

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

FORM 3

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL		1. WELL NAME and NUMBER NBU 1021-29P1CS
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>		3. FIELD OR WILDCAT NATURAL BUTTES
4. TYPE OF WELL Gas Well Coalbed Methane Well: NO		5. UNIT or COMMUNITIZATION AGREEMENT NAME NATURAL BUTTES
6. NAME OF OPERATOR KERR-MCGEE OIL & GAS ONSHORE, L.P.		7. OPERATOR PHONE 720 929-6515
8. ADDRESS OF OPERATOR P.O. Box 173779, Denver, CO, 80217		9. OPERATOR E-MAIL julie.jacobson@anadarko.com
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) ML 21330	11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>		13. NAME OF SURFACE OWNER (if box 12 = 'fee')
14. SURFACE OWNER PHONE (if box 12 = 'fee')		15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')
16. SURFACE OWNER E-MAIL (if box 12 = 'fee')		17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')
18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>		19. SLANT VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	1993 FSL 400 FEL	NESE	29	10.0 S	21.0 E	S
Top of Uppermost Producing Zone	836 FSL 504 FEL	SESE	29	10.0 S	21.0 E	S
At Total Depth	836 FSL 504 FEL	SESE	29	10.0 S	21.0 E	S

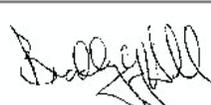
21. COUNTY UINTAH	22. DISTANCE TO NEAREST LEASE LINE (Feet) 504	23. NUMBER OF ACRES IN DRILLING UNIT 640
25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 1343	26. PROPOSED DEPTH MD: 9434 TVD: 9224	
27. ELEVATION - GROUND LEVEL 5256	28. BOND NUMBER 22013542	29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Permit #43-8496

Hole, Casing, and Cement Information										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2020	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 - 9434	11.6	I-80 Buttress	12.5	Premium Lite High Strength	260	3.38	11.0
							50/50 Poz	1120	1.31	14.3

ATTACHMENTS

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

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

NAME Danielle Piernot	TITLE Regulatory Analyst	PHONE 720 929-6156
SIGNATURE	DATE 03/11/2011	EMAIL danielle.piernot@anadarko.com
API NUMBER ASSIGNED 43047515310000	APPROVAL  Permit Manager	

Kerr-McGee Oil & Gas Onshore. L.P.**NBU 1021-29P1CS**

Surface: 1993 FSL / 400 FEL NESE
 BHL: 836 FSL / 504 FEL SESE

Section 29 T10S R21E

Unitah County, Utah
 Mineral Lease: UT ST ML 21330

ONSHORE ORDER NO. 1**DRILLING PROGRAM**

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	938	
Birds Nest	1213	Water
Mahogany	1566	Water
Wasatch	4135	Gas
Mesaverde	7002	Gas
MVU2	7950	Gas
MVL1	8451	Gas
TVD	9224	
TD	9434	

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

Please refer to the attached Drilling Program

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

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

6. **Evaluation Program:**

Please refer to the attached Drilling Program

7. **Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 9224' TVD, approximately equals
 6,088 psi 0.64 psi/ft = actual bottomhole gradient

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

Maximum anticipated surface pressure equals approximately 3,861 psi (bottom hole pressure
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

8. **Anticipated Starting Dates:**

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

9. **Variances:**

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

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

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

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

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

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

Background

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

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

The air rig is then mobilized to drill the surface casing hole by drilling a 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.

Conclusion

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

10. **Other Information:**

Please refer to the attached Drilling Program.



KERR-McGEE OIL & GAS ONSHORE LP
DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'				3,390	1,880	348,000
SURFACE	8-5/8"	0 to 2,020	28.00	IJ-55	LTC	2.68	1.99	6.09
PRODUCTION	4-1/2"	0 to 9,434	11.60	I-80	BTC	1.11	1.06	4.15

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 @ 7000 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
NOTE: If well will circulate water to surface, option 2 will be utilized							
SURFACE	LEAD	1,520'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	140	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	3,634'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	260	10%	11.00	3.38
	TAIL	5,800'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,120	10%	14.30	1.31

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

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

FLOAT EQUIPMENT & CENTRALIZERS

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

ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER:

Nick Spence / Emile Goodwin

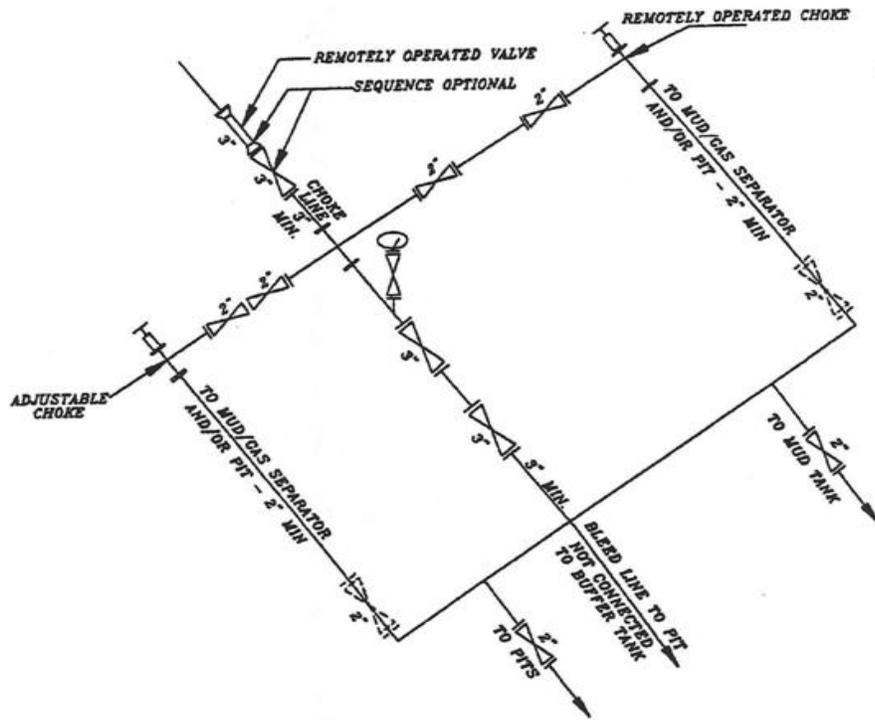
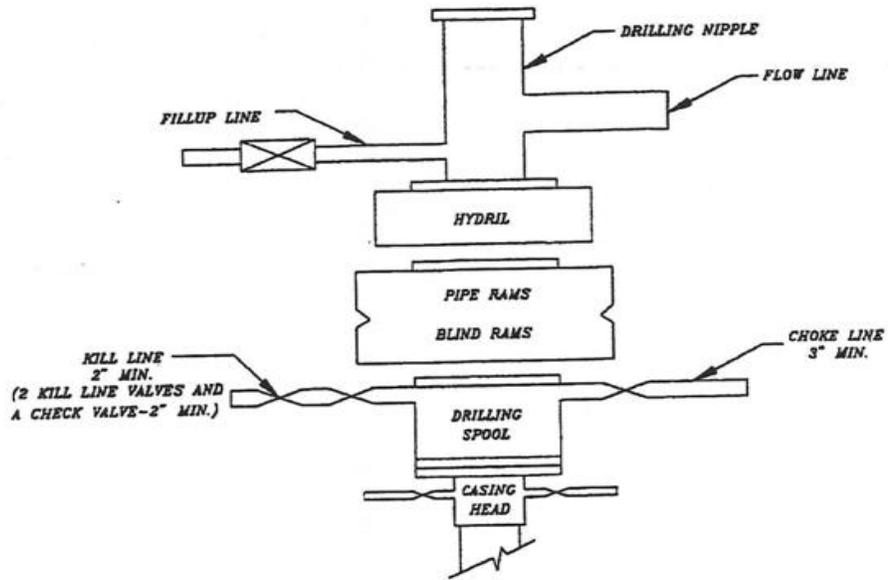
DATE:

DRILLING SUPERINTENDENT:

Kenny Gathings / Lovel Young

DATE:

EXHIBIT A
NBU 1021-29P1CS

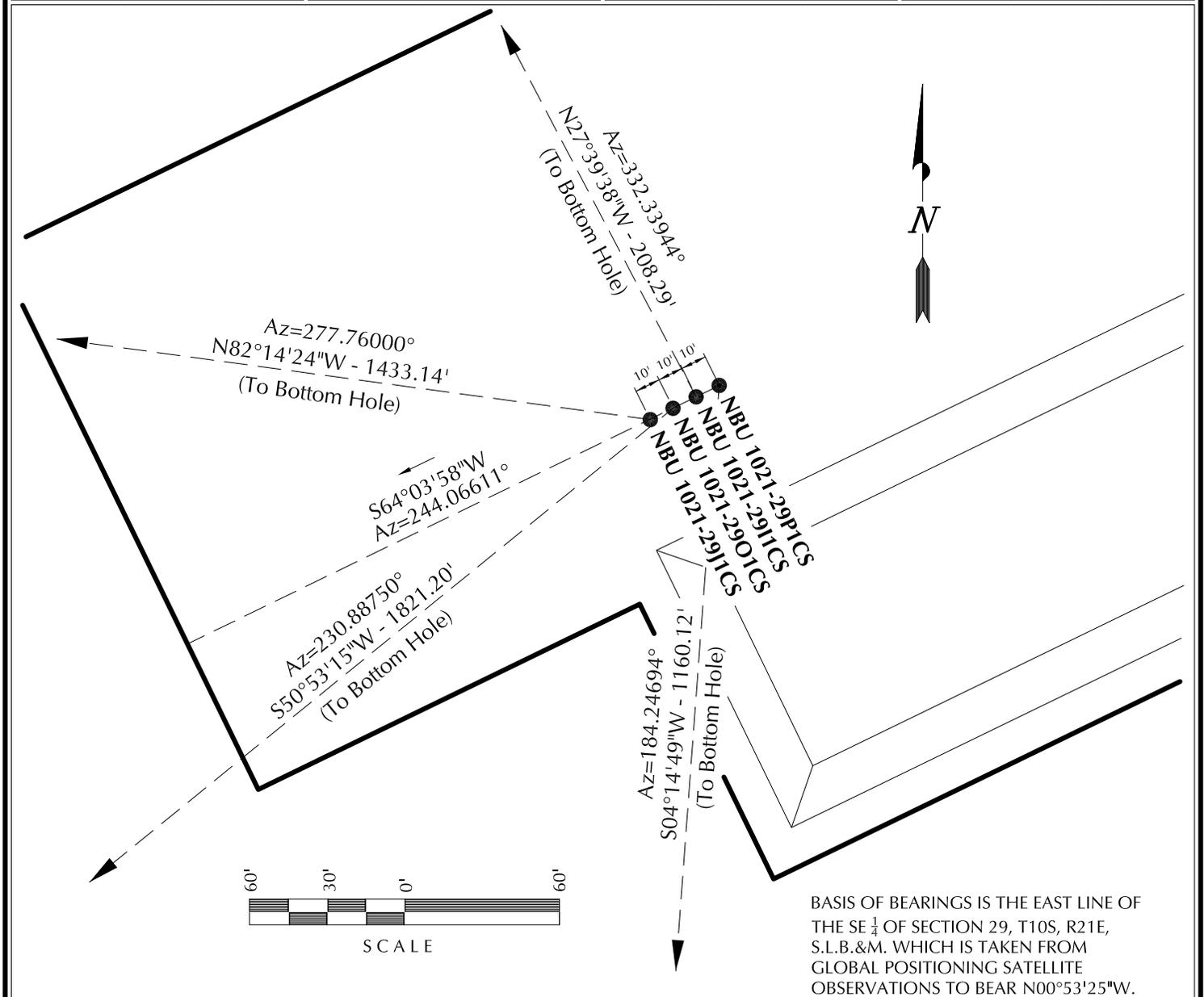


SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1021-29P1CS	39°55'00.299"	109°34'02.759"	39°55'00.424"	109°34'00.284"	1993' FSL 400' FEL	39°54'48.868"	109°34'03.844"	39°54'48.992"	109°34'01.369"	836' FSL 504' FEL
NBU 1021-29I1CS	39°55'00.255"	109°34'02.874"	39°55'00.380"	109°34'00.399"	1988' FSL 409' FEL	39°55'02.077"	109°34'04.118"	39°55'02.202"	109°34'01.642"	2173' FSL 503' FEL
NBU 1021-29O1CS	39°55'00.211"	109°34'02.989"	39°55'00.336"	109°34'00.514"	1984' FSL 418' FEL	39°54'48.843"	109°34'21.102"	39°54'48.968"	109°34'18.627"	837' FSL 1849' FEL
NBU 1021-29J1CS	39°55'00.167"	109°34'03.103"	39°55'00.292"	109°34'00.628"	1980' FSL 427' FEL	39°55'02.063"	109°34'21.326"	39°55'02.187"	109°34'18.850"	2175' FSL 1844' 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 1021-29P1CS	-1156.9'	-85.9'	NBU 1021-29I1CS	184.5'	-96.7'	NBU 1021-29O1CS	-1148.9'	-1413.1'	NBU 1021-29J1CS	193.5'	-1420.0'



BASIS OF BEARINGS IS THE EAST LINE OF THE SE 1/4 OF SECTION 29, T10S, R21E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°53'25"W.

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

WELL PAD - NBU 1021-29I

WELL PAD INTERFERENCE PLAT
WELLS - NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, 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

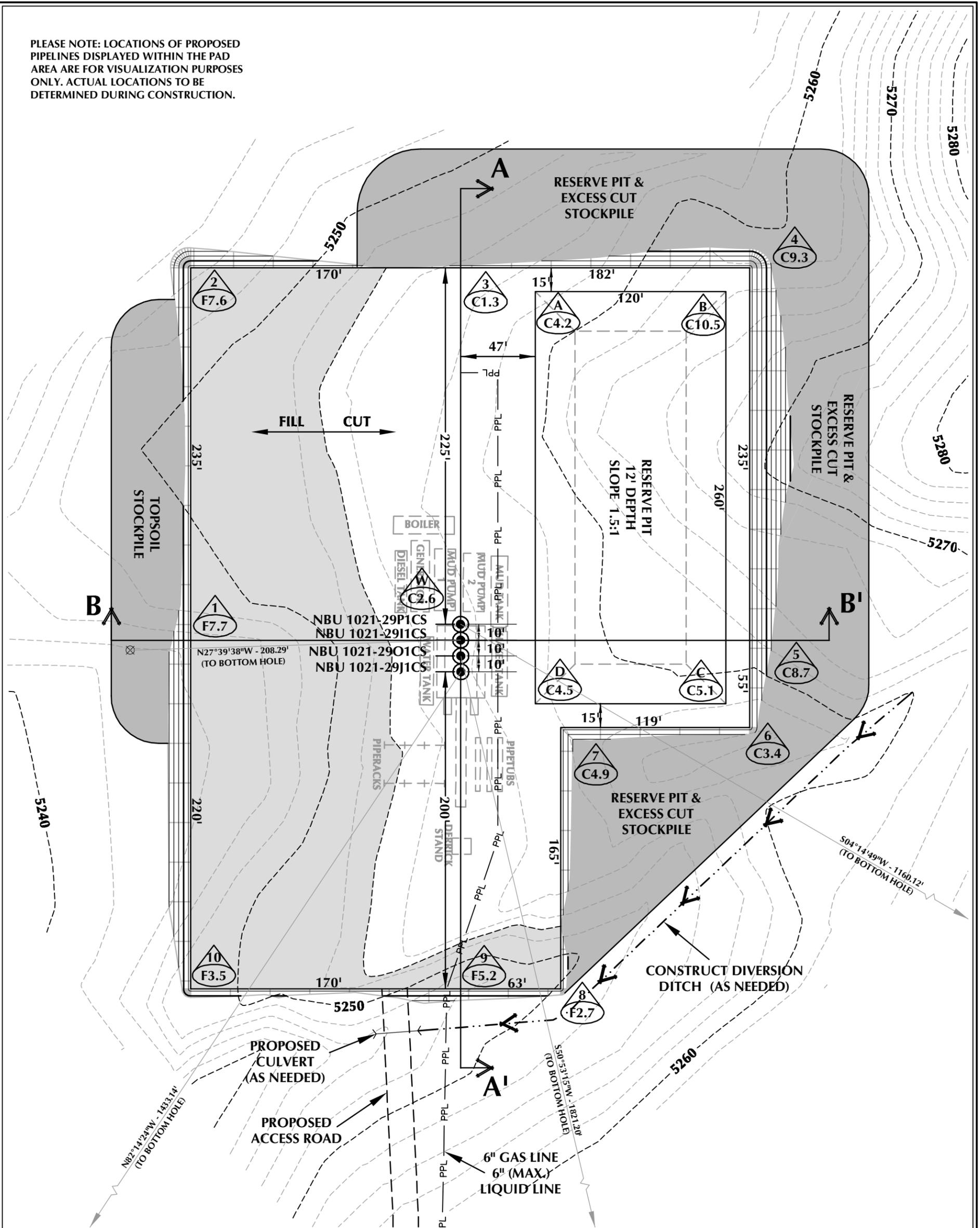
ENGINEERING & LAND SURVEYING, INC.

209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

DATE SURVEYED: 10-29-10	SURVEYED BY: D.J.S.	SHEET NO: 5
DATE DRAWN: 11-08-10	DRAWN BY: B.M.	
SCALE: 1" = 60'		5 OF 16

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



WELL PAD - NBU 1021-29I DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5255.6'
 FINISHED GRADE ELEVATION = 5253.0'
 CUT SLOPES = 1.5:1
 FILL SLOPES = 1.5:1
 TOTAL WELL PAD AREA = 3.57 ACRES
 TOTAL DAMAGE AREA = 6.28 ACRES
 SHRINKAGE FACTOR = 1.10
 SWELL FACTOR = 1.00

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

WELL PAD - NBU 1021-29I

WELL PAD - LOCATION LAYOUT
 NBU 1021-29P1CS, NBU 1021-29I1CS,
 NBU 1021-29O1CS & NBU 1021-29J1CS
 LOCATED IN SECTION 29, T10S, R21E,
 S.L.B.&M., UINTAH COUNTY, UTAH



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

WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 17,077 C.Y.
 TOTAL FILL FOR WELL PAD = 9,002 C.Y.
 TOPSOIL @ 6" DEPTH = 2,883 C.Y.
 EXCESS MATERIAL = 8,075 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

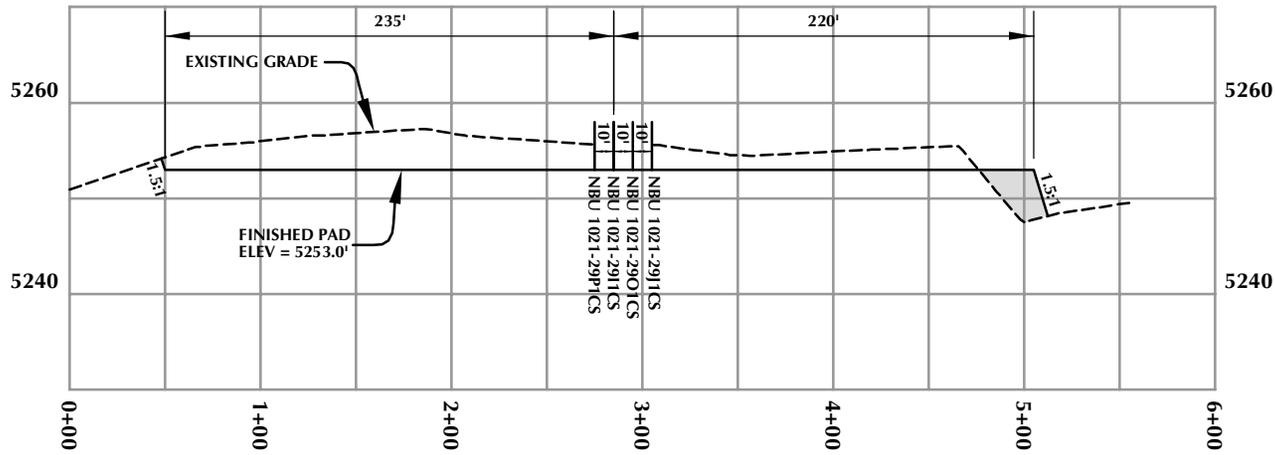
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL - PROPOSED PIPELINE
- EPL - EXISTING PIPELINE



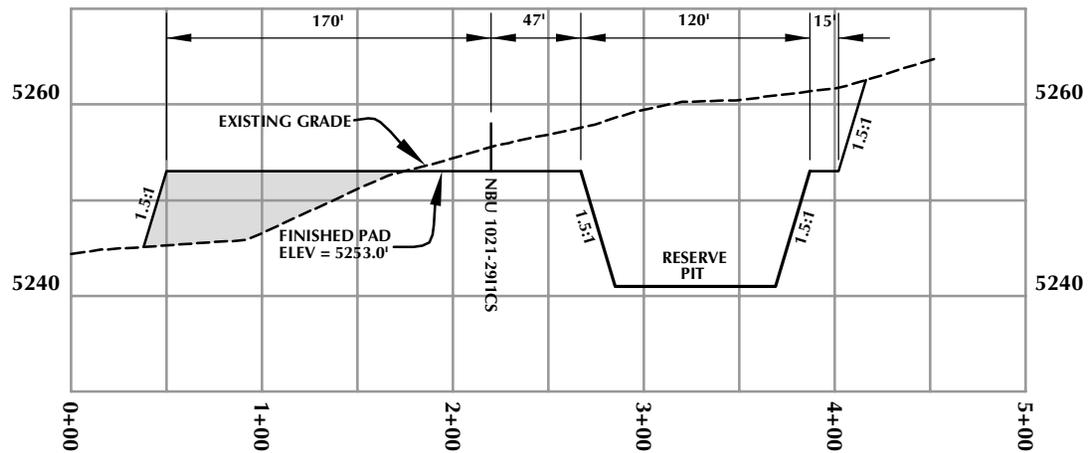
HORIZONTAL 0 30' 60' 1" = 60'
 2' CONTOURS

SCALE: 1"=60' DATE: 11/16/10 SHEET NO:
 REVISED: **6** 6 OF 16

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 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 1021-29I

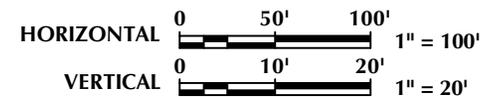
WELL PAD - CROSS SECTIONS
NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, R21E,
S.L.B.&M., Uintah County, Utah



