

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

FORM 3

AMENDED REPORT 

<b>APPLICATION FOR PERMIT TO DRILL</b>						1. WELL NAME and NUMBER NBU 1022-4A1BS						
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT NATURAL BUTTES						
4. TYPE OF WELL Gas Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME NATURAL BUTTES						
6. NAME OF OPERATOR KERR-MCGEE OIL & GAS ONSHORE, L.P.						7. OPERATOR PHONE 720 929-6515						
8. ADDRESS OF OPERATOR P.O. Box 173779, Denver, CO, 80217						9. OPERATOR E-MAIL julie.jacobson@anadarko.com						
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) UTU-01191			11. MINERAL OWNERSHIP FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>						
13. NAME OF SURFACE OWNER (if box 12 = 'fee')						14. SURFACE OWNER PHONE (if box 12 = 'fee')						
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')						16. SURFACE OWNER E-MAIL (if box 12 = 'fee')						
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			19. SLANT VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>						
20. LOCATION OF WELL		FOOTAGES		QTR-QTR		SECTION		TOWNSHIP		RANGE		MERIDIAN
LOCATION AT SURFACE		494 FNL 1326 FEL		NWNE		4		10.0 S		22.0 E		S
Top of Uppermost Producing Zone		219 FNL 480 FEL		NENE		4		10.0 S		22.0 E		S
At Total Depth		219 FNL 480 FEL		NENE		4		10.0 S		22.0 E		S
21. COUNTY UINTAH			22. DISTANCE TO NEAREST LEASE LINE (Feet) 526			23. NUMBER OF ACRES IN DRILLING UNIT 1042						
			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 677			26. PROPOSED DEPTH MD: 10222 TVD: 10086						
27. ELEVATION - GROUND LEVEL 5043			28. BOND NUMBER WYB000291			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 43-8496						
<b>Hole, Casing, and Cement Information</b>												
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement		Sacks	Yield	Weight	
SURF	11	8.625	0 - 2360	28.0	J-55 LT&C	0.2	Type V		180	1.15	15.8	
							Class G		270	1.15	15.8	
PROD	7.875	4.5	0 - 10222	11.6	HCP-110 LT&C	12.5	Premium Lite High Strength		300	3.38	12.0	
							50/50 Poz		1500	1.31	14.3	
<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						
NAME Cara Mahler				TITLE Regulatory Analyst I				PHONE 720 929-6029				
SIGNATURE				DATE 06/04/2013				EMAIL cara.mahler@anadarko.com				
API NUMBER ASSIGNED 43047538260000				APPROVAL   Permit Manager								

RECEIVED: June 13, 2013

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

	<b><u>NBU 1022-4A1BS</u></b>	
Surface:	494 FNL / 1326 FEL	NWNE
BHL:	219 FNL / 480 FEL	NENE

Section 4 T10S R22E

Unitah County, Utah  
Mineral Lease: UTU-01191**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

1. & 2.a **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	1,162'	
Birds Nest	1,418'	Water
Mahogany	1,906'	Water
Wasatch	4,364'	Gas
Mesaverde	6,763'	Gas
Sego	8,961'	Gas
Castlegate	9,039'	Gas
Blackhawk	9,486'	Gas
TVD =	10,086'	
TD =	10,222'	

- 2.b** Kerr McGee Oil & Gas Onshore LP (Kerr McGee) may elect to drill to (i) the Blackhawk formation (part of the Mesaverde Group), (ii) to a shallower depth within the Mesaverde Group, or (iii) to the Wasatch Formation. If Kerr McGee drills to the Blackhawk formation, please refer to Blackhawk as the bottom formation. The attached Blackhawk Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the deeper formation.

If Kerr-McGee drills to a shallower depth in the Mesaverde Group or to the Wasatch Formation, please refer to the attached Wasatch/Mesaverde Drilling Program which includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the shallower formations.

**3. Pressure Control Equipment**

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

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

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**5. Drilling Fluids Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**6. Evaluation Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

**7. Abnormal Conditions:****7.a Blackhawk (Part of Mesaverde Group)**

Maximum anticipated bottom hole pressure calculated at 10086' TVD, approximately equals  
6,455 psi (0.64 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,222 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

**7.b Wasach Formation/Mesaverde Group**

Maximum anticipated bottom hole pressure calculated at 8961' TVD, approximately equals  
5,466 psi (0.61 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 3,518 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

**8. Anticipated Starting Dates:**

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

**9. Variiances:**

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

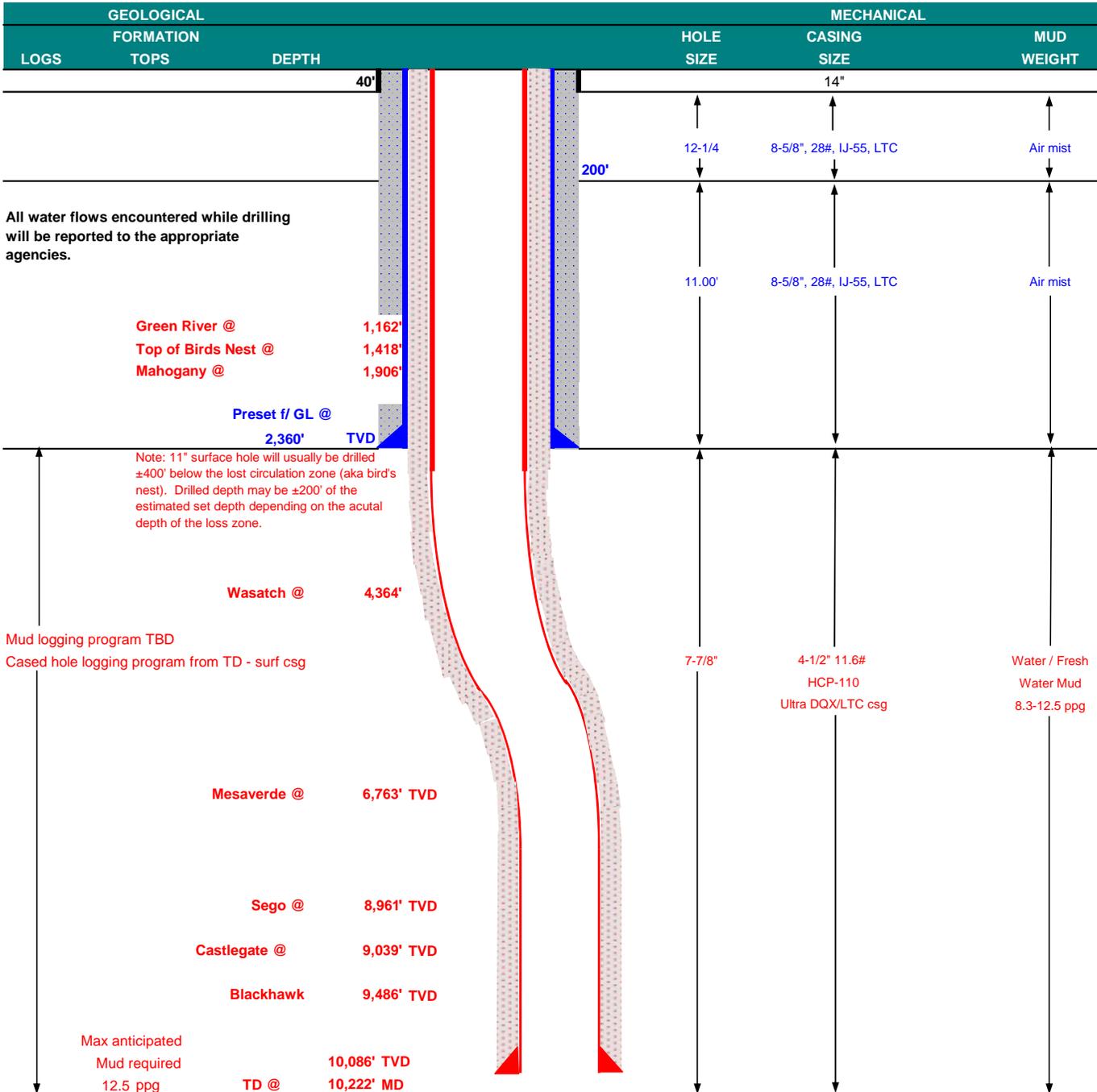
**10. Other Information:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program



**KERR-McGEE OIL & GAS ONSHORE LP**  
**Blackhawk Drilling Program**

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	April 4, 2013	
WELL NAME	<b>NBU 1022-4A1BS</b>		TD	10,086'	TVD 10,222' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	NWNE	494 FNL	1326 FEL	Sec 4 T 10S	R 22E
	Latitude: 39.983911	Longitude: -109.440282		NAD 83	
BTM HOLE LOCATION	NENE	219 FNL	480 FEL	Sec 4 T 10S	R 22E
	Latitude: 39.984665	Longitude: -109.437275		NAD 83	
OBJECTIVE ZONE(S)	BLACKHAWK (Part of the Mesaverde Group)				
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), BLM (Surface), UDOGM Tri-County Health Dept.				





**KERR-McGEE OIL & GAS ONSHORE LP**  
**Blackhawk Drilling Program**

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	DQX
								TENSION	
CONDUCTOR	14"	0-40'							
						3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,360	28.00	IJ-55	LTC	2.28	1.70	6.01	N/A
						10,690	8,650	279,000	367,174
PRODUCTION	4-1/2"	0 to 5,000	11.60	HCP-110	DQX	1.19	1.32		3.83
	4-1/2"	5,000 to 10,222'	11.60	HCP-110	LTC	1.19	1.32	5.69	

**Surface Casing:**

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe

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

(Collapse Assumption: Fully Evacuated Casing, Max MW)

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

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi) 0.64 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

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

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
			+ 0.25 pps flocele				
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
			+ 2% CaCl + 0.25 pps flocele				
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE	LEAD	1,860'	Premium cmt + 16% Gel + 10 pps gilsonite	230	35%	12.00	2.86
			+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps				
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
			+ 0.25 pps flocele				
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	3,862'	Premium Lite II +0.25 pps celloflake + .4% FL-52	300	35%	12.00	3.38
			+ .3% R-3 + 5 lbs/sk Kol-Seal + 6%Bentonite II +				
			1.2% Sodium Metasilicate + .05 lbs/sk Static Free				
	TAIL	6,360'	50/50 Poz/G + 10% salt + .05 lbs/sk Static Free	1,500	35%	14.30	1.31
			+ 1.2% Sodium Metasilicate + .5 % EC-1				
			+ .002 gps FP-6L + 2% Bentonite II				

\*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.

IF extreme mud losses are observed OR cement doesn't reach surface on a well on the pad, a DV Tool may be used. With Cement Baskets above and Below it.

DRILLING ENGINEER:

Nick Spence / John Tuckwiller / Brian Cocchiere / Tyler Elliott

DATE:

DRILLING SUPERINTENDENT:

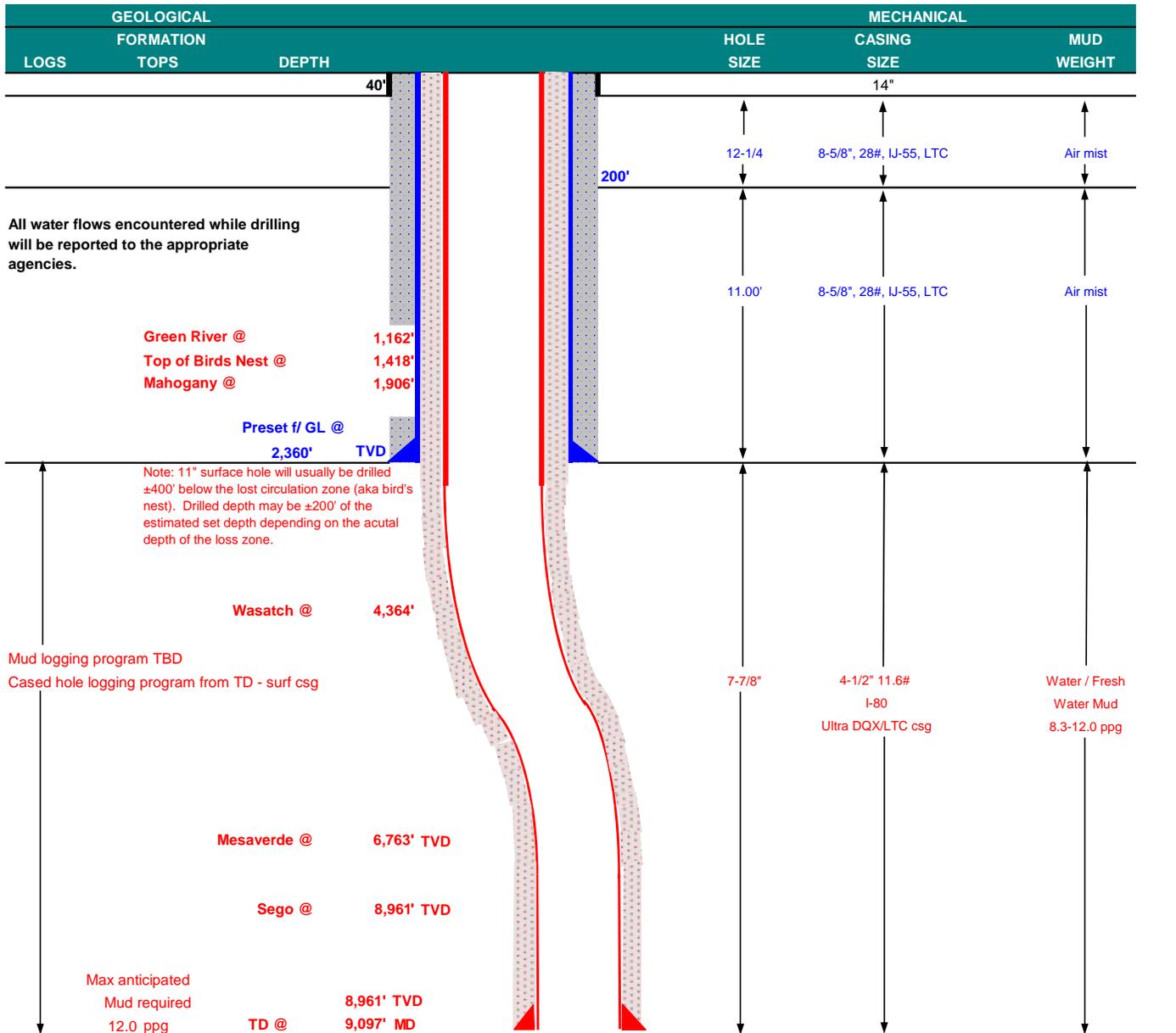
Kenny Gathings / Lovel Young

DATE:



### KERR-McGEE OIL & GAS ONSHORE LP Wasatch/Mesaverde Drilling Program

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	April 4, 2013			
WELL NAME	NBU 1022-4A1BS		TD	8,961'	TVD	9,097' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	5,043'
SURFACE LOCATION	NWNE	494 FNL	1326 FEL	Sec 4	T 10S	R 22E	
	Latitude:	39.983911	Longitude:	-109.440282		NAD 83	
BTM HOLE LOCATION	NENE	219 FNL	480 FEL	Sec 4	T 10S	R 22E	
	Latitude:	39.984665	Longitude:	-109.437275		NAD 83	
OBJECTIVE ZONE(S)	Wasatch Formation/Mesaverde Group						
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), BLM (Surface), UDOGM Tri-County Health Dept.						





**KERR-McGEE OIL & GAS ONSHORE LP**  
**Wasatch/Mesaverde Drilling Program**

**CASING PROGRAM**

							DESIGN FACTORS			
	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	LTC	DQX
		TENSION								
CONDUCTOR	14"	0-40'								
SURFACE	8-5/8"	0	to 2,360	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
							2.28	1.70	6.01	N/A
PRODUCTION	4-1/2"	0	to 5,000	11.60	I-80	DQX	7,780	6,350		267,035
							1.11	1.14		3.10
	4-1/2"	5,000	to 9,097'	11.60	I-80	LTC	1.11	1.14	223,000	5.75

**Surface casing:**

(Burst Assumptions: TD = 12.0 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\*Buoy.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.61 psi/ft = bottomhole gradient

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

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE Option 1	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE Option 2	LEAD	1,860'	Premium cmt + 16% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOC + GR 3 pps	230	35%	12.00	2.86
	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps Flocele + 3% salt BWOC + GR 3 pps	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	3,857'	Premium Lite II + 0.25 pps celloflake + .4% FL-52 + .3% R-3 + 5 lbs/sk Kol-Seal + 6%Bentonite II + 1.2% Sodium Metasilicate + .05 lbs/sk Static Free	300	35%	12.00	3.38
	TAIL	5,240'	50/50 Poz/G + 10% salt + .05 lbs/sk Static Free + 1.2% Sodium Metasilicate + .5 % EC-1 +.002 gps FP-6L + 2% Bentonite II	1,240	35%	14.30	1.31

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

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**DRILLING ENGINEER:**

Nick Spence / John Tuckwiller / Brian Cocchiere / Tyler Elliott

**DATE:**

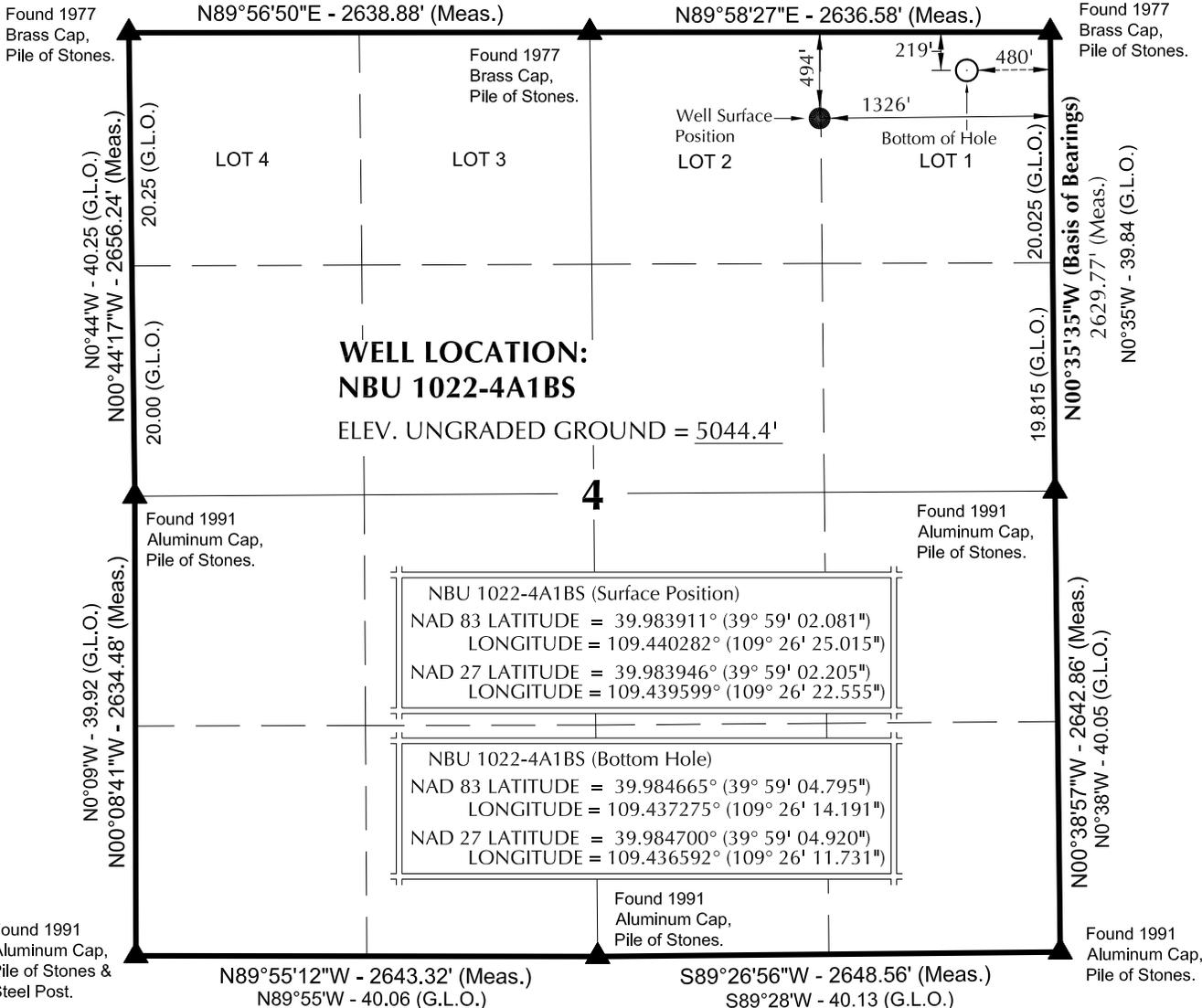
**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

**DATE:**

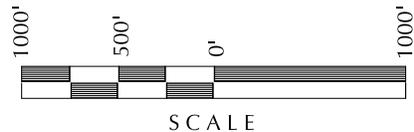
# T10S, R22E, S.L.B.&M.

N89°56'E - 79.92 (G.L.O.)



