

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

FORM 3

AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>						<b>1. WELL NAME and NUMBER</b> NBU 921-2011BS				
<b>2. TYPE OF WORK</b> DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						<b>3. FIELD OR WILDCAT</b> NATURAL BUTTES				
<b>4. TYPE OF WELL</b> Gas Well      Coalbed Methane Well: NO						<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b> NATURAL BUTTES				
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.						<b>7. OPERATOR PHONE</b> 720 929-6515				
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> julie.jacobson@anadarko.com				
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> UTU0575			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>				
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>				
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>				
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b> THE UTE INDIAN TRIBE			<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
<b>20. LOCATION OF WELL</b>		<b>FOOTAGES</b>		<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>		
LOCATION AT SURFACE		850 FSL 599 FEL		SESE	20	9.0 S	21.0 E	S		
Top of Uppermost Producing Zone		2559 FSL 491 FEL		NESE	20	9.0 S	21.0 E	S		
At Total Depth		2559 FSL 491 FEL		NESE	20	9.0 S	21.0 E	S		
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 491			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 1600				
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 573			<b>26. PROPOSED DEPTH</b> MD: 11637 TVD: 11298				
<b>27. ELEVATION - GROUND LEVEL</b> 4874			<b>28. BOND NUMBER</b> WYB000291			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 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 - 2890	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 - 11637	11.6	HCP-110 LT&C	12.5	Premium Lite High Strength	350	3.38	12.0
							50/50 Poz	1680	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					
<b>NAME</b> Cara Mahler				<b>TITLE</b> Regulatory Analyst I				<b>PHONE</b> 720 929-6029		
<b>SIGNATURE</b>				<b>DATE</b> 11/27/2012				<b>EMAIL</b> cara.mahler@anadarko.com		
<b>API NUMBER ASSIGNED</b> 43047533630000				<b>APPROVAL</b>  Permit Manager						

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

	<u><b>NBU 921-2011BS</b></u>	
Surface:	850 FSL / 599 FEL	SESE
BHL:	2559 FSL / 491 FEL	NESE

Section 20 T9S R21E

Unitah County, Utah  
Mineral Lease: UTU 0575**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	1,666'	
Birds Nest	1,944'	Water
Mahogany	2,438'	Water
Wasatch	5,001'	Gas
Mesaverde	7,979'	Gas
Sego	10,228'	Gas
Castlegate	10,315'	Gas
Blackhawk	10,698'	Gas
TVD =	11,298'	
TD =	11,637'	

- 2.c 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** (Schematic Attached)

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

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 11298' TVD, approximately equals  
 7,231 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 4,729 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 10228' TVD, approximately equals  
 6,239 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 4,016 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. Variances:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program  
 Onshore Order #2 – Air Drilling Variance

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

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

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

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

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

**Background**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **Variance for FIT Requirements**

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

**Conclusion**

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

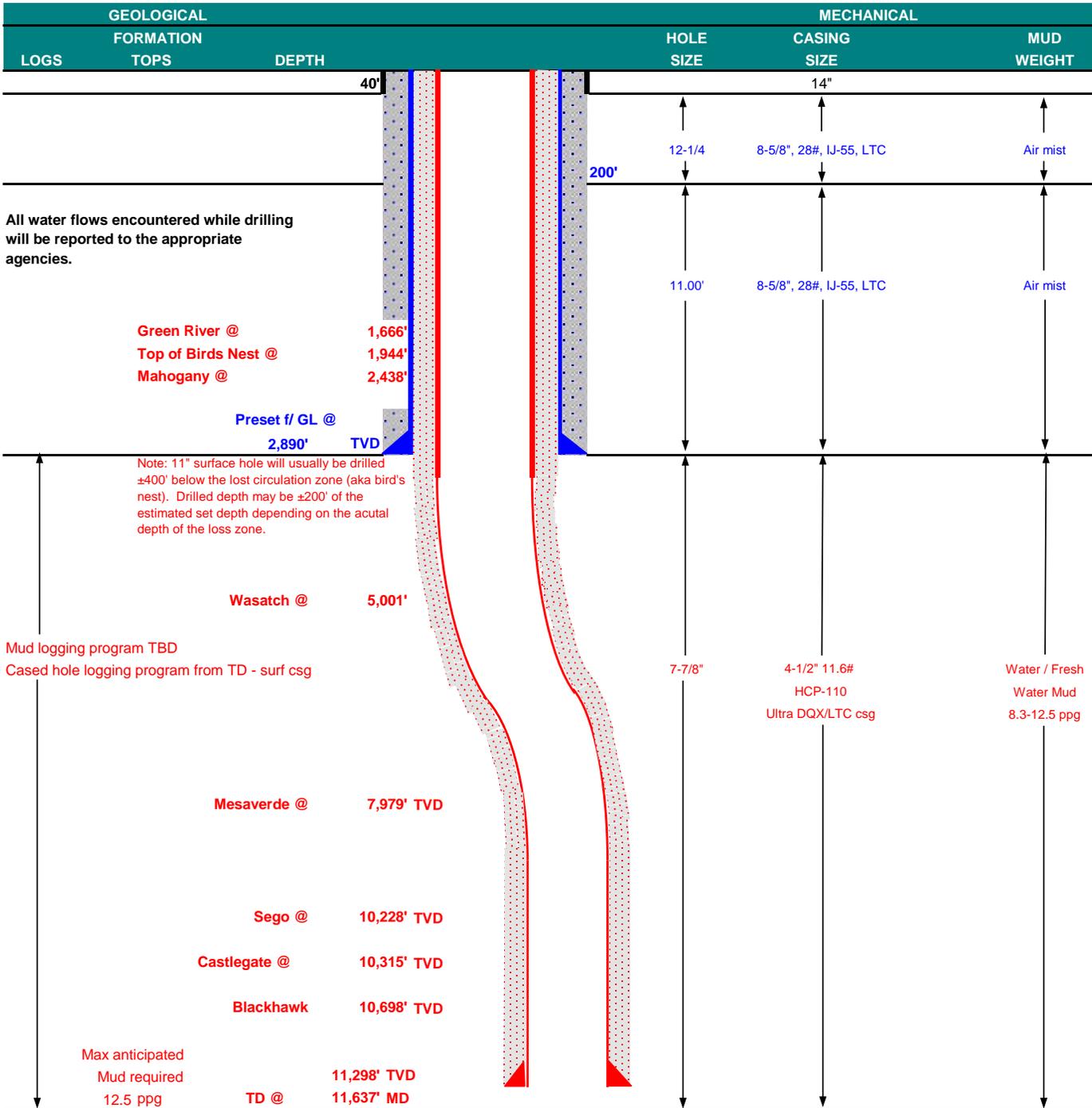
10. **Other Information:**

Please refer to the attached 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	July 24, 2012	
WELL NAME	<b>NBU 921-201BS</b>		TD	11,298'	TVD 11,637' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	SESE	850 FSL	599 FEL	Sec 20 T 9S R 21E	FINISHED ELEVATION 4,874'
	Latitude: 40.016598		Longitude: -109.568295		NAD 83
BTM HOLE LOCATION	NESE	2559 FSL	491 FEL	Sec 20 T 9S R 21E	
	Latitude: 40.021290		Longitude: -109.567912		NAD 83
OBJECTIVE ZONE(S)	BLACKHAWK (Part of the Mesaverde Group)				
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), Ute Indian Tribe (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 2,890	28.00	IJ-55	LTC	1.86	1.39	4.91	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	1.18		3.36
	4-1/2"	5,000 to 11,637'	11.60	HCP-110	LTC	1.19	1.18	4.48	

**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 + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	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	LEAD	2,390'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	220	35%	11.00	3.82
Option 2	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,497'	Premium Lite II + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	350	35%	12.00	3.38
	TAIL	7,140'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,680	35%	14.30	1.31

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

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

**ADDITIONAL INFORMATION**

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

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

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

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

**DRILLING ENGINEER:**

Nick Spence / Danny Showers / Travis Hansell

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

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

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





**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'					3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to 2,890	28.00	IJ-55	LTC	1.86	1.39	4.91	N/A
PRODUCTION	4-1/2"	0	to 5,000	11.60	I-80	DQX	1.11	0.99		267,035
	4-1/2"	5,000	to 10,567'	11.60	HCP-110	LTC	1.53	1.36	223,000	4.23

**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)

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(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.61 psi/ft = bottomhole gradient  
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SURFACE		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>					
<b>Option 2</b>	LEAD	2,390'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	220	35%	11.00	3.82
	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,497'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	350	35%	12.00	3.38
	TAIL	6,070'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,430	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 / Danny Showers / Travis Hansell

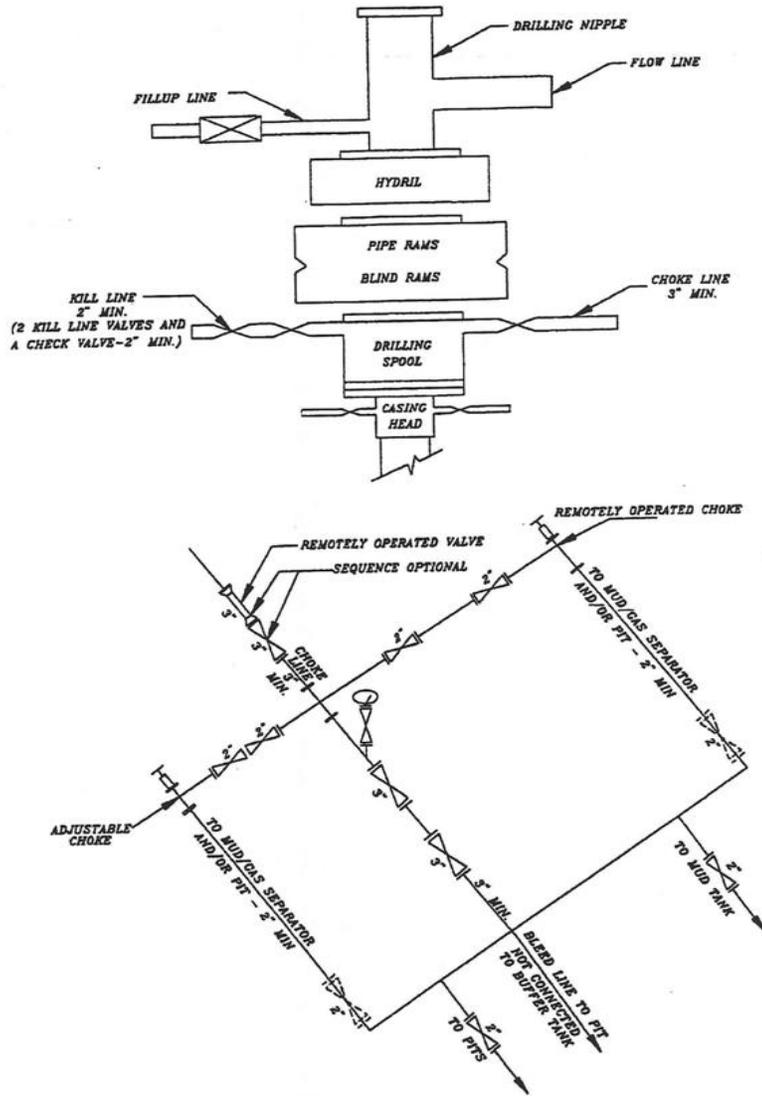
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

**DATE:**

**EXHIBIT A**  
**NBU 921-2011BS**



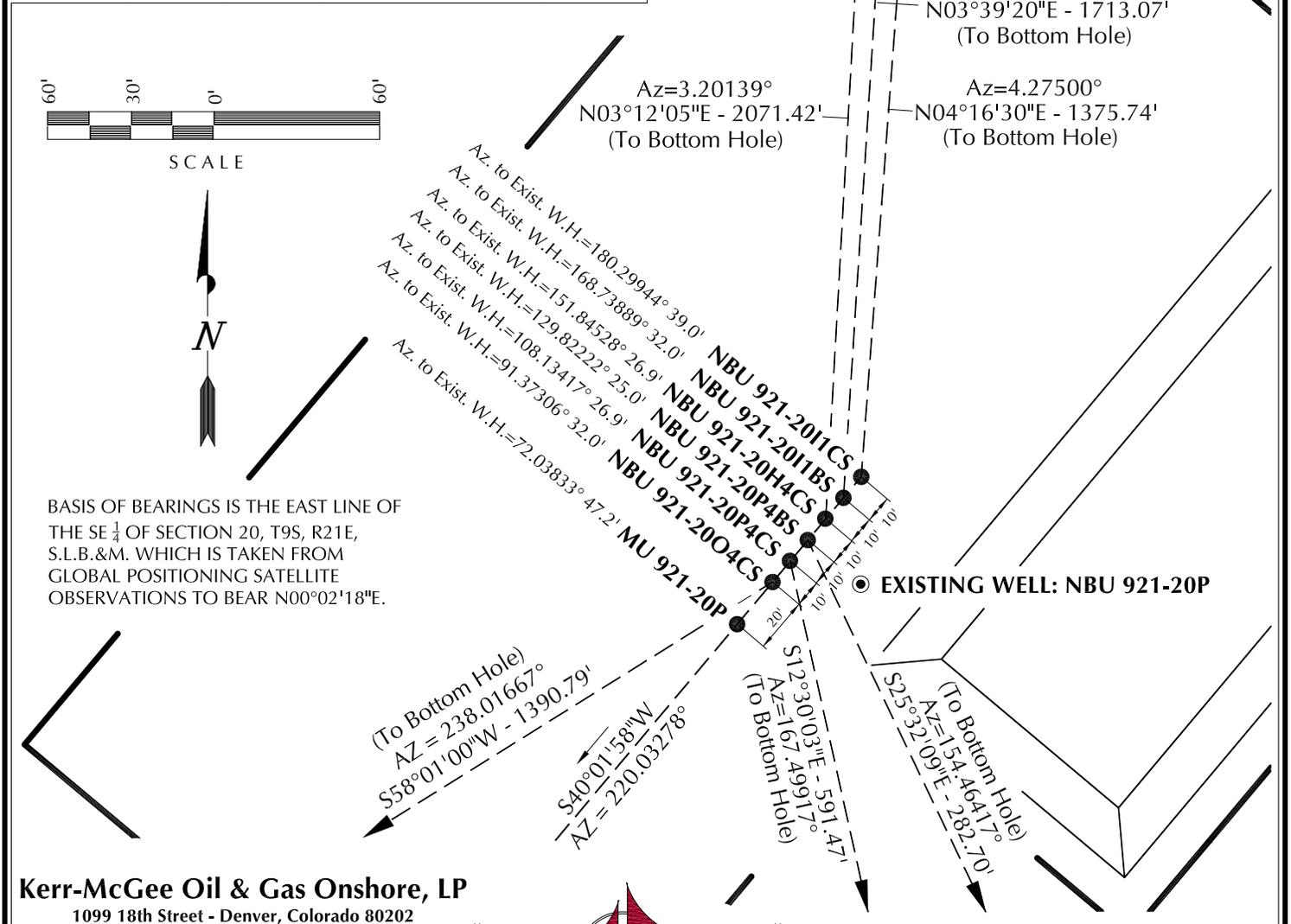
**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**



WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 921-2011CS	40°00'59.829"	109°34'05.779"	40°00'59.956"	109°34'03.298"	857' FSL 593' FEL	40°01'13.385"	109°34'04.482"	40°01'13.512"	109°34'02.001"	2229' FSL 491' FEL
NBU 921-2011BS	40°00'59.754"	109°34'05.862"	40°00'59.881"	109°34'03.381"	850' FSL 599' FEL	40°01'16.645"	109°34'04.484"	40°01'16.772"	109°34'02.003"	2559' FSL 491' FEL
NBU 921-20H4CS	40°00'59.678"	109°34'05.945"	40°00'59.805"	109°34'03.463"	842' FSL 606' FEL	40°01'20.113"	109°34'04.490"	40°01'20.240"	109°34'02.008"	2397' FSL 491' FEL
NBU 921-20P4BS	40°00'59.602"	109°34'06.028"	40°00'59.729"	109°34'03.547"	834' FSL 612' FEL	40°00'57.083"	109°34'04.459"	40°00'57.210"	109°34'01.977"	579' FSL 490' FEL
NBU 921-20P4CS	40°00'59.526"	109°34'06.110"	40°00'59.653"	109°34'03.629"	827' FSL 618' FEL	40°00'53.823"	109°34'04.456"	40°00'53.950"	109°34'01.975"	249' FSL 490' FEL
NBU 921-20O4CS	40°00'59.451"	109°34'06.192"	40°00'59.578"	109°34'03.711"	819' FSL 625' FEL	40°00'52.159"	109°34'21.339"	40°00'52.286"	109°34'18.857"	84' FSL 1804' FEL
MU 921-20P	40°00'59.300"	109°34'06.358"	40°00'59.427"	109°34'03.876"	804' FSL 638' FEL	40°016472°	109.568433°			
NBU 921-20P	40°00'59.444"	109°34'05.781"	40°00'59.571"	109°34'03.300"	818' FSL 593' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 921-2011CS	1371.9'	102.6'	NBU 921-2011BS	1709.6'	109.2'	NBU 921-20H4CS	2068.2'	115.7'	NBU 921-20P4BS	-255.1'	121.9'
NBU 921-20P4CS	-577.4'	128.0'	NBU 921-20O4CS	-736.7	-1179.7						



BASIS OF BEARINGS IS THE EAST LINE OF THE SE ¼ OF SECTION 20, T9S, R21E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°02'18"E.

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

**WELL PAD - NBU 921-20P**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 921-2011CS,  
NBU 921-2011BS, NBU 921-20H4CS,  
NBU 921-20P4BS, NBU 921-20P4CS,  
NBU 921-20O4CS & MU 921-20P  
LOCATED IN SECTION 20, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH.



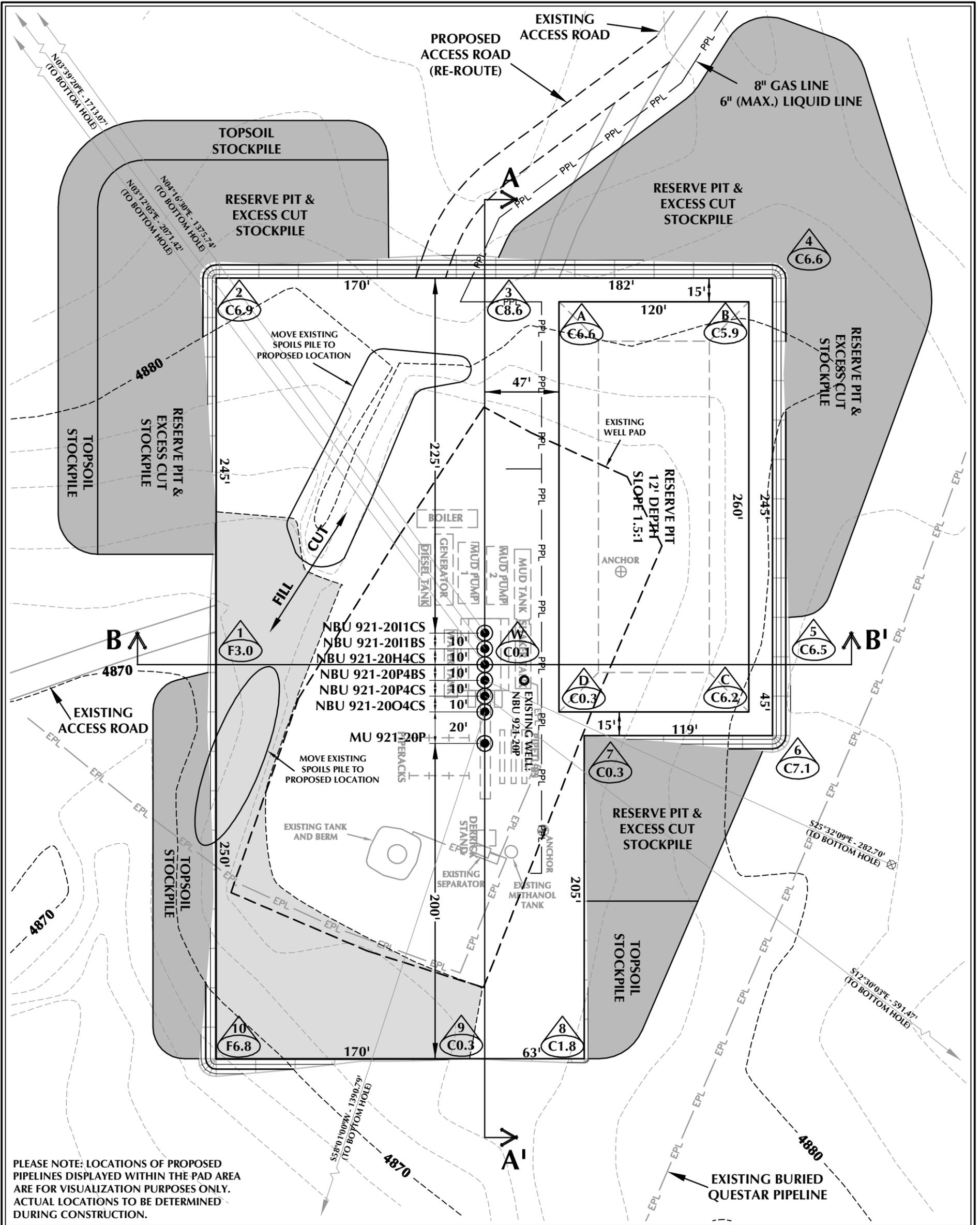
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**TIMBERLINE**

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

(435) 789-1365

DATE SURVEYED: 3-14-12	SURVEYED BY: A.F.	SHEET NO: <b>8</b>
DATE DRAWN: 3-22-12	DRAWN BY: T.J.R.	
SCALE: 1" = 60'	Date Last Revised: 5-16-12 T.J.R.	8 OF 19



**WELL PAD - NBU 921-20P DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4874.5'  
 FINISHED GRADE ELEVATION = 4874.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.70 ACRES  
 TOTAL DISTURBANCE AREA = 5.92 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 921-20P**  
 WELL PAD - LOCATION LAYOUT  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH



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

**WELL PAD QUANTITIES**  
 TOTAL CUT FOR WELL PAD = 9,115 C.Y.  
 TOTAL FILL FOR WELL PAD = 1,964 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,967 C.Y.  
 EXCESS MATERIAL = 7,151 C.Y.

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

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

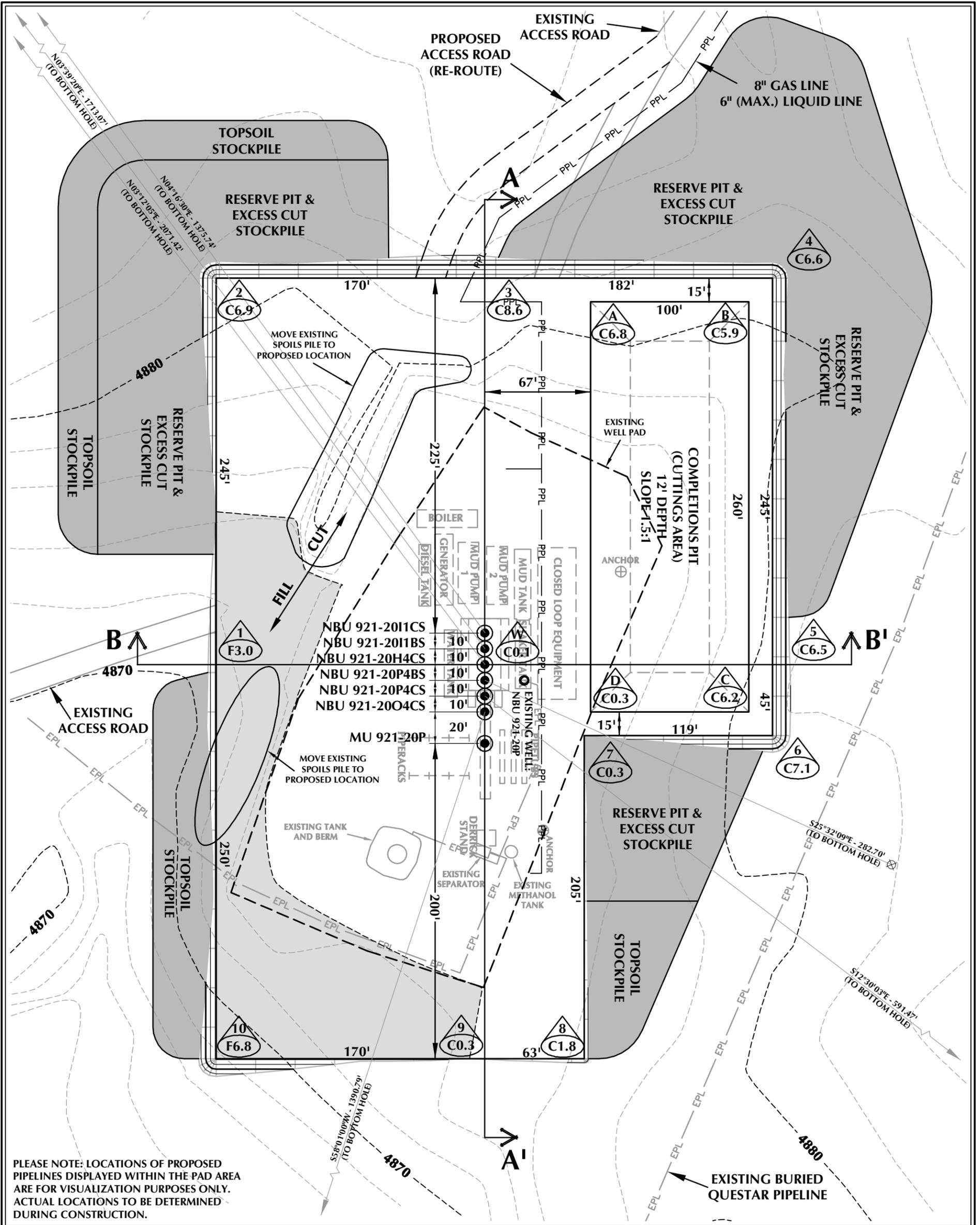
**WELL PAD LEGEND**

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

HORIZONTAL 0 30' 60' 1" = 60'

2' CONTOURS

SCALE: 1"=60' DATE: 4/17/12 SHEET NO: 9 OF 19  
 REVISED: DJD 5/18/12



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

**WELL PAD - NBU 921-20P (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4874.5'  
 FINISHED GRADE ELEVATION = 4874.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.70 ACRES  
 TOTAL DISTURBANCE AREA = 5.92 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 921-20P**

WELL PAD - LOCATION LAYOUT  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH



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

**WELL PAD QUANTITIES**

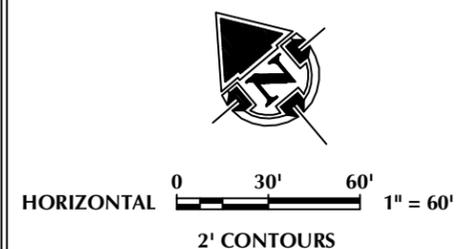
TOTAL CUT FOR WELL PAD = 9,115 C.Y.  
 TOTAL FILL FOR WELL PAD = 1,964 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,967 C.Y.  
 EXCESS MATERIAL = 7,151 C.Y.

**COMPLETIONS PIT QUANTITIES**

TOTAL CUT FOR COMPLETIONS PIT  
 +/- 8,870 C.Y.  
 COMPLETIONS PIT CAPACITY  
 (2' OF FREEBOARD)  
 +/- 33,770 BARRELS

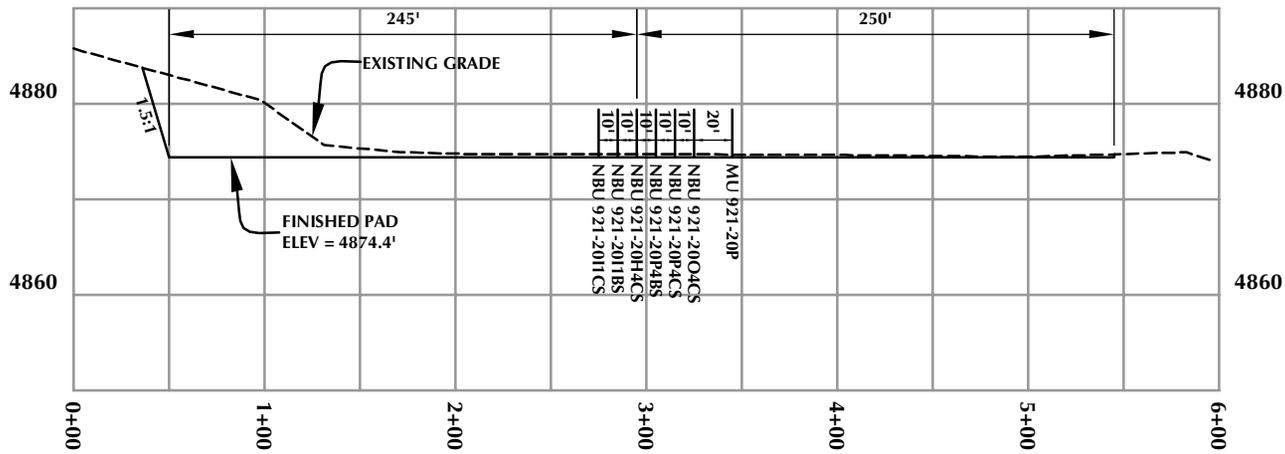
**WELL PAD LEGEND**

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

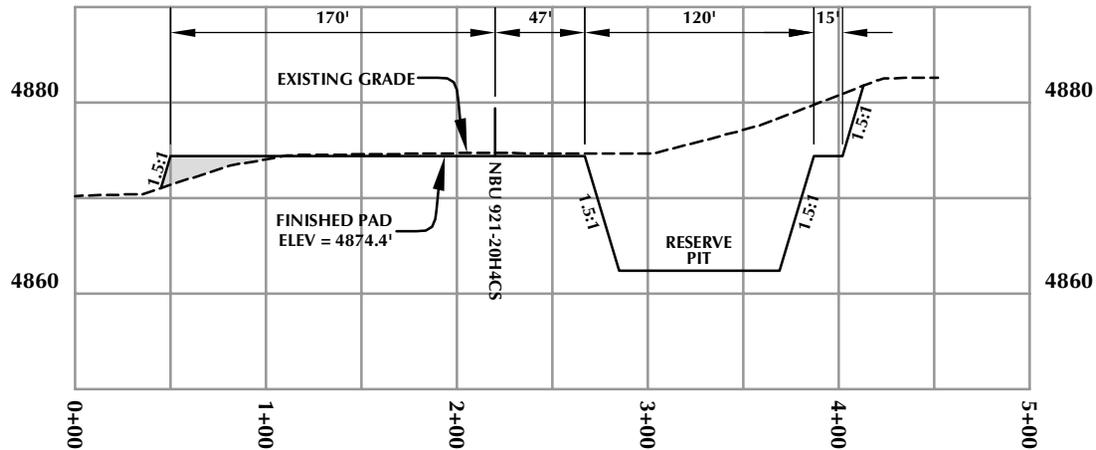


SCALE: 1"=60' DATE: 4/17/12 SHEET NO:  
 REVISED: DJD 5/18/12 **9B** 9B OF 19

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



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 921-20P**

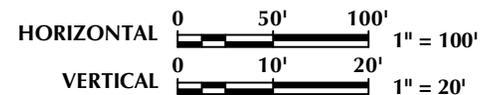
**WELL PAD - CROSS SECTIONS**  
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NBU 921-20I1BS, NBU 921-20H4CS,  
NBU 921-20P4BS, NBU 921-20P4CS,  
NBU 921-20O4CS & MU 921-20P  
LOCATED IN SECTION 20, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

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

(435) 789-1365



Scale: 1"=100'

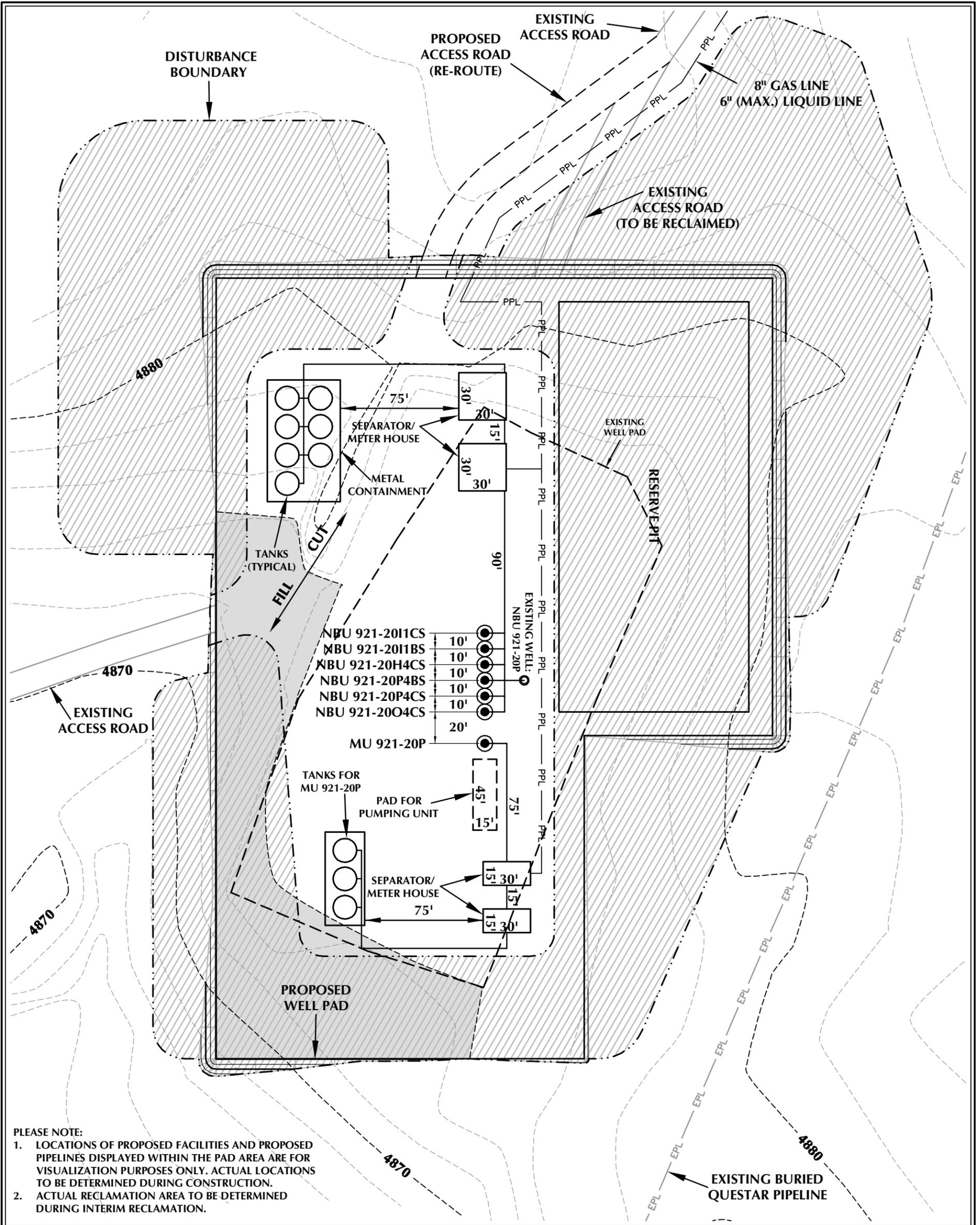
Date: 4/17/12

SHEET NO:

REVISED:

DJD  
5/18/12

**10** 10 OF 19



**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 921-20P DESIGN SUMMARY**

TOTAL DISTURBANCE AREA = 5.92 ACRES (INCLUDING EXISTING)  
 RECLAMATION AREA = 4.26 ACRES  
 TOTAL WELL PAD AREA AFTER RECLAMATION = 1.66 ACRES

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

**WELL PAD - NBU 921-20P**

WELL PAD - RECLAMATION LAYOUT  
 NBU 921-2011CS,  
 NBU 921-2011BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

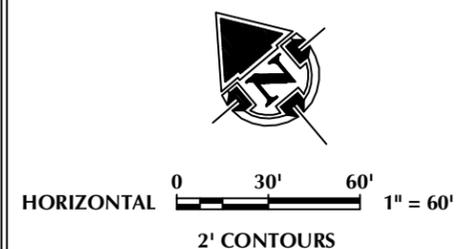


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**TIMBERLINE**  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

WELL PAD LEGEND	
	EXISTING WELL LOCATION
	PROPOSED WELL LOCATION
	PROPOSED BOTTOM HOLE LOCATION
	EXISTING CONTOURS (2' INTERVAL)
	PROPOSED CONTOURS (2' INTERVAL)
	PPL PROPOSED PIPELINE
	EPL EXISTING PIPELINE
	RECLAMATION AREA



SCALE: 1"=60'	DATE: 4/17/12	SHEET NO:
REVISED:	DJD 5/18/12	<b>11</b> 11 OF 19

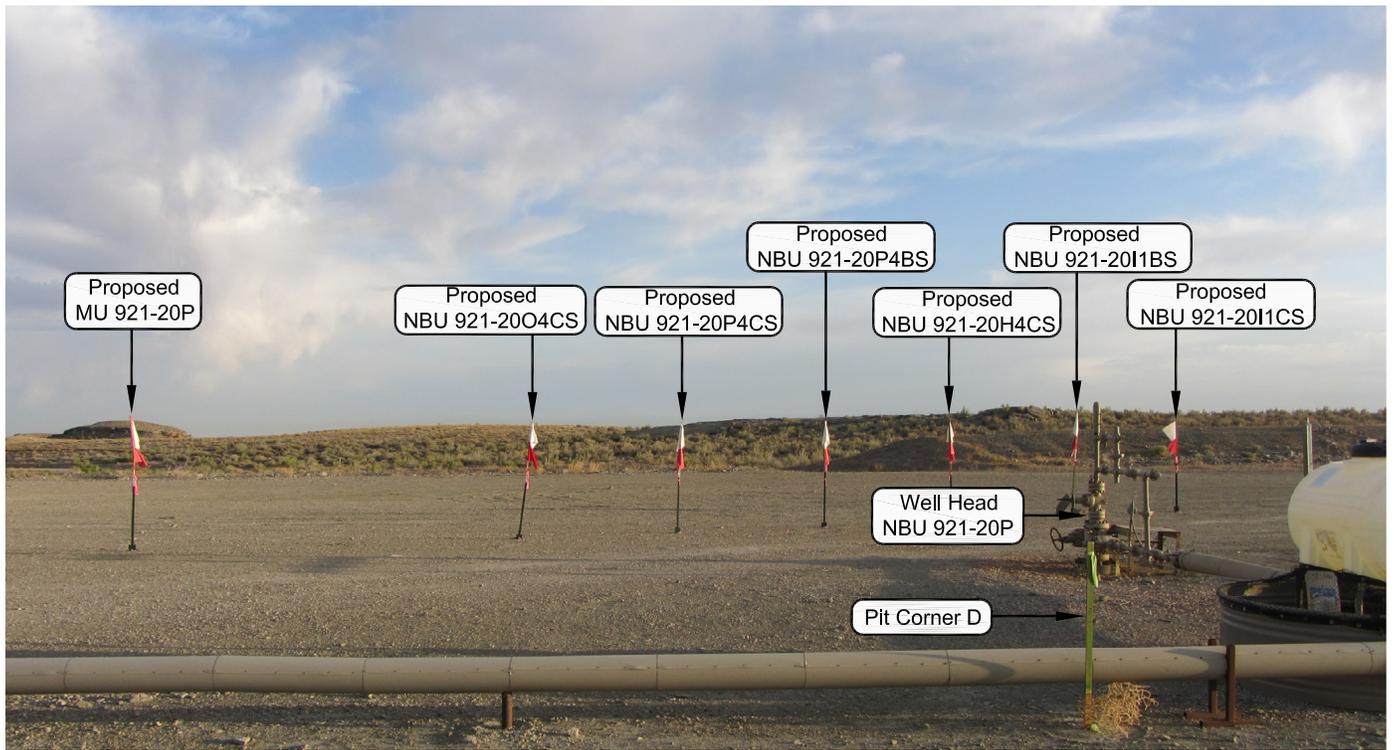


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHWESTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: WESTERLY