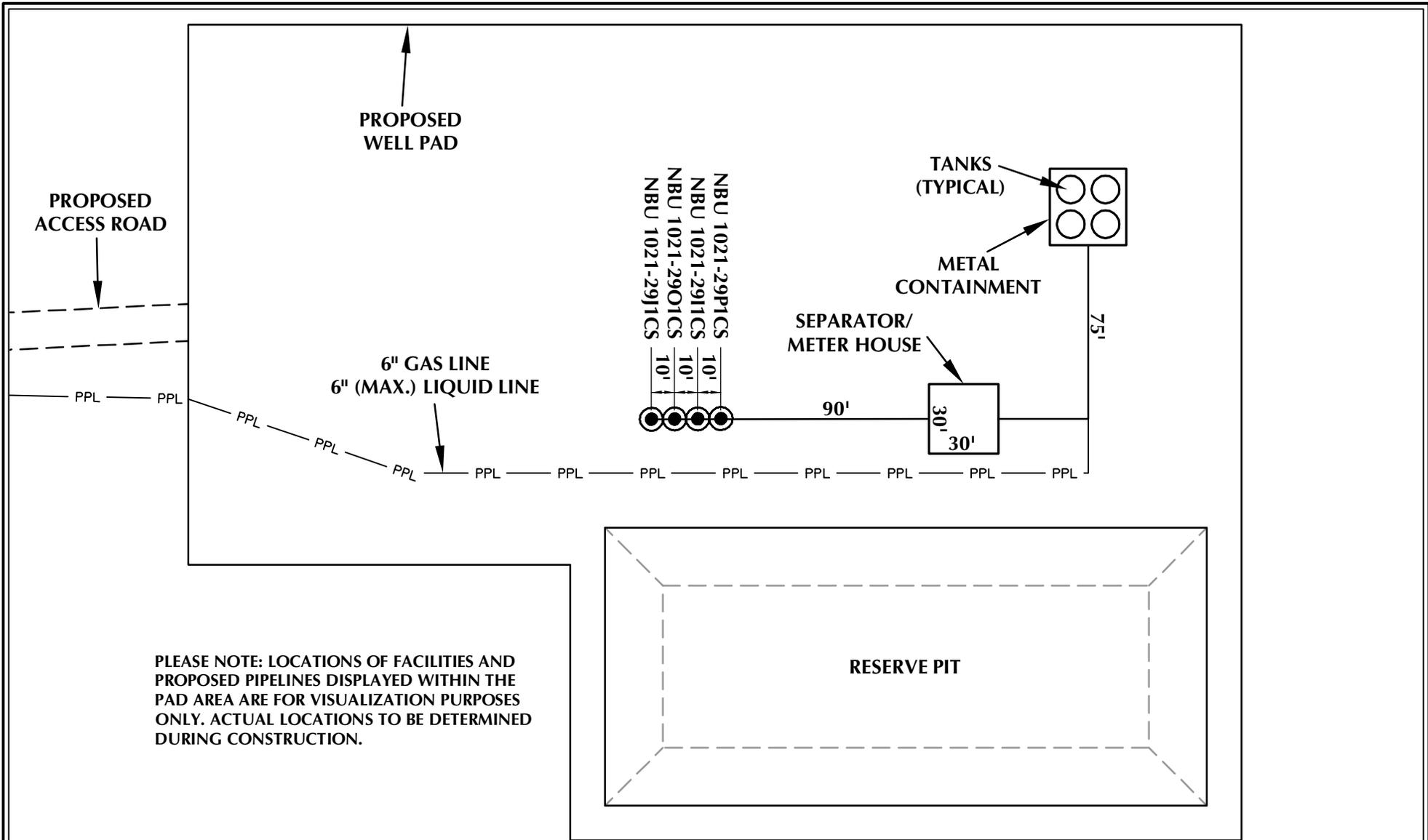
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Scale: 1"=100'	Date: 11/16/10	SHEET NO:
REVISED:		7 7 OF 16



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

WELL PAD - NBU 1021-29I

WELL PAD - FACILITIES DIAGRAM
NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, R21E,
S.L.B.&M., Uintah County, Utah



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WELL PAD LEGEND

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



HORIZONTAL 0 30' 60' 1" = 60'

TIMBERLINE (435) 789-1365
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209 NORTH 300 WEST - VERNAL, UTAH 84078

Scale: 1"=60' Date: 11/16/10
REVISED:

SHEET NO:
8 8 OF 16

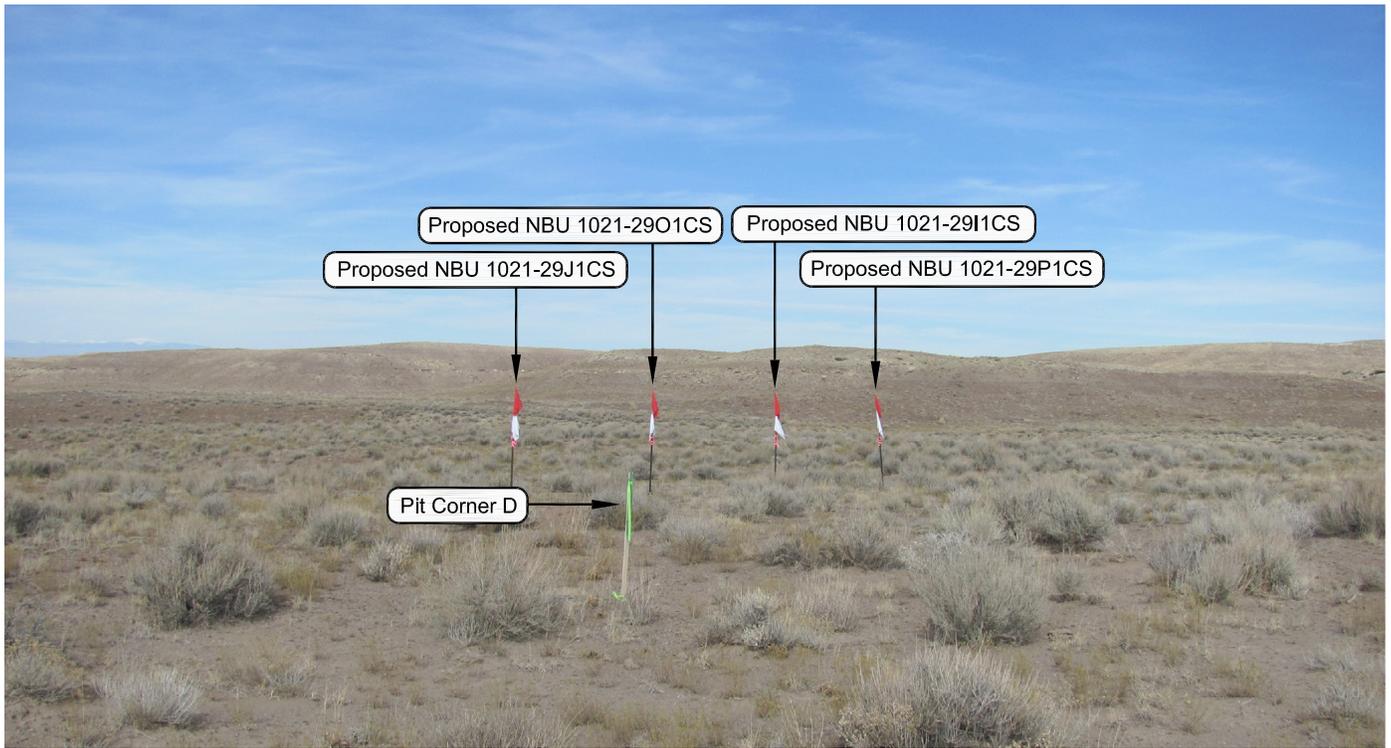


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHERLY

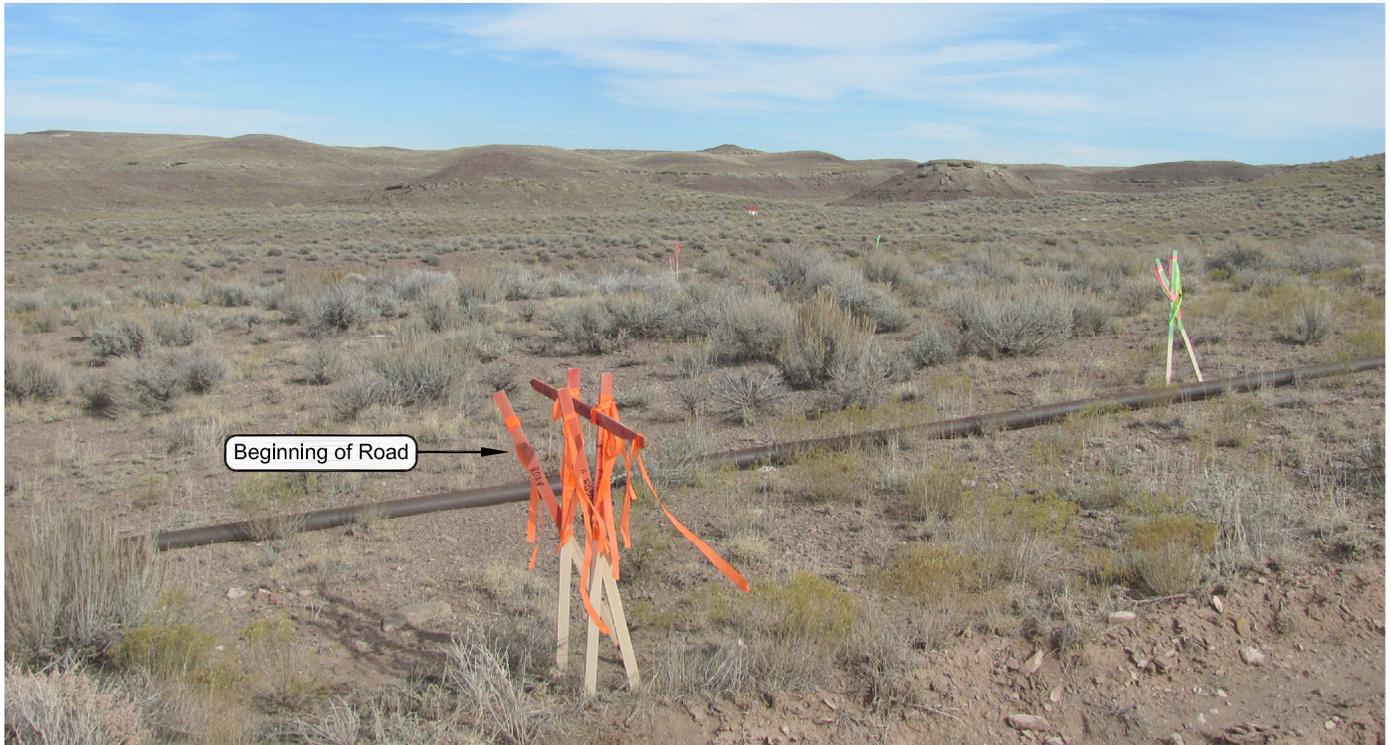


PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: NORTHEASTERLY

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

WELL PAD - NBU 1021-29I

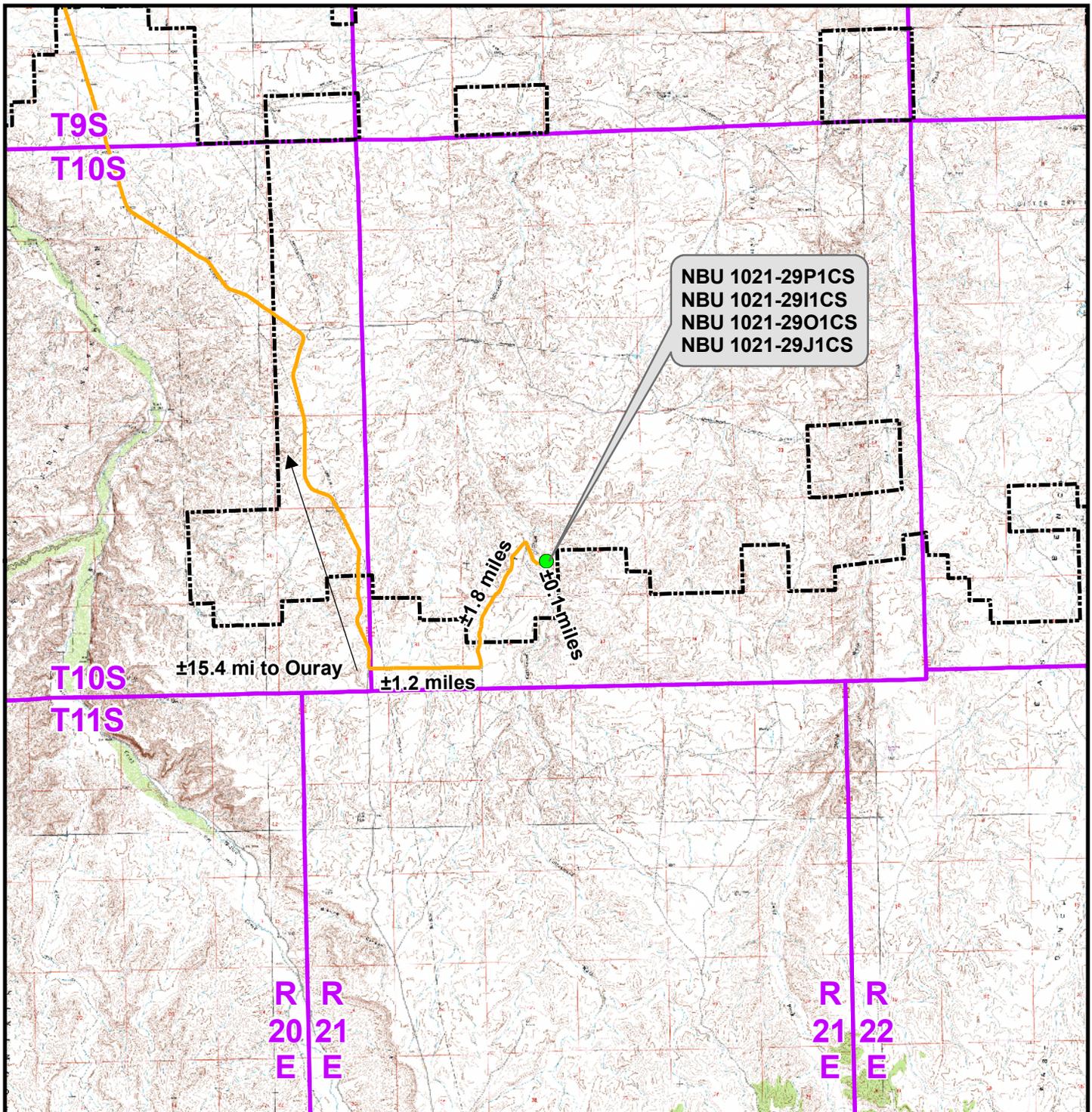
LOCATION PHOTOS
 NBU 1021-29P1CS, NBU 1021-29I1CS,
 NBU 1021-29O1CS & NBU 1021-29J1CS
 LOCATED IN SECTION 29, T10S, R21E,
 S.L.B.&M., UINTAH COUNTY, UTAH.



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DATE PHOTOS TAKEN: 10-29-10	PHOTOS TAKEN BY: D.J.S.	SHEET NO: 9 9 OF 16
DATE DRAWN: 11-08-10	DRAWN BY: B.M.	
Date Last Revised:		



Legend

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

Distance From Well Pad - NBU 1021-29I To Unit Boundary: ±400ft

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

WELL PAD - NBU 1021-29I

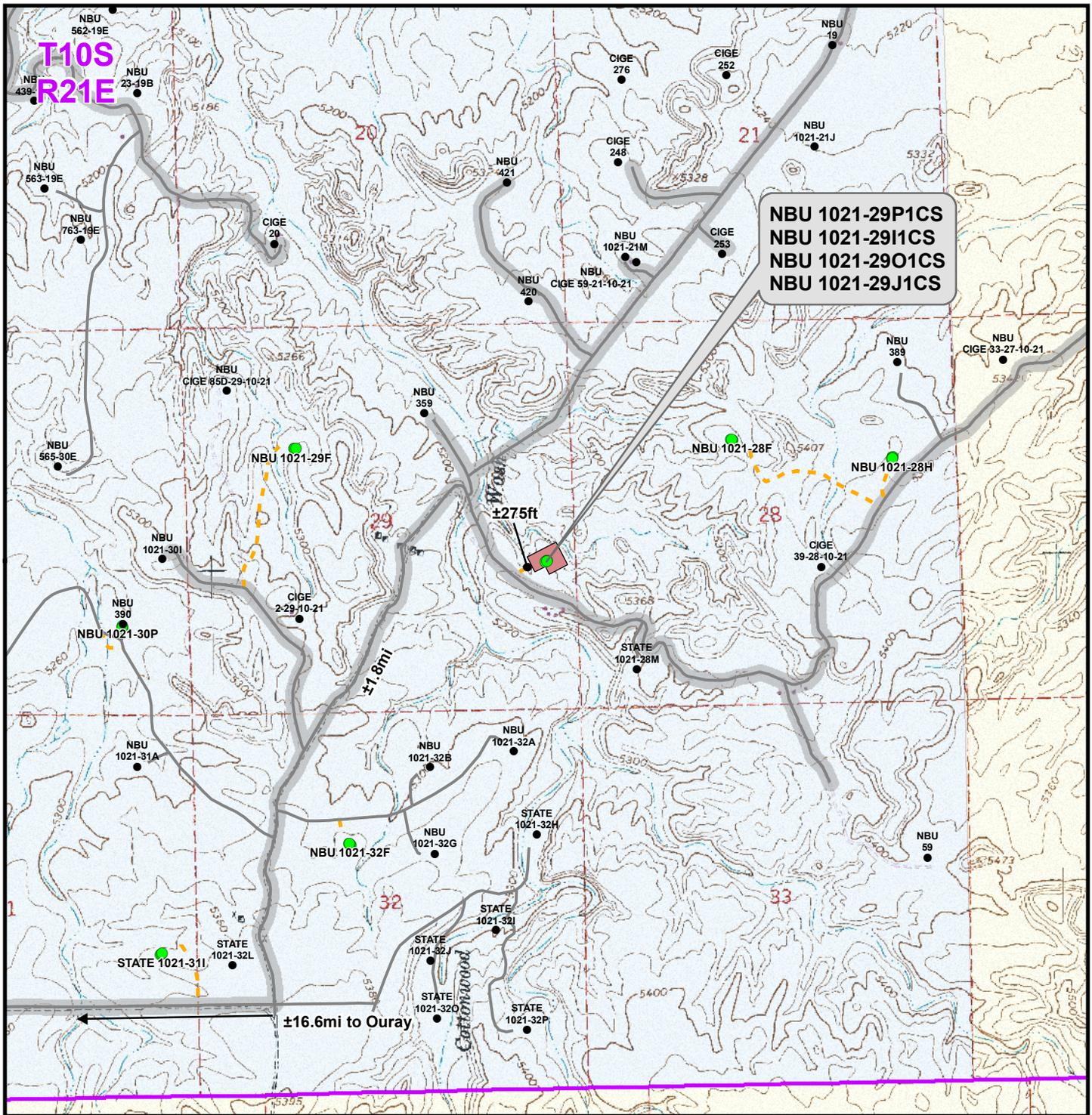
TOPO A
 NBU 1021-29P1CS, NBU 1021-29I1CS,
 NBU 1021-29O1CS & NBU 1021-29J1CS
 LOCATED IN SECTION 29, T10S, R21E,
 S.L.B.&M., UINTAH COUNTY, UTAH



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



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 16 Nov 2010	10
Revised:	Date:	



**NBU 1021-29P1CS
NBU 1021-29I1CS
NBU 1021-29O1CS
NBU 1021-29J1CS**

Legend

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

Total Proposed Road Length: ±275ft

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

WELL PAD - NBU 1021-29I

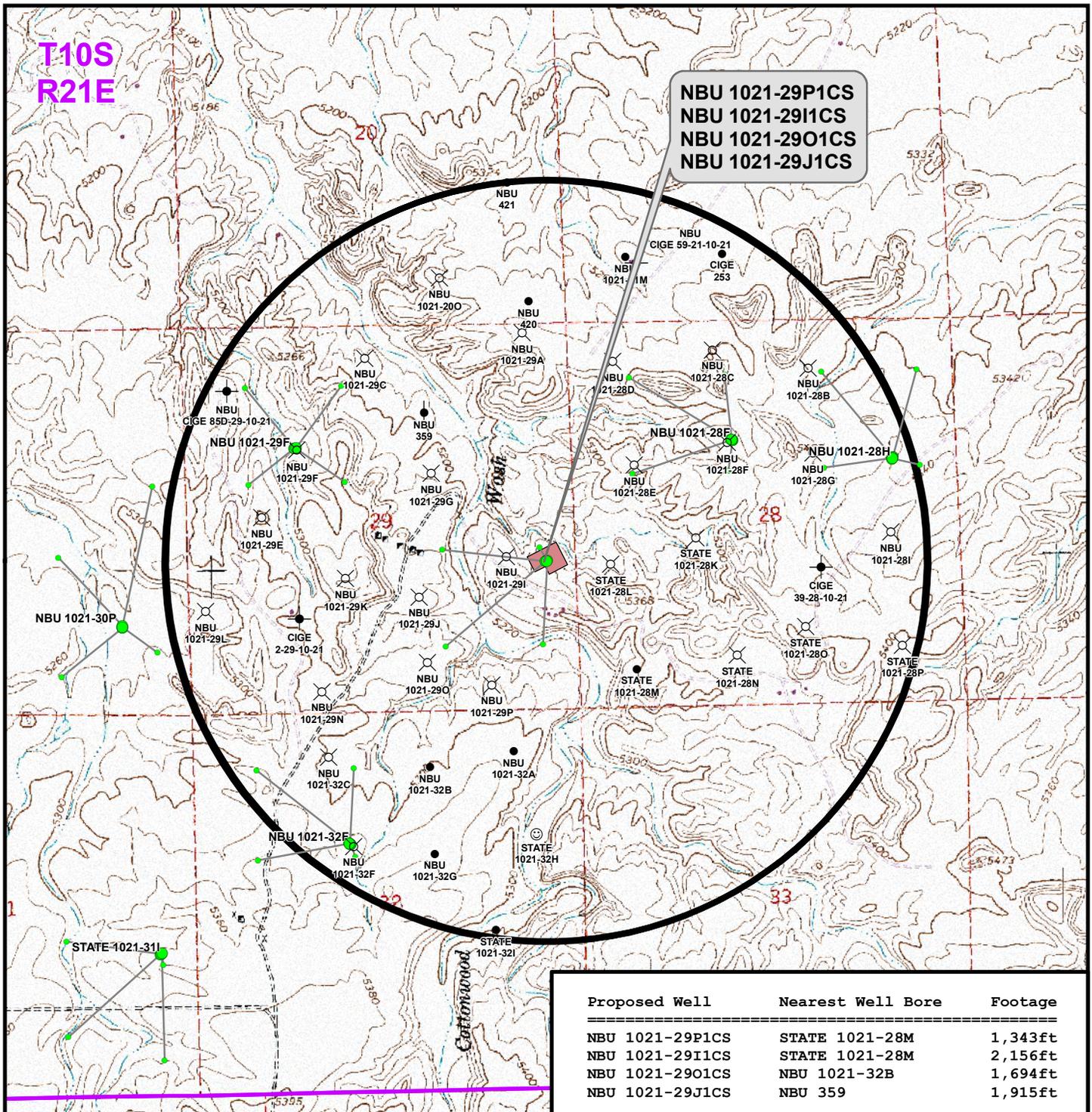
TOPO B
NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, R21E,
S.L.B.&M., UTAH COUNTY, UTAH

609

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: 11 11 of 16
Drawn: TL	Date: 16 Nov 2010	
Revised:	Date:	