**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines. G.L.O. distances are shown in feet or chains.
- 2. 1 chain = 66 feet.
- 3. The Bottom of hole bears N71°55'37"E 886.46' from the Surface Position.
- 4. NAD 83 Latitude & Longitude are (CORS 96)(EPOCH:2002).
- 5. Bearings and Distances are based upon a Local Cartesian Grid, oriented to Geodetic North at the North 1/4 Corner of Section 8, T10S, R22E, S.L.B.&M. The Grid having a mean project height of 5300'. Lineal units used are U.S. Survey Foot.
- 6. Basis of elevation is Tri-Sta "Two Water" located in Lot 4 of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**SURVEYOR'S CERTIFICATE**

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

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

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

**WELL PAD: NBU 1022-4A**

**NBU 1022-4A1BS**  
**WELL PLAT**  
**219' FNL, 480' FEL (Bottom Hole)**  
**LOT 1 OF SECTION 4, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH.**

**609**

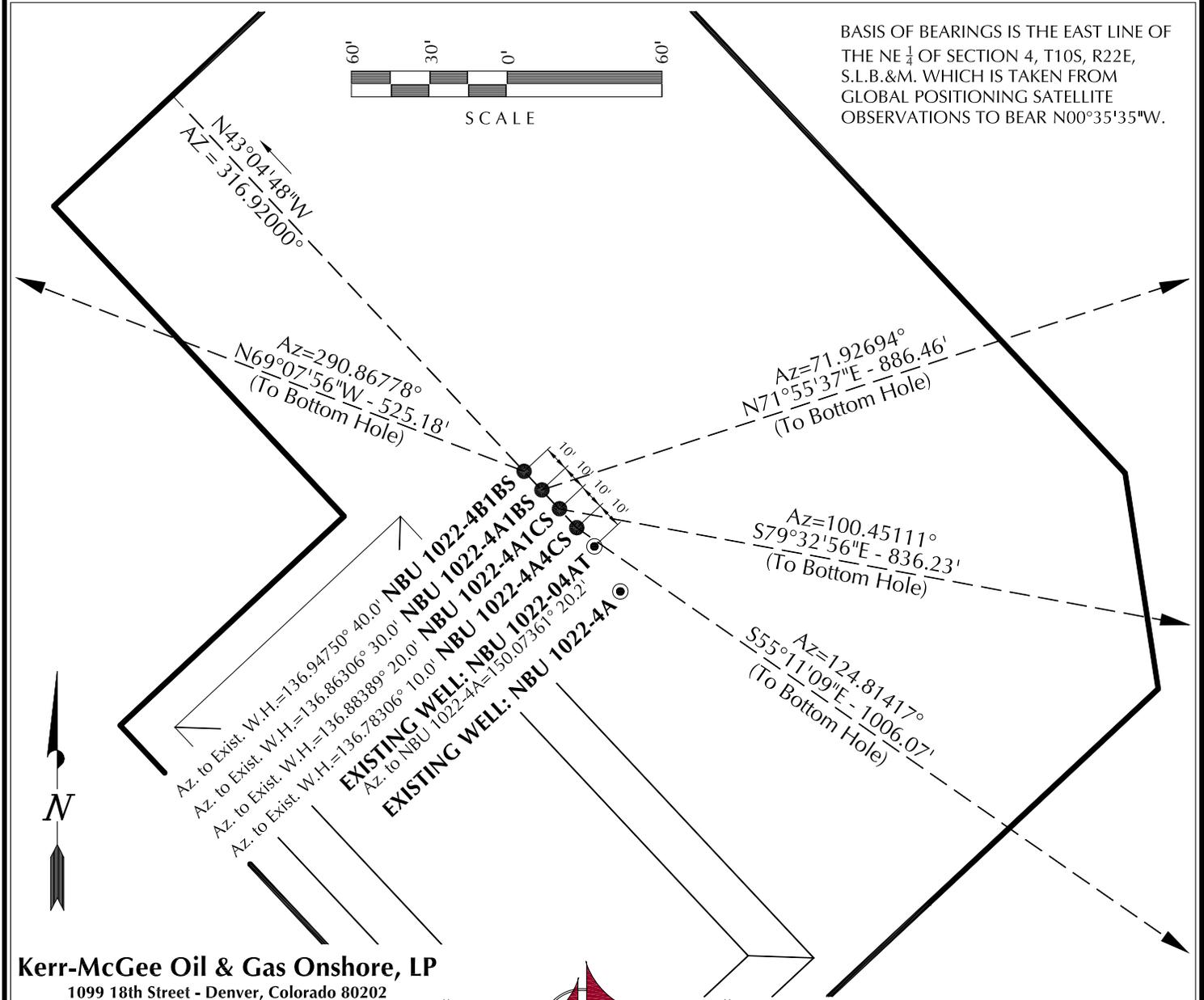
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

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

DATE SURVEYED: 8-3-12	SURVEYED BY: J.W.	SHEET NO: <b>3</b>
DATE DRAWN: 8-15-12	DRAWN BY: T.J.R.	
SCALE: 1" = 1000'		3 OF 16

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1022-4A4CS	39°59'01.936"	109°26'24.840"	39°59'02.061"	109°26'22.380"	508' FNL 1312' FEL	39°58'56.259"	109°26'14.233"	39°58'56.384"	109°26'11.774"	1083' FNL 492' FEL
NBU 1022-4A1CS	39°59'02.008"	109°26'24.927"	39°59'02.133"	109°26'22.467"	501' FNL 1319' FEL	39°59'00.507"	109°26'14.366"	39°59'00.632"	109°26'11.907"	653' FNL 498' FEL
NBU 1022-4A1BS	39°59'02.081"	109°26'25.015"	39°59'02.205"	109°26'22.555"	494' FNL 1326' FEL	39°59'04.795"	109°26'14.191"	39°59'04.920"	109°26'11.731"	219' FNL 480' FEL
NBU 1022-4B1BS	39°59'02.153"	109°26'25.102"	39°59'02.278"	109°26'22.642"	486' FNL 1332' FEL	39°59'04.002"	109°26'31.404"	39°59'04.127"	109°26'28.944"	299' FNL 1821' FEL
NBU 1022-04AT	39°59'01.864"	109°26'24.752"	39°59'01.989"	109°26'22.292"	516' FNL 1305' FEL					
NBU 1022-4A	39°59'01.691"	109°26'24.622"	39°59'01.816"	109°26'22.163"	533' FNL 1295' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole											
WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-4A4CS	-574.4'	826.0'	NBU 1022-4A1CS	-151.7'	822.4'	NBU 1022-4A1BS	275.0'	842.7'	NBU 1022-4B1BS	187.1'	-490.7'



BASIS OF BEARINGS IS THE EAST LINE OF THE NE 1/4 OF SECTION 4, T10S, R22E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°35'35\"/>

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

**WELL PAD - NBU 1022-4A**

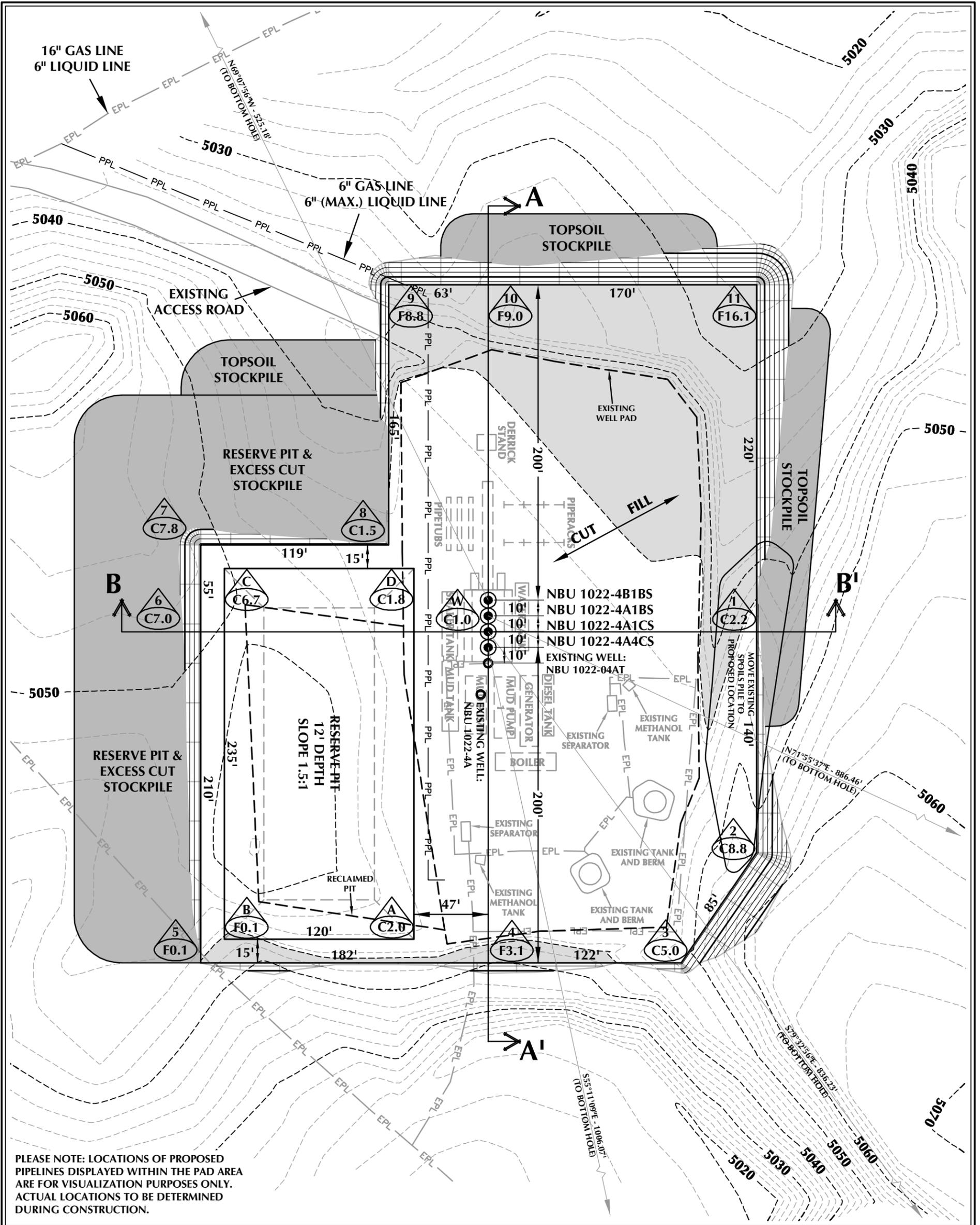
**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1022-4A4CS, NBU 1022-4A1CS,  
NBU 1022-4A1BS & NBU 1022-4B1BS  
LOCATED IN SECTION 4, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH.



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

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

DATE SURVEYED: 8-3-12	SURVEYED BY: J.W.	SHEET NO: <b>5</b>
DATE DRAWN: 8-15-12	DRAWN BY: T.J.R.	
SCALE: 1" = 60'		5 OF 16



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

**WELL PAD - NBU 1022-4A DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5044.4'  
 FINISHED GRADE ELEVATION = 5043.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.35 ACRES  
 TOTAL DISTURBANCE AREA = 4.55 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-4A**

**WELL PAD - LOCATION LAYOUT**  
 NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH



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

**WELL PAD QUANTITIES**  
 TOTAL CUT FOR WELL PAD = 10,049 C.Y.  
 TOTAL FILL FOR WELL PAD = 8,652 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,523 C.Y.  
 EXCESS MATERIAL = 1,397 C.Y.

**RESERVE PIT QUANTITIES**  
 TOTAL CUT FOR RESERVE PIT  
 +/- 9,890 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 37,880 BARRELS

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

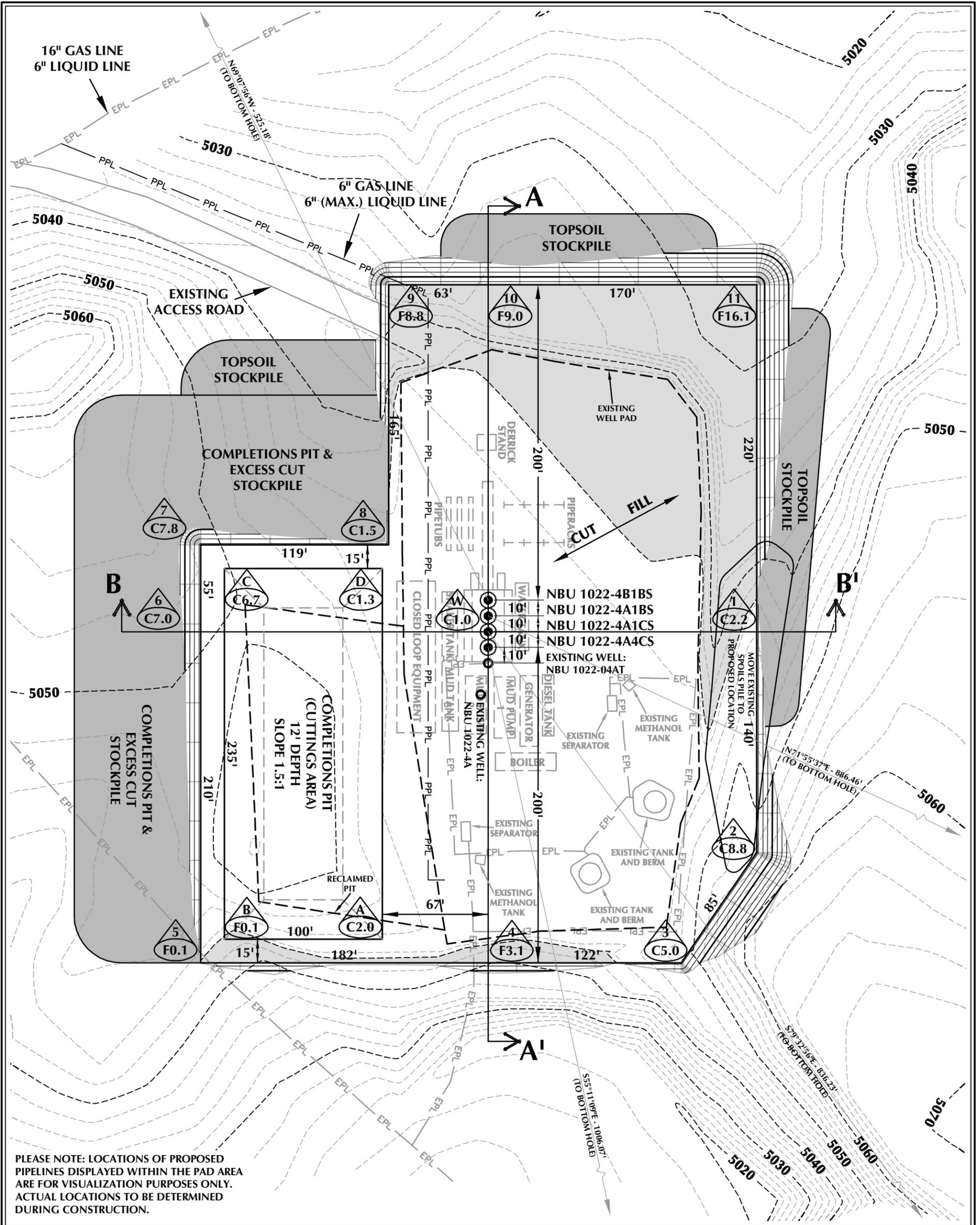
**WELL PAD LEGEND**

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



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

SCALE: 1"=60' DATE: 8/30/12 SHEET NO:  
 REVISED: 1/8/13 JID 6 6 OF 16



**WELL PAD - NBU 1022-4A (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5044.4'  
 FINISHED GRADE ELEVATION = 5043.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.35 ACRES  
 TOTAL DISTURBANCE AREA = 4.55 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-4A**

**WELL PAD - LOCATION LAYOUT**  
 NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH

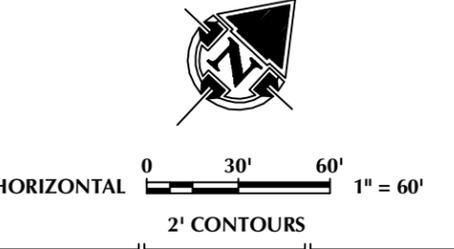


**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**  
 TOTAL CUT FOR WELL PAD = 10,049 C.Y.  
 TOTAL FILL FOR WELL PAD = 8,652 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,523 C.Y.  
 EXCESS MATERIAL = 1,397 C.Y.

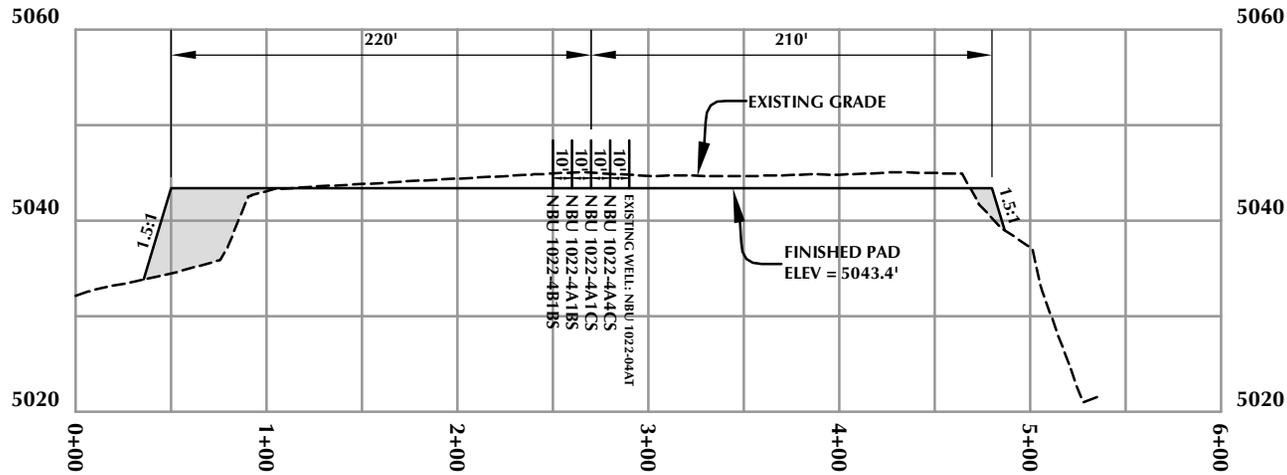
**COMPLETIONS PIT QUANTITIES**  
 TOTAL CUT FOR COMPLETIONS PIT  
 +/- 7,960 C.Y.  
 COMPLETIONS PIT CAPACITY  
 (2' OF FREEBOARD)  
 +/- 30,260 BARRELS

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

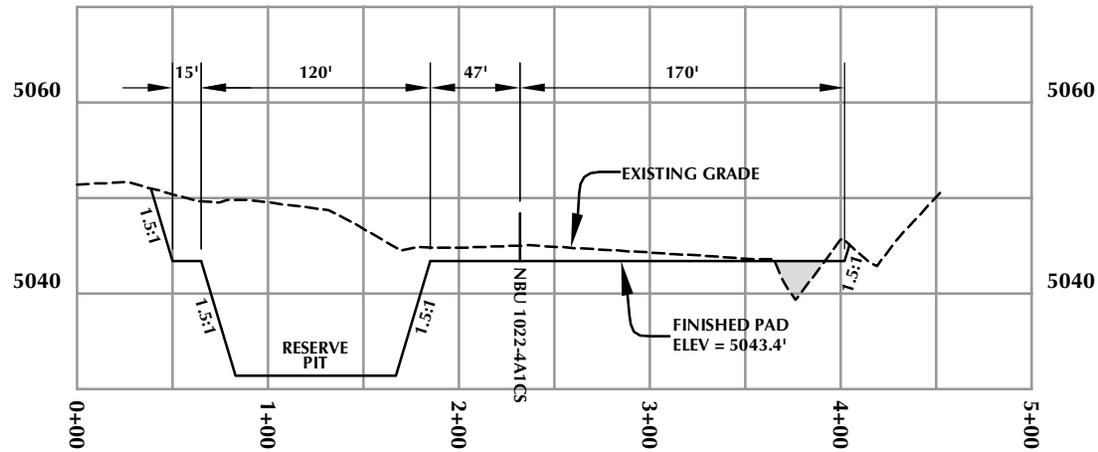


**TIMBERLINE** ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078  
 (435) 789-1365

SCALE: 1"=60' DATE: 1/8/13 SHEET NO: **6B** 6B OF 16



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 1022-4A**

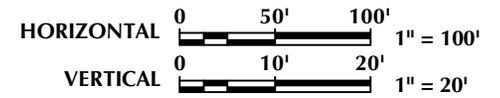
**WELL PAD - CROSS SECTIONS**  
NBU 1022-4A4CS, NBU 1022-4A1CS,  
NBU 1022-4A1BS & NBU 1022-4B1BS  
LOCATED IN SECTION 4, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

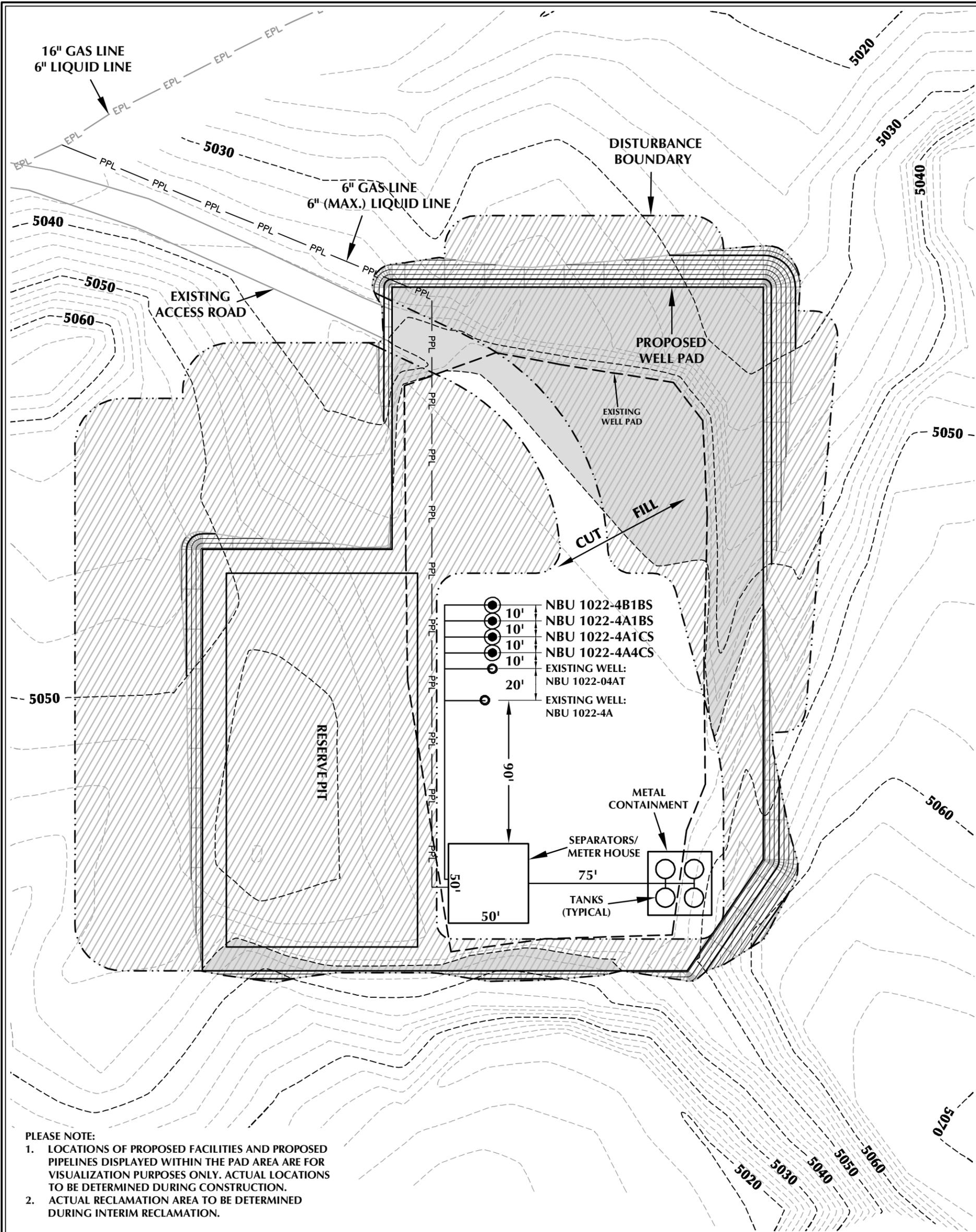
**TIMBERLINE**  
ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365



Scale: 1"=100'	Date: 8/30/12	SHEET NO:
REVISED:		<b>7</b> 7 OF 16

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

**WELL PAD - NBU 1022-4A RECLAMATION DESIGN SUMMARY**

TOTAL DISTURBANCE AREA = 4.55 ACRES (INCLUDING EXISTING)  
 RECLAMATION AREA = 3.49 ACRES  
 TOTAL WELL PAD AREA AFTER RECLAMATION = 1.06 ACRES

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

WELL PAD - NBU 1022-4A

WELL PAD - RECLAMATION LAYOUT  
 NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH



CONSULTING, LLC  
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 Sheridan, WY 82801  
 Phone 307-674-0609  
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**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE
- RECLAMATION AREA