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

**WELL PAD - NBU 921-20P**

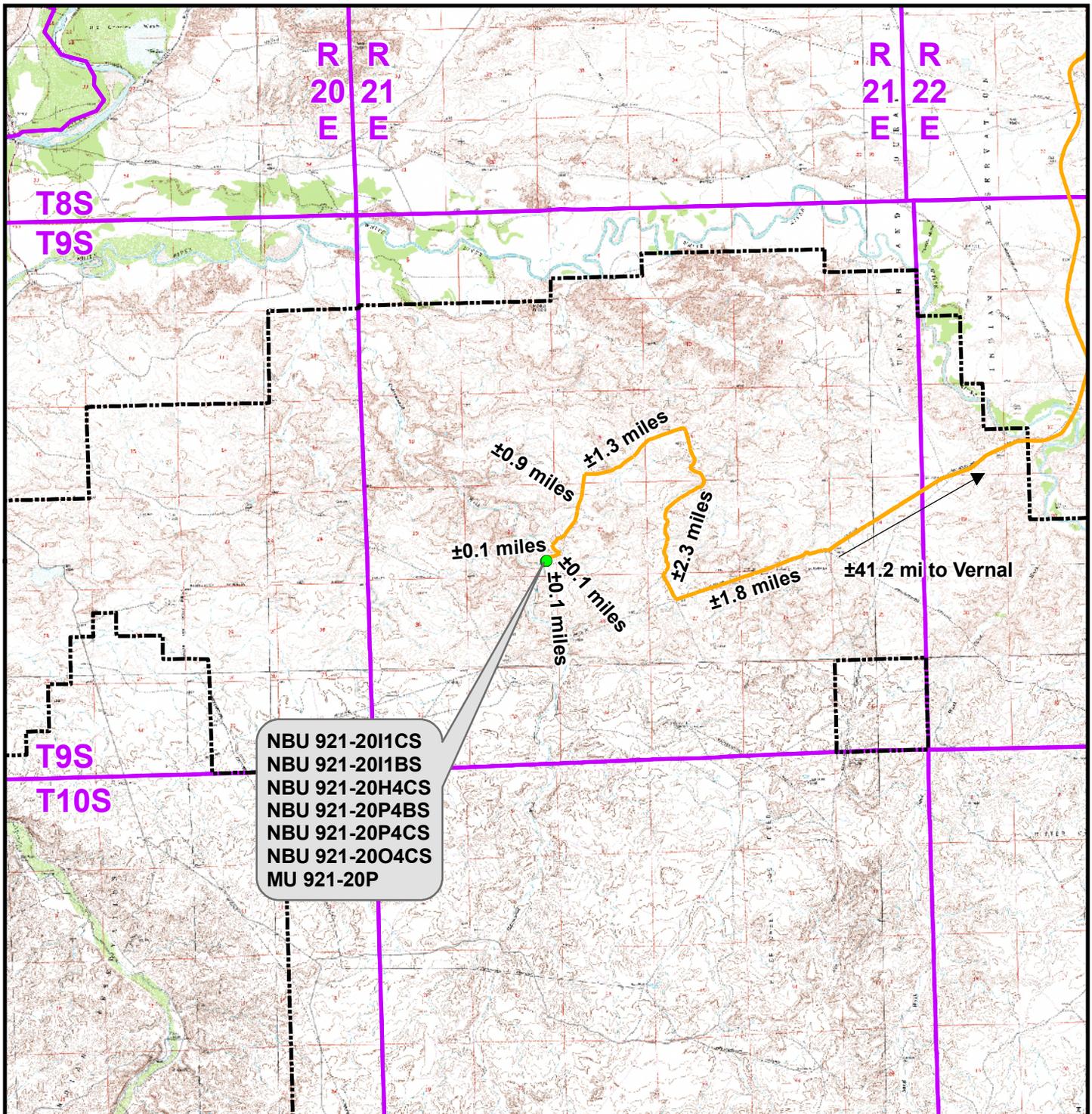
LOCATION PHOTOS  
 NBU 921-20I1CS,  
 NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



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

DATE PHOTOS TAKEN: 3-14-12	PHOTOS TAKEN BY: A.F.	SHEET NO: <b>12</b>
DATE DRAWN: 3-22-12	DRAWN BY: T.J.R.	
Date Last Revised: 5-16-12 T.J.R.		12 OF 19



NBU 921-20I1CS  
 NBU 921-20I1BS  
 NBU 921-20H4CS  
 NBU 921-20P4BS  
 NBU 921-20P4CS  
 NBU 921-20O4CS  
 MU 921-20P

**Legend**

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

Distance From Well Pad - NBU 921-20P To Unit Boundary: ±15,028ft

**WELL PAD - NBU 921-20P**

TOPO A  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 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

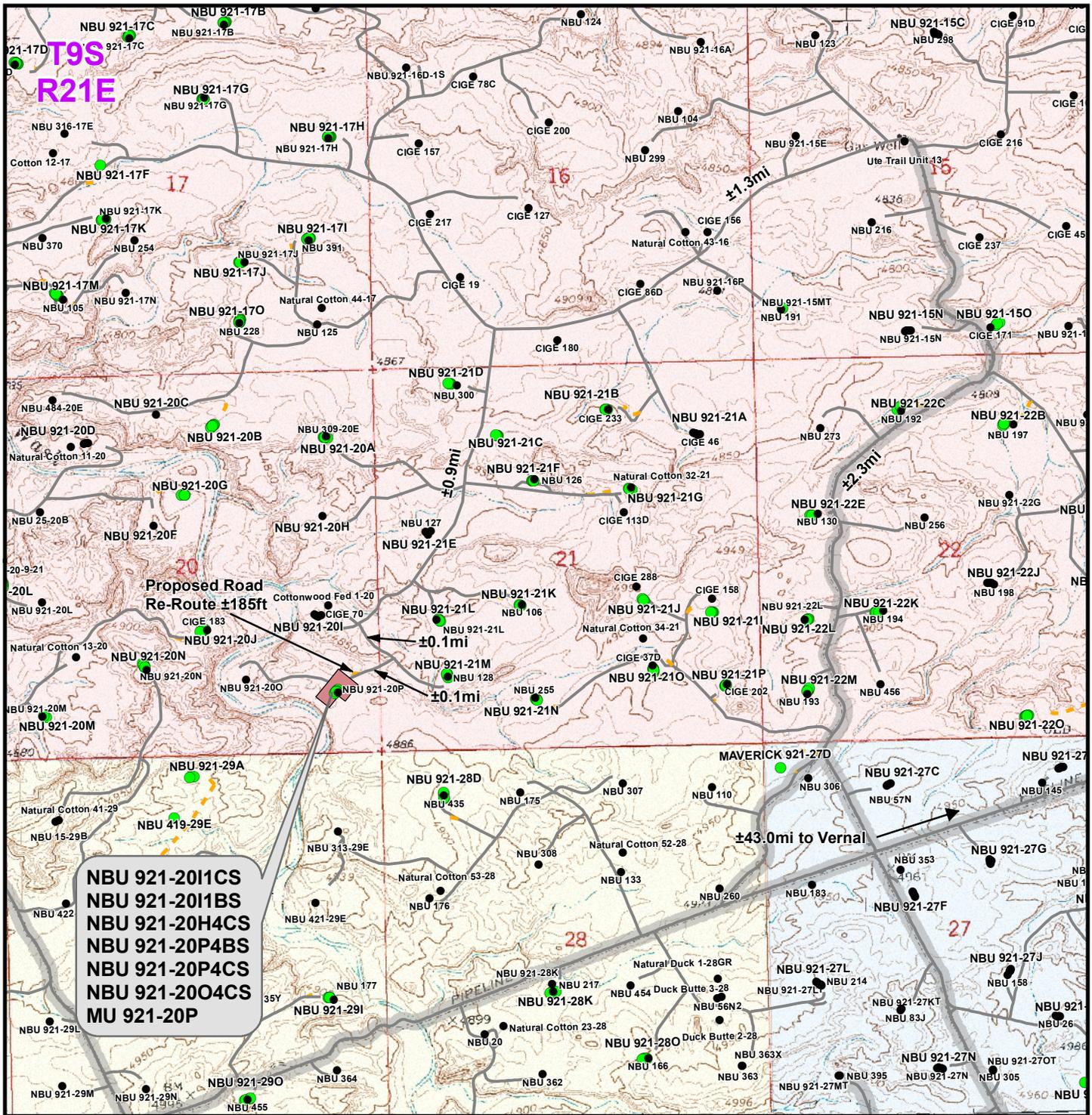
DATE: 17 Apr 2012

**13**

REVISED: TL

DATE: 17 May 2012

13 OF 19



**Legend**

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

Total Proposed Road Re-Route Length: ±185ft

**WELL PAD - NBU 921-20P**

TOPO B  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

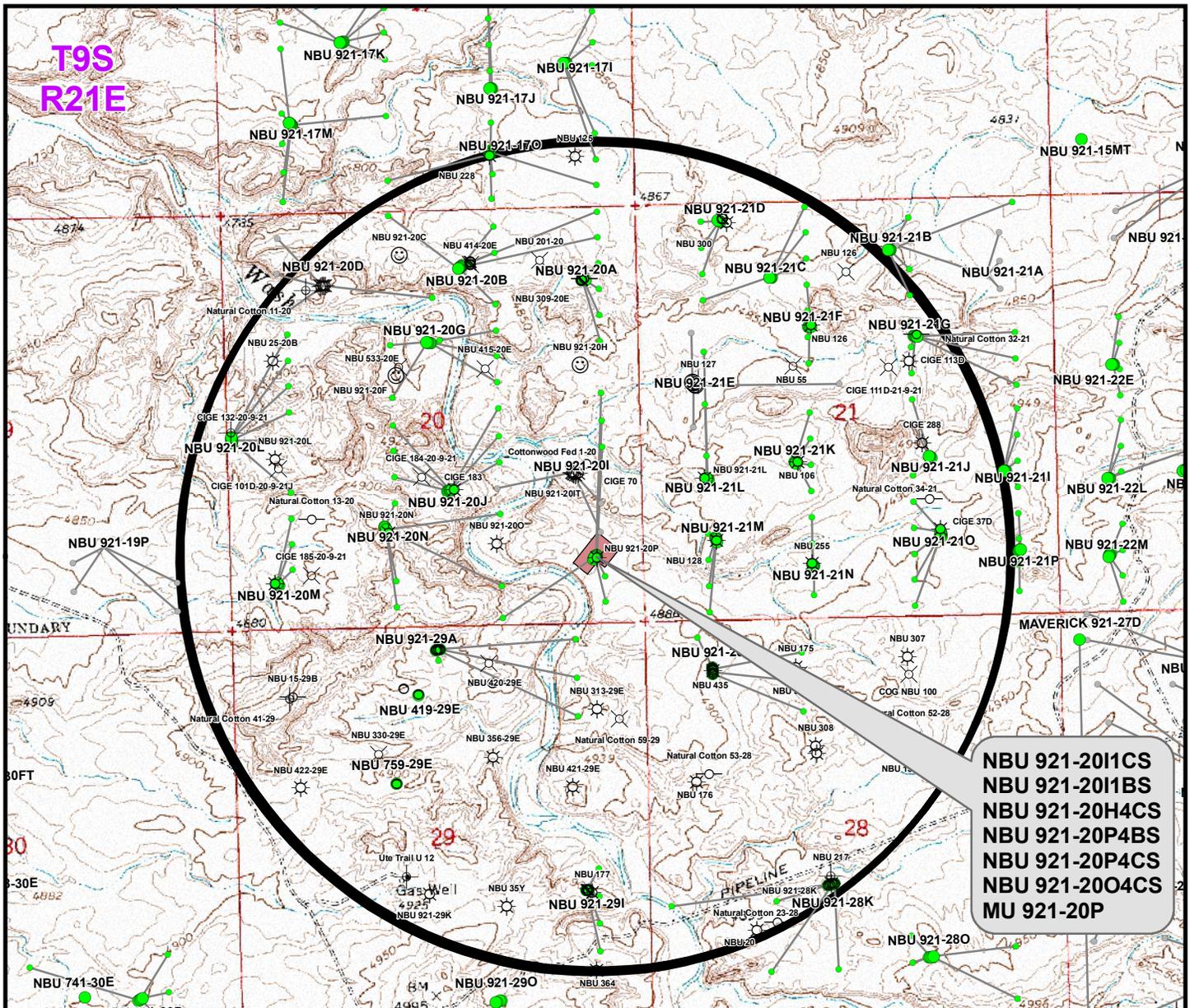
1099 18th Street  
 Denver, Colorado 80202



**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:
DRAWN: TL	DATE: 17 Apr 2012	<b>14</b>
REVISED: TL	DATE: 17 May 2012	



**NBU 921-20I1CS**  
**NBU 921-20I1BS**  
**NBU 921-20H4CS**  
**NBU 921-20P4BS**  
**NBU 921-20P4CS**  
**NBU 921-20O4CS**  
**MU 921-20P**

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 921-20I1CS	Cottonwood Fed 1-20	290ft
NBU 921-20I1BS	Cottonwood Fed 1-20	573ft
NBU 921-20H4CS	NBU 921-20H	444ft
NBU 921-20P4BS	NBU 921-20P	260ft
NBU 921-20P4CS	NBU 921-20P	578ft
NBU 921-20O4CS	NBU 921-20O	942ft
MU 921-20P	NBU 921-20P	47ft

**Legend**

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

**WELL PAD - NBU 921-20P**

TOPO C  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

1099 18th Street  
 Denver, Colorado 80202

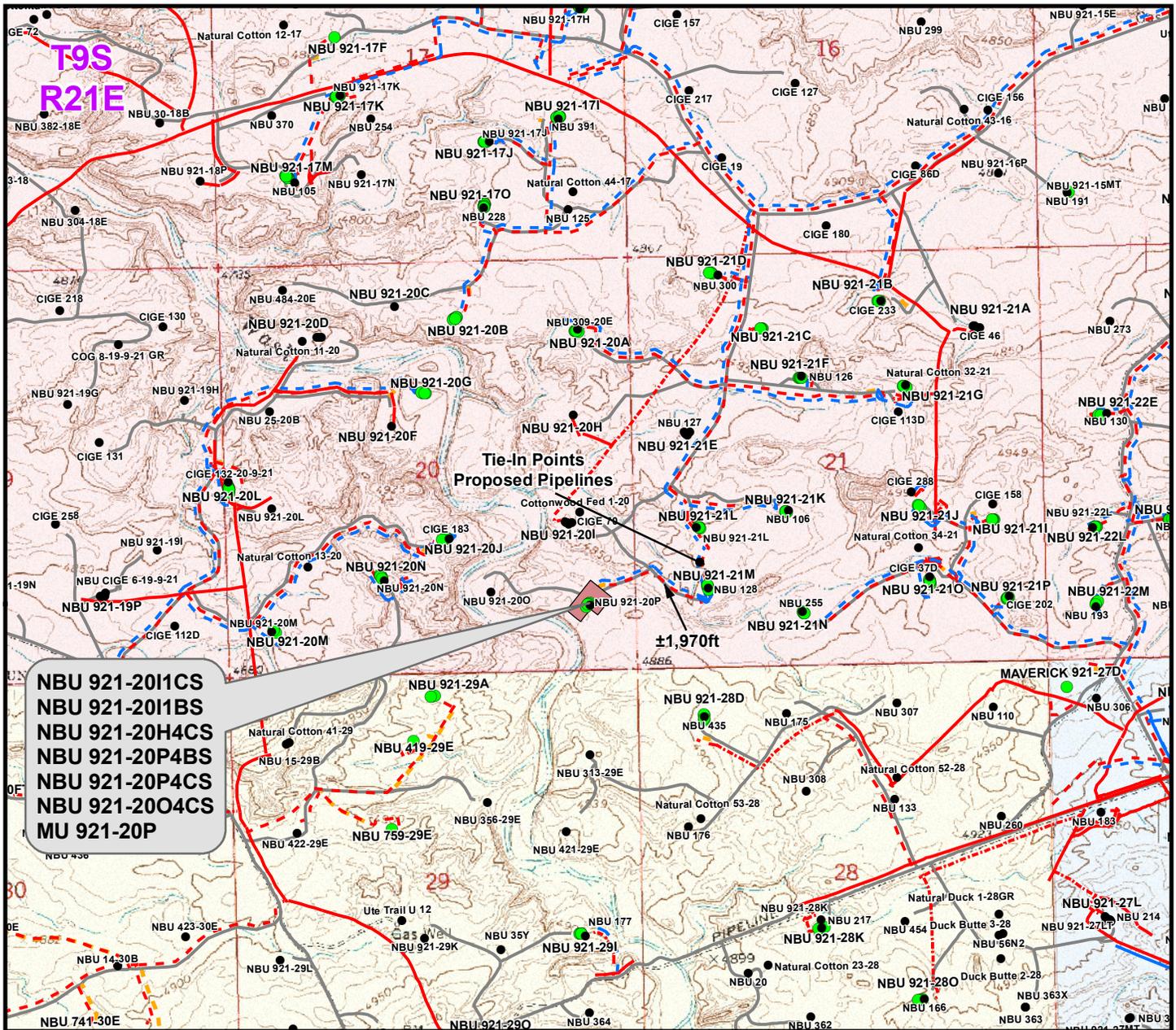


**CONSULTING, LLC**

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

SCALE: 1" = 2,000ft	NAD83 USP Central	15
DRAWN: TL	DATE: 17 Apr 2012	
REVISED: TL	DATE: 17 May 2012	

SHEET NO:  
 15 OF 19



**NBU 921-2011CS**  
**NBU 921-2011BS**  
**NBU 921-20H4CS**  
**NBU 921-20P4BS**  
**NBU 921-20P4CS**  
**NBU 921-20O4CS**  
**MU 921-20P**

Proposed Liquid Pipeline	Length	Proposed Gas Pipeline	Length
Buried 6" (Max.) (Meter House to 200 Intersection)	±460ft	Buried 8" (Meter House to 200 Intersection)	±460ft
Buried 6" (Max.) (200 Intersection to 921-21M Intersection)	±1,970ft	Buried 8" (200 Intersection to 921-21M Intersection)	±1,970ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±2,430ft</b>	<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±2,430ft</b>

**Legend**

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

**WELL PAD - NBU 921-20P**

TOPO D  
 NBU 921-2011CS,  
 NBU 921-2011BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 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

DRAWN: TL

REVISED: TL

NAD83 USP Central

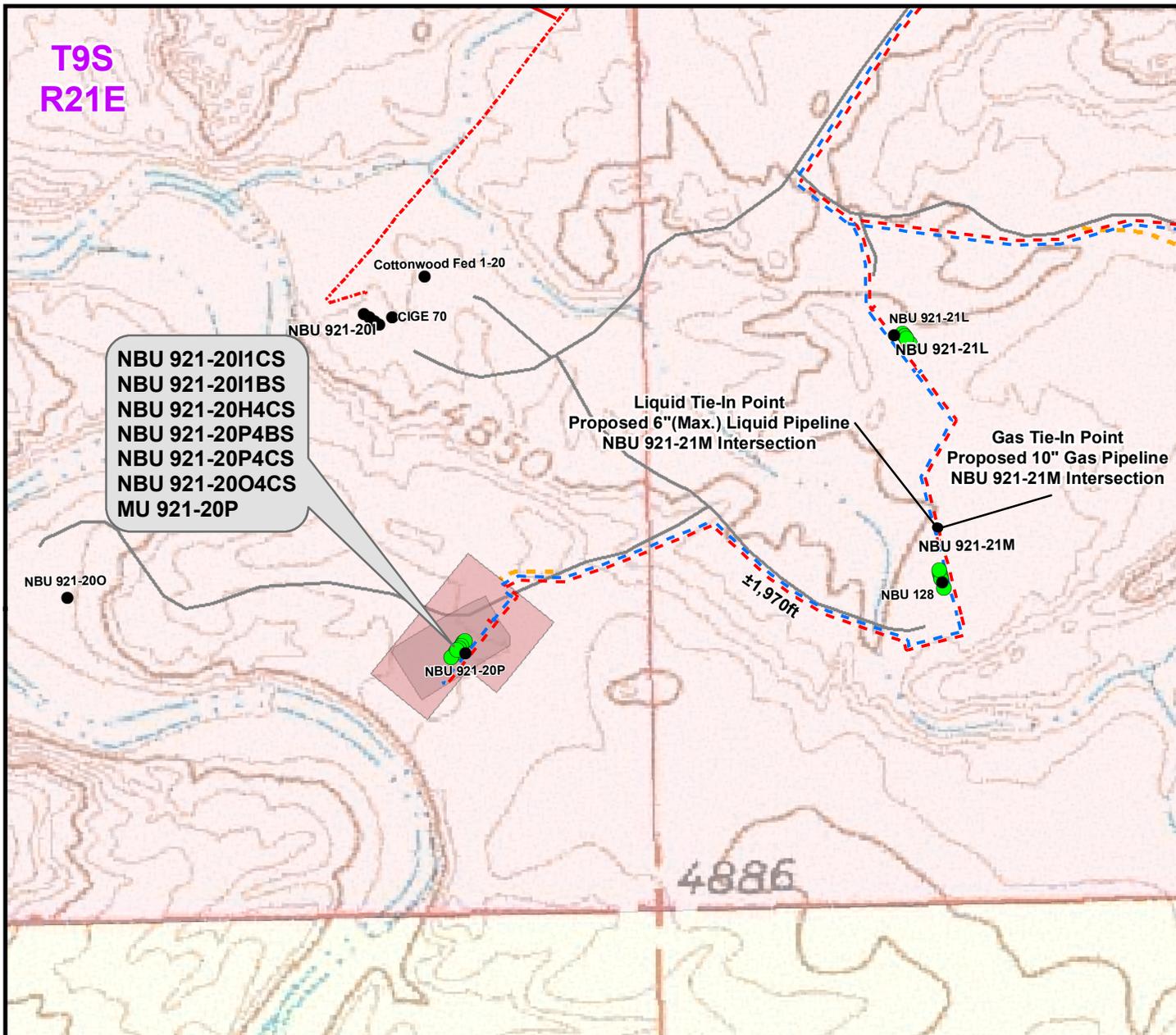
DATE: 17 Apr 2012

DATE: 17 May 2012

SHEET NO:

**16**

16 OF 19



Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to 200 Intersection)	±460ft
Buried 6" (Max.) (200 Intersection to 921-21M Intersection)	±1,970ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±2,430ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to 200 Intersection)	±460ft
Buried 8" (200 Intersection to 921-21M Intersection)	±1,970ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±2,430ft</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 921-20P**

TOPO D2 (PAD & PIPELINE DETAIL)  
 NBU 921-201CS,  
 NBU 921-201BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

1099 18th Street  
 Denver, Colorado 80202



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



SCALE: 1" = 500ft	NAD83 USP Central	<b>17</b> 17 OF 19
DRAWN: TL	DATE: 17 Apr 2012	
REVISED: TL	DATE: 17 May 2012	



**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD - NBU 921-20P  
WELLS - NBU 921-20I1CS,  
NBU 921-20I1BS, NBU 921-20H4CS,  
NBU 921-20P4BS, NBU 921-20P4CS,  
NBU 921-20O4CS & MU 921-20P  
Section 20, T9S, R21E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.7 miles to a Class D County Road to the southwest. Exit right and proceed in a southwesterly direction along the Class D County Road approximately 1.8 miles to a second Class D County Road to the north. Exit right and proceed in a northerly direction along the second Class D County Road approximately 2.3 miles to a Tribal Road to the southwest. Continue in a southwesterly, then northwesterly direction along the Tribal Road approximately 1.3 miles to a service road to the south. Exit left and proceed in a southerly, then southwesterly direction along the service road approximately 0.9 miles to a second service road to the southeast. Exit left and proceed in a southeasterly direction along the second service road approximately 0.1 miles to a third service road the southwest. Exit right and proceed in a southwesterly direction along the third service road approximately 0.1 miles to the proposed access road to the west. Follow road flags in westerly direction approximately 185 feet to the proposed well location.

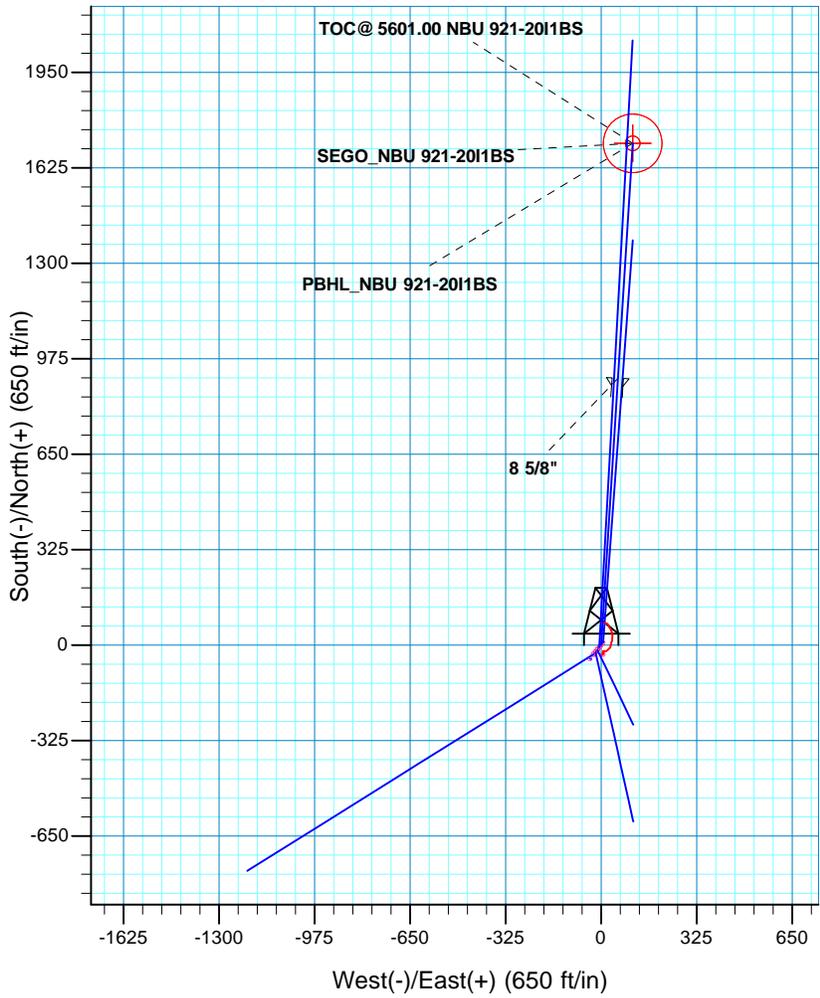
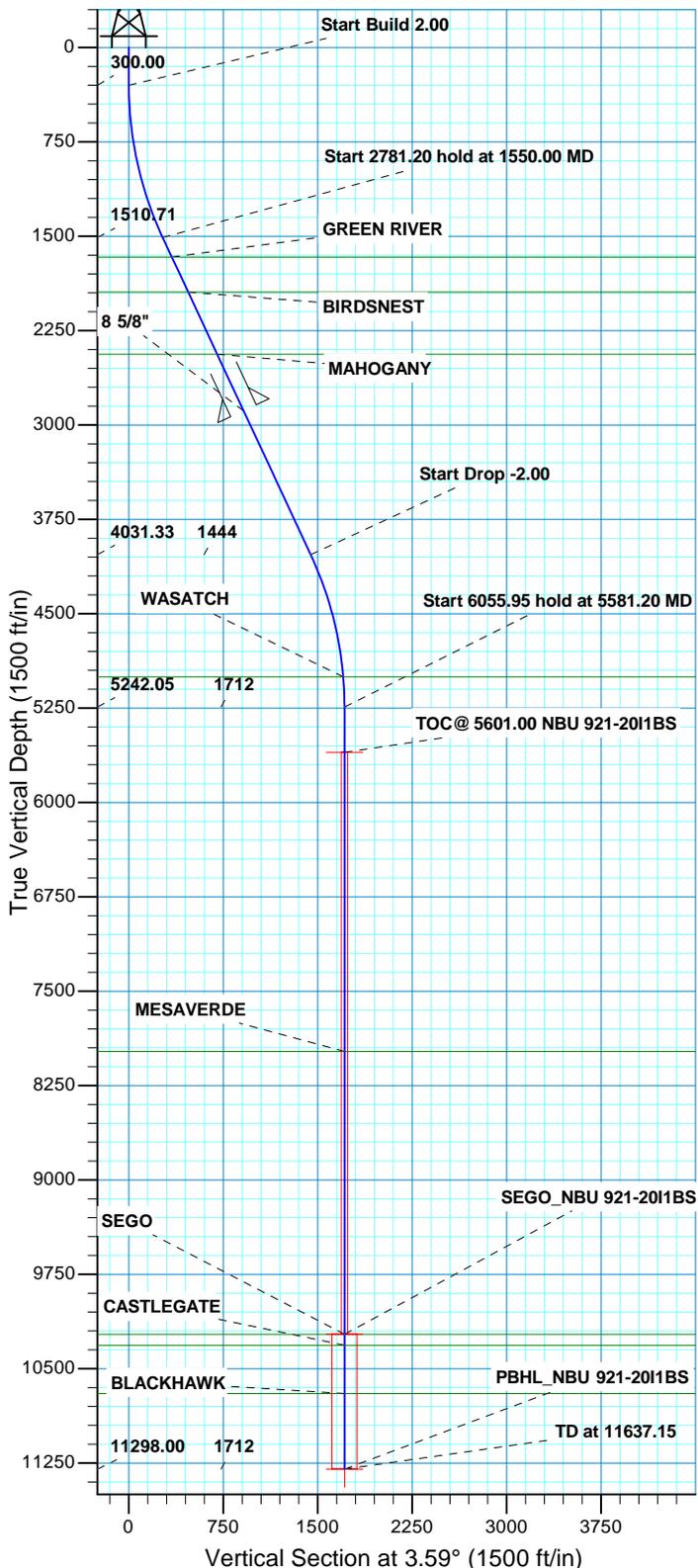
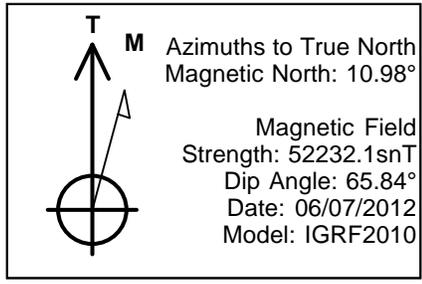
Total distance from Vernal, Utah to the proposed well location is approximately 47.7 miles in a southerly direction.



Site: NBU 921-20P PAD  
Well: NBU 921-201BS  
Wellbore: OH  
Design: PLAN #1 PERMIT



WELL DETAILS: NBU 921-201BS								
GL 4874 & KB 4								
@ 4878.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14535325.35	2041480.47	40.016634	-109.567606			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TOC	5601.00	1708.84	107.25	14537035.69	2041560.24	40.021326	-109.567223	Point
- plan hits target center								
SEGO	10228.00	1708.84	107.25	14537035.69	2041560.24	40.021326	-109.567223	Circle (Radius: 25.00)
- plan hits target center								
PBHL	11298.00	1708.84	107.25	14537035.69	2041560.24	40.021326	-109.567223	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	
1550.00	25.00	3.59	1510.71	267.88	16.81	2.00	3.59	268.41	
4331.20	25.00	3.59	4031.33	1440.96	90.44	0.00	0.00	1443.79	
5581.20	0.00	0.00	5242.05	1708.84	107.25	2.00	180.00	1712.20	
11637.15	0.00	0.00	11298.00	1708.84	107.25	0.00	0.00	1712.20	PBHL_NBU 921-201BS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)	TVDPATH	MDPATH	Formation		
Datum: NAD 1927 (NADCON CONUS)	1666.00	1721.34	GREEN RIVER		
Ellipsoid: Clarke 1866	1944.00	2028.08	BIRDSNEST		
Zone: Zone 12N (114 W to 108 W)	2438.00	2573.15	MAHOGANY		
Location: SECTION20 T10S R21E	5001.00	5339.87	WASATCH		
System Datum: Mean Sea Level	7979.00	8318.15	MESAVERDE		
	10228.00	10567.15	SEGO		
	10315.00	10654.15	CASTLEGATE		
	10698.00	11037.15	BLACKHAWK		

CASING DETAILS			
TVD	MD	Name	Size
2888.00	3069.67	8 5/8"	8.625

RECEIVED :



# Scientific Drilling

## **US ROCKIES REGION PLANNING**

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

**NBU 921-20P PAD**

**NBU 921-20I1BS**

**OH**

**Plan: PLAN #1 PERMIT**

## **Standard Planning Report**

**07 June, 2012**





<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	@ 4878.00ft (ASSUMED) GL 4874 & KB 4
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	@ 4878.00ft (ASSUMED) True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

<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 921-20P PAD, SECTION 20 T10S R21E				
<b>Site Position:</b>	<b>Northing:</b>	14,535,333.11 usft	<b>Latitude:</b>	40.016655	
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,041,486.79 usft	<b>Longitude:</b>	-109.567583
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.92 °

<b>Well</b>	NBU 921-201BS, 850 FSL 599 FEL					
<b>Well Position</b>	<b>+N/-S</b>	-7.65 ft	<b>Northing:</b>	14,535,325.36 usft	<b>Latitude:</b>	40.016634
	<b>+E/-W</b>	-6.44 ft	<b>Easting:</b>	2,041,480.47 usft	<b>Longitude:</b>	-109.567606
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,874.00 ft	

<b>Wellbore</b>	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/07/12	10.98	65.84	52,232

<b>Design</b>	PLAN #1 PERMIT
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<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 3.59

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	3.59	1,510.71	267.88	16.81	2.00	2.00	0.00	3.59	
4,331.20	25.00	3.59	4,031.34	1,440.96	90.44	0.00	0.00	0.00	0.00	
5,581.20	0.00	0.00	5,242.05	1,708.84	107.25	2.00	-2.00	0.00	180.00	
11,637.15	0.00	0.00	11,298.00	1,708.84	107.25	0.00	0.00	0.00	0.00	PBHL_NBU 921-201I



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	@ 4878.00ft (ASSUMED) GL 4874 & KB 4
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	@ 4878.00ft (ASSUMED) True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>										
400.00	2.00	3.59	399.98	1.74	0.11	1.75	2.00	2.00	0.00	
500.00	4.00	3.59	499.84	6.96	0.44	6.98	2.00	2.00	0.00	
600.00	6.00	3.59	599.45	15.66	0.98	15.69	2.00	2.00	0.00	
700.00	8.00	3.59	698.70	27.83	1.75	27.88	2.00	2.00	0.00	
800.00	10.00	3.59	797.47	43.44	2.73	43.52	2.00	2.00	0.00	
900.00	12.00	3.59	895.62	62.48	3.92	62.60	2.00	2.00	0.00	
1,000.00	14.00	3.59	993.06	84.93	5.33	85.10	2.00	2.00	0.00	
1,100.00	16.00	3.59	1,089.64	110.76	6.95	110.98	2.00	2.00	0.00	
1,200.00	18.00	3.59	1,185.27	139.94	8.78	140.21	2.00	2.00	0.00	
1,300.00	20.00	3.59	1,279.82	172.43	10.82	172.77	2.00	2.00	0.00	
1,400.00	22.00	3.59	1,373.17	208.19	13.07	208.60	2.00	2.00	0.00	
1,500.00	24.00	3.59	1,465.21	247.19	15.51	247.67	2.00	2.00	0.00	
1,550.00	25.00	3.59	1,510.71	267.88	16.81	268.41	2.00	2.00	0.00	
<b>Start 2781.20 hold at 1550.00 MD</b>										
1,600.00	25.00	3.59	1,556.03	288.97	18.14	289.54	0.00	0.00	0.00	
1,700.00	25.00	3.59	1,646.66	331.15	20.78	331.80	0.00	0.00	0.00	
1,721.34	25.00	3.59	1,666.00	340.15	21.35	340.82	0.00	0.00	0.00	
<b>GREEN RIVER</b>										
1,800.00	25.00	3.59	1,737.29	373.33	23.43	374.06	0.00	0.00	0.00	
1,900.00	25.00	3.59	1,827.92	415.51	26.08	416.32	0.00	0.00	0.00	
2,000.00	25.00	3.59	1,918.55	457.69	28.73	458.59	0.00	0.00	0.00	
2,028.08	25.00	3.59	1,944.00	469.53	29.47	470.45	0.00	0.00	0.00	
<b>BIRDSNEST</b>										
2,100.00	25.00	3.59	2,009.18	499.86	31.37	500.85	0.00	0.00	0.00	
2,200.00	25.00	3.59	2,099.81	542.04	34.02	543.11	0.00	0.00	0.00	
2,300.00	25.00	3.59	2,190.44	584.22	36.67	585.37	0.00	0.00	0.00	
2,400.00	25.00	3.59	2,281.07	626.40	39.31	627.63	0.00	0.00	0.00	
2,500.00	25.00	3.59	2,371.70	668.58	41.96	669.90	0.00	0.00	0.00	
2,573.15	25.00	3.59	2,438.00	699.43	43.90	700.81	0.00	0.00	0.00	
<b>MAHOGANY</b>										
2,600.00	25.00	3.59	2,462.34	710.76	44.61	712.16	0.00	0.00	0.00	
2,700.00	25.00	3.59	2,552.97	752.94	47.26	754.42	0.00	0.00	0.00	
2,800.00	25.00	3.59	2,643.60	795.12	49.90	796.68	0.00	0.00	0.00	
2,900.00	25.00	3.59	2,734.23	837.30	52.55	838.94	0.00	0.00	0.00	
3,000.00	25.00	3.59	2,824.86	879.47	55.20	881.20	0.00	0.00	0.00	
3,069.67	25.00	3.59	2,888.00	908.86	57.04	910.65	0.00	0.00	0.00	
<b>8 5/8"</b>										
3,100.00	25.00	3.59	2,915.49	921.65	57.84	923.47	0.00	0.00	0.00	
3,200.00	25.00	3.59	3,006.12	963.83	60.49	965.73	0.00	0.00	0.00	
3,300.00	25.00	3.59	3,096.75	1,006.01	63.14	1,007.99	0.00	0.00	0.00	
3,400.00	25.00	3.59	3,187.38	1,048.19	65.79	1,050.25	0.00	0.00	0.00	
3,500.00	25.00	3.59	3,278.01	1,090.37	68.43	1,092.51	0.00	0.00	0.00	
3,600.00	25.00	3.59	3,368.64	1,132.55	71.08	1,134.78	0.00	0.00	0.00	
3,700.00	25.00	3.59	3,459.27	1,174.73	73.73	1,177.04	0.00	0.00	0.00	
3,800.00	25.00	3.59	3,549.90	1,216.91	76.37	1,219.30	0.00	0.00	0.00	



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	@ 4878.00ft (ASSUMED) GL 4874 & KB 4
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	@ 4878.00ft (ASSUMED) True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