Legend

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

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

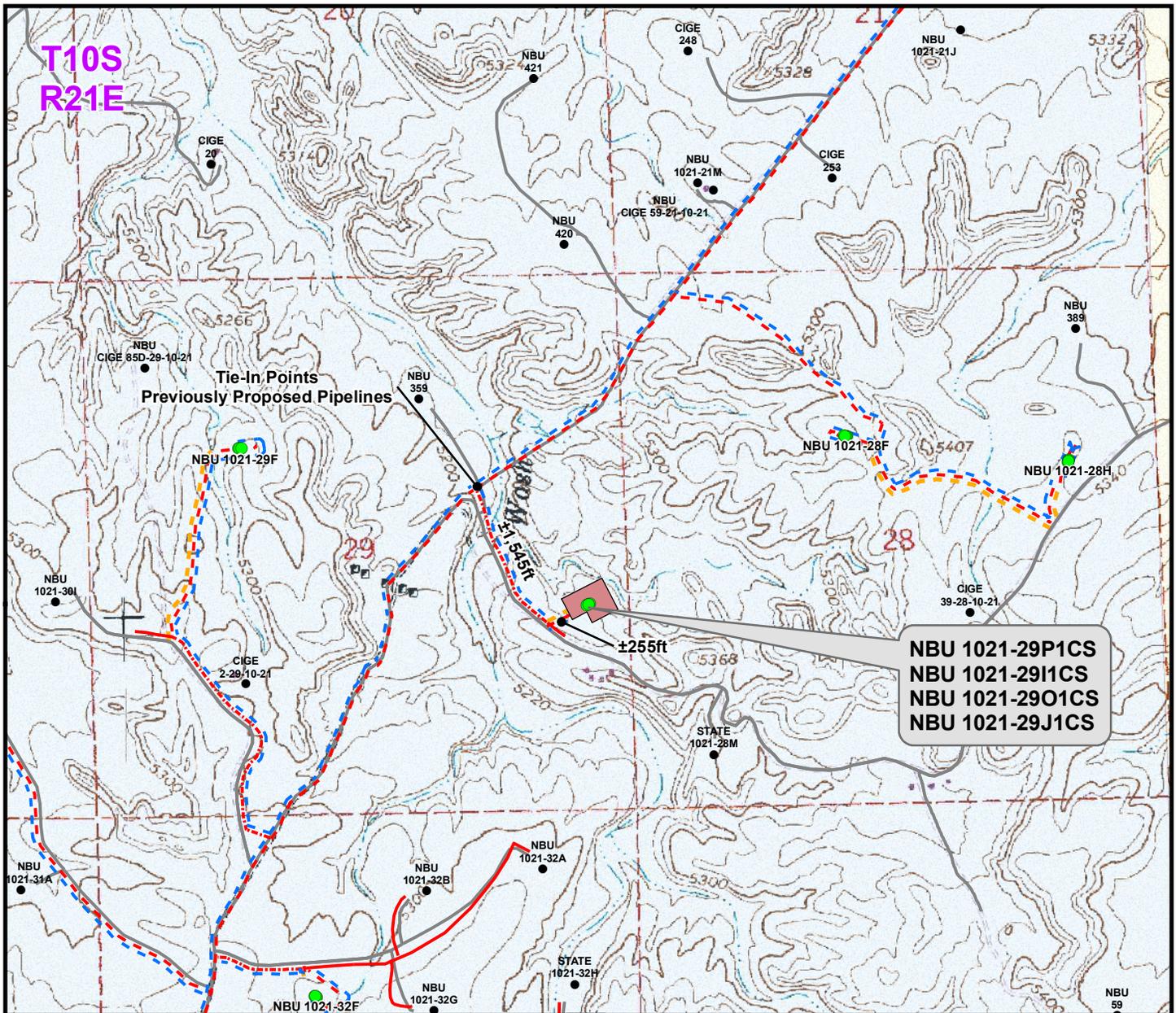
WELL PAD - NBU 1021-29I

TOPO C
NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, R21E,
S.L.B.&M., UINTAH COUNTY, UTAH

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CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
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Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 16 Nov 2010	12
Revised:	Date:	



**NBU 1021-29P1CS
NBU 1021-29I1CS
NBU 1021-29O1CS
NBU 1021-29J1CS**

Proposed Liquid Pipeline	Length	Proposed Gas Pipeline	Length
Proposed 6" Max. (Meter House to Edge of Pad)	±475ft	Proposed 6" (Meter House to Edge of Pad)	±475ft
Proposed 6" Max. (Edge of Pad to Road Intersection)	±255ft	Proposed 6" (Edge of Pad to Road Intersection)	±255ft
Proposed 6" Max. (Road Intersection to Previously Proposed Liquid Pipeline)	±1,545ft	Proposed 12" (Road Intersection to Previously Proposed 16" Gas Pipeline)	±1,545ft
TOTAL PROPOSED LIQUID PIPELINE =	±2,275ft	TOTAL PROPOSED GAS PIPELINE =	±2,275ft

Legend

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

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

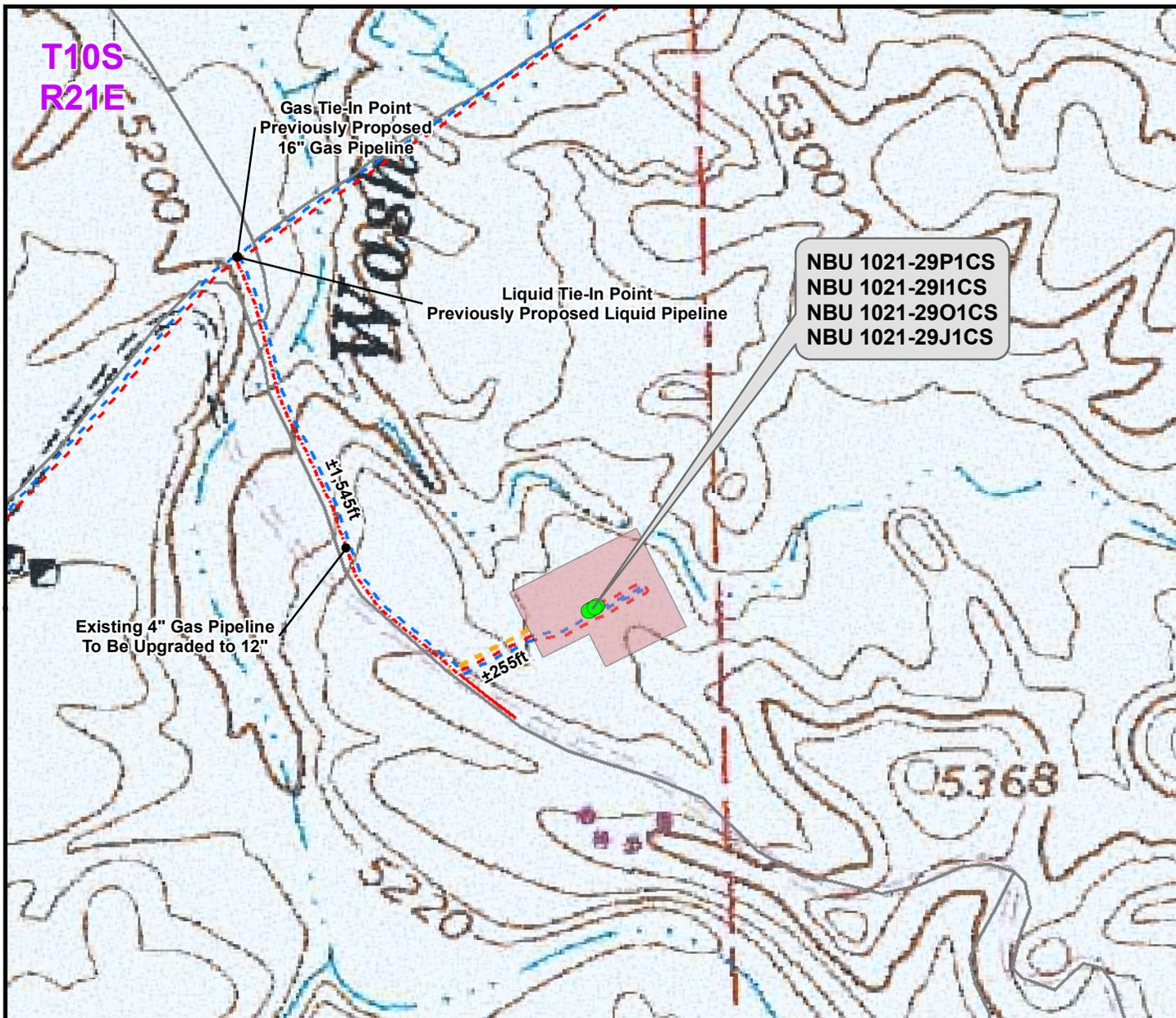
WELL PAD - NBU 1021-29I

TOPO D
NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
LOCATED IN SECTION 29, T10S, R21E,
S.L.B.&M., UINTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 16 Nov 2010	13 13 of 16
Revised:	Date:	



NBU 1021-29P1CS
 NBU 1021-29I1CS
 NBU 1021-29O1CS
 NBU 1021-29J1CS

Proposed Liquid Pipeline	Length
Proposed 6" Max. (Meter House to Edge of Pad)	±475ft
Proposed 6" Max. (Edge of Pad to Road Intersection)	±255ft
Proposed 6" Max. (Road Intersection to Previously Proposed Liquid Pipeline)	±1,545ft
TOTAL PROPOSED LIQUID PIPELINE =	±2,275ft

Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±475ft
Proposed 6" (Edge of Pad to Road Intersection)	±255ft
Proposed 12" (Road Intersection to Previously Proposed 16" Gas Pipeline)	±1,545ft
TOTAL PROPOSED GAS PIPELINE =	±2,275ft

Legend

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

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

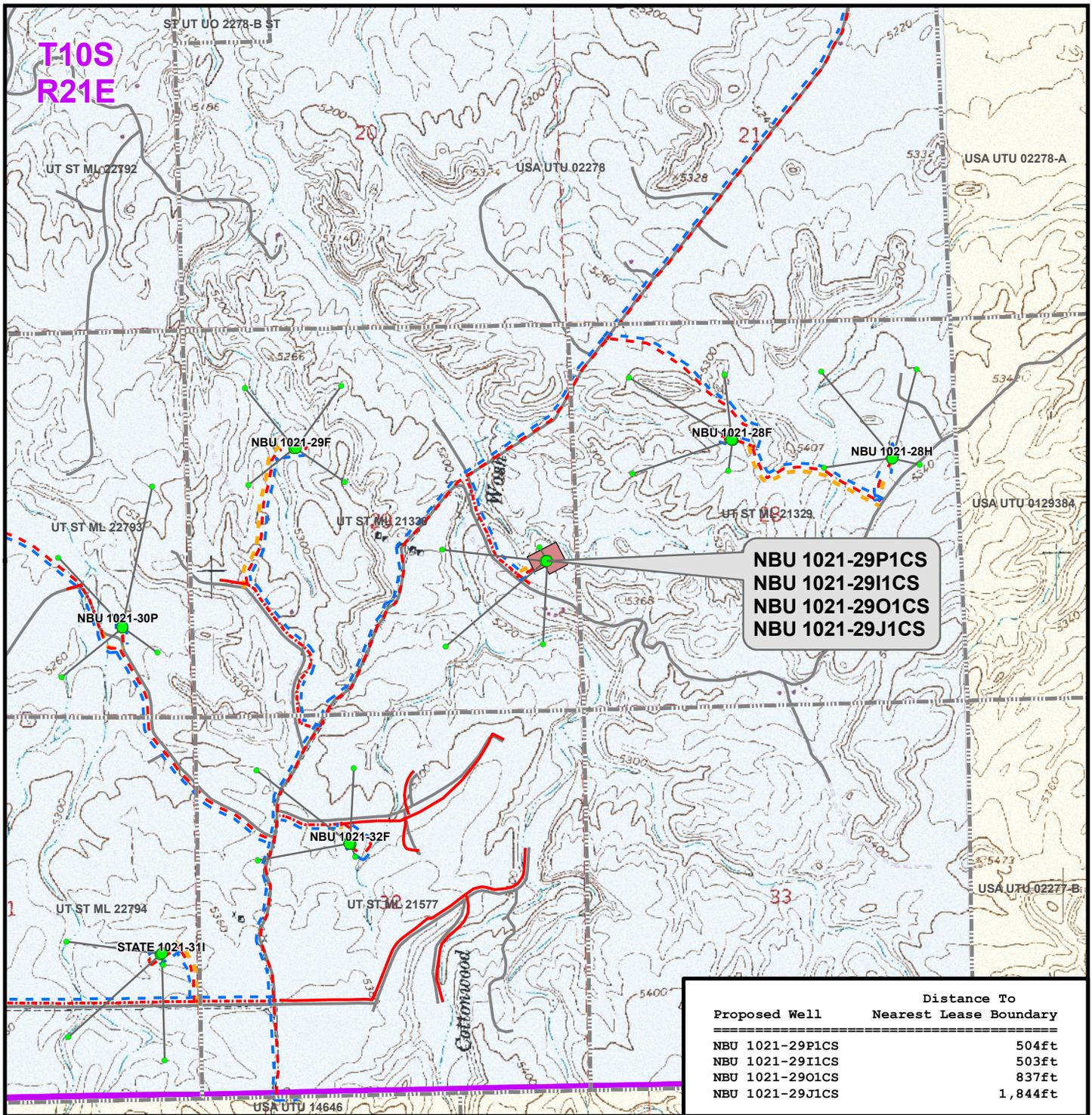
WELL PAD - NBU 1021-29I

TOPO D2 (PAD & PIPELINE DETAIL)
 NBU 1021-29P1CS, NBU 1021-29I1CS,
 NBU 1021-29O1CS & NBU 1021-29J1CS
 LOCATED IN SECTION 29, T10S, R21E,
 S.L.B.&M., UINTAH COUNTY, UTAH

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 CONSULTING, LLC
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Scale: 1" = 500ft	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 16 Nov 2010	14
Revised:	Date:	



Proposed Well	Distance To Nearest Lease Boundary
NBU 1021-29P1CS	504ft
NBU 1021-29I1CS	503ft
NBU 1021-29O1CS	837ft
NBU 1021-29J1CS	1,844ft

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

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

WELL PAD - NBU 1021-29I

TOPO E
 NBU 1021-29P1CS, NBU 1021-29I1CS,
 NBU 1021-29O1CS & NBU 1021-29J1CS
 LOCATED IN SECTION 29, T10S, R21E,
 S.L.B.&M., UTAH COUNTY, UTAH

609
 CONSULTING, LLC
 2155 North Main Street
 Sheridan, WY 82801
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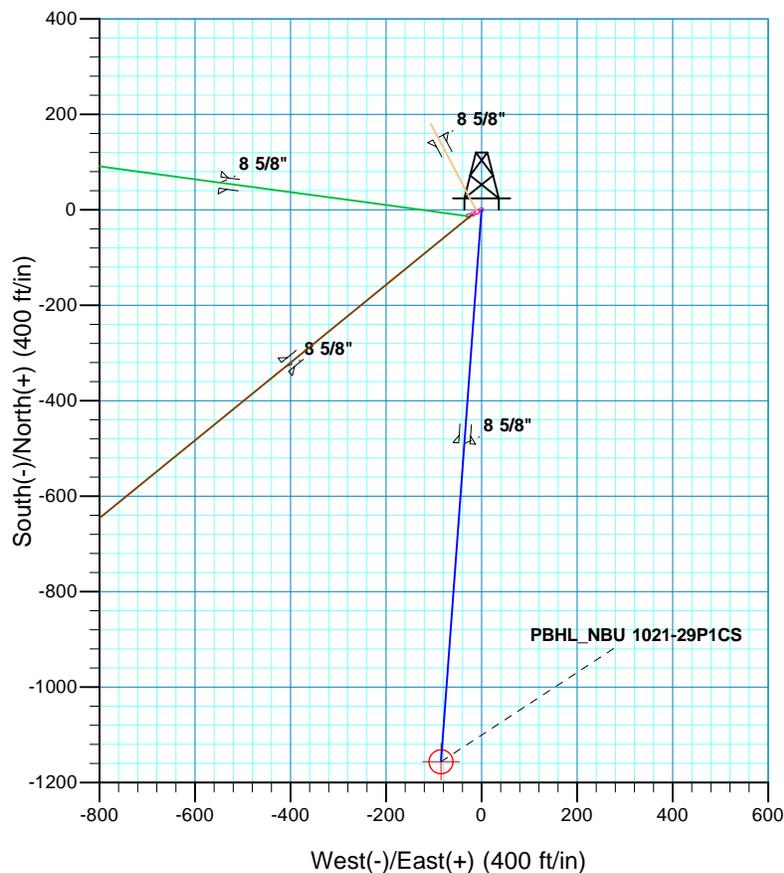
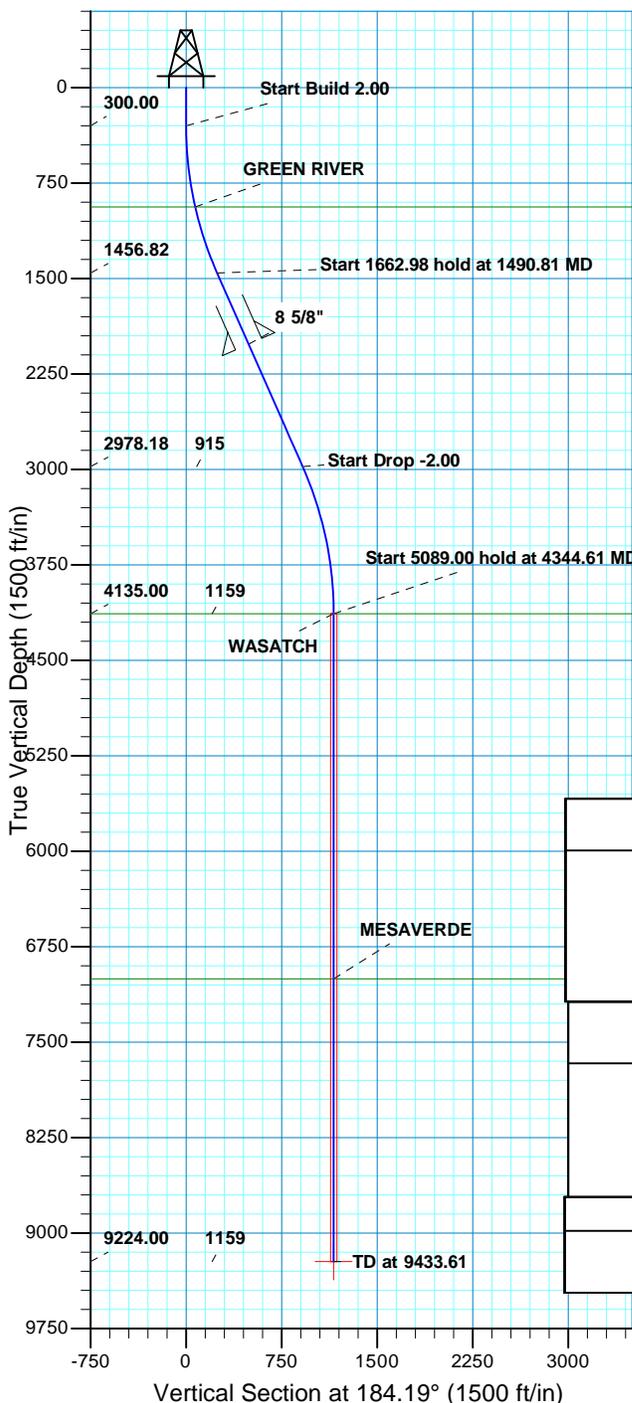
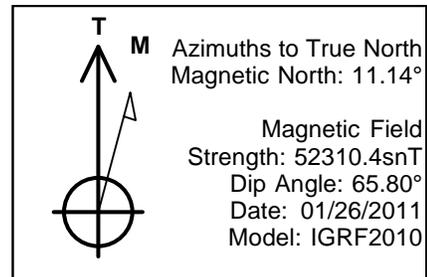
Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 16 Nov 2010	15 15 of 16
Revised:	Date:	

Kerr-McGee Oil & Gas Onshore, LP
WELL PAD – NBU 1021-29I
WELLS – NBU 1021-29P1CS, NBU 1021-29I1CS,
NBU 1021-29O1CS & NBU 1021-29J1CS
Section 29, T10S, R21E, S.L.B.&M.

From the intersection of U.S. Highway 40 and Vernal Avenue in Vernal, Utah, proceed in a westerly direction along U.S. Highway 40 approximately 13.9 miles to the junction of State Highway 88. Exit left and proceed in a southerly direction along State Highway 88 approximately 16.8 miles to Ouray, Utah. From Ouray, proceed in a southerly direction along the Seep Ridge Road (County B Road 2810) approximately 15.4 miles to the intersection of a Class D County Road to the east. Exit left and proceed in an easterly direction along the Class D County Road approximately 1.2 miles to the intersection of the Cottonwood Wash Road (Class D County Road) to the north. Exit left and proceed in a northerly then northeasterly then southeasterly direction along the Cottonwood Wash Road approximately 1.8 miles to the proposed access road. Follow road flags in a northeasterly direction approximately 275 feet to the proposed location.

Total distance from Vernal, Utah to the proposed well location is approximately 49.2 miles in a southerly direction.

WELL DETAILS: NBU 1021-29P1CS									
GL 5253 & KB 4' @ 5257.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	14498968.65	2042305.93	39° 55' 0.422 N	109° 34' 0.282 W				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	9224.00	-1156.32	-84.70	14497811.12	2042239.80	39° 54' 48.992 N	109° 34' 1.369 W	Circle (Radius: 25.00)	
- plan hits target center									



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1490.81	23.82	184.19	1456.82	-243.30	-17.82	2.00	184.19	243.95	
3153.79	23.82	184.19	2978.18	-913.02	-66.88	0.00	0.00	915.47	
4344.61	0.00	0.00	4135.00	-1156.32	-84.70	2.00	180.00	1159.42	
9433.61	0.00	0.00	9224.00	-1156.32	-84.70	0.00	0.00	1159.42	PBHL_NBU 1021-29P1CS
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N									
Geodetic System: Universal Transverse Mercator (US Survey Feet)					FORMATION TOP DETAILS				
Datum: NAD 1927 (NADCON CONUS)					TVDPath	MDPath	Formation		
Ellipsoid: Clarke 1866					938.00	943.40	GREEN RIVER		
Zone: Zone 12N (114 W to 108 W)					4135.00	4344.61	WASATCH		
Location: SECTION 29 T10S R21E					7002.00	7211.61	MESAVERDE		
System Datum: Mean Sea Level									
CASING DETAILS									
			TVD	MD	Name	Size			
			2016.00	2102.05	8 5/8"	8.625			



US ROCKIES REGION PLANNING

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

UINTAH_NBU 1021-29I PAD

NBU 1021-29P1CS

NBU 1021-29P1CS

Plan: PLAN #1 1-26-11 RHS

Standard Planning Report

26 January, 2011





Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	North Reference:	True
Well:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Wellbore:	NBU 1021-29P1CS		
Design:	PLAN #1 1-26-11 RHS		

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

Site	UINTAH_NBU 1021-29I PAD, SECTION 29 T10S R21E				
Site Position:	Northing:	14,498,964.15 usft	Latitude:	39° 55' 0.379 N	
From: Lat/Long	Easting:	2,042,297.02 usft	Longitude:	109° 34' 0.397 W	
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.92 °

Well	NBU 1021-29P1CS, 1993 FSL 400 FEL					
Well Position	+N/-S	4.37 ft	Northing:	14,498,968.66 usft	Latitude:	39° 55' 0.422 N
	+E/-W	8.97 ft	Easting:	2,042,305.93 usft	Longitude:	109° 34' 0.282 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,253.00 ft

Wellbore	NBU 1021-29P1CS				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/26/2011	11.14	65.80	52,310

Design	PLAN #1 1-26-11 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	184.19

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	
1,490.81	23.82	184.19	1,456.82	-243.30	-17.82	2.00	2.00	0.00	184.19	
3,153.79	23.82	184.19	2,978.18	-913.02	-66.88	0.00	0.00	0.00	0.00	
4,344.61	0.00	0.00	4,135.00	-1,156.32	-84.70	2.00	-2.00	0.00	180.00	
9,433.61	0.00	0.00	9,224.00	-1,156.32	-84.70	0.00	0.00	0.00	0.00	PBHL_NBU 1021-29F



Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	North Reference:	True
Well:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Wellbore:	NBU 1021-29P1CS		
Design:	PLAN #1 1-26-11 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 2.00										
400.00	2.00	184.19	399.98	-1.74	-0.13	1.75	2.00	2.00	0.00	
500.00	4.00	184.19	499.84	-6.96	-0.51	6.98	2.00	2.00	0.00	
600.00	6.00	184.19	599.45	-15.65	-1.15	15.69	2.00	2.00	0.00	
700.00	8.00	184.19	698.70	-27.81	-2.04	27.88	2.00	2.00	0.00	
800.00	10.00	184.19	797.47	-43.41	-3.18	43.52	2.00	2.00	0.00	
900.00	12.00	184.19	895.62	-62.44	-4.57	62.60	2.00	2.00	0.00	
943.40	12.87	184.19	938.00	-71.75	-5.26	71.95	2.00	2.00	0.00	
GREEN RIVER										
1,000.00	14.00	184.19	993.06	-84.87	-6.22	85.10	2.00	2.00	0.00	
1,100.00	16.00	184.19	1,089.64	-110.68	-8.11	110.98	2.00	2.00	0.00	
1,200.00	18.00	184.19	1,185.27	-139.84	-10.24	140.21	2.00	2.00	0.00	
1,300.00	20.00	184.19	1,279.82	-172.31	-12.62	172.77	2.00	2.00	0.00	
1,400.00	22.00	184.19	1,373.17	-208.05	-15.24	208.60	2.00	2.00	0.00	
1,490.81	23.82	184.19	1,456.82	-243.30	-17.82	243.95	2.00	2.00	0.00	
Start 1662.98 hold at 1490.81 MD										
1,500.00	23.82	184.19	1,465.22	-247.00	-18.09	247.66	0.00	0.00	0.00	
1,600.00	23.82	184.19	1,556.71	-287.27	-21.04	288.04	0.00	0.00	0.00	
1,700.00	23.82	184.19	1,648.19	-327.54	-23.99	328.42	0.00	0.00	0.00	
1,800.00	23.82	184.19	1,739.67	-367.82	-26.94	368.80	0.00	0.00	0.00	
1,900.00	23.82	184.19	1,831.16	-408.09	-29.89	409.18	0.00	0.00	0.00	
2,000.00	23.82	184.19	1,922.64	-448.36	-32.84	449.56	0.00	0.00	0.00	
2,100.00	23.82	184.19	2,014.13	-488.63	-35.79	489.94	0.00	0.00	0.00	
2,102.05	23.82	184.19	2,016.00	-489.46	-35.85	490.77	0.00	0.00	0.00	
8 5/8"										
2,200.00	23.82	184.19	2,105.61	-528.91	-38.74	530.32	0.00	0.00	0.00	
2,300.00	23.82	184.19	2,197.10	-569.18	-41.69	570.70	0.00	0.00	0.00	
2,400.00	23.82	184.19	2,288.58	-609.45	-44.64	611.09	0.00	0.00	0.00	
2,500.00	23.82	184.19	2,380.07	-649.73	-47.59	651.47	0.00	0.00	0.00	
2,600.00	23.82	184.19	2,471.55	-690.00	-50.54	691.85	0.00	0.00	0.00	
2,700.00	23.82	184.19	2,563.03	-730.27	-53.49	732.23	0.00	0.00	0.00	
2,800.00	23.82	184.19	2,654.52	-770.54	-56.44	772.61	0.00	0.00	0.00	
2,900.00	23.82	184.19	2,746.00	-810.82	-59.39	812.99	0.00	0.00	0.00	
3,000.00	23.82	184.19	2,837.49	-851.09	-62.34	853.37	0.00	0.00	0.00	
3,100.00	23.82	184.19	2,928.97	-891.36	-65.29	893.75	0.00	0.00	0.00	
3,153.79	23.82	184.19	2,978.18	-913.02	-66.88	915.47	0.00	0.00	0.00	
Start Drop -2.00										
3,200.00	22.89	184.19	3,020.61	-931.29	-68.22	933.79	2.00	-2.00	0.00	
3,300.00	20.89	184.19	3,113.39	-968.48	-70.94	971.07	2.00	-2.00	0.00	
3,400.00	18.89	184.19	3,207.42	-1,002.41	-73.43	1,005.10	2.00	-2.00	0.00	
3,500.00	16.89	184.19	3,302.58	-1,033.05	-75.67	1,035.82	2.00	-2.00	0.00	
3,600.00	14.89	184.19	3,398.75	-1,060.36	-77.67	1,063.20	2.00	-2.00	0.00	
3,700.00	12.89	184.19	3,495.82	-1,084.30	-79.43	1,087.21	2.00	-2.00	0.00	
3,800.00	10.89	184.19	3,593.67	-1,104.85	-80.93	1,107.81	2.00	-2.00	0.00	
3,900.00	8.89	184.19	3,692.18	-1,121.98	-82.19	1,124.99	2.00	-2.00	0.00	
4,000.00	6.89	184.19	3,791.23	-1,135.68	-83.19	1,138.72	2.00	-2.00	0.00	
4,100.00	4.89	184.19	3,890.69	-1,145.92	-83.94	1,148.99	2.00	-2.00	0.00	
4,200.00	2.89	184.19	3,990.46	-1,152.68	-84.44	1,155.77	2.00	-2.00	0.00	
4,300.00	0.89	184.19	4,090.40	-1,155.98	-84.68	1,159.07	2.00	-2.00	0.00	
4,344.61	0.00	0.00	4,135.00	-1,156.32	-84.70	1,159.42	2.00	-2.00	0.00	



Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	North Reference:	True
Well:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Wellbore:	NBU 1021-29P1CS		
Design:	PLAN #1 1-26-11 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
Start 5089.00 hold at 4344.61 MD - WASATCH										
4,400.00	0.00	0.00	4,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,290.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,390.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,490.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,590.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,690.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,790.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,890.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,200.00	0.00	0.00	4,990.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,090.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,290.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,390.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,490.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,590.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,690.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,790.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,890.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,990.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,090.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,290.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,390.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,490.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,590.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,690.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,790.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,890.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,990.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,211.61	0.00	0.00	7,002.00	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
MESAVERDE										
7,300.00	0.00	0.00	7,090.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,290.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,390.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,490.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,590.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,690.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,790.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,890.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,990.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,090.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,290.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,390.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,490.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,590.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,690.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,790.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,890.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
9,200.00	0.00	0.00	8,990.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,090.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	



Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	North Reference:	True
Well:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Wellbore:	NBU 1021-29P1CS		
Design:	PLAN #1 1-26-11 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,400.00	0.00	0.00	9,190.39	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
9,433.61	0.00	0.00	9,224.00	-1,156.32	-84.70	1,159.42	0.00	0.00	0.00	
PBHL_NBU 1021-29P1CS										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NBU 1021-29P1C - hit/miss target - Shape - Circle (radius 25.00)	0.00	0.00	9,224.00	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
2,102.05	2,016.00	8 5/8"	8.625	11.000		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
943.40	938.00	GREEN RIVER				
4,344.61	4,135.00	WASATCH				
7,211.61	7,002.00	MESAVERDE				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,490.81	1,456.82	-243.30	-17.82	Start 1662.98 hold at 1490.81 MD	
3,153.79	2,978.18	-913.02	-66.88	Start Drop -2.00	
4,344.61	4,135.00	-1,156.32	-84.70	Start 5089.00 hold at 4344.61 MD	
9,433.61	9,224.00	-1,156.32	-84.70	TD at 9433.61	



US ROCKIES REGION PLANNING

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

UINTAH_NBU 1021-29I PAD

NBU 1021-29P1CS

NBU 1021-29P1CS

Plan: PLAN #1 1-26-11 RHS

Survey Report - Geographic

26 January, 2011





SDI
Survey Report - Geographic



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Design:	PLAN #1 1-26-11 RHS	Database:	EDM5000-RobertS-Local

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

Site	UINTAH_NBU 1021-29I PAD, SECTION 29 T10S R21E				
Site Position:	Northing:	14,498,964.15 usft	Latitude:	39° 55' 0.379 N	
From:	Lat/Long	Easting:	2,042,297.02 usft	Longitude:	109° 34' 0.397 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.92 °

Well	NBU 1021-29P1CS, 1993 FSL 400 FEL					
Well Position	+N/-S	0.00 ft	Northing:	14,498,968.66 usft	Latitude:	39° 55' 0.422 N
	+E/-W	0.00 ft	Easting:	2,042,305.93 usft	Longitude:	109° 34' 0.282 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,253.00 ft	

Wellbore	NBU 1021-29P1CS				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/26/2011	11.14	65.80	52,310

Design	PLAN #1 1-26-11 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	184.19

Survey Tool Program	Date	01/26/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	9,433.61	PLAN #1 1-26-11 RHS (NBU 1021-29P1C)	SDI MWD	SDI MWD - Standard ver 1.0.1

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W	
100.00	0.00	0.00	100.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W	
200.00	0.00	0.00	200.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W	
300.00	0.00	0.00	300.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W	
Start Build 2.00										
400.00	2.00	184.19	399.98	-1.74	-0.13	14,498,966.92	2,042,305.83	39° 55' 0.405 N	109° 34' 0.284 W	
500.00	4.00	184.19	499.84	-6.96	-0.51	14,498,961.69	2,042,305.53	39° 55' 0.354 N	109° 34' 0.289 W	
600.00	6.00	184.19	599.45	-15.65	-1.15	14,498,952.99	2,042,305.03	39° 55' 0.268 N	109° 34' 0.297 W	
700.00	8.00	184.19	698.70	-27.81	-2.04	14,498,940.82	2,042,304.34	39° 55' 0.148 N	109° 34' 0.308 W	
800.00	10.00	184.19	797.47	-43.41	-3.18	14,498,925.21	2,042,303.44	39° 54' 59.993 N	109° 34' 0.323 W	
900.00	12.00	184.19	895.62	-62.44	-4.57	14,498,906.16	2,042,302.36	39° 54' 59.805 N	109° 34' 0.341 W	



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Design:	PLAN #1 1-26-11 RHS	Database:	EDM5000-RobertS-Local

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
943.40	12.87	184.19	938.00	-71.75	-5.26	14,498,896.83	2,042,301.82	39° 54' 59.713 N	109° 34' 0.349 W	
GREEN RIVER										
1,000.00	14.00	184.19	993.06	-84.87	-6.22	14,498,883.70	2,042,301.07	39° 54' 59.583 N	109° 34' 0.362 W	
1,100.00	16.00	184.19	1,089.64	-110.68	-8.11	14,498,857.86	2,042,299.60	39° 54' 59.328 N	109° 34' 0.386 W	
1,200.00	18.00	184.19	1,185.27	-139.84	-10.24	14,498,828.67	2,042,297.93	39° 54' 59.040 N	109° 34' 0.413 W	
1,300.00	20.00	184.19	1,279.82	-172.31	-12.62	14,498,796.17	2,042,296.07	39° 54' 58.719 N	109° 34' 0.444 W	
1,400.00	22.00	184.19	1,373.17	-208.05	-15.24	14,498,760.40	2,042,294.03	39° 54' 58.366 N	109° 34' 0.478 W	
1,490.81	23.82	184.19	1,456.82	-243.30	-17.82	14,498,725.10	2,042,292.01	39° 54' 58.017 N	109° 34' 0.511 W	
Start 1662.98 hold at 1490.81 MD										
1,500.00	23.82	184.19	1,465.22	-247.00	-18.09	14,498,721.40	2,042,291.80	39° 54' 57.981 N	109° 34' 0.514 W	
1,600.00	23.82	184.19	1,556.71	-287.27	-21.04	14,498,681.09	2,042,289.50	39° 54' 57.583 N	109° 34' 0.552 W	
1,700.00	23.82	184.19	1,648.19	-327.54	-23.99	14,498,640.77	2,042,287.20	39° 54' 57.185 N	109° 34' 0.590 W	
1,800.00	23.82	184.19	1,739.67	-367.82	-26.94	14,498,600.46	2,042,284.89	39° 54' 56.787 N	109° 34' 0.628 W	
1,900.00	23.82	184.19	1,831.16	-408.09	-29.89	14,498,560.14	2,042,282.59	39° 54' 56.389 N	109° 34' 0.666 W	
2,000.00	23.82	184.19	1,922.64	-448.36	-32.84	14,498,519.83	2,042,280.29	39° 54' 55.990 N	109° 34' 0.704 W	
2,100.00	23.82	184.19	2,014.13	-488.63	-35.79	14,498,479.51	2,042,277.98	39° 54' 55.592 N	109° 34' 0.741 W	
2,102.05	23.82	184.19	2,016.00	-489.46	-35.85	14,498,478.69	2,042,277.94	39° 54' 55.584 N	109° 34' 0.742 W	
8 5/8"										
2,200.00	23.82	184.19	2,105.61	-528.91	-38.74	14,498,439.20	2,042,275.68	39° 54' 55.194 N	109° 34' 0.779 W	
2,300.00	23.82	184.19	2,197.10	-569.18	-41.69	14,498,398.88	2,042,273.38	39° 54' 54.796 N	109° 34' 0.817 W	
2,400.00	23.82	184.19	2,288.58	-609.45	-44.64	14,498,358.57	2,042,271.07	39° 54' 54.398 N	109° 34' 0.855 W	
2,500.00	23.82	184.19	2,380.07	-649.73	-47.59	14,498,318.25	2,042,268.77	39° 54' 54.000 N	109° 34' 0.893 W	
2,600.00	23.82	184.19	2,471.55	-690.00	-50.54	14,498,277.94	2,042,266.47	39° 54' 53.602 N	109° 34' 0.931 W	
2,700.00	23.82	184.19	2,563.03	-730.27	-53.49	14,498,237.63	2,042,264.16	39° 54' 53.204 N	109° 34' 0.969 W	
2,800.00	23.82	184.19	2,654.52	-770.54	-56.44	14,498,197.31	2,042,261.86	39° 54' 52.806 N	109° 34' 1.006 W	
2,900.00	23.82	184.19	2,746.00	-810.82	-59.39	14,498,157.00	2,042,259.56	39° 54' 52.408 N	109° 34' 1.044 W	
3,000.00	23.82	184.19	2,837.49	-851.09	-62.34	14,498,116.68	2,042,257.26	39° 54' 52.010 N	109° 34' 1.082 W	
3,100.00	23.82	184.19	2,928.97	-891.36	-65.29	14,498,076.37	2,042,254.95	39° 54' 51.611 N	109° 34' 1.120 W	
3,153.79	23.82	184.19	2,978.18	-913.02	-66.88	14,498,054.68	2,042,253.71	39° 54' 51.397 N	109° 34' 1.140 W	
Start Drop -2.00										
3,200.00	22.89	184.19	3,020.61	-931.29	-68.22	14,498,036.39	2,042,252.67	39° 54' 51.217 N	109° 34' 1.158 W	
3,300.00	20.89	184.19	3,113.39	-968.48	-70.94	14,497,999.17	2,042,250.54	39° 54' 50.849 N	109° 34' 1.193 W	
3,400.00	18.89	184.19	3,207.42	-1,002.41	-73.43	14,497,965.20	2,042,248.60	39° 54' 50.514 N	109° 34' 1.224 W	
3,500.00	16.89	184.19	3,302.58	-1,033.05	-75.67	14,497,934.53	2,042,246.85	39° 54' 50.211 N	109° 34' 1.253 W	
3,600.00	14.89	184.19	3,398.75	-1,060.36	-77.67	14,497,907.19	2,042,245.29	39° 54' 49.941 N	109° 34' 1.279 W	
3,700.00	12.89	184.19	3,495.82	-1,084.30	-79.43	14,497,883.22	2,042,243.92	39° 54' 49.704 N	109° 34' 1.301 W	
3,800.00	10.89	184.19	3,593.67	-1,104.85	-80.93	14,497,862.65	2,042,242.74	39° 54' 49.501 N	109° 34' 1.321 W	
3,900.00	8.89	184.19	3,692.18	-1,121.98	-82.19	14,497,845.50	2,042,241.76	39° 54' 49.332 N	109° 34' 1.337 W	
4,000.00	6.89	184.19	3,791.23	-1,135.68	-83.19	14,497,831.79	2,042,240.98	39° 54' 49.196 N	109° 34' 1.350 W	
4,100.00	4.89	184.19	3,890.69	-1,145.92	-83.94	14,497,821.55	2,042,240.40	39° 54' 49.095 N	109° 34' 1.359 W	
4,200.00	2.89	184.19	3,990.46	-1,152.68	-84.44	14,497,814.77	2,042,240.01	39° 54' 49.028 N	109° 34' 1.366 W	
4,300.00	0.89	184.19	4,090.40	-1,155.98	-84.68	14,497,811.47	2,042,239.82	39° 54' 48.996 N	109° 34' 1.369 W	
4,344.61	0.00	0.00	4,135.00	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
Start 5089.00 hold at 4344.61 MD - WASATCH										
4,400.00	0.00	0.00	4,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
4,500.00	0.00	0.00	4,290.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
4,600.00	0.00	0.00	4,390.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
4,700.00	0.00	0.00	4,490.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
4,800.00	0.00	0.00	4,590.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
4,900.00	0.00	0.00	4,690.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,000.00	0.00	0.00	4,790.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,100.00	0.00	0.00	4,890.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,200.00	0.00	0.00	4,990.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,300.00	0.00	0.00	5,090.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Design:	PLAN #1 1-26-11 RHS	Database:	EDM5000-RobertS-Local

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,400.00	0.00	0.00	5,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,500.00	0.00	0.00	5,290.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,600.00	0.00	0.00	5,390.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,700.00	0.00	0.00	5,490.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,800.00	0.00	0.00	5,590.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
5,900.00	0.00	0.00	5,690.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,000.00	0.00	0.00	5,790.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,100.00	0.00	0.00	5,890.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,200.00	0.00	0.00	5,990.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,300.00	0.00	0.00	6,090.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,400.00	0.00	0.00	6,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,500.00	0.00	0.00	6,290.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,600.00	0.00	0.00	6,390.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,700.00	0.00	0.00	6,490.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,800.00	0.00	0.00	6,590.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
6,900.00	0.00	0.00	6,690.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,000.00	0.00	0.00	6,790.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,100.00	0.00	0.00	6,890.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,200.00	0.00	0.00	6,990.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,211.61	0.00	0.00	7,002.00	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
MESAVERDE										
7,300.00	0.00	0.00	7,090.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,400.00	0.00	0.00	7,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,500.00	0.00	0.00	7,290.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,600.00	0.00	0.00	7,390.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,700.00	0.00	0.00	7,490.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,800.00	0.00	0.00	7,590.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
7,900.00	0.00	0.00	7,690.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,000.00	0.00	0.00	7,790.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,100.00	0.00	0.00	7,890.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,200.00	0.00	0.00	7,990.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,300.00	0.00	0.00	8,090.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,400.00	0.00	0.00	8,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,500.00	0.00	0.00	8,290.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,600.00	0.00	0.00	8,390.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,700.00	0.00	0.00	8,490.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,800.00	0.00	0.00	8,590.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
8,900.00	0.00	0.00	8,690.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,000.00	0.00	0.00	8,790.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,100.00	0.00	0.00	8,890.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,200.00	0.00	0.00	8,990.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,300.00	0.00	0.00	9,090.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,400.00	0.00	0.00	9,190.39	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
9,433.61	0.00	0.00	9,224.00	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W	
PBHL_NBU 1021-29P1CS										



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Site:	UINTAH_NBU 1021-29I PAD	MD Reference:	GL 5253 & KB 4' @ 5257.00ft (ASSUMED)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	NBU 1021-29P1CS	Survey Calculation Method:	Minimum Curvature
Design:	PLAN #1 1-26-11 RHS	Database:	EDM5000-RobertS-Local

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
PBHL_NBU 1021-29P1C - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,224.00	-1,156.32	-84.70	14,497,811.13	2,042,239.80	39° 54' 48.992 N	109° 34' 1.369 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,102.05	2,016.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
943.40	938.00	GREEN RIVER			
4,344.61	4,135.00	WASATCH			
7,211.61	7,002.00	MESAVERDE			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300	300	0	0	Start Build 2.00	
1491	1457	-243	-18	Start 1662.98 hold at 1490.81 MD	
3154	2978	-913	-67	Start Drop -2.00	
4345	4135	-1156	-85	Start 5089.00 hold at 4344.61 MD	
9434	9224	-1156	-85	TD at 9433.61	

Checked By: _____ Approved By: _____ Date: _____

NBU 1021-29I1CS

Surface: 1,988' FSL 409' FEL (NE/4SE/4)
BHL: 2,173' FSL 503' FEL (NE/4SE/4)

NBU 1021-29J1CS

Surface: 1,980' FSL 427' FEL (NE/4SE/4)
BHL: 2,175' FSL 1,844' FEL (NW/4SE/4)

NBU 1021-29O1CS

Surface: 1,984' FSL 418' FEL (NE/4SE/4)
BHL: 837' FSL 1,849' FEL (SW/4SE/4)

NBU 1021-29P1CS

Surface: 1,993' FSL 400' FEL (NE/4SE/4)
BHL: 836' FSL 504' FEL (SE/4SE/4)

Pad: NBU 1021-29I
Section 29 T10S R21E
Mineral Lease: ML 21330

Uintah County, Utah
Operator: Kerr-McGee Oil & Gas Onshore LP

MULTI-POINT SURFACE USE PLAN of OPERATIONS (SUPO)

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including, but not limited to, APDs/SULAs/ROEs/ROWs and/or easements).

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

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

A. Existing Roads:

Existing roads consist of county roads and improved/unimproved lease roads. APC/KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

B. Planned Access Roads:

Approximately $\pm 275'$ (0.1 miles) of new road is proposed (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

Where roads are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

Turnouts; major cut and fills; culverts; bridges; gates; cattle guards; low water crossings; or modifications needed to existing infrastructure/facilities were determined at the on-site and, as applicable, are typically shown on attached Exhibits and Topo maps.

C. Location of Existing and Proposed Facilities:

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of each well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) aboveground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of UDOGM.

Gathering facilities:

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is $\pm 2,275'$ and the individual segments are broken up as follows:

$\pm 475'$ (0.1 miles) –New 6" buried gas pipeline from the meter to the edge of the pad.

$\pm 255'$ (0.05 miles) –New 6" buried gas pipeline from the edge of pad to the road intersection.

$\pm 1,545'$ (0.3 miles) –New 12" buried gas pipeline from the road intersection to the previously proposed 16" gas pipeline.

The total liquid gathering pipeline distance from the separator to the tie in point is $\pm 2,275'$ and the individual segments are broken up as follows:

- $\pm 475'$ (0.1 miles) –New 6” buried liquid pipeline from the separator to the edge of the pad.
- $\pm 255'$ (0.05 miles) –New 6” buried liquid pipeline from the edge of pad to the road intersection.
- $\pm 1,545'$ (0.3 miles) –New 6” buried liquid pipeline from the road intersection to the previously proposed liquid pipeline.

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

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. Kerr-McGee requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, Kerr-McGee requests a temporary 45' construction right-of-way and 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

D. Location and Type of Water Supply:

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

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

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

No water well is to be drilled on this lease.

E. Source of Construction Materials:

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

F. Methods of Handling Waste Materials:

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E
Ace Oilfield in Sec. 2 T6S R20E
MC&MC in Sec. 12 T6S R19E
Pipeline Facility in Sec. 36 T9S R20E
Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E
Bonanza Evaporation Pond in Sec. 2 T10S R23E
Ouray #1 SWD in Sec. 1 T9S R21E
NBU 159 SWD in Sec. 35 T9S R21E
CIGE 112D SWD in Sec. 19 T9S R21E
CIGE 114 SWD in Sec. 34 T9S R21E
NBU 921-34K SWD in Sec. 34 T9S R21E
NBU 921-33F SWD in Sec. 33 T9S R21E
NBU 921-34L SWD in Sec. 34 T9S R21E

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20-mil or thicker. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. Any additional pits necessary to subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

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

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility.

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

Any undesirable event, accidental release, or in excess of reportable quantities will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule, and, where State wells are participatory to a Federal agreement, according to NTL-3A.

Materials Management

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations

issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

G. Ancillary Facilities:

None are anticipated.

H. Well Site Layout (see Well Pad Design Summary):

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1983 (NAD83) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

I. Plans for Reclamation of the Surface:

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

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

Interim Reclamation

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All

stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

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

Final Reclamation

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

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

All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to UDOGM.

Seeding and Measures Common to Interim and Final Reclamation

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to, erosion control blankets and

bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The site specific seed mix will be provided by SITLA.

J. Surface/Mineral Ownership:

SITLA

675 East 500 South, Suite 500

Salt Lake City, UT 84102

K. Other Information:

None

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

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

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

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

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

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

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, by Bureau of Land Management Nationwide Bond WYB000291.

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


Danielle Piernot

March 11, 2011
Date



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

January 17, 2011

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

Re: Directional Drilling R649-3-11
NBU 1021-29PICS
T10S-R21E
Section 29: NESE (Surf), SESE (Bottom)
Surface: 400' FEL, 1993' FSL
Bottom Hole: 504' FEL, 836' FSL
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 1021-29PICS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

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

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

A handwritten signature in blue ink, appearing to read 'R. Spencer'.

