> UINTAH_NBU 1022-8B PAD			
<b>Site Position:</b>		<b>Northing:</b>	14,518,172.28 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,071,981.26 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.968147
		<b>Longitude:</b>	-109.459767
		<b>Grid Convergence:</b>	0.99 °

<b>Well</b> NBU 1022-8B4AS			
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 14,518,209.16 usft
	+E/-W	0.00 ft	<b>Easting:</b> 2,072,028.55 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 39.968246
			<b>Longitude:</b> -109.459596
			<b>Ground Level:</b> 5,185.40 ft

<b>Wellbore</b> NBU 1022-8B4AS					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2012	10.96	65.83	52,242

<b>Design</b> NBU 1022-8B4AS					
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	9.00	0.00	0.00	44.99	

<b>Survey Program</b> Date 4/23/2012					
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
246.00	2,398.00	Survey #1 (NBU 1022-8B4AS)	MWD	MWD - STANDARD	
2,464.00	10,180.00	Survey #2 (NBU 1022-8B4AS)	MWD	MWD - STANDARD	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9.00	0.00	0.00	9.00	0.00	0.00	14,518,209.16	2,072,028.55	39.968246	-109.459596
246.00	0.53	43.05	246.00	0.80	0.75	14,518,209.98	2,072,029.29	39.968248	-109.459594
337.00	2.46	47.89	336.96	2.42	2.48	14,518,211.62	2,072,030.99	39.968253	-109.459587
427.00	3.69	31.54	426.83	6.18	5.43	14,518,215.44	2,072,033.88	39.968263	-109.459577
521.00	4.19	29.70	520.61	11.74	8.72	14,518,221.06	2,072,037.06	39.968278	-109.459565
615.00	4.31	40.06	614.35	17.43	12.69	14,518,226.81	2,072,040.94	39.968294	-109.459551
709.00	5.72	42.61	707.99	23.58	18.14	14,518,233.05	2,072,046.28	39.968311	-109.459532
803.00	6.95	36.81	801.42	31.58	24.72	14,518,241.17	2,072,052.72	39.968333	-109.459508
898.00	7.56	36.28	895.65	41.22	31.86	14,518,250.93	2,072,059.69	39.968359	-109.459483
991.00	7.91	35.67	987.81	51.35	39.21	14,518,261.18	2,072,066.87	39.968387	-109.459456
1,084.00	8.71	34.88	1,079.83	62.33	46.97	14,518,272.29	2,072,074.43	39.968417	-109.459429

# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-8B4AS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Site:</b>	UINTAH_NBU 1022-8B PAD	<b>MD Reference:</b>	18' RKB + GL @ 5203.40ft (SST 54)
<b>Well:</b>	NBU 1022-8B4AS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-8B4AS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-8B4AS	<b>Database:</b>	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,177.00	7.30	39.45	1,171.92	72.67	54.75	14,518,282.77	2,072,082.04	39.968446	-109.459401	
1,271.00	6.24	39.54	1,265.27	81.22	61.80	14,518,291.44	2,072,088.93	39.968469	-109.459376	
1,365.00	6.07	36.55	1,358.72	89.15	68.01	14,518,299.48	2,072,095.01	39.968491	-109.459354	
1,460.00	6.68	34.09	1,453.14	97.76	74.10	14,518,308.19	2,072,100.95	39.968515	-109.459332	
1,555.00	6.68	30.48	1,547.49	107.10	80.00	14,518,317.63	2,072,106.68	39.968540	-109.459311	
1,651.00	6.60	40.15	1,642.85	116.13	86.39	14,518,326.77	2,072,112.92	39.968565	-109.459288	
1,746.00	6.77	40.50	1,737.21	124.56	93.54	14,518,335.32	2,072,119.93	39.968588	-109.459262	
1,842.00	6.88	36.37	1,832.53	133.49	100.63	14,518,344.37	2,072,126.86	39.968613	-109.459237	
1,935.00	5.72	38.48	1,924.96	141.61	106.81	14,518,352.59	2,072,132.90	39.968635	-109.459215	
2,029.00	5.28	37.34	2,018.53	148.71	112.35	14,518,359.79	2,072,138.32	39.968654	-109.459195	
2,124.00	5.45	41.29	2,113.11	155.58	117.98	14,518,366.75	2,072,143.83	39.968673	-109.459175	
2,217.00	5.63	41.03	2,205.68	162.34	123.89	14,518,373.61	2,072,149.62	39.968692	-109.459154	
2,313.00	5.28	32.59	2,301.25	169.61	129.36	14,518,380.98	2,072,154.96	39.968712	-109.459135	
2,398.00	5.45	30.04	2,385.87	176.40	133.49	14,518,387.84	2,072,158.97	39.968730	-109.459120	
<b>tie on</b>										
2,464.00	5.30	28.03	2,451.58	181.80	136.49	14,518,393.30	2,072,161.88	39.968745	-109.459109	
2,559.00	4.34	28.98	2,546.25	188.82	140.29	14,518,400.38	2,072,165.56	39.968765	-109.459096	
2,655.00	3.49	34.13	2,642.02	194.42	143.69	14,518,406.03	2,072,168.86	39.968780	-109.459084	
2,751.00	2.88	38.87	2,737.87	198.71	146.84	14,518,410.38	2,072,171.94	39.968792	-109.459072	
2,846.00	2.69	39.62	2,832.76	202.29	149.76	14,518,414.01	2,072,174.80	39.968802	-109.459062	
2,941.00	2.13	86.24	2,927.69	204.12	152.95	14,518,415.90	2,072,177.95	39.968807	-109.459051	
3,037.00	1.81	91.62	3,023.63	204.20	156.24	14,518,416.03	2,072,181.24	39.968807	-109.459039	
3,132.00	1.56	95.12	3,118.59	204.04	159.03	14,518,415.92	2,072,184.03	39.968806	-109.459029	
3,227.00	1.56	97.87	3,213.55	203.75	161.60	14,518,415.67	2,072,186.61	39.968806	-109.459020	
3,322.00	1.56	102.74	3,308.52	203.28	164.14	14,518,415.25	2,072,189.16	39.968804	-109.459011	
3,417.00	0.88	165.99	3,403.50	202.29	165.58	14,518,414.28	2,072,190.61	39.968802	-109.459005	