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	25.00	3.59	3,640.54	1,259.08	79.02	1,261.56	0.00	0.00	0.00	
4,000.00	25.00	3.59	3,731.17	1,301.26	81.67	1,303.82	0.00	0.00	0.00	
4,100.00	25.00	3.59	3,821.80	1,343.44	84.32	1,346.09	0.00	0.00	0.00	
4,200.00	25.00	3.59	3,912.43	1,385.62	86.96	1,388.35	0.00	0.00	0.00	
4,300.00	25.00	3.59	4,003.06	1,427.80	89.61	1,430.61	0.00	0.00	0.00	
4,331.20	25.00	3.59	4,031.34	1,440.96	90.44	1,443.79	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
4,400.00	23.62	3.59	4,094.03	1,469.23	92.21	1,472.12	2.00	-2.00	0.00	
4,500.00	21.62	3.59	4,186.33	1,507.62	94.62	1,510.59	2.00	-2.00	0.00	
4,600.00	19.62	3.59	4,279.92	1,542.77	96.83	1,545.81	2.00	-2.00	0.00	
4,700.00	17.62	3.59	4,374.68	1,574.64	98.83	1,577.74	2.00	-2.00	0.00	
4,800.00	15.62	3.59	4,470.49	1,603.19	100.62	1,606.35	2.00	-2.00	0.00	
4,900.00	13.62	3.59	4,567.25	1,628.39	102.20	1,631.59	2.00	-2.00	0.00	
5,000.00	11.62	3.59	4,664.83	1,650.20	103.57	1,653.45	2.00	-2.00	0.00	
5,100.00	9.62	3.59	4,763.11	1,668.60	104.72	1,671.88	2.00	-2.00	0.00	
5,200.00	7.62	3.59	4,861.97	1,683.57	105.66	1,686.88	2.00	-2.00	0.00	
5,300.00	5.62	3.59	4,961.30	1,695.08	106.39	1,698.41	2.00	-2.00	0.00	
5,339.87	4.83	3.59	5,001.00	1,698.70	106.61	1,702.04	2.00	-2.00	0.00	
<b>WASATCH</b>										
5,400.00	3.62	3.59	5,060.97	1,703.12	106.89	1,706.47	2.00	-2.00	0.00	
5,500.00	1.62	3.59	5,160.86	1,707.69	107.18	1,711.05	2.00	-2.00	0.00	
5,581.20	0.00	0.00	5,242.05	1,708.84	107.25	1,712.20	2.00	-2.00	0.00	
<b>Start 6055.95 hold at 5581.20 MD</b>										
5,600.00	0.00	0.00	5,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
5,940.15	0.00	0.00	5,601.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>TOC@ 5601.00 NBU 921-201BS</b>										
6,000.00	0.00	0.00	5,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	@ 4878.00ft (ASSUMED) GL 4874 & KB 4
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	@ 4878.00ft (ASSUMED) True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

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)	
8,100.00	0.00	0.00	7,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,318.15	0.00	0.00	7,979.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>MESAVERDE</b>										
8,400.00	0.00	0.00	8,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,200.00	0.00	0.00	8,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,300.00	0.00	0.00	8,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,100.00	0.00	0.00	9,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,200.00	0.00	0.00	9,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,300.00	0.00	0.00	9,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,567.15	0.00	0.00	10,228.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>SEGO - SEGO_NBU 921-201BS</b>										
10,600.00	0.00	0.00	10,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,654.15	0.00	0.00	10,315.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>CASTLEGATE</b>										
10,700.00	0.00	0.00	10,360.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,460.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,560.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,660.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,037.15	0.00	0.00	10,698.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>BLACKHAWK</b>										
11,100.00	0.00	0.00	10,760.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,200.00	0.00	0.00	10,860.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,300.00	0.00	0.00	10,960.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,060.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,160.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,600.00	0.00	0.00	11,260.85	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
11,637.15	0.00	0.00	11,298.00	1,708.84	107.25	1,712.20	0.00	0.00	0.00	
<b>TD at 11637.15 - PBHL_NBU 921-201BS</b>										



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	@ 4878.00ft (ASSUMED) GL 4874 & KB 4
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	@ 4878.00ft (ASSUMED) True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)			
- Shape										
TOC@ 5601.00 NBU 92 - plan hits target center - Point	0.00	0.00	5,601.00	1,708.84	107.25	14,537,035.70	2,041,560.23	40.021326	-109.567223	
SEGO_NBU 921-201BS - plan hits target center - Circle (radius 25.00)	0.00	0.00	10,228.00	1,708.84	107.25	14,537,035.70	2,041,560.23	40.021326	-109.567223	
PBHL_NBU 921-201BS - plan hits target center - Circle (radius 100.00)	0.00	0.00	11,298.00	1,708.84	107.25	14,537,035.70	2,041,560.23	40.021326	-109.567223	

Casing Points						
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter		
(ft)	(ft)		(in)	(in)		
3,069.67	2,888.00	8 5/8"	8.625	11.000		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,721.34	1,666.00	GREEN RIVER				
2,028.08	1,944.00	BIRDSNEST				
2,573.15	2,438.00	MAHOGANY				
5,339.87	5,001.00	WASATCH				
8,318.15	7,979.00	MESAVERDE				
10,567.15	10,228.00	SEGO				
10,654.15	10,315.00	CASTLEGATE				
11,037.15	10,698.00	BLACKHAWK				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,550.00	1,510.71	267.88	16.81	Start 2781.20 hold at 1550.00 MD	
4,331.20	4,031.34	1,440.96	90.44	Start Drop -2.00	
5,581.20	5,242.05	1,708.84	107.25	Start 6055.95 hold at 5581.20 MD	
11,637.15	11,298.00	1,708.84	107.25	TD at 11637.15	

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

### NBU 921-20P Pad

<u>API #</u>	<u>MU 921-20P</u>		
	Surface:	804 FSL / 638 FEL	SESE Lot
	BHL:	804 FSL / 638 FEL	SESE Lot
<u>API #</u>	<u>NBU 921-20H4CS</u>		
	Surface:	842 FSL / 606 FEL	SESE Lot
	BHL:	2397 FNL / 491 FEL	SENE Lot
<u>API #</u>	<u>NBU 921-20I1BS</u>		
	Surface:	850 FSL / 599 FEL	SESE Lot
	BHL:	2559 FSL / 491 FEL	NESE Lot
<u>API #</u>	<u>NBU 921-20I1CS</u>		
	Surface:	857 FSL / 593 FEL	SESE Lot
	BHL:	2229 FSL / 491 FEL	NESE Lot
<u>API #</u>	<u>NBU 921-20O4CS</u>		
	Surface:	819 FSL / 625 FEL	SESE Lot
	BHL:	84 FSL / 1804 FEL	SWSE Lot
<u>API #</u>	<u>NBU 921-20P4BS</u>		
	Surface:	834 FSL / 612 FEL	SESE Lot
	BHL:	579 FSL / 490 FEL	SESE Lot
<u>API #</u>	<u>NBU 921-20P4CS</u>		
	Surface:	827 FSL / 618 FEL	SESE Lot
	BHL:	249 FSL / 490 FEL	SESE Lot

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 May 8, 2012. Present were:

- David Gordon, Melissa Wardle, Tyler Cox - BLM;
- Bucky Secakuku - BIA;
- Brad Pinecoose - Ute Indian Tribe;
- Amy Ackman - Montgomery Archeological Consultants Inc.;
- Scott Carson - Smiling Lake Consulting;
- John Slaugh, Mitch Batty - Timberline Engineering & Land Surveying, Inc.;
- Danielle Piernot, Raleen White, Doyle Holmes, Rod Anderson, Charles Chase - Kerr-McGee
- Tim Horgan-Kobelski - Grasslands Consulting, Inc.
- Justin Strauss - SWCA Environmental Consultants

#### A. Existing Roads:

Existing roads consist of county and improved/unimproved access roads (two-tracks). In accordance with Onshore Order #1, Kerr-McGee will, in accordance with BMPs, improve or maintain existing roads in a condition that is the same as or better than before operations began. New or reconstructed proposed access roads are discussed in Section B.

The existing roads will be maintained in a safe and usable condition. Maintenance for existing roads will continue until final abandonment and reclamation of well pads and/or other facilities, as applicable. Road maintenance will include, but is not limited to, blading, ditching, and/or culvert installation and cleanout. To ensure safe operating conditions, gravel surfacing will be performed where excessive rutting or erosion may occur. Dust control will be performed as necessary to ensure safe operating conditions.

Roads, gathering lines and electrical distribution lines will occupy common disturbance corridors where possible. Where available, roadways will be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor will overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Please refer to Topo B, for existing roads.

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

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BIA.

Each new well pad or pad expansion may require construction of a new access road and/or de-commissioning of an older road. Plans, routes, and distances for new roads and road improvements are provided in design packages, exhibits and maps for a project. Project-specific maps are submitted to depict the locations of existing, proposed, and/or decommissioned and include the locations for supporting structures, including, but not limited to, culverts, bridges, low water crossings, range infrastructure, and haul routes, as per OSO 1. Designs for cuts and fills, including spoils source and storage areas, are provided with the road designs, as necessary.

Where safety objectives can be met. As applicable, Kerr-McGee may use unimproved and/or two-track roads for lease operations, to lessen total disturbance.

Road designs will be based on the road safety requirements, traffic characteristics, environmental conditions, and the vehicles the road is intended to carry. Generally, newly constructed unpaved lease roads will be crowned and ditched with the running surfaces of the roads approximately 12-18 feet wide and a total road corridor width not to exceed 45 feet, except where noted in the road design for a specific project. Maximum grade will generally not exceed 8%. Borrow ditches will be back sloped 3:1 or less. Construction BMPs will be employed to control onsite and offsite erosion.

Where topography would direct storm water runoff to an access road or well pad, drainage ditches or other common drainage control facilities, such as V- or wing-ditches, will be constructed to divert surface water runoff. Drainage features, including culverts, will be constructed or installed prior to commencing other operations, including drilling or facilities placement. Riprap will be placed at the inlet and outlet at the culvert(s), as necessary.

Prior to construction, new access road(s) will be staked according to the requirements of OSO 1. Construction activity will not be conducted using frozen or saturated materials or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur. Vegetative debris will not be placed in or under fill embankments.

New road maintenance will include, but is not limited to, blading, ditching, culvert installation and cleanout, gravel surfacing where excessive rutting or erosion may occur and dust control, as necessary to ensure safe operating conditions. All vehicular traffic, personnel movement, construction/restoration operations will be confined to the approved area and to existing roadways and/or access routes.

Snow removal will be conducted on an as-needed basis to accommodate safe travel. Snow removal will occur as necessary throughout the year, as will necessary drainage ditch construction. Removed snow may be stored on permitted well pads to reduce hauling distances and/or at the aerial extent of approved disturbance boundaries to facilitate snow removal for the remainder of the season.

If a county road crossing or encroachment permit is needed, it will be obtained prior to construction.

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±185' (0.04 miles) – Section 20 (SE/4 SE/4) T9S R21E – On lease UTU0575 Ute Indian Tribe surface, road re-route from the edge of the pad to the existing road to the north. Please refer to Topo B.

**C. Location of Existing Wells:**

A) Refer to Topo Map C.

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

This pad will expand the existing pad for the NBU 921-20P, which is a producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records on June 28, 2012. 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).

Should the well(s) prove productive, production facilities will be installed on the disturbed portion of each well pad. A berm will be constructed completely around production components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will generally be constructed of compacted subsoil or corrugated metal, and will hold the capacity of the largest tank and have sufficient freeboard to accommodate a 25 year rainfall event. This includes pumping units. Aboveground structures constructed or installed onsite for 6 months or longer, will be painted a flat, non-reflective, earth-tone color chosen at the onsite (typically Shadow Gray). A production facility layout is provided as part of a project-specific APD, ROW or NOS submission.

**GAS GATHERING**

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

The gas gathering pipeline material: Steel line pipe. Surface = Bare pipe. Buried = Coated with fusion bonded epoxy coating (or equivalent). The total gas gathering pipeline distance from the meter to the tie in point is ±2,430' and the individual segments are broken up as follows:

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±2,430' (0.5 miles) – Section 20 and Section 21 T9S R21E– On-lease UTU0575 and UTU0576 Ute Indian Tribe Surface, New 8" buried gas gathering pipeline from the meter to the NBU 921-21M Pad intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

**LIQUID GATHERING**

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

The total liquid gathering pipeline distance from the separator to the tie in point is ±2,430' and the individual segments are broken up as follows:

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±2,430' (0.5 miles) – Section 20 and Section 21 T9S R21E– On-lease UTU0575 and UTU0576 Ute Indian Tribe Surface. New 6" buried liquid gathering pipeline from the separator to the NBU 921-21M Pad intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

### Pipeline Gathering Construction

Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee. Gas gathering pipeline(s), gas lift, or liquids pipelines may be constructed to lie on the surface or be buried. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. The area of disturbance during construction from the edge of road or well pad will typically be 30' in width. Where pipelines run cross country, the width of disturbance will typically be 45 ft for buried lines and 30 ft for surface lines. In addition, Kerr-McGee requests for a permanent 30' disturbance width that will be maintained for the portion adjacent to the road. The need for the 30' permanent disturbance width is for maintenance and repairs. Cross country permanent disturbance width also are required to be 30ft.

Above-ground installation will generally not require clearing of vegetation or blading of the surface, except where safety considerations necessitate earthwork. In some surface pipeline installation instances pipe cannot be constructed where it will lay. In these cases where an above-ground pipeline is constructed parallel and adjacent to a road, it will be welded/fused on the road and then lifted from the road to the pipeline route. In other cases where a pipeline route is not parallel and adjacent to a road (cross-country between sites), it will be welded/fused in place at a well pad, access road, or designated work area and pulled between connection locations with a suitable piece of equipment.

Buried pipelines will generally be installed parallel and adjacent to existing and/or newly constructed roads and within the permitted disturbance corridor. Buried pipelines may vary from 2 inches (typically fuel gas lines) to 24 inches (typically transportation lines) in diameter, but 6 to 16 inches is typical for a buried gas line. The diameter of liquids pipelines may vary from 2 inches to 12 inches, but 6 inches is the typical diameter. Gas lift lines may vary from 2 to 12 inches in diameter, but 6-inch diameter pipes are generally used for gas lift. If two or more pipelines are present (gas gathering, gas lift, and fluids), they will share a common trench where possible.

Typically, to install a buried pipeline, topsoil will be removed, windrowed and placed on the non-working side of the route for later reclamation. Because working room is limited, the spoil may be spread out across the working side and construction will take place on the spoil. The working side of the corridor will be used for pipe stringing, bending, welding and equipment travel. Small areas on the working side displaying ruts or uneven ground will be groomed to facilitate the safe passage of equipment. After the pipelines are installed, spoil will be placed back into the trench, and the topsoil will be redistributed over the disturbed corridor prior to final reclamation. Typical depth of the trench will be 6 feet, but depths may vary according to site-specific conditions (presence of bedrock, etc.). The proposed trench width for the pipeline would range from 18-48 inches.

The pipeline will be welded along the proposed route and lowered into place. Trenching equipment will cut through the soil or into the bedrock and create good backfill, eliminating the need to remove large rocks. The proposed buried pipeline will be visually and radiographically inspected and the entire pipeline will be pneumatically or hydrostatically tested before being placed into service. Routine vehicle traffic will be prevented from using pipeline routes as travel ways by posting signs at the route's intersection with an access road.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, Kerr-McGee will apply all applicable Army Corps mandates as well as the BLM's Hydraulic Considerations for Pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface.

Pipeline signs will be installed along the route to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves and lateral T's will be installed at various locations for production integrity and safety purposes.

Upon completion of the proposed buried pipeline, the entire area of disturbance will be reclaimed to the standards proposed in the Green River District Reclamation Guidelines. Please refer to section J for more details regarding final reclamation.

When no longer deemed necessary by the operator, Kerr-McGee or its successor will consult with the Vernal BIA Office before terminating of the use of the pipeline(s).

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

Kerr-McGee will use either a closed loop drilling system that will require one pit and one storage area to be constructed on the drilling pad or a traditional drilling operation with one pit. The storage area will be used to contain only the de-watered drill cuttings and will be lined and reclaimed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit is lined and will be used for the wells drilled on the pad or used as part of our Anadarko Completions Transportation (ACTS) system which is discussed in more detail below. Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completion pit.

If Kerr-McGee does not use a closed loop system, it will construct a drilling reserve pit to contain drill cuttings and for use in completion operations. Depending on the location of the pit, its relation to future drilling locations, the reserve/completion pit will be utilized for the completion of the wells on that pad and/or be used as part of our ACTS system.

Kerr-McGee will use ACTS to optimize the completion processes for multiple pads across the project area which may include up to a section of development. ACTS will facilitate management of frac fluids by utilizing existing reserve pits and temporary, surface-laid aluminum liquids transfer lines between frac locations. The pit will be refurbished as follows when a traditional drill pit is used: mix and pile up drill cuttings with dry dirt, bury the original liner in the pit, walk bottom of pit with cat. Kerr-McGee will reline the pit with a 30 mil liner and double felt padding. The refurbished pit will be the same size or smaller as specified in the originally approved ROW/APD. The pit refurb will be done in a normal procedure and there will be no modification to the pit.

All four sides of the completions pit will be fenced in according to standard pit fencing procedures. Netting will be installed over all pits.

The collected hydrocarbons will be treated and sold at approved sales facilities. A loading rack with drip containment will also be installed where water trucks would unload and load to prevent damage caused from pulling hoses in and out of the pit .

ACTS will require temporarily laying multiple 6" aluminum water transfer lines on the surface between either existing or refurbished reserve pits. The temporary aluminum transfer lines will be utilized to transport frac fluid being injected and/or recovered during the completion process and will be laid adjacent to existing access roads or pipeline corridors. Upon completion of the frac operation, the liquids transfer lines will be flushed with fresh water and purged with compressed air. The contents of the transfer lines will be flushed into a water truck for delivery to another ACTS location or a reserve pit.

The temporary ACTS lines will be permitted under a separate cover to the Ute Indian Tribe.

The volume of frac fluid transported through a water transfer line will vary, but volume is projected to be approximately 1.75 bbls per 50-foot joint. Although the maximum working pressure is 125 psig, the liquids transfer lines will be operated at a pressure of approximately 30 to 40 psig. Kerr-McGee requests to keep the netted pit open for one year from first production of the first produced well on the pad. During this time the surrounding well location completion fluids may be recycled in this pit and utilized for other frac jobs in the area. After one year Kerr-McGee will backfill the pit and reclaim. If the pit is not needed for an entire year it will be backfilled and reclaimed earlier. Kerr-McGee understands that due to the temporary nature of this system, BIA considers this a casual use situation; therefore, no permanent ROW or temporary use plan will need to be issued by the BIA.

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

Water for drilling and completion operations will be obtained from the following sources:

Permit # 49-2307	JD Field Services	Green River- Section 15, T2N, R22E
Permit # 49-2321	R.N. Industries	White River- Section 2, T10S, R24E
Permit # 49-2319	R.N. Industries	White River- Various Sources
Permit # 49-2320	R.N. Industries	Green River- Section 33, T8S, R23E

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

No water well is to be drilled on this lease.

**F. Construction Materials:**

Construction operations will typically be completed with native materials found on location. Construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source (described in site-specific documents). No construction materials will be removed from Tribal lands without prior approval from the BIA. A source location other than an on-location construction site will be designated either via a map or narrative within the project specific materials provided to the BIA.

**G. Methods for Handling Waste:**

All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. Kerr-McGee also maintains a Spill Control and Countermeasure Plan, which includes notification requirements, including the BIA, for all reportable spills of oil, produced liquids, and hazardous materials.

Any accidental release, such as a leak or spill in excess of the reportable quantity, as established by 40 CFR Part 117.3, will be reported as per the requirements of CERCLA, Section 102 B. If a release involves petroleum hydrocarbons or produced liquids, Kerr-McGee will comply with the notification requirements of NTL-3A. Drill cuttings and/or drilling fluids will be contained in the reserve/frac pit whether a closed loop system is used or not. Cuttings will be buried in pit(s) upon closure. Unless specifically approved by the BIA, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface precipitation runoff into the pit (via appropriate placement of subsoil storage areas and/or construction of berms, ditches, etc.). Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling, completions or well testing, liquid petroleum hydrocarbons will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by the BIA. Should timely removal not be feasible, the pit will be netted as soon as practical. Similarly, hydrocarbon removal will take place prior to the closure of the pit, unless authorization is provided for disposal via alternate pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with an impermeable liner. The liner will be a synthetic material 30 mil or thicker. The bottom and side walls of the pit will be void of any sharp rocks that could puncture the liner. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. After evaporation and when dry, the reserve pit liners will be cut off, ripped and/or folded back (as safety considerations allow) as near to the mud surface as possible and buried on location or hauled to a landfill prior to backfilling the pit with a minimum of five feet of soil material.

Where necessary and if conditions (freeboard, etc.) allow, produced liquids from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per Onshore Order Number 7 (OSO 7). Subsequently, permanent approved produced water disposal methods will be employed in accordance with OSO 7 and/or as described in a Water Management Plan (WMP). Otherwise, fluids disposal locations and associated haul routes, for ROW consideration, are typically depicted on Topo A of individual projects. Revisions to the water source or method of transportation will be subject to written approval from the BIA.

Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after one year from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility. Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash receptacles will be collected and removed from the well location.

For the protection of livestock and wildlife, all open pits (excluding flare pits) will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet. Siphons, catchments, and absorbent pads will be installed to keep hydrocarbons produced by the drilling rig or other equipment on location from entering the reserve pit. Hydrocarbons, contaminated pads, and/or soils will be disposed of in accordance with state and federal requirements.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

#### **Materials Management**

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

Hazardous materials may be contained in some grease or lubricants, solvents, acids, paint, and herbicides, among others as defined above. Kerr-McGee maintains a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used during the course of construction, drilling, completion, and production operations for this project. The transport, use, storage and handling of hazardous materials will follow procedures specified by federal and state regulations. Transportation of hazardous materials to the well location is regulated by the Department of Transportation (DOT) under 49 CFR, Parts 171-180. DOT regulations pertain to the packing, container handling, labeling, vehicle placarding, and other safety aspects.

Potentially hazardous materials used in the development or operation of wells will be kept in limited quantities on well sites and at the production facilities for short periods of time. Chemicals meeting the criteria for being an acutely hazardous material/substance or meet the quantities criteria per BLM Instruction Memorandum No. 93-344 will not be used.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities (crude oil/condensate, produced water). They may also be kept in limited quantities on drilling sites (barite, diesel fuel, cement, cottonseed hulls etc.) for short periods of time during drilling or completion activities.

Fluids disposal and pipeline/haul routes are depicted on Topo Map A.

Any produced water separated from recoverable condensate from the proposed well will be contained in a water tank and will then be transported by pipeline and/or truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E  
 NBU #159 in Sec. 35 T9S R21E  
 Ace Oilfield in Sec. 2 T6S R20E  
 MC&MC in Sec. 12 T6S R19E  
 Pipeline Facility in Sec. 36 T9S R20E  
 Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E  
 Bonanza Evaporation Pond in Sec. 2 T10S R23E

Or to one of the following Kerr-McGee active Salt Water Disposal (SWD) wells:

NBU 159 SWD in Sec. 35 T9S R21E  
 CIGE 112D SWD in Sec. 19 T9S R21E  
 CIGE 114 SWD in Sec. 34 T9S R21E  
 NBU 921-34K SWD in Sec. 34 T9S R21E  
 NBU 921-33F SWD in Sec. 34 T9S R21E

#### H. Ancillary Facilities:

ancillary facilities are

#### I. Well Site Layout:

The location, orientation and aerial extent of each drill pad, reserve/completion/flare pit (for closed loop or non-closed loop operations), access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure, proposed cuts and fills, and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment depending on whether a closed loop system is used. Surface distance may be less if using closed loop. But in either case, the area of disturbance will not exceed the maximum disturbance outlined in the attached exhibits.

For the protection of livestock and wildlife, all open pits and cellars will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Each well will utilize either a centralized tank battery, centralized fluids management system, or have tanks installed on its pad. Production/ Produced Liquid tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons. The tanks are not to be used for disposal of liquids from additional sources without prior approval of BIA.

#### J. Plans for Surface Reclamation:

The surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. Interim reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

##### Interim Reclamation

Interim reclamation may include pit evaporation, fluid removal, pit solidification, re-contouring, ripping, spreading top soil, seeding, and/or weed control. Interim reclamation will be performed in accordance with OSO 1, or written notification will be provided to the BIA for approval. Where feasible, drilling locations, reserve pits, or access routes not utilized for production operations will be re-contoured to a natural appearance.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit. Disposal of pit fluids and linings is discussed in Section G.

### **Final Reclamation**

Final reclamation will be performed for unproductive wells and after the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by Kerr-McGee. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. The BIA will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring the site to the approximate contour that existed prior to pad construction, final grading will be conducted over the entire surface of the well site and access road. The area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers, where practical. The surface soil material will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep, where practical. The entire area will be uniformly covered with the depressions constructed perpendicular to the natural flow of water.

Reclamation of roads will be performed at the discretion of the BIA/Tribe. All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded in accordance with the seeding specifications as proposed below in "Measures Common to Interim and Final Reclamation".

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to the BIA/Tribe.

### **Measures Common to Interim and Final Reclamation**

Soil preparation will be conducted using a disk for areas in need of more soil preparation following site preparation. This will provide primary soil tillage to a depth no greater than 6 inches. Prior to reseeding, compacted areas will be scarified by ripping or chiseling to loosen compacted soils, promote water infiltration, and improve soil aeration and root penetration.

Seeding will occur year-round as conditions allow and will typically be accomplished through the use of a no-till rangeland style seed drill with a "picker box" in order to seed "fluffy" seed. Where drill seeding is not the preferred method, seed will be broadcast and then raked into the ground at double the rate of drill seeding. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for

re-vegetation. The seed mixes will be selected from a list provided by or approved by the BIA/Tribe or a specific seed mix will be proposed by Kerr-McGee to the BIA/Tribe and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be maintained by Kerr-McGee. Every effort will be made to obtain "cheat grass free seed".

Seed Mix to be used for Well Site, Access Road, and Pipeline (as applicable):

Indian Ricegrass (Nezpar)	3
Sandberg Bluegrass	0.75
Bottlebrush Squirreltail	1
Great Basin Wildrye	0.5
Crested Wheatgrass	1.5
Winterfat	0.25
Shadscale	1.5
Four-wing Saltbrush	0.75
Forage Kochia	0.25
<b>Total</b>	<b>9.5</b>

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

#### **Weed Control**

Noxious weeds will be controlled in all affected areas in accordance with all applicable rules and regulations.

#### **K. Surface/Mineral Ownership:**

Ute Indian Tribe	United States of America
P.O. Box 70	Bureau of Land Management
988 South 7500 East Annex Building	170 South 500 East
Fort Duchesne, UT 84026	Vernal, UT 84078
(435) 722-4307	(435)781-4400

#### **L. Other Information:**

##### **Onsite Specifics:**

- No changes

#### **Cultural and Paleontological Resources**

All personnel are strictly prohibited from collecting artifacts, any paleontological specimens or fossils, and from disturbing any significant cultural resources in the area. If artifacts, fossils, or any culturally sensitive materials are exposed or identified in the area of construction, all construction operations that would affect the newly discovered resource will cease, and Kerr-McGee will provide immediate notification to the BIA.

#### **Resource Reports:**

A Class I literature survey report was completed on May 21, 2012 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 12-152.

A paleontological reconnaissance survey was completed on April 10-16, 2012 by SWCA Environmental Consultants. For additional details please refer to report UT12-14314-105 and UT12-14314-122.

Biological field survey was completed on April 10-13, 2012 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-775 and GCI-776.

**Proposed Action Annual Emissions Tables:**

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>			
<b>Pollutant</b>	<b>Development</b>	<b>Production</b>	<b>Total</b>
NO <sub>x</sub>	3.8	0.12	3.92
CO	2.2	0.11	2.31
VOC	0.1	4.9	5
SO <sub>2</sub>	0.005	0.0043	0.0093
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.025	0.425
Benzene	2.2E-03	0.044	0.046
Toluene	1.6E-03	0.103	0.105
Ethylbenzene	3.4E-04	0.005	0.005
Xylene	1.1E-03	0.076	0.077
n-Hexane	1.7E-04	0.145	0.145
Formaldehyde	1.3E-02	8.64E-05	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

<b>Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison</b>			
<b>Species</b>	<b>Proposed Action Production Emissions (ton/yr)</b>	<b>WRAP Phase III 2012 Uintah Basin Emission Inventory<sup>a</sup> (ton/yr)</b>	<b>Percentage of Proposed Action to WRAP Phase III</b>
NO <sub>x</sub>	27.44	16,547	0.17%
VOC	35	127,495	0.03%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

Uintah Basin Data

MU 921-20P/ NBU 921-20H4CS/ 921-20I1BS/ 921-20I1CS  
NBU 921-20O4CS/ 921-20P4BS/ 921-20P4CS  
Kerr-McGee Oil Gas Onshore, L.P.

Surface Use Plan of Operations  
12 of 12

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

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

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

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

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

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

Bond coverage 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.

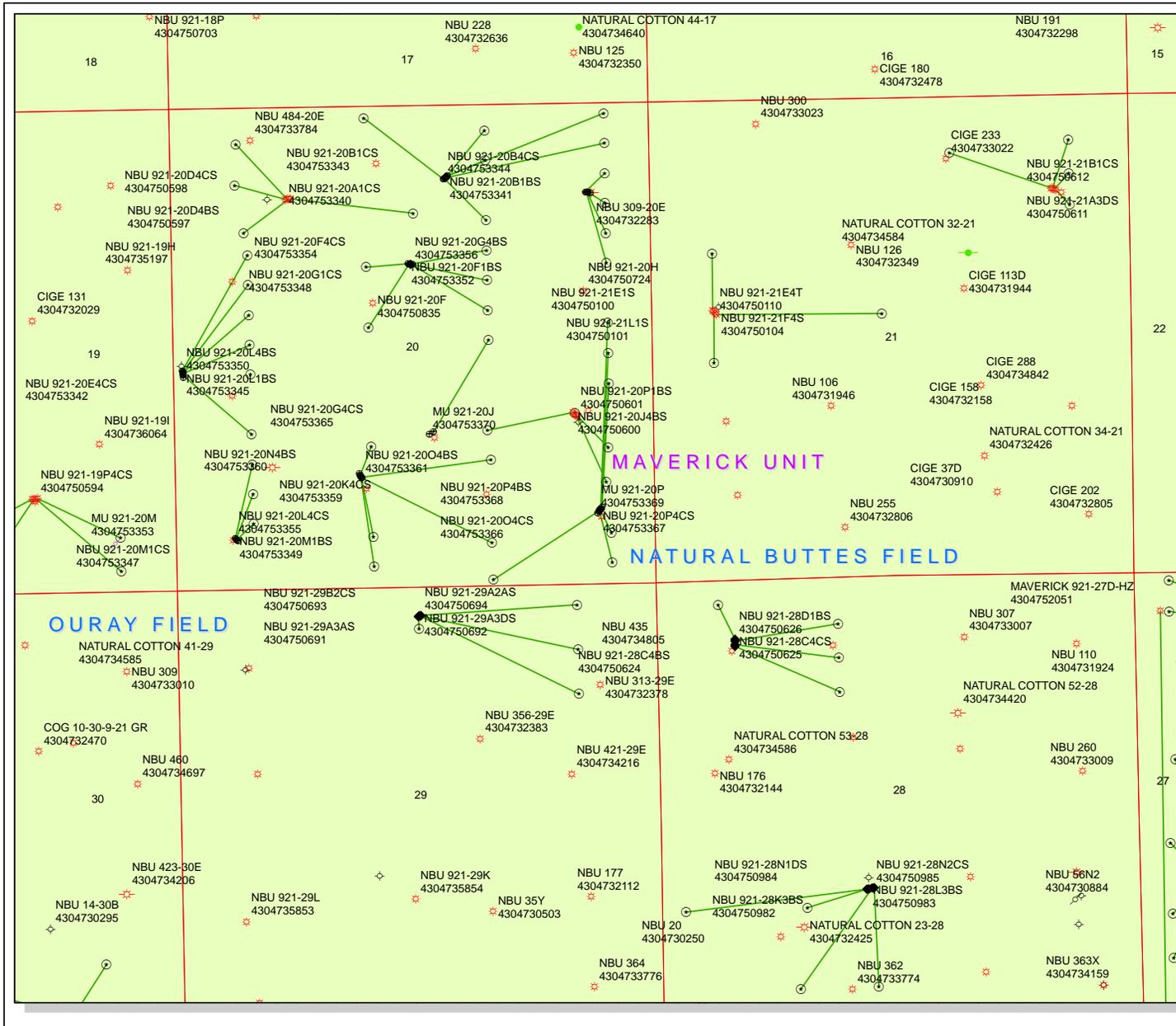
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Danielle Piernot

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July 12, 2012

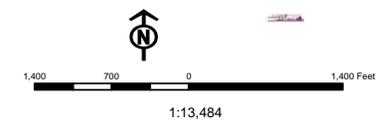
Date



**API Number: 4304753363**  
**Well Name: NBU 921-201BS**  
**Township T09.0S Range R21.0E Section 20**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason

Units STATUS	Wells Query Status
ACTIVE	APD - Approved Permit
EXPLORATORY	DRL - Spudded (Drilling Commenced)
GAS STORAGE	GIW - Gas Injection
NF PP OIL	GS - Gas Storage
NF SECONDARY	LOC - New Location
PI OIL	OPS - Operation Suspended
PP GAS	PA - Plugged Abandoned
PP GEOTHERM.	PGW - Producing Gas Well
PP OIL	SGW - Shut-in Gas Well
SECONDARY	POW - Producing Oil Well
TERMINATED	SGW - Shut-in Oil Well
Unknown	TA - Temp. Abandoned
ABANDONED	TW - Test Well
ACTIVE	WDW - Water Disposal
COMBINED	WW - Water Injection Well
INACTIVE	WSW - Water Supply Well
STORAGE	Bottom Hole Location - Oil&GasDls
TERMINATED	



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office

P.O. Box 45155

Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:

3160

(UT-922)

December 6, 2012

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2012 Plan of Development Natural Buttes Unit  
Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2012 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
<b>NBU 921-20A PAD</b>		
43-047-53330	NBU 921-20A4BS	Sec 20 T09S R21E 0947 FNL 0708 FEL BHL Sec 20 T09S R21E 0744 FNL 0491 FEL
43-047-53331	NBU 921-20A4CS	Sec 20 T09S R21E 0951 FNL 0678 FEL BHL Sec 20 T09S R21E 1075 FNL 0491 FEL
43-047-53334	NBU 921-20H1BS	Sec 20 T09S R21E 0950 FNL 0688 FEL BHL Sec 20 T09S R21E 1405 FNL 0491 FEL
43-047-53335	NBU 921-20H1CS	Sec 20 T09S R21E 0948 FNL 0698 FEL BHL Sec 20 T09S R21E 1736 FNL 0491 FEL
<b>NBU 921-20L PAD</b>		
43-047-53333	NBU 921-20E1BS	Sec 20 T09S R21E 2450 FSL 0075 FWL BHL Sec 20 T09S R21E 1571 FNL 0819 FWL
43-047-53336	NBU 921-20E1CS	Sec 20 T09S R21E 2440 FSL 0076 FWL BHL Sec 20 T09S R21E 1902 FNL 0819 FWL
43-047-53339	NBU 921-20E4BS	Sec 20 T09S R21E 2430 FSL 0077 FWL BHL Sec 20 T09S R21E 2233 FNL 0819 FWL
43-047-53342	NBU 921-20E4CS	Sec 20 T09S R21E 2420 FSL 0078 FWL BHL Sec 20 T09S R21E 2564 FNL 0819 FWL
43-047-53345	NBU 921-20L1BS	Sec 20 T09S R21E 2410 FSL 0079 FWL BHL Sec 20 T09S R21E 2396 FSL 0819 FWL
43-047-53350	NBU 921-20L4BS	Sec 20 T09S R21E 2401 FSL 0080 FWL BHL Sec 20 T09S R21E 1736 FSL 0818 FWL

RECEIVED: December 06, 2012

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
<b>NBU 921-20B PAD</b>								
43-047-53337	NBU 921-20C1BS	Sec 20	T09S	R21E	0777	FNL	2269	FEL
	BHL	Sec 20	T09S	R21E	0083	FNL	2136	FWL
43-047-53338	NBU 921-20A1BS	Sec 20	T09S	R21E	0745	FNL	2231	FEL
	BHL	Sec 20	T09S	R21E	0083	FNL	0491	FEL
43-047-53340	NBU 921-20A1CS	Sec 20	T09S	R21E	0764	FNL	2253	FEL
	BHL	Sec 20	T09S	R21E	0413	FNL	0491	FEL
43-047-53341	NBU 921-20B1BS	Sec 20	T09S	R21E	0751	FNL	2238	FEL
	BHL	Sec 20	T09S	R21E	0248	FNL	1808	FEL
43-047-53343	NBU 921-20B1CS	Sec 20	T09S	R21E	0738	FNL	2223	FEL
	BHL	Sec 20	T09S	R21E	0578	FNL	1808	FEL
43-047-53344	NBU 921-20B4CS	Sec 20	T09S	R21E	0771	FNL	2261	FEL
	BHL	Sec 20	T09S	R21E	1240	FNL	1807	FEL
<b>NBU 921-20G PAD</b>								
43-047-53346	NBU 921-20G1BS	Sec 20	T09S	R21E	1706	FNL	2606	FWL
	BHL	Sec 20	T09S	R21E	1570	FNL	1807	FEL
43-047-53348	NBU 921-20G1CS	Sec 20	T09S	R21E	1712	FNL	2636	FWL
	BHL	Sec 20	T09S	R21E	1901	FNL	1807	FEL
43-047-53352	NBU 921-20F1BS	Sec 20	T09S	R21E	1702	FNL	2587	FWL
	BHL	Sec 20	T09S	R21E	1732	FNL	2126	FWL
43-047-53354	NBU 921-20F4CS	Sec 20	T09S	R21E	1704	FNL	2597	FWL
	BHL	Sec 20	T09S	R21E	2399	FNL	2134	FWL
43-047-53356	NBU 921-20G4BS	Sec 20	T09S	R21E	1710	FNL	2626	FWL
	BHL	Sec 20	T09S	R21E	2232	FNL	1806	FEL
<b>NBU 921-20M PAD</b>								
43-047-53347	NBU 921-20M1CS	Sec 20	T09S	R21E	0575	FSL	0625	FWL
	BHL	Sec 20	T09S	R21E	0746	FSL	0818	FWL
43-047-53349	NBU 921-20M1BS	Sec 20	T09S	R21E	0581	FSL	0617	FWL
	BHL	Sec 20	T09S	R21E	1076	FSL	0818	FWL
43-047-53355	NBU 921-20L4CS	Sec 20	T09S	R21E	0587	FSL	0609	FWL
	BHL	Sec 20	T09S	R21E	1406	FSL	0818	FWL
<b>NBU 921-20N PAD</b>								
43-047-53351	NBU 921-20N4CS	Sec 20	T09S	R21E	1256	FSL	2008	FWL
	BHL	Sec 20	T09S	R21E	0249	FSL	2132	FWL
43-047-53358	NBU 921-20J4CS	Sec 20	T09S	R21E	1239	FSL	2019	FWL
	BHL	Sec 20	T09S	R21E	1407	FSL	1805	FEL
43-047-53359	NBU 921-20K4CS	Sec 20	T09S	R21E	1265	FSL	2003	FWL
	BHL	Sec 20	T09S	R21E	1572	FSL	2133	FWL
43-047-53360	NBU 921-20N4BS	Sec 20	T09S	R21E	1248	FSL	2014	FWL
	BHL	Sec 20	T09S	R21E	0579	FSL	2132	FWL
43-047-53361	NBU 921-20O4BS	Sec 20	T09S	R21E	1231	FSL	2024	FWL
	BHL	Sec 20	T09S	R21E	0492	FSL	1810	FEL