Robert Spencer
Landman II



Kerr-McGee Oil & Gas Onshore LP
1999 Broadway, Suite 3700
Denver, CO 80205

January 24, 2011

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

RE: NBU 1021-29P1CS
T10S-R21E
Section 29: NESE
Surface: 1993' FSL, 400' FEL
Bottom Hole: 836' FSL, 504' FEL
Uintah County, Utah

Dear Mrs. Mason:

Kerr-McGee Oil & Gas Onshore LP has submitted a permit to drill the captioned well to test the Wasatch and Mesaverde formations. The well is located within the area covered by Order No. 173-14 and is within an exception location area. The surface location of this well is less than 460' from the unit boundary due to a limited amount of topographically acceptable surface locations. Kerr-McGee owns 100% of the leasehold in the offset lands and has no objection to the exception location.

Kerr-McGee requests your approval of this exception location. If you have any questions or require any additional information, please do not hesitate to call me at 720-929-6351.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. T. Spencer'.

Robert T. Spencer
Landman

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office

P.O. Box 45155

Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:

3160

(UT-922)

March 16, 2011

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2011 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 2011 within the Natural Buttes Unit, Uintah County, Utah.

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

NBU 1021-30P PAD

43-047-51510	NBU 1021-30O4BS	Sec 30 T10S R21E 1179 FSL 0971 FEL
	BHL	Sec 30 T10S R21E 0499 FSL 1831 FEL

43-047-51511	NBU 1021-30P1CS	Sec 30 T10S R21E 1189 FSL 0972 FEL
	BHL	Sec 30 T10S R21E 0837 FSL 0499 FEL

NBU 1021-32F PAD

43-047-51512	NBU 1021-32C4BS	Sec 32 T10S R21E 1872 FNL 2121 FWL
	BHL	Sec 32 T10S R21E 0825 FNL 2188 FWL

43-047-51513	NBU 1021-32D4BS	Sec 32 T10S R21E 1860 FNL 2105 FWL
	BHL	Sec 32 T10S R21E 0825 FNL 0842 FWL

43-047-51514	NBU 1021-32E4BS	Sec 32 T10S R21E 1866 FNL 2113 FWL
	BHL	Sec 32 T10S R21E 2072 FNL 0841 FWL

43-047-51515	NBU 1021-32F4BS	Sec 32 T10S R21E 1878 FNL 2129 FWL
	BHL	Sec 32 T10S R21E 2053 FNL 2191 FWL

NBU 1021-28F PAD

43-047-51516	NBU 1021-28C4BS	Sec 28 T10S R21E 1730 FNL 2213 FWL
	BHL	Sec 28 T10S R21E 0831 FNL 2151 FWL

RECEIVED: May. 19, 2011

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-51517	NBU 1021-28D4BS	Sec 28 T10S R21E 1726 FNL 2204 FWL BHL Sec 28 T10S R21E 0834 FNL 0827 FWL
43-047-51518	NBU 1021-28E4BS	Sec 28 T10S R21E 1733 FNL 2222 FWL BHL Sec 28 T10S R21E 2168 FNL 0828 FWL
43-047-51519	NBU 1021-28F4BS	Sec 28 T10S R21E 1736 FNL 2232 FWL BHL Sec 28 T10S R21E 2163 FNL 2153 FWL
NBU 1021-28H PAD		
43-047-51520	NBU 1021-28A4BS	Sec 28 T10S R21E 2029 FNL 0866 FEL BHL Sec 28 T10S R21E 0828 FNL 0496 FEL
43-047-51521	NBU 1021-28B4BS	Sec 28 T10S R21E 2038 FNL 0871 FEL BHL Sec 28 T10S R21E 0830 FNL 1820 FEL
43-047-51522	NBU 1021-28G4BS	Sec 28 T10S R21E 2047 FNL 0876 FEL BHL Sec 28 T10S R21E 2158 FNL 1822 FEL
43-047-51523	NBU 1021-28H4BS	Sec 28 T10S R21E 2056 FNL 0880 FEL BHL Sec 28 T10S R21E 2153 FNL 0497 FEL
NBU 1021-29F PAD		
43-047-51524	NBU 1021-29C4BS	Sec 29 T10S R21E 1685 FNL 1518 FWL BHL Sec 29 T10S R21E 0837 FNL 2171 FWL
43-047-51525	NBU 1021-29D4BS	Sec 29 T10S R21E 1687 FNL 1498 FWL BHL Sec 29 T10S R21E 0838 FNL 0835 FWL
43-047-51526	NBU 1021-29E4BS	Sec 29 T10S R21E 1689 FNL 1488 FWL BHL Sec 29 T10S R21E 2179 FNL 0837 FWL
43-047-51527	NBU 1021-29F4BS	Sec 29 T10S R21E 1686 FNL 1508 FWL BHL Sec 29 T10S R21E 2177 FNL 2176 FWL
NBU 1021-29I		
43-047-51528	NBU 1021-29I1CS	Sec 29 T10S R21E 1988 FSL 0409 FEL BHL Sec 29 T10S R21E 2173 FSL 0503 FEL
43-047-51529	NBU 1021-29J1CS	Sec 29 T10S R21E 1980 FSL 0427 FEL BHL Sec 29 T10S R21E 2175 FSL 1844 FEL
43-047-51530	NBU 1021-29O1CS	Sec 29 T10S R21E 1984 FSL 0418 FEL BHL Sec 29 T10S R21E 0837 FSL 1849 FEL
43-047-51531	NBU 1021-29P1CS	Sec 29 T10S R21E 1993 FSL 0400 FEL BHL Sec 29 T10S R21E 0836 FSL 0504 FEL

From: Jim Davis
To: Bonner, Ed; Garrison, LaVonne; Hill, Brad; Mason, Diana
CC: Jacobsen, Julie; Lytle, Andy; Piernot, Danielle
Date: 4/28/2011 2:24 PM
Subject: Kerr McGee APD approvals (28)

The following APDs have been approved by SITLA including arch clearance. Paleo clearance is granted with the stipulations noted below.

These wells are approved with out stipulation.

4304751536 NBU 1021-30H4BS
4304751537 NBU 1021-30J1CS
4304751510 NBU 1021-30O4BS
4304751511 NBU 1021-30P1CS
4304751512 NBU 1021-32C4BS
4304751513 NBU 1021-32D4BS
4304751514 NBU 1021-32E4BS
4304751515 NBU 1021-32F4BS

A permitted paleontologist needs to be on-site to observe construction of these wells/ pads.

4304751516 NBU 1021-28C4BS
4304751517 NBU 1021-28D4BS
4304751518 NBU 1021-28E4BS
4304751519 NBU 1021-28F4BS
4304751520 NBU 1021-28A4BS
4304751521 NBU 1021-28B4BS
4304751522 NBU 1021-28G4BS
4304751523 NBU 1021-28H4BS
4304751524 NBU 1021-29C4BS
4304751525 NBU 1021-29D4BS
4304751526 NBU 1021-29E4BS
4304751527 NBU 1021-29F4BS
4304751528 NBU 1021-29I1CS
4304751529 NBU 1021-29J1CS
4304751530 NBU 1021-29O1CS
4304751531 NBU 1021-29P1CS
4304751532 NBU 1021-30C4BS
4304751533 NBU 1021-30D4BS
4304751534 NBU 1021-30E4BS
4304751535 NBU 1021-30F4BS

-Jim Davis

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1021-29P1C			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2020	9434		
Previous Shoe Setting Depth (TVD)	0	2020		
Max Mud Weight (ppg)	8.3	12.5		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	6088	12.4		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	872	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	630	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	428	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	428	NO Reasonable depth in area
Required Casing/BOPE Test Pressure=		2020	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient

Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	6132	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	5000	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	4057	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4501	NO Reasonable
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2020	psi *Assumes 1psi/ft frac gradient

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

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi

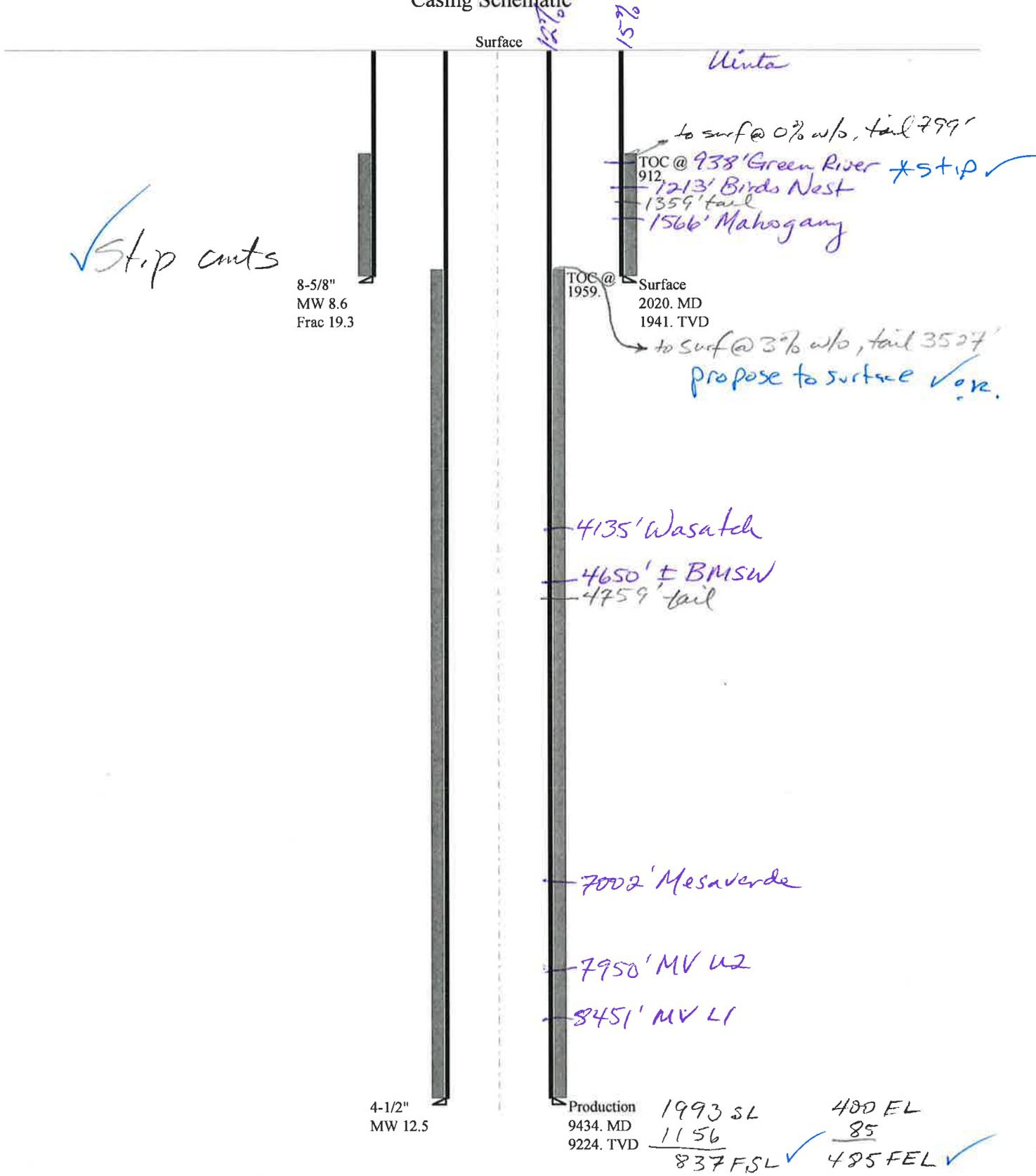
API Well Number: 43047515310000

*Max Pressure Allowed @ Previous Casing Shoe=

psi *Assumes 1psi/ft frac gradient

43047515310000 NBU 1021-29P1CS

Casing Schematic



SE SE Sec 29-105-21E

Well name:	43047515310000 NBU 1021-29P1CS	
Operator:	KERR-MCGEE OIL & GAS ONSHORE, L.P.	
String type:	Surface	Project ID: 43-047-51531
Location:	UINTAH COUNTY	

Design parameters:

Collapse

Mud weight: 8.600 ppg
Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 101 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 100 ft
Cement top: 912 ft

Burst

Max anticipated surface pressure: 1,778 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 2,011 psi

No backup mud specified.

Tension:

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

Tension is based on air weight.
Neutral point: 1,751 ft

Directional Info - Build & Drop

Kick-off point 300 ft
Departure at shoe: 458 ft
Maximum dogleg: 2 °/100ft
Inclination at shoe: 23.82 °

Re subsequent strings:

Next setting depth: 9,224 ft
Next mud weight: 12.500 ppg
Next setting BHP: 5,990 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,020 ft
Injection pressure: 2,020 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2020	8.625	28.00	I-55	LT&C	1941	2020	7.892	79992
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	867	1880	2.168	2011	3390	1.69	54.3	348	6.40 J

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

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

Date: May 18, 2011
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 1941 ft, a mud weight of 8.6 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	43047515310000 NBU 1021-29P1CS		
Operator:	KERR-MCGEE OIL & GAS ONSHORE, L.P.		
String type:	Production	Project ID:	43-047-51531
Location:	UINTAH COUNTY		

Design parameters:

Collapse

Mud weight: 12.500 ppg
 Internal fluid density: 1.000 ppg

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
 Surface temperature: 74 °F
 Bottom hole temperature: 203 °F
 Temperature gradient: 1.40 °F/100ft
 Minimum section length: 100 ft
 Cement top: 1,959 ft

Burst

Max anticipated surface pressure: 3,961 psi
 Internal gradient: 0.220 psi/ft
 Calculated BHP 5,990 psi

No backup mud specified.

Tension:

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

Directional Info - Build & Drop

Kick-off point 300 ft
 Departure at shoe: 1159 ft
 Maximum dogleg: 2 °/100ft
 Inclination at shoe: 0 °

Tension is based on air weight.
 Neutral point: 7,710 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	9434	4.5	11.60	I-80	LT&C	9224	9434	3.875	124529
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5511	6360	1.154	5990	7780	1.30	107	212	1.98 J

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

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

Date: May 18, 2011
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 9224 ft, a mud weight of 12.5 ppg. An internal gradient of .052 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Engineering responsibility for use of this design will be that of the purchaser.

ON-SITE PREDRILL EVALUATION

Utah Division of Oil, Gas and Mining

Operator KERR-MCGEE OIL & GAS ONSHORE, L.P.
Well Name NBU 1021-29P1CS
API Number 43047515310000 **APD No** 3547 **Field/Unit** NATURAL BUTTES
Location: 1/4,1/4 NESE **Sec** 29 **Tw** 10.0S **Rng** 21.0E 1993 **FSL** 400 **FEL**
GPS Coord (UTM) 622497 4419297 **Surface Owner**

Participants

See other comments:

Regional/Local Setting & Topography

The general area is within the Natural Buttes Unit in the middle portion of the Cottonwood Wash Drainage of Uintah County. The area is characterized by rolling hills and benches which are frequently intersected by somewhat gentle draws. The draws are occasionally rimmed with steep side hills which have exposed sand stone bedrock cliffs along the rims. Cottonwood Wash is an ephemeral drainage, which drains northerly approximately 6 miles to the White River. No seeps, springs or streams exist in the area. An occasional pond, constructed to store runoff for cattle and livestock exists.

This location is approximately 18.5 road miles southeast of Ouray, Utah and 49.2 road miles south of Vernal, Utah. It is accessed by the Seep Ridge Road then by Uintah County and existing or planned oil field development roads to within 275 feet of the proposed site. New construction will be required from this point.

The proposed NBU 1021-29I pad will contain 4 gas wells all to be directionally drilled. They are the NBU 1021-29P1CS, NBU 1021-29I1CS, NBU 1021-20I1CS and NBU 1021-2J1CS. The location is in rolling topography on top of a rounded ridge which extends to the northwest. The south side is somewhat defined and limited by a draw which will be slightly re-channeled to the south and drained by a culvert under the access road. This drainage continues to the northwest into a significant draw. To the northeast is a deep narrow rocky draw which precludes any movement of the pad in this direction. It continues to the northwest joining the other draw. An interior swale near corner 1 will be filled during pad construction. Maximum cut for the pad is 9.3 feet at Corner 4 with a maximum fill is 7.7 feet at Corner 1. Cottonwood Wash is about 1/8 mile to the west.

The selected location appears to be a suitable site for drilling and operating a well, and is the best site in the immediate area

Both the surface and minerals for this location are owned by SITLA.

Surface Use Plan

Current Surface Use

Grazing
Recreational
Wildlife Habitat

New Road Miles	Well Pad	Src Const Material	Surface Formation
0.025	Width 353 Length 455	Onsite	UNTA

Ancillary Facilities N

Waste Management Plan Adequate?

Environmental Parameters

Affected Floodplains and/or Wetlands N

Flora / Fauna

Vegetation is a desert shrub type. Vegetation included shadscale, horsebrush, broom snakeweed, sagebrush, curly mesquite grass, bud sage, mat saltbrush, squirrel tail, cheat grass, prickly pear, halogeton and spring annuals.

Antelope, cattle, rabbits, coyotes, and small mammals, birds and raptors.

Soil Type and Characteristics

Moderately deep to shallow sandy loam with some bedrock outcrops.

Erosion Issues Y

The south side is somewhat defined and limited by a draw which will be slightly re-channeled to the south and drained by a culvert under the access road.

Sedimentation Issues N

Site Stability Issues N

Drainage Diversion Required? Y

The south side is somewhat defined and limited by a draw which will be slightly re-channeled to the south and drained by a culvert under the access road.

Berm Required? N

Erosion Sedimentation Control Required? Y

The south side is somewhat defined and limited by a draw which will be slightly re-channeled to the south and drained by a culvert under the access road.

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

Reserve Pit

Site-Specific Factors		Site Ranking	
Distance to Groundwater (feet)	100 to 200	5	
Distance to Surface Water (feet)	>1000	0	
Dist. Nearest Municipal Well (ft)	>5280	0	
Distance to Other Wells (feet)		20	
Native Soil Type	Mod permeability	10	
Fluid Type	Fresh Water	5	
Drill Cuttings	Normal Rock	0	
Annual Precipitation (inches)		0	
Affected Populations			
Presence Nearby Utility Conduits	Not Present	0	
	Final Score	40	Sensitivity Level

Characteristics / Requirements

The reserve pit is planned in an area of cut in the southeast corner of the location. Dimensions are 120' x 260' x 12' deep with 2' of freeboard and a 15' outer bench. Kerr McGee proposed to line the pit with a 30-mil liner and 2 layers of felt.

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

Other Observations / Comments

Floyd Bartlett (DOGM), Jim Davis (SITLA), Clay Einerson, Charles Chase, Roger Perry, Duane Holmes, Kenny Gathings, Andy Lytle and Shelia Wopsock (Kerr McGee), Alex Hansen and Ben Williams (UDWR), Mitch Batty, John Slaugh, (Timberline Engineering and Land Surveying).

Floyd Bartlett
Evaluator

3/30/2011
Date / Time

Application for Permit to Drill

Statement of Basis

5/19/2011

Utah Division of Oil, Gas and Mining

Page 1

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
3547	43047515310000	SITLA	GW	S	No
Operator	KERR-MCGEE OIL & GAS ONSHORE, L.P.		Surface Owner-APD		
Well Name	NBU 1021-29P1CS	Unit		NATURAL BUTTES	
Field	NATURAL BUTTES	Type of Work		DRILL	
Location	NESE 29 10S 21E S 1993 FSL 400 FEL		GPS Coord (UTM)	622495E	4419296N

Geologic Statement of Basis

Kerr McGee proposes to set 2,020' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 4,650'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 29. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

Brad Hill
APD Evaluator

4/25/2011
Date / Time

Surface Statement of Basis

The general area is within the Natural Buttes Unit in the middle portion of the Cottonwood Wash Drainage of Uintah County. The area is characterized by rolling hills and benches which are frequently intersected by somewhat gentle draws. The draws are occasionally rimmed with steep side hills which have exposed sand stone bedrock cliffs along the rims. Cottonwood Wash is an ephemeral drainage, which drains northerly approximately 6 miles to the White River. No seeps, springs or streams exist in the area. An occasional pond, constructed to store runoff for cattle and livestock exists.

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The selected location appears to be a suitable site for drilling and operating a well, and is the best site in the immediate area

Both the surface and minerals for this location are owned by SITLA. Jim Davis of SITLA attended the site visit. He had no concerns regarding the proposal except as noted above. A seed mix to be used in reclamation has previously been provided to Kerr McGee by SITLA for this zone. Ben Williams and Alex Hansen of the UDWR also attended. The area is classified as yearlong crucial habitat for antelope but no restrictions were recommended. No other wildlife species are expected to be significantly affected.

Application for Permit to Drill Statement of Basis

5/19/2011

Utah Division of Oil, Gas and Mining

Page 2

Floyd Bartlett
Onsite Evaluator

3/30/2011
Date / Time

Conditions of Approval / Application for Permit to Drill

Category	Condition
Pits	A synthetic liner with a minimum thickness of 30 mils with a double felt subliner shall be properly installed and maintained in the reserve pit.
Surface	Drainages adjacent to the proposed pad shall be diverted around the location.
Surface	The reserve pit shall be fenced upon completion of drilling operations.
Surface	The well site shall be bermed to prevent fluids from leaving the pad.

WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 3/11/2011

API NO. ASSIGNED: 43047515310000

WELL NAME: NBU 1021-29P1CS

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

PHONE NUMBER: 720 929-6156

CONTACT: Danielle Piernot

PROPOSED LOCATION: NESE 29 100S 210E

Permit Tech Review:

SURFACE: 1993 FSL 0400 FEL

Engineering Review:

BOTTOM: 0836 FSL 0504 FEL

Geology Review:

COUNTY: UINTAH

LATITUDE: 39.91680

LONGITUDE: -109.56676

UTM SURF EASTINGS: 622495.00

NORTHINGS: 4419296.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 3 - State

LEASE NUMBER: ML 21330

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

SURFACE OWNER: 3 - State

COALBED METHANE: NO

RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: STATE/FEE - 22013542
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: Permit #43-8496
- RDCC Review:
- Fee Surface Agreement
- Intent to Commingle

Commingling Approved

LOCATION AND SITING:

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

Comments: Presite Completed

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



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 1021-29P1CS
API Well Number: 43047515310000
Lease Number: ML 21330
Surface Owner: STATE
Approval Date: 5/19/2011

Issued to:

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

Authority:

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

Duration:

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

Commingle:

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

General:

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

Conditions of Approval:

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

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

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

Surface casing shall be cemented to the surface.

Cement volume for the 4 1/2" production string shall be determined from actual hole diameter in order to place cement from the pipe setting depth back to 1820' MD minimum.

Additional Approvals:

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

- Any changes to the approved drilling plan – contact Dustin Doucet
- Significant plug back of the well – contact Dustin Doucet
- Plug and abandonment of the well – contact Dustin Doucet

Notification Requirements:

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

- Within 24 hours following the spudding of the well – contact Carol Daniels
OR
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing – contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program – contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well – contact Dan Jarvis

Contact Information:

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

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
801-231-8956 - after office hours

Reporting Requirements:

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

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

Approved By:

Approved by:

A handwritten signature in black ink, appearing to read "J. Rogers", written in a cursive style.

For John Rogers
Associate Director, Oil & Gas

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330
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:
		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1021-29P1CS	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047515310000	
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S 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"/> NOTICE OF INTENT Approximate date work will start: 7/6/2011 <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>Kerr-McGee Oil and Gas Onshore, L.P. (Kerr-McGee) respectfully requests to change the total depth (TD) to include the Blackhawk formation, which is in the Mesaverde group for this well. In addition, Kerr-McGee respectfully requests approval in the well design, which includes hole and casing size changes. Please see the attached for additional details. Please contact the undersigned if you have any questions and/or comments. Thank you.</p>		
		<p>Approved by the Utah Division of Oil, Gas and Mining</p> <p>Date: <u>07/20/2011</u></p> <p>By: <u><i>Derek Duff</i></u></p>
NAME (PLEASE PRINT) Gina Becker	PHONE NUMBER 720 929-6086	TITLE Regulatory Analyst II
SIGNATURE N/A	DATE 7/6/2011	

Well name:	43047515310000 NBU 1021-29P1CSrev.	
Operator:	KERR-MCGEE OIL & GAS ONSHORE, L.P.	
String type:	Production	Project ID: 43-047-51531
Location:	UINTAH COUNTY	

Design parameters:

Collapse

Mud weight: 13.000 ppg
Internal fluid density: 1.000 ppg

Minimum design factors:

Collapse:

Design factor 1.125

Environment:

H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 218 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 100 ft

Burst:

Design factor 1.00

Cement top: 732 ft *w/12%wo*
surf. csg @ 2040 ✓OK

Burst

Max anticipated surface pressure: 4,690 psi → *SMBOPF proposal ✓OK*
Internal gradient: 0.220 psi/ft
Calculated BHP 6,955 psi

Tension:

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

Directional well information:

Kick-off point 300 ft
Departure at shoe: 1160 ft
Maximum dogleg: 2 °/100ft
Inclination at shoe: 0 °

No backup mud specified.