3,513.00	0.94	165.99	3,499.49	200.81	165.95	14,518,412.81	2,072,191.01	39.968797	-109.459004	
3,608.00	1.13	165.12	3,594.47	199.15	166.38	14,518,411.16	2,072,191.46	39.968793	-109.459003	
3,703.00	1.19	157.12	3,689.45	197.34	167.00	14,518,409.35	2,072,192.12	39.968788	-109.459000	
3,799.00	1.31	147.37	3,785.43	195.49	167.98	14,518,407.53	2,072,193.13	39.968783	-109.458997	
3,894.00	0.75	163.87	3,880.41	193.98	168.74	14,518,406.03	2,072,193.91	39.968779	-109.458994	
3,990.00	0.94	165.99	3,976.40	192.61	169.10	14,518,404.67	2,072,194.30	39.968775	-109.458993	
4,085.00	1.00	160.37	4,071.39	191.08	169.57	14,518,403.14	2,072,194.80	39.968771	-109.458991	
4,181.00	1.19	166.12	4,167.37	189.32	170.09	14,518,401.39	2,072,195.35	39.968766	-109.458989	
4,276.00	0.56	146.12	4,262.36	187.98	170.59	14,518,400.06	2,072,195.87	39.968762	-109.458988	
4,371.00	0.13	195.87	4,357.36	187.49	170.82	14,518,399.57	2,072,196.10	39.968761	-109.458987	
4,466.00	0.69	311.74	4,452.36	187.77	170.36	14,518,399.84	2,072,195.64	39.968762	-109.458988	
4,561.00	0.50	309.74	4,547.35	188.41	169.62	14,518,400.48	2,072,194.89	39.968763	-109.458991	
4,656.00	0.38	277.24	4,642.35	188.72	168.98	14,518,400.77	2,072,194.25	39.968764	-109.458993	
4,751.00	0.13	271.12	4,737.35	188.76	168.56	14,518,400.80	2,072,193.83	39.968764	-109.458995	
4,846.00	0.88	328.62	4,832.34	189.38	168.08	14,518,401.42	2,072,193.33	39.968766	-109.458997	
4,941.00	0.75	324.84	4,927.33	190.51	167.34	14,518,402.54	2,072,192.57	39.968769	-109.458999	
5,037.00	0.63	321.99	5,023.33	191.44	166.65	14,518,403.46	2,072,191.87	39.968772	-109.459002	
5,132.00	0.38	331.24	5,118.32	192.13	166.18	14,518,404.14	2,072,191.39	39.968774	-109.459003	
5,228.00	0.19	325.87	5,214.32	192.54	165.94	14,518,404.54	2,072,191.14	39.968775	-109.459004	
5,323.00	0.25	339.24	5,309.32	192.87	165.77	14,518,404.86	2,072,190.97	39.968776	-109.459005	
5,419.00	0.06	350.74	5,405.32	193.11	165.69	14,518,405.11	2,072,190.88	39.968776	-109.459005	
5,514.00	0.25	208.74	5,500.32	192.98	165.58	14,518,404.97	2,072,190.78	39.968776	-109.459005	
5,610.00	0.31	197.36	5,596.32	192.55	165.41	14,518,404.54	2,072,190.61	39.968775	-109.459006	
5,705.00	0.44	178.87	5,691.32	191.94	165.34	14,518,403.93	2,072,190.55	39.968773	-109.459006	
5,800.00	0.75	178.62	5,786.31	190.95	165.36	14,518,402.94	2,072,190.59	39.968770	-109.459006	
5,896.00	0.81	186.99	5,882.30	189.65	165.29	14,518,401.64	2,072,190.54	39.968767	-109.459006	
5,991.00	1.00	176.49	5,977.29	188.16	165.26	14,518,400.14	2,072,190.54	39.968763	-109.459007	
6,087.00	0.63	160.49	6,073.28	186.82	165.49	14,518,398.82	2,072,190.79	39.968759	-109.459006	
6,182.00	0.38	45.37	6,168.28	186.55	165.89	14,518,398.55	2,072,191.19	39.968758	-109.459004	