API #	WELL NAME			LOCATION						
(Proposed PZ WASATCH-MESA VERDE)										
<b>NBU 921-20P PAD</b>										
43-047-53362	NBU 921-20H4CS	Sec 20	T09S	R21E	0842	FSL	0606	FEL		
	BHL	Sec 20	T09S	R21E	2397	FNL	0491	FEL		
43-047-53363	NBU 921-20I1BS	Sec 20	T09S	R21E	0850	FSL	0599	FEL		
	BHL	Sec 20	T09S	R21E	2559	FSL	0491	FEL		
43-047-53364	NBU 921-20I1CS	Sec 20	T09S	R21E	0857	FSL	0593	FEL		
	BHL	Sec 20	T09S	R21E	2229	FSL	0491	FEL		
43-047-53366	NBU 921-20O4CS	Sec 20	T09S	R21E	0819	FSL	0625	FEL		
	BHL	Sec 20	T09S	R21E	0084	FSL	1804	FEL		
43-047-53367	NBU 921-20P4CS	Sec 20	T09S	R21E	0827	FSL	0618	FEL		
	BHL	Sec 20	T09S	R21E	0249	FSL	0490	FEL		
43-047-53368	NBU 921-20P4BS	Sec 20	T09S	R21E	0834	FSL	0612	FEL		
	BHL	Sec 20	T09S	R21E	0579	FSL	0490	FEL		
<b>NBU 921-20J PAD</b>										
43-047-53365	NBU 921-20G4CS	Sec 20	T09S	R21E	1726	FSL	2431	FEL		
	BHL	Sec 20	T09S	R21E	2563	FNL	1806	FEL		

Michael L. Coulthard

Digitally signed by Michael L. Coulthard  
 DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US  
 Date: 2012.12.06 09:34:53 -0700

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

MCoulthard:mc:12-6-12

API Number	Well Name	Surface Location		
		Sec 20	T09S R21E	
43-047-53330	NBU 921-20A4BS	Sec 20	T09S R21E	0947 FNL 0708 FEL
43-047-53331	NBU 921-20A4CS	Sec 20	T09S R21E	0951 FNL 0678 FEL
43-047-53333	NBU 921-20E1BS	Sec 20	T09S R21E	2450 FSL 0075 FWL
43-047-53334	NBU 921-20H1BS	Sec 20	T09S R21E	0950 FNL 0688 FEL
43-047-53335	NBU 921-20H1CS	Sec 20	T09S R21E	0948 FNL 0698 FEL
43-047-53336	NBU 921-20E1CS	Sec 20	T09S R21E	2440 FSL 0076 FWL
43-047-53337	NBU 921-20C1BS	Sec 20	T09S R21E	0777 FNL 2269 FEL
43-047-53338	NBU 921-20A1BS	Sec 20	T09S R21E	0745 FNL 2231 FEL
43-047-53339	NBU 921-20E4BS	Sec 20	T09S R21E	2430 FSL 0077 FWL
43-047-53340	NBU 921-20A1CS	Sec 20	T09S R21E	0764 FNL 2253 FEL
43-047-53341	NBU 921-20B1BS	Sec 20	T09S R21E	0751 FNL 2238 FEL
43-047-53342	NBU 921-20E4CS	Sec 20	T09S R21E	2420 FSL 0078 FWL
43-047-53343	NBU 921-20B1CS	Sec 20	T09S R21E	0738 FNL 2223 FEL
43-047-53344	NBU 921-20B4CS	Sec 20	T09S R21E	0771 FNL 2261 FEL
43-047-53345	NBU 921-20L1BS	Sec 20	T09S R21E	2410 FSL 0079 FWL
43-047-53346	NBU 921-20G1BS	Sec 20	T09S R21E	1706 FNL 2606 FWL
43-047-53347	NBU 921-20M1CS	Sec 20	T09S R21E	0575 FSL 0625 FWL
43-047-53348	NBU 921-20G1CS	Sec 20	T09S R21E	1712 FNL 2636 FWL
43-047-53349	NBU 921-20M1BS	Sec 20	T09S R21E	0581 FSL 0617 FWL
43-047-53350	NBU 921-20L4BS	Sec 20	T09S R21E	2401 FSL 0080 FWL
43-047-53351	NBU 921-20N4CS	Sec 20	T09S R21E	1256 FSL 2008 FWL
43-047-53352	NBU 921-20F1BS	Sec 20	T09S R21E	1702 FNL 2587 FWL
43-047-53354	NBU 921-20F4CS	Sec 20	T09S R21E	1704 FNL 2597 FWL
43-047-53355	NBU 921-20L4CS	Sec 20	T09S R21E	0587 FSL 0609 FWL
43-047-53356	NBU 921-20G4BS	Sec 20	T09S R21E	1710 FNL 2626 FWL
43-047-53358	NBU 921-20J4CS	Sec 20	T09S R21E	1239 FSL 2019 FWL
43-047-53359	NBU 921-20K4CS	Sec 20	T09S R21E	1265 FSL 2003 FWL
43-047-53360	NBU 921-20N4BS	Sec 20	T09S R21E	1248 FSL 2014 FWL
43-047-53361	NBU 921-20O4BS	Sec 20	T09S R21E	1231 FSL 2024 FWL
43-047-53362	NBU 921-20H4CS	Sec 20	T09S R21E	0842 FSL 0606 FEL
43-047-53363	NBU 921-20I1BS	Sec 20	T09S R21E	0850 FSL 0599 FEL
43-047-53364	NBU 921-20I1CS	Sec 20	T09S R21E	0857 FSL 0593 FEL
43-047-53365	NBU 921-20G4CS	Sec 20	T09S R21E	1726 FSL 2431 FEL
43-047-53366	NBU 921-20O4CS	Sec 20	T09S R21E	0819 FSL 0625 FEL
43-047-53367	NBU 921-20P4CS	Sec 20	T09S R21E	0827 FSL 0618 FEL
43-047-53368	NBU 921-20P4BS	Sec 20	T09S R21E	0834 FSL 0612 FEL

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 11/27/2012

API NO. ASSIGNED: 43047533630000

WELL NAME: NBU 921-201BS

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

PHONE NUMBER: 720 929-6029

CONTACT: Cara Mahler

PROPOSED LOCATION: SESE 20 090S 210E

Permit Tech Review: 

SURFACE: 0850 FSL 0599 FEL

Engineering Review: 

BOTTOM: 2559 FSL 0491 FEL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 40.01655

LONGITUDE: -109.56827

UTM SURF EASTINGS: 622185.00

NORTHINGS: 4430576.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU0575

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

SURFACE OWNER: 2 - Indian

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 921-2011BS  
**API Well Number:** 43047533630000  
**Lease Number:** UTU0575  
**Surface Owner:** INDIAN  
**Approval Date:** 12/10/2012

### 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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

AUG 23 2012

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. UTU0575
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		6. If Indian, Allottee or Tribe Name
2. Name of Operator KERR MCGEE OIL&GAS ONSHORE, LP Contact: DANIELLE PIERNOT Danielle.Piernot@anadarko.com		7. If Unit or CA Agreement, Name and No. UTU63047A
3a. Address PO BOX 173779 DENVER, CO 80202-3779		8. Lease Name and Well No. NBU 921-201BS
3b. Phone No. (include area code) Ph: 720-929-6156 Fx: 720-929-7156		9. API Well No. 43 047 53363
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE 850FSL 599FEL 40.016598 N Lat, 109.568295 W Lon At proposed prod. zone NESE 2559FSL 491FEL 40.021290 N Lat, 109.567912 W Lon		10. Field and Pool, or Exploratory NATURAL BUTTES
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 48 MILES SOUTH OF VERNAL, UT		11. Sec., T., R., M., or Blk. and Survey or Area Sec 20 T9S R21E Mer SLB
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 491'	16. No. of Acres in Lease 1600.00	12. County or Parish UINTAH COUNTY
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 573'	19. Proposed Depth 11637 MD 11298 TVD	13. State UT
21. Elevations (Show whether DF, KB, RT, GL, etc.) 4874 GL	22. Approximate date work will start 02/01/2013	17. Spacing Unit dedicated to this well
20. BLM/BIA Bond No. on file WYB000291		23. Estimated duration 60-90 DAYS

24. Attachments

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) DANIELLE PIERNOT Ph: 720-929-6156	Date 07/13/2012
Title REGULATORY ANALYST II		
Approved by (Signature) 	Name (Printed/Typed) Jerry Kenczka	Date JUN 19 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.

CONDITIONS OF APPROVAL 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.

RECEIVED

Additional Operator Remarks (see next page)

JUN 25 2013

Electronic Submission #142910 verified by the BLM Well Information System  
For KERR MCGEE OIL&GAS ONSHORE, LP, sent to the Vernal

DIV. OF OIL, GAS & MINING

NOTICE OF APPROVAL

UDOGM

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

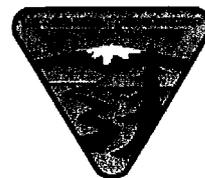


UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
VERNAL FIELD OFFICE

170 South 500 East

VERNAL, UT 84078

(435) 781-4400



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

Company: KERR MCGEE OIL & GAS ON SHORE Location: SESE, Sec. 20, T9S, R21E  
Well No: NBU 921-201BS Lease No: UTU-0575  
API No: 43-047-53363 Agreement:

**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.

**NBU 921-20P Well Pad**

- 1. Paint facilities "Shadow Gray."
- 2. Conduct a raptor survey prior to construction operations if such activities would take place during raptor nesting season (January 1 through September 30). If active raptor nests are identified during the survey, operations should be conducted according to the seasonal restrictions detailed in the Uinta Basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines.
- 3. If construction operations are not initiated prior to April 11, 2013, an additional biological survey for Uinta Basin hookless cactus should be conducted prior to construction according to current USFWS protocol.
- 4. Monitor construction with a permitted archaeologist.
- 5. Monitor access road, well pad, and pipeline construction with a permitted paleontologist.
- 6. Contact Questar Pipeline to maintain required separation between existing pipeline and NBU 921-20P pipeline.

**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**

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 by CD (compact disc). 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 ( $\frac{1}{4}$  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.	5. LEASE DESIGNATION AND SERIAL NUMBER: UTU0575
1. TYPE OF WELL Gas Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: THE UT
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 921-201BS
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0850 FSL 0599 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	9. API NUMBER: 43047533630000
5. PHONE NUMBER: 720 929-6511	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 checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 12/10/2013	<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 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 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:** October 17, 2013

**By:**

<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> 10/16/2013	



**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 43047533630000**

API: 43047533630000

Well Name: NBU 921-2011BS

Location: 0850 FSL 0599 FEL QTR SESE SEC 20 TWNP 090S RNG 210E MER S

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

Date Original Permit Issued: 12/10/2012

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: Kay E. Kelly

Date: 10/16/2013

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

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575	
<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>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> THE UT
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>8. WELL NAME and NUMBER:</b> NBU 921-201BS
<b>PHONE NUMBER:</b> 720 929-6511	<b>9. API NUMBER:</b> 43047533630000
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0850 FSL 0599 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
	<b>COUNTY:</b> UINTAH
	<b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> 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: 10/12/2013	<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 10/12/2013 @ 12:30. 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 11/08/2013.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 October 21, 2013

<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> 10/16/2013	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: UTU0575
<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.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: THE UT  7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 921-201BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047533630000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6514  9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0850 FSL 0599 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	COUNTY: UINTAH  STATE: 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: 10/29/2013  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>

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

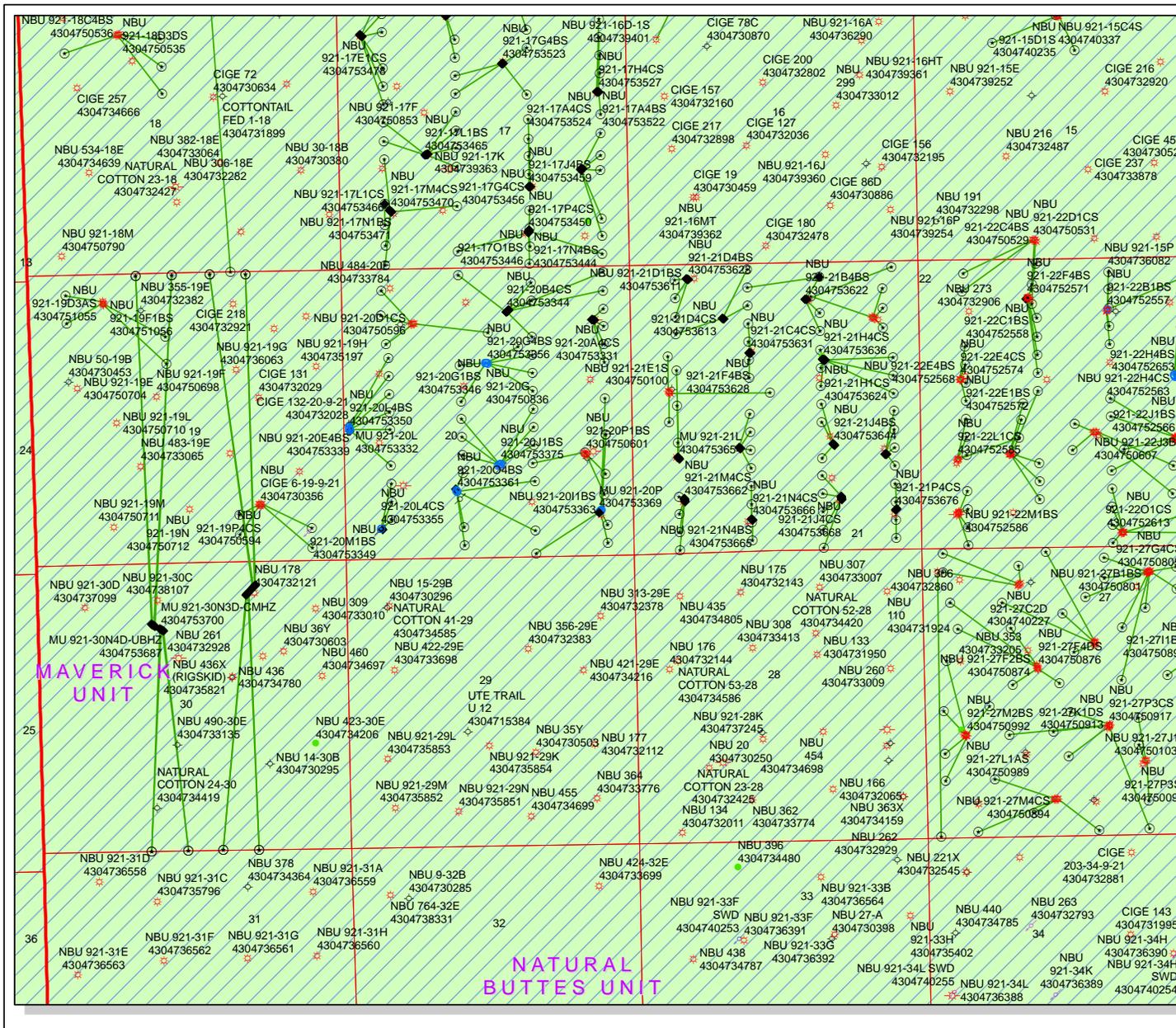
The operator is requesting the approval of the following changes to the originally approved APD: Bottom Hole Location Change (New Plat is Attached) From 2559 FSL/ 491 FEL To 2229 FSL/ 491 FEL Please see attached plat package, drill plan, and directional drilling program.

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

**Date:** November 05, 2013

**By:** 

<b>NAME (PLEASE PRINT)</b> Matthew P Wold	<b>PHONE NUMBER</b> 720 929-6993	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 10/29/2013	



API Number: 4304753363

Well Name: NBU 921-2011BS

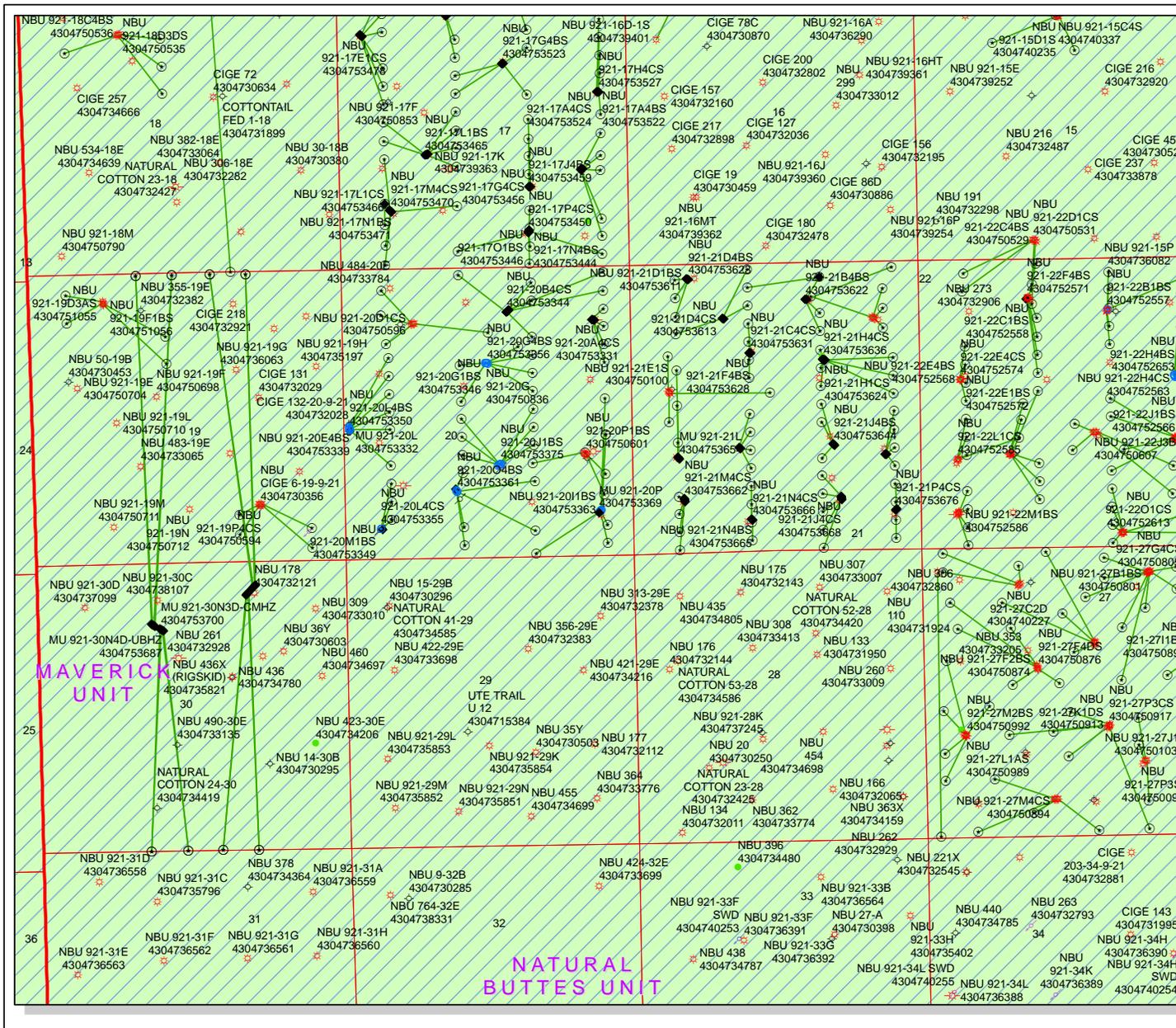
Township: T09.0S Range: R21.0E Section: 20 Meridian: S

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared: 10/30/2013  
Map Produced by Diana Mason

Wells Query		Units STATUS	
◆	APD - Approved Permit	ACTIVE	
●	DRL - Spudded (Drilling Commenced)	EXPLORATORY	
○	GIW - Gas Injection	GAS STORAGE	
⊕	GS - Gas Storage	NF PP OIL	
⊖	LOC - New Location	NF SECONDARY	
⊗	OPS - Operation Suspended	PI OIL	
⊘	PA - Plugged Abandoned	PP GAS	
⊙	PGW - Producing Gas Well	PP GEOTHERML	
⊚	POW - Producing Oil Well	PP OIL	
⊛	SGW - Shut-in Gas Well	SECONDARY	
⊜	SOW - Shut-in Oil Well	TERMINATED	
⊝	TA - Temp. Abandoned		
⊞	TW - Test Well		
⊟	WWD - Water Disposal		
⊠	WW - Water Injection Well		
⊡	WSW - Water Supply Well		





API Number: 4304753363

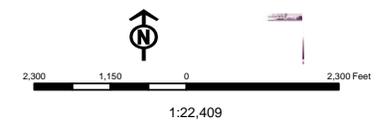
Well Name: NBU 921-201BS

Township: T09.0S Range: R21.0E Section: 20 Meridian: S

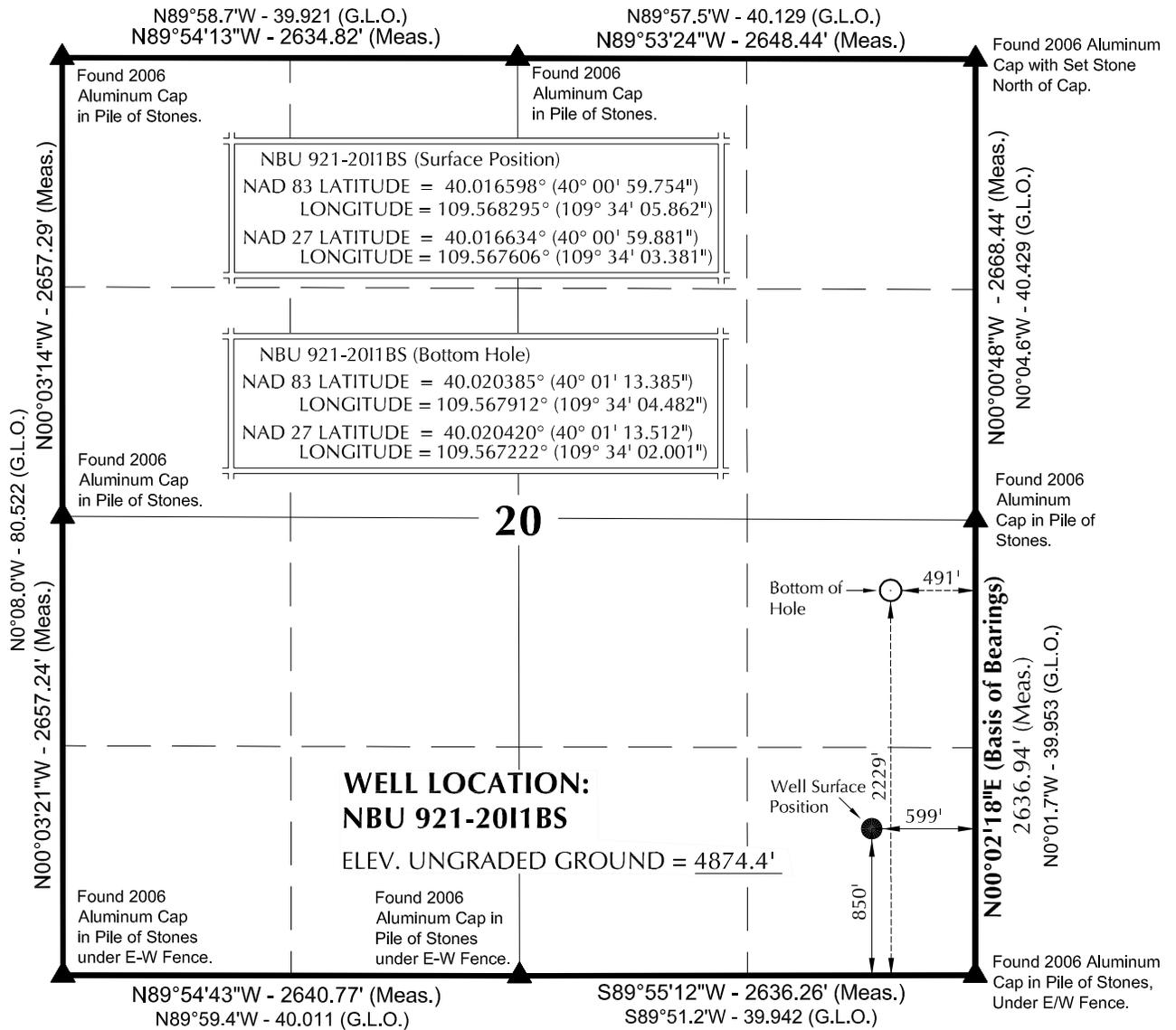
Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared: 10/30/2013  
Map Produced by Diana Mason

Wells Query	Units STATUS
◆ APD - Approved Permit	ACTIVE
● DRL - Spudded (Drilling Commenced)	EXPLORATORY
○ GW - Gas Injection	GAS STORAGE
★ GS - Gas Storage	NF PP OIL
⊕ LOC - New Location	NF SECONDARY
⊖ OPS - Operation Suspended	PI OIL
⊘ PA - Plugged Abandoned	PP GAS
⊙ PGW - Producing Gas Well	PP GEOTHERML
● POW - Producing Oil Well	PP OIL
★ SGW - Shut-in Gas Well	SECONDARY
● SOW - Shut-in Oil Well	TERMINATED
⊖ TA - Temp. Abandoned	
○ TW - Test Well	
⊖ WW - Water Disposal	
⊖ WW - Water Injection Well	
● WSW - Water Supply Well	



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

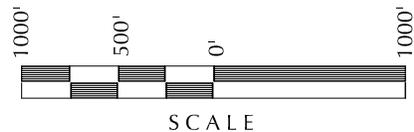


**WELL LOCATION:  
NBU 921-201BS**

ELEV. UNGRADED GROUND = 4874.4'

**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains.  
1 chain = 66 feet.
- 3. The Bottom of hole bears N04°31'04"E 1383.88' from the Surface Position.
- 4. Bearings are based on Global Positioning Satellite observations.
- 5. Basis of elevation is Tri-Sta "Two Water" located in the NW ¼ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**SURVEYOR'S CERTIFICATE**

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

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

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

**WELL PAD: NBU 921-20P**

**NBU 921-201BS  
 WELL PLAT  
 2229' FSL, 491' FEL (Bottom Hole)  
 NE ¼ SE ¼ OF SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH.**

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

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

DATE SURVEYED: 3-14-12	SURVEYED BY: A.F.	SHEET NO: <b>2</b> 2 OF 19
DATE DRAWN: 3-22-12	DRAWN BY: T.J.R.	
SCALE: 1" = 1000'		Date Last Revised: 10-17-13 C.T.C.

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

	<u>NBU 921-201BS</u>	
Surface:	850 FSL / 599 FEL	SESE
BHL:	2229 FSL / 491 FEL	NESE

Section 20 T9S R21E

Unitah County, Utah  
Mineral Lease: UTU 0575**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	1,661'	
Birds Nest	1,926'	Water
Mahogany	2,430'	Water
Wasatch	4,991'	Gas
Mesaverde	7,974'	Gas
Sego	10,217'	Gas
Castlegate	10,315'	Gas
Blackhawk	10,698'	Gas
TVD =	11,298'	
TD =	11,637'	

- 2.c 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** (Schematic Attached)

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

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 11298' TVD, approximately equals  
7,231 psi (0.64 psi/ft = actual bottomhole gradient)

---

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

Maximum anticipated surface pressure equals approximately 4,729 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

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

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

Maximum anticipated bottom hole pressure calculated at 10217' TVD, approximately equals  
6,232 psi (0.61 psi/ft = actual bottomhole gradient)

---

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

Maximum anticipated surface pressure equals approximately 4,012 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

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

**8. Anticipated Starting Dates:**

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

**9. Variances:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program  
Onshore Order #2 – Air Drilling Variance

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

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

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

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

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

**Background**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **Variance for FIT Requirements**

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

**Conclusion**

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

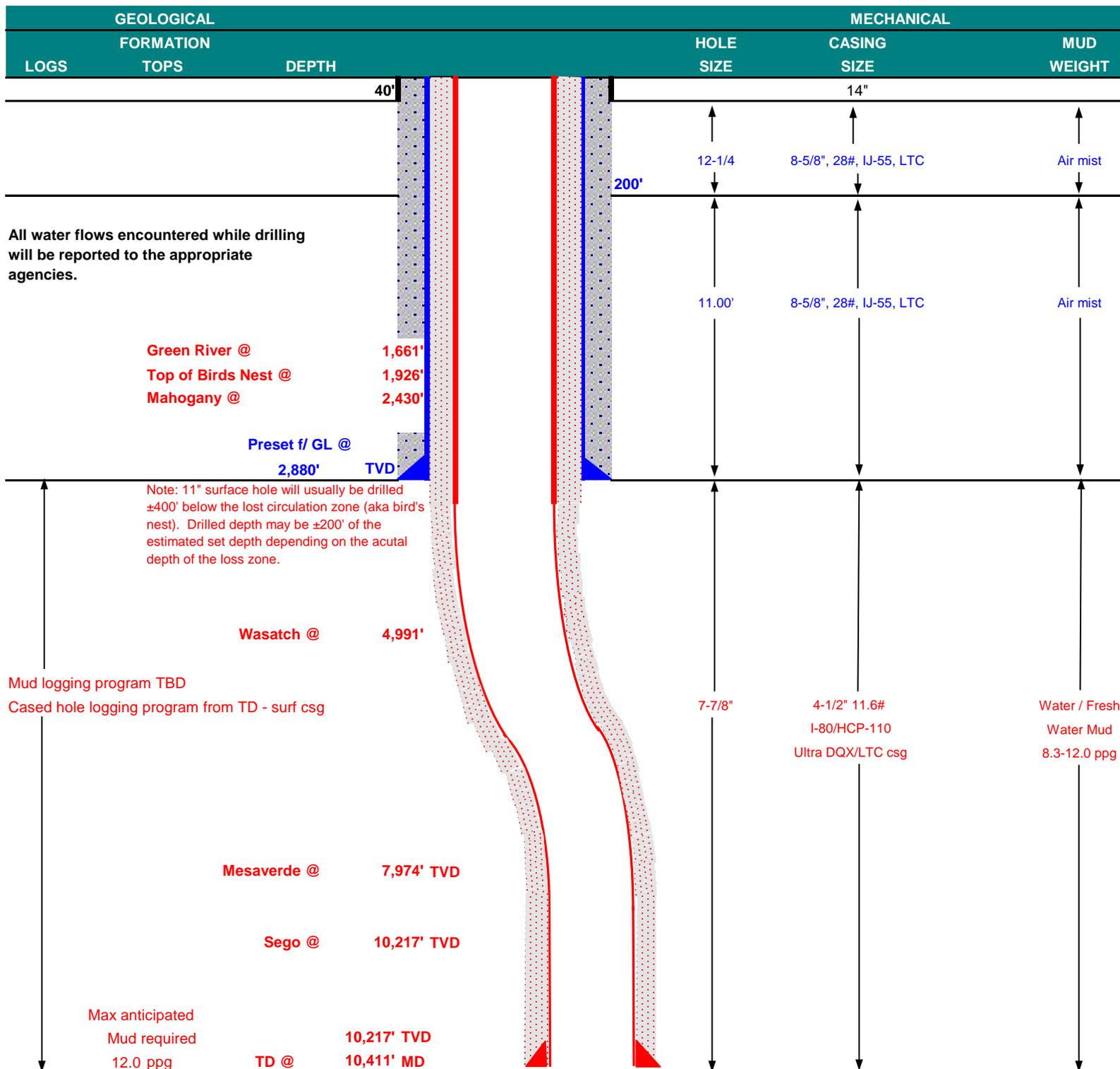
10. **Other Information:**

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



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP			DATE	October 29, 2013		
WELL NAME	<b>NBU 921-201BS</b>			TD	10,217'	TVD	10,411' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	4,874'
SURFACE LOCATION	SESE	850 FSL	599 FEL	Sec 20	T 9S	R 21E	
	Latitude:	40.016598	Longitude:	-109.568295	NAD 83		
BTM HOLE LOCATION	NESE	2229 FSL	491 FEL	Sec 20	T 9S	R 21E	
	Latitude:	40.020358	Longitude:	-109.567912	NAD 83		
OBJECTIVE ZONE(S)	Wasatch Formation/Mesaverde Group						
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), Ute Indian Tribe (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'								
							3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to 2,880	28.00	IJ-55	LTC	1.87	1.39	4.93	N/A
							7,780	6,350		267,035
PRODUCTION	4-1/2"	0	to 5,000	11.60	I-80	DQX	1.11	1.00		2.71
							10,690	8,650	223,000	
	4-1/2"	5,000	to 10,411'	11.60	HCP-110	LTC	1.53	1.36	4.35	

**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\*Buoyn.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\*Buoyn.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
	Option 1		+ 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					
SURFACE	Option 2		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>					
	LEAD	2,380'	65/35 Poz + 6% Gel + 10 pps gilsonite	220	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	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	4,491'	Premium Lite II +0.25 pps	350	35%	12.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	5,920'	50/50 Poz/G + 10% salt + 2% gel	1,400	35%	14.30		1.31
			+ 0.1% R-3					

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

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

**ADDITIONAL INFORMATION**

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

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

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

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

**DRILLING ENGINEER:**

\_\_\_\_\_  
Nick Spence / Danny Showers / Travis Hansell

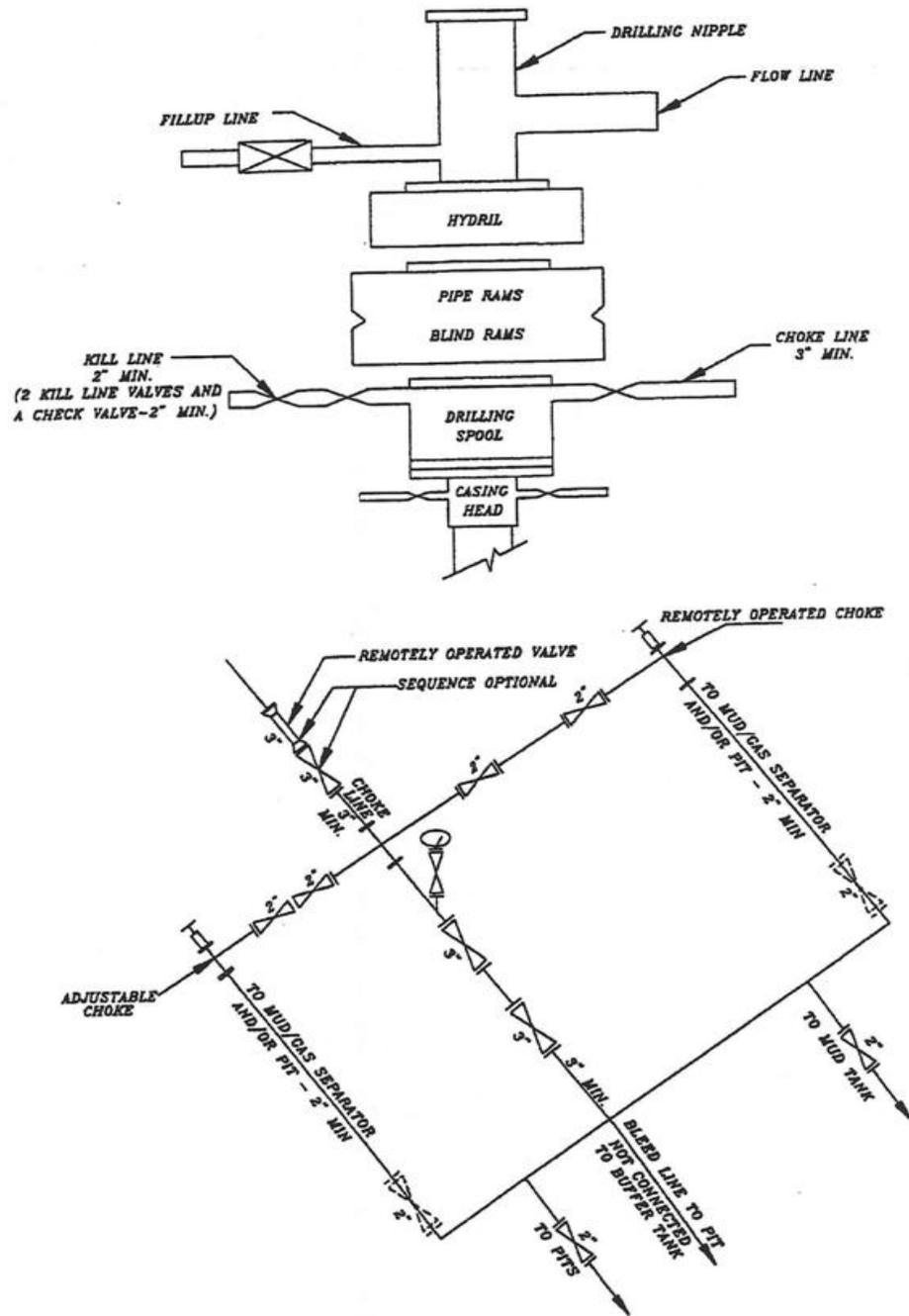
**DATE:** \_\_\_\_\_

**DRILLING SUPERINTENDENT:**

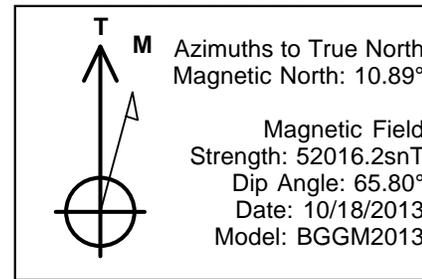
\_\_\_\_\_  
Kenny Gathings / Lovel Young