Tension is based on air weight.
Neutral point: 8,508 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	10509	4.5	11.60	HCP-110	LT&C	10299	10509	3.875	50632

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	6420	8650	1.347 ✓	6955	10690	1.54 ✓	119.5	279	2.34 J ✓

Prepared by: Dustin K. Doucet
Div of Oil, Gas & Mining

Phone: 801 538-5281
FAX: 801-359-3940

Date: July 20, 2011
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 10299 ft, a mud weight of 13 ppg. An internal gradient of .052 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Engineering responsibility for use of this design will be that of the purchaser.

RECEIVED Jul. 06, 2011

Kerr-McGee Oil & Gas Onshore. L.P.**NBU 1021-29P1CS**

Surface: 1993 FSL / 400 FEL NESE
 BHL: 836 FSL / 504 FEL SESE

Section 29 T10S R21E

Unitah County, Utah
 Mineral Lease: UT ST ML 21330

ONSHORE ORDER NO. 1**DRILLING PROGRAM**

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	963	
Birds Nest	1238	Water
Mahogany	1591	Water
Wasatch	4160	Gas
Mesaverde	7027	Gas
MVU2	7083	Gas
MVL1	8476	Gas
Sego	9249	Gas
Castlegate	9397	Gas
MN5	9699	Gas
TVD	10299	
TD	10509	

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

Please refer to the attached Drilling Program

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

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

6. Evaluation Program:

Please refer to the attached Drilling Program

7. Abnormal Conditions:

Maximum anticipated bottom hole pressure calculated at 10299' TVD, approximately equals
6,844 psi (0.66 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,578 psi (bottom hole pressure
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

8. Anticipated Starting Dates:

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

9. Variances:

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

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

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

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

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

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

Background

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

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

The air rig is then mobilized to drill the surface casing hole by drilling a 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.

Conclusion

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

10. **Other Information:**

Please refer to the attached Drilling Program.



KERR-McGEE OIL & GAS ONSHORE LP
DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	BTC
								TENSION	
CONDUCTOR	14"	0-40'				3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,040	28.00	IJ-55	LTC	2.65	1.97	6.96	N/A
PRODUCTION	4-1/2"	0 to 10,509	11.60	HCP-110	LTC or BTC	10,690	8,650	279,000	367,000
						1.19	1.24	2.86	3.76

Surface casing:

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

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

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

Production casing:

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

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

CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
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				
NOTE: If well will circulate water to surface, option 2 will be utilized							
SURFACE	LEAD	1,540'	65/35 Poz + 6% Gel + 10 pps gilsonite	140	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	3,659'	Premium Lite II +0.25 pps	280	20%	11.00	3.38
			celloflake + 5 pps gilsonite + 10% gel				
			+ 0.5% extender				
	TAIL	6,850'	50/50 Poz/G + 10% salt + 2% gel	1,620	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. No centralizers will be used.

ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER:

Nick Spence / Danny Showers

DATE:

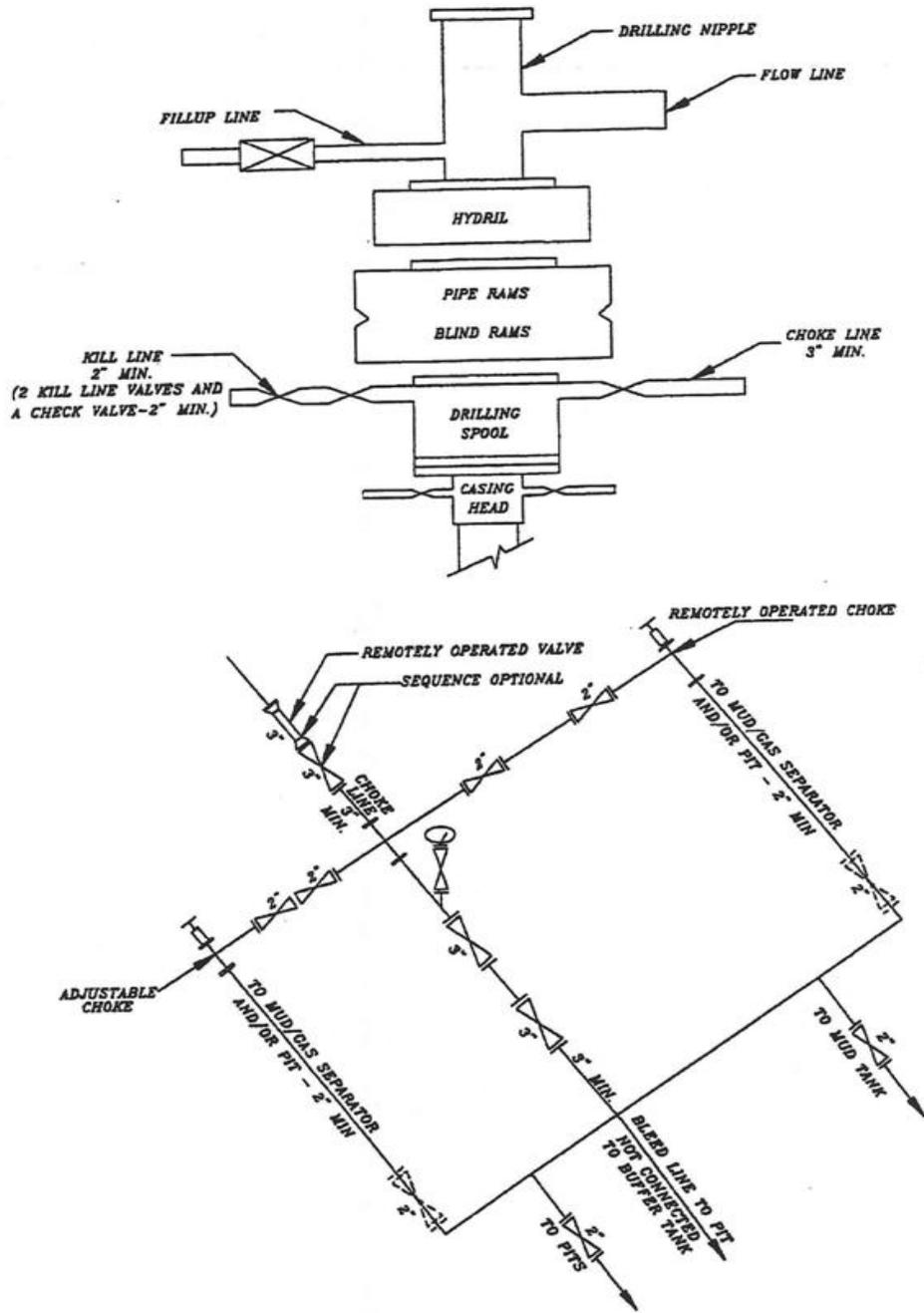
DRILLING SUPERINTENDENT:

Kenny Gathings / Lovel Young

DATE:



EXHIBIT A NBU 1021-29P1CS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330
SUNDRY NOTICES AND REPORTS ON WELLS		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
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.		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well		8. WELL NAME and NUMBER: NBU 1021-29P1CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.		9. API NUMBER: 43047515310000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S 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 type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 7/21/2011 <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 07/21/2011 AT 0930 HRS.		
Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY		
NAME (PLEASE PRINT) Sheila Wopsock	PHONE NUMBER 435 781-7024	TITLE Regulatory Analyst
SIGNATURE N/A		DATE 7/25/2011

BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG
Submitted By ANDY LYTLE Phone Number 720.929.6100
Well Name/Number NBU 1021-29P1CS
Qtr/Qtr NESE Section 29 Township 10S Range 21E
Lease Serial Number ML 21330
API Number 4304751531

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

Date/Time 07/21/2011 14:00 HRS AM PM

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

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

RECEIVED

JUL 20 2011

DIV. OF OIL, GAS & MINING

Date/Time 08/03/2011 08:00 HRS AM PM

BOPE

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

Date/Time _____ AM PM

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT KENNY GATHINGS AT 435.828.0986 OR LOVELL YOUNG AT 435.781.7051

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

FORM 6

ENTITY ACTION FORM

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

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751531	NBU 1021-29P1CS		NESE	29	10S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	7/21/2011		7/26/11		
Comments: MIRU PETE MARTIN BUCKET RIG. <i>WSMVD</i> SPUD WELL ON 07/21/2011 AT 0930 HRS. <i>BHL = SESE</i>							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751528	NBU 1021-29I1CS		NESE	29	10S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	7/21/2011		7/26/11		
Comments: MIRU PETE MARTIN BUCKET RIG. <i>WSMVD</i> SPUD WELL ON 07/21/2011 AT 1300 HRS. <i>BHL = NESE</i>							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751530	NBU 1021-29O1CS		NESE	29	10S	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	7/21/2011		7/26/11		
Comments: MIRU PETE MARTIN BUCKET RIG. <i>WSMVD</i> SPUD WELL ON 07/21/2011 AT 1600 HRS. <i>BHL = SWSE</i>							

ACTION CODES:

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

SHEILA WOPSOCK

Name (Please Print)

Signature

REGULATORY ANALYST

7/22/2011

Title

Date

(5/2000)

RECEIVED

JUL 26 2011

DIV. OF OIL, GAS & MINING

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330
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:
		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1021-29P1CS	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047515310000	
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S 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 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: 7/25/2011	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
MIRU AIR RIG ON JULY 23, 2011. DRILLED SURFACE HOLE TO 2230'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.		
Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY		
NAME (PLEASE PRINT) Andy Lytle	PHONE NUMBER 720 929-6100	TITLE Regulatory Analyst
SIGNATURE N/A	DATE 7/26/2011	

BLM - Vernal Field Office - Notification Form

Operator KERR MCGEE Rig Name/# H&P 311
Submitted By DALTON KING Phone Number 435- 790-1884
Well Name/Number NBU 1021-29P1CS
Qtr/Qtr NE/SE Section 29 Township 10S Range 21E
Lease Serial Number ML-21330
API Number 43-047-51531

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

Date/Time _____ AM PM

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

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

RECEIVED

AUG 16 2011

DIV. OF OIL, GAS & MINING

Date/Time _ _ AM PM

BOPE

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

Date/Time TUE. 8/16/2011 04:00 AM PM

Remarks TIME IS ESTIMATED, B&C QUICK TEST

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9	
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330	
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:	
		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES	
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1021-29P1CS		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047515310000		
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S 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 type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 8/26/2011	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. MIRU ROTARY RIG. FINISHED DRILLING FROM 2230' TO 10,500' ON AUGUST 24, 2011. RAN 4-1/2" 11.6# P-110 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P RIG 311 ON AUGUST 26, 2011 @ 01:30 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.			
NAME (PLEASE PRINT) Andy Lytle		PHONE NUMBER 720 929-6100	TITLE Regulatory Analyst
SIGNATURE N/A		DATE 8/26/2011	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330
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		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1021-29P1CS	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047515310000	
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S 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"/> NOTICE OF INTENT Approximate date work will start: 11/28/2011 <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
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12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>The operator requests authorization to recomplete the subject well. The operator requests approval to recomplete the Wasatch and the Mesaverde formations. The operator will commingle the Wasatch and the Mesaverde formations. Please see the attached procedure. Thank you.</p>		
		<p>Approved by the Utah Division of Oil, Gas and Mining</p> <p>Date: <u>11/30/2011</u></p> <p>By: <u><i>Dark K. Quist</i></u></p>
NAME (PLEASE PRINT) Jaime Scharnowske	PHONE NUMBER 720 929-6304	TITLE Regulatory Analyst
SIGNATURE N/A	DATE 11/28/2011	

Greater Natural Buttes Unit



NBU 1021-29P1CS RECOMPLETIONS PROCEDURE

DATE:11/11/2011
AFE#:
API#:4304751531
USER ID:CKW374 (Frac Invoices Only)

COMPLETIONS ENGINEER: Michael Sollee, Denver, CO
(720)-929-6057 (Office)
(832)-859-0515 (Cell)

SIGNATURE:

ENGINEERING MANAGER: JEFF DUFRESNE

SIGNATURE:

REMEMBER SAFETY FIRST!

Name: NBU 1021-29P1CS
Location: SW NE SE SE SEC 29 T10S R21E
LAT: 39.916750 **LONG:** -109.567433 **SURFACE COORDINATE:** NAD83
 Uintah County, UT
Date: 11/11/2011

ELEVATIONS: 5253' GL 5278' KB *Frac Registry TVD: 10335*

TOTAL DEPTH: 10500' **PBTD:** 10431'
SURFACE CASING: 8 5/8", 28# J-55 LT&C @ 2219'
PRODUCTION CASING: 4 1/2", 11.6#, P-110 BT&C @ 10477'
 Marker Joint **4097-4119 & 6997-7018 & 9644-9665'**

TUBULAR PROPERTIES:

	BURST (psi)	COLLAPSE (psi)	DRIFT DIA. (in.)	CAPACITIES	
				(bbl/ft)	(gal/ft)
2 3/8" 4.7# J-55 tbg	7,700	8,100	1.901"	0.00387	0.1624
4 1/2" 11.6# I-80 (See above)	7780	6350	3.875"	0.0155	0.6528
4 1/2" 11.6# P-110	10691	7580	3.875"	0.0155	0.6528
2 3/8" by 4 1/2" Annulus				0.0101	0.4227

TOPS:

1077' Green River Top
 1335' Bird's Nest Top
 1729' Mahogany Top
 4327' Wasatch Top
 7201' Mesaverde Top

BOTTOMS:

7201' Wasatch Bottom
 10500' Mesaverde Bottom (TD)

T.O.C. @ 1456'

GENERAL:

- A minimum of **19** tanks (cleaned lined 500 bbl) of recycled water will be required. Note: Use biocide in tanks and the water needs to be at least 45°F at pump time.
- All perforation depths are from Halliburtons Induction-Density-Neutron log dated 8/25/2011
- **6** fracturing stages required for coverage.
- Procedure calls for **7** CBP's .
- Calculate open perforations after each breakdown. If less than 60% of the perforations appear to be open, ball out with 15% HCl.
- Pump scale inhibitor at 3 gpt (in pad and until 1.25 ppg ramp up is reached) and 10 gpt in all flushes except the final stage. Remember to pre-load the casing with scale inhibitor for the very first stage with 10 gpt.
- 30/50 mesh Ottawa sand, **Slickwater frac.**
- Maximum surface pressure **9000** psi.

- Flush volumes are the sum of slick water and acid used during displacement (include scale inhibitor as mentioned above). Stage acid and scale inhibitor if necessary to cover the next perforated interval.
- **Call flush at 0 PPG @ inline densimeters. Slow to 5 bbl/min over last 10-20 bbls of flush. Flush to top perf.**
- Tubing Currently Landed @~10110
- Originally completed on 10/13/2011

Existing Perforations:

Name NBU 1021-29P1CS
Perforation and CBP Summary

Stage	Zones	Perforations		SPF	Holes	Fracture Coverage		
		Top, ft	Bottom, ft					
1	LOWER MESAVER	10145	10148	4	12	10098	to	10203
	LOWER MESAVER	10182	10185	4	12			
	LOWER MESAVER							
	LOWER MESAVER							
	LOWER MESAVER							
	LOWER MESAVER							
	# of Perfs/stage					24	CBP DEPTH	10,050
2	LOWER MESAVER	9950	9952	4	8	9940	to	9970
	LOWER MESAVER	9974	9976	4	8	9970	to	10029
	LOWER MESAVER	10018	10020	4	8			
	LOWER MESAVER							
	LOWER MESAVER							
	LOWER MESAVER							
	LOWER MESAVER							
# of Perfs/stage					24	CBP DEPTH	9,900	
	Totals				48			

Relevant History:

10/13/2011- Completed the Blackhawk formation with 4520 bbls water and 135,770 # 30/50 TLC. Well produced nothing but water.

PROCEDURE: (If using any chemicals for pickling tubing or H2S Scavenging, have MSDS for all chemicals prior to starting work.)

1. MIRU. Control well with recycled water and biocide as required. ND WH, NU BOP's and test.
2. TOOH with 2-3/8", 4.7#, J-55 (or N-80) tubing (currently landed at ~10110'). Visually inspect for scale and consider replacing if needed.

3. If tbg looks ok consider running a gauge ring to 9470 (50' below proposed CBP). Otherwise P/U a mill and C/O to 9470 (50' below proposed CBP).
4. Set 8000 psi CBP at ~ 9420'. ND BOPs and NU frac valves. Test frac valves and casing to 1000 and 3500 psi for 15 minutes each and to 6200 psi for 30 minutes; if pressure test fails contact Denver engineer and see notes. As per standard operating procedure install steel blowdown line to reserve pit from 4-1/2" X 8-5/8" annulus. Lock **OPEN** the Braden head valve. Annulus will be monitored throughout stimulation. If release occurs, stimulation will be shut down. Well conditions will be assessed and actions taken as necessary to secure the well. UDOGM will be notified if a release to the annulus occurs.
5. Perf the following with 3-3/8" gun, 23 gm, 0.36"hole:
- | Zone | From | To | spf | # of shots |
|-----------|------|------|-----|------------|
| MESAVERDE | 9343 | 9346 | 4 | 12 |
| MESAVERDE | 9387 | 9390 | 4 | 12 |
6. Breakdown perfs and establish injection rate (include scale inhibitor in fluid). Spot 250 gals of 15% HCL and let soak 5-10 min. Fracture as outlined in Stage 1 on attached listing. Under-displace to ~9343' and trickle 250gal 15%HCL w/ scale inhibitor in flush .
7. Set 8000 psi CBP at ~8,964'. Perf the following 3-3/8" gun, 23 gm, 0.36"hole:
- | Zone | From | To | spf | # of shots |
|-----------|------|------|-----|------------|
| MESAVERDE | 8721 | 8722 | 3 | 3 |
| MESAVERDE | 8830 | 8832 | 3 | 6 |
| MESAVERDE | 8874 | 8876 | 3 | 6 |
| MESAVERDE | 8901 | 8903 | 3 | 6 |
| MESAVERDE | 8933 | 8934 | 3 | 3 |
8. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 2 on attached listing. Under-displace to ~8721' and trickle 250gal 15%HCL w/ scale inhibitor in flush.
9. Set 8000 psi CBP at ~6,927'. Perf the following with 3-3/8" gun, 23 gm, 0.36" hole:
- | Zone | From | To | spf | # of shots |
|---------|------|------|-----|------------|
| WASATCH | 6736 | 6739 | 3 | 9 |
| WASATCH | 6877 | 6879 | 3 | 6 |
| WASATCH | 6894 | 6897 | 3 | 9 |
10. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 3 on attached listing. Under-displace to ~6736' and trickle 250gal 15%HCL w/ scale inhibitor in flush.
11. Set 8000 psi CBP at ~6,352'. Perf the following with 3-3/8" gun, 23 gm, 0.36" hole:
- | Zone | From | To | spf | # of shots |
|---------|------|------|-----|------------|
| WASATCH | 6059 | 6062 | 4 | 12 |
| WASATCH | 6319 | 6322 | 4 | 12 |
12. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 4 on attached listing. Under-displace to ~6059' and trickle 250gal 15%HCL w/ scale inhibitor in flush.
13. Set 8000 psi CBP at ~5,837'. Perf the following with 3-3/8" gun, 23 gm, 0.36" hole:
- | Zone | From | To | spf | # of shots |
|---------|------|------|-----|------------|
| WASATCH | 5790 | 5794 | 4 | 16 |

WASATCH 5805 5807 4 8

14. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 5 on attached listing. Under-displace to ~5790' and trickle 250gal 15%HCL w/ scale inhibitor in flush.
15. Set 8000 psi CBP at ~5,518'. Perf the following with 3-3/8" gun, 23 gm, 0.36" hole:

Zone	From	To	spf	# of shots
WASATCH	5482	5488	4	24
16. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 7 on attached listing. Under-displace to ~5482' and flush only with recycled water.
17. Set 8000 psi CBP at ~5,432'.
18. ND Frac Valves, NU and Test BOPs.
19. TIH with 3 7/8" mill, pump open sub, XN nipple and tubing.
20. Mill 6 plugs and clean out to a depth of 9410'. **This well WILL be commingled at this time.**
21. Land tubing at 8691', drop ball and pump open sub. Flow back completion load. RDMO
22. MIRU, POOH tbg and mill. TIH with POBS and mill.
23. Mill last plug @ 9470' clean out to PBTD at 10431'. Land tubing at ±9313' pump off bit and bit sub.
24. Clean out well with foam and/or swabbing unit until steady flow has been established from completion.
25. **Leave surface casing valve open.** Monitor and report any flow from surface casing. RDMO

**For design questions, please call
Michael Sollee, Denver, CO
(720)-929-6057 (Office)
(832)-859-0515 (Cell)**

**For field implementation questions, please call
Jeff Samuels, Vernal, UT
435-781 7046 (Office)**

NOTES:

Verify that the Braden head valve is locked OPEN.