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

SCALE: 1"=60'	DATE: 8/30/12	SHEET NO:
REVISED:	JID 1/8/13	<b>8</b> 8 OF 16

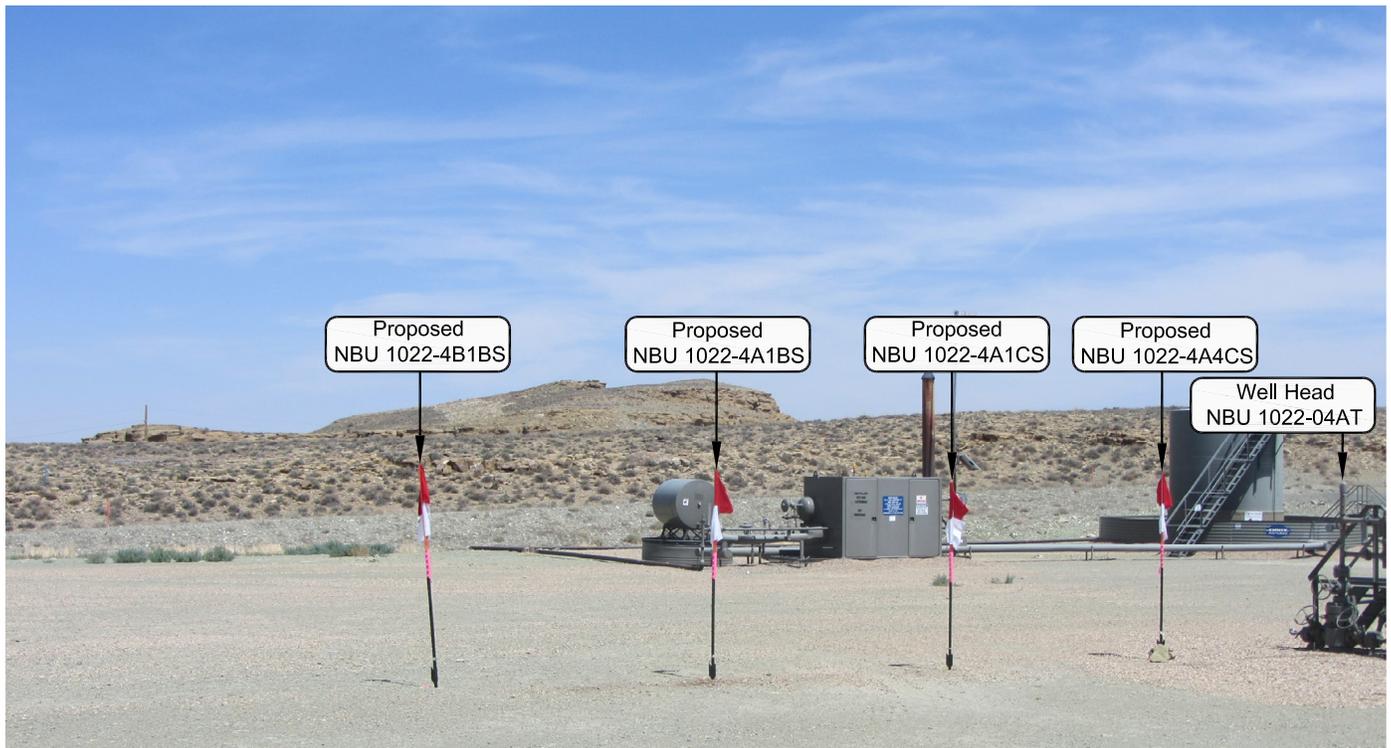


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: EASTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: NORTHEASTERLY

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

**WELL PAD - NBU 1022-4A**

**LOCATION PHOTOS**

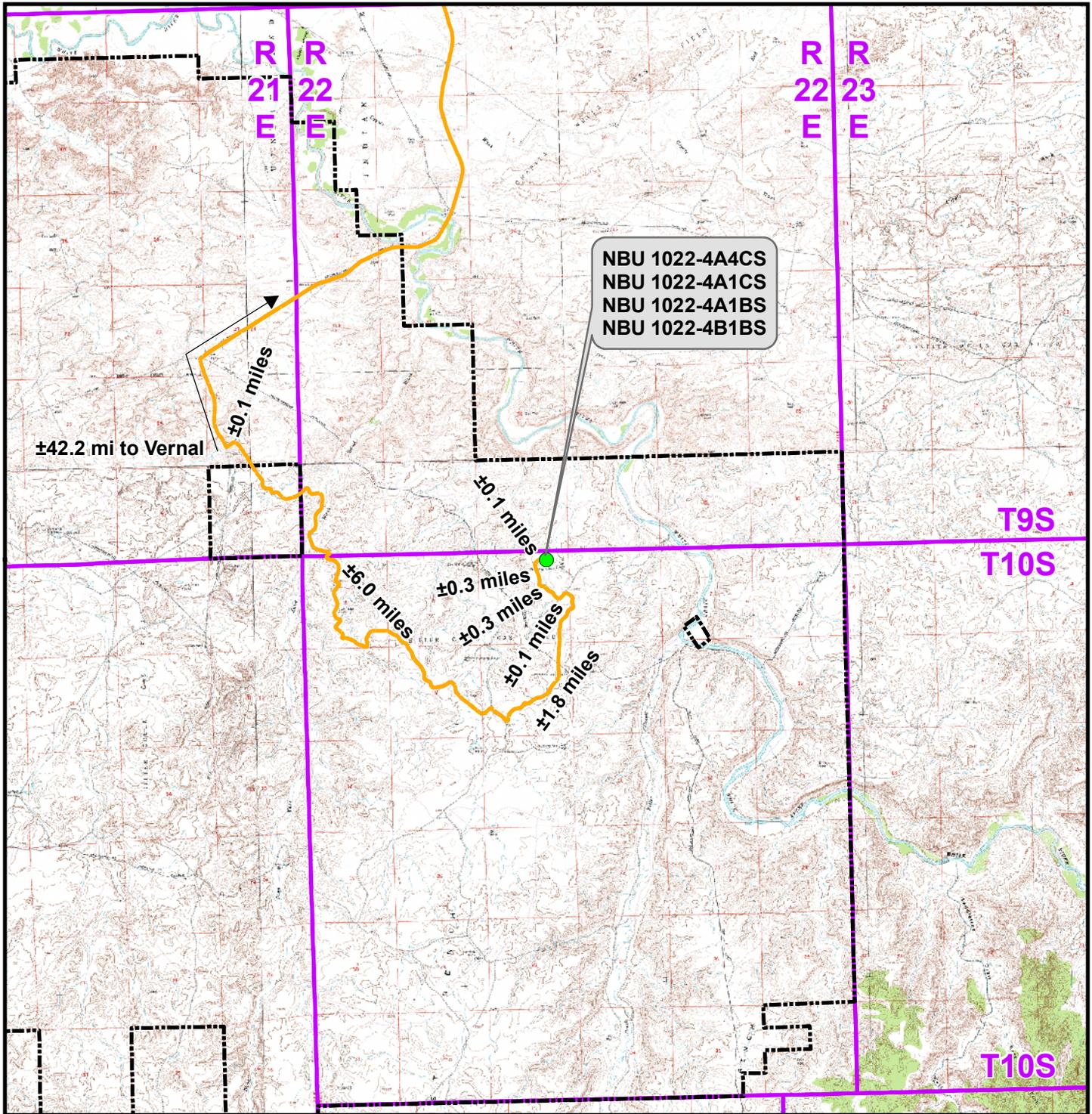
**NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.**



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 2155 North Main Street  
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**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE PHOTOS TAKEN: 8-3-12	PHOTOS TAKEN BY: J.W.	SHEET NO: <b>9</b> 9 OF 16
DATE DRAWN: 8-15-12	DRAWN BY: T.J.R.	
Date Last Revised:		



File: K:\ANADARKO\2012\2012\_52\_NBU\_1022-4\_FOCUS\GIS\Maps\_ABCDENBU\_1022-4A\_NBU\_1022-4A\_A.mxd, 8/29/2012 6:19:59 PM

**Legend**

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

Distance From Well Pad - NBU 1022-4A To Unit Boundary: ±5,779ft

**WELL PAD - NBU 1022-4A**

**TOPO A**  
 NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

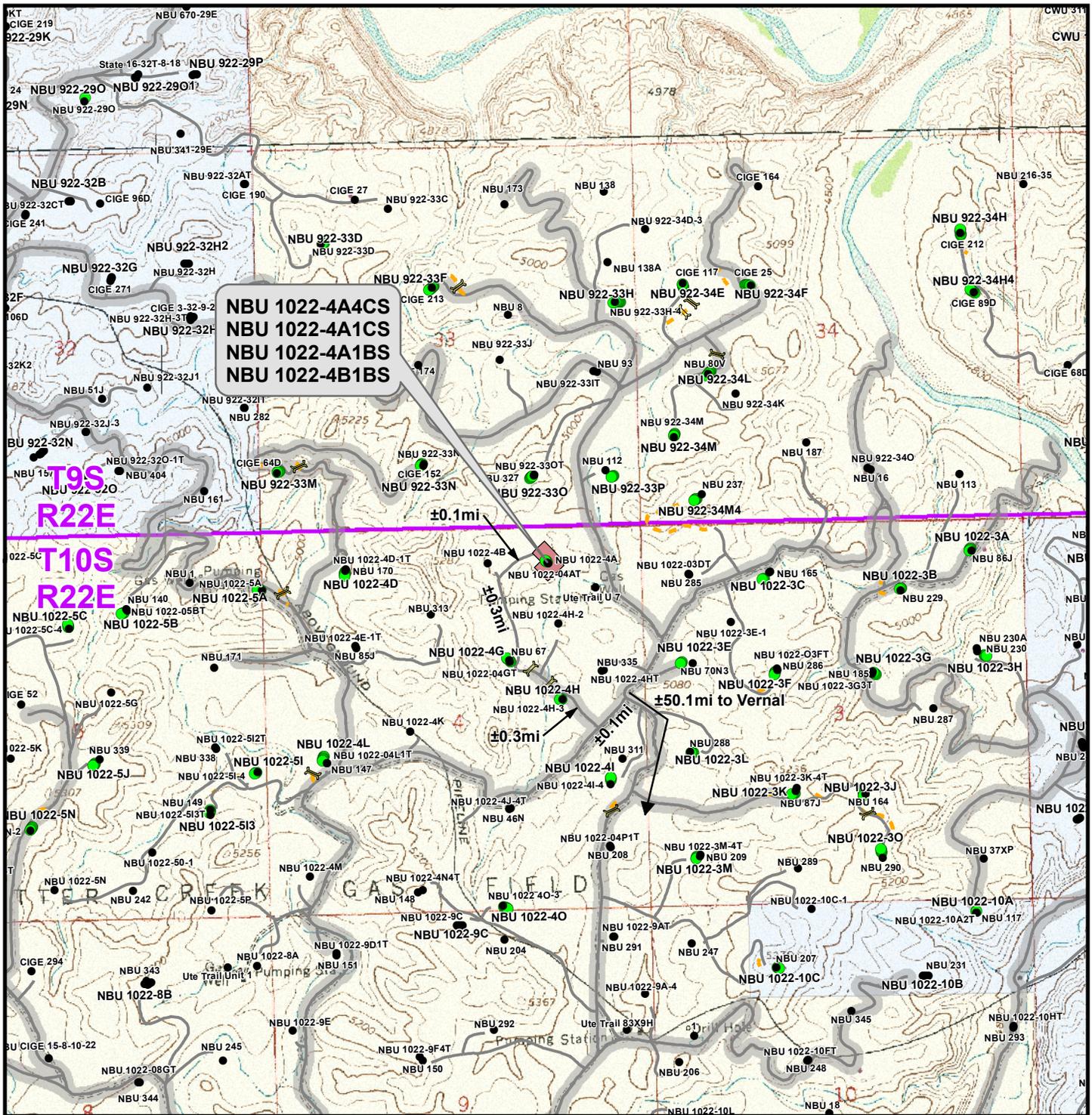
1099 18th Street  
 Denver, Colorado 80202



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



SCALE: 1:100,000	NAD83 USP Central	SHEET NO:
DRAWN: TL	DATE: 30 Aug 2012	<b>10</b>
REVISED:	DATE:	



File: K:\ANADARKO\2012\2012\_52\_NBU\_1022-4\_FOCUS\GIS\Maps\_ABCDENBU\_1022-4A\_B.mxd, 1/14/2013 11:04:00 AM

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- Road - Existing
- - - Road - Proposed
- ▬ County Road
- 🚧 Culvert/LWC - Proposed
- Bureau of Land Management
- Indian Reservation
- State
- Private

Total Proposed Road Length: ±0ft

**WELL PAD - NBU 1022-4A**

**TOPO B**  
 NBU 1022-4A4CS, NBU 1022-4A1CS,  
 NBU 1022-4A1BS & NBU 1022-4B1BS  
 LOCATED IN SECTION 4, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

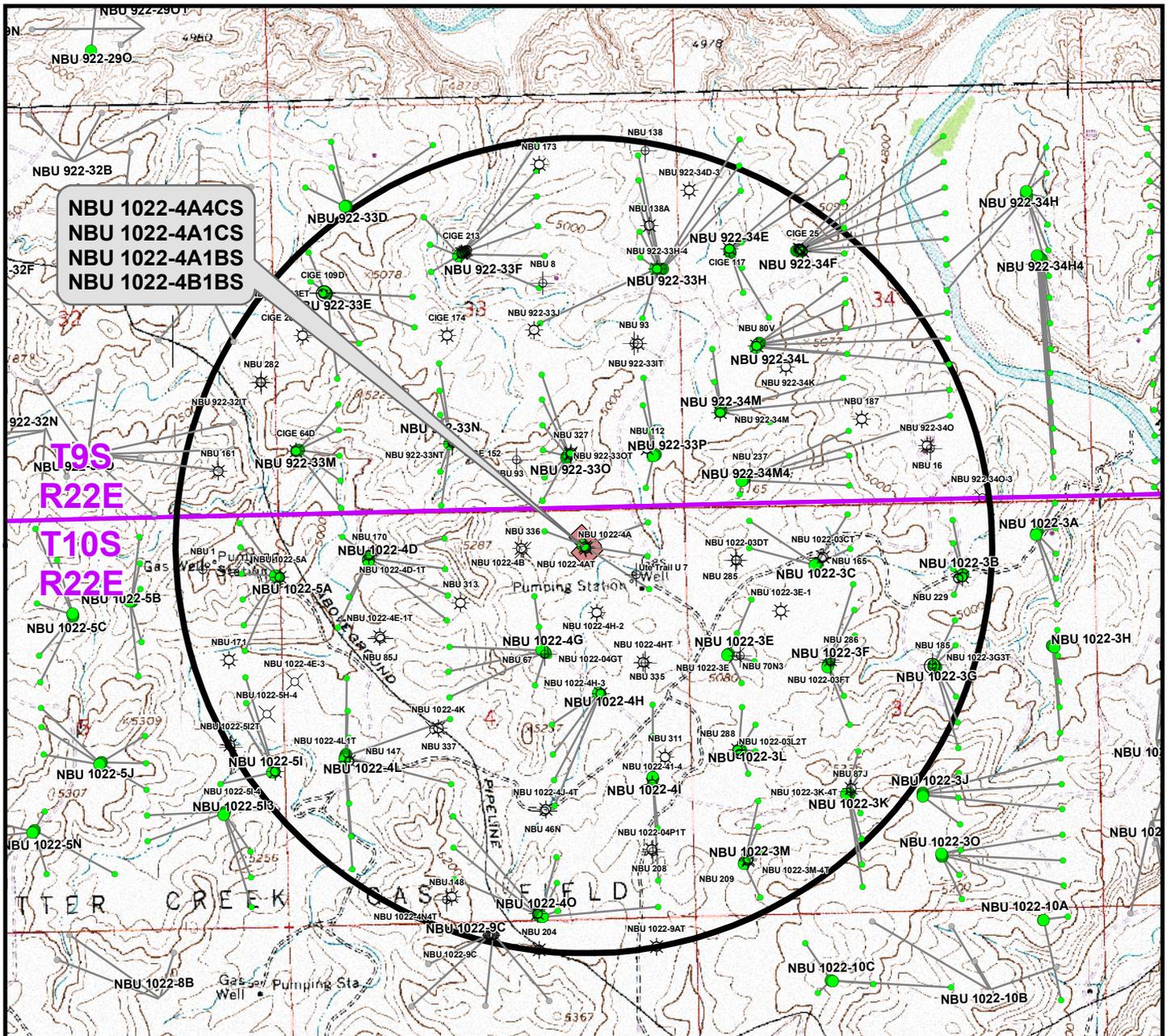
1099 18th Street  
 Denver, Colorado 80202



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



SCALE: 1" = 2,000ft	NAD83 USP Central	SHEET NO:	<b>11</b>
DRAWN: TL	DATE: 30 Aug 2012	11 OF 16	
REVISED: TL	DATE: 11 Jan 2013		



Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

Proposed Well	Nearest Well Bore	Footage
NBU 1022-4A4CS	UTE TRAIL U 7	262ft
NBU 1022-4A1CS	UTE TRAIL U 7	269ft
NBU 1022-4A1BS	UTE TRAIL U 7	677ft
NBU 1022-4B1BS	NBU 1022-4B	377ft

**Legend**

- Well - Proposed
- Well Path
- ☀ Producing
- ⊕ Deferred
- ☀ Active Injector
- ⊕ Plugged & Abandoned
- Bottom Hole - Proposed
- Well Pad
- ☺ Spudded
- ⊗ Cancelled
- ☀ Location Abandoned
- ⊕ Shut-In
- Bottom Hole - Existing
- ◻ Well - 1 Mile Radius
- ⊙ APD Approved
- ⊖ Temporarily Abandoned
- ⊖ Location Abandoned
- ⊖ Shut-In
- ⊖ Preliminary Location

**WELL PAD - NBU 1022-4A**

**TOPO C**  
**NBU 1022-4A4CS, NBU 1022-4A1CS,**  
**NBU 1022-4A1BS & NBU 1022-4B1BS**  
**LOCATED IN SECTION 4, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH**

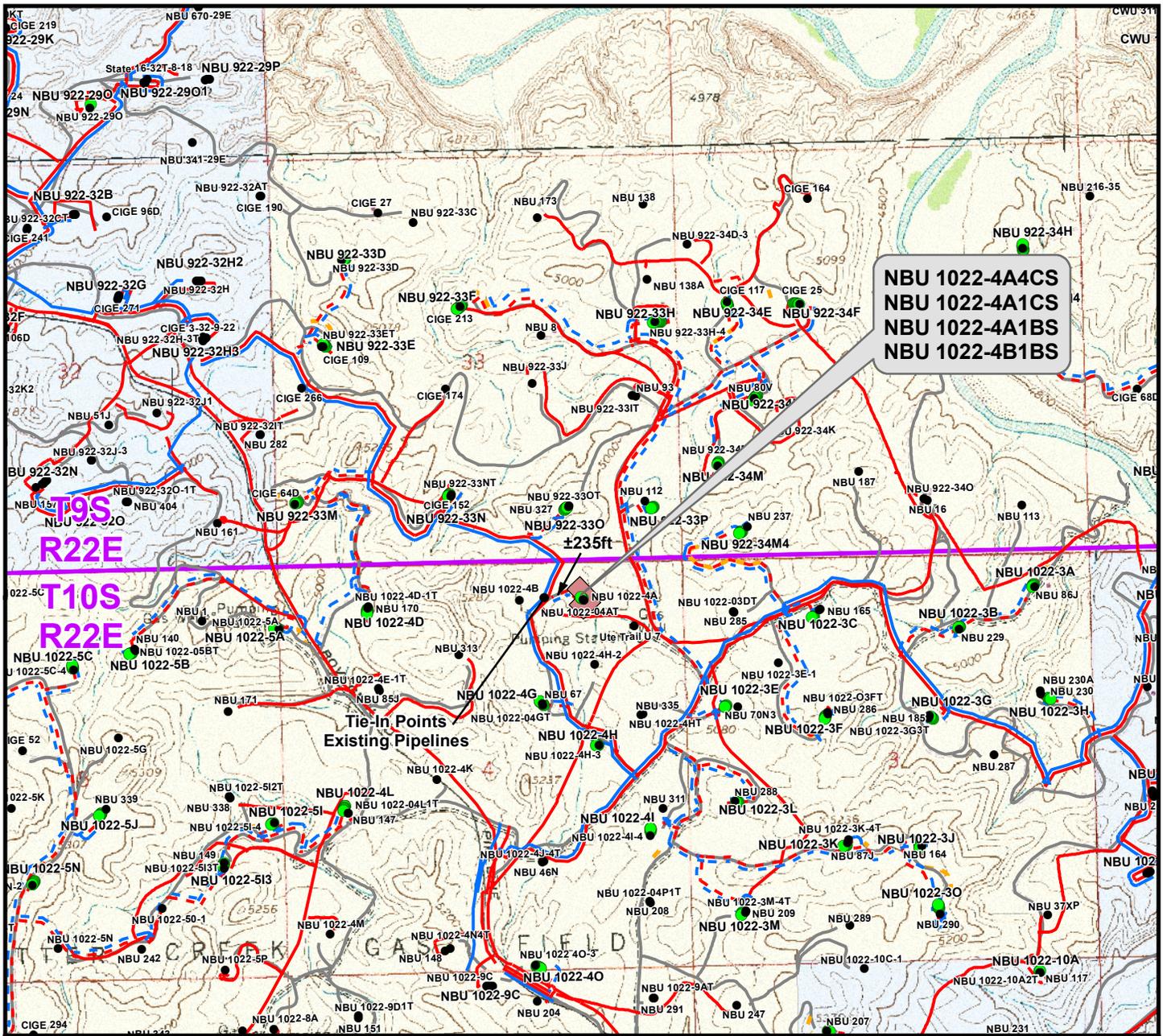
**Kerr-McGee Oil & Gas Onshore L.P.**  
 1099 18th Street  
 Denver, Colorado 80202



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

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>12</b>
DRAWN: TL	DATE: 11 Jan 2013	
REVISED:	DATE:	

SHEET NO:  
**12**  
 12 OF 16



**NBU 1022-4A4CS  
NBU 1022-4A1CS  
NBU 1022-4A1BS  
NBU 1022-4B1BS**

Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Separator to Edge of Pad)	±400ft
Buried 6" (Max.) (Edge of Pad to Existing 6" Liquid Pipeline)	±235ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±635ft</b>

Proposed Gas Pipeline	Length
Buried 6" (Meter House to Edge of Pad)	±400ft
Buried 6" (Edge of Pad to Existing 16" Gas Pipeline)	±235ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±635ft</b>

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

**WELL PAD - NBU 1022-4A**

**TOPO D**  
**NBU 1022-4A4CS, NBU 1022-4A1CS,**  
**NBU 1022-4A1BS & NBU 1022-4B1BS**  
**LOCATED IN SECTION 4, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH**

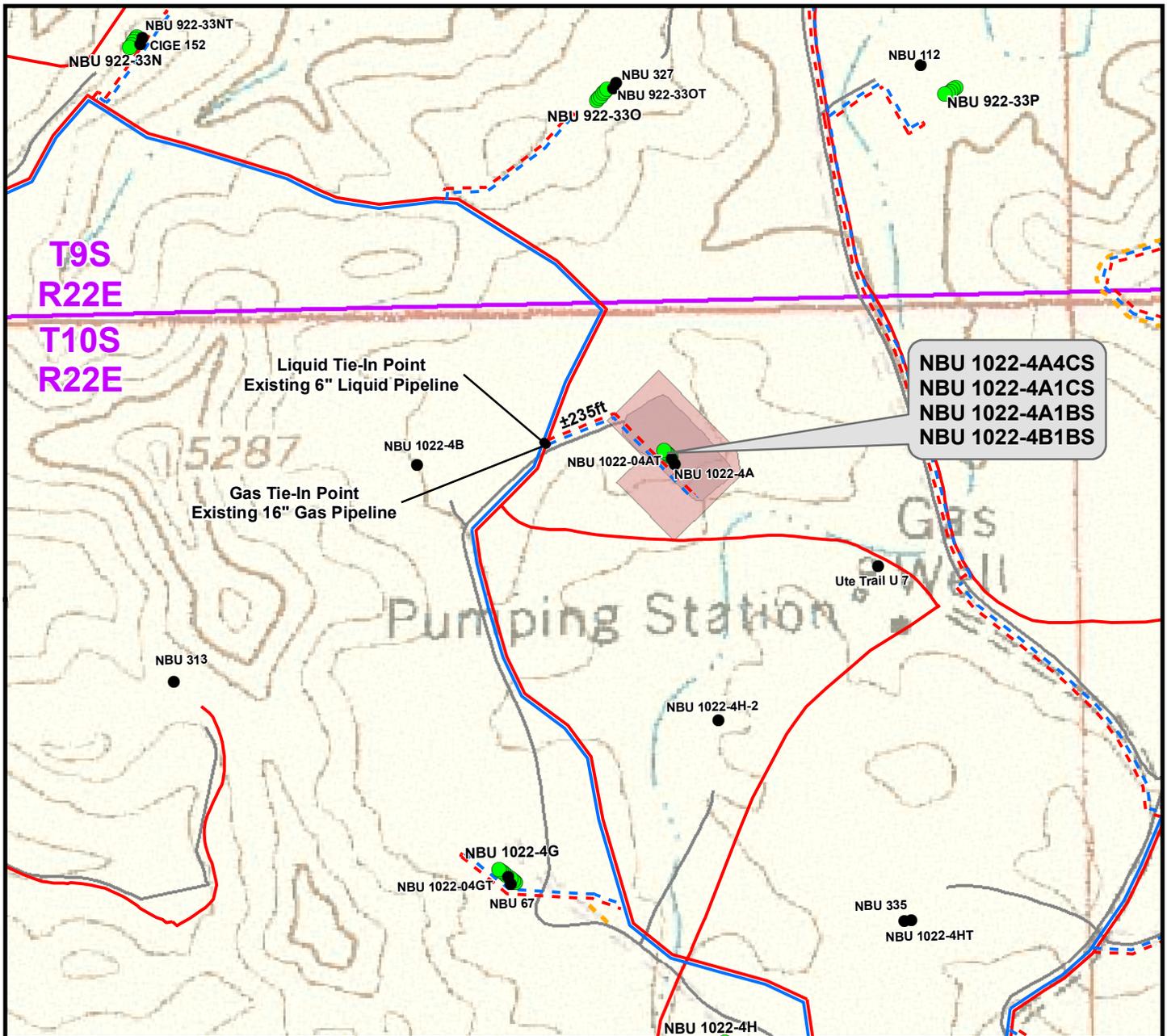
**Kerr-McGee Oil & Gas Onshore L.P.**

**1099 18th Street**  
**Denver, Colorado 80202**

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

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>13</b> 13 OF 16
DRAWN: TL	DATE: 11 Jan 2013	
REVISED:	DATE:	