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

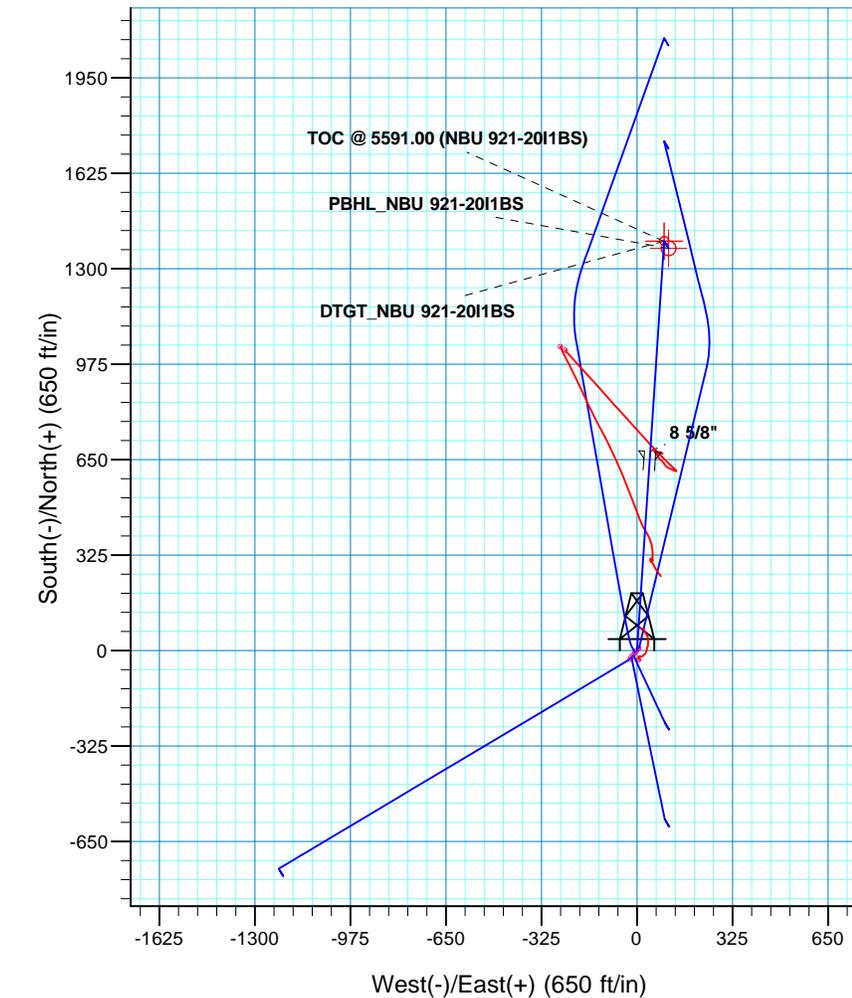
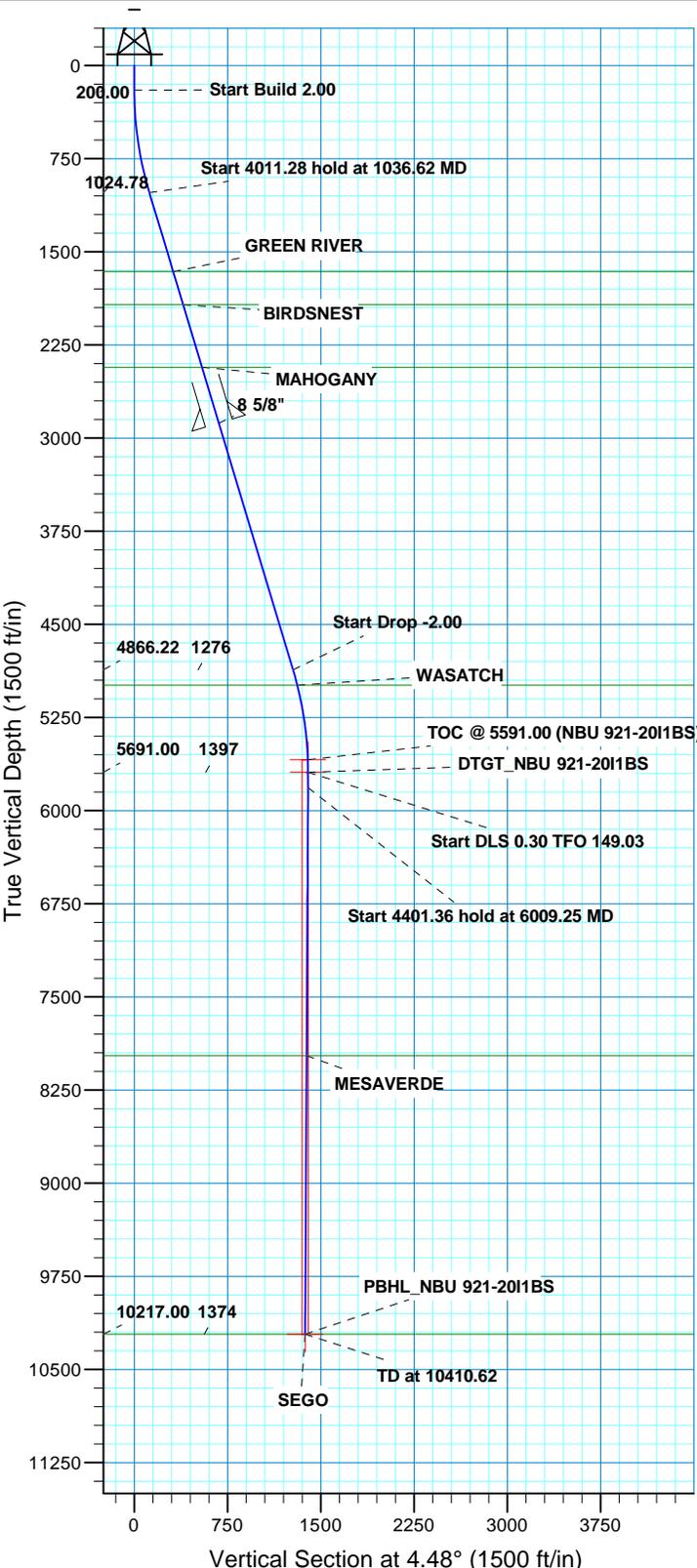
**EXHIBIT A**  
**NBU 921-2011BS**



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



WELL DETAILS: NBU 921-201BS								
GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14535325.10	2041480.56	40.0166333	-109.5676057			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TOC	5591.00	1392.66	92.13	14536719.06	2041550.30	40.0204572	-109.5672767	Point
DTGT	- plan hits target center 5691.00	1394.40	92.25	14536720.80	2041550.38	40.0204619	-109.5672763	Circle (Radius: 15.00)
PBHL	- plan hits target center 10217.00	1369.40	107.25	14536696.05	2041565.78	40.0203933	-109.5672227	Circle (Radius: 25.00)
	- plan hits target center							



SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00		
1036.62	16.73	3.79	1024.78	121.03	8.01	2.00	3.79	121.29		
5047.90	16.73	3.79	4866.22	1273.37	84.24	0.00	0.00	1276.06		
5884.52	0.00	0.00	5691.00	1394.40	92.25	2.00	180.00	1397.35	DTGT_NBU 921-201BS	
6009.25	0.37	149.03	5815.73	1394.05	92.46	0.30	149.03	1397.01	PBHL_NBU 921-201BS	
10410.62	0.37	149.03	10217.00	1369.40	107.25	0.00	0.00	1373.60		

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:	SECTION20 T10S R21E		
System Datum:	Mean Sea Level		

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
1661.00	1700.97	GREEN RIVER	
1926.00	1977.69	BIRDSNEST	
2430.00	2503.97	MAHOGANY	
4991.00	5177.36	WASATCH	
7974.00	8167.57	MESAVERDE	
10217.00	10410.62	SEGO	

CASING DETAILS			
TVD	MD	Name	Size
2880.00	2973.86	8 5/8"	8.625

REC



# **US ROCKIES REGION PLANNING**

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

**NBU 921-20P PAD**

**NBU 921-20I1BS**

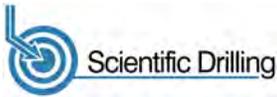
**OH**

**Plan: PLAN #3 PRODUCTION**

## **Standard Planning Report**

**16 October, 2013**





**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3 PRODUCTION		

<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)		

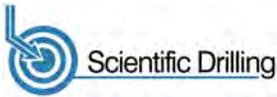
<b>Site</b>	NBU 921-20P PAD, SECTION 20 T10S R21E				
<b>Site Position:</b>	<b>Northing:</b>	14,535,332.86 usft	<b>Latitude:</b>	40.0166543	
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,041,486.88 usft	<b>Longitude:</b>	-109.5675827
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.92 °

<b>Well</b>	NBU 921-201BS,					
<b>Well Position</b>	<b>+N/-S</b>	-7.65 ft	<b>Northing:</b>	14,535,325.11 usft	<b>Latitude:</b>	40.0166333
	<b>+E/-W</b>	-6.44 ft	<b>Easting:</b>	2,041,480.56 usft	<b>Longitude:</b>	-109.5676057
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,874.00 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>
	BGGM2013	10/18/13	10.89	65.80	52,016

<b>Design</b>	PLAN #3 PRODUCTION			
<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	4.48

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,036.62	16.73	3.79	1,024.78	121.03	8.01	2.00	2.00	0.00	3.79	
5,047.90	16.73	3.79	4,866.22	1,273.37	84.24	0.00	0.00	0.00	0.00	
5,884.52	0.00	0.00	5,691.00	1,394.40	92.25	2.00	-2.00	0.00	180.00	DTGT_NBU 921-2011
6,009.25	0.37	149.03	5,815.73	1,394.05	92.46	0.30	0.30	119.48	149.03	
10,410.62	0.37	149.03	10,217.00	1,369.40	107.25	0.00	0.00	0.00	0.00	PBHL_NBU 921-2011



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3 PRODUCTION		

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	
<b>Start Build 2.00</b>										
300.00	2.00	3.79	299.98	1.74	0.12	1.75	2.00	2.00	0.00	
400.00	4.00	3.79	399.84	6.96	0.46	6.98	2.00	2.00	0.00	
500.00	6.00	3.79	499.45	15.66	1.04	15.69	2.00	2.00	0.00	
600.00	8.00	3.79	598.70	27.82	1.84	27.88	2.00	2.00	0.00	
700.00	10.00	3.79	697.47	43.43	2.87	43.52	2.00	2.00	0.00	
800.00	12.00	3.79	795.62	62.47	4.13	62.60	2.00	2.00	0.00	
900.00	14.00	3.79	893.06	84.91	5.62	85.09	2.00	2.00	0.00	
1,000.00	16.00	3.79	989.64	110.74	7.33	110.97	2.00	2.00	0.00	
1,036.62	16.73	3.79	1,024.78	121.03	8.01	121.29	2.00	2.00	0.00	
<b>Start 4011.28 hold at 1036.62 MD</b>										
1,100.00	16.73	3.79	1,085.48	139.24	9.21	139.53	0.00	0.00	0.00	
1,200.00	16.73	3.79	1,181.24	167.97	11.11	168.32	0.00	0.00	0.00	
1,300.00	16.73	3.79	1,277.01	196.69	13.01	197.11	0.00	0.00	0.00	
1,400.00	16.73	3.79	1,372.77	225.42	14.91	225.90	0.00	0.00	0.00	
1,500.00	16.73	3.79	1,468.54	254.15	16.81	254.69	0.00	0.00	0.00	
1,600.00	16.73	3.79	1,564.31	282.88	18.71	283.47	0.00	0.00	0.00	
1,700.00	16.73	3.79	1,660.07	311.60	20.61	312.26	0.00	0.00	0.00	
1,700.97	16.73	3.79	1,661.00	311.88	20.63	312.54	0.00	0.00	0.00	
<b>GREEN RIVER</b>										
1,800.00	16.73	3.79	1,755.84	340.33	22.52	341.05	0.00	0.00	0.00	
1,900.00	16.73	3.79	1,851.60	369.06	24.42	369.84	0.00	0.00	0.00	
1,977.69	16.73	3.79	1,926.00	391.38	25.89	392.20	0.00	0.00	0.00	
<b>BIRDSNEST</b>										
2,000.00	16.73	3.79	1,947.37	397.79	26.32	398.63	0.00	0.00	0.00	
2,100.00	16.73	3.79	2,043.14	426.51	28.22	427.41	0.00	0.00	0.00	
2,200.00	16.73	3.79	2,138.90	455.24	30.12	456.20	0.00	0.00	0.00	
2,300.00	16.73	3.79	2,234.67	483.97	32.02	484.99	0.00	0.00	0.00	
2,400.00	16.73	3.79	2,330.43	512.70	33.92	513.78	0.00	0.00	0.00	
2,500.00	16.73	3.79	2,426.20	541.42	35.82	542.57	0.00	0.00	0.00	
2,503.97	16.73	3.79	2,430.00	542.56	35.89	543.71	0.00	0.00	0.00	
<b>MAHOGANY</b>										
2,600.00	16.73	3.79	2,521.97	570.15	37.72	571.35	0.00	0.00	0.00	
2,700.00	16.73	3.79	2,617.73	598.88	39.62	600.14	0.00	0.00	0.00	
2,800.00	16.73	3.79	2,713.50	627.60	41.52	628.93	0.00	0.00	0.00	
2,900.00	16.73	3.79	2,809.26	656.33	43.42	657.72	0.00	0.00	0.00	
2,973.86	16.73	3.79	2,880.00	677.55	44.83	678.98	0.00	0.00	0.00	
<b>8 5/8"</b>										
3,000.00	16.73	3.79	2,905.03	685.06	45.32	686.51	0.00	0.00	0.00	
3,100.00	16.73	3.79	3,000.79	713.79	47.22	715.30	0.00	0.00	0.00	
3,200.00	16.73	3.79	3,096.56	742.51	49.12	744.08	0.00	0.00	0.00	
3,300.00	16.73	3.79	3,192.33	771.24	51.02	772.87	0.00	0.00	0.00	
3,400.00	16.73	3.79	3,288.09	799.97	52.92	801.66	0.00	0.00	0.00	
3,500.00	16.73	3.79	3,383.86	828.70	54.82	830.45	0.00	0.00	0.00	
3,600.00	16.73	3.79	3,479.62	857.42	56.73	859.24	0.00	0.00	0.00	
3,700.00	16.73	3.79	3,575.39	886.15	58.63	888.02	0.00	0.00	0.00	
3,800.00	16.73	3.79	3,671.16	914.88	60.53	916.81	0.00	0.00	0.00	
3,900.00	16.73	3.79	3,766.92	943.61	62.43	945.60	0.00	0.00	0.00	

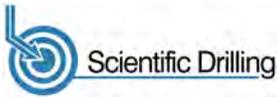


**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3 PRODUCTION		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,000.00	16.73	3.79	3,862.69	972.33	64.33	974.39	0.00	0.00	0.00	
4,100.00	16.73	3.79	3,958.45	1,001.06	66.23	1,003.18	0.00	0.00	0.00	
4,200.00	16.73	3.79	4,054.22	1,029.79	68.13	1,031.96	0.00	0.00	0.00	
4,300.00	16.73	3.79	4,149.99	1,058.52	70.03	1,060.75	0.00	0.00	0.00	
4,400.00	16.73	3.79	4,245.75	1,087.24	71.93	1,089.54	0.00	0.00	0.00	
4,500.00	16.73	3.79	4,341.52	1,115.97	73.83	1,118.33	0.00	0.00	0.00	
4,600.00	16.73	3.79	4,437.28	1,144.70	75.73	1,147.12	0.00	0.00	0.00	
4,700.00	16.73	3.79	4,533.05	1,173.43	77.63	1,175.91	0.00	0.00	0.00	
4,800.00	16.73	3.79	4,628.82	1,202.15	79.53	1,204.69	0.00	0.00	0.00	
4,900.00	16.73	3.79	4,724.58	1,230.88	81.43	1,233.48	0.00	0.00	0.00	
5,000.00	16.73	3.79	4,820.35	1,259.61	83.33	1,262.27	0.00	0.00	0.00	
5,047.90	16.73	3.79	4,866.22	1,273.37	84.24	1,276.06	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
5,100.00	15.69	3.79	4,916.25	1,287.88	85.20	1,290.60	2.00	-2.00	0.00	
5,177.36	14.14	3.79	4,991.00	1,307.75	86.52	1,310.52	2.00	-2.00	0.00	
<b>WASATCH</b>										
5,200.00	13.69	3.79	5,012.97	1,313.19	86.88	1,315.96	2.00	-2.00	0.00	
5,300.00	11.69	3.79	5,110.53	1,335.10	88.33	1,337.93	2.00	-2.00	0.00	
5,400.00	9.69	3.79	5,208.79	1,353.61	89.55	1,356.47	2.00	-2.00	0.00	
5,500.00	7.69	3.79	5,307.63	1,368.69	90.55	1,371.58	2.00	-2.00	0.00	
5,600.00	5.69	3.79	5,406.95	1,380.31	91.32	1,383.23	2.00	-2.00	0.00	
5,700.00	3.69	3.79	5,506.61	1,388.47	91.86	1,391.41	2.00	-2.00	0.00	
5,784.50	2.00	3.79	5,591.00	1,392.66	92.13	1,395.60	2.00	-2.00	0.00	
<b>TOC @ 5591.00 (NBU 921-201BS)</b>										
5,800.00	1.69	3.79	5,606.49	1,393.16	92.17	1,396.10	2.00	-2.00	0.00	
5,884.52	0.00	0.00	5,691.00	1,394.40	92.25	1,397.35	2.00	-2.00	0.00	
<b>Start DLS 0.30 TFO 149.03 - DTGT_NBU 921-201BS</b>										
5,900.00	0.05	149.03	5,706.48	1,394.39	92.25	1,397.34	0.30	0.30	0.00	
6,000.00	0.35	149.03	5,806.48	1,394.10	92.43	1,397.06	0.30	0.30	0.00	
6,009.25	0.37	149.03	5,815.73	1,394.05	92.46	1,397.01	0.30	0.30	0.00	
<b>Start 4401.36 hold at 6009.25 MD</b>										
6,100.00	0.37	149.03	5,906.48	1,393.54	92.76	1,396.53	0.00	0.00	0.00	
6,200.00	0.37	149.03	6,006.47	1,392.98	93.10	1,396.00	0.00	0.00	0.00	
6,300.00	0.37	149.03	6,106.47	1,392.42	93.44	1,395.47	0.00	0.00	0.00	
6,400.00	0.37	149.03	6,206.47	1,391.86	93.77	1,394.94	0.00	0.00	0.00	
6,500.00	0.37	149.03	6,306.47	1,391.30	94.11	1,394.40	0.00	0.00	0.00	
6,600.00	0.37	149.03	6,406.47	1,390.74	94.44	1,393.87	0.00	0.00	0.00	
6,700.00	0.37	149.03	6,506.46	1,390.18	94.78	1,393.34	0.00	0.00	0.00	
6,800.00	0.37	149.03	6,606.46	1,389.62	95.12	1,392.81	0.00	0.00	0.00	
6,900.00	0.37	149.03	6,706.46	1,389.06	95.45	1,392.27	0.00	0.00	0.00	
7,000.00	0.37	149.03	6,806.46	1,388.50	95.79	1,391.74	0.00	0.00	0.00	
7,100.00	0.37	149.03	6,906.46	1,387.94	96.13	1,391.21	0.00	0.00	0.00	
7,200.00	0.37	149.03	7,006.45	1,387.38	96.46	1,390.68	0.00	0.00	0.00	
7,300.00	0.37	149.03	7,106.45	1,386.82	96.80	1,390.15	0.00	0.00	0.00	
7,400.00	0.37	149.03	7,206.45	1,386.26	97.13	1,389.61	0.00	0.00	0.00	
7,500.00	0.37	149.03	7,306.45	1,385.70	97.47	1,389.08	0.00	0.00	0.00	
7,600.00	0.37	149.03	7,406.44	1,385.14	97.81	1,388.55	0.00	0.00	0.00	
7,700.00	0.37	149.03	7,506.44	1,384.58	98.14	1,388.02	0.00	0.00	0.00	
7,800.00	0.37	149.03	7,606.44	1,384.02	98.48	1,387.49	0.00	0.00	0.00	
7,900.00	0.37	149.03	7,706.44	1,383.46	98.81	1,386.95	0.00	0.00	0.00	
8,000.00	0.37	149.03	7,806.44	1,382.90	99.15	1,386.42	0.00	0.00	0.00	



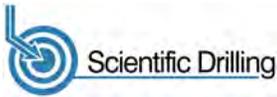
**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3 PRODUCTION		

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)	
8,100.00	0.37	149.03	7,906.43	1,382.34	99.49	1,385.89	0.00	0.00	0.00	
8,167.57	0.37	149.03	7,974.00	1,381.96	99.71	1,385.53	0.00	0.00	0.00	
<b>MESAVERDE</b>										
8,200.00	0.37	149.03	8,006.43	1,381.78	99.82	1,385.36	0.00	0.00	0.00	
8,300.00	0.37	149.03	8,106.43	1,381.22	100.16	1,384.83	0.00	0.00	0.00	
8,400.00	0.37	149.03	8,206.43	1,380.66	100.49	1,384.29	0.00	0.00	0.00	
8,500.00	0.37	149.03	8,306.43	1,380.10	100.83	1,383.76	0.00	0.00	0.00	
8,600.00	0.37	149.03	8,406.42	1,379.54	101.17	1,383.23	0.00	0.00	0.00	
8,700.00	0.37	149.03	8,506.42	1,378.98	101.50	1,382.70	0.00	0.00	0.00	
8,800.00	0.37	149.03	8,606.42	1,378.42	101.84	1,382.17	0.00	0.00	0.00	
8,900.00	0.37	149.03	8,706.42	1,377.86	102.17	1,381.63	0.00	0.00	0.00	
9,000.00	0.37	149.03	8,806.41	1,377.30	102.51	1,381.10	0.00	0.00	0.00	
9,100.00	0.37	149.03	8,906.41	1,376.74	102.85	1,380.57	0.00	0.00	0.00	
9,200.00	0.37	149.03	9,006.41	1,376.18	103.18	1,380.04	0.00	0.00	0.00	
9,300.00	0.37	149.03	9,106.41	1,375.62	103.52	1,379.51	0.00	0.00	0.00	
9,400.00	0.37	149.03	9,206.41	1,375.06	103.85	1,378.97	0.00	0.00	0.00	
9,500.00	0.37	149.03	9,306.40	1,374.50	104.19	1,378.44	0.00	0.00	0.00	
9,600.00	0.37	149.03	9,406.40	1,373.94	104.53	1,377.91	0.00	0.00	0.00	
9,700.00	0.37	149.03	9,506.40	1,373.38	104.86	1,377.38	0.00	0.00	0.00	
9,800.00	0.37	149.03	9,606.40	1,372.82	105.20	1,376.85	0.00	0.00	0.00	
9,900.00	0.37	149.03	9,706.40	1,372.26	105.53	1,376.31	0.00	0.00	0.00	
10,000.00	0.37	149.03	9,806.39	1,371.70	105.87	1,375.78	0.00	0.00	0.00	
10,100.00	0.37	149.03	9,906.39	1,371.14	106.21	1,375.25	0.00	0.00	0.00	
10,200.00	0.37	149.03	10,006.39	1,370.58	106.54	1,374.72	0.00	0.00	0.00	
10,300.00	0.37	149.03	10,106.39	1,370.02	106.88	1,374.19	0.00	0.00	0.00	
10,400.00	0.37	149.03	10,206.38	1,369.46	107.22	1,373.65	0.00	0.00	0.00	
10,410.62	0.37	149.03	10,217.00	1,369.40	107.25	1,373.60	0.00	0.00	0.00	
<b>TD at 10410.62 - PBHL_NBU 921-201BS</b>										

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TOC @ 5591.00 (NBU 9 - plan hits target center - Point	0.00	0.00	5,591.00	1,392.66	92.13	14,536,719.06	2,041,550.29	40.0204572	-109.5672767
DTGT_NBU 921-201BS - plan hits target center - Circle (radius 15.00)	0.00	0.00	5,691.00	1,394.40	92.25	14,536,720.81	2,041,550.38	40.0204620	-109.5672763
PBHL_NBU 921-201BS - plan hits target center - Circle (radius 25.00)	0.00	0.00	10,217.00	1,369.40	107.25	14,536,696.05	2,041,565.78	40.0203933	-109.5672227



**SDI**  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 921-201BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4874 & KB 4 @ 4878.00ft (PROPETRO 12)
<b>Site:</b>	NBU 921-20P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-201BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3 PRODUCTION		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,973.86	2,880.00	8 5/8"	8.625	11.000	

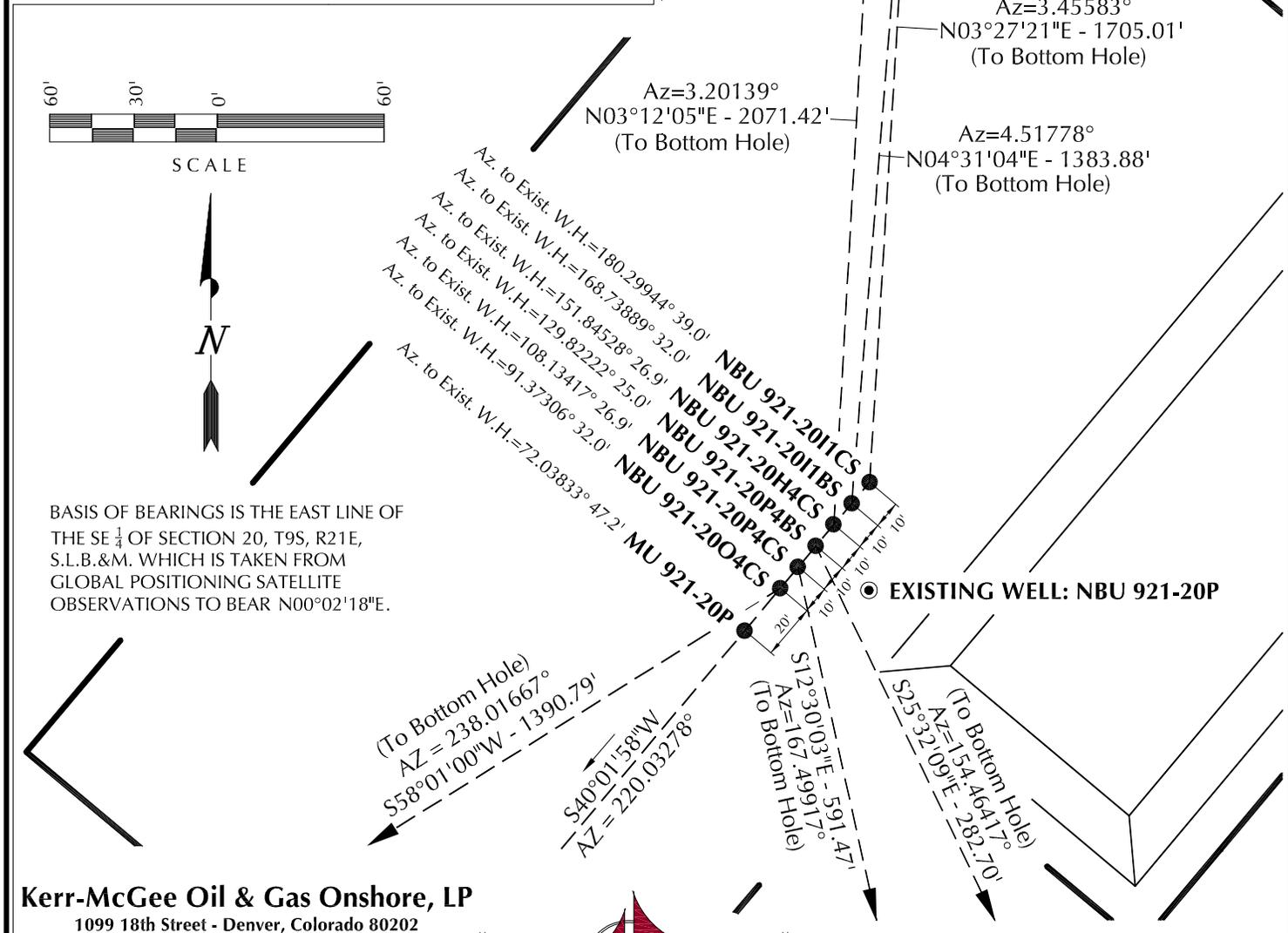
Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,700.97	1,661.00	GREEN RIVER				
1,977.69	1,926.00	BIRDSNEST				
2,503.97	2,430.00	MAHOGANY				
5,177.36	4,991.00	WASATCH				
8,167.57	7,974.00	MESAVERDE				
10,410.62	10,217.00	SEGO				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
200.00	200.00	0.00	0.00	Start Build 2.00	
1,036.62	1,024.78	121.03	8.01	Start 4011.28 hold at 1036.62 MD	
5,047.90	4,866.22	1,273.37	84.24	Start Drop -2.00	
5,884.52	5,691.00	1,394.40	92.25	Start DLS 0.30 TFO 149.03	
6,009.25	5,815.73	1,394.05	92.46	Start 4401.36 hold at 6009.25 MD	
10,410.62	10,217.00	1,369.40	107.25	TD at 10410.62	

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 921-201CS	40°00'59.829"	109°34'05.779"	40°00'59.956"	109°34'03.298"	857' FSL	40°01'16.645"	109°34'04.484"	40°01'16.772"	109°34'02.003"	2559' FSL
NBU 921-201BS	40.016619°	109.568272°	40.016655°	109.567583°	593' FEL	40.021290°	109.567912°	40.021326°	109.567223°	491' FEL
NBU 921-201CS	40°00'59.754"	109°34'05.862"	40°00'59.881"	109°34'03.381"	850' FSL	40°01'13.385"	109°34'04.482"	40°01'13.512"	109°34'02.001"	2229' FSL
NBU 921-201BS	40.016598°	109.568295°	40.016634°	109.567606°	599' FEL	40.020385°	109.567912°	40.020420°	109.567222°	491' FEL
NBU 921-20H4CS	40°00'59.678"	109°34'05.945"	40°00'59.805"	109°34'03.463"	842' FSL	40°01'20.113"	109°34'04.490"	40°01'20.240"	109°34'02.008"	2397' FSL
NBU 921-20H4CS	40.016577°	109.568318°	40.016613°	109.567629°	606' FEL	40.022254°	109.567914°	40.022289°	109.567224°	491' FEL
NBU 921-20P4BS	40°00'59.602"	109°34'06.028"	40°00'59.729"	109°34'03.547"	834' FSL	40°00'57.083"	109°34'04.459"	40°00'57.210"	109°34'01.977"	579' FSL
NBU 921-20P4BS	40.016556°	109.568341°	40.016591°	109.567652°	612' FEL	40.015856°	109.567905°	40.015892°	109.567216°	490' FEL
NBU 921-20P4CS	40°00'59.526"	109°34'06.110"	40°00'59.653"	109°34'03.629"	827' FSL	40°00'53.823"	109°34'04.456"	40°00'53.950"	109°34'01.975"	249' FSL
NBU 921-20P4CS	40.016472°	109.568364°	40.016570°	109.567675°	618' FEL	40.014951°	109.567905°	40.014986°	109.567215°	490' FEL
NBU 921-20O4CS	40°00'59.451"	109°34'06.192"	40°00'59.578"	109°34'03.711"	819' FSL	40°00'52.159"	109°34'21.339"	40°00'52.286"	109°34'18.857"	84' FSL
NBU 921-20O4CS	40.016514°	109.568387°	40.016549°	109.567698°	625' FEL	40.014489°	109.572594	40.014524°	109.571905°	1804' FEL
MU 921-20P	40°00'59.300"	109°34'06.358"	40°00'59.427"	109°34'03.876"	804' FSL					
MU 921-20P	40.016472°	109.568433°	40.016507°	109.567743°	638' FEL					
NBU 921-20P	40°00'59.444"	109°34'05.781"	40°00'59.571"	109°34'03.300"	818' FSL					
NBU 921-20P	40.016512°	109.568273°	40.016547°	109.567583°	593' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 921-201CS	1701.9'	102.8'	NBU 921-201BS	1379.6'	109.0'	NBU 921-20H4CS	2068.2'	115.7'	NBU 921-20P4BS	-255.1'	121.9'
NBU 921-20P4CS	-577.4'	128.0'	NBU 921-20O4CS	-736.7	-1179.7						



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

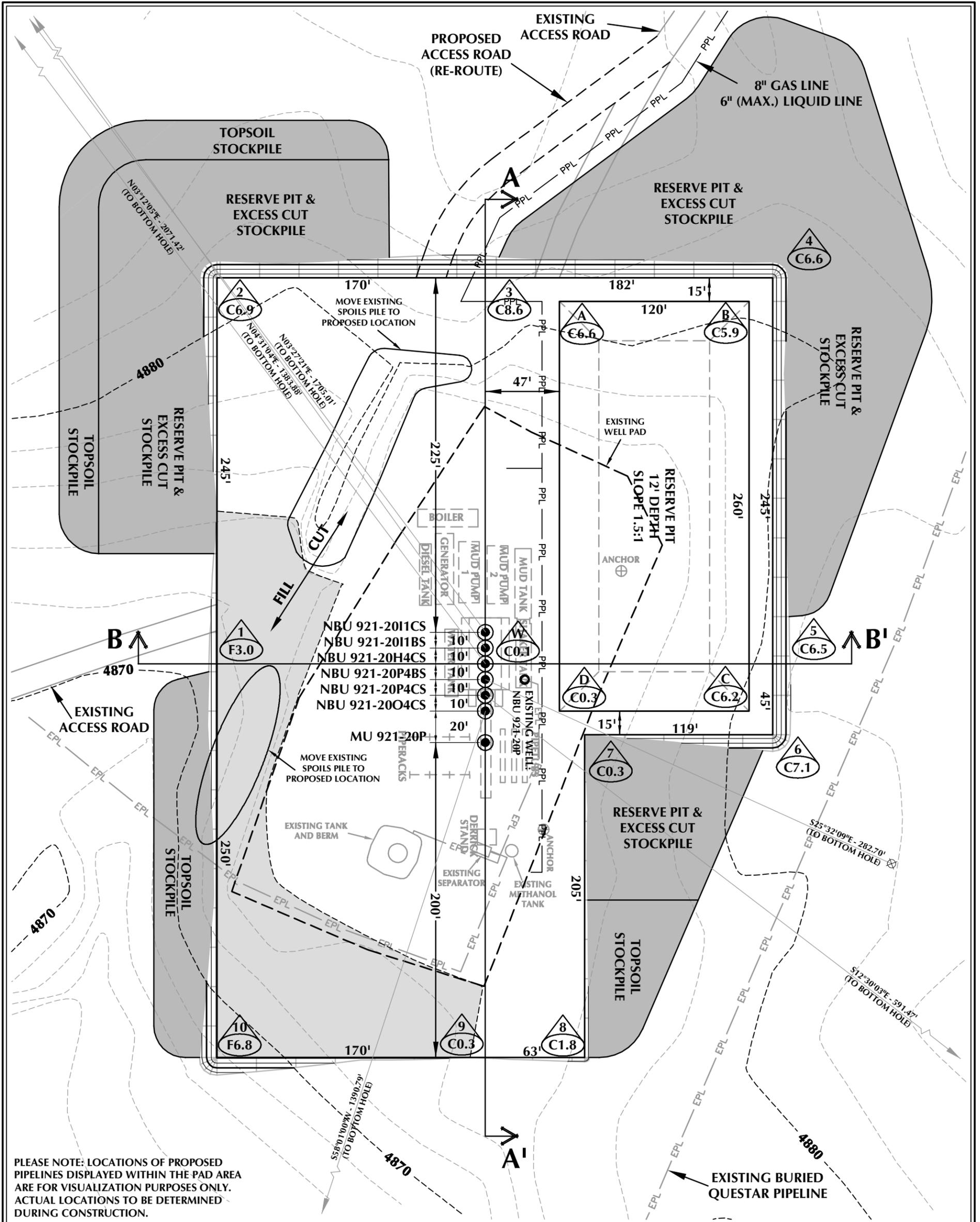
**WELL PAD - NBU 921-20P**

**WELL PAD INTERFERENCE PLAT**  
 WELLS - NBU 921-201CS,  
 NBU 921-201BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH.

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

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

DATE SURVEYED: 3-14-12	SURVEYED BY: A.F.	SHEET NO: <b>8</b>
DATE DRAWN: 3-22-12	DRAWN BY: T.J.R.	
SCALE: 1" = 60'		8 OF 19



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

**WELL PAD - NBU 921-20P DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4874.5'  
 FINISHED GRADE ELEVATION = 4874.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.70 ACRES  
 TOTAL DISTURBANCE AREA = 5.92 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 921-20P**

WELL PAD - LOCATION LAYOUT  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH



**609 CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
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**WELL PAD QUANTITIES**

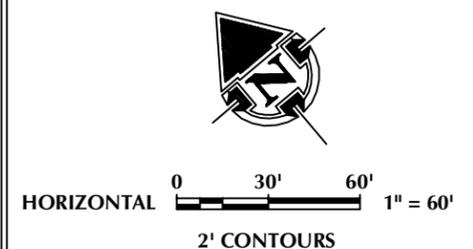
TOTAL CUT FOR WELL PAD = 9,115 C.Y.  
 TOTAL FILL FOR WELL PAD = 1,964 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,967 C.Y.  
 EXCESS MATERIAL = 7,151 C.Y.

**RESERVE PIT QUANTITIES**

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

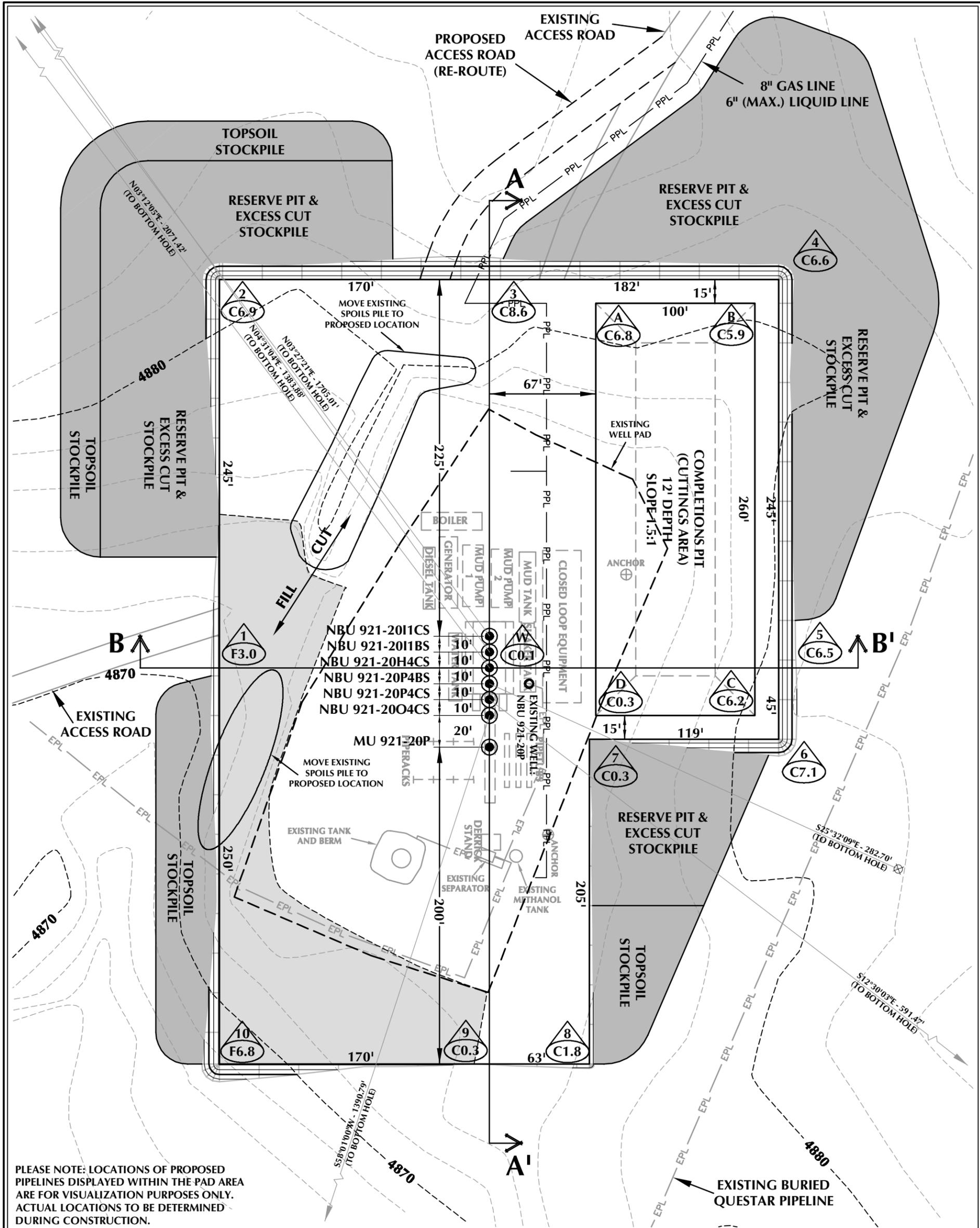
**WELL PAD LEGEND**

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



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

SCALE: 1"=60' DATE: 4/17/12 SHEET NO: 9 OF 19  
 REVISED: APF 10/24/13



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

**WELL PAD - NBU 921-20P (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4874.5'  
 FINISHED GRADE ELEVATION = 4874.4'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.70 ACRES  
 TOTAL DISTURBANCE AREA = 5.92 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 9,115 C.Y.  
 TOTAL FILL FOR WELL PAD = 1,964 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,967 C.Y.  
 EXCESS MATERIAL = 7,151 C.Y.