Fracturing Schedules
 Name NBU 1021-29P1CS
 Slickwater Frac

Recomplete? Pad? ACTS? Y N N
 Copy to new book

Swabbing Days 3
 Production Log 0
 DFIT 0

Enter Number of swabbing days here for recompletes
 Enter 1 if running a Production Log
 Enter Number of DFITs

Stage	Zone	Perfs		Rate	Fluid	Initial	Final	Fluid	Volume	Cum Vol	Volume	Cum Vol	Fluid	Sand	Cum. Sand	Footage from	Scale
		Top. ft.	Bot. ft.														
1	MESAVERDE	9343	9346	4	12	Varied	Pump-in test	Slickwater	0	0	0	0	Slickwater	0	0		58
	MESAVERDE	9387	9390	4	12	0 ISIP and 5 min ISIP	0 ISIP and 5 min ISIP	Slickwater	4,482	4,482	107	107	Slickwater	0	0		13
	MESAVERDE					50 Slickwater Pad	50 Slickwater Pad	Slickwater	8,466	12,948	202	308	Slickwater	3,704	3,704	0	25
	MESAVERDE					50 SW Sweep	50 SW Sweep	Slickwater	0	12,948	0	308	Slickwater	0	3,704	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	8,466	21,414	202	510	Slickwater	5,820	9,524	0	0
	MESAVERDE					50 SW Sweep	50 SW Sweep	Slickwater	0	21,414	0	510	Slickwater	0	9,524	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	0	21,414	0	510	Slickwater	0	9,524	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	8,466	29,880	202	711	Slickwater	7,408	16,932	0	0
	MESAVERDE					50 Flush (4-12)	50 Flush (4-12)	Slickwater	6,099	35,979	145	857	Slickwater	0	16,932	0	0
	MESAVERDE					ISDP and 5 min ISDP	ISDP and 5 min ISDP	Slickwater	35,979	35,979	145	857	Slickwater	0	16,932	0	58
	MESAVERDE							Sand laden Volume	29,880	29,880	0	0	Sand laden Volume	80,000	45,333	379	155
	MESAVERDE				24	17.1	<< Above pump time (min)										
2	MESAVERDE	8721	8722	3	3	Varied	Pump-in test	Slickwater	0	0	0	0	Slickwater	0	0		31
	MESAVERDE	8830	8832	3	6	0 ISIP and 5 min ISIP	0 ISIP and 5 min ISIP	Slickwater	10,195	10,195	243	243	Slickwater	0	0		58
	MESAVERDE	8874	8876	3	6	50 Slickwater Pad	50 Slickwater Pad	Slickwater	19,258	29,453	459	701	Slickwater	8,425	8,425	0	0
	MESAVERDE	8901	8903	3	6	50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	0	29,453	0	701	Slickwater	0	8,425	0	0
	MESAVERDE	8933	8934	3	3	50 SW Sweep	50 SW Sweep	Slickwater	0	29,453	0	701	Slickwater	0	8,425	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	19,258	48,710	459	1,160	Slickwater	13,240	21,665	0	0
	MESAVERDE					50 SW Sweep	50 SW Sweep	Slickwater	5,250	53,960	125	1,285	Slickwater	0	21,665	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	3,000	56,960	71	1,356	Slickwater	1,500	23,165	0	0
	MESAVERDE					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	19,258	76,218	459	1,815	Slickwater	16,850	40,015	0	0
	MESAVERDE					50 Flush (4-12)	50 Flush (4-12)	Slickwater	5,693	81,911	136	1,950	Slickwater	0	40,015	0	45
	MESAVERDE					ISDP and 5 min ISDP	ISDP and 5 min ISDP	Sand laden Volume	67,968	67,968	0	0	Sand laden Volume	80,000	47,099	1,794	133
	MESAVERDE																
	MESAVERDE				24	39.0	<< Above pump time (min)										
3	WASATCH	6739	6739	3	9	Varied	Pump-in test	Slickwater	0	0	0	0	Slickwater	0	0		15
	WASATCH	6877	6879	3	6	0 ISIP and 5 min ISIP	0 ISIP and 5 min ISIP	Slickwater	5,119	5,119	122	122	Slickwater	0	0		51
	WASATCH	6894	6897	3	9	50 Slickwater Pad	50 Slickwater Pad	Slickwater	17,062	22,181	406	528	Slickwater	10,664	10,664	0	0
	WASATCH					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	11,943	34,124	284	812	Slickwater	17,915	28,579	0	0
	WASATCH					50 Slickwater Ramp	50 Slickwater Ramp	Slickwater	4,397	38,521	105	917	Slickwater	0	28,579	0	0
	WASATCH					50 Flush (4-12)	50 Flush (4-12)	Slickwater	0	38,521	0	917	Slickwater	0	28,579	0	0
	WASATCH					ISDP and 5 min ISDP	ISDP and 5 min ISDP	Sand laden Volume	38,521	38,521	105	917	Sand laden Volume	40,000	33,500	384	108
	WASATCH																
	WASATCH				24	18.3	<< Above pump time (min)										

Total Stages 6 stages
 Last Stage Flush 3,579 gals

Service Company Supplied Chemicals - Job Totals

Friction Reducer	168	gals @	0.5	GPT
Surfactant	336	gals @	1.0	GPT
Clay Stabilizer	336	gals @	1.0	GPT
15% Hcl	1500	gals @	250	gal/stg
Iron Control for acid	8	gals @	5.0	GPT of acid
Surfactant for acid	2	gals @	1.0	GPT of acid
Corrosion Inhibitor for acid	3	gals @	2.0	GPT of acid

Third Party Supplied Chemicals Job Totals - Include Pumping Charge if Applicable

Scale Inhibitor	805	gals pumped per schedule above
Biocide	168	gals @ 0.5 GPT

Name NBU 1021-29P1CS
 Perforation and CBP Summary

Stage	Zones	Perforations		SPF	Holes	Fracture Coverage		
		Top, ft	Bottom, ft					
1	MESAVERDE	9343	9346	4	12	9334.5	to	9348
	MESAVERDE	9387	9390	4	12	9377.5	to	9398.5
	# of Perfs/stage				24	CBP DEPTH		8,964
2	MESAVERDE	8721	8722	3	3	8713	to	8722.5
	MESAVERDE	8830	8832	3	6	8818.5	to	8834
	MESAVERDE	8874	8876	3	6	8865.5	to	8878.5
	MESAVERDE	8901	8903	3	6	8898.5	to	8918.5
	MESAVERDE	8933	8934	3	3	8931.5	to	8935.5
# of Perfs/stage				24	CBP DEPTH		6,927	
3	WASATCH	6736	6739	3	9	6734	to	6741.5
	WASATCH	6877	6879	3	6	6874	to	6880
	WASATCH	6894	6897	3	9	6888	to	6901.5
	# of Perfs/stage				24	CBP DEPTH		6,352
4	WASATCH	6059	6062	4	12	6057.5	to	6064
	WASATCH	6319	6322	4	12	6315	to	6322
	# of Perfs/stage				24	CBP DEPTH		5,837
5	WASATCH	5790	5794	4	16	5785.5	to	5809
	WASATCH	5805	5807	4	8			
	# of Perfs/stage				24	CBP DEPTH		5,518
6	WASATCH	5482	5488	4	24	5463.5	to	5496.5
	# of Perfs/stage				24	CBP DEPTH		5,432
Totals					144			

MD	TVD	EW	NS	INC	AZI		MD	TVD	EW	NS	INC	AZI
0.00	0.00	0.00	0.00	0.00	0.00		5314.00	5150.21	-99.75	-1128.08	0.53	130.95
197.00	197.00	0.00	0.00	0.00	292.99		5409.00	5245.20	-99.06	-1128.90	0.77	145.52
281.00	280.99	-0.17	-1.00	1.38	189.44		5503.00	5339.19	-98.42	-1130.24	1.06	161.01
367.00	366.93	-0.59	-4.24	2.98	186.63		5597.00	5433.18	-97.85	-1131.09	0.35	96.41
451.00	450.73	-1.16	-9.92	4.81	185.12		5691.00	5527.18	-97.30	-1131.56	0.62	148.53
541.00	540.29	-2.29	-18.71	6.50	189.00		5786.00	5622.17	-96.80	-1132.53	0.70	157.23
631.00	629.53	-3.86	-30.25	8.38	186.75		5880.00	5716.16	-96.30	-1133.65	0.79	154.68
721.00	718.39	-5.30	-44.40	9.81	185.00		5975.00	5811.15	-95.72	-1134.98	0.97	157.76
811.00	806.89	-6.46	-60.72	11.13	183.25		6069.00	5905.15	-95.42	-1135.72	0.00	282.30
901.00	895.06	-7.57	-78.72	12.00	183.75		6164.00	6000.15	-95.23	-1135.94	0.35	138.60
991.00	982.71	-8.97	-99.11	14.25	184.12		6258.00	6094.15	-94.99	-1136.44	0.35	171.12
1081.00	1069.45	-10.39	-123.03	16.63	182.75		6352.00	6188.14	-94.96	-1137.16	0.53	181.22
1171.00	1155.18	-11.64	-150.39	18.81	182.50		6447.00	6283.14	-95.07	-1138.24	0.79	188.69
1261.00	1240.26	-12.82	-179.71	19.25	182.12		6541.00	6377.13	-95.28	-1139.52	0.79	190.28
1351.00	1325.30	-14.42	-209.14	18.99	184.11		6636.00	6472.13	-95.56	-1140.03	0.26	309.02
1441.00	1410.41	-17.25	-238.25	18.94	187.00		6730.00	6566.12	-95.86	-1139.73	0.26	321.85
1531.00	1495.70	-20.23	-266.83	18.31	184.87		6824.00	6660.12	-96.11	-1139.46	0.18	310.16
1621.00	1581.31	-22.59	-294.50	17.63	184.87		6919.00	6755.12	-96.27	-1139.34	0.07	300.38
1711.00	1666.96	-25.11	-322.01	18.13	185.62		7013.00	6849.12	-96.43	-1139.41	0.18	226.31
1801.00	1752.37	-27.49	-350.29	18.63	184.00		7108.00	6944.12	-96.74	-1139.59	0.26	250.92
1891.00	1837.59	-29.57	-379.15	18.88	184.25		7202.00	7038.12	-96.99	-1139.71	0.09	223.06
1981.00	1922.72	-32.40	-408.22	19.00	186.87		7296.00	7132.12	-97.07	-1139.83	0.09	200.38
2071.00	2007.52	-36.34	-438.10	20.13	188.12		7391.00	7227.12	-97.23	-1139.97	0.18	244.94
2191.00	2120.23	-41.53	-478.95	20.02	186.34		7485.00	7321.12	-97.26	-1140.21	0.26	150.64
2295.00	2218.18	-44.62	-513.76	19.26	183.77		7580.00	7416.12	-97.08	-1140.76	0.44	168.88
2390.00	2307.45	-46.45	-546.21	20.75	182.72		7674.00	7510.11	-96.94	-1141.91	0.97	174.72
2484.00	2395.53	-47.56	-579.02	20.14	181.14		7768.00	7604.11	-96.71	-1142.85	0.26	134.20
2578.00	2483.41	-46.96	-612.38	21.46	176.92		7863.00	7699.11	-96.55	-1143.07	0.09	173.23
2673.00	2571.95	-47.62	-646.76	21.10	185.35		7957.00	7793.10	-96.37	-1143.46	0.44	151.25
2767.00	2659.78	-52.18	-679.92	20.66	190.36		8051.00	7887.10	-95.93	-1144.39	0.81	157.15
2861.00	2747.48	-58.22	-713.22	21.54	190.19		8146.00	7982.08	-95.26	-1146.02	1.32	157.93
2956.00	2836.16	-64.29	-746.74	20.49	190.36		8240.00	8076.05	-94.18	-1148.22	1.67	150.29
3050.00	2924.29	-70.03	-778.93	20.22	189.84		8334.00	8170.03	-93.12	-1149.84	0.70	139.04
3144.00	3012.59	-74.64	-810.83	19.90	186.58		8429.00	8265.02	-92.94	-1149.42	1.06	346.81
3239.00	3102.17	-77.72	-842.30	18.99	184.56		8523.00	8359.00	-93.34	-1147.44	1.41	350.15
3333.00	3191.01	-80.28	-872.92	19.17	185.00		8617.00	8452.98	-93.74	-1145.53	0.97	345.40
3427.00	3280.71	-82.36	-900.89	15.56	183.33		10413.00	10248.41	-62.37	-1154.29	2.70	123.70
3522.00	3372.76	-83.52	-924.32	13.04	182.26		10500.00	10335.31	-58.96	-1156.56	2.70	123.70
3616.00	3464.61	-84.46	-944.29	11.52	183.16							
3710.00	3556.84	-85.56	-962.40	10.73	183.86							
3805.00	3650.19	-87.06	-979.94	10.64	185.88							
3899.00	3742.67	-89.61	-996.58	10.02	191.77							
3994.00	3836.37	-92.44	-1011.99	8.97	188.87							
4088.00	3929.33	-94.37	-1025.80	8.09	186.94							
4182.00	4022.49	-95.87	-1038.21	7.19	186.87							
4277.00	4116.82	-97.42	-1049.35	6.42	189.05							
4371.00	4210.26	-99.13	-1059.43	6.07	190.28							
4465.00	4303.72	-100.38	-1069.42	6.24	184.04							
4560.00	4398.18	-101.19	-1079.50	5.98	185.18							
4654.00	4491.68	-102.02	-1089.18	5.89	184.65							
4749.00	4586.20	-102.72	-1098.69	5.63	183.68							
4843.00	4679.83	-102.81	-1107.03	4.57	176.92							
4937.00	4773.53	-102.52	-1114.51	4.57	178.59							
5032.00	4868.33	-101.96	-1120.58	2.81	168.39							
5126.00	4962.26	-101.28	-1124.04	1.49	169.97							
5220.00	5056.22	-100.57	-1126.52	1.67	158.81							

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 21330
1. TYPE OF WELL Gas Well		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.		7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		8. WELL NAME and NUMBER: NBU 1021-29P1CS
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1993 FSL 0400 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NESE Section: 29 Township: 10.0S Range: 21.0E Meridian: S		9. API NUMBER: 43047515310000
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 type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING	
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CASING REPAIR	
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 1/20/2012	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	
	<input type="checkbox"/> CHANGE TUBING	
	<input type="checkbox"/> CHANGE WELL STATUS	
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	
	<input type="checkbox"/> CONVERT WELL TYPE	
	<input type="checkbox"/> DEEPEN	
	<input type="checkbox"/> FRACTURE TREAT	
	<input type="checkbox"/> NEW CONSTRUCTION	
	<input type="checkbox"/> OPERATOR CHANGE	
	<input type="checkbox"/> PLUG AND ABANDON	
	<input type="checkbox"/> PLUG BACK	
	<input checked="" type="checkbox"/> PRODUCTION START OR RESUME	
	<input type="checkbox"/> RECLAMATION OF WELL SITE	
	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION	
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	
	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	
	<input type="checkbox"/> TEMPORARY ABANDON	
	<input type="checkbox"/> TUBING REPAIR	
	<input type="checkbox"/> VENT OR FLARE	
	<input type="checkbox"/> WATER DISPOSAL	
	<input type="checkbox"/> WATER SHUTOFF	
	<input type="checkbox"/> SI TA STATUS EXTENSION	
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 01/20/2012 AT 0750 HRS. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.		
Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY January 25, 2012		
NAME (PLEASE PRINT) Sheila Wopsock	PHONE NUMBER 435 781-7024	TITLE Regulatory Analyst
SIGNATURE N/A	DATE 1/20/2012	

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

AMENDED REPORT FORM 8
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER:
ML 21330

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME
UTU63047A

8. WELL NAME and NUMBER:
NBU 1021-29P1CS

9. API NUMBER:
4304751531

10. FIELD AND POOL, OR WILDCAT
NATURAL BUTTES

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
NESE 29 10S 21E S

12. COUNTY
UINTAH

13. STATE
UTAH

14. DATE SPUNDED: **7/21/2011**

15. DATE T.D. REACHED: **8/24/2011**

16. DATE COMPLETED: **1/20/2012**

ABANDONED READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL):
5253 GL

18. TOTAL DEPTH: MD **10,500** TVD **10,335**

19. PLUG BACK T.D.: MD **10,432** TVD **10,297**

20. IF MULTIPLE COMPLETIONS, HOW MANY? *

21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
BHV-SD/DSN/ACTR-CBL/GR/COLLARS/TEMP

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

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

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11	8 5/8" IJ-55	28#	0	2,219		530		0	
7 7/8"	4 1/2" P-110	11.6#	0	10,477		1,820		1456	

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	10,110							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) MESAVERDE	9,950	10,185			9,950 10,185	0.36	48	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B) <i>Wsmvd</i>								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

27. PERFORATION RECORD

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
9950 - 10185	PUMP 4,520 BBLs SLICK H2O & 135,770 LBS 30/50 OTTAWA SAND 2 STAGES

RECEIVED
FEB 28 2012
DIV. OF OIL, GAS & MINING

29. ENCLOSED ATTACHMENTS:

ELECTRICAL/MECHANICAL LOGS GEOLOGIC REPORT DST REPORT DIRECTIONAL SURVEY

SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION CORE ANALYSIS OTHER: _____

30. WELL STATUS:
PROD

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED: 1/20/2012		TEST DATE: 1/27/2012		HOURS TESTED: 24		TEST PRODUCTION RATES: →		OIL – BBL: 0	GAS – MCF: 1,611	WATER – BBL: 33	PROD. METHOD: FLOWING
CHOKE SIZE: 20/64	TBG. PRESS. 979	CSG. PRESS. 1,230	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL: 0	GAS – MCF: 1,611	WATER – BBL: 33	INTERVAL STATUS: PROD	

INTERVAL B (As shown in item #26)

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

INTERVAL C (As shown in item #26)

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

INTERVAL D (As shown in item #26)

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

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

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
				GREEN RIVER	1,077
				BIRD'S NEST	1,335
				MAHOGANY	1,729
				WASATCH	4,327
				MESAVERDE	7,201

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/4" bit. The remainder of surface hole was drilled with an 11" bit. Attached is the chronological well history, perforation report & final survey.

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

NAME (PLEASE PRINT) JAIME SCHARNOWSKE TITLE REGULATORY ANALYST
 SIGNATURE *Jaime Scharnowske* DATE 2/21/2012

This report must be submitted within 30 days of

- completing or plugging a new well
- reentering a previously plugged and abandoned well
- drilling horizontal laterals from an existing well bore
- significantly deepening an existing well bore below the previous bottom-hole depth
- recompleting to a different producing formation
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining Phone: 801-538-5340
 1594 West North Temple, Suite 1210
 Box 145801 Fax: 801-359-3940
 Salt Lake City, Utah 84114-5801

**US ROCKIES REGION
Operation Summary Report**

Well: NBU 1021-29P1CS RED	Spud Conductor: 7/21/2011	Spud Date: 7/24/2011
Project: UTAH-UINTAH	Site: NBU 1021-29I PAD	Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING	Start Date: 7/22/2011	End Date: 8/26/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)	UWI: NBU 1021-29P1CS	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
7/23/2011	7:00 - 12:00	5.00	DRLSUR	01	A	P		MOVE RIG FROM SWD WELL
	12:00 - 17:00	5.00	DRLSUR	21	E	P		WAIT ON J AND L TO FINISH PAD
	17:00 - 18:00	1.00	DRLSUR	01	A	P		MOVE RIG FROM SWD WELL
	18:00 - 0:00	6.00	DRLSUR	08	A	Z		WORK ON RIG FLAT TIRE AND WOULD NOT START
7/24/2011	0:00 - 6:00	6.00	DRLSUR	01	B	P		RIG UP ON THE 1021-29P1CS
	6:00 - 7:30	1.50	DRLSUR	02	C	P		SPUD WELL WITH 12.25" BIT DRILL TO 210'
	7:30 - 10:30	3.00	DRLSUR	06	A	P		TOOH INSTALL DIRECTIONAL TOOLS AND ORIENT TO MD MOTOR AND TIH
	10:30 - 0:00	13.50	DRLSUR	02	C	P		DRILL 11" HOLE F/ 210' - 1810' AVE ROP 118 FT HR LAST SURVEY 18.88 DEG 184.25 AZI NO LOSSES
7/25/2011	0:00 - 5:30	5.50	DRLSUR	02	C	P		DRILL 12.25" HOLE F/ 1810' - 2230' T.D
	5:30 - 7:30	2.00	DRLSUR	05	C	P		CIRCULATE AND CONDITION MUD PRIOR TO LDDS
	7:30 - 11:30	4.00	DRLSUR	06	A	P		TOOH LAYING DOWN BREAK DOWN DIRECTIONAL TOOLS AND L/D MUD MOTOR AND BIT
	11:30 - 16:00	4.50	DRLSUR	12	C	P		RIG UP AND RUN 50 JOINTS 8.625 28# J55 SURFACE CASING SHOE AT 2197' BAFFLE AT 2153'
8/14/2011	6:00 - 18:00	12.00	RDMO	01	E	P		TEST LINES TO 2000' PSI, PUMP 140 BBLS OF H2O , PUMP 20 BBLS OF GEL WATER. PUMP 180 (122 BBLS) SX OF 11#, 3.82 YD, 23 GAL SX HI FILL LEAD CEMENT. PUMP 200 SX (41 BBLS) OF 15.8#, 1.15 YD, 5 GAL/SK TAIL CEMENT, DROP PLUG ON FLY AND DISPLACE W/ 137 BBLS OF 8.3# H2O, 15BBLS OF LEAD TO SURFACE W/ 500 PSI OF LIFT @ 5 BBLS/MIN. W/ LAND PLUG 1000 PSI AND CHECK FLOAT. FLOAT HELD. PUMP 150 SX OF 4% CALC 15.8# 1.15 YD, 5 GAL/SK CEMENT DOWN 1". CEMENT TO SURFACE. RELEASE RIG AT 1900
	18:00 - 0:00	6.00	RDMO	21	C	P		RIGGING DOWN, RIGGED DOWN THE FRONT YARD LOADED PIPE BASKETS, SKIDDED RIG TO HOME POSITION, RIGGED DOWN CATWALK, PUMP, PITS,MUD LINES, WATER SYST. FLARE LINES, FLOOR, BLED THE LOWERING RAMS, LOWERED THE DERRICK.PREPPED DERRICK TO BE MOVED. MOVED OUT THE PIPE BASKETS, PIPE RACKS, CATWALK, FRAC TANKS, CEMENT BINS, MUD TRAILER, BHA ASSY.,
8/15/2011	0:00 - 6:00	6.00	RDMO	21	C	P		W/O DAYLIGHT TO BEGIN MOVING EQUIP. W/O DAYLIGHT TO MOVE

US ROCKIES REGION
Operation Summary Report

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011		Spud Date: 7/24/2011	
Project: UTAH-UINTAH			Site: NBU 1021-29I PAD		Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING			Start Date: 7/22/2011		End Date: 8/26/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)				UWI: NBU 1021-29P1CS	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 18:00	12.00	RDMO	01	E	P		RD AND LOADED OUT THE DERRICK, SUB, PUMPS, PITS, GEN SET, FUEL SKID, WATER TANK, FLARE LINES, UTILITY SKID, SHAKERS, SKID RAILS, MATTING BOARDS AND CAMPS. MOVED EQUIP. 8 MILES TO THE NBU 1021-29I PAD. SET THE PITS, PUMPS, GENS, SKID RAILS, SUB, MUD UPRIGHTS, PIPE BASKETS, PIT EQUIP. AND CAMPS. 5-BED TRUCKS 6 HAUL TRUCKS 2-FORKLIFTS 2 CRANES 3-SWAMPERS 2- TRUCK PUSHERS 15-HP RIG PERSONEL 2-RIG MANAGERS 1-HP SAFETY MAN W/O DAYLIGHT TO RIG UP W/O DAYLIGHT AND TRUCKS
8/16/2011	18:00 - 0:00	6.00	RDMO	21	C	P		HELD A JSA W/ RW JONES. FINISHED PULLING WIRES, SET CHOKE LINES, YELLOW DOG, AND DRAWWORKS.
	0:00 - 6:00	6.00	MIRU	21	C	P		ASSEMBLED AND SET DERRICK TO THE SUB. HELD A PJSM RAISED THE DERRICK, PROCEDED TO FINISH RIGGING UP THE FLOOR AND GROUND EQUIP. FILL PITS AND TEST SYSTEM FOR LEAKS. TRUCKS RELEASED @ 13:30 CRANE RELEASED @ 14:00
	6:00 - 18:00	12.00	MIRU	01	B	P		NIPPLE UP INSTALL MOUSEHOLE
	18:00 - 21:00	3.00	DRLPRO	14	A	P		RU THE TESTER. TEST THE BOP, TIW, IBOP, DART VALVE, BOP VALVES, PIPE RAMS, BLIND RAMS, CHOKE VALVES AND KILL LINE TO 250#/5MIN AND 5000#/10 MIN. TESTED THE ANNULAR TO 2500#, REPLACE A RAM DOOR SEAL
	21:00 - 21:30	0.50	DRLPRO	01	B	P		REPLACE RAM DOOR SEALS
	21:30 - 23:00	1.50	DRLPRO	15	A	P		TEST THE BOP, TIW, IBOP, DART VALVE, BOP VALVES, PIPE RAMS, BLIND RAMS, CHOKE VALVES AND KILL LINE TO 250#/5MIN AND 5000#/10 MIN. TESTED THE ANNULAR TO 2500#, WELL HEADE LEAKED PULL BOPS CHANGE OUT GASKET
8/17/2011	23:00 - 0:00	1.00	DRLPRO	08	C	S		TEST CASING TO 1500 PSI FOR 30 MIN
	0:00 - 0:30	0.50	DRLPRO	08	C	P		INSTALL WEAR BUSHING
	0:30 - 1:30	1.00	DRLPRO	15	A	P		JAS AND RIG UP LD TRUCK
	1:30 - 3:30	2.00	DRLPRO	14	C	S		PICK UP 210 JTS. 4 1/2 DRILL PIPE 60 STD STRAP PIPE PU HWDP AND DIR TOOLS. TAG CEMENT @ 2074' JSA AND RD LAY DOWN CREW
	3:30 - 4:00	0.50	DRLPRO	15	A	P		RIG SERVICE
	4:00 - 4:30	0.50	DRLPRO	14	B	P		DRILL OUT CEMENT F/ 2074' T/2219'FLOAT @ 2175 SHOE @2219' NEW HOLE @ 2261
	4:30 - 5:30	1.00	DRLPRO	01	B			
	5:30 - 16:00	10.50	DRLPRO	06	A	P		
	16:00 - 16:30	0.50	DRLPRO	01	B	P		
	16:30 - 17:00	0.50	DRLPRO	07	A	P		
	17:00 - 18:00	1.00	DRLPRO	02	F	P		