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Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Separator to Edge of Pad)	±400ft
Buried 6" (Max.) (Edge of Pad to Existing 6" Liquid Pipeline)	±235ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±635ft</b>

Proposed Gas Pipeline	Length
Buried 6" (Meter House to Edge of Pad)	±400ft
Buried 6" (Edge of Pad to Existing 16" Gas Pipeline)	±235ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±635ft</b>

**Legend**

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

**WELL PAD - NBU 1022-4A**

**TOPO D2 (PAD & PIPELINE DETAIL)**  
**NBU 1022-4A4CS, NBU 1022-4A1CS,**  
**NBU 1022-4A1BS & NBU 1022-4B1BS**  
**LOCATED IN SECTION 4, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH**

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

**1099 18th Street  
 Denver, Colorado 80202**



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 Fax 307-674-0182



SCALE: 1" = 500ft

NAD83 USP Central

SHEET NO:

DRAWN: TL

DATE: 30 Aug 2012

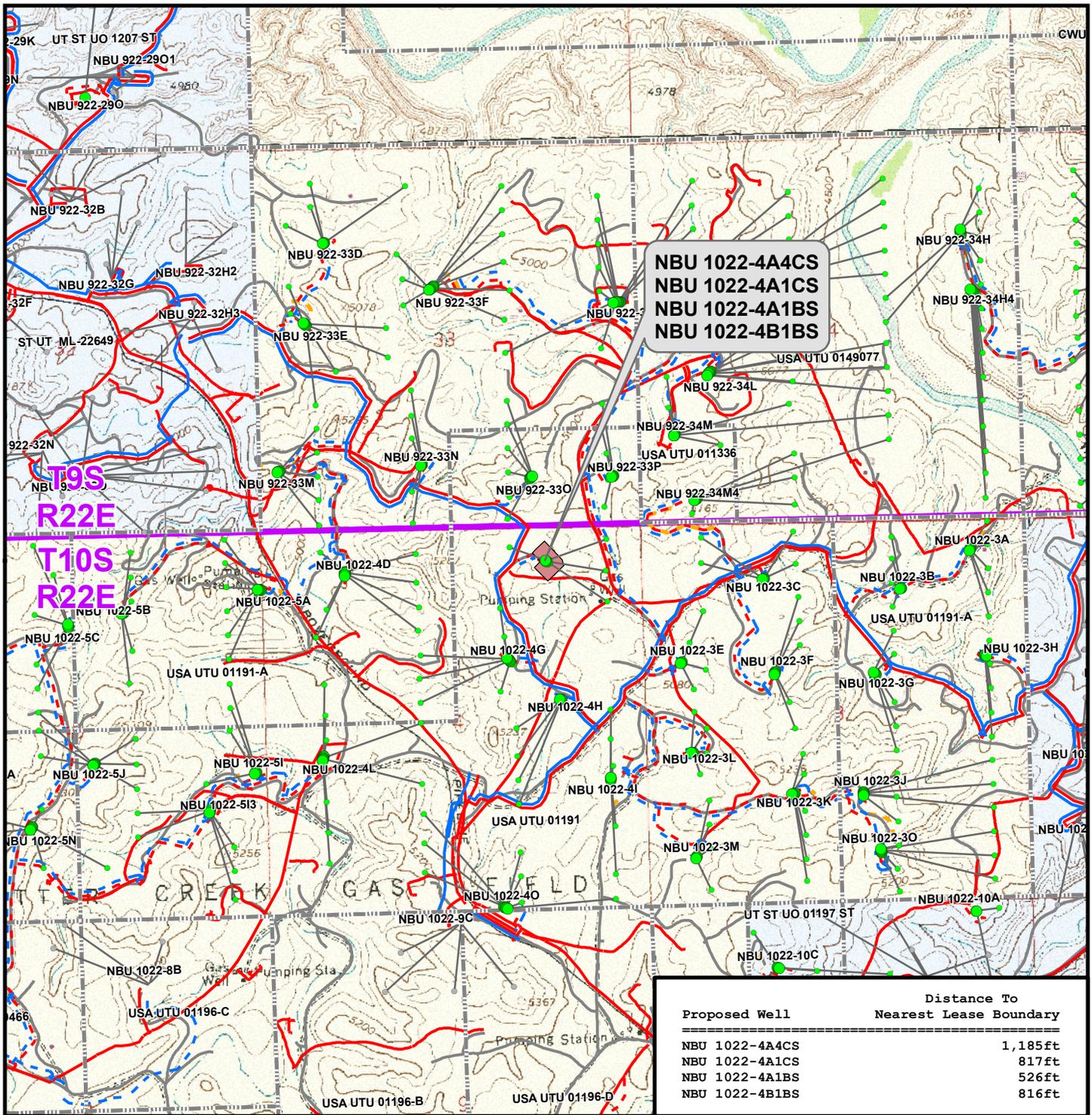
**14**

REVISED: TL

DATE: 11 Jan 2013

14 OF 16

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Proposed Well	Distance To Nearest Lease Boundary
NBU 1022-4A4CS	1,185ft
NBU 1022-4A1CS	817ft
NBU 1022-4A1BS	526ft
NBU 1022-4B1BS	816ft

**Legend**

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

**WELL PAD - NBU 1022-4A**

**TOPO E**  
**NBU 1022-4A4CS, NBU 1022-4A1CS,**  
**NBU 1022-4A1BS & NBU 1022-4B1BS**  
**LOCATED IN SECTION 4, T10S, R22E,**  
**S.L.B.&M., UINTAH COUNTY, UTAH**

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

**1099 18th Street**  
**Denver, Colorado 80202**

**609 CONSULTING, LLC**  
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 Sheridan, Wyoming 82801  
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 Fax 307-674-0182

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SCALE: 1" = 2,000ft	NAD83 USP Central	<b>15</b>
DRAWN: TL	DATE: 11 Jan 2013	
REVISED:	DATE:	

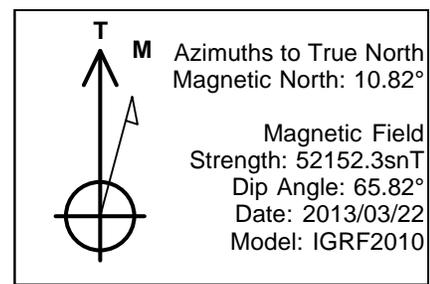
SHEET NO:  
15 OF 16

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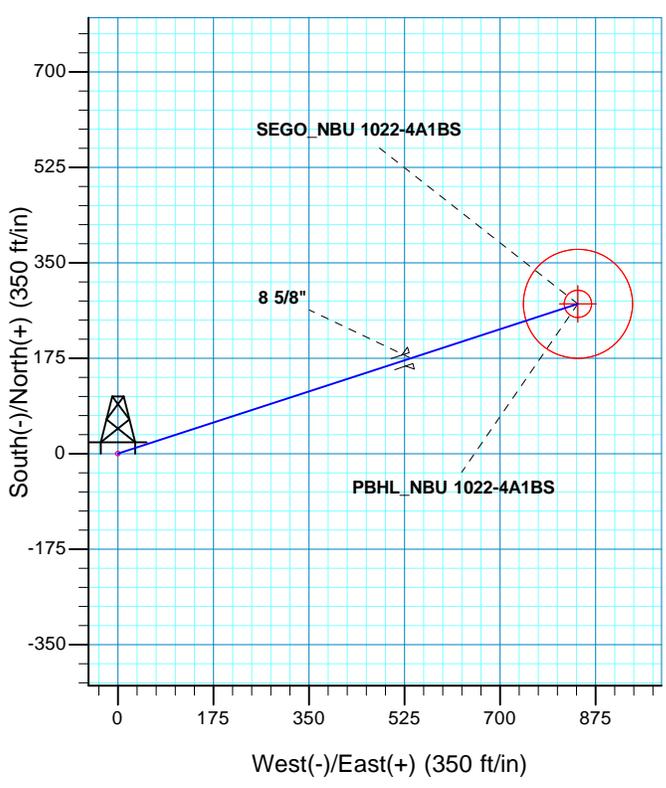
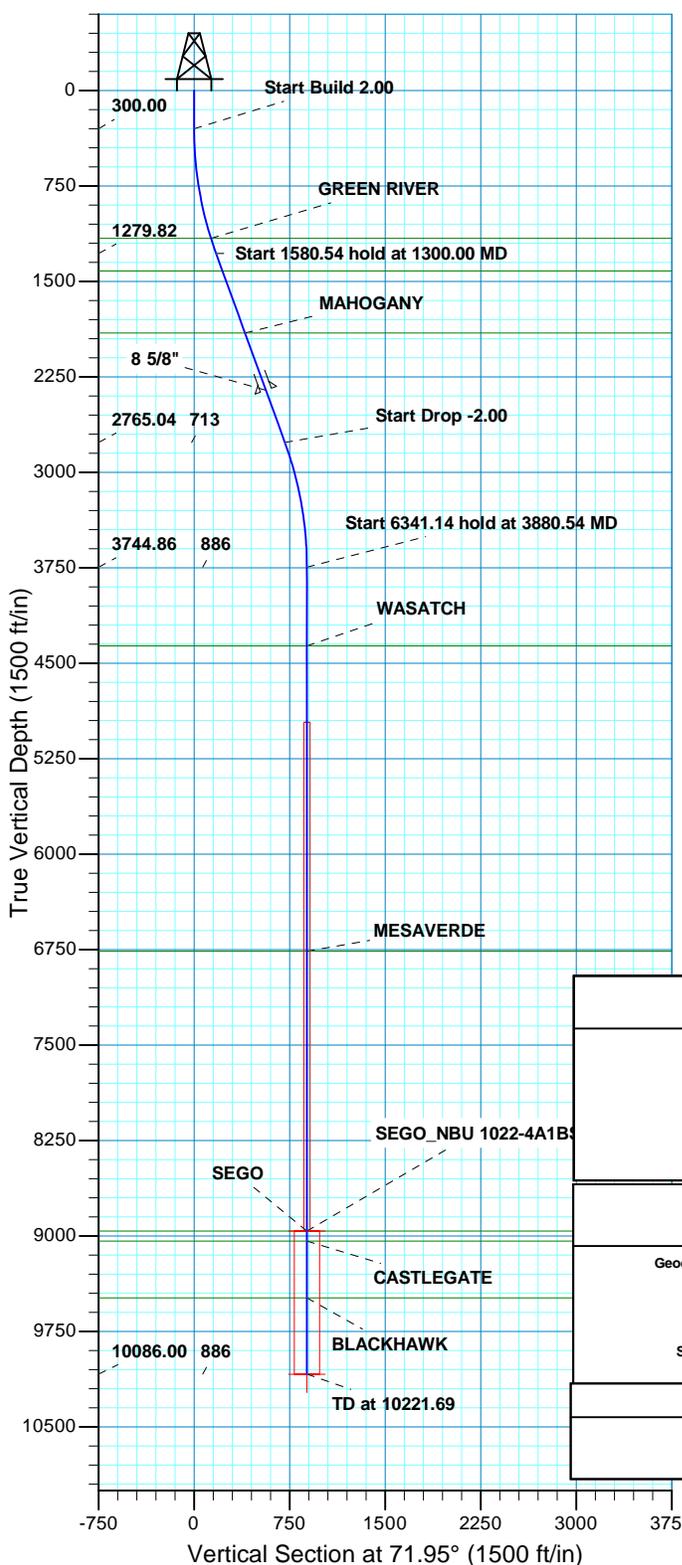
**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD – NBU 1022-4A  
WELLS - NBU 1022-4A4CS, NBU 1022-4A1CS,  
NBU 1022-4A1BS & NBU 1022-4B1BS  
Section 4, T10S, R22E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45; exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 18.7 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.1 miles to a second Class D County Road to the southeast. Exit right and proceed in a southeasterly direction along the second Class D County Road approximately 6.0 miles to a third Class D County Road to the northeast. Exit left and proceed in a northeasterly, then northerly direction along the third Class D County Road approximately 1.8 miles to a fourth Class D County Road to the southwest. Exit left and proceed in a southwesterly direction along the fourth Class D County Road approximately 0.1 miles to a fifth Class D County Road to the northwest. Exit right and proceed in a northwesterly direction along the fifth Class D County Road approximately 0.3 miles to a service road to the northwest. Proceed in a northwesterly direction along the service road approximately 0.3 miles to a second service road to the northeast. Exit right and proceed in a northeasterly direction along the second service road approximately 0.1 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 50.9 miles in a southerly direction.



WELL DETAILS: NBU 1022-4A1BS								
GL 5043 & KB 4 @ 5047.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14524023.69	2077531.86	39.9839456	-109.4395987			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SEGO	8961.00	274.63	842.48	14524313.02	2078369.41	39.9846996	-109.4365918	Circle (Radius: 25.00)
- plan hits target center								
PBHL	10086.00	274.63	842.48	14524313.02	2078369.41	39.9846996	-109.4365918	Circle (Radius: 100.00)
- plan hits target center								



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1300.00	20.00	71.95	1279.82	53.55	164.26	2.00	71.95	172.77	
2880.54	20.00	71.95	2765.04	221.08	678.22	0.00	0.00	713.35	
3880.54	0.00	0.00	3744.86	274.63	842.48	2.00	180.00	886.11	PBHL_NBU 1022-4A1BS
10221.69	0.00	0.00	10086.00	274.63	842.48	0.00	0.00	886.11	

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			
Geodetic System: Universal Transverse Mercator (US Survey Feet)			
Datum: NAD 1927 (NADCON CONUS)			
Ellipsoid: Clarke 1866			
Zone: Zone 12N (114 W to 108 W)			
Location: SECTION 4 T10S R22E			
System Datum: Mean Sea Level			

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1162.00	1175.57	GREEN RIVER
1418.00	1447.05	BIRDSNEST
1906.00	1966.37	MAHOGANY
4364.00	4499.69	WASATCH
6763.00	6898.69	MESAVERDE
8961.00	9096.69	SEGO
9039.00	9174.69	CASTLEGATE
9486.00	9621.69	BLACKHAWK

CASING DETAILS			
TVD	MD	Name	Size
2356.00	2445.25	8 5/8"	8.625

RECEIVED



# Scientific Drilling

## **US ROCKIES REGION PLANNING**

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

**NBU 1022-4A PAD**

**NBU 1022-4A1BS**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**22 March, 2013**





<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-4A PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-4A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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

<b>Site</b>	NBU 1022-4A PAD, SECTION 4 T10S R22E				
<b>Site Position:</b>	<b>Northing:</b>	14,524,009.37 usft	<b>Latitude:</b>	39.9839056	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,077,545.84 usft	<b>Longitude:</b>	-109.4395497	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.00 °

<b>Well</b>	NBU 1022-4A1BS, 494 FNL 1326 FEL					
<b>Well Position</b>	<b>+N/-S</b>	14.57 ft	<b>Northing:</b>	14,524,023.69 usft	<b>Latitude:</b>	39.9839456
	<b>+E/-W</b>	-13.73 ft	<b>Easting:</b>	2,077,531.86 usft	<b>Longitude:</b>	-109.4395987
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,043.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2013/03/22	10.82	65.82	52,152

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	71.95

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	71.95	1,279.82	53.55	164.26	2.00	2.00	0.00	71.95	
2,880.54	20.00	71.95	2,765.04	221.08	678.22	0.00	0.00	0.00	0.00	
3,880.54	0.00	0.00	3,744.86	274.63	842.48	2.00	-2.00	0.00	180.00	
10,221.69	0.00	0.00	10,086.00	274.63	842.48	0.00	0.00	0.00	0.00	PBHL_NBU 1022-4A'



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-4A PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-4A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Start Build 2.00</b>										
400.00	2.00	71.95	399.98	0.54	1.66	1.75	2.00	2.00	0.00	
500.00	4.00	71.95	499.84	2.16	6.63	6.98	2.00	2.00	0.00	
600.00	6.00	71.95	599.45	4.86	14.92	15.69	2.00	2.00	0.00	
700.00	8.00	71.95	698.70	8.64	26.51	27.88	2.00	2.00	0.00	
800.00	10.00	71.95	797.47	13.49	41.38	43.52	2.00	2.00	0.00	
900.00	12.00	71.95	895.62	19.40	59.52	62.60	2.00	2.00	0.00	
1,000.00	14.00	71.95	993.06	26.37	80.91	85.10	2.00	2.00	0.00	
1,100.00	16.00	71.95	1,089.64	34.39	105.51	110.98	2.00	2.00	0.00	
1,175.57	17.51	71.95	1,162.00	41.15	126.22	132.76	2.00	2.00	0.00	
<b>GREEN RIVER</b>										
1,200.00	18.00	71.95	1,185.27	43.46	133.31	140.21	2.00	2.00	0.00	
1,300.00	20.00	71.95	1,279.82	53.55	164.26	172.77	2.00	2.00	0.00	
<b>Start 1580.54 hold at 1300.00 MD</b>										
1,400.00	20.00	71.95	1,373.78	64.15	196.78	206.97	0.00	0.00	0.00	
1,447.05	20.00	71.95	1,418.00	69.13	212.08	223.06	0.00	0.00	0.00	
<b>BIRDSNEST</b>										
1,500.00	20.00	71.95	1,467.75	74.75	229.30	241.17	0.00	0.00	0.00	
1,600.00	20.00	71.95	1,561.72	85.35	261.81	275.37	0.00	0.00	0.00	
1,700.00	20.00	71.95	1,655.69	95.95	294.33	309.58	0.00	0.00	0.00	
1,800.00	20.00	71.95	1,749.66	106.55	326.85	343.78	0.00	0.00	0.00	
1,900.00	20.00	71.95	1,843.63	117.15	359.37	377.98	0.00	0.00	0.00	
1,966.37	20.00	71.95	1,906.00	124.18	380.95	400.68	0.00	0.00	0.00	
<b>MAHOGANY</b>										
2,000.00	20.00	71.95	1,937.60	127.75	391.89	412.18	0.00	0.00	0.00	
2,100.00	20.00	71.95	2,031.57	138.35	424.40	446.38	0.00	0.00	0.00	
2,200.00	20.00	71.95	2,125.54	148.95	456.92	480.59	0.00	0.00	0.00	
2,300.00	20.00	71.95	2,219.51	159.55	489.44	514.79	0.00	0.00	0.00	
2,400.00	20.00	71.95	2,313.48	170.15	521.96	548.99	0.00	0.00	0.00	
2,445.25	20.00	71.95	2,356.00	174.94	536.67	564.47	0.00	0.00	0.00	
<b>8 5/8"</b>										
2,500.00	20.00	71.95	2,407.45	180.75	554.48	583.19	0.00	0.00	0.00	
2,600.00	20.00	71.95	2,501.42	191.35	586.99	617.39	0.00	0.00	0.00	
2,700.00	20.00	71.95	2,595.39	201.95	619.51	651.60	0.00	0.00	0.00	
2,800.00	20.00	71.95	2,689.35	212.55	652.03	685.80	0.00	0.00	0.00	
2,880.54	20.00	71.95	2,765.04	221.08	678.22	713.35	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
2,900.00	19.61	71.95	2,783.35	223.13	684.49	719.94	2.00	-2.00	0.00	
3,000.00	17.61	71.95	2,878.11	233.02	714.83	751.85	2.00	-2.00	0.00	
3,100.00	15.61	71.95	2,973.93	241.88	742.01	780.44	2.00	-2.00	0.00	
3,200.00	13.61	71.95	3,070.70	249.70	765.99	805.66	2.00	-2.00	0.00	
3,300.00	11.61	71.95	3,168.28	256.46	786.75	827.49	2.00	-2.00	0.00	
3,400.00	9.61	71.95	3,266.56	262.17	804.25	845.90	2.00	-2.00	0.00	
3,500.00	7.61	71.95	3,365.43	266.81	818.49	860.88	2.00	-2.00	0.00	
3,600.00	5.61	71.95	3,464.76	270.38	829.43	872.39	2.00	-2.00	0.00	
3,700.00	3.61	71.95	3,564.43	272.87	837.07	880.43	2.00	-2.00	0.00	
3,800.00	1.61	71.95	3,664.32	274.28	841.41	884.98	2.00	-2.00	0.00	
3,880.54	0.00	0.00	3,744.86	274.63	842.48	886.11	2.00	-2.00	0.00	
<b>Start 6341.14 hold at 3880.54 MD</b>										