**COMPLETIONS PIT QUANTITIES**

TOTAL CUT FOR COMPLETIONS PIT +/- 8,870 C.Y.  
 COMPLETIONS PIT CAPACITY (2' OF FREEBOARD) +/- 33,770 BARRELS

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



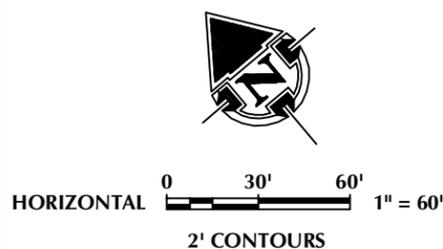
CONSULTING, LLC  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

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

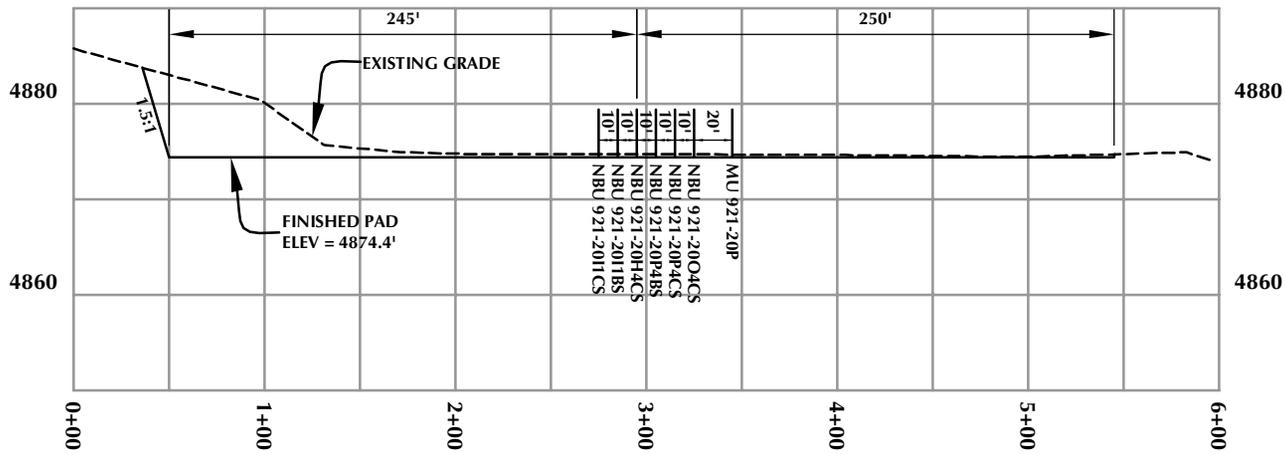
(435) 789-1365

**WELL PAD LEGEND**

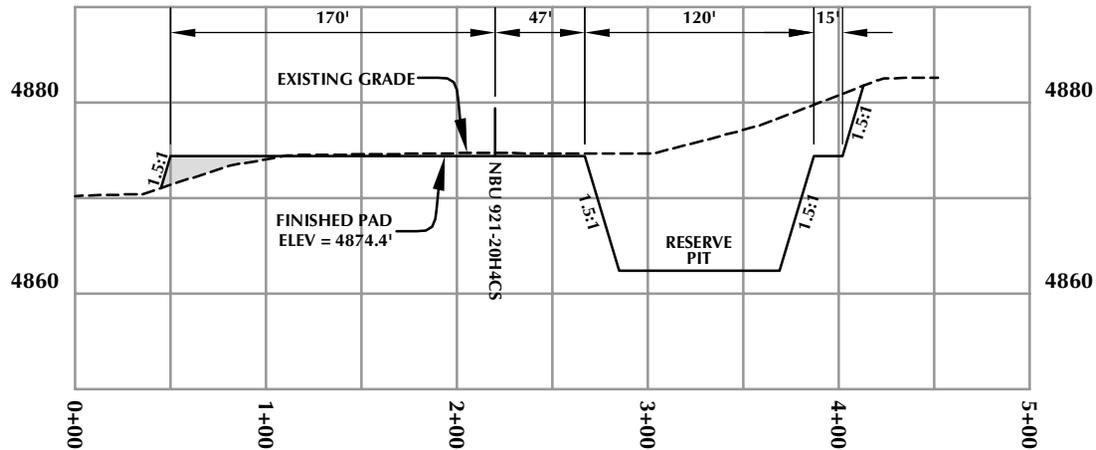
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PROPOSED PIPELINE
- EXISTING PIPELINE



SCALE: 1"=60' DATE: 4/17/12 SHEET NO:  
 REVISED: APF 10/24/13 **9B** 9B OF 19



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 921-20P**

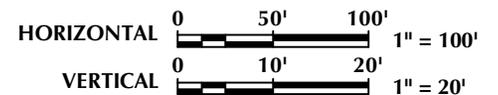
**WELL PAD - CROSS SECTIONS**  
NBU 921-20I1CS,  
NBU 921-20I1BS, NBU 921-20H4CS,  
NBU 921-20P4BS, NBU 921-20P4CS,  
NBU 921-20O4CS & MU 921-20P  
LOCATED IN SECTION 20, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

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

(435) 789-1365



Scale: 1"=100'

Date: 4/17/12

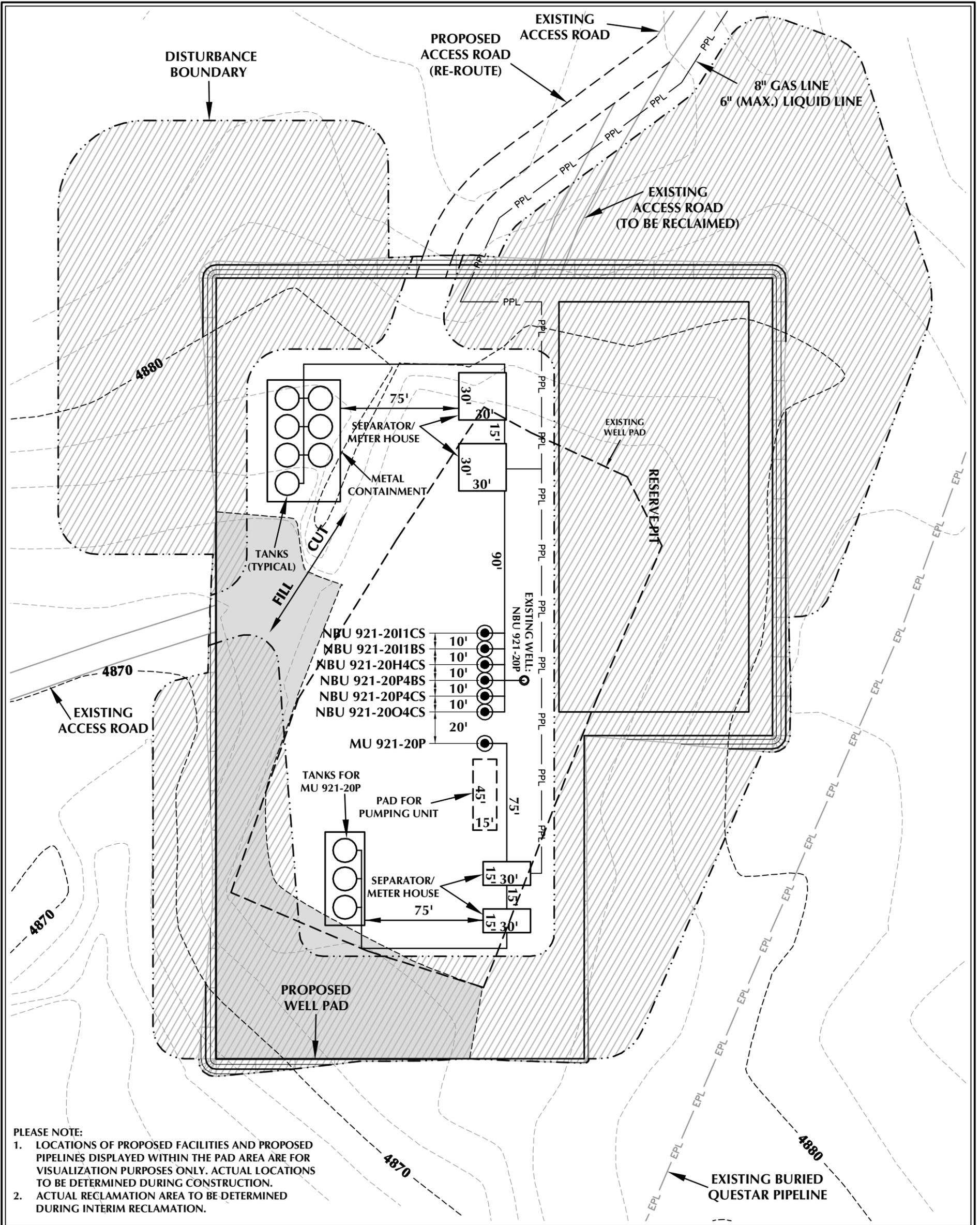
SHEET NO:

REVISED:

DJD  
5/18/12

**10** 10 OF 19

K:\MADARKO\2011\1011\_49\_NBU\_FOCUS\_921-20\DWG\NBU\_921-20P.dwg, 5/17/2012 4:03:37 PM, dby



**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 921-20P DESIGN SUMMARY**

**TOTAL DISTURBANCE AREA = 5.92 ACRES (INCLUDING EXISTING)**  
**RECLAMATION AREA = 4.26 ACRES**  
**TOTAL WELL PAD AREA AFTER RECLAMATION = 1.66 ACRES**

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

**WELL PAD - NBU 921-20P**

**WELL PAD - RECLAMATION LAYOUT**  
 NBU 921-20I1CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



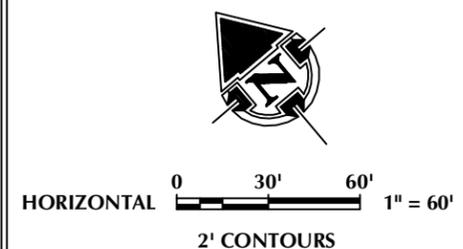
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

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

(435) 789-1365

**WELL PAD LEGEND**

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



SCALE: 1"=60'	DATE: 4/17/12	SHEET NO:
REVISED:	DJD 5/18/12	<b>11</b> 11 OF 19

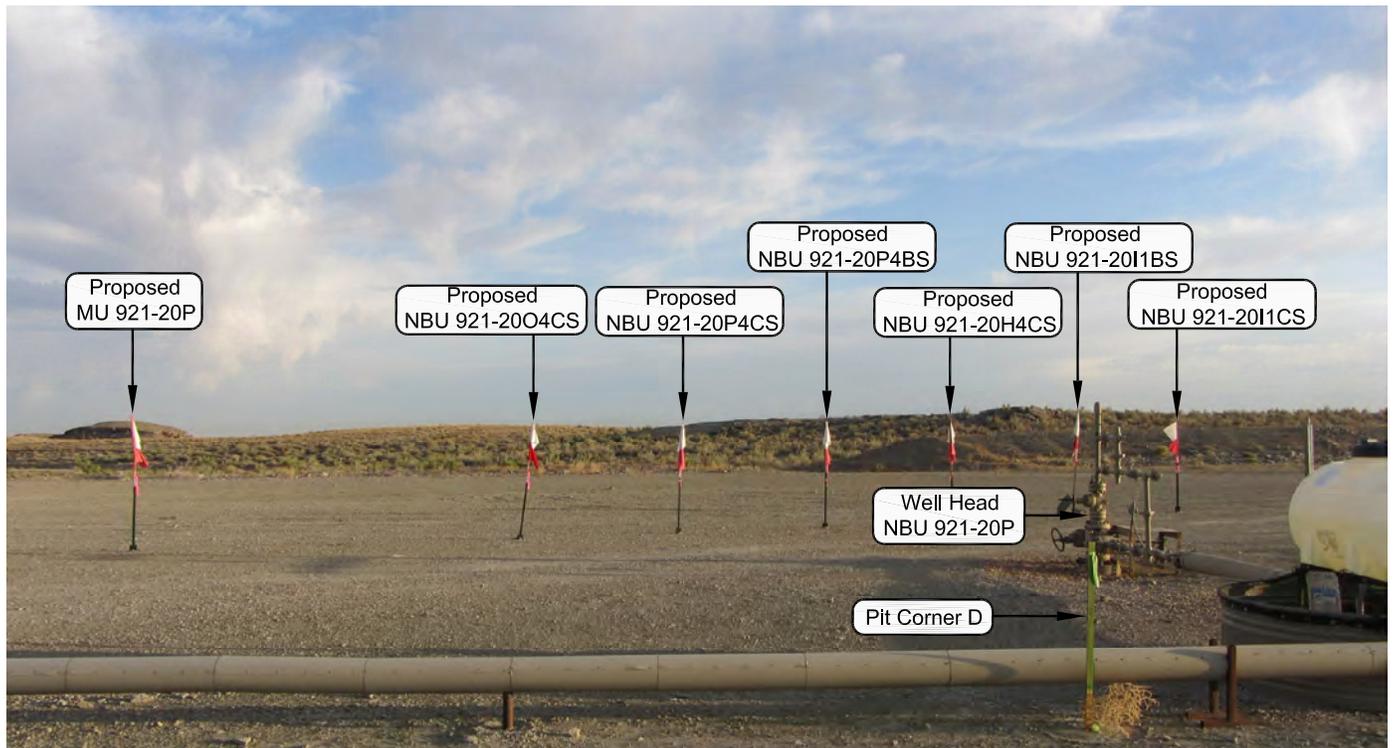


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHWESTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: WESTERLY

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

**WELL PAD - NBU 921-20P**

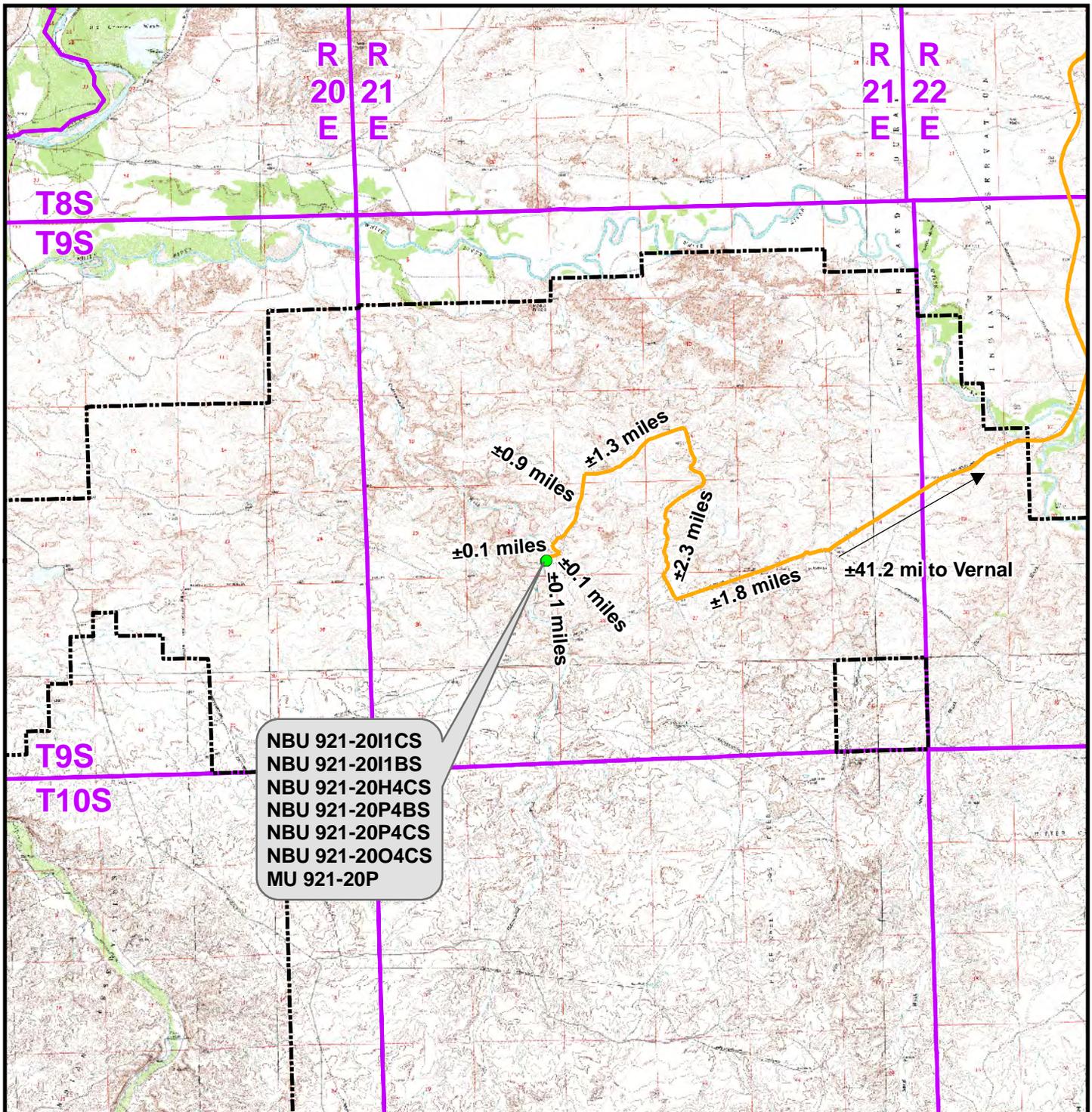
LOCATION PHOTOS  
 NBU 921-20I1CS,  
 NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



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

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

DATE PHOTOS TAKEN: 3-14-12	PHOTOS TAKEN BY: A.F.	SHEET NO: <b>12</b>
DATE DRAWN: 3-22-12	DRAWN BY: T.J.R.	
Date Last Revised: 5-16-12 T.J.R.		12 OF 19



**Legend**

Distance From Well Pad - NBU 921-20P To Unit Boundary: ±15,028ft

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

**WELL PAD - NBU 921-20P**

TOPO A  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

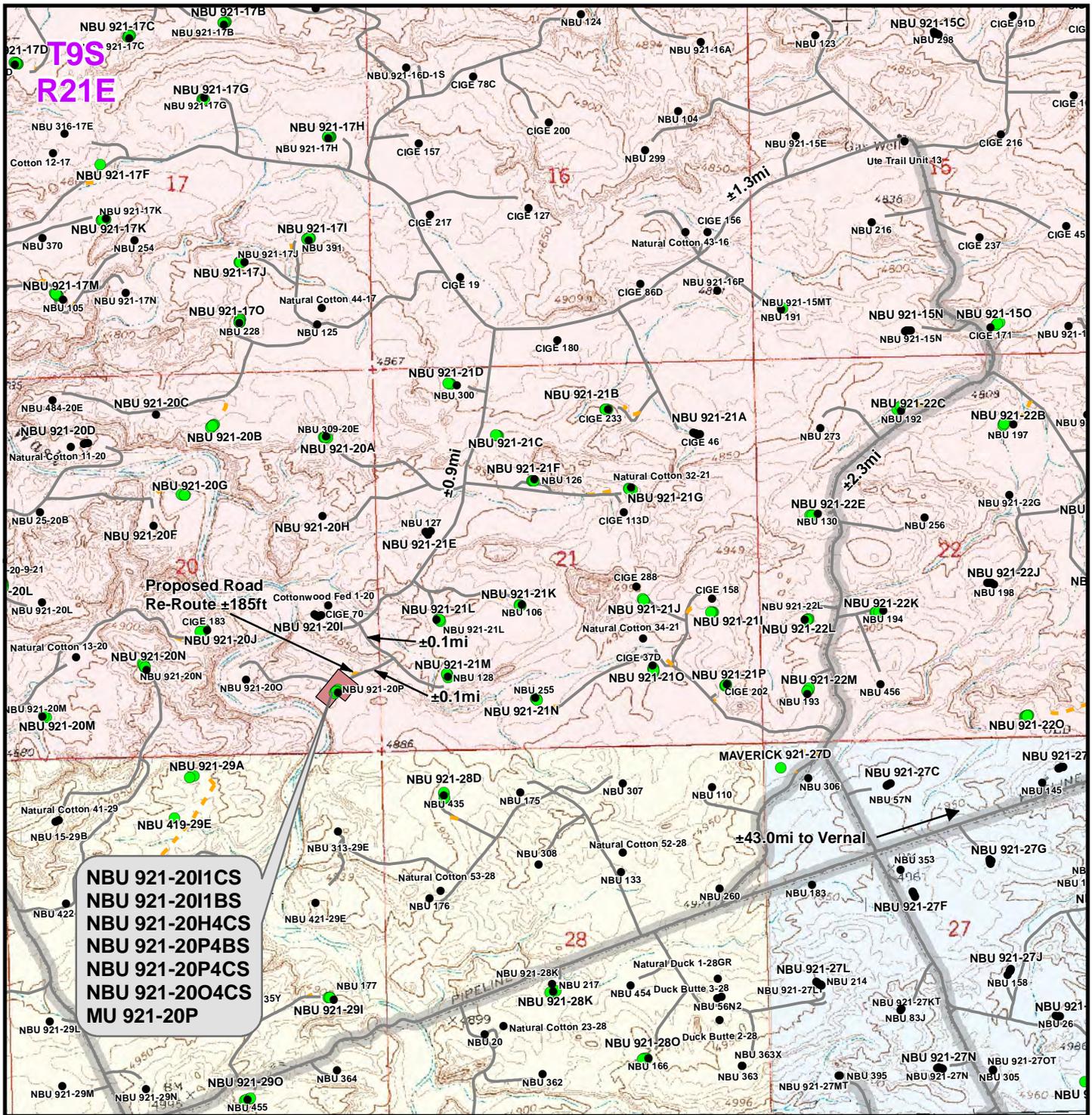
1099 18th Street  
 Denver, Colorado 80202



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 Fax 307-674-0182



SCALE: 1:100,000	NAD83 USP Central	<b>13</b> 13 OF 19
DRAWN: TL	DATE: 17 Apr 2012	
REVISED: TL	DATE: 17 May 2012	



**Legend**

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

Total Proposed Road Re-Route Length: ±185ft

**WELL PAD - NBU 921-20P**

TOPO B  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

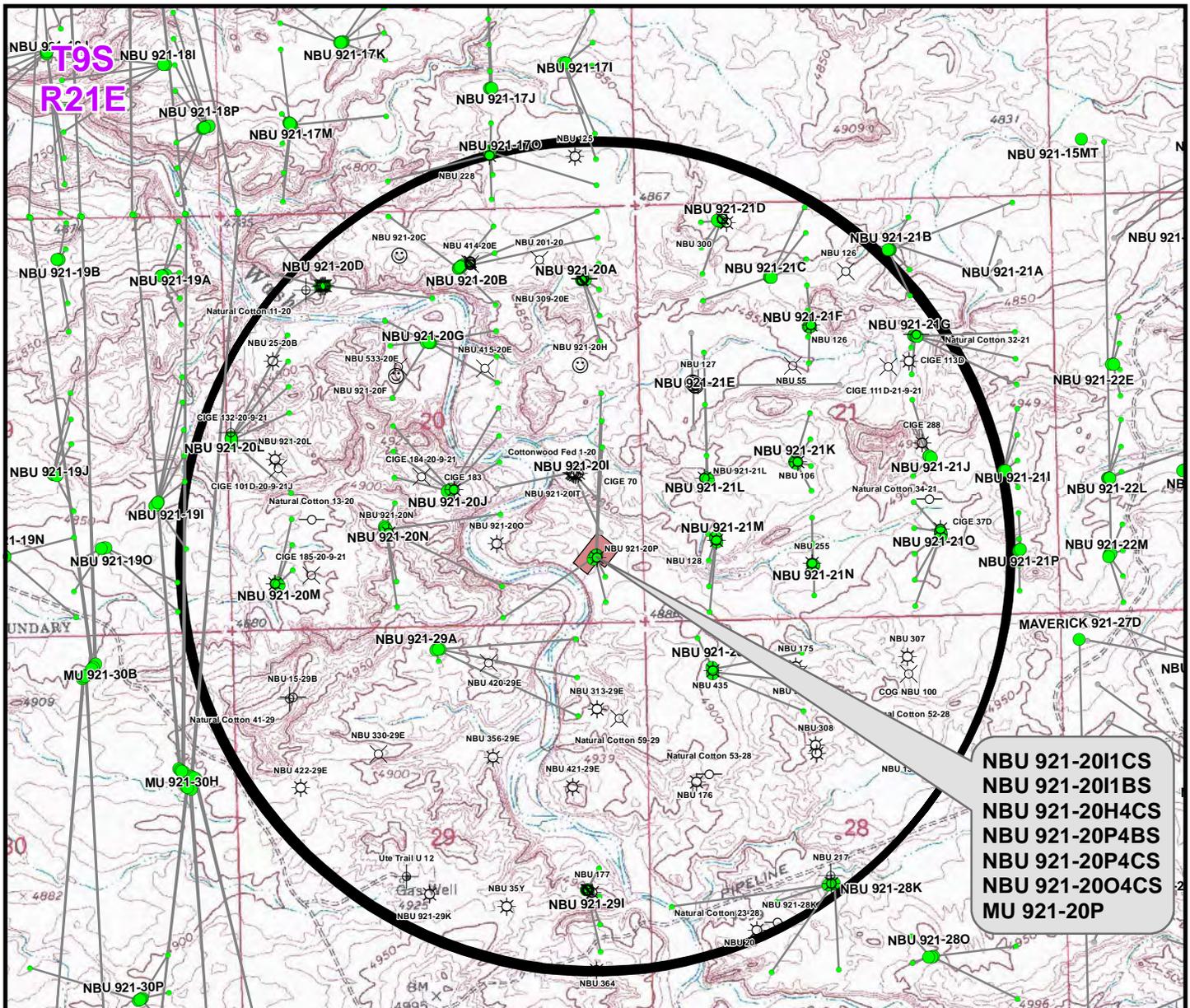
**Kerr-McGee Oil &  
 Gas Onshore L.P.**  
 1099 18th Street  
 Denver, Colorado 80202



**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>14</b>
DRAWN: TL	DATE: 17 Apr 2012	<b>14</b> 14 OF 19	
REVISED: TL	DATE: 17 May 2012		



**NBU 921-20I1CS**  
**NBU 921-20I1BS**  
**NBU 921-20H4CS**  
**NBU 921-20P4BS**  
**NBU 921-20P4CS**  
**NBU 921-20O4CS**  
**MU 921-20P**

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 921-20I1CS	Cottonwood Fed 1-20	573ft
NBU 921-20I1BS	Cottonwood Fed 1-20	290ft
NBU 921-20H4CS	NBU 921-20H	444ft
NBU 921-20P4BS	NBU 921-20P	260ft
NBU 921-20P4CS	NBU 921-20P	578ft
NBU 921-20O4CS	NBU 921-20O	942ft
MU 921-20P	NBU 921-20P	47ft

**Legend**

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

**WELL PAD - NBU 921-20P**

TOPO C  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

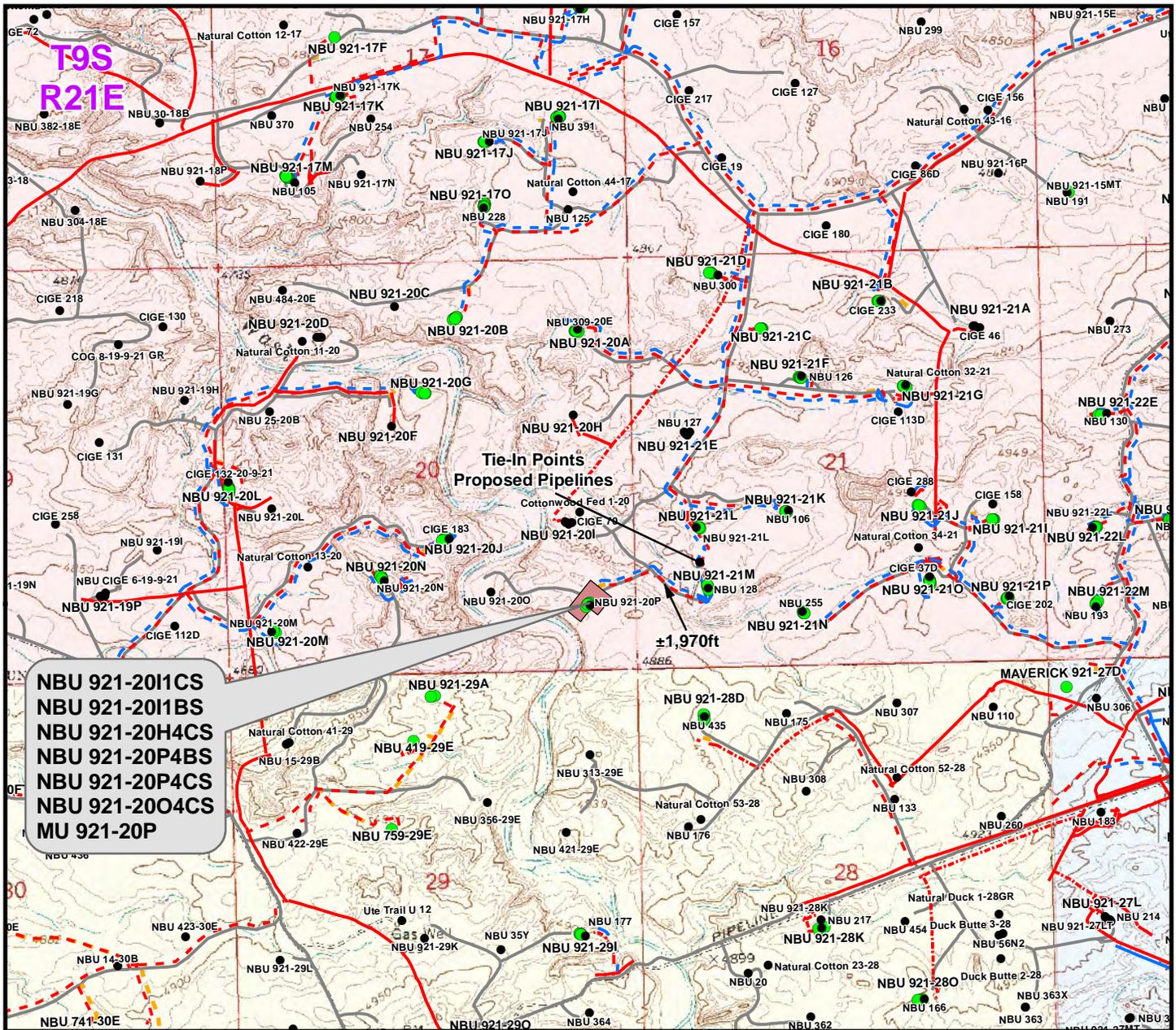
**Kerr-McGee Oil &  
 Gas Onshore L.P.**

1099 18th Street  
 Denver, Colorado 80202



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 Sheridan, Wyoming 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>15</b> 15 OF 19
DRAWN: TL	DATE: 17 Apr 2012	
REVISED: TL	DATE: 24 Oct 2013	



**NBU 921-201CS**  
**NBU 921-201BS**  
**NBU 921-20H4CS**  
**NBU 921-20P4BS**  
**NBU 921-20P4CS**  
**NBU 921-20O4CS**  
**MU 921-20P**

±1,970ft

Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to 200 Intersection)	±460ft
Buried 6" (Max.) (200 Intersection to 921-21M Intersection)	±1,970ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±2,430ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to 200 Intersection)	±460ft
Buried 8" (200 Intersection to 921-21M Intersection)	±1,970ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±2,430ft</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 921-20P**

TOPO D  
 NBU 921-201CS,  
 NBU 921-201BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

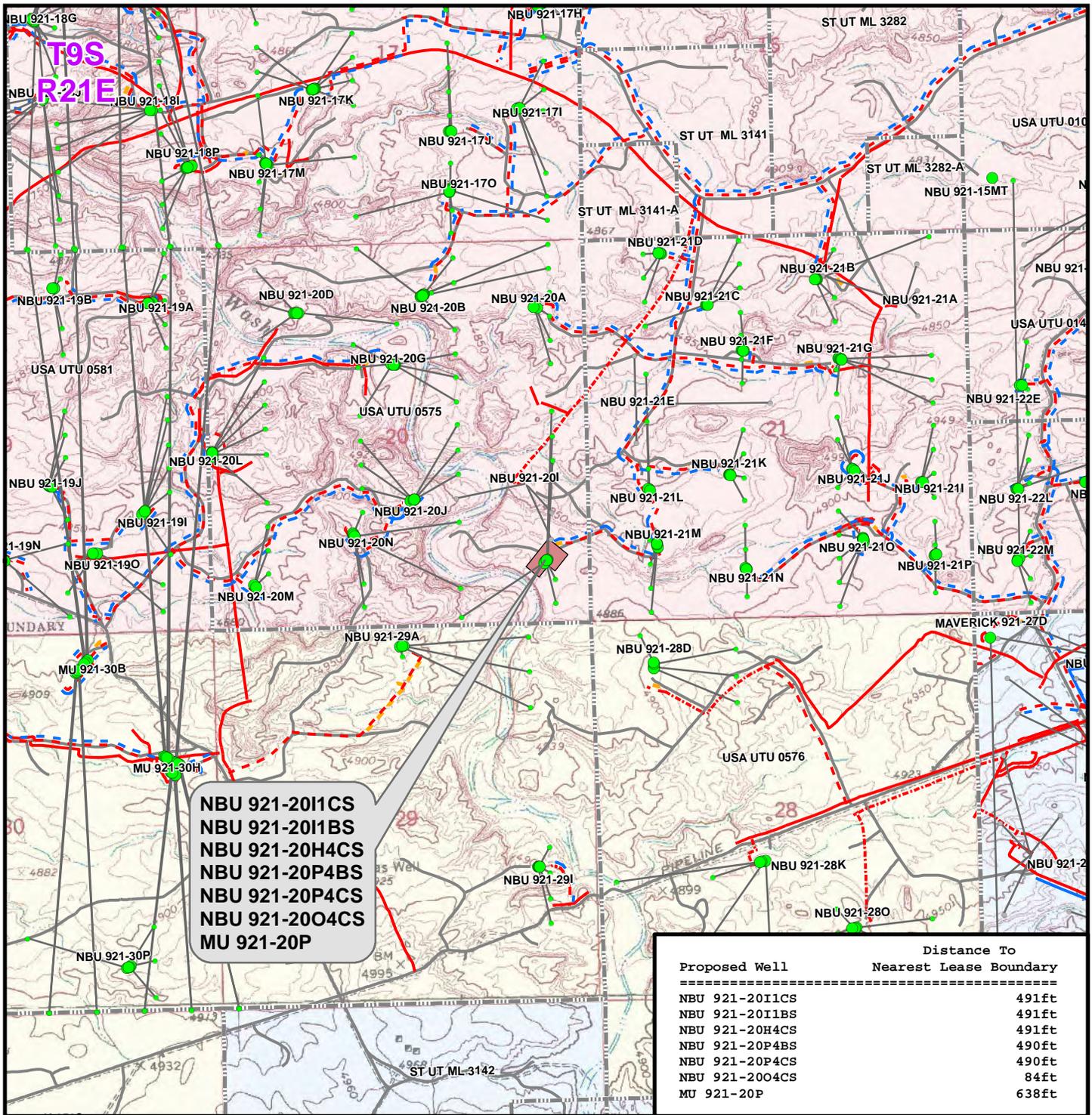
1099 18th Street  
 Denver, Colorado 80202



**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>16</b>
DRAWN: TL	DATE: 17 Apr 2012	
REVISED: TL	DATE: 17 May 2012	





**Legend**

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

**WELL PAD - NBU 921-20P**

TOPO E  
 NBU 921-20I1CS,  
 NBU 921-20I1BS, NBU 921-20H4CS,  
 NBU 921-20P4BS, NBU 921-20P4CS,  
 NBU 921-20O4CS & MU 921-20P  
 LOCATED IN SECTION 20, T9S, R21E,  
 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:

DRAWN: TL

DATE: 17 Apr 2012

**18**

REVISED: TL

DATE: 24 Oct 2013

18 OF 19

**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD - NBU 921-20P  
WELLS - NBU 921-20I1CS,  
NBU 921-20I1BS, NBU 921-20H4CS,  
NBU 921-20P4BS, NBU 921-20P4CS,  
NBU 921-20O4CS & MU 921-20P  
Section 20, T9S, R21E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.7 miles to a Class D County Road to the southwest. Exit right and proceed in a southwesterly direction along the Class D County Road approximately 1.8 miles to a second Class D County Road to the north. Exit right and proceed in a northerly direction along the second Class D County Road approximately 2.3 miles to a Tribal Road to the southwest. Continue in a southwesterly, then northwesterly direction along the Tribal Road approximately 1.3 miles to a service road to the south. Exit left and proceed in a southerly, then southwesterly direction along the service road approximately 0.9 miles to a second service road to the southeast. Exit left and proceed in a southeasterly direction along the second service road approximately 0.1 miles to a third service road the southwest. Exit right and proceed in a southwesterly direction along the third service road approximately 0.1 miles to the proposed access road to the west. Follow road flags in westerly direction approximately 185 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 47.7 miles in a southerly direction.

<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: UTU0575
1. TYPE OF WELL Gas Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
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 921-201BS
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0850 FSL 0599 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	9. API NUMBER: 43047533630000
PHONE NUMBER: 720 929-6111	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 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: 4/1/2014	<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.

Drilled to 3,045 ft. in Quarter 1 of 2014.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 April 01, 2014**

<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> 4/1/2014	

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# SST 8  
\_Submitted By Micah Beale Phone Number 435-790-2016  
Well Name/Number NBU 921-2011BS  
Qtr/Qtr SE/SE Section 20 Township 9S Range 21E  
Lease Serial Number UTU-0575  
API Number 43-0475-5336A3

Casing – Time casing run starts, not cementing times.