# Anadarko Petroleum Corp

## Survey Report - Geographic

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1022-8B PAD  
**Well:** NBU 1022-8B4AS  
**Wellbore:** NBU 1022-8B4AS  
**Design:** NBU 1022-8B4AS

**Local Co-ordinate Reference:** Well NBU 1022-8B4AS  
**TVD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**MD Reference:** 18' RKB + GL @ 5203.40ft (SST 54)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,278.00	0.44	84.37	6,264.28	186.81	166.48	14,518,398.82	2,072,191.78	39.968759	-109.459002	
6,373.00	0.56	102.99	6,359.27	186.74	167.29	14,518,398.77	2,072,192.59	39.968759	-109.458999	
6,469.00	0.69	106.74	6,455.27	186.47	168.31	14,518,398.51	2,072,193.61	39.968758	-109.458996	
6,564.00	0.81	116.12	6,550.26	186.01	169.46	14,518,398.07	2,072,194.77	39.968757	-109.458992	
6,659.00	0.69	32.12	6,645.25	186.20	170.36	14,518,398.28	2,072,195.67	39.968757	-109.458988	
6,754.00	0.81	34.12	6,740.25	187.24	171.04	14,518,399.33	2,072,196.34	39.968760	-109.458986	
6,848.00	0.88	53.62	6,834.24	188.22	172.00	14,518,400.32	2,072,197.27	39.968763	-109.458983	
6,944.00	0.94	62.62	6,930.22	189.02	173.29	14,518,401.14	2,072,198.55	39.968765	-109.458978	
7,039.00	0.25	99.24	7,025.22	189.34	174.19	14,518,401.49	2,072,199.44	39.968766	-109.458975	
7,134.00	0.38	282.87	7,120.22	189.38	174.08	14,518,401.52	2,072,199.34	39.968766	-109.458975	
7,230.00	1.75	315.49	7,216.20	190.49	172.75	14,518,402.61	2,072,197.98	39.968769	-109.458980	
7,325.00	1.56	320.87	7,311.16	192.53	170.91	14,518,404.62	2,072,196.11	39.968775	-109.458986	
7,420.00	1.06	321.99	7,406.14	194.23	169.56	14,518,406.29	2,072,194.73	39.968779	-109.458991	
7,613.00	0.38	11.24	7,599.12	196.26	168.58	14,518,408.31	2,072,193.72	39.968785	-109.458995	
7,707.00	0.50	78.24	7,693.12	196.65	169.04	14,518,408.71	2,072,194.17	39.968786	-109.458993	
7,802.00	0.56	102.74	7,788.11	196.63	169.90	14,518,408.70	2,072,195.03	39.968786	-109.458990	
7,898.00	0.50	105.74	7,884.11	196.42	170.76	14,518,408.50	2,072,195.90	39.968785	-109.458987	
7,993.00	0.69	114.74	7,979.10	196.06	171.68	14,518,408.16	2,072,196.82	39.968784	-109.458984	
8,089.00	1.00	129.49	8,075.09	195.29	172.85	14,518,407.41	2,072,198.01	39.968782	-109.458979	
8,184.00	1.50	123.87	8,170.07	194.07	174.53	14,518,406.22	2,072,199.70	39.968779	-109.458974	
8,280.00	1.81	114.49	8,266.03	192.74	176.95	14,518,404.93	2,072,202.14	39.968775	-109.458965	
8,375.00	1.94	110.37	8,360.98	191.56	179.82	14,518,403.80	2,072,205.04	39.968772	-109.458955	
8,471.00	1.69	101.24	8,456.93	190.72	182.73	14,518,403.01	2,072,207.96	39.968770	-109.458944	
8,565.00	2.00	94.24	8,550.88	190.33	185.73	14,518,402.67	2,072,210.96	39.968769	-109.458934	
8,660.00	2.31	85.74	8,645.82	190.35	189.29	14,518,402.75	2,072,214.53	39.968769	-109.458921	
8,756.00	2.31	91.87	8,741.74	190.43	193.15	14,518,402.90	2,072,218.39	39.968769	-109.458907	
8,851.00	2.56	91.49	8,836.65	190.31	197.19	14,518,402.85	2,072,222.42	39.968769	-109.458893	
8,947.00	2.81	102.37	8,932.55	189.75	201.63	14,518,402.37	2,072,226.87	39.968767	-109.458877	
9,041.00	2.81	108.37	9,026.44	188.53	206.07	14,518,401.22	2,072,231.33	39.968764	-109.458861	
9,136.00	2.56	111.99	9,121.33	187.00	210.24	14,518,399.77	2,072,235.53	39.968760	-109.458846	
9,232.00	2.38	117.37	9,217.24	185.28	214.00	14,518,398.11	2,072,239.32	39.968755	-109.458833	
9,327.00	2.44	115.99	9,312.16	183.49	217.57	14,518,396.38	2,072,242.92	39.968750	-109.458820	
9,422.00	2.56	113.62	9,407.07	181.75	221.33	14,518,394.71	2,072,246.71	39.968745	-109.458806	
9,518.00	2.56	116.12	9,502.97	179.95	225.22	14,518,392.98	2,072,250.63	39.968740	-109.458793	
9,613.00	2.75	119.74	9,597.87	177.89	229.11	14,518,390.98	2,072,254.55	39.968735	-109.458779	
9,708.00	2.63	123.24	9,692.77	175.56	232.91	14,518,388.72	2,072,258.39	39.968728	-109.458765	
9,804.00	2.44	123.12	9,788.67	173.24	236.46	14,518,386.46	2,072,261.99	39.968722	-109.458753	
9,899.00	2.25	123.62	9,883.59	171.10	239.71	14,518,384.38	2,072,265.27	39.968716	-109.458741	
9,994.00	2.19	121.49	9,978.52	169.12	242.81	14,518,382.45	2,072,268.40	39.968710	-109.458730	
10,120.00	2.19	123.99	10,104.43	166.51	246.86	14,518,379.92	2,072,272.50	39.968703	-109.458715	
<b>last mwd survey</b>										
10,180.00	2.19	123.99	10,164.38	165.23	248.76	14,518,378.67	2,072,274.42	39.968700	-109.458709	
<b>projection</b>										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
2,398.00	2,385.87	176.40	133.49	tie on	
10,120.00	10,104.43	166.51	246.86	last mwd survey	
10,180.00	10,164.38	165.23	248.76	projection	