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-4A PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-4A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,900.00	0.00	0.00	3,764.31	274.63	842.48	886.11	0.00	0.00	0.00
4,000.00	0.00	0.00	3,864.31	274.63	842.48	886.11	0.00	0.00	0.00
4,100.00	0.00	0.00	3,964.31	274.63	842.48	886.11	0.00	0.00	0.00
4,200.00	0.00	0.00	4,064.31	274.63	842.48	886.11	0.00	0.00	0.00
4,300.00	0.00	0.00	4,164.31	274.63	842.48	886.11	0.00	0.00	0.00
4,400.00	0.00	0.00	4,264.31	274.63	842.48	886.11	0.00	0.00	0.00
4,499.69	0.00	0.00	4,364.00	274.63	842.48	886.11	0.00	0.00	0.00
<b>WASATCH</b>									
4,500.00	0.00	0.00	4,364.31	274.63	842.48	886.11	0.00	0.00	0.00
4,600.00	0.00	0.00	4,464.31	274.63	842.48	886.11	0.00	0.00	0.00
4,700.00	0.00	0.00	4,564.31	274.63	842.48	886.11	0.00	0.00	0.00
4,800.00	0.00	0.00	4,664.31	274.63	842.48	886.11	0.00	0.00	0.00
4,900.00	0.00	0.00	4,764.31	274.63	842.48	886.11	0.00	0.00	0.00
5,000.00	0.00	0.00	4,864.31	274.63	842.48	886.11	0.00	0.00	0.00
5,100.00	0.00	0.00	4,964.31	274.63	842.48	886.11	0.00	0.00	0.00
5,200.00	0.00	0.00	5,064.31	274.63	842.48	886.11	0.00	0.00	0.00
5,300.00	0.00	0.00	5,164.31	274.63	842.48	886.11	0.00	0.00	0.00
5,400.00	0.00	0.00	5,264.31	274.63	842.48	886.11	0.00	0.00	0.00
5,500.00	0.00	0.00	5,364.31	274.63	842.48	886.11	0.00	0.00	0.00
5,600.00	0.00	0.00	5,464.31	274.63	842.48	886.11	0.00	0.00	0.00
5,700.00	0.00	0.00	5,564.31	274.63	842.48	886.11	0.00	0.00	0.00
5,800.00	0.00	0.00	5,664.31	274.63	842.48	886.11	0.00	0.00	0.00
5,900.00	0.00	0.00	5,764.31	274.63	842.48	886.11	0.00	0.00	0.00
6,000.00	0.00	0.00	5,864.31	274.63	842.48	886.11	0.00	0.00	0.00
6,100.00	0.00	0.00	5,964.31	274.63	842.48	886.11	0.00	0.00	0.00
6,200.00	0.00	0.00	6,064.31	274.63	842.48	886.11	0.00	0.00	0.00
6,300.00	0.00	0.00	6,164.31	274.63	842.48	886.11	0.00	0.00	0.00
6,400.00	0.00	0.00	6,264.31	274.63	842.48	886.11	0.00	0.00	0.00
6,500.00	0.00	0.00	6,364.31	274.63	842.48	886.11	0.00	0.00	0.00
6,600.00	0.00	0.00	6,464.31	274.63	842.48	886.11	0.00	0.00	0.00
6,700.00	0.00	0.00	6,564.31	274.63	842.48	886.11	0.00	0.00	0.00
6,800.00	0.00	0.00	6,664.31	274.63	842.48	886.11	0.00	0.00	0.00
6,898.69	0.00	0.00	6,763.00	274.63	842.48	886.11	0.00	0.00	0.00
<b>MESAVERDE</b>									
6,900.00	0.00	0.00	6,764.31	274.63	842.48	886.11	0.00	0.00	0.00
7,000.00	0.00	0.00	6,864.31	274.63	842.48	886.11	0.00	0.00	0.00
7,100.00	0.00	0.00	6,964.31	274.63	842.48	886.11	0.00	0.00	0.00
7,200.00	0.00	0.00	7,064.31	274.63	842.48	886.11	0.00	0.00	0.00
7,300.00	0.00	0.00	7,164.31	274.63	842.48	886.11	0.00	0.00	0.00
7,400.00	0.00	0.00	7,264.31	274.63	842.48	886.11	0.00	0.00	0.00
7,500.00	0.00	0.00	7,364.31	274.63	842.48	886.11	0.00	0.00	0.00
7,600.00	0.00	0.00	7,464.31	274.63	842.48	886.11	0.00	0.00	0.00
7,700.00	0.00	0.00	7,564.31	274.63	842.48	886.11	0.00	0.00	0.00
7,800.00	0.00	0.00	7,664.31	274.63	842.48	886.11	0.00	0.00	0.00
7,900.00	0.00	0.00	7,764.31	274.63	842.48	886.11	0.00	0.00	0.00
8,000.00	0.00	0.00	7,864.31	274.63	842.48	886.11	0.00	0.00	0.00
8,100.00	0.00	0.00	7,964.31	274.63	842.48	886.11	0.00	0.00	0.00
8,200.00	0.00	0.00	8,064.31	274.63	842.48	886.11	0.00	0.00	0.00
8,300.00	0.00	0.00	8,164.31	274.63	842.48	886.11	0.00	0.00	0.00
8,400.00	0.00	0.00	8,264.31	274.63	842.48	886.11	0.00	0.00	0.00
8,500.00	0.00	0.00	8,364.31	274.63	842.48	886.11	0.00	0.00	0.00
8,600.00	0.00	0.00	8,464.31	274.63	842.48	886.11	0.00	0.00	0.00
8,700.00	0.00	0.00	8,564.31	274.63	842.48	886.11	0.00	0.00	0.00
8,800.00	0.00	0.00	8,664.31	274.63	842.48	886.11	0.00	0.00	0.00



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-4A PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-4A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,900.00	0.00	0.00	8,764.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,864.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,096.69	0.00	0.00	8,961.00	274.63	842.48	886.11	0.00	0.00	0.00	
<b>SEGO - SEGO_NBU 1022-4A1BS</b>										
9,100.00	0.00	0.00	8,964.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,174.69	0.00	0.00	9,039.00	274.63	842.48	886.11	0.00	0.00	0.00	
<b>CASTLEGATE</b>										
9,200.00	0.00	0.00	9,064.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,164.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,264.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,364.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,464.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,621.69	0.00	0.00	9,486.00	274.63	842.48	886.11	0.00	0.00	0.00	
<b>BLACKHAWK</b>										
9,700.00	0.00	0.00	9,564.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,664.31	274.63	842.48	886.11	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,764.31	274.63	842.48	886.11	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,864.31	274.63	842.48	886.11	0.00	0.00	0.00	
10,100.00	0.00	0.00	9,964.31	274.63	842.48	886.11	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,064.31	274.63	842.48	886.11	0.00	0.00	0.00	
10,221.69	0.00	0.00	10,086.00	274.63	842.48	886.11	0.00	0.00	0.00	
<b>TD at 10221.69 - PBHL_NBU 1022-4A1BS</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SEGO_NBU 1022-4A1B - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,961.00	274.63	842.48	14,524,313.03	2,078,369.40	39.9846996	-109.4365918	
PBHL_NBU 1022-4A1B - plan hits target center - Circle (radius 100.00)	0.00	0.00	10,086.00	274.63	842.48	14,524,313.03	2,078,369.40	39.9846996	-109.4365918	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,445.25	2,356.00	8 5/8"	8.625	11.000		



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5043 & KB 4 @ 5047.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-4A PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-4A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,175.57	1,162.00	GREEN RIVER			
1,447.05	1,418.00	BIRDSNEST			
1,966.37	1,906.00	MAHOGANY			
4,499.69	4,364.00	WASATCH			
6,898.69	6,763.00	MESAVERDE			
9,096.69	8,961.00	SEGO			
9,174.69	9,039.00	CASTLEGATE			
9,621.69	9,486.00	BLACKHAWK			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,300.00	1,279.82	53.55	164.26	Start 1580.54 hold at 1300.00 MD	
2,880.54	2,765.04	221.08	678.22	Start Drop -2.00	
3,880.54	3,744.86	274.63	842.48	Start 6341.14 hold at 3880.54 MD	
10,221.69	10,086.00	274.63	842.48	TD at 10221.69	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-4A PAD**

<b><u>API #</u></b>	<b><u>NBU 1022-4A1BS</u></b>		
	Surface: 494 FNL / 1326 FEL	NWNE	Lot 2
	BHL: 219 FNL / 480 FEL	NENE	Lot 1
<b><u>API #</u></b>	<b><u>NBU 1022-4A1CS</u></b>		
	Surface: 501 FNL / 1319 FEL	NWNE	Lot 2
	BHL: 653 FNL / 498 FEL	NENE	Lot 1
<b><u>API #</u></b>	<b><u>NBU 1022-4A4CS</u></b>		
	Surface: 508 FNL / 1312 FEL	NENE	Lot 1
	BHL: 1083 FNL / 492 FEL	NENE	Lot 1
<b><u>API #</u></b>	<b><u>NBU 1022-4B1BS</u></b>		
	Surface: 486 FNL / 1332 FEL	NWNE	Lot 2
	BHL: 299 FNL / 1821 FEL	NWNE	Lot 2

This Surface Use Plan of Operations (SUPO) or 13-point plan provides site-specific information for the above-referenced wells.

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

An on-site meeting was held on October 10-11, 2012. Present were:

- Dave Gordon, Lynn Dehner, Aaron Roe and Melissa Wardle - BLM;
- Mitch Batty - Timberline Engineering & Land Surveying, Inc.;
- Jacob Dunham - 609 Consulting, LLC.;
- Alan Rabinoff - ICF International;
- Gina Becker, Tony Kazeck, Casey McKee, Charles Chase and Randy Townley- Kerr-McGee

**A. Existing Roads:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Topo B for existing roads.

**B. New or Reconstructed Access Roads:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**The following segments are "on-lease"**

No new access road are proposed for this well location.

**C. Location of Existing Wells:**

Please refer to Topo C for existing wells.

**D. Location of Existing and/or Proposed Facilities:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

This pad will expand the existing pad for the NBU 1022-04AT and the NBU 1022-4A, which are producing gas wells according to Utah Division of Oil, Gas and Mining (UDOGM) records on February 25, 2013. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

**GAS GATHERING**

*Please refer to Exhibit A and Topo D2- Pad and Pipeline Detail.*

The total gas gathering pipeline distance from the meter to the tie in point is  $\pm 635'$  and the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

- $\pm 400'$  (0.08 miles) – Section 4 T10S R22E (N/2) – On-lease UTU01191, BLM surface, New 6" buried gas gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 235'$  (0.04 miles) – Section 4 T10S R22E (N/2) – On-lease UTU01191, BLM surface, New 6" buried gas gathering pipeline from the edge of the pad to the existing 16" gas pipeline to the west. Please refer to Exhibit A, Line 2.

**LIQUID GATHERING**

*Please refer to Exhibit B and Topo D2- Pad and Pipeline Detail.*

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 635'$  and the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

- $\pm 400'$  (0.08 miles) – Section 4 T10S R22E (NW/4 NE/4) – On-lease UTU01191, BLM surface, New 6" buried liquid gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 235'$  (0.04 miles) – Section 4 T10S R22E (NW/4 NE/4) – On-lease UTU01191, BLM surface, New 6" buried liquid gathering pipeline from the edge of the pad to the existing 6" liquid pipeline to the west. Please refer to Exhibit B, Line 3.

**Pipeline Gathering Construction**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**The Anadarko Completions Transportation System (ACTS) information:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Exhibit C for ACTS Lines

**E. Location and Types of Water Supply:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

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

**F. Construction Materials:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**G. Methods for Handling Waste:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Materials Management**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**H. Ancillary Facilities:**

No additional ancillary facilities are planned for this location.

**I. Well Site Layout:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**J. Plans for Surface Reclamation:**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Interim Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Final Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Measures Common to Interim and Final Reclamation**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Weed Control**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Monitoring**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**K. Surface/Mineral Ownership:**

United States of America  
Bureau of Land Management  
170 South 500 East  
Vernal, UT 84078  
(435)781-4400

**L. Other Information:**

**Cultural and Paleontological Resources**

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

**Resource Reports:**

A Class I literature survey report was completed on November 30, 2012 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 12-314.

A paleontological reconnaissance survey report was completed December 2012 by SWCA Environmental Consultants. For additional details please refer to report UT12-14314-206.

Biological field survey was completed August 26-November 9, 2012 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-862.

**Proposed Action Annual Emissions Tables:**

Please refer to the Appendix in the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

NBU 1022-4A1BS/ NBU 1022-4A1CS/ NBU 1022-4A4CS/ NBU 1022-4B1BS  
Kerr-McGee Oil Gas Onshore, LP.

Surface Use Plan of Operations  
6 of 6

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

Cara Mahler  
Regulatory Analyst I  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6029

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

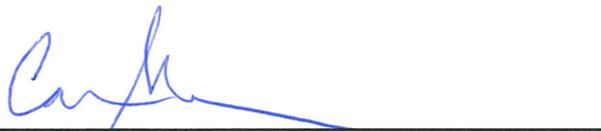
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

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.

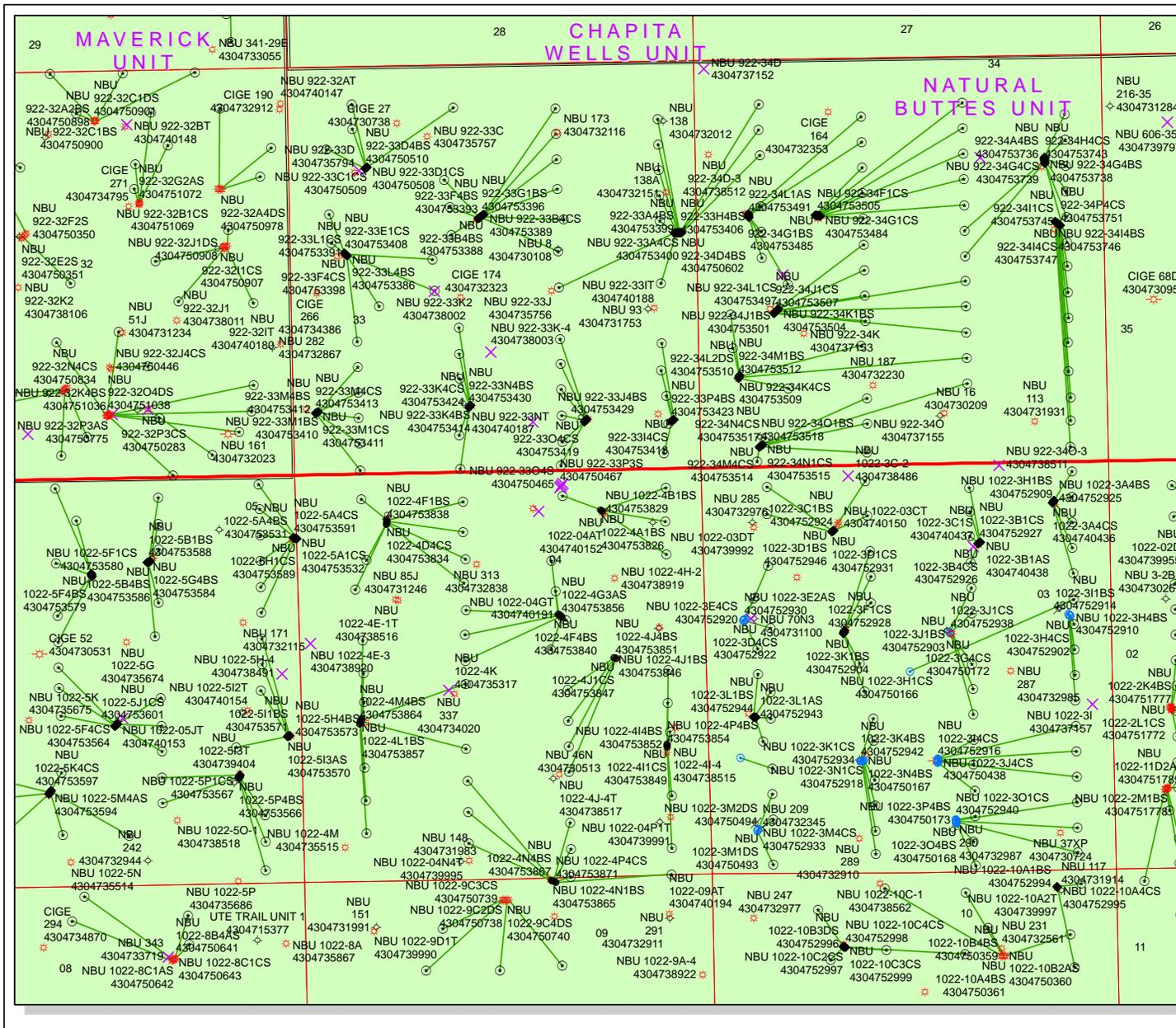
I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan 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.



Cara Mahler

April 4, 2013

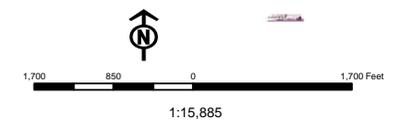
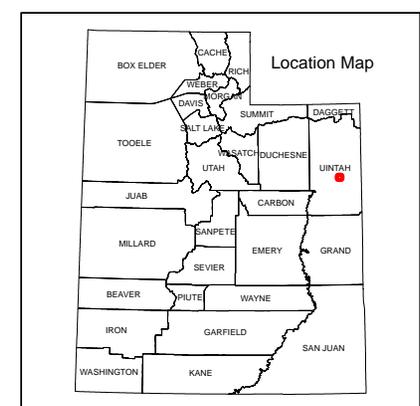
Date



**API Number: 4304753826**  
**Well Name: NBU 1022-4A1BS**  
 Township T10.0S Range R22.0E Section 04  
 Meridian: SLBM  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason

- Units STATUS**
- ACTIVE
  - EXPLORATORY
  - GAS STORAGE
  - NP PP OIL
  - NP SECONDARY
  - PI OIL
  - PP GAS
  - PP GEOTHERMAL
  - PP OIL
  - SECONDARY
  - TERMINATED



## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 6/4/2013

API NO. ASSIGNED: 43047538260000

WELL NAME: NBU 1022-4A1BS

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

PHONE NUMBER: 720 929-6029

CONTACT: Cara Mahler

PROPOSED LOCATION: NWNE 04 100S 220E

Permit Tech Review: 

SURFACE: 0494 FNL 1326 FEL

Engineering Review: 

BOTTOM: 0219 FNL 0480 FEL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 39.98383

LONGITUDE: -109.44022

UTM SURF EASTINGS: 633177.00

NORTHINGS: 4427127.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU-01191

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

SURFACE OWNER: 1 - Federal

COALBED METHANE: NO

## RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: FEDERAL - WYB000291
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: 43-8496
- RDCC Review:
- Fee Surface Agreement
- Intent to Commingle

Commingle Approved

## LOCATION AND SITING:

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

Comments: Presite Completed

Stipulations: 3 - Commingle - ddoucet  
 4 - Federal Approval - dmason  
 15 - Directional - dmason  
 17 - Oil Shale 190-5(b) - dmason



GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lieutenant Governor

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

## Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-4A1BS  
**API Well Number:** 43047538260000  
**Lease Number:** UTU-01191  
**Surface Owner:** FEDERAL  
**Approval Date:** 6/13/2013

### Issued to:

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

### Authority:

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

### Duration:

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

### Commingle:

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

### General:

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

### Conditions of Approval:

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 <http://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:**



For John Rogers  
Associate Director, Oil & Gas

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APR 11 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER

BLM

5. Lease Serial No. UTU01191	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No. 891008900A	
8. Lease Name and Well No. NBU 1022-4A1BS	
9. API Well No. 43-047-53826	
10. Field and Pool, or Exploratory NATURAL BUTTES	
11. Sec., T., R., M., or Blk. and Survey or Area Sec 4 T10S R22E Mer SLB SME: BLM	
12. County or Parish UINTAH	13. State UT
17. Spacing Unit dedicated to this well	
20. BLM/BIA Bond No. on file WYB000291	
23. Estimated duration 60-90 DAYS	

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone	
2. Name of Operator KERR MCGEE OIL & GAS ONSHORE	
Contact: CARA MAHLER Email: cara.mahler@anadarko.com	
3a. Address 1368 SOUTH 1200 EAST VERNAL, UT 84078	3b. Phone No. (include area code) Ph: 720-929-6029 Fx: 720-929-7029
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface Lot 2 494FNL 1326FEL 39.983911 N Lat, 109.440282 W Lon At proposed prod. zone Lot 1 219FNL 480FEL 39.984665 N Lat, 109.437275 W Lon	
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 50.9 MILES SOUTH OF VERNAL	
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 526	16. No. of Acres in Lease 1041.78
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 677	19. Proposed Depth 10222 MD 10086 TVD
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5043 GL	22. Approximate date work will start

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SEP 05 2013

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) CARA MAHLER Ph: 720-929-6029	Date 04/05/2013
Title REGULATORY ANALYST		
Approved by (Signature) 	Name (Printed/Typed) Jerry Kenczka	Date AUG 22 2013
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 #203677 verified by the BLM Well Information System  
For KERR MCGEE OIL & GAS ONSHORE L, sent to the Vernal  
Committed to AFMSS for processing by JOHNETTA MAGEE on 04/15/2013 (13JM0321AE)

CONDITIONS OF APPROVAL ATTACHED

UDOGM

NOTICE OF APPROVAL

\*\*BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\*

**Revisions to Operator-Submitted EC Data for APD #203677**

	<b>Operator Submitted</b>	<b>BLM Revised (AFMSS)</b>
Lease:	UTU01191	UTU01191
Agreement:	UTU63047A	891008900A (UTU63047A)
Operator:	KERR MCGEE OIL & GAS LP PO BOX 173779 DENVER, CO 80202-3779 Ph: 720-929-6000	KERR MCGEE OIL & GAS ONSHORE L 1368 SOUTH 1200 EAST VERNAL, UT 84078 Ph: 435.789.3995
Admin Contact:	CARA MAHLER REGULATORY ANALYST 1099 18TH STREET SUITE 1800 DENVER, CO 80202 Ph: 720-929-6029 Fx: 720-929-7029  E-Mail: cara.mahler@anadarko.com	CARA MAHLER REGULATORY ANALYST 1368 SOUTH 1200 EAST VERNAL, UT 84078 Ph: 720-929-6029 Fx: 720-929-7029  E-Mail: cara.mahler@anadarko.com
Tech Contact:	CARA MAHLER REGULATORY ANALYST 1099 18TH STREET SUITE 1800 DENVER, CO 80202	CARA MAHLER REGULATORY ANALYST 1368 SOUTH 1200 EAST VERNAL, UT 84078
Well Name: Number:	NBU 1022-4A1BS	NBU 1022-4A1BS
Location: State: County: S/T/R: Surf Loc:	UT UINTAH Sec 4 T10S R22E Mer SLB NWNE Lot 2 494FNL 1326FEL 39.983911 N Lat, 109.440282 W Lon	UT UINTAH Sec 4 T10S R22E Mer SLB NWNE Lot 2 494FNL 1326FEL 39.983911 N Lat, 109.440282 W Lon
Field/Pool:	NATURAL BUTTES	NATURAL BUTTES
Bond:	WYB000291	WYB000291



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

170 South 500 East

VERNAL, UT 84078

(435) 781-4400



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

Company: Kerr McGee Oil & Gas Onshore, LP      Location: Lot 2, Sec. 4, T10S, R22E  
Well No: NBU 1022-4A1BS      Lease No: UTU-01191  
API No: 43-047-53826      Agreement: Natural Butte

**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:blm_ut_vn_opreport@blm.gov">blm_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.
- Mitigation measures can be found in Appendix B, Table B-2, of the GNB ROD (BLM 2012b) under the following sections of the table:
  - Air Quality
  - Soils
  - Vegetation: *Sclerocactus wetlandicus*
  - Wildlife: Colorado River Fish
- Where populations or individuals of *Sclerocactus wetlandicus* are located within 300 feet of the proposed edge of project ROWs, the following actions will be taken to minimize impacts:
  - Silt fencing will be used to protect cacti that are within 300 feet and downslope or downwind of surface disturbance. Fencing is intended to prevent sedimentation or dust deposition and will be evaluated for effectiveness by a qualified botanist.
  - A qualified botanist will be on site to monitor surface-disturbing activities when cacti are within 300 feet of any surface disturbance.
  - Dust abatement (consisting of water only) will occur during construction where plants are closer than 300 feet from surface-disturbing activities.
  - Cacti within 300 feet of proposed surface disturbance will be flagged immediately prior to surface-disturbing activities and flags will be removed immediately after surface-disturbing activities are completed. Leaving cacti flagged for as short a time as possible will minimize drawing attention to the cacti location and reduce potential for theft.
  - Pipelines will be sited to maximize distance from adjacent cacti locations.
  - Project personnel associated with construction activities will be instructed to drive at a speed limit of 15 miles per hour on unpaved roads and remain in existing roadway ROWs at all times.
- For permanent surface pipelines, KMG will adhere to existing cacti survey/buffer guidelines of 300 feet, or amended guidelines if developed by the BLM and USFWS. In areas where avoidance by 300 feet is not feasible and populations or individuals of *Sclerocactus wetlandicus* are within 50 feet of proposed project components, the following actions will be taken to minimize impacts:
  - Prior to construction, flag individual cactus. Once pipe installation is complete, remove the flagging.