- Production Casing  
 Other

Date/Time 5/15/2014 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

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> UTE
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well		<b>8. WELL NAME and NUMBER:</b> NBU 921-201BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>9. API NUMBER:</b> 43047533630000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6111	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0850 FSL 0599 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S		<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 6/24/2014	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> OTHER OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
Drilled to 10,300 ft. in Quarter 2 of 2014.		
<b>Accepted by the Utah Division of Oil, Gas and Mining</b> <b>FOR RECORD ONLY</b> June 24, 2014		
<b>NAME (PLEASE PRINT)</b> Ila Beale	<b>PHONE NUMBER</b> 720 929-6408	<b>TITLE</b> Staff Reg. Specialist
<b>SIGNATURE</b> N/A		<b>DATE</b> 6/24/2014

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
<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> UTE
		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 921-201BS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533630000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6111	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0850 FSL 0599 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH	
	<b>STATE:</b> UTAH	
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 9/12/2014	<input type="checkbox"/> ACIDIZE  <input type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION  OTHER: <input style="width: 100px;" type="text"/>
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
Started completing the well. Well TD at 10,300 ft. Thank you. <div style="text-align: right; margin-top: 20px;"> <p><b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY September 12, 2014</b></p> </div>		
<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> 9/12/2014	

<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> UTU0575
<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> UTE  <b>7.UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 921-2011BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533630000
<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>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0850 FSL 0599 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> Uintah  <b>STATE:</b> UTAH

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

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: 1/6/2015	<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 921-2011BS was placed on production 01/06/2015 after a new well completion. Producing from the MESAVERDE.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 January 09, 2015

<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> 1/7/2015	

<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> UTU0575
<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> UTE  <b>7.UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 921-201BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533630000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6111  <b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0850 FSL 0599 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SESE Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

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: 1/6/2015	<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 921-201BS well was returned to production on 1/06/2015.  
 Thank you.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 January 27, 2015

<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> 1/20/2015	

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.  
UTU0575

1a. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Dry <input type="checkbox"/> Other			6. If Indian, Allottee or Tribe Name		
b. Type of Completion <input checked="" type="checkbox"/> New Well <input type="checkbox"/> Work Over <input type="checkbox"/> Deepen <input type="checkbox"/> Plug Back <input type="checkbox"/> Diff. Resvr. Other _____			7. Unit or CA Agreement Name and No. UTU63047A		
2. Name of Operator KERR-MCGEE OIL AND GAS ONSHORE			8. Lease Name and Well No. NBU 921-201BS		
3. Address P.O. BOX 173779 DENVER, CO 82017			9. API Well No. 43-047-53363		
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface SESE 850FSL 599FEL 40.016598 N Lat, 109.568295 W Lon At top prod interval reported below NESE 2227FSL 507FEL At total depth NESE 2240FSL 486FEL 40.020415 N Lat, 109.567893 W Lon			10. Field and Pool, or Exploratory NATURAL BUTTES		
14. Date Spudded 10/12/2013			15. Date T.D. Reached 05/15/2014		
16. Date Completed <input type="checkbox"/> D & A <input checked="" type="checkbox"/> Ready to Prod. 01/06/2015			17. Elevations (DF, KB, RT, GL)* 4898 KB		
18. Total Depth: MD 10300 TVD 10105		19. Plug Back T.D.: MD 10232 TVD 10038		20. Depth Bridge Plug Set: MD TVD	
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) RADIAL CEMENT BOND GAMMA RAY CCL			22. Was well cored? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit analysis) Was DST run? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit analysis) Directional Survey? <input type="checkbox"/> No <input checked="" type="checkbox"/> 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	24	3037		575		0	
7.875	4.500 I-80	11.6	24	5043		1975		0	
7.875	4.500 P 110	11.6	5043	10280					

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	9865							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) MESA VERDE	8063	10300	8072 TO 10215	0.410	240	OPEN
B)						
C)						
D)						

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

Depth Interval	Amount and Type of Material
8072 TO 10215	PUMP 13,991 BBLS SLICKWATER, 60 BBLS HCL ACID (12.5%-18%), 283,265 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
01/06/2015	01/25/2015	24	→	15.0	1678.0	524.0			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 1323	1966.0	→	15	1678	524		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 #289417 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**

<p>30. Summary of Porous Zones (Include Aquifers):</p> <p>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.</p>	<p>31. Formation (Log) Markers</p>
---	------------------------------------

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				GREEN RIVER	1730
				BIRD'S NEST	2027
				MAHOGANY	2500
				WASATCH	5211
				MESA VERDE	8063

32. Additional remarks (include plugging procedure):

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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 #289417 Verified by the BLM Well Information System.  
 For KERR-MCGEE OIL AND GAS ONSHORE, sent to the Vernal**

Name (please print) DOREEN GREEN Title REGULATORY ANALYST II

Signature \_\_\_\_\_ (Electronic Submission) Date 01/26/2015

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: Jan. 26, 2015**

US ROCKIES REGION  
Operation Summary Report

US ROCKIES REGION									
Operation Summary Report									
Well: NBU 921-201BS [BLUE]					Spud date: 2/15/2014				
Project: UTAH-UINTAH			Site: NBU 921-20P PAD			Rig name no.: PROPETRO 12/12, SST 8/8			
Event: DRILLING			Start date: 2/15/2014			End date: 5/16/2014			
Active datum: RKB @4,898.00usft (above Mean Sea Level)				UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0					
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation	
2/15/2014	8:00 - 13:00	5.00	MIRU	01	A	P	64	PJSM WITH JD FIELD SERVICE & RIG CREW. MOVE 1.0 MILES TO NBU 921-20P PAD. MOVE IN AND RIG UP CAMPS AND SET IN CLOSED LOOP SYSTEM. STALLION 2 SEMI-TRUCKS, 2 CREW TRUCKS, J.D FIELD SERVICE HAD 4 BEDTRUCKS, 6 HAUL TRUCKS, 1 PUSHER, 1 SAFETY MAN, 2 SWAMPERS, 1 FORKLIFT, PROPETRO 4 SEMI LOADS, 1 RIG, 1 CREW RIDE, 1 TRUCK PUSHER.	
	13:00 - 20:00	7.00	MIRU	01	B	P	64	RIG UP MUD TANKS AND CLEAN HARBOR CLOSED LOOP SYSTEM. SPOT RIG MAT OVER WELL. SPOT RIG OVER WELL. RIG UP DIVERTER & FLOW LINE. SET CAT WALK & PIPE RACKS. HOOK UP AND PRIME PUMP. SPOT 6 UP RIGHT TANKS AND RIG UP MANIFOLD. SPOT IN AND RIG UP 2 FRESH WATER FRAC TANKS. FILL FUEL TANK WITH DIESEL.	
	20:00 - 21:00	1.00	MIRU	01	B	P	64	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. FINISH PICKING UP BHA.	
	21:00 - 22:30	1.50	DRLSUR	02	B	P	64	PICK UP NOV 1.83 DEGREE BENT MOTOR (RUN # 1) .17 REV/GAL PICK UP 12 1/4" DRILL BIT. SPUD @ 2/15/2014 21:00. DRILL 12.25" HOLE 44' TO 210' (166' @ 111 FPH). WEIGHT ON BIT 5-15 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/ ROTATE 25/25/25 K. DRAG 0 K. CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER. RUNNING VOLUME THROUGH 1 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS.	
	22:30 - 0:00	1.50	DRLSUR	06	A	P	230	PRE JOB SAFETY MEETING, CIRC 15 MINUTES AND, TRIP OUT TO CHANGE ASSEMBLY. BREAK 12 1/4" BIT. MAKE UP BAKER HUGHES 11" BIT. PICK UP 8" DIRECTIONAL ASSEMBLY SCIBE MOTOR. INSTALL EM TOOL.	
2/16/2014	0:00 - 0:30	0.50	DRLSUR	06	A	P	230	TRIP IN HOLE WITH 11" BHA ASSEMBLY.	

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	0:30 - 5:30	5.00	DRLSUR	02	B	P	230	DRILL 11" SURFACE HOLE FROM 210' TO 730' (520' @ 104 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 920/670. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 55/48/50 K. DRAG 5 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 0.4' HIGH & 2.3' RIGHT OF THE LINE WITH 122' OF SLIDE @ 20%. 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	750	CONDUCT PRE TOUR SAFETY MEETING. TOPIC: MAKING CONNECTIONS.
	6:00 - 17:30	11.50	DRLSUR	02	B	P	750	DRILL 11" SURFACE HOLE FROM 730' to 1990' (1260' @ 110 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1300/1100. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 73/58/63 K. DRAG 10 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 5.1' HIGH & 8.2' LEFT OF THE LINE WITH 210' OF SLIDE @ 16%. 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	23		P	2010	CONDUCT PRE TOUR SAFETY MEETING. TOPIC: MAKING CONNECTIONS.
	18:00 - 0:00	6.00	DRLSUR	02	B	P	2010	DRILL 11" SURFACE HOLE FROM 1990' to 2410' (420' @ 70 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1350/1120. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 85/61/71 K. DRAG 14 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 10.2' HIGH & 6.9' LEFT OF THE LINE WITH 53' OF SLIDE @ 12%. 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 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
2/17/2014	0:00 - 5:30	5.50	DRLSUR	02	B	P	2430	DRILL 11" SURFACE HOLE FROM 2410' to 2800' (390' @ 71 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1550/1300. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 90/62/74 K. DRAG 16 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 5.7' HIGH & 4.3' LEFT OF THE LINE WITH 115' OF SLIDE @ 36%. 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	2820	CONDUCT PRE TOUR SAFETY MEETING. TOPIC: MAKING CONNECTIONS.
	6:00 - 10:00	4.00	DRLSUR	02	B	P	2820	DRILL 11" SURFACE HOLE FROM 2800' to 3045' (245' @ 62 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1550/1300. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 90/62/74 K. DRAG 16 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 5.7' HIGH & 4.3' LEFT OF THE LINE WITH 115' OF SLIDE @ 36%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.
	10:00 - 12:00	2.00	DRLSUR	05	C	P	3065	CIRCULATE AND CONDITION HOLE, VOLUME IS CLEAN COMING OVER SHAKERS, 3-400 BBL UPRIGHT'S FULL AND 3-400 BBL UPRIGHTS EMPTY, 1,000 BBL OF FRESH WATER ON LOCATION FOR CEMENT JOB.
	12:00 - 17:00	5.00	DRLSUR	06	A	P	3065	PRE JOB SAFETY MEETING, TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BOTTOM HOLE ASSEMBLY, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT. CLEAR TOOL AREA. SPOT SURFACE CASING FOR 8 5/8" CASING RUN.

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-201BS [BLUE]

Spud date: 2/15/2014

Project: UTAH-UINTAH

Site: NBU 921-20P PAD

Rig name no.: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start date: 2/15/2014

End date: 5/16/2014

Active datum: RKB @4,898.00usft (above Mean Sea Level)

UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	17:00 - 21:00	4.00	CSGSUR	12	C	P	3065	RUN 68 JOINTS OF 8-5/8" 28# J-55 LTC CASING. RAN 1 CENTRALIZER ON FIRST THREE JOINTS, AND EVERY OTHER JOINT FOR 2 JOINTS FOR A TOTAL OF 5 CENTRALIZERS. RUN CASING TO BOTTOM WITH NO PROBLEMS. SET FLOAT SHOE @ 3,016' KB. SET TOP OF BAFFLE PLATE @ 2,970'. FILLED CASING AND WASHED LAST JOINT TO BOTTOM.
	21:00 - 0:00	3.00	CSGSUR	12	E	P	3065	PRE JOB SAFETY MEETING WITH PRO PETRO CEMENTERS. RAN 200' OF 1". PIPE DOWN BACK-SIDE OF CASING. PRESSURE TEST LINES TO 1500 PSI. PUMP 0 BBLS OF FRESH WATER CLEARING SHOE. MIX AND PUMP 20 BBLS OF GEL WATER FLUSH AHEAD OF CEMENT. MIX AND PUMP 300 SX OF PREMIUM LEAD CEMENT WITH 10 LB/SX OF GILSONITE, 2 LB/SX OF GR-3, 3% SALT BWOC, 16% GEL, & 0.25 LB/SX FLOCELE. 173 BBLS OF SLURRY MIXED @ 12.0 PPG WITH YIELD OF 2.86 CF/SX. MIX AND PUMP 175 SX OF PREMIUM TAIL CEMENT WITH 2% CACL2 & 0.25 LB/SX FLOCELE. 35.8 BBLS OF SLURRY MIXED @ 15.8 PPG WITH YIELD OF 1.15 CF/SX. DROP PLUG ON FLY. DISPLACE WITH 185.5 BBLS OF FRESH WATER. GOOD RETURNS THROUGH JOB. FINAL LIFT OF 800 PSI AT 3 BBL/MINUTE. RETURNED 30 BBL CEMENT TO SURFACE. TESTED FLOAT AND FLOAT HELD ON 02/17/2014 AT 2335.  RELEASE RIG ON 2/18/2014 AT 0000.  TOP JOB # 1: PUMP CEMENT DOWN ONE INCH PIPE WITH 100 SX PREMIUM CEMENT WITH 4% CACL2, & .25 LB/SX FLOCELE, 20.5 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. CEMENT RETURNS TO SURFACE. RIG DOWN PRO PETRO CEMENTERS.  (CEMENT JOB FINISHED @ 02/18/2014 01:30)
5/9/2014	14:00 - 15:30	1.50	MIRU3	01	C	P	3065	SKID RIG, RIG UP
	15:30 - 16:30	1.00	MIRU3	08	B	Z	3065	CHANGE OUT IBOP ON TOP DRIVE
	16:30 - 17:00	0.50	PRPSPD	14	A	P	3065	NU BOP
	17:00 - 21:00	4.00	PRPSPD	15	A	P	3065	TEST 8 5/8 CASING TO 1500 PSI, FOR 30 MINS, TEST BLINDS, PIPE RAM , HCR VALVE, WING VALVES, CHOKE MANIFOLD, HCR VALVE FLOOR VALVES LOW 250 PSI FOR 5 MINS. , HIGH 5,000 PSI FOR 10 MINS HY-DRILL LOW 250 PSI FOR 5 MINS, HIGH 2500 PSI FOR 10 MINS
	21:00 - 21:30	0.50	PRPSPD	14	B	P	3065	INSTALL WEAR BUSHING

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	21:30 - 23:30	2.00	PRPSPD	06	A	P	3065	PU DIRECTIONAL BHA, SCRIBE, SURFACE TEST MWD
	23:30 - 0:00	0.50	PRPSPD	06	A	P	3065	TIH WITH NEW BHA
5/10/2014	0:00 - 1:00	1.00	PRPSPD	06	A	P	3065	TIH WITH NEW BHA
	1:00 - 2:00	1.00	DRLPRC	02	F	P	3065	TAG CEMENT @ 2928'. DRILL CEMENT, PLUG, FLOAT, AND SHOE. 335 GPM, 25 RPM, 5-10 WOB
	2:00 - 15:30	13.50	DRLPRC	02	D	P	3065	DRILL SLIDE F/3065' T/4621' (1556' @ 115 FT/ HR) WEIGHT ON BIT 16 - 25 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2150 / 1700 DIFFERENTIAL 450 TORQUE HIGH/LOW 13800 / 7500 OFF BOTTOM TORQUE 7000 STRING WEIGHT UP/DOWN/ROT 135 / 90 / 112 BOS RUNNING CONVENTIONAL WT 9.0 VIS 28 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 9.09 10.50 Total Footage Drilled From 3480' To 4623' 1143' Total Footage Drilled Rotating 913.00 Percent of Footage Rotated 80% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 230.00 Percent of Footage Sliding 20% Hours Total Time Rotate Drilling 4.91 Percent of Time Rotated 54% Total Time Slide Drilling 4.16 Percent of Time Sliding 46% Connection / Ream / Rig Time / Circulating / Tripping 1.41 Percent Non-Drilling Time 13% Last Survey MD: 4583' Inc 14.2 Azm 354.2 TVD 4414.67' Projection to Bit from Last Survey MD: 4623' Below 15.0' Left 11.0' REF PBHL Designed RIG SERVICE
	15:30 - 16:00	0.50	DRLPRC	07	A	P	4621	RIG SERVICE

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]

Spud date: 2/15/2014

Project: UTAH-UINTAH

Site: NBU 921-20P PAD

Rig name no.: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start date: 2/15/2014

End date: 5/16/2014

Active datum: RKB @4,898.00usft (above Mean Sea Level)

UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	16:00 - 0:00	8.00	DRLPRC	02	D	P	4621	DRILL SLIDE F/4621' T/5258' (637' @ 80 FT/ HR) WEIGHT ON BIT 17 - 27 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2250 / 1800 DIFFERENTIAL 450 TORQUE HIGH/LOW 12400 / 9100 OFF BOTTOM TORQUE 7500 STRING WEIGHT UP/DOWN/ROT 150 / 110 / 120 BOS RUNNING CONVENTIONAL WT 9.0 VIS 28 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Total Footage Drilled From 4623' To 5260' 637' Total Footage Drilled Rotating 463.00 Percent of Footage Rotated 73% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 174.00 Percent of Footage Sliding 27% Hours Total Time Rotate Drilling 3.17 Percent of Time Rotated 40% Total Time Slide Drilling 4.84 Percent of Time Sliding 61% Connection / Ream / Rig Time / Circulating / Tripping 0.50 Percent Non-Drilling Time 6% Last Survey MD: 5153' Inc 13.6 Azm 3.6 TVD 4966.49' Projection to Bit from Last Survey MD: 5260' 35.78 Below 21.49 Left REF PBHL

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

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/11/2014	0:00 - 5:00	5.00	DRLPRC	02	D	P	5258	DRILL SLIDE F/5258' T/5637' (379' @ 76 FT/ HR) WEIGHT ON BIT 18 - 27 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2250 / 1800 DIFFERENTIAL 450 TORQUE HIGH/LOW 13500 / 10900 OFF BOTTOM TORQUE 9500 STRING WEIGHT UP/DOWN/ROT 150 / 110 / 120 BOS RUNNING CONVENTIONAL WT 9.0 VIS 28 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 4.67 5.00 Total Footage Drilled From 5260' To 5637' 377' Total Footage Drilled Rotating 296.00 Percent of Footage Rotated 79% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 81.00 Percent of Footage Sliding 21% Hours Total Time Rotate Drilling 2.17 Percent of Time Rotated 46% Total Time Slide Drilling 2.50 Percent of Time Sliding 54% Connection / Ream / Rig Time / Circulating / Tripping 0.33 Percent Non-Drilling Time 7% Last Survey MD: 5534' Inc 8.2 Azm 45.3 TVD 5340.34' Projection to Bit from Last Survey MD: 5637' South 1.10 West 9.53 REF PBHL

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 16:00	11.00	DRLPRV	02	B	P	5637	DRILL SLIDE F/5637' T/6620' (983' @ 89 FT/ HR) WEIGHT ON BIT 14 - 27 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2350 / 2000 DIFFERENTIAL 350 TORQUE HIGH/LOW 13800 / 12400 OFF BOTTOM TORQUE 10500 STRING WEIGHT UP/DOWN/ROT 175 / 100 / 128 BOS RUNNING CONVENTIONAL WT 9.2 VIS 29 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 9.91 12.50 Total Footage Drilled From 5637' To 6620' 983' Total Footage Drilled Rotating 925.00 Percent of Footage Rotated 94% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 58.00 Percent of Footage Sliding 6% Hours Total Time Rotate Drilling 8.41 Percent of Time Rotated 85% Total Time Slide Drilling 1.50 Percent of Time Sliding 15% Connection / Ream / Rig Time / Circulating / Tripping 2.59 Percent Non-Drilling Time 21% Last Survey MD: 6580' Inc 0.8 Azm 183.3 TVD 6384.9' Projection to Bit from Last Survey MD: 6620' North 18.50 East 1.25 REF PBHL
	16:00 - 16:30	0.50	DRLPRV	07	A	P	6620	RIG SERVICE
	16:30 - 0:00	7.50	DRLPRV	02	B	P	6620	DRILL SLIDE F/6620' T/7193' (573' @ 76 FT/ HR) WEIGHT ON BIT 15 - 29 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2400 / 2050 DIFFERENTIAL 350 TORQUE HIGH/LOW 16400 / 13100 OFF BOTTOM TORQUE 13200 STRING WEIGHT UP/DOWN/ROT 190 / 125 / 140 BOS RUNNING CONVENTIONAL WT 9.4 VIS 29 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/12/2014	0:00 - 5:00	5.00	DRLPRV	02	B	P	7193	DRILL SLIDE F/7193' T/7500' (307' @ 62 FT/ HR) WEIGHT ON BIT 18 - 28 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2450 / 2150 DIFFERENTIAL 300 TORQUE HIGH/LOW 14400 / 13200 OFF BOTTOM TORQUE 12000 STRING WEIGHT UP/DOWN/ROT 190 / 125 / 140 BOS RUNNING CONVENTIONAL WT 9.5 VIS 29 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 4.75 5.00 Total Footage Drilled From 7192' To 7500' 308' Total Footage Drilled Rotating 290.00 Percent of Footage Rotated 94% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 18.00 Percent of Footage Sliding 6% Hours Total Time Rotate Drilling 3.75 Percent of Time Rotated 79% Total Time Slide Drilling 1.00 Percent of Time Sliding 21% Connection / Ream / Rig Time / Circulating / Tripping 0.25 Percent Non-Drilling Time 5% Last Survey MD: 7437' Inc 0.7 Azm 254.8 TVD 7241.72' Projection to Bit from Last Survey MD: 7500' North 4.40' West 1.63' REF PBHL

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 13:30	8.50	DRLPRV	02	B	P	7500	DRILL SLIDE F/7500' T/8049' (549' @ 65 FT/ HR) WEIGHT ON BIT 17 - 28 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 2700 / 2300 DIFFERENTIAL 400 TORQUE HIGH/LOW 18500 / 15400 OFF BOTTOM TORQUE 13000 STRING WEIGHT UP/DOWN/ROT 220 / 120 / 152 BOS RUNNING CONVENTIONAL WT 10.1 VIS 30 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 8.00 9.00 Total Footage Drilled From 7500' To 8049' 549' Total Footage Drilled Rotating 529.00 Percent of Footage Rotated 96% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 20.00 Percent of Footage Sliding 4% Hours Total Time Rotate Drilling 6.83 Percent of Time Rotated 85% Total Time Slide Drilling 1.17 Percent of Time Sliding 15% Connection / Ream / Rig Time / Circulating / Tripping 1.00 Percent Non-Drilling Time 11% Last Survey MD: 8009' Inc 1.4 Azm 296.0 TVD 7813.66' Projection to Bit from Last Survey MD: 8049' North 3.32' West 9.09' REF PBHL RIG SERVICE
	13:30 - 14:00	0.50	DRLPRV	07	A	P	8049	

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	14:00 - 0:00	10.00	DRLPRV	02	B	P	8049	DRILL SLIDE F/8049' T/8500' (451' @ 45 FT/ HR) WEIGHT ON BIT 17 - 28 K. ROTARY RPM 63 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 3000 / 2600 DIFFERENTIAL 400 TORQUE HIGH/LOW 19000 / 14400 OFF BOTTOM TORQUE 18000 STRING WEIGHT UP/DOWN/ROT 225 / 125 / 156 BOS RUNNING CONVENTIONAL WT 10.7 VIS 31 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 9.67 10.00 Total Footage Drilled From 8049' To 8500' 451' Total Footage Drilled Rotating 428.00 Percent of Footage Rotated 95% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 23.00 Percent of Footage Sliding 5% Hours Total Time Rotate Drilling 7.34 Percent of Time Rotated 76% Total Time Slide Drilling 2.33 Percent of Time Sliding 24% Connection / Ream / Rig Time / Circulating / Tripping 0.33 Percent Non-Drilling Time 3% Last Survey MD: 8390' Inc 1.5 Azm 330.0 TVD 8194.55' Projection to Bit from Last Survey MD: 8500' North 9.77' West 16.84' REF PBHL

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/13/2014	0:00 - 6:00	6.00	DRLPRV	02	B	P	8500	DRILL SLIDE F/8500' T/8833' (333' @ 56 FT/ HR) WEIGHT ON BIT 17 - 28 K. ROTARY RPM 53 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 3000 / 2600 DIFFERENTIAL 400 TORQUE HIGH/LOW 19000 / 14400 OFF BOTTOM TORQUE 18000 STRING WEIGHT UP/DOWN/ROT 225 / 125 / 156 BOS RUNNING CONVENTIONAL WT 10.7 VIS 31 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 5.17 5.00 Total Footage Drilled From 8500' To 8833' 333' Total Footage Drilled Rotating 333.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 5.17 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping -0.17 Percent Non-Drilling Time -3% Last Survey MD: 8771' Inc 1.0 Azm 18.8 TVD 8575.45' Projection to Bit from Last Survey MD: 8833' North 16.52' West 15.57' REF PBHL
	6:00 - 6:45	0.75	DRLPRV	05	C	Z	8833	HUNTING MUD MOTOR SPIKING AND CHUNKING. RUBBER COMING ACROSS SHAKERS. CIRCULATE SWEEP AROUND BEFORE TOOH.
	6:45 - 13:30	6.75	DRLPRV	06	H	Z	8833	TOOH TO REPLACE MUD MOTOR. WASH AND REAM THROUGH TIGHT SPOT AT TOP OF WASATCH
	13:30 - 14:30	1.00	DRLPRV	06	H	Z	8833	LD MUD MOTOR AND BIT. MOTOR DID NOT DRAIN. BIT GRADED 1-1-CT
	14:30 - 16:00	1.50	DRLPRV	06	A	Z	8833	PU NEW MUD MOTOR AND BIT. ORIENT AND SCRIBE. PROGRAM MWD
	16:00 - 17:30	1.50	DRLPRV	06	A	Z	8833	TIH WITH BHA TO SHOE
	17:30 - 18:00	0.50	DRLPRV	07	A	P	8833	RIG SERVICE. CHANGE OUT WASH PIPE
	18:00 - 19:30	1.50	DRLPRV	09	A	P	8833	SLIP AND CUT DRILL LINE
	19:30 - 22:30	3.00	DRLPRV	06	A	Z	8833	CONTINUE TO TIH WITH BHA. WASH LAST 2 STANDS TO BOTTOM.

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

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	22:30 - 0:00	1.50	DRLPRV	02	B	P	8833	DRILL SLIDE F/8833' T/8955' (122' @ 81 FT/ HR) WEIGHT ON BIT 11 - 22 K. ROTARY RPM 53 MUD MOTOR RPM 106 STROKES PER MINUTE 63/63 GALLONS PER MINUTE 528 SPP ON/OFF 3300 / 2850 DIFFERENTIAL 450 TORQUE HIGH/LOW 21400 / 19700 OFF BOTTOM TORQUE 17000 STRING WEIGHT UP/DOWN/ROT 200 / 125 / 157 BOS RUNNING CONVENTIONAL WT 11.1 VIS 34 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 1.41 1.50 Total Footage Drilled From 8833' To 8955' 122' Total Footage Drilled Rotating 122.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 1.41 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.09 Percent Non-Drilling Time 6% Last Survey MD: 8866' Inc 1.1 Azm 24.3 TVD 8671.31' Projection to Bit from Last Survey MD: 8955' North 12.96' West 14.72' REF PBHL

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-201BS [BLUE]

Spud date: 2/15/2014

Project: UTAH-UINTAH

Site: NBU 921-20P PAD

Rig name no.: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start date: 2/15/2014

End date: 5/16/2014

Active datum: RKB @4,898.00usft (above Mean Sea Level)

UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/14/2014	0:00 - 5:00	5.00	DRLPRV	02	B	P	8955	DRILL SLIDE F/8955' T/9320' (365' @ 73 FT/ HR) WEIGHT ON BIT 13 - 23 K. ROTARY RPM 50 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 3350 / 2950 DIFFERENTIAL 400 TORQUE HIGH/LOW 19200 / 16700 OFF BOTTOM TORQUE 15000 STRING WEIGHT UP/DOWN/ROT 220 / 122 / 157 BOS RUNNING CONVENTIONAL WT 11.1 VIS 33 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 4.67 5.00 Total Footage Drilled From 8955' To 9320' 365' Total Footage Drilled Rotating 365.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 4.67 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.33 Percent Non-Drilling Time 7% Last Survey MD: 9247' Inc 1.2 Azm 77.6 TVD 9052.25' Projection to Bit from Last Survey MD: 9320' North 15.44' West 9.33' REF PBHL

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 16:00	11.00	DRLPRV	02	B	P	9320	DRILL SLIDE F/9320' T/9763' (443' @ 41 FT/ HR) WEIGHT ON BIT 15 - 22 K. ROTARY RPM 50 MUD MOTOR RPM 109 STROKES PER MINUTE 65/65 GALLONS PER MINUTE 544 SPP ON/OFF 3400 / 3000 DIFFERENTIAL 400 TORQUE HIGH/LOW 19700 / 18100 OFF BOTTOM TORQUE 15000 STRING WEIGHT UP/DOWN/ROT 250 / 130 / 160 BOS RUNNING CONVENTIONAL WT 12.0 VIS 34 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 11.00 11.50 Total Footage Drilled From 9320' To 9763' 443' Total Footage Drilled Rotating 443.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 11.00 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.50 Percent Non-Drilling Time 4% Last Survey MD: 9723' Inc 0.8 Azm 116.3 TVD 9528.18' Projection to Bit from Last Survey MD: 9763' North 14.77' West 2.13' REF PBHL RIG SERVICE
	16:00 - 16:30	0.50	DRLPRV	07	A	P	9763	

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	16:30 - 0:00	7.50	DRLPRV	02	B	P	9763	DRILL SLIDE F/9763' T/10001' (238' @ 32 FT/ HR) WEIGHT ON BIT 14 - 24 K. ROTARY RPM 45 MUD MOTOR RPM 88 STROKES PER MINUTE 0/105 GALLONS PER MINUTE 440 SPP ON/OFF 2650 / 2300 DIFFERENTIAL 350 TORQUE HIGH/LOW 22200 / 20600 OFF BOTTOM TORQUE 15500 STRING WEIGHT UP/DOWN/ROT 245 / 135 / 175 BOS RUNNING CONVENTIONAL WT 12.0 VIS 34 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 6.83 7.50 Total Footage Drilled From 9763' To 10001' 238' Total Footage Drilled Rotating 238.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 6.83 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.67 Percent Non-Drilling Time 9% Last Survey MD: 9913' Inc 0.6 Azm 104.1 TVD 9718.16' Projection to Bit from Last Survey MD: 10001' North 13.93' East 0.54' REF PBHL

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-201BS [BLUE]

Spud date: 2/15/2014

Project: UTAH-UINTAH

Site: NBU 921-20P PAD

Rig name no.: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start date: 2/15/2014

End date: 5/16/2014

Active datum: RKB @4,898.00usft (above Mean Sea Level)

UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/15/2014	0:00 - 5:00	5.00	DRLPRV	02	B	P	10,001	DRILL SLIDE F/10001' T/10180' (179' @ 36 FT/ HR) WEIGHT ON BIT 18 - 24 K. ROTARY RPM 45 MUD MOTOR RPM 88 STROKES PER MINUTE 0/105 GALLONS PER MINUTE 440 SPP ON/OFF 2800 / 2450 DIFFERENTIAL 350 TORQUE HIGH/LOW 22600 / 20000 OFF BOTTOM TORQUE 15500 STRING WEIGHT UP/DOWN/ROT 248 / 134 / 176 BOS RUNNING CONVENTIONAL WT 12.0 VIS 36 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 4.83 5.00 Total Footage Drilled From 10001' To 10180' 179' Total Footage Drilled Rotating 179.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 4.83 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.17 Percent Non-Drilling Time 3% Last Survey MD: 10104' Inc 1.0 Azm 113.6 TVD 9909.14' Projection to Bit from Last Survey MD: 10180' North 12.38' East 3.38' REF PBHL

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	5:00 - 8:00	3.00	DRLPRV	02	B	P	10,180	DRILL SLIDE F/10180' T/10300' (120' @ 40 FT/ HR) WEIGHT ON BIT 17 - 25 K. ROTARY RPM 45 MUD MOTOR RPM 100 STROKES PER MINUTE 60/60 GALLONS PER MINUTE 502 SPP ON/OFF 3500 / 3150 DIFFERENTIAL 350 TORQUE HIGH/LOW 23500 / 21000 OFF BOTTOM TORQUE 16000 STRING WEIGHT UP/DOWN/ROT 275 / 150 / 175 BOS RUNNING CONVENTIONAL WT 12.0 VIS 36 PUMP LCM SWEEPS TO HELP WITH LOSSES. BARRELS LOSSES 0 @ 0 BBL/HR NO FLARE Actual On Bottom Drilling Time 2.92 3.00 Total Footage Drilled From 10180' To 10300' 120' Total Footage Drilled Rotating 120.00 Percent of Footage Rotated 100% BIT POSITION / SLIDING / ROTATING / DRILLING REPORT Total Footage Drilled Sliding 0.00 Percent of Footage Sliding 0% Hours Total Time Rotate Drilling 2.92 Percent of Time Rotated 100% Total Time Slide Drilling 0.00 Percent of Time Sliding 0% Connection / Ream / Rig Time / Circulating / Tripping 0.08 Percent Non-Drilling Time 3% Last Survey MD: 10260' Inc 1.1 Azm 120.3 TVD 10065.12' Projection to Bit from Last Survey MD: 10300' North 10.82' East 5.09' REF PBHL
	8:00 - 10:00	2.00	DRLPRV	05	C	P	10,300	CIRCULATE AT TD PRIOR TO WIPER TRIP
	10:00 - 12:00	2.00	DRLPRV	06	E	P	10,300	10 STAND WIPER TRIP. MAX PULL OFF BOTTOM 350K
	12:00 - 14:00	2.00	DRLPRV	05	C	P	10,300	CIRCULATE AFTER WIPER TRIP. 2x HIGH VIS LCM SWEEPS. 1ST SWEEP RETURNED 15% INCREASE IN CUTTINGS. 2ND SWEEP RETURNED MOSTLY FINES
	14:00 - 19:30	5.50	DRLPRV	06	D	P	10,300	TOOH TO LD DIRECTIONAL BHA AND RUN CASING. MAX PULL 315K OFF BOTTOM. NO TIGHT SPOTS ENCOUNTERED.
	19:30 - 20:00	0.50	DRLPRV	06	D	P	10,300	LD DIRECTIONAL BHA AND BIT. BIT GRADED 2-2-BT
	20:00 - 20:30	0.50	DRLPRV	14	B	P	10,300	PULL WEAR BUSHING
	20:30 - 21:30	1.00	CSGPRO	12	A	P	10,300	RU CASERS FLAGPOLE, LD TRUCK, TONGS, HOSES, AND FLOOR
	21:30 - 0:00	2.50	CSGPRO	12	C	P	10,300	RUN 4 1/2" PRODUCTION CASING. SET @ 10280'. FLOAT @ 10234'. MARKER @ 8150'. DV TOOL @ 5379'. X/O-MARKER @ 5065'. 117 JTS OF 11.6# P110 LTC, 114 JTS OF 11.6# 180 DQX, 1 MARKER, 1 X/O, 1 DV TOOL

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start date: 2/15/2014	End date: 5/16/2014
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
5/16/2014	0:00 - 4:00	4.00	CSGPRO	12	C	P	10,300	CONTINUE RUN 4 1/2" PRODUCTION CASING. SET @ 10280'. FLOAT @ 10234'. MARKER @ 8150'. DV TOOL @ 5379'. X/O-MARKER @ 5065'. 117 JTS OF 11.6# P110 LTC, 114 JTS OF 11.6# I80 DQX, 1 MARKER, 1 X/O, 1 DV TOOL
	4:00 - 4:30	0.50	CSGPRO	12	A	P	10,300	CIRCULATE CASING. RD FRANKS CASERS LD TRUCK, FLAGPOLE, TONGS, HOSES, AND TORQUE TURN
	4:30 - 6:00	1.50	CSGPRO	12	B	P	10,300	CIRCULATE CASING. RU BAKER BULK TRUCKS, PUMP TRUCK, HOSES, AND STANDPIPE. SAFETY MEETING
	6:00 - 8:30	2.50	CSGPRO	12	E	P	10,300	CEMENT FIRST STAGE. 25 BBL SPACER, 1210 SKS/280 BBL OF 14.3# / 1.35 YIELD CEMENT, 159 BBLS DISPLACEMENT(90 H2O/69 MUD). FINAL LIFT 2291 PSI, BUMPED 3045 PSI. FLOATS HELD. 1.5 BBLS BACK TO TRUCK
	8:30 - 9:00	0.50	CSGPRO	12	E	P	10,300	DROP BOMB, WAIT 30 MINUTES, OPEN DV TOOL @ 660 PSI. 60 BBLS CEMENT BACK TO SURFACE
	9:00 - 12:30	3.50	CSGPRO	05	D	P	10,300	CIRCULATE BETWEEN STAGES
	12:30 - 14:00	1.50	CSGPRO	12	E	P	10,300	CEMENT SECOND STAGE. 25 BBL SPACER, 705 SKS/248 BBL OF 12.5# / 1.98 YIELD LEAD CEMENT, 60 SKS/12.5 BBL OF 15.8# / 1.16 YIELD TAIL CEMENT, 84 BBLS DISPLACEMENT. FINAL LIFT 1199 PSI, BUMP PLUG AND CLOSE DV TOOL 3065 PSI. 2 BBLS CEMENT TO SURFACE. FLOATS HELD. 1 BBL BACK TO TRUCK.
	14:00 - 14:30	0.50	CSGPRO	12	B	P	10,300	RD BAKER BULK TRUCKS, PUMP TRUCK, HOSES, AND STANDPIPE.
	14:30 - 15:00	0.50	CSGPRO	12	B	P	10,300	SET PACKOFF WITH CAMERON AND TEST
	15:00 - 16:00	1.00	RDMO	14	A	P	10,300	ND BOP, RIG DOWN, PREPARE TO SKID. RELEASE RIG

# Anadarko Petroleum Corporation



**Project:** Uintah Co., UT (UTM)  
**Site:** Sec 20-T9S-R21E  
**Well:** NBU 921-201BS  
**Wellbore:** Original Hole  
**Final Surveys**  
**Rig:** SST 56

**Surface Location:**  
 SHL 850' FSL & 599' FEL Sec 20-T9S-R21E

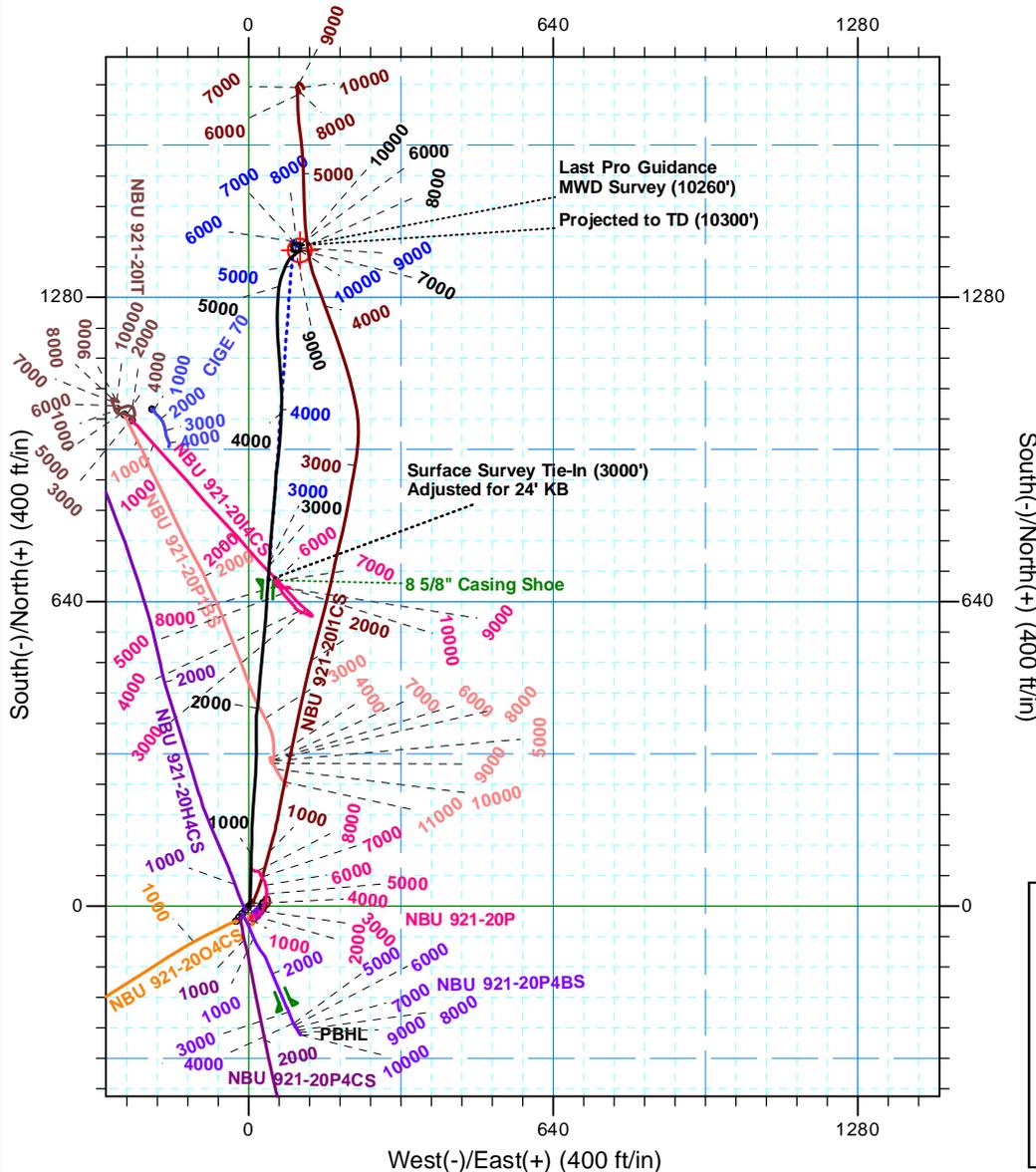
Universal Transverse Mercator (US Survey Feet)  
 NAD 1927 (NADCON CONUS)  
 Zone 12N (114 W to 108 W)  
**Elevation: 4874' GL + 24' KB @ 4898.00ft (SST 56)**  
**Northing**      **Easting**      **Latitude**      **Longitude**  
 14535325.35    2041480.47      40.016634      -109.567606

**SECTION DETAILS**  
 Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
2980.00	17.85	3.82	2883.90	686.21	41.57	0.00	0.00	687.36	Survey Tie-In/Begin Turn at 2980' MD, 2884' TVD
2986.60	17.85	4.25	2890.19	688.23	41.71	2.00	90.21	689.39	Begin Hold at 2987' MD, 2890' TVD
4865.05	17.85	4.25	4678.21	1262.44	84.39	0.00	0.00	1265.18	Begin Drop at 4865' MD, 4678' TVD
5757.55	0.00	0.00	5556.34	1399.96	94.61	2.00	180.00	1403.08	Begin Hold at 5758' MD, 5556' TVD
5857.55	0.00	0.00	5656.34	1399.96	94.61	0.00	0.00	1403.08	Begin Build at 5878' MD, 5656' TVD
5964.23	0.32	148.51	5763.02	1399.71	94.77	0.30	148.51	1402.84	Begin Hold at 5964' MD, 5763' TVD
10318.28	0.32	148.52	10117.00	1378.87	107.53	0.00	0.71	1383.06	<b>PBHL</b>

**WELLBORE TARGET DETAILS (LAT/LONG)**

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
<b>PBHL</b>	10117.00	1378.87	107.53	40.020420	-109.567222



South(-)/North(+) (400 ft/in)

**Azimuths to True North**  
 Magnetic North: 10.73°

Magnetic Field  
 Strength: 52038.4snT  
 Dip Angle: 65.79°  
 Date: 05/20/2014  
 Model: IGRF2010

**Azimuth Corrections**

To convert a Magnetic Direction to a True Direction, Add 10.73° East  
 To convert a True Direction to a Grid Direction, Subtract 0.92°  
 To convert a Magnetic Direction to a Grid Direction, Add 9.81°

Created By: Bob Hays    Date: 8:00, May 16 2014

# Anadarko Petroleum Corporation



**Project: Uintah Co., UT (UTM)**  
**Site: Sec 20-T9S-R21E**  
**Well: NBU 921-201BS**  
**Wellbore: Original Hole**  
**Final Surveys**  
**Rig: SST 56**

**Surface Location:**  
**SHL 850' FSL & 599' FEL Sec 20-T9S-R21E**

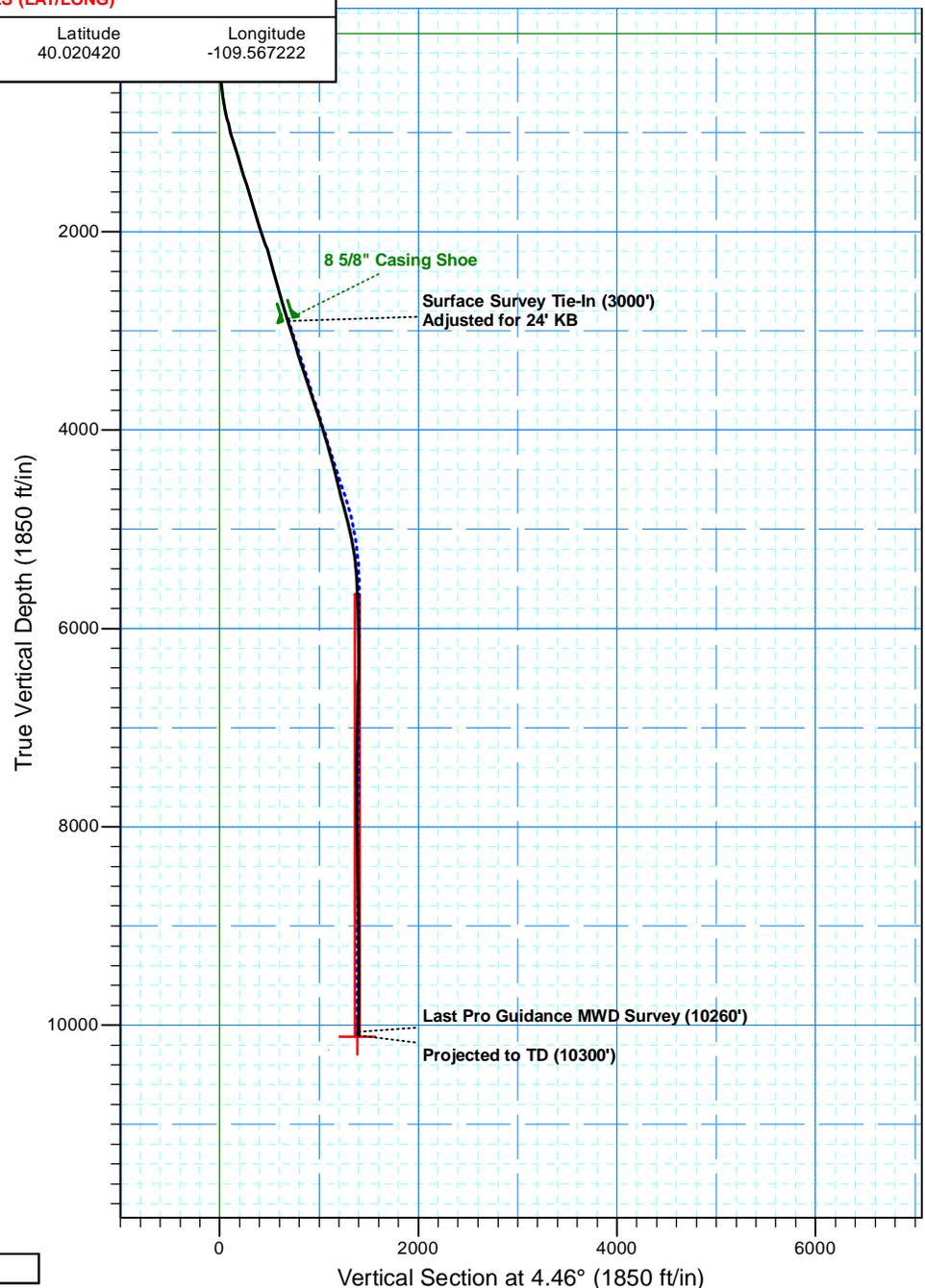
Universal Transverse Mercator (US Survey Feet)  
 NAD 1927 (NADCON CONUS)  
 Zone 12N (114 W to 108 W)  
**Elevation: 4874' GL + 24' KB @ 4898.00ft (SST 56)**  
**Northing**      **Easting**      **Latitude**      **Longitude**  
 14535325.35    2041480.47      40.016634      -109.567606

**SECTION DETAILS**  
 Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
2980.00	17.85	3.82	2883.90	686.21	41.57	0.00	0.00	687.36	Survey Tie-In/Begin Turn at 2980' MD, 2884' TVD
2986.60	17.85	4.25	2890.19	688.23	41.71	2.00	90.21	689.39	Begin Hold at 2987' MD, 2890' TVD
4865.05	17.85	4.25	4678.21	1262.44	84.39	0.00	0.00	1265.18	Begin Drop at 4865' MD, 4678' TVD
5757.55	0.00	0.00	5556.34	1399.96	94.61	2.00	180.00	1403.08	Begin Hold at 5758' MD, 5556' TVD
5857.55	0.00	0.00	5656.34	1399.96	94.61	0.00	0.00	1403.08	Begin Build at 5878' MD, 5656' TVD
5964.23	0.32	148.51	5763.02	1399.71	94.77	0.30	148.51	1402.84	Begin Hold at 5964' MD, 5763' TVD
10318.28	0.32	148.52	10117.00	1378.87	107.53	0.00	0.71	1383.06	<b>PBHL</b>

**WELLBORE TARGET DETAILS (LAT/LONG)**

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
<b>PBHL</b>	10117.00	1378.87	107.53	40.020420	-109.567222





# **Anadarko Petroleum Corporation**

**Uintah Co., UT (UTM)**

**Sec 20-T9S-R21E**

**NBU 921-2011BS**

**Original Hole**

**Design: Final Surveys**

## **Standard Survey Report**

**16 May, 2014**





## Professional Directional LTD

### Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-2011BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Well:</b>	NBU 921-2011BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Uintah Co., UT (UTM)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<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>	Sec 20-T9S-R21E		
<b>Site Position:</b>		<b>Northing:</b>	14,536,796.93 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,036,855.98 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	40.020877
		<b>Longitude:</b>	-109.584034
		<b>Grid Convergence:</b>	0.91 °

<b>Well</b>	NBU 921-2011BS		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	14,535,325.36 usft
			<b>Latitude:</b>
			40.016634
			<b>Longitude:</b>
			-109.567606
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>
			0.00 ft
			<b>Ground Level:</b>
			4,874.00 ft

<b>Wellbore</b>	Original Hole		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/20/14	10.73	65.79	52,038

Survey Program	Date				
	05/16/14				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
20.00	3,000.00	Surface Surveys (Original Hole)	MWD	MWD	
3,059.00	10,260.00	Pro Guidance MWD Surveys (Original Hol	MWD	MWD	
10,300.00	10,300.00	Projected to TD (Original Hole)	Projection	Projection	

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
	20.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00
	217.00	0.70	91.97	217.00	-0.04	1.20	0.05	0.36	0.36	0.00
	301.00	2.11	23.95	300.97	1.35	2.34	1.53	2.33	1.68	-80.98
	383.00	3.69	7.25	382.87	5.35	3.29	5.59	2.17	1.93	-20.37
	473.00	5.01	1.80	472.60	12.15	3.78	12.41	1.54	1.47	-6.06
	563.00	6.77	357.84	562.13	21.38	3.70	21.61	2.01	1.96	-4.40
	653.00	8.97	1.36	651.27	33.70	3.67	33.88	2.50	2.44	3.91
	743.00	10.90	1.45	739.92	49.22	4.05	49.39	2.14	2.14	0.10
	833.00	12.31	1.80	828.08	67.32	4.57	67.47	1.57	1.57	0.39
	923.00	14.40	2.09	915.64	88.09	5.28	88.24	2.32	2.32	0.32
	1,013.00	15.30	1.10	1,002.63	111.15	5.91	111.27	1.04	1.00	-1.10
	1,103.00	16.74	1.76	1,089.14	135.98	6.54	136.08	1.61	1.60	0.73
	1,193.00	17.23	2.06	1,175.21	162.25	7.42	162.34	0.55	0.54	0.33
	1,283.00	17.48	2.97	1,261.11	189.07	8.60	189.17	0.41	0.28	1.01



## Professional Directional LTD

## Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-2011BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Well:</b>	NBU 921-2011BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,373.00	16.62	5.05	1,347.16	215.39	10.43	215.55	1.17	-0.96	2.31
1,463.00	16.37	4.42	1,433.45	240.86	12.54	241.11	0.34	-0.28	-0.70
1,553.00	16.36	2.77	1,519.81	266.17	14.13	266.46	0.52	-0.01	-1.83
1,643.00	16.88	2.94	1,606.05	291.88	15.41	292.19	0.58	0.58	0.19
1,733.00	17.59	0.48	1,692.01	318.53	16.20	318.82	1.13	0.79	-2.73
1,823.00	17.67	359.60	1,777.78	345.78	16.21	346.00	0.31	0.09	-0.98
1,913.00	18.11	359.43	1,863.43	373.43	15.98	373.54	0.49	0.49	-0.19
2,003.00	17.41	5.49	1,949.14	400.82	17.13	400.94	2.20	-0.78	6.73
2,093.00	18.20	5.67	2,034.83	428.21	19.81	428.45	0.88	0.88	0.20
2,183.00	19.26	3.91	2,120.07	457.01	22.21	457.35	1.33	1.18	-1.96
2,273.00	17.15	4.70	2,205.56	485.04	24.31	485.47	2.36	-2.34	0.88
2,363.00	15.39	5.40	2,291.95	510.16	26.52	510.68	1.97	-1.96	0.78
2,453.00	15.74	5.23	2,378.65	534.21	28.75	534.82	0.39	0.39	-0.19
2,543.00	16.27	6.54	2,465.16	558.89	31.30	559.63	0.71	0.59	1.46
2,633.00	16.09	5.05	2,551.60	583.84	33.84	584.70	0.50	-0.20	-1.66
2,723.00	15.21	3.56	2,638.26	608.04	35.67	608.98	1.07	-0.98	-1.66
2,813.00	15.56	4.87	2,725.03	631.85	37.43	632.85	0.55	0.39	1.46
2,903.00	17.15	4.43	2,811.39	657.11	39.48	658.19	1.77	1.77	-0.49
3,000.00	17.85	3.82	2,903.90	686.21	41.57	687.36	0.75	0.72	-0.63
<b>Surface Survey Tie-In (3000') Adjusted for 24' KB</b>									
3,059.00	16.20	1.60	2,960.31	703.46	42.40	704.62	3.01	-2.80	-3.76
3,154.00	16.90	4.20	3,051.38	730.48	43.78	731.67	1.07	0.74	2.74
3,250.00	17.80	6.00	3,143.01	758.99	46.34	760.29	1.09	0.94	1.88
3,345.00	18.70	4.60	3,233.23	788.61	49.08	790.04	1.05	0.95	-1.47
3,440.00	17.90	3.10	3,323.42	818.37	51.09	819.86	0.98	-0.84	-1.58
3,536.00	18.70	6.30	3,414.57	848.40	53.58	849.99	1.34	0.83	3.33
3,631.00	17.10	3.10	3,504.97	877.48	56.00	879.18	1.98	-1.68	-3.37
3,726.00	17.10	5.50	3,595.77	905.33	58.10	907.11	0.74	0.00	2.53
3,822.00	18.30	7.30	3,687.23	934.33	61.37	936.27	1.37	1.25	1.88
3,917.00	19.40	6.20	3,777.13	964.81	64.96	966.94	1.22	1.16	-1.16
4,012.00	18.30	1.80	3,867.04	995.41	67.14	997.61	1.89	-1.16	-4.63
4,107.00	17.20	4.10	3,957.52	1,024.33	68.61	1,026.56	1.37	-1.16	2.42
4,202.00	16.60	2.20	4,048.42	1,051.90	70.14	1,054.16	0.86	-0.63	-2.00
4,297.00	15.90	358.80	4,139.62	1,078.47	70.38	1,080.68	1.24	-0.74	-3.58
4,392.00	15.80	354.30	4,231.01	1,104.35	68.83	1,106.36	1.30	-0.11	-4.74
4,487.00	14.90	356.20	4,322.62	1,129.40	66.73	1,131.17	1.09	-0.95	2.00
4,583.00	14.20	354.20	4,415.54	1,153.44	64.72	1,154.98	0.90	-0.73	-2.08
4,678.00	14.10	353.70	4,507.66	1,176.53	62.28	1,177.81	0.17	-0.11	-0.53
4,773.00	14.50	357.50	4,599.72	1,199.91	60.49	1,200.98	1.07	0.42	4.00
4,868.00	15.20	0.80	4,691.55	1,224.25	60.14	1,225.22	1.16	0.74	3.47
4,963.00	15.50	1.90	4,783.16	1,249.39	60.74	1,250.33	0.44	0.32	1.16
5,058.00	13.80	4.10	4,875.07	1,273.38	61.97	1,274.34	1.88	-1.79	2.32
5,153.00	13.60	3.60	4,967.37	1,295.83	63.48	1,296.84	0.24	-0.21	-0.53
5,248.00	12.70	15.20	5,059.89	1,317.06	66.92	1,318.27	2.93	-0.95	12.21



## Professional Directional LTD

### Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-2011BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Well:</b>	NBU 921-2011BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

#### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,343.00	11.20	23.80	5,152.84	1,335.58	73.38	1,337.24	2.45	-1.58	9.05
5,439.00	9.30	25.40	5,247.30	1,351.12	80.47	1,353.28	2.00	-1.98	1.67
5,534.00	8.20	45.30	5,341.21	1,362.82	88.58	1,365.58	3.37	-1.16	20.95
5,629.00	5.90	52.70	5,435.49	1,370.54	97.28	1,373.96	2.60	-2.42	7.79
5,724.00	4.10	50.60	5,530.13	1,375.66	103.79	1,379.57	1.90	-1.89	-2.21
5,820.00	2.70	32.90	5,625.96	1,379.74	107.67	1,383.93	1.81	-1.46	-18.44
5,914.00	1.70	349.90	5,719.89	1,382.97	108.63	1,387.23	1.98	-1.06	-45.74
6,009.00	1.50	348.50	5,814.86	1,385.57	108.14	1,389.79	0.21	-0.21	-1.47
6,104.00	1.20	348.50	5,909.83	1,387.77	107.69	1,391.94	0.32	-0.32	0.00
6,199.00	1.10	357.50	6,004.81	1,389.65	107.45	1,393.80	0.22	-0.11	9.47
6,295.00	1.00	13.50	6,100.79	1,391.39	107.61	1,395.54	0.32	-0.10	16.67
6,390.00	0.90	17.80	6,195.78	1,392.90	108.03	1,397.09	0.13	-0.11	4.53
6,485.00	0.50	182.60	6,290.78	1,393.20	108.24	1,397.40	1.46	-0.42	173.47
6,580.00	0.80	183.30	6,385.77	1,392.13	108.18	1,396.32	0.32	0.32	0.74
6,676.00	0.90	177.90	6,481.76	1,390.70	108.17	1,394.90	0.13	0.10	-5.63
6,771.00	1.20	173.40	6,576.75	1,388.97	108.31	1,393.19	0.33	0.32	-4.74
6,867.00	1.40	169.40	6,672.72	1,386.82	108.64	1,391.07	0.23	0.21	-4.17
6,962.00	1.50	166.80	6,767.69	1,384.47	109.14	1,388.76	0.13	0.11	-2.74
7,057.00	1.60	170.50	6,862.66	1,381.95	109.64	1,386.29	0.15	0.11	3.89
7,152.00	1.30	192.40	6,957.63	1,379.59	109.63	1,383.93	0.66	-0.32	23.05
7,247.00	0.70	248.40	7,052.61	1,378.32	108.86	1,382.61	1.13	-0.63	58.95
7,342.00	0.90	256.50	7,147.60	1,377.93	107.60	1,382.13	0.24	0.21	8.53
7,437.00	0.70	254.80	7,242.59	1,377.61	106.31	1,381.70	0.21	-0.21	-1.79
7,532.00	0.70	248.70	7,337.59	1,377.24	105.21	1,381.25	0.08	0.00	-6.42
7,628.00	0.80	244.30	7,433.58	1,376.74	104.06	1,380.66	0.12	0.10	-4.58
7,723.00	0.70	239.90	7,528.57	1,376.16	102.96	1,380.00	0.12	-0.11	-4.63
7,818.00	0.90	219.20	7,623.56	1,375.29	101.99	1,379.06	0.37	0.21	-21.79
7,914.00	0.90	296.50	7,719.55	1,375.04	100.83	1,378.72	1.17	0.00	80.52
8,009.00	1.40	296.00	7,814.53	1,375.89	99.12	1,379.43	0.53	0.53	-0.53
8,105.00	1.30	280.70	7,910.51	1,376.60	97.00	1,379.98	0.39	-0.10	-15.94
8,200.00	1.30	280.70	8,005.48	1,377.00	94.88	1,380.21	0.00	0.00	0.00
8,295.00	1.50	319.80	8,100.46	1,378.15	93.02	1,381.21	1.01	0.21	41.16
8,390.00	1.50	330.00	8,195.42	1,380.18	91.60	1,383.12	0.28	0.00	10.74
8,485.00	1.40	358.00	8,290.39	1,382.42	90.93	1,385.30	0.75	-0.11	29.47
8,580.00	1.30	352.70	8,385.37	1,384.64	90.76	1,387.51	0.17	-0.11	-5.58
8,676.00	1.30	12.60	8,481.34	1,386.79	90.86	1,389.65	0.47	0.00	20.73
8,771.00	1.00	18.80	8,576.33	1,388.62	91.36	1,391.52	0.34	-0.32	6.53
8,866.00	1.10	24.30	8,671.31	1,390.24	92.00	1,393.18	0.15	0.11	5.79
8,961.00	0.80	29.00	8,766.30	1,391.65	92.70	1,394.65	0.33	-0.32	4.95
9,057.00	0.80	49.00	8,862.29	1,392.68	93.53	1,395.73	0.29	0.00	20.83
9,152.00	1.10	64.30	8,957.27	1,393.51	94.85	1,396.66	0.41	0.32	16.11
9,247.00	1.20	77.60	9,052.25	1,394.12	96.64	1,397.41	0.30	0.11	14.00
9,342.00	0.80	80.40	9,147.24	1,394.44	98.27	1,397.86	0.42	-0.42	2.95



## Professional Directional LTD

### Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-2011BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4874' GL + 24' KB @ 4898.00ft (SST 56)
<b>Well:</b>	NBU 921-2011BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

#### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,437.00	1.10	88.20	9,242.23	1,394.58	99.83	1,398.12	0.34	0.32	8.21
9,532.00	1.10	89.50	9,337.21	1,394.62	101.66	1,398.30	0.03	0.00	1.37
9,628.00	1.10	104.10	9,433.19	1,394.40	103.47	1,398.22	0.29	0.00	15.21
9,723.00	0.80	116.30	9,528.18	1,393.88	104.95	1,397.82	0.38	-0.32	12.84
9,818.00	0.80	113.10	9,623.17	1,393.33	106.16	1,397.37	0.05	0.00	-3.37
9,913.00	0.60	104.10	9,718.16	1,392.95	107.25	1,397.07	0.24	-0.21	-9.47
10,009.00	0.80	128.10	9,814.16	1,392.41	108.26	1,396.61	0.37	0.21	25.00
10,104.00	1.00	113.60	9,909.14	1,391.67	109.55	1,395.98	0.32	0.21	-15.26
10,199.00	1.10	130.00	10,004.13	1,390.75	111.00	1,395.17	0.33	0.11	17.26
10,260.00	1.10	120.30	10,065.12	1,390.08	111.96	1,394.58	0.30	0.00	-15.90
<b>Last Pro Guidance MWD Survey (10260')</b>									
10,300.00	1.10	120.30	10,105.11	1,389.69	112.62	1,394.24	0.00	0.00	0.00
<b>Projected to TD (10300')</b>									

#### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,000.00	2,903.90	686.21	41.57	Surface Survey Tie-In (3000') Adjusted for 24' KB
10,260.00	10,065.12	1,390.08	111.96	Last Pro Guidance MWD Survey (10260')
10,300.00	10,105.11	1,389.69	112.62	Projected to TD (10300')

US ROCKIES REGION  
Operation Summary Report

US ROCKIES REGION								
Operation Summary Report								
Well: NBU 921-201BS [BLUE]				Spud date: 2/15/2014				
Project: UTAH-UINTAH			Site: NBU 921-20P PAD			Rig name no.: GWS 1/1, MILES 3/3		
Event: COMPLETION			Start date: 7/8/2014			End date: 1/6/2015		
Active datum: RKB @4,898.00usft (above Mean Sea Level)				UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0				
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
7/7/2014	7:00 - 7:30	0.50	DRLOUT	48		P		MILLING
	7:30 - 17:30	10.00	DRLOUT	44	D	P		MIRU, NDWH, NU BOP'S, TEST BOP'S, PU MILL STABILIZER, SN, TBG, TIH TO DV TOOL, TAG 82' HIGH, MILL 82' CEMENT, MILL DV TOOL, 2.5 HRS, TIH TO 10,232' C/O 35' CEMENT, BREAK CIRC, TEST CSG TO 1000# 10 MIN, LAY DWN 32 JTS, SWIFN TRIPPING
7/8/2014	7:00 - 7:30	0.50	DRLOUT	48		P		
	7:30 - 12:00	4.50	DRLOUT	31	I	P		CIRC HOLE, POOH LAY DWN TBG ON TLR, LAY DWN STABILIZER, MILL, ND BOP'S, NUWH, RDMO
7/21/2014	-							
7/24/2014	-							
	9:00 - 10:00	1.00	SURFPR	52	A			FILL SURFACE CSG. MIRU CAMERON QUICK TEST. PRESSURE TEST CSG 1ST PSI TEST T/ 7000 PSI. HELD FOR 15 MIN LOST -62 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI.  PRESSURE TEST 8 5/8 X 4 1/2 TO 500 PSI HELD FOR 5 MIN LOST -288 PSI, BLED PSI OFF, REINSTALLED POP OFF SWIFN NO PRESSURE ON SURFACE CSG PULLED 10' FLUID OFF 4 1/2" CSG TO STOP FREEZING
12/10/2014	7:00 - 7:30	0.50	SUBSPR	48		P		HSM, LAYING DOWN PIPE.
	7:30 - 8:30	1.00	SUBSPR	30	A	P		5 OF 6, MOVED OVER & RIGGED UP, ND WH NU BOPS, RU FLOOR.
	8:30 - 12:00	3.50	SUBSPR	31	I	P		PU 37/8 BIT & 142 JTS 23/8 P-110, EOT @ 4510' GOT WTR SAMPLES F/ SURF & 4510', CIRC WELL CLEAN W/ EXTRA BICIDE.L/D 142 JTS 23/8 P-110 & BIT, ND BOPS NU FV.SWI RIGGED DOWN
12/11/2014	12:00 - 13:00	1.00	SUBSPR	52	B	P		FILL SURFACE CSG. MIRU CAMERON QUICK TEST. PRESSURE TEST CSG & FRAC VALVES 1ST PSI TEST T/ 7000 PSI. HELD FOR 15 MIN LOST -48 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI.  PRESSURE TEST 8 5/8 X 4 1/2 TO 630 PSI HELD FOR 5 MIN LOST -398 PSI, BLED PSI OFF, REINSTALLED POP OFF SWIFN NO PRESSURE ON SURFACE CASING FILLED SURFACE WITH 1/2 BBL H2O
	16:00 - 17:00	1.00	SUBSPR	37	E	P		PERF STG 1)PU 3 1/8 EXP GUN, 19 GM, .40 HOLE SIZE. RIH PERFWELL, AS PER PERF DESIGN. POOH. SWIFW

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]

Spud date: 2/15/2014

Project: UTAH-UINTAH

Site: NBU 921-20P PAD

Rig name no.: GWS 1/1, MILES 3/3

Event: COMPLETION

Start date: 7/8/2014

End date: 1/6/2015

Active datum: RKB @4,898.00usft (above Mean Sea Level)

UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
12/18/2014	7:00 - 17:00	10.00	FRAC	36	1	P		ROAD FRAC EQUIP T/ LOC. MIRU FRAC CREW. INSTALL KEVLAR RESTRAINTS. PSI TEST FRAC LINES T/ 10,000 PSI. SDFN.
12/19/2014	13:15 - 17:00	3.75	FRAC	36	E	P		FRAC STG 1)WHP 1411 PSI, BRK 3823 PSI @ 4.2 BPM. ISIP 2861 PSI, FG. 0.72 ISIP 3079 PSI, FG. 0.74, NPI 218 PSI. SWI, XO FOR WL.  PERF STG 2)RIH SET CBP & PERF AS DESIGNED. POOH. SWIFN.
12/20/2014	6:45 - 7:00	0.25	FRAC	48		P		HSM. RED ZONE & HIGH PSI LINES.
	7:00 - 17:00	10.00	FRAC	36	E	P		FRAC STG 2)WHP 2307 PSI, BRK 5537 PSI @ 3.8 BPM. ISIP 3743 PSI, FG. 0.8 ISIP 3368 PSI, FG. 0.78, NPI -375 PSI. SWI. XO FOR WL.  PERF STG 3)RIH SET CBP & PERF AS DESIGNED.  FRAC STG 3)WHP 2227 PSI, BRK 4461 PSI @ 4 BPM. ISIP 3421 PSI, FG. 0.79 ISIP 3170 PSI, FG. 0.76, NPI -251 PSI. SWI, XO T/ WL.  PERF STG 4)RIH SET CBP & PERF AS DESIGN. POOH. SWIFN.
12/21/2014	9:00 - 17:00	8.00	FRAC	36	E	P		FRAC STG 4)WHP 2349 PSI, BRK 5127 PSI @ 4.3 BPM. ISIP 3135 PSI, FG. 0.77 ISIP 2842 PSI, FG. 0.73, NPI -293 PSI.SWI X/O WL.  PERF STG 5) RIH SET CBP & PERF AS DESIGN. POOH, XO T/ FRAC.  FRAC STG 5)WHP 2337 PSI, BRK 6438 PSI @ 4.1 BPM. ISIP 3025 PSI, FG. 0.76 ISIP 2980 PSI, FG. 0.76, NPI -45 PSI. SWI, XO T/ WL.  PERF STG 6)RIH SET CBP & PERF AS DESIGN. POOH. SWIFN.
12/22/2014	7:30 - 7:45	0.25	FRAC	48		P		HSM, JSA
	7:45 - 8:00	0.25	FRAC	52	E	P		PRIME UP & PRESSURE TEST

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-201BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: GWS 1/1, MILES 3/3
Event: COMPLETION		Start date: 7/8/2014	End date: 1/6/2015
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	8:00 - 18:00	10.00	FRAC	36	E	P		FRAC STAGE 6) WHP 2256 PSI, BRK 5369 PSI @ 4.1 BPM. ISIP 2871 PSI, FG. 0.75 ISIP 3049 PSI, FG. 0.77, NPI 178 PSI. X/O WL  PERF STG 7) RIH SET CBP & PERF AS PER DESIGN. POOH, X/O T/FRAC  FRAC STAGE 7) WHP 1868 PSI, BRK 5325 PSI @ 4.3 BPM. ISIP 2893 PSI, FG. 0.76 ISIP 2954 PSI, FG. 0.77, NPI 61 PSI. X/OWL  PERF STAGE 8) RIH SET CBP & PERF AS PER DESIGN. POOH, X/O T/FRAC  FRAC STAGE 8)WHP 2065 PSI, BRK 5335 PSI @ 4 BPM. ISIP 3508 PSI, FG. 0.84 ISIP 2821 PSI, FG. 0.76, NPI -687 PSI. X/O WL  PERFORATE STAGE 9) RIH SET CBP & PERF AS PER DESIGN. POOH. SWIFN W/O FRAC.
12/23/2014	6:15 - 6:30	0.25	FRAC	48		P		HSM,JSA
	6:30 - 18:00	11.50	FRAC	36	E	P		FRAC STAGE 9)WHP 2007 PSI, BRK 2975 PSI @ 4.4 BPM. ISIP 2615 PSI, FG. 0.75 ISIP 2729 PSI, FG. 0.76, NPI 114 PSI. X/O WL.  PERFORATE STAGE 10) RIH SET CBP & PERF AS PER DESIGN. POOH, X/O T/FRAC.  FRAC STAGE 10)WHP 1421 PSI, BRK 2432 PSI @ 4.4 BPM. ISIP 1611 PSI, FG. 0.64 ISIP 2638 PSI, FG. 0.76, NPI 1027 PSI. X/OWL.  SET TOP KILL PLUG.
1/5/2015	7:00 - 7:15	0.25	SURFPR	48		P		HSM,JSA
	7:15 - 11:00	3.75	SURFPR	30	A	P		RDMO, RU, NDWH,NUBOP, RU TBG EQUIP.
	11:00 - 18:00	7.00	DRLOUT	31	I	P		MU 3-7/8"BIT, POBS,XN NIPPLE, PU, TALLY & RIH WITH 251 JTS 2-3/8" P-110 TBG TAGGED FILL @ 7961'. RU PWR SWVL. EOT@ 7930' SWIFN WINTERIZE EQUIP.
1/6/2015	6:45 - 7:00	0.25	DRLOUT	48		P		HSM. HIGH PSI LINES. DONT PUT HEAD OVER DRL HEAD RUBBER.

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

Well: NBU 921-2011BS [BLUE]		Spud date: 2/15/2014	
Project: UTAH-UINTAH		Site: NBU 921-20P PAD	Rig name no.: GWS 1/1, MILES 3/3
Event: COMPLETION		Start date: 7/8/2014	End date: 1/6/2015
Active datum: RKB @4,898.00usft (above Mean Sea Level)		UWI: SE/SE/0/9/S/21/E/20/0/0/26/PM/S/850/E/0/599/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
	7:00 - 17:00	10.00	DRLOUT	44	C	P		<p>OPEN WELL 0 PSI. BRK CONV CIRC. BEG DRL OUT. 1st CBP)TAG SAND @ 7992' = 30' SAND. DRL OUT CBP @ 8022' IN 8 MIN, 800 PSI INCR. CONT RIH. 2nd CBP)TAG SAND @ 8193' = 90' SAND. DRL OUT CBP @ 8283' IN 8 MIN, 1000 PSI INCR. CONT RIH. 3rd CBP)TAG SAND @ 8564' = 30' SAND. DRL OUT CBP @ 8594' IN 8 MIN. 400 PSI INCR. CONT RIH. 4th CBP)TAG SAND @ 8765' = 35' SAND. DR OUT CBP @ 8808' IN 8 MIN. 650 PSI INCR. CONT RIH. 5th CBP)TAG SAND @ 8963' = 30' SAND. DRL OUT CBP @ 8993' IN 8 MIN, 400 PSI INCR. CONT RIH. 6th CBP)TAG SAND @ 9200' = 40' SAND. DRL OUT CBP @ 9240' IN 8 MIN, 500 PSI INCR. CONT RIH. 7th CBP)TAG SAND @ 9433' = 30' SAND. DRL OUT CBP @ 9463' IN 8 MIN, 350 PSI INCR. CONT RIH. 8th CBP)TAG SAND @ 9670' = 35' SAND. DRL OUT CBP @ 9705' IN 8 MIN, 300 PSI INCR. CONT RIH. 9th CBP)TAG SAND @ 9847' = 25' SAND. DRL OUT CBP @ 9872' IN 8 MIN, 600 PSI INCR. CONT RIH. 10th CBP)TAG SAND @ 10,029' = 35' SAND. DRL OUT CBP @ 10,064' IN 8 MIN, 1000 PSI INCR. CONT RIH. CO T/ PBDT @ 10,232'. CIRC WELL 10 MIN. LD 1 JT &amp; RD DRL EQUIP. POOH LD 11 JTS EXESS TBG. PU 41/16 CMR TBG HNGR. LAND TBG W/ KB =====&gt; 24.00 41/16 TBG HNGR =====&gt; .83 310 JTS 23/8 P-110 =====&gt; 9837.94 1.875 XN/ TOPBOPS =====&gt; 2.20  EOT @ 9865' RD TBG EQUIP &amp; RIG FLOOR. ND BOP. NU WH. PSI TEST FLOW LINES T/ 3000 PSI. GOOD TEST. BLEED OFF PSI. PUMP BIT OFF W/ 3600 PSI. UNLOAD TBG T/ PIT. TURN WELL OVER T/ FBC.  TOTAL FRAC LOAD = 14,049 BBLS. RIG RECOVERD = 1,153 BBLS. LEFT T/ RECOVER = 12,896 BBLS.  GAS SOLD DURING D/O NBU 921-2011BS SOLD = 241 MMCF NBU 921-2004CS SOLD = 193 MMCF TOTAL GAS SOLD = 434 MMCF.  ALL TBG 23/8 P-110 TOTAL JTS DELIVERD = 330 JTS. TOTAL JTS USED IN WELL = 310 JTS. TOTAL JTS SENT BACK = 20 JTS.</p>

US ROCKIES REGION

**1 General**

**1.1 Customer Information**

Company	US ROCKIES REGION
Representative	
Address	

**1.2 Well/Wellbore Information**

Well	NBU 921-2011BS [BLUE]	Wellbore No.	00
Well Name	NBU 921-2011BS	Wellbore Name	NBU 921-2011BS
Report no.	1	Report date	12/15/2014
Project	UTAH-JUNTAH	Site	NBU 921-20P PAD
Rig Name/No.	GWS 1/1	Event	COMPLETION
Start date	7/8/2014	End date	1/6/2015
Spud date	2/15/2014	Active datum	RKB @4,898.00usft (above Mean Sea Level)
UWI	SE/SE/O/9/S/21/E/20/O/0/26/PM/S/850/E/O/599/O/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	8,072.0 (usft)-10,215.0 (us	Start Date/Time	12/15/2014 12:00AM
No. of intervals	73	End Date/Time	12/15/2014 12:00AM
Total shots	240	Net perforation interval	80.00 (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
12/15/2014 4 12:00AM	M E S A VERDE/			8,072.0	8,073.0	3.00		0.410 EXP/		3.125	120.00		19.00	PRODUCTION		

US ROCKIES REGION

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
12/15/201 4	M E S A VERDE/			8,090.0	8,091.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,104.0	8,105.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,119.0	8,120.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,180.0	8,181.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,217.0	8,218.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,242.0	8,243.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,252.0	8,253.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,344.0	8,345.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,430.0	8,431.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,492.0	8,493.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,503.0	8,504.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,517.0	8,518.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,532.0	8,533.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,554.0	8,555.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,568.0	8,569.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

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US ROCKIES REGION

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
12/15/201 4	M E S A VERDE/			8,611.0	8,612.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,638.0	8,639.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,663.0	8,664.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,672.0	8,673.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,686.0	8,687.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,728.0	8,729.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,740.0	8,741.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,777.0	8,778.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,832.0	8,833.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,871.0	8,872.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,882.0	8,883.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,902.0	8,903.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,915.0	8,916.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,948.0	8,950.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			8,962.0	8,963.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

US ROCKIES REGION

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
12/15/201 4	M E S A VERDE/			9,034.0	9,035.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,047.0	9,048.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,072.0	9,073.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,078.0	9,079.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,116.0	9,118.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,212.0	9,214.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,290.0	9,291.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,301.0	9,302.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,319.0	9,320.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,391.0	9,392.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,416.0	9,418.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,430.0	9,432.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,510.0	9,511.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,527.0	9,528.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,556.0	9,557.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

US ROCKIES REGION

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
12/15/201 4	M E S A VERDE/			9,595.0	9,596.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,632.0	9,633.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,645.0	9,646.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,661.0	9,662.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,688.0	9,689.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,721.0	9,722.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,742.0	9,743.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,753.0	9,754.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,769.0	9,770.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,796.0	9,797.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,824.0	9,825.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,840.0	9,842.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,891.0	9,892.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,925.0	9,926.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4	M E S A VERDE/			9,962.0	9,964.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

US ROCKIES REGION

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
12/15/201 4 12:00AM	M E S A VERDE/			9,980.0	9,981.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,006.0	10,007.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,030.0	10,031.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,047.0	10,048.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,077.0	10,078.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,089.0	10,090.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,110.0	10,111.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,134.0	10,135.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,152.0	10,153.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,165.0	10,166.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,176.0	10,177.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		
12/15/201 4 12:00AM	M E S A VERDE/			10,214.0	10,215.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTION		

3 Plots