- Prior to construction, install protective fencing around the cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.
- A qualified botanist will be present during construction to monitor surface line installation.
- The following considerations are required for those wells where KMG deems completion fluid recycling is appropriate based on new well density and topography:
  - Temporary lines associated with recycling of completion water will be sited in existing ROWs. The pressure in the lines is less than 50 pounds per square inch and the lines are constructed of rigid aluminum; therefore, virtually no movement will occur during operation.
  - If surface water completion lines are placed within the footprint of a road disturbance where vegetation does not grow, *Sclerocactus wetlandicus* surveys will not be necessary.
  - A qualified botanist will survey a 50-foot-wide corridor along roads where temporary lines are planned to ensure *Sclerocactus wetlandicus* is not present.
  - If cacti are present within the 50-foot-wide survey corridor and avoidance is necessary (to ensure the line is more than 50 feet away from identified cactus), the new alignment will, if possible, be such that the cacti are topographically higher than the re-aligned line so a potential spill from the line will not impact the identified cacti.
  - If it is not possible to re-align the surface lines to avoid individuals or populations of the *Sclerocactus wetlandicus* that are within 50 feet of surface disturbance, the following actions will be taken to minimize impacts:
    - Prior to construction, KMG will flag individual cacti. Once pipe installation is complete, remove the flagging.
    - Prior to construction, KMG will install protective fencing around the cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.
    - A qualified botanist will be present during construction to monitor surface line installation.
- Avoidance of cactus by 300 feet will take priority in the expansion of pads within the cactus core conservation areas. When the 300-foot buffer cannot be avoided in pad expansion, KMG will notify the USFWS and work with the BLM to determine pad expansion that places a priority on avoiding cactus impacts.
- KMG will follow existing ROWs and/or roads in constructing new buried pipelines within the cactus core conservation areas. For instance, where a new buried pipeline is unable to follow an existing ROW and/or road and exceeds 600 feet in length, KMG will work with the USFWS and the BLM to determine a route that places a priority on avoiding cactus impacts.
- Maintenance activities on pipelines within cactus core conservation areas will avoid impacts to cactus, to the extent possible.
- All vehicles and equipment shall be cleaned either through power-washing, or other approved method, if the vehicles or equipment were previously operated outside the Uinta Basin, to prevent weed seed introduction.
- All disturbance areas shall be monitored for noxious weeds annually, for a minimum of three growing seasons following completion of project or until desirable vegetation is established
- Noxious and invasive weeds will be controlled throughout the area of project disturbance.
- Noxious weeds will be inventoried and reported to BLM in the annual reclamation report. Where an integrated pest management program is applicable, coordination has been undertaken with the state and local management program (if existing). A copy of the pest management plan will be submitted for each project.

- A pesticide use permit (PUP) will be obtained for the project, if applicable.
- Bird exclusion netting will be installed over reserve pits containing water that are left open for more than 30 days to reduce possibility of exposure to hazardous chemicals (BLM 2012b).
- KMG will install bird-excluding devices that prevent the perching and entry of migratory birds on or into its new fired vessel exhaust stacks (BLM 2012b).
- Tree removal within pinyon-juniper habitat will occur outside of the nesting season for migratory birds (approximately 4/1 to 7/31 (BLM 2012b).
- Pipelines in the NWNW and SESW quarter quarters of section 4 T10S R22E: Paleontological monitoring by a BLM permitted paleontologist is required during all ground-disturbing activities (BLM 2012b).
- Damage to livestock and livestock facilities would be reported as quickly as possible to the BLM and affected livestock operators. Operators would develop and employ prevention measures to avoid damaging fences, gates, and cattle guards, including upgrading cattle guard gate widths and load-bearing requirements and fencing all open pits and cellars.
- If partial or complete removal of a fence cannot be avoided, the fence would be braced and tied off per the BLM guidance. Where the fence is crossed by a road, the fence would be braced and a cattle guard and gate installed per BLM guidance.

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

**SITE SPECIFIC DOWNHOLE COAs:**

- Gamma Ray Log shall be run from Total Depth to Surface.
- CBL will be run from TD to TOC.
- Cement for the surface casing will be circulated to the surface.

Variances Granted  
Air Drilling

- All variances approved as written in APD.

**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 CD (compact disc) format to the Vernal BLM Field Office. 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 workover 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.

<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-01191
<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> 720 929-6100	<b>8. WELL NAME and NUMBER:</b> NBU 1022-4A1BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0494 FNL 1326 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 04 Township: 10.0S Range: 22.0E Meridian: S	<b>9. API NUMBER:</b> 43047538260000
	<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: 6/13/2014	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<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 checked="" 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.

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:** April 16, 2014

**By:**

<b>NAME (PLEASE PRINT)</b> Teena Paulo	<b>PHONE NUMBER</b> 720 929-6236	<b>TITLE</b> Staff Regulatory Specialist
<b>SIGNATURE</b> N/A	<b>DATE</b> 4/14/2014	



**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 43047538260000**

API: 43047538260000

Well Name: NBU 1022-4A1BS

Location: 0494 FNL 1326 FEL QTR NWNE SEC 04 TWP 100S RNG 220E MER S

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

Date Original Permit Issued: 6/13/2013

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: Teena Paulo

Date: 4/14/2014

Title: Staff Regulatory Specialist 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>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.	5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-01191
1. TYPE OF WELL Gas Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	8. WELL NAME and NUMBER: NBU 1022-4A1BS
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0494 FNL 1326 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWNE Section: 04 Township: 10.0S Range: 22.0E Meridian: S	9. API NUMBER: 43047538260000
PHONE NUMBER: 720 929-6100	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
	COUNTY: Uintah
	STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 5/1/2014	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

Spud well 05/01/2014 @ 12:00. Drill 24" conductor hole to 40', run 14" X .250 wall conductor pipe, cement with 81 sacks ready mix. Anticipated surface spud date and surface casing cement 05/16/2014.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 May 05 2014  
 FOR RECORD ONLY**

<b>NAME (PLEASE PRINT)</b> Doreen Green	<b>PHONE NUMBER</b> 435 781-9758	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/5/2014	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
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<b>1. TYPE OF WELL</b> Gas Well	<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU-01191
<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> 720 929-6111	<b>8. WELL NAME and NUMBER:</b> NBU 1022-4A1BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0494 FNL 1326 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 04 Township: 10.0S Range: 22.0E Meridian: S	<b>9. API NUMBER:</b> 43047538260000
	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
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	<b>STATE:</b> UTAH

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<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: 9/11/2014	<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"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

No activity for Quarter 3 of 2014. Well TD at 2,451 ft. Thank you.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 September 12, 2014

<b>NAME (PLEASE PRINT)</b> Kay E. Kelly	<b>PHONE NUMBER</b> 720 929 6582	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/11/2014	

<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-01191	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-4A1BS	
<b>9. API NUMBER:</b> 43047538260000	
<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>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> 720 929-6100
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0494 FNL 1326 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 04 Township: 10.0S Range: 22.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input 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: 12/16/2014	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

THE SURFACE TD IS AT 2,451'. WAITING ON PRODUCTION RIG. THANK YOU.

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

**FOR RECORD ONLY**

December 17, 2014

<b>NAME (PLEASE PRINT)</b> Kay E. Kelly	<b>PHONE NUMBER</b> 720 929 6582	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/16/2014	

<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>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU-01191
		<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 1022-4A1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047538260000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0494 FNL 1326 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 04 Township: 10.0S Range: 22.0E Meridian: S		<b>COUNTY:</b> UINTAH
		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING	
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CASING REPAIR	
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 3/30/2015	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	
	<input type="checkbox"/> CHANGE TUBING	
	<input type="checkbox"/> CHANGE WELL STATUS	
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	
	<input type="checkbox"/> CHANGE WELL NAME	
	<input type="checkbox"/> DEEPEN	
	<input type="checkbox"/> CONVERT WELL TYPE	
	<input type="checkbox"/> OPERATOR CHANGE	
	<input type="checkbox"/> FRACTURE TREAT	
	<input type="checkbox"/> NEW CONSTRUCTION	
	<input type="checkbox"/> PRODUCTION START OR RESUME	
	<input type="checkbox"/> PLUG AND ABANDON	
	<input type="checkbox"/> RECLAMATION OF WELL SITE	
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	
	<input type="checkbox"/> PLUG BACK	
	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	
	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION	
	<input type="checkbox"/> TUBING REPAIR	
	<input type="checkbox"/> VENT OR FLARE	
	<input type="checkbox"/> WATER SHUTOFF	
	<input type="checkbox"/> SI TA STATUS EXTENSION	
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
Drilled production to 10,020 ft in Quarter 1 of 2015. Waiting on completions. Thank you.		
<b>Accepted by the          Utah Division of          Oil, Gas and Mining          FOR RECORD ONLY          March 31, 2015</b>		
<b>NAME (PLEASE PRINT)</b> Kristina Geno	<b>PHONE NUMBER</b> 720 929-6824	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 3/30/2015	

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# SST 57  
Submitted By STUART NEILSON Phone Number 435-828-0985  
Well Name/Number NBU 1022-4A1BS  
Qtr/Qtr NW/NE Section 4 Township 10S Range 23E 22 E  
Lease Serial Number UTU-01191  
API Number 43-047-53826

Casing – Time casing run starts, not cementing times.

- Production Casing  
 Other

Date/Time 3/6/15 6 AM  PM

BOPE

- Initial BOPE test at surface casing point  
 Other

Date/Time \_ \_ AM  PM

Rig Move

Location To: \_

Date/Time \_ \_ AM  PM

Remarks \_\_\_\_\_

TIME IS APPROXIMATE

<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-01191	
<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 1022-4A1BS	
<b>9. API NUMBER:</b> 43047538260000	
<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>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> 720 929-6100
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0494 FNL 1326 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNE Section: 04 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 checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 5/18/2015	<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 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 NBU 1022-4A1BS was placed on production 5/18/2015 after a new well completion. Producing from the MESAVERDE/BLACKHAWK. Thank you.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 May 20, 2015

<b>NAME (PLEASE PRINT)</b> Jennifer Thomas	<b>PHONE NUMBER</b> 720 929-6808	<b>TITLE</b> Regulatory Specialist
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/19/2015	

Form 3160-4  
(August 2007)

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.  
UTU01191

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 AND GAS ONSHORE  
Contact: JENNIFER THOMAS  
Email: Jennifer.Thomas@anadarko.com

8. Lease Name and Well No.  
NBU 1022-4A1BS

3. Address P.O. BOX 173779  
DENVER, CO 80217

3a. Phone No. (include area code)  
Ph: 720-929-6808

9. API Well No.  
43-047-53826

4. Location of Well (Report location clearly and in accordance with Federal requirements)\*  
 At surface NWNE 494FNL 1326FEL 39.983911 N Lat, 109.440282 W Lon  
 At top prod interval reported below NENE 206FNL 490FEL  
 At total depth NENE 254FNL 481FEL 39.984571 N Lat, 109.437268 W Lon

10. Field and Pool, or Exploratory  
NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey  
or Area Sec 4 T10S R22E Mer SLB

12. County or Parish  
UINTAH

13. State  
UT

14. Date Spudded  
05/01/2014

15. Date T.D. Reached  
03/05/2015

16. Date Completed  
 D & A  Ready to Prod.  
05/18/2015

17. Elevations (DF, KB, RT, GL)\*  
5061 KB

18. Total Depth: MD 10020  
TVD 9890

19. Plug Back T.D.: MD 9954  
TVD 9824

20. Depth Bridge Plug Set: MD  
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)  
TRIPLE COMBO, RADIAL CEMENT BOND GAMMA RAY CCL TEM

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
24.000	14.000 STL	36.7	0	40		81			
11.000	8.625 J55	28.0	18	2434		600		0	
7.875	4.500 P 110	11.6	18	10000		2000		1354	

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	8701							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) MESA VERDE	7044	9019	7044 TO 9019	0.410	168	OPEN
B) BLACKHAWK	9731	9906	9731 TO 9906	0.410	24	OPEN
C)						
D)						

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

Depth Interval	Amount and Type of Material
7044 TO 9906	PUMP 12270 BBLS SLICKWATER, 48 BBLS HCL ACID (12.5%-18%), 219954 LBS 30/50 MESH SAND

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
05/18/2015	06/01/2015	24	→	13.0	2244.0	343.0			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 1167	1551.0	→	13	2244	343		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		→						

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #304577 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

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

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 BIRD'S NEST MAHOGANY WASATCH MESA VERDE	1067 1435 2037 4493 6954

32. Additional remarks (include plugging procedure):

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 #304577 Verified by the BLM Well Information System.  
For KERR-MCGEE OIL AND GAS ONSHORE, sent to the Vernal**

Name (please print) JENNIFER THOMAS Title REGULATORY SPECIALIST III

Signature (Electronic Submission) Date 06/10/2015

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 \*\***

**RECEIVED:** Jun. 10, 2015

US ROCKIES REGION  
**Operation Summary Report**

Well: NBU 1022-4A1BS YELLOW

Spud date: 5/19/2014

Project: UTAH-UINTAH

Site: NBU 1022-4A PAD

Rig name no.: PROPETRO 12/12, SST 57/57

Event: DRILLING

Start date: 5/19/2014

End date: 3/6/2015

Active datum: RKB @5,061.00usft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/19/2014	10:30 - 12:30	2.00	MIRU	01	C	P	58	SKID RIG 20 FT AND RIG UP SET MATTING BOARD, SET RIG IN PLACE ON NBU 1022-4A1BS WELL 4 OF 4 PRE SPUD JOB SAFETY MEETING. REVIEW DIRECTIONAL PLANS AND PLATS AND VERIFY LAT/LONGS AND WELL ORDER VERIFY DIRECTIONAL DRILLERS PLAN IS THE MOST RECENT AND APPROVED VERSION REFERENCE WELLBORE DIAGRAMS FOR EXACT CASING DESIGN AND GENERAL OVERVIEW OF WELLBORE, PRIOR TO SPUD
	12:30 - 14:00	1.50	DRLSUR	02	B	P	58	PICK UP NOV 1.83 DEGREE BENT MOTOR (RUN # 5) .17 REV/GAL PICK UP 12 1/4" DRILL BIT. SPUD @ 04/22/2014 12:30. DRILL 12.25" HOLE FROM 44' TO 210' (166' @ 110 FPH). WEIGHT ON BIT 5-15 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491. PRESSURE ON/OFF (BOTTOM) 620/430. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROTATE 25/25/25 K. DRAG 0 K. CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS.
	14:00 - 15:30	1.50	DRLSUR	06	A	P	224	CIRC 15 MINUTES AND, TRIP OUT TO CHANGE ASSEMBLY. BREAK 12 1/4" BIT MAKE UP NOV. 11" BIT. PICK UP 8" DIRECTIONAL ASSEMBLY SCIBE MOTOR. INSTALL EM TOOL, TRIP IN HOLE.
	15:30 - 17:30	2.00	DRLSUR	02	B	P	224	DRILL 11" SURFACE HOLE FROM 210' TO 460' (250' @ 125'FPH).WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 800/600. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 46/44/45 K. DRAG 3 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY: 2.8' HIGH / 0.4' LEFT SLIDE - 37' = 8% CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER.RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES
	17:30 - 18:00	0.50	DRLSUR	07	A	P	474	RIG SERVICE

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 1022-4A1BS YELLOW

Spud date: 5/19/2014

Project: UTAH-UINTAH

Site: NBU 1022-4A PAD

Rig name no.: PROPETRO 12/12, SST 57/57

Event: DRILLING

Start date: 5/19/2014

End date: 3/6/2015

Active datum: RKB @5,061.00usft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	18:00 - 0:00	6.00	DRLSUR	02	A	P	474	DRILL 11" SURFACE HOLE FROM 460' TO 1190' (730' @ 121'FPH).WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 920/710. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 60/50/51 K. DRAG 3 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY: 5.8' HIGH / 0.5' LEFT SLIDE - 153' = 22.30% CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER.RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES
5/20/2014	0:00 - 5:30	5.50	DRLSUR	02	B	P	1204	DRILL 11" SURFACE HOLE FROM 1190' TO 1790' (600' @ 109'FPH).WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491.PRESSURE ON/OFF(BOTTOM) 1050/800. AIR ON TO MAINTAIN DRILLING DRILLING FLUID AT 1670' PUMP 420 GPM @ 1900 CFM ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 71/56/62 K. DRAG 6 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY: 3.1' HIGH / 0.9' RIGHTSLIDE - 153' = 22.30% CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER.RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES
	5:30 - 6:00	0.50	DRLSUR	23		P	1804	SAFETY MEETING DRILLING WITH AIR
	6:00 - 12:00	6.00	DRLSUR	02	B	P	1804	DRILL 11" SURFACE HOLE FROM 1790' TO 2240' (450' @ 75'FPH).WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491.PRESSURE ON/OFF(BOTTOM) 1100/900. AIR ON TO MAINTAIN DRILLING DRILLING FLUID AT 1670' PUMP 420 GPM @ 1900 CFM ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 83/50/60 K. DRAG 10 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY: 1.9' HIGH / 0.0' LEFT SLIDE - 0' = 0.0% CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER.RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES

US ROCKIES REGION  
Operation Summary Report

Well: NBU 1022-4A1BS YELLOW

Spud date: 5/19/2014

Project: UTAH-UINTAH

Site: NBU 1022-4A PAD

Rig name no.: PROPETRO 12/12, SST 57/57

Event: DRILLING

Start date: 5/19/2014

End date: 3/6/2015

Active datum: RKB @5,061.00usft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	12:00 - 15:00	3.00	DRLSUR	02	B	P	2254	DRILL 11" SURFACE HOLE FROM 2240' TO 2451' (211' @ 71'FPH).WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491.PRESSURE ON/OFF(BOTTOM) 1200/1000. AIR ON TO MAINTAIN DRILLING DRILLING FLUID AT 1670' PUMP 420 GPM @ 1900 CFM ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 90/60/75 K. DRAG 15 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY: 0.6' LOW / 1.4' LEFT SLIDE - 40' = 5% CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER.RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES
	15:00 - 17:00	2.00	DRLSUR	05	A	P	2465	CIRCULATE AND CONDITION HOLE, VOLUME IS CLEAN COMING OVER SHAKERS, 1,000 BBLs OF FRESH WATER ON LOCATION FOR CEMENT JOB. PUMP 70 BBLs HEAVY MUD ON BOTTOM BEFORE TRIP OUT 3- UPRIGHT'S FULL AND 2- UPRIGHTS EMPTY,
	17:00 - 21:00	4.00	DRLSUR	06	D	P	2465	TRIP OUT OF HOLE,LAY DOWN DRILL STRING, BOTTOM HOLE ASSEMBLY,LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT.
	21:00 - 0:00	3.00	CSGSUR	12	C	P	2465	RUN 55 JOINTS OF 8-5/8" 28# J-55 LTC CASING. RAN 1 CENTRALIZER ON FIRST THREE JOINTS, AND EVERY TWO JOINT FOR 2 JOINTS FOR A TOTAL OF 5 CENTRALIZERS. RUN CASING TO BOTTOM WITH NO PROBLEMS. SET FLOAT SHOE @ 2,420' KB. SET TOP OF BAFFLE PLATE @ 2,374'
5/21/2014	0:00 - 1:30	1.50	CSGSUR	05	D	P	2465	CIRCULATE TO CLEAR CASING

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	1:30 - 5:30	4.00	CSGSUR	12	E	P	2465	PRE JOB SAFETY MEETING WITH PRO PETRO CEMENTERS. RAN 200' OF 1". PIPE DOWN BACK-SIDE, RIG UP AND INSTALL CEMENT HEAD, START CEMENT OPERATIONS. PRESSURE TEST LINES TO 2000 PSI. PUMP 135 BBLs H2O AND PUMP 20 BBLs OF 8.4# GEL WATER AHEAD. MIX AND PUMP (300 SX) 61.4 BBLs OF 15.8# 1.15 YD 5 GAL/SK PREMIUM CEMENT W/ 2% CALC. DROP PLUG ON FLY. DISPLACE W/ 148.1 BBLs OF H2O. NO CIRC THROUGH OUT. FINAL LIFT OF 345 PSI AT 4 BBL/MIN. BUMP PLUG WITH 600 PSI FOR 5 MIN. FLOAT HELD. TOP JOB # 1: PUMP CEMENT DOWN ONE INCH PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 30.7 BBLs OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX.NO RETURNS START CEMENT 01:55 DISPLACMENT 02:06 END BUMP PLUG 02:28 TOP OUT #1 02:50 END 03:10  RELEASE RIG 5-21-2014 @ 05:30  TOP JOB # 2: PUMP CEMENT DOWN ONE INCH PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 30.7 BBLs OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. START 05:45 END 06:00 CEMENT TO SURFACE AND STAYING  .RELEASE CEMENTERS 5/21/2014 @06:00 SKID RIG TO NBU-1022-4A1BS
2/28/2015	4:30 - 5:30	1.00	MIRU3	01	C	P	2465	SKID RIG TO NBU-1022-4A1BS
	5:30 - 6:30	1.00	PRPSPD	14	A	P	2465	N/U BOPE
	6:30 - 10:00	3.50	PRPSPD	15	A	P	2465	HPJSM TEST BOPS RUN TEST ASSY, TEST BOP WITH A-1 TESTERS - TEST ANNULAR TO 250 PSI LOW/ 5 MIN 2500 PSI HIGH 10 MIN, PIPE & BLIND RAMS, FLOOR VALVES, IBOP, HCR VALVE, KILL LINE VALVES, TEST BOPS, CHOKE MANIFOLD TO 250 PSI LOW / 5 MIN - 5000 PSI HIGH / 10 MIN, HOLD ACCUMULATOR FUNCTION TEST, TEST CSG 1500 PSI - 30 MIN,
	10:00 - 10:30	0.50	PRPSPD	09	A	P	2465	CUT & SLIP DRILL LINE, REMOVED LINE FROM DRUM & FOUND CRACK ON BRAKE, NEW SET COMING FROM CASPER
	10:30 - 22:30	12.00	PRPSPD	08	B	Z	2465	WAIT ON BREAKE BANDS FROM CASPER & INSTALL
	22:30 - 23:00	0.50	PRPSPD	09	A	P	2465	FINISH SLIP CUT DRILL LINE
	23:00 - 23:30	0.50	PRPSPD	14	B	P	2465	INSTALL WEAR BUSHING
	23:30 - 0:00	0.50	PRPSPD	06	A	P	2465	P/U DIR TOOLS & SCRIBE MOTOR
3/1/2015	0:00 - 1:00	1.00	PRPSPD	06	A	P	2465	P/U DIR TOOLS & SCRIBE & TRIP IN HOLE & TAG CEMENT @ 2296
	1:00 - 2:00	1.00	PRPSPD	02	F	P	2465	DRILL SHOE TRACK TAG CEMENT @ 2296 & BAFFLE @ 2388 & SHOE @ 2433

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	2:00 - 8:00	6.00	DRLPRC	02	D	P	2465	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 2465' T/ 3126', 661' @ 110' PH WEIGHT ON BIT = 18 - 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM = 1650 STAND PIPE PRESSURE OFF BOTTOM = 1400 STRING WEIGHT UP/DOWN/ROTATING = 125K / 90K / 105K 2' High / 3' Left OF PLAN Slide 116' @ 17% = 1.42 Hrs: Rot 545' @ 83% = 3.82 Hrs. HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.4 PPG VISCOSITY = 26 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	8:00 - 16:00	8.00	DRLPRC	02	D	P	3126	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 3126' TO 4545', 1419' @ 177.4' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM = 2100 STAND PIPE PRESSURE OFF BOTTOM = 1700 STRING WEIGHT UP/DOWN/ROTATING = 145K / 95K / 125K 11' North / 4' West of center target Slide 175' @ 12% = 1.5 hrs: Rot 1248' @ 88% = 5.83 Hrs HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.4 PPG VISCOSITY = 26 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	16:00 - 16:30	0.50	DRLPRV	02	B	P	4545	SERVICE RIG & TD

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	16:30 - 0:00	7.50	DRLPRV	02	B	P	4545	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F / 4545' TO 5900, 1355' @ 180'PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM = 2250 STAND PIPE PRESSURE OFF BOTTOM = 1850 STRING WEIGHT UP/DOWN/ROTATING = 185K / 90K / 140K 11.5' North / 4.5' West of center target Slide 42' @ 3.13% = .83 Hrs Rot 1313' @ 96.87% = 5.42 Hrs. HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.5 PPG VISCOSITY = 27 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
3/2/2015	0:00 - 8:00	8.00	DRLPRV	02	B	P	5900	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F 5900' TO 7024', 1124' @ 140.5' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM = 2250 STAND PIPE PRESSURE OFF BOTTOM = 1850 STRING WEIGHT UP/DOWN/ROTATING = 185K / 90K / 140K 14' North / 8' West of center target Slide 8' @ .7% = .25 Hrs: Rot 1122' @ 99.3% = 6.83 Hrs HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.5 PPG VISCOSITY = 27 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB

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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	8:00 - 16:00	8.00	DRLPRV	02	B	P	7024	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 7024 TO 7976', 952' @ 119' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM =2500 STAND PIPE PRESSURE OFF BOTTOM = 2100 STRING WEIGHT UP/DOWN/ROTATING = 185K / 90K / 140K 17' North / 12' West of center target Slide 37' @ 4% = 1 Hrs: Rot 915' @ 96% = 6 Hrs. HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.5 PPG VISCOSITY = 27 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	16:00 - 16:30	0.50	DRLPRV	07	A	P	7976	SERVICE RIG
	16:30 - 0:00	7.50	DRLPRV	02	B	P	7976	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 7976' TO 8643 , 667' @ 88.9' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 2 PUMPS @ 60 GALLONS PER MINUTE = 591 MUD MOTOR RPM = 136 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 83 - 148 FT/LBS TORQUE = 6 - 11K STAND PIPE PRESSURE ON BOTTOM =2800 STAND PIPE PRESSURE OFF BOTTOM = 2600 STRING WEIGHT UP/DOWN/ROTATING = 240/150/180 8' North / 16.5' West of center target. Slide 0' @ 0% = 0 Hrs Rot 667' @ 100% = 7.17 Hrs. HOLE IN GOOD CONDITION BOS - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 8.5 PPG VISCOSITY = 27 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB MUD UP SYSTEM @ 8548 - 11.6 PPG 36 VIS

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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
3/3/2015	0:00 - 8:00	8.00	DRLPRV	02	B	P	8643	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 8643 TO 9028', 383' @ 47.8' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 1 PUMPS @ 90 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE =8-13 K STAND PIPE PRESSURE ON BOTTOM =2200 STAND PIPE PRESSURE OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 240/160/180 1' South / 15' West of center target. Slide 0' @ 0% = 0 Hrs: Rot 385' @ 100% = 7.67 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 11.9 PPG VISCOSITY = 39 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	8:00 - 15:00	7.00	DRLPRV	02	B	P	9028	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9028' TO 9309', 281' @ 40' PH WEIGHT ON BIT = 24 K STROKES PER MINUTE 1 PUMPS @ 90 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 10-14 K STAND PIPE PRESSURE ON BOTTOM =2300 STAND PIPE PRESSURE OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 240/160/180 10' South / 9' West center target. Slide 0' @ 0% = 0 Hrs: Rot 287' @ 100% = 7.42 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 11.9 PPG VISCOSITY = 39 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	15:00 - 15:30	0.50	DRLPRV	07	A	P	9309	SERVICE RIG & TD

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	15:30 - 0:00	8.50	DRLPRV	02	B	P	9309	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9309' TO 9544 '235'@ 27.6 PH WEIGHT ON BIT = 24-26 K STROKES PER MINUTE 1 PUMPS @ 90 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 10-14 K STAND PIPE PRESSURE ON BOTTOM =2300 STAND PIPE PRESSURE OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 254/155/189 16' South / 7' West Slide 0' @ 0% = 0 Hrs: Rot 234' @ 100% = 8.17 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 12.0 PPG VISCOSITY = 41 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
3/4/2015	0:00 - 7:00	7.00	DRLPRV	02	B	P	9544	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9544' TO 9670', 126' @ 18' PH WEIGHT ON BIT = 24-26 K STROKES PER MINUTE 1 PUMPS @80-100 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 12-16 K STAND PIPE PRESSURE ON BOTTOM =2300 STAND PIPE PRESSURE OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 254/155/189 16' South / 7' West Slide 0' @ 0% = 0 Hrs: Rot 234' @ 100% = 8.17 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 12.0 PPG VISCOSITY = 41 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	7:00 - 11:30	4.50	DRLPRV	06	A	P	9670	PUMP HIGH VIS SWEEP, BACK REAM 10 STANDS ( PRETTY STICKY), PUMP PILL & PULL OUT OF HOLE CHANGE OUT MM & BIT, NO PROBLEMS
	11:30 - 12:30	1.00	DRLPRV	06	A	P	9670	L/D MM, BIT CLEAN FLOOR
	12:30 - 13:00	0.50	DRLPRV	06	A	P	9670	P/U NEW MM & BIT
	13:00 - 13:30	0.50	DRLPRV	06	A	P	9670	TRIP IN TO SHOE, FILL PIPE

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	13:30 - 14:30	1.00	DRLPRV	09	A	P	9670	CUT & SLIP 12 WRAPS = 66' & INSPECT DRUM ASSEMBLY
	14:30 - 15:30	1.00	DRLPRV	06	A	P	9670	TRIP IN HOLE, TIGHT HOLE @ 4400', FILL PIPE
	15:30 - 16:00	0.50	DRLPRV	03	A	X	9670	*** WASH & REAM FROM 4400 TO 4500 TIGHT SPOT OUT, PACKED OFF LOST 40 BBLS TO FORMATION, HOLE GAVE 20 BBLS BACK AFTER TIGHT HOLE WAS CLEANED
	16:00 - 17:30	1.50	DRLPRV	06	A	P	9670	TRIP IN HOLE
	17:30 - 18:00	0.50	DRLPRV	03	E	P	9670	WASH & REAM F/ 9651 TO 9670 ( NO FILL )
	18:00 - 22:00	4.00	DRLPRV	02	B	P	9670	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9670'TO 9885' - 215'@ 47.7' PH WEIGHT ON BIT = 24-26 K STROKES PER MINUTE 1 PUMPS @80-100 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 12-16 K STAND PIPE PRESSURE ON BOTTOM =2300 STAND PIPE PRESSURE OFF BOTTOM = 2000 STRING WEIGHT UP/DOWN/ROTATING = 250/160/192 27.8' South / .9' West Slide 0' @ 0% = 0 Hrs: Rot 215' @ 100% = 4 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 12.0 PPG VISCOSITY = 41 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	22:00 - 22:30	0.50	DRLPRV	22	L	Z	9885	CYCLE PUMPS TRY GET MWD SIGNAL FOR SURVEY

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	22:30 - 0:00	1.50	DRLPRV	02	B	P	9885	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9885' TO 9970- 85'@ 56.6' PH WEIGHT ON BIT = 24-26 K STROKES PER MINUTE 1 PUMPS @80-100 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 12-16 K STAND PIPE PRESSURE ON BOTTOM =2400 STAND PIPE PRESSURE OFF BOTTOM = 2150 STRING WEIGHT UP/DOWN/ROTATING = 250/160/192 31.2' South / .7' EAST Slide 0' @ 0% = 0 Hrs: Rot 85' @ 100% = 1.5 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 12.0 PPG VISCOSITY = 45 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
3/5/2015	0:00 - 1:00	1.00	DRLPRV	02	B	P	9970	DIRECTIONAL DRILL 7.875 PRODUCTION HOLE F/ 9970 TO 10,020 - 50.0'@ 50.0' PH WEIGHT ON BIT = 24-26 K STROKES PER MINUTE 1 PUMPS @80-100 GALLONS PER MINUTE = 442 MUD MOTOR RPM = 102 TOP DRIVE RPM = 55 - 65 TOTAL RPM = 162 FT/LBS TORQUE = 12-16 K STAND PIPE PRESSURE ON BOTTOM =2400 STAND PIPE PRESSURE OFF BOTTOM = 2150 STRING WEIGHT UP/DOWN/ROTATING = 250/160/192 34.2' South / 1.9' West Slide 0' @ 0% = 0 Hrs: Rot 50' @ 100% = 1 Hrs. HOLE IN GOOD CONDITION BOS -STANDBY CENTRIFUGE - RUNNING DE-SANDER - RUNNING MUD WEIGHT = 12.0 PPG VISCOSITY = 45 SECONDS DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB
	1:00 - 2:30	1.50	DRLPRV	05	A	P	10,020	CIRC BOTTOM UP
	2:30 - 7:30	5.00	DRLPRV	06	B	P	10,020	BACK REAM 8 STANDS , PUMP PILL & PULL OUT OF HOLE NO PROBLEMS & RUN WEATHERFORD SHUTTLE LOGS, WORK TIGHT SPOT F/ 4200-4362'
	7:30 - 8:30	1.00	DRLPRV	06	A	P	10,020	L/D DIR TOOLS, MM,BIT

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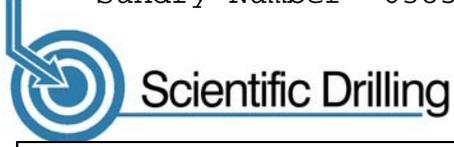
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End date: 3/6/2015

Active datum: RKB @5,061.00usft (above Mean Sea Level)

UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	8:30 - 11:00	2.50	EVALPR	11	D	P	10,020	HPJSM WITH RIG & LOGGING CREWS, R/U LOGGERS AND P/U SHUTTLE LOGGING TOOLS ( TRIPLE COMBO )
	11:00 - 16:30	5.50	EVALPR	11	D	P	10,020	TIH WITH LOGGING TOOLS - BREAK CIRCULATION EVERY 15 STANDS AND CHECK PRESSURES & TAG BTM @ 10,017
	16:30 - 17:30	1.00	EVALPR	11	D	P	10,020	CIRCULATE & DEPLOY LOGGING TOOLS
	17:30 - 0:00	6.50	EVALPR	11	D	P	10,020	T.I.H - WHILE LOGGING OUT WITH WEATHERFORD SHUTTLE LOGS
3/6/2015	0:00 - 1:00	1.00	EVALPR	11	D	P	10,020	FINISH P.O.O.H & LOGGING WEATHERFORD LOGGING TOOLS
	1:00 - 2:30	1.50	EVALPR	11	D	P	10,020	RIG DOWN WEATHERFORD LOGGING TOOLS
	2:30 - 3:00	0.50	CSGPRO	14	B	P	10,020	PULL WEAR BUSHING
	3:00 - 12:30	9.50	CSGPRO	12	C	P	10,020	HELD PRE-JOB SAFETY MEETING WITH RIG & CASING CREWS, RIG UP & RUN 113 JTS + 2 MARKER JT 4 1/2", 11.6# P-110, LTC CASING + 112 JTS + CROSSOVER + PUP JT, 4 1/2", 11.6#, P-110, DQX CASING, SET @ 10,000', PLUG BACK @ 9,954', RAN 20 CENT'S, MKR JT TOP OF BLACKHAWK @ 9642 MESEVERDE @ 6964, R/D CIRC & COND MUD TO CEMENT
	12:30 - 13:30	1.00	CSGPRO	05	D	P	10,020	CIRC & COND MUD TO CEMENT
	13:30 - 17:00	3.50	CSGPRO	12	E	P	10,020	CEMENT W/ HALLABURTON - PUMP 20 BBLS WATER SPACER - 10 BBL GEL SPACER & 187.2 BBLS LEAD CEMENT 565 SKS @ 12.5 PPG W/ 1.86 YIELD, MIX & PUMP 288.8 BBLS TAIL CEMENT 1435 SKS @ 14.3 PPG W/ 1.13 YIELD - WASH UP LINES - DISPLACE W/ 154.3 BBLS WATER, BUMP PLUG TO 3550 PSI - HAD 2900 PSI LIFT PRESSURE PRIOR TO BUMP PLUG / 1 3/4 BBLS CMT BACK- FLOAT HELD/ GOOD RETURNS THROUGHOUT JOB - 6 BBLS CEMENT TO SURFACE - RIG DOWN CEMENTERS PUMPED 40% EXCESS ON LEAD & 25% EXCESS ON TAIL CEMENT EST TOP OF TAIL IS 3950', R/D
	17:00 - 18:00	1.00	CSGPRO	14	A	P	10,020	FLUSH OUT STACK WITH FRESH WATER, SET PACKOFF & TEST, L/D LANDING JT RELEASED RIG @ 18:00 HRS ON 3/6/2015

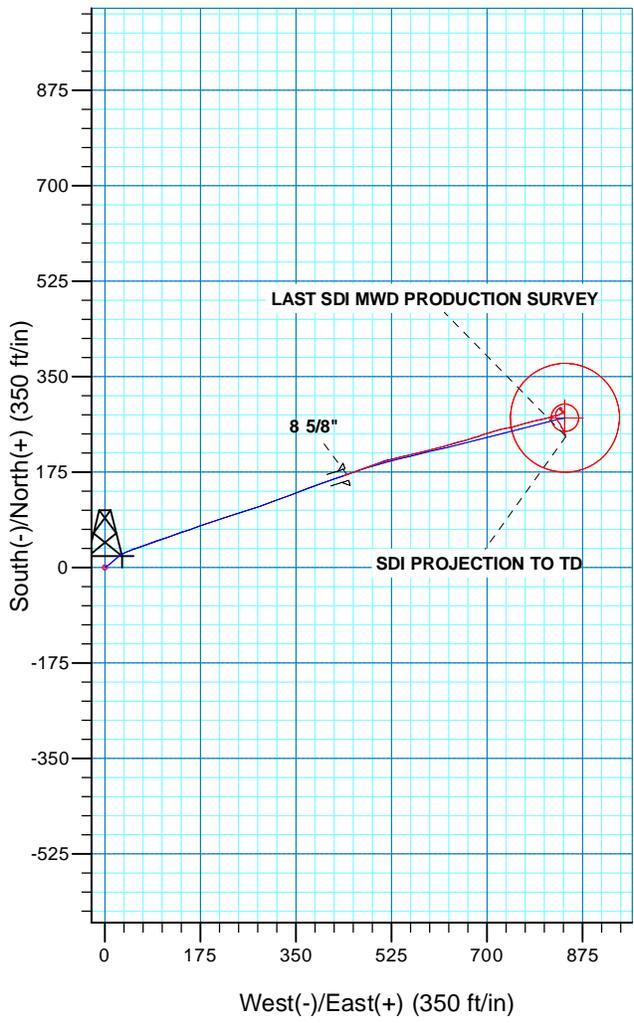
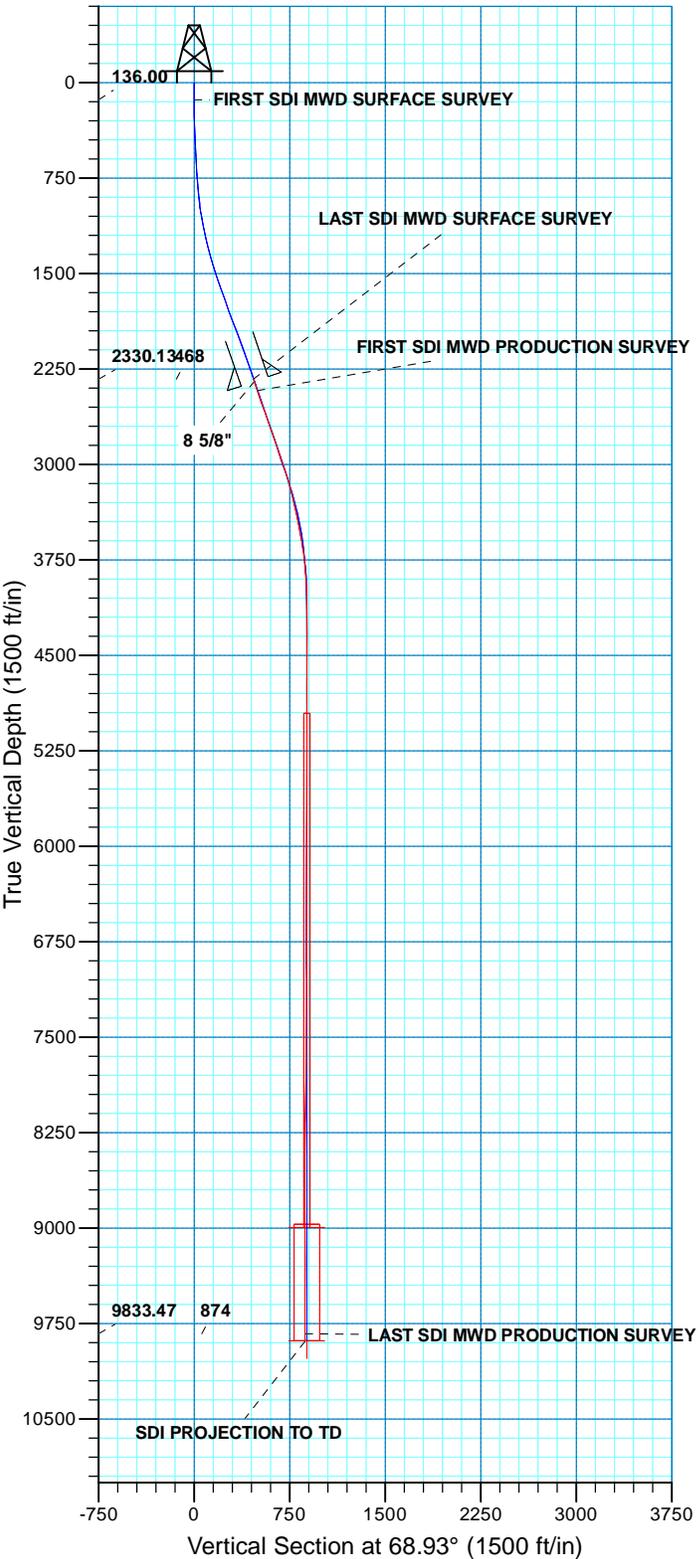


WELL DETAILS: NBU 1022-4A1BS

GL 5043 & KB 18 @ 5061.00ft (SST 57)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14524023.83	2077531.78	39.9839460	-109.4395990

Azimuths to True North  
 Magnetic North: 10.70°  
  
 Magnetic Field  
 Strength: 51831.3snT  
 Dip Angle: 65.76°  
 Date: 3/4/2015  
 Model: BGGM2014



PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N  
  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 4 T10S R22E  
 System Datum: Mean Sea Level

REC



# US ROCKIES REGION PLANNING

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

NBU 1022-4A PAD

NBU 1022-4A1BS

OH

Design: OH

## Standard Survey Report

12 March, 2015



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Site:</b>	NBU 1022-4A PAD	<b>MD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Well:</b>	NBU 1022-4A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales

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

<b>Site</b>	NBU 1022-4A PAD, SECTION 4 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,524,009.51 usft	<b>Latitude:</b>	39.9839060
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,077,545.75 usft	<b>Longitude:</b>	-109.4395500
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.00 °

<b>Well</b>	NBU 1022-4A1BS, 494 FNL 1326 FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,524,023.84 usft	<b>Latitude:</b>	39.9839460
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,077,531.77 usft	<b>Longitude:</b>	-109.4395990
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,043.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2014	3/4/2015	10.70	65.76	51,831

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	68.93	

<b>Survey Program</b>	<b>Date</b>	3/12/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
14.00	2,399.00	Survey #1 SDI MWD SURFACE (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
2,495.00	10,020.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
136.00	0.09	18.23	136.00	0.09	0.03	0.06	0.07	0.07	0.07	0.00
<b>FIRST SDI MWD SURFACE SURVEY</b>										
221.00	0.21	63.32	221.00	0.22	0.19	0.26	0.19	0.14	0.14	53.05
303.00	1.45	64.06	302.99	0.75	1.26	1.44	1.51	1.51	1.51	0.90
385.00	2.20	57.96	384.95	2.03	3.52	4.02	0.94	0.91	0.91	-7.44
475.00	2.99	56.99	474.85	4.23	6.96	8.01	0.88	0.88	0.88	-1.08
565.00	3.08	45.31	564.73	7.21	10.64	12.52	0.69	0.10	0.10	-12.98
655.00	3.69	44.60	654.57	10.97	14.40	17.38	0.68	0.68	0.68	-0.79



## Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Site:</b>	NBU 1022-4A PAD	<b>MD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Well:</b>	NBU 1022-4A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales

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)	
745.00	4.13	46.45	744.36	15.27	18.78	23.01	0.51	0.49	2.06	
835.00	5.36	51.11	834.05	20.14	24.40	30.01	1.43	1.37	5.18	
925.00	7.39	62.53	923.49	25.45	32.81	39.77	2.65	2.26	12.69	
1,015.00	9.26	69.06	1,012.54	30.71	44.71	52.76	2.33	2.08	7.26	
1,105.00	10.29	70.88	1,101.24	35.93	59.07	68.04	1.19	1.14	2.02	
1,195.00	12.05	70.62	1,189.53	41.68	75.53	85.46	1.96	1.96	-0.29	
1,285.00	13.98	70.25	1,277.21	48.47	94.62	105.72	2.15	2.14	-0.41	
1,375.00	15.83	71.23	1,364.18	56.09	116.48	128.86	2.07	2.06	1.09	
1,465.00	18.11	71.23	1,450.26	64.55	141.35	155.10	2.53	2.53	0.00	
1,555.00	19.61	69.63	1,535.42	74.30	168.75	184.18	1.76	1.67	-1.78	
1,645.00	18.91	71.50	1,620.39	84.19	196.74	213.85	1.04	-0.78	2.08	
1,735.00	19.59	73.04	1,705.35	93.22	225.00	243.47	0.94	0.76	1.71	
1,825.00	20.05	72.02	1,790.02	102.38	254.11	273.93	0.64	0.51	-1.13	
1,915.00	19.61	70.00	1,874.69	112.31	282.98	304.43	0.90	-0.49	-2.24	
2,005.00	20.22	70.00	1,959.30	122.79	311.78	335.08	0.68	0.68	0.00	
2,095.00	20.22	70.27	2,043.76	133.36	341.04	366.18	0.10	0.00	0.30	
2,185.00	20.18	69.01	2,128.22	144.18	370.17	397.26	0.49	-0.04	-1.40	
2,275.00	19.26	69.39	2,212.94	154.96	398.56	427.62	1.03	-1.02	0.42	
2,399.00	18.91	72.11	2,330.13	168.33	436.82	468.14	0.77	-0.28	2.19	
<b>LAST SDI MWD SURFACE SURVEY</b>										
2,495.00	18.52	69.47	2,421.05	178.46	465.91	498.91	0.97	-0.41	-2.75	
<b>FIRST SDI MWD PRODUCTION SURVEY</b>										
2,591.00	18.38	69.24	2,512.12	189.17	494.34	529.30	0.16	-0.15	-0.24	
2,686.00	19.09	76.85	2,602.10	198.02	523.48	559.66	2.68	0.75	8.01	
2,781.00	18.82	76.10	2,691.95	205.23	553.48	590.25	0.38	-0.28	-0.79	
2,877.00	20.84	76.62	2,782.25	212.90	585.12	622.54	2.11	2.10	0.54	
2,972.00	19.17	74.87	2,871.52	220.89	616.62	654.81	1.87	-1.76	-1.84	
3,067.00	18.99	73.99	2,961.30	229.22	646.54	685.72	0.36	-0.19	-0.93	
3,163.00	17.67	72.23	3,052.43	237.97	675.43	715.82	1.49	-1.38	-1.83	
3,258.00	15.48	73.28	3,143.47	246.02	701.30	742.86	2.33	-2.31	1.11	
3,353.00	14.68	75.48	3,235.20	252.69	725.10	767.46	1.04	-0.84	2.32	
3,448.00	13.45	76.36	3,327.35	258.31	747.49	790.38	1.31	-1.29	0.93	
3,544.00	11.52	76.01	3,421.08	263.26	767.64	810.96	2.01	-2.01	-0.36	
3,639.00	10.99	75.66	3,514.25	267.80	785.62	829.37	0.56	-0.56	-0.37	
3,734.00	9.15	75.74	3,607.78	271.90	801.72	845.86	1.94	-1.94	0.08	
3,830.00	7.74	75.13	3,702.74	275.44	815.36	859.87	1.47	-1.47	-0.64	
3,925.00	5.89	75.83	3,797.06	278.28	826.27	871.07	1.95	-1.95	0.74	
4,020.00	4.22	59.40	3,891.70	281.25	834.01	879.36	2.31	-1.76	-17.29	
4,115.00	1.93	45.07	3,986.55	284.16	838.15	884.27	2.52	-2.41	-15.08	
4,210.00	1.32	33.91	4,081.52	286.20	839.89	886.63	0.72	-0.64	-11.75	
4,305.00	0.70	183.50	4,176.51	286.53	840.47	887.28	2.06	-0.65	157.46	
4,400.00	0.97	178.84	4,271.50	285.14	840.45	886.77	0.29	0.28	-4.91	
4,496.00	0.09	241.42	4,367.49	284.30	840.40	886.42	0.97	-0.92	65.19	



## Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Site:</b>	NBU 1022-4A PAD	<b>MD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Well:</b>	NBU 1022-4A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,591.00	0.26	275.17	4,462.49	284.28	840.12	886.15	0.20	0.18	35.53	
4,687.00	0.53	140.52	4,558.49	283.96	840.18	886.09	0.77	0.28	-140.26	
4,782.00	0.91	170.50	4,653.48	282.87	840.59	886.08	0.55	0.40	31.56	
4,877.00	0.79	301.16	4,748.48	282.47	840.15	885.53	1.63	-0.13	137.54	
4,973.00	0.52	322.02	4,844.47	283.15	839.32	885.00	0.37	-0.28	21.73	
5,068.00	0.54	253.22	4,939.47	283.36	838.62	884.42	0.63	0.02	-72.42	
5,163.00	0.17	236.17	5,034.47	283.16	838.08	883.84	0.40	-0.39	-17.95	
5,258.00	0.82	338.75	5,129.47	283.71	837.71	883.70	0.92	0.68	107.98	
5,353.00	0.34	15.31	5,224.46	284.62	837.54	883.87	0.61	-0.51	38.48	
5,449.00	0.35	69.18	5,320.46	285.00	837.89	884.33	0.33	0.01	56.11	
5,544.00	0.09	42.52	5,415.46	285.15	838.21	884.68	0.29	-0.27	-28.06	
5,639.00	0.62	359.19	5,510.46	285.72	838.26	884.93	0.59	0.56	-45.61	
5,734.00	0.10	260.83	5,605.45	286.22	838.17	885.03	0.68	-0.55	-103.54	
5,829.00	0.18	153.79	5,700.45	286.08	838.15	884.96	0.24	0.08	-112.67	
5,925.00	1.41	330.45	5,796.45	286.97	837.64	884.80	1.66	1.28	184.02	
6,020.00	0.88	319.65	5,891.43	288.54	836.59	884.38	0.60	-0.56	-11.37	
6,115.00	0.67	319.76	5,986.42	289.52	835.76	883.96	0.22	-0.22	0.12	
6,210.00	0.52	294.72	6,081.41	290.13	835.01	883.48	0.31	-0.16	-26.36	
6,305.00	0.26	216.19	6,176.41	290.13	834.49	883.00	0.56	-0.27	-82.66	
6,400.00	0.35	135.39	6,271.41	289.75	834.56	882.93	0.42	0.09	-85.05	
6,495.00	0.62	2.97	6,366.41	290.06	834.79	883.26	0.94	0.28	-139.39	
6,590.00	0.18	251.61	6,461.41	290.52	834.68	883.32	0.74	-0.46	-117.22	
6,685.00	0.09	182.27	6,556.41	290.40	834.53	883.14	0.18	-0.09	-72.99	
6,780.00	0.35	164.07	6,651.40	290.05	834.61	883.08	0.28	0.27	-19.16	
6,876.00	0.62	175.94	6,747.40	289.25	834.73	882.90	0.30	0.28	12.36	
6,971.00	0.62	154.32	6,842.40	288.27	834.99	882.80	0.24	0.00	-22.76	
7,066.00	0.62	70.65	6,937.39	287.98	835.69	883.35	0.87	0.00	-88.07	
7,161.00	0.79	78.73	7,032.38	288.28	836.82	884.51	0.21	0.18	8.51	
7,257.00	0.35	357.52	7,128.38	288.70	837.46	885.26	0.85	-0.46	-84.59	
7,352.00	1.58	341.53	7,223.37	290.23	837.03	885.41	1.31	1.29	-16.83	
7,447.00	0.97	326.41	7,318.34	292.15	836.17	885.29	0.73	-0.64	-15.92	
7,542.00	0.79	286.68	7,413.33	293.00	835.10	884.60	0.65	-0.19	-41.82	
7,637.00	0.79	260.49	7,508.32	293.08	833.83	883.44	0.38	0.00	-27.57	
7,732.00	0.62	225.77	7,603.32	292.62	832.81	882.33	0.47	-0.18	-36.55	
7,828.00	0.88	224.19	7,699.31	291.73	831.93	881.18	0.27	0.27	-1.65	
7,923.00	1.06	216.72	7,794.29	290.50	830.89	879.77	0.23	0.19	-7.86	
8,018.00	1.14	225.07	7,889.28	289.13	829.70	878.17	0.19	0.08	8.79	
8,114.00	0.88	217.95	7,985.26	287.87	828.57	876.66	0.30	-0.27	-7.42	
8,209.00	0.77	217.14	8,080.25	286.79	827.73	875.49	0.12	-0.12	-0.85	
8,304.00	1.06	202.22	8,175.24	285.46	827.02	874.35	0.39	0.31	-15.71	
8,400.00	0.70	199.49	8,271.23	284.09	826.48	873.36	0.38	-0.38	-2.84	
8,495.00	0.74	200.17	8,366.22	282.97	826.08	872.58	0.04	0.04	0.72	
8,590.00	1.06	188.07	8,461.21	281.52	825.74	871.74	0.39	0.34	-12.74	
8,685.00	1.14	175.06	8,556.19	279.71	825.70	871.05	0.28	0.08	-13.69	



## Survey Report



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-4A1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Site:</b>	NBU 1022-4A PAD	<b>MD Reference:</b>	GL 5043 & KB 18 @ 5061.00ft (SST 57)
<b>Well:</b>	NBU 1022-4A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,781.00	1.32	173.83	8,652.17	277.66	825.90	870.50	0.19	0.19	-1.28	
8,876.00	1.49	167.06	8,747.14	275.37	826.30	870.05	0.25	0.18	-7.13	
8,971.00	1.76	154.41	8,842.10	272.85	827.20	869.99	0.47	0.28	-13.32	
9,066.00	2.05	142.05	8,937.05	270.19	828.88	870.59	0.53	0.31	-13.01	
9,162.00	1.93	144.58	9,032.99	267.52	830.87	871.49	0.15	-0.13	2.64	
9,257.00	1.85	146.94	9,127.94	264.93	832.64	872.21	0.12	-0.08	2.48	
9,352.00	1.76	145.00	9,222.89	262.45	834.31	872.88	0.11	-0.09	-2.04	
9,448.00	1.70	155.32	9,318.85	259.95	835.75	873.32	0.33	-0.06	10.75	
9,542.00	2.20	156.25	9,412.80	257.03	837.06	873.49	0.53	0.53	0.99	
9,637.00	2.29	157.57	9,507.72	253.61	838.52	873.62	0.11	0.09	1.39	
9,732.00	2.20	158.36	9,602.65	250.16	839.91	873.69	0.10	-0.09	0.83	
9,828.00	2.38	153.62	9,698.57	246.66	841.48	873.89	0.27	0.19	-4.94	
9,923.00	2.11	158.19	9,793.50	243.27	843.00	874.09	0.34	-0.28	4.81	
9,963.00	2.03	151.96	9,833.47	241.96	843.61	874.19	0.60	-0.20	-15.58	
<b>LAST SDI MWD PRODUCTION SURVEY</b>										
10,020.00	2.03	151.96	9,890.44	240.18	844.56	874.43	0.00	0.00	0.00	
<b>SDI PROJECTION TO TD</b>										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
136.00	136.00	0.09	0.03	FIRST SDI MWD SURFACE SURVEY	
2,399.00	2,330.13	168.33	436.82	LAST SDI MWD SURFACE SURVEY	
2,495.00	2,421.05	178.46	465.91	FIRST SDI MWD PRODUCTION SURVEY	
9,963.00	9,833.47	241.96	843.61	LAST SDI MWD PRODUCTION SURVEY	
10,020.00	9,890.44	240.18	844.56	SDI PROJECTION TO TD	

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

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

Well: NBU 1022-4A1BS YELLOW			Spud date: 5/19/2014		
Project: UTAH-UINTAH		Site: NBU 1022-4A PAD		Rig name no.: ROCKY MOUNTAIN WELL SERVICE 1/1	
Event: COMPLETION		Start date: 4/10/2015		End date: 5/18/2015	
Active datum: RKB @5,061.00usft (above Mean Sea Level)			UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
3/23/2015	-							
4/10/2015	9:00 - 15:00	6.00	SUBSPR	52	A	P		100 PSI ON SURFACE CSG, BLED OFF IN 2 MIN.  FILL SURFACE W/ 2 BBLS BRINE  MIRU CAMERON TEST TRUCK  PRESSURE TEST CSG & FRAC VALVES TO 9058 PSI , LOST 58 PSI IN 15 MIN, NO COMMUNICATION OR MIGRATION WITH SURFACE CSG, BLEED OFF PSI.  TEST SURFACE CSG TO 520 PSI, LOST 212 PSI IN 5 MIN.
4/30/2015	9:00 - 11:00	2.00	SUBSPR	37	E	P		PERF STG #1 AS DESIGNED, SWI.
5/4/2015	6:30 - 6:45	0.25	FRAC	48		P		HSM, SLIPS, TRIPS & FALLS, RUSHING, MIND ON TASK, W/L
	6:45 - 17:00	10.25	FRAC	36	E	P		FRAC STG # 1) WHP 1427 PSI, BRK 3939 PSI @ 6.3 BPM. ISIP 3070 PSI, FG. 0.75 ISIP 3535 PSI, FG. 0.79, NPI 465 PSI.  SET BKR CBP & PERF STG # 2 AS PER DESIGN  FRAC STG # 2) WHP 1349 PSI, BRK 3883 PSI @ 7.1 BPM. ISIP 2550 PSI, FG. 0.72 ISIP 2650 PSI, FG. 0.73, NPI 100 PSI.  SET BKR CBP & PERF STG # 3 AS PER DESIGN  FRAC STG # 3) WHP 946 PSI, BRK 4403 PSI @ 7 BPM. ISIP 2700 PSI, FG. 0.75 ISIP 2650 PSI, FG. 0.74, NPI -50 PSI.  SDFN
5/5/2015	6:30 - 6:45	0.25	FRAC	48		P		HSM, SLIPS, TRIPS & FALLS, RUSHING, EYES & MIND ON TASK, W/L

US ROCKIES REGION  
**Operation Summary Report**

Well: NBU 1022-4A1BS YELLOW		Spud date: 5/19/2014	
Project: UTAH-UINTAH		Site: NBU 1022-4A PAD	Rig name no.: ROCKY MOUNTAIN WELL SERVICE 1/1
Event: COMPLETION		Start date: 4/10/2015	End date: 5/18/2015
Active datum: RKB @5,061.00usft (above Mean Sea Level)		UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	6:45 - 17:00	10.25	FRAC	36	E	P		SET BKR CBP & PERF STG # 4 AS PER DESIGN  FRAC STG # 4) WHP 256 PSI, BRK 4907 PSI @ 7.4 BPM. ISIP 2650 PSI, FG. 0.75 ISIP 2650 PSI, FG. 0.75, NPI 0 PSI.  SET BKR CBP & PERF STG # 5 AS PER DESIGN  FRAC STG # 5) WHP 2102 PSI, BRK 5625 PSI @ 6.8 BPM. ISIP 1820 PSI, FG. 0.66 ISIP 2050 PSI, FG. 0.69, NPI 230 PSI.  SET BKR CBP & PERF STG # 6 AS PER DESIGN  FRAC STG # 6) WHP 1208 PSI, BRK 4446 PSI @ 7 BPM. ISIP 1800 PSI, FG. 0.66 ISIP 2150 PSI, FG. 0.71, NPI 350 PSI.  SDFN
5/6/2015	6:30 - 6:45	0.25	FRAC	48		P		HSM, SLIPS, TRIPS & FALLS, MIND & EYES ON TASK, W/L, RUSHING
	6:45 - 17:00	10.25	FRAC	36	E	P		SET BKR CBP & PERF STG # 7 AS PER DESIGN  FRAC STG # 7) WHP 134 PSI, BRK 2851 PSI @ 5.9 BPM. ISIP 1525 PSI, FG. 0.64 ISIP 2240 PSI, FG. 0.73, NPI 715 PSI.  SET BKR CBP & PERF STG # 8 AS PER DESIGN  FRAC STG # 8) WHP 654 PSI, BRK 4221 PSI @ 6.7 BPM. ISIP 1830 PSI, FG. 0.69 ISIP 1870 PSI, FG. 0.7, NPI 40 PSI.  SET BKR 6K KILL PLUG AS PER DESIGN RDMO W/L & FRAC CREW  TOTAL WATER PUMPED: 12,317 BBLS TOTAL SAND PUMPED: 219,954# SCALE: 282 GAL BIO: 154 GAL
5/15/2015	7:00 - 7:15	0.25	DRLOUT	48		P		HSM, RABBIT TBG
	7:15 - 10:00	2.75	DRLOUT	30	A	P		R/D MOVE OVER R/U. N/D WELL HEAD, N/U BOPS, R/U TBG EQUIP.
	10:00 - 15:00	5.00	DRLOUT	31	I	P		O/U 3-7/8 BIT W/ POBS PKG, TALLEY AND P/U 2-3/8 P-110 TBG, RIH TAG KILL PLUG, P/U POWER SWIVEL, PREP FOR DRILL OUT MONDAY.
5/18/2015	7:00 - 7:15	0.25	DRLOUT	48		P		HSM, P/U TBG

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

Well: NBU 1022-4A1BS YELLOW		Spud date: 5/19/2014	
Project: UTAH-UINTAH		Site: NBU 1022-4A PAD	Rig name no.: ROCKY MOUNTAIN WELL SERVICE 1/1
Event: COMPLETION		Start date: 4/10/2015	End date: 5/18/2015
Active datum: RKB @5,061.00usft (above Mean Sea Level)		UWI: NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	7:15 - 17:30	10.25	DRLOUT	44	C	P		<p>SICP=0#, SITP=0#, PRESSURE TEST BOPS TO 3,000# [NO LEAKS] OPEN WELL BREAK CIRC W/ RIG PUMP. DRILL THROUGH BAKER CBP @=6,994' IN 10 MIN W/ 300# PRESSURE INCREASE.</p> <p>PLUG #2] CONTINUE TO RIH TAG @=7,266' [20' FILL] C/O AND DRILL THROUGH BAKER CBP @=7,286' IN 12 MIN W/ 300# PRESSURE INCREASE.</p> <p>PLUG #3] CONTINUE TO RIH TAG @=7,659' [25' FILL] C/O AND DRILL THROUGH BAKER CBP @=7,684' IN 46 MIN W/ 0# PRESSURE INCREASE.</p> <p>PLUG #4] CONTINUE TO RIH TAG @=7,959' [40' FILL] C/O AND DRILL THROUGH BAKER CBP @=7,999' IN 37 MIN W/ 0# PRESSURE INCREASE.</p> <p>PLUG #5] CONTINUE TO RIH TAG @=8,236' [45' FILL] C/O AND DRILL THROUGH BAKER CBP @=8,281' IN 50 MIN W/ 200# PRESSURE INCREASE.</p> <p>PLUG #6] CONTINUE TO RIH TAG @=8,468' [15' FILL] C/O AND DRILL THROUGH BAKER CBP @=8,483' IN 20 MIN W/ 250# PRESSURE INCREASE.</p> <p>PLUG #7] CONTINUE TO RIH TAG @=8,703' [20' FILL] C/O AND DRILL THROUGH BAKER CBP @=8,723' IN 8 MIN W/ 300# PRESSURE INCREASE.</p> <p>PLUG #8] CONTINUE TO RIH TAG @=9,029' [20' FILL] C/O AND DRILL THROUGH BAKER CBP @=9,049' IN 15 MIN W/ 750# PRESSURE INCREASE. CONTINUE TO RIH, C/O TO PBTD @=9,954' CIRC HOLE FOR 30 MIN, HANG POWER SWIVEL BACK, L/D 40 JNTS. P/U HANGER STRIP IN WELL. LAND TBG W/ 274 JNTS 2-3/8 P-110 @=8,700.75'. R/D TBG EQUIP, N/D BOPS, DROP BALL, N/U WELL HEAD. PUMP OFF BIT W/ 1,950# PRESSURE, LEAVE WELL SHUT IN FOR 15 MIN. OPEN WELL UNLOAD TBG. PUT ON SALES TURN OVER TO F/B CREW.</p> <p>KB 18.00 HANGER .83 274 JNTS 2-3/8 P-110 8,679.72' TOP 1/2 POBS 2.20 EOT @= 8,700.75'</p>
	17:30 - 17:30	0.00	DRLOUT	50				<p>WELL ON SALES @ 8:30 HR ON 5/18/2015, 4.3MCFD, FCP 2566#, FTP 2680#, 1,920 BWPD, 20/64 CK.</p>

**1 General****1.1 Customer Information**

Company	US ROCKIES REGION
Representative	
Address	

**1.2 Well/Wellbore Information**

Well	NBU 1022-4A1BS YELLOW	Wellbore No.	00
Well Name	NBU 1022-4A1BS	Wellbore Name	NBU 1022-4A1BS
Report no.	1	Report date	4/29/2015
Project	UTAH-UINTAH	Site	NBU 1022-4A PAD
Rig Name/No.		Event	COMPLETION
Start date	4/10/2015	End date	5/18/2015
Spud date	5/19/2014	Active datum	RKB @5,061.00usft (above Mean Sea Level)
UWI	NW/NE/0/10/S/22/E/4/0/0/26/PM/N/494/E/0/1326/0/0		

**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	7,044.0 (usft)-9,906.0 (usft)	Start Date/Time	4/29/2015 12:00AM
No. of intervals	57	End Date/Time	4/29/2015 12:00AM
Total shots	192	Net perforation interval	64.00 (usft)
Avg. shot density	3.00 (shot/ft)	Final surface pressure	
		Final press. date	

**2 Intervals****2.1 Perforated Interval**

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (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	How Guns Conveyed
4/29/2015 12:00AM	M E S A VERDE/			7,044.0	7,045.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (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	How Guns Conveyed
4/29/2015 12:00AM	M E S A VERDE/			7,069.0	7,070.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,078.0	7,080.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,165.0	7,167.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,254.0	7,256.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,401.0	7,402.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,469.0	7,470.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,509.0	7,510.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,537.0	7,538.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,557.0	7,558.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,621.0	7,622.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,643.0	7,644.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,663.0	7,664.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,698.0	7,699.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,734.0	7,735.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,783.0	7,784.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,806.0	7,807.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,880.0	7,881.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,918.0	7,919.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,952.0	7,953.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			7,968.0	7,969.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,013.0	8,014.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,047.0	8,048.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

## 2.1 Perforated Interval (Continued)

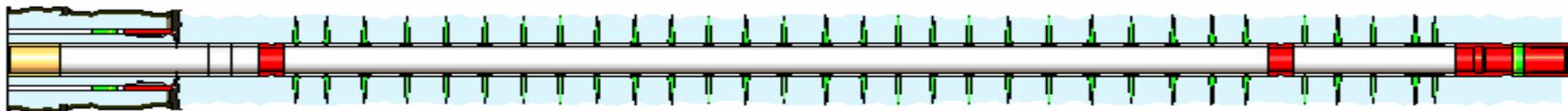
Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)	MD base (usft)	Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
4/29/2015 12:00AM	M E S A VERDE/			8,065.0	8,066.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,088.0	8,089.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,100.0	8,101.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,167.0	8,168.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,211.0	8,212.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,250.0	8,251.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,296.0	8,297.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,312.0	8,313.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,357.0	8,358.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,368.0	8,369.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,390.0	8,391.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,406.0	8,407.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,419.0	8,420.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,452.0	8,453.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,494.0	8,495.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,520.0	8,521.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,603.0	8,605.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,652.0	8,654.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,691.0	8,693.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,745.0	8,746.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,754.0	8,755.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,785.0	8,786.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (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	How Guns Conveyed
4/29/2015 12:00AM	M E S A VERDE/			8,803.0	8,804.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,869.0	8,870.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,920.0	8,921.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			8,931.0	8,932.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,018.0	9,019.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,731.0	9,732.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,765.0	9,766.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,789.0	9,790.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,824.0	9,825.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,839.0	9,840.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,890.0	9,891.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
4/29/2015 12:00AM	M E S A VERDE/			9,904.0	9,906.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

## 3 Plots

## 3.1 Wellbore Schematic



<b>Well Name:</b>	NBU 1022-4A1BS	<b>Field Name:</b>	GNB_NATURAL BUTTES	<b>TD:</b>	10020	<b>ST#:</b>	00
<b>Wellbore Name:</b>	NBU 1022-4A1BS	<b>Lat:</b>	39.983945	<b>TVD:</b>	9890	<b>Working Interest:</b>	100.00
<b>WINS No:</b>	C7934	<b>Long:</b>	-109.439598	<b>PBTD:</b>	9954	<b>Ground Elevation:</b>	5,043.00
<b>API No:</b>	4304753826	<b>Spud Date:</b>	05/19/2014	<b>PB TVD:</b>	9824	<b>KB Height:</b>	5061
<b>State:</b>	UTAH	<b>TD Date:</b>	03/05/2015	<b>Target Formation:</b> BLACKHAWK			
<b>County:</b>	UINTAH	<b>Location Description:</b> NW NE 4 10S 22E 494' FNL 1,326' FEL					

## PERFORATIONS

Date	Formation	Zone	Top	Btm	SPF	No. Holes	Diameter	Phasing	Reason	Status	Comments
04/29/2015	MESA VERDE	MESAVERDE	7044	7045	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7069	7070	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7078	7080	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7165	7167	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7254	7256	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7401	7402	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7469	7470	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7509	7510	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7537	7538	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7557	7558	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7621	7622	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7643	7644	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7663	7664	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7698	7699	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7734	7735	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7783	7784	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7806	7807	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7880	7881	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7918	7919	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7952	7953	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	7968	7969	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8013	8014	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8047	8048	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8065	8066	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8088	8089	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8100	8101	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8167	8168	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8211	8212	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8250	8251	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8296	8297	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8312	8313	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8357	8358	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8368	8369	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8390	8391	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8406	8407	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8419	8420	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8452	8453	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8494	8495	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8520	8521	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8603	8605	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8652	8654	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8691	8693	3	6	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8745	8746	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8754	8755	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8785	8786	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8803	8804	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8869	8870	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8920	8921	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	8931	8932	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	MESAVERDE	9018	9019	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	BLACKHAWK	9731	9732	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	BLACKHAWK	9765	9766	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	BLACKHAWK	9789	9790	3	3	0.41	120	PRODUCTION	OPEN	
04/29/2015	MESA VERDE	BLACKHAWK	9824	9825	3	3	0.41	120	PRODUCTION	OPEN	

Sundry Number: 63854 API Well Number: 43047538260000

<b>Well Name:</b> NBU 1022-4A1BS	<b>Field Name:</b> GNB_NATURAL BUTTES	<b>TD:</b> 10020	<b>ST#:</b> 00
<b>Wellbore Name:</b> NBU 1022-4A1BS	<b>Lat:</b> 39.983945	<b>TVD:</b> 9890	<b>Working Interest:</b> 100.00
<b>WINS No:</b> C7934	<b>Long:</b> -109.439598	<b>PBTD:</b> 9954	<b>Ground Elevation:</b> 5,043.00
<b>API No:</b> 4304753826	<b>Spud Date:</b> 05/19/2014	<b>PB TVD:</b> 9824	<b>KB Height:</b> 5061
<b>State:</b> UTAH	<b>TD Date:</b> 03/05/2015	<b>Target Formation:</b> BLACKHAWK	
<b>County:</b> UINTAH	<b>Location Description:</b> NW NE 4 10S 22E 494' FNL 1,326' FEL		

04/29/2015	MESA VERDE	BLACKHAWK	9839	9840	3	3	0.41	120	PRODUCTION	OPEN
04/29/2015	MESA VERDE	BLACKHAWK	9890	9891	3	3	0.41	120	PRODUCTION	OPEN
04/29/2015	MESA VERDE	BLACKHAWK	9904	9906	3	6	0.41	120	PRODUCTION	OPEN

<b>Well Directions:</b>	<b>Battery Directions:</b>
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