**US ROCKIES REGION
Operation Summary Report**

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011		Spud Date: 7/24/2011	
Project: UTAH-UINTAH			Site: NBU 1021-29I PAD		Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING			Start Date: 7/22/2011		End Date: 8/26/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)			UWI: NBU 1021-29P1CS		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILLED .58 MIN F/ 2261 T/ 2328 67' WOB 12K ROP 114.9 RPM 30 TORQ 3 FLOW RATE 472 SPP 600,- -SLIDE .33 MIN. 2328' TO 2348' 20' WOB 12K ROP 60.0 TORQUE 3 FLOW 472 SPP 600 -- DRILL .25 MIN 2348' T/2358 10' WOB 12K ROP 40 RPM 45 TORQUE 3 FLOW 472 SPP 600-- SLIDE .25 MIN 2358' T/ 2378' 20' WOB 12K ROP 80.0 RPM 0 TORQUE 3 FLOW 472 SPP 950 TFO 345-- DRILL .67 MIN. 2378' T/ 2452' 74' WOB 12 ROP 111.0 RPM 45 TORQUE 3 FLOW 472 SPP 950-- SLIDE .25 MIN 2452' T/ 2472' 20' WOB 12 ROP 80.0 RPM 0 TQ 3 FR 950 TFO 330-- DRILL .25 MIN 2472' T/ 2516' 44' WOB 12 ROP 176 RPM 45 TQ 3 FR 472 SPP 950-- SLIDE .17 MIN 2516' T/ 2526' 10' ROP 60 TQ 3 -- DRILL .33 MIN 2526' T/ 2546' 20' ROP 60 -- SLIDE 25 MIN 2546' T/ 2566 20' ROP 80 -- DRILL .25 MIN 2566' T/ 2610' 44' ROP 176- - SLIDE .25 MIN 2610' T/ 262' 10' ROP 40TFO 60 -- DRILL .33 MIN 2620' T/ 2641 21' ROP 63 -- SLIDE .25 MIN 2641' T/ 2660' 19' ROP 76 TFO 60--DRILL .58 MIN 2660' T/ 2735' 75' ROP 128.6 --SLIDE .33 MIN 2735' T/ 2755' 20' TFO 60--DRILL 17 MIN 2755' T/ 2770' 15' ROP 90
8/18/2011	0:00 - 17:30	17.50	DRLPRO	02	D	P		DRILL .33 MIN 2770' T/ 2830' 60' WOB 12 ROP 180 RPM 45 TORQUE 3 FLOW RATE 472 SSP 950 -- SLIDE .33 MIN 2830' T/ 2850' 20' ROP 60--DRILL 42 MIN 2850 T/ 2922' 72' ROP 172-- SLIDE 17 MIN 2922' T/ 2932' 10' ROP 60-- DRILL .67 2932' 3017' 85' ROP' 127.5--SLIDE .25 MIN 3017' T/ 3032' 15' ROP 60--DRILL .50 MIN 3032' T/ 3113' 81' ROP 162-- SLIDE 17 MIN 3113' T/ 3123' 10 ROP 60--DRILL 1.50 HR.3123' T/ 3299' 176 ROP 117.3--SLIDE .33 MIN 3299' T 3314' 15' ROP 60.--DRILL 1.84 HR 3314' T/ 3580' 266' ROP145.1--SLIDE .17 MIN 3580' T/ 3590' 10' ROP 60 TFO 15--DRILL .92 3590' T/ 3678' 88' ROP 96.0-- SLIDE 3678' T/ 3692' 14' ROP 42 TFO 15DRIL 1.25 3692' T/ 3773' 81 ROP 64.8--SL .58 3773' T/ 3793' 20' ROP 34.3--DR .75 3793' T/ 3867' 74' ROP 98.7--SL .50 3867' T/ 3887' 20; ROP 40.0-- DR 3.75 3887' T/ 4434" 547' ROP 145.9-- SL.42 4434 T/ 4446' 12' WOB 23K ROP 28.8 SPP 1230 TFO 270 RIG SERVICE SPCC INSP COMPLETE
	17:30 - 18:00	0.50	DRLPRO	07	A	P		
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DR 3.58 4446' T/ 4810' 364' WOB 12 ROP 101.6--SL .50 4810' T/ 4825' 15' WOB 23K ROP 30.0 --DR 1.33 HR 4825' T/ 5000' 175' WOB 12 ROP 131.3 --SL .42 5000' T/ 5020' 20' WOB 23 ROP 48.0--DR .67 5020' T/ 5094' 74' ROP 111.0--SL .50 5094' T/ 5114' 20' WOB 23 ROP 40.0SPP 1230 TFO 330--DR 1.83 HR 5114' T/ 5282' 168' WOB 12 ROP 91.6

US ROCKIES REGION
Operation Summary Report

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011	Spud Date: 7/24/2011
Project: UTAH-UINTAH		Site: NBU 1021-29I PAD	Rig Name No: H&P 311/311, PROPETRO 11/11
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/19/2011	0:00 - 17:30	17.50	DRLPRO	02	D	P		DRILLED 5282'-6600',1318'/ 17.5 HRS, 75.3'/HR WOB/12/23K, MM/ 111 RPM, TD/45 RPM PUMP 1 & 2 60/60 SPM, 535 GPM, ON/OFF BOTTOM PUMP PRESS. 2250/1875. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 7/6K. HOOK LOAD PU/SO/ROT 162/95/121 33/VIS 10.5/MW ROT 1263'/ 15.5 HRS, 81.4' /HR SLID 55'/ 1.5HR, ROP 36.6'/HR RIG SERVICE
	17:30 - 18:00	0.50	DRLPRO	07	A	P		
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILLED 6600'-6920',320'/ 6 HRS, 53.3'/HR WOB/12/23K, MM/ 111 RPM, TD/45 RPM PUMP 1 & 2 60/60 SPM, 535 GPM, ON/OFF BOTTOM PUMP PRESS. 2250/1875. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 7/6K. HOOK LOAD PU/SO/ROT 162/95/121 33/VIS 10.5/MW ROT 295'/ 5.58 HRS, 52.8' /HR SLID 25'/ .23HR, ROP 30.0'/HR
8/20/2011	0:00 - 14:30	14.50	DRLPRO	02	D	P		DRILLED 6920'-7641',721'/ 14 HRS, 51.5'/HR WOB/12/23K, MM/ 100 RPM, TD/145 RPM PUMP 1 & 2 60/60 SPM, 535 GPM, ON/OFF BOTTOM PUMP PRESS. 2250/1875. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 7/6K. 38/VIS 10./MW ROT 295'/ 5.58 HRS, 52.8' /HR SLID 0'/ 0HR, ROP 0.0'/HR RIG SERVICE SPCC INSP. COMPLETE
	14:30 - 15:00	0.50	DRLPRO	07	A	P		
	15:00 - 0:00	9.00	DRLPRO	02	D	P		DRILLED 7641'-7951',310'/ 9 HRS, 34.4'/HR WOB/12/25K, MM/ 84 RPM, 40TD/124 RPM PUMP 1 90 SPM, 400 GPM, ON/OFF BOTTOM PUMP PRESS. 1600/1400. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 14/14K. HOOK LOAD PU/SO/ROT 232/125/165 33/VIS 10.8/MW ROT 290'/ 7.83 HRS, 37.' /HR SLID 20'/ 1.17HR, ROP 17.1'/HR
8/21/2011	0:00 - 17:30	17.50	DRLPRO	02	D	P		DRILLED 7951'T/8585',634'/ 17.5 HRS, 36.2'/HR WOB/12/25K, MM/ 84 RPM, 40TD/124 RPM PUMP 1 90 SPM, 400 GPM, ON/OFF BOTTOM PUMP PRESS. 1600/1400. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 14/14K. HOOK LOAD PU/SO/ROT 232/125/165 33/VIS 10.8/MW ROT 737'/ 15.42 HRS, 47.8.' /HR SLID 53'/3.59HR, ROP 15.1'/HR RIG SERVICE
	17:30 - 18:00	0.50	DRLPRO	07	A	P		

US ROCKIES REGION
Operation Summary Report

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011		Spud Date: 7/24/2011	
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILLED 8585'T/8741', 156'/ 6HRS, 26'/HR WOB/12/25K, MM/ 84 RPM, 40TD/124 RPM PUMP 1 SPM, 410 GPM, ON/OFF BOTTOM PUMP PRESS. 2090/1940. DIFF PRESS. 250-400# ON/OFF BOTTOM TORQUE 14/14K. HOOK LOAD PU/SO/ROT 253/129/178 33/VIS 10.8/MW ROT 290'/ 6 HRS, 37. ' /HR SLID 20'/ 1.17HR, ROP 17.1'/HR MIX AND PUMP DRY PILL FOR TRIP
8/22/2011	0:00 - 0:30	0.50	DRLPRO	05	C	P		TOOH FOR BIT
	0:30 - 4:00	3.50	DRLPRO	06	A	P		CHANGE OUT MOTOR AND BIT
	4:00 - 5:30	1.50	DRLPRO	06	A	P		INSTALL ROTATING HEAD
	5:30 - 6:00	0.50	DRLPRO	06	A	P		TRIP IN TO 2300' BREAK CIRC., TIH TIGHT F/2875' T/ 3500', TIH TO 6500' BREAK CIRC., TIH TO 8623' REAM 8623' TI 8742'
	6:00 - 10:30	4.50	DRLPRO	06	A	P		RIG SERVICE
	10:30 - 11:00	0.50	DRLPRO	07	A	P		
	11:00 - 0:00	13.00	DRLPRO	02	D	P		DRILLED 8741'T/9472', 731'/ 13HRS, 56.2'/HR WOB/12/25K, MM/ 83 RPM 50,TD/134 RPM PUMP 1,110 SPM, 490 GPM, ON/OFF BOTTOM PUMP PRESS. 2425/2225. DIFF PRESS. 150-300# ON/OFF BOTTOM TORQUE 17/14K. HOOK LOAD PU/SO/ROT 252/136/185 38/VIS 10.8/MW
8/23/2011	0:00 - 14:30	14.50	DRLPRO	02	D	P		DRILLED 9472'T/9944', 472'/ 14.5HRS, 32.5'/HR WOB/12/25K, 38/VIS 11.5/MW RPM 50,- MM/83-TD/134 RPM PUMP 1,110 SPM, 490 GPM, ON/OFF BOTTOM PUMP PRESS. 2611/2225. DIFF PRESS. 150-300# ON/OFF BOTTOM TORQUE 17/14K. HOOK LOAD PU/SO/ROT 252/136/185
	14:30 - 0:00	9.50	DRLPRO	02	D	P		DRILLED 9944'T/10203', 259'/ 9.5HRS, 27.2'/HR HOOK LOAD PU/SO/ROT 271/144/193 ON/OFF BOTTOM PUMP PRESS. 22625/2450. ON/OFF BOTTOM TORQUE 17/17K. WOB/12/25K, RPM 55,- MM/83-TD/138 RPM PUMP 1,110 SPM, 490 GPM, 38/VIS 11.4 /MW DIFF PRESS. 150-300# RIG SERVICE
	14:30 - 14:30	0.00	DRLPRO	07	A	P		
8/24/2011	0:00 - 9:30	9.50	DRLPRO	02	D	P		DRILLED 10203'T/10500', 297'/ 9.5HRS, 31.2'/HR HOOK LOAD PU/SO/ROT 271/144/193 ON/OFF BOTTOM PUMP PRESS. 2262/2450. ON/OFF BOTTOM TORQUE 17/17K. WOB/12/25K, RPM 55,- MM/83-TD/138 RPM PUMP 1,110 SPM, 490 GPM, 38/VIS 11.4 /MW DIFF PRESS. 150-300#

US ROCKIES REGION
Operation Summary Report

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011	Spud Date: 7/24/2011
Project: UTAH-UINTAH		Site: NBU 1021-29I PAD	Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING		Start Date: 7/22/2011	End Date: 8/26/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)		UWI: NBU 1021-29P1CS	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	9:30 - 11:30	2.00	DRLPRO	05	A	P		CIRC.AND COND. HOLE FOR LOGS
	11:30 - 15:30	4.00	DRLPRO	06	B	P		PUMP PILL TOOH TO SHOE TIGHT @2780
	15:30 - 19:00	3.50	DRLPRO	06	B	P		TIH, FILL PIPE @ 4,000 8,000'
	19:00 - 20:30	1.50	DRLPRO	05	A	P		CIRC. AND COND. HOLE FOR LOGS
	20:30 - 21:00	0.50	DRLPRO	05	J	P		CHECK FOR FLOW AND DROP SURVEY
	21:00 - 0:00	3.00	DRLPRO	06	B	P		PUMP PILL PILL 2 STD WORK TIGHT HOLE PULL 5 STD PUMP PILL TOOH.
8/25/2011	0:00 - 2:30	2.50	DRLPRO	06	B	P		FINISH TOOH
	2:30 - 3:00	0.50	DRLPRO	06	B	P		CLEAN FLOOR AND SPOT HALLIBURTON TRUCK
	3:00 - 3:30	0.50	DRLPRO	07	A	P		RIG SERVICE
	3:30 - 8:00	4.50	DRLPRO	11	G	P		RU/LOG RUN IN W/ TRIPLE COMBO , TAG BRIDGE AT 8272', LOGS TD 10498'
	8:00 - 9:00	1.00	DRLPRO	11	G	P		SAFETY MEETING AND RD LOGGERS
	9:00 - 12:00	3.00	DRLPRO	12	A	P		PULL WEAR BUSHING AND RU CASING CREW
	12:00 - 20:30	8.50	DRLPRO	12	C	P		RUN 4½ P110 BTC PRODTION CASING FILL 2206', 4500' 7000' WORK STUCK PIPE @ 7,000'
	20:30 - 21:30	1.00	DRLPRO	05	A	P		CIRC. HOLE FOR CEMENT
	21:30 - 0:00	2.50	DRLPRO	12	E	P		PRESSURE TEST 5000 10 MIN,PUMPED 20BBL PRE FLUSH H2O, 14 BBL SCAVENGER 10.5#,3.96YD, 20 SX, 25GPS--175 BBL LEAD,11.5 #,2.71 YD,365 SX,15.69 GPS--339 BBLS TAIL, 14.3#,1.31YD,1455SX,GPS 5.90. DISPLACED 169 BBLS H2O BUMP PLUG 3835 FOR 5MIN.--25 BBLS TO SURFACE, TOP OF TAIL 2067'
8/26/2011	0:00 - 1:00	1.00	DRLPRO	12	E	P		PRESSURE TEST 5000 10 MIN,PUMPED 20BBL PRE FLUSH H2O, 14 BBL SCAVENGER 10.5#,3.96YD, 20 SX, 25GPS--175 BBL LEAD,11.5 #,2.71 YD,365 SX,15.69 GPS--339 BBLS TAIL, 14.3#,1.31YD,1455SX,GPS 5.90. DISPLACED 169 BBLS H2O BUMP PLUG 3835 FOR 5MIN.--25 BBLS TO SURFACE, TOP OF TAIL 2067'
	1:00 - 1:30	0.50	DRLPRO	14	A	P		NOTE: MARKER JOINTS @ 4168',7064'AND 9709' SET SLIPS @100 K NIPPLE DOWN RELEASE RIG @ 01:30

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 1021-29P1CS RED	Wellbore No.	OH
Well Name	NBU 1021-29P1CS	Wellbore Name	NBU 1021-29P1CS
Report No.	1	Report Date	10/7/2011
Project	UTAH-UINTAH	Site	NBU 1021-29I PAD
Rig Name/No.	GWS 1/1	Event	COMPLETION
Start Date	10/10/2011	End Date	10/25/2011
Spud Date	7/24/2011	Active Datum	RKB @5,154.00usft (above Mean Sea Level)
UWI	NBU 1021-29P1CS		

1.3 General

Contractor	CASED HOLE SOLUTIONS	Job Method	PERFORATE	Supervisor	ED GUDAC
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

1.4 Initial Conditions

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

1.5 Summary

Gross Interval	9,950.0 (usft)-10,185.0 (usft)	Start Date/Time	10/10/2011 12:00AM
No. of Intervals	5	End Date/Time	10/10/2011 12:00AM
Total Shots	0	Net Perforation Interval	12.00 (usft)
Avg Shot Density	0.00 (shot/ft)	Final Surface Pressure	
		Final Press Date	

2 Intervals

2.1 Perforated Interval

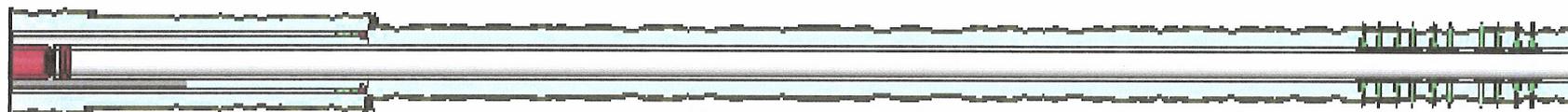
Date	Formation/Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/Add. Shot	Diameter (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/10/2011 1 12:00AM	MESAVERDE/			9,950.0	9,952.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/10/201 1 12:00AM	MESAVERDE/			9,974.0	9,976.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/10/201 1 12:00AM	MESAVERDE/			10,018.0	10,020.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/10/201 1 12:00AM	MESAVERDE/			10,145.0	10,148.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
10/10/201 1 12:00AM	MESAVERDE/			10,182.0	10,185.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

3 Plots

3.1 Wellbore Schematic



US ROCKIES REGION
Operation Summary Report

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011	Spud Date: 7/24/2011
Project: UTAH-UINTAH		Site: NBU 1021-29I PAD	Rig Name No: GWS 1/1
Event: COMPLETION		Start Date: 10/10/2011	End Date: 10/25/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)		UWI: NBU 1021-29P1CS	

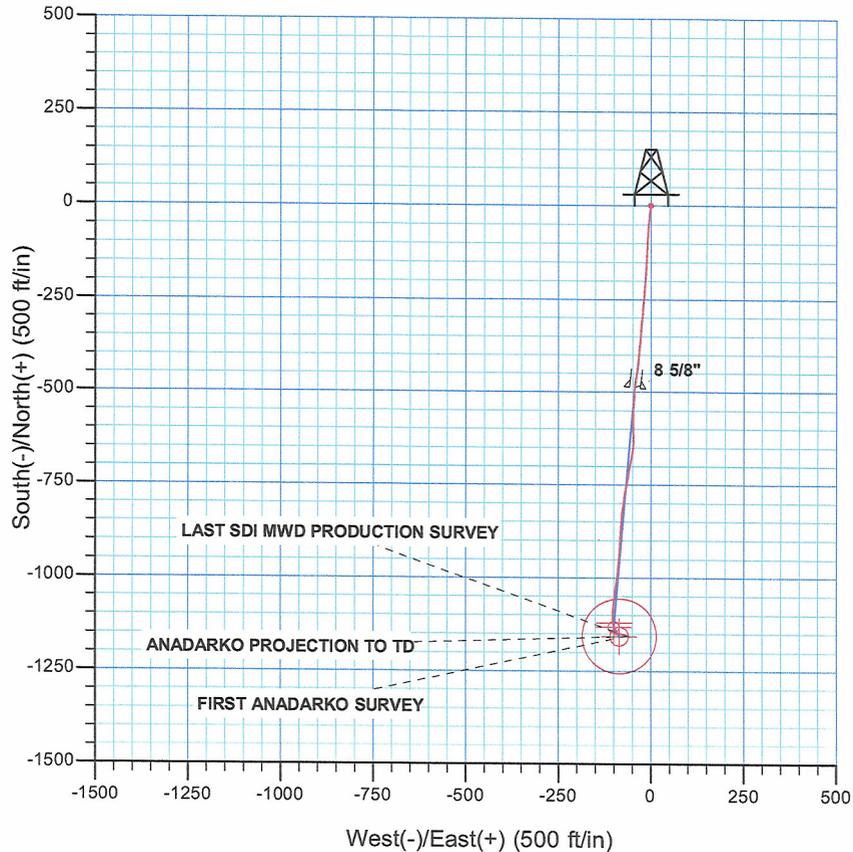
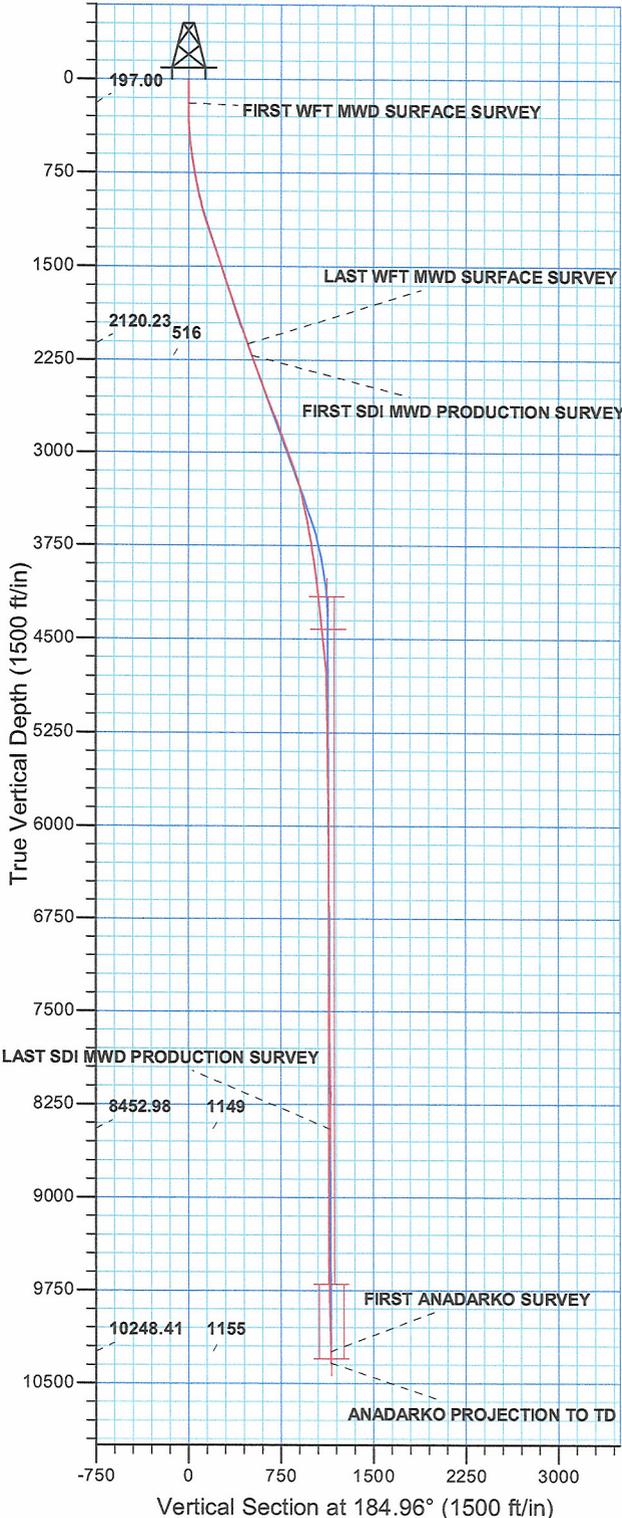
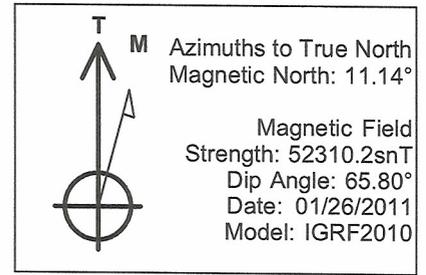
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
10/6/2011	6:45 - 7:00	0.25	COMP	48		P		HELD SAFETY MEETING HIGH PRESSURE
	7:00 - 11:00	4.00	COMP	33		P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 12 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 13 PSI. 1ST PSI TEST T/ 9000 PSI. HELD FOR 30 MIN LOST 87 PSI. BLEED OFF PSI. MOVE T/ NEXT WELL.
10/10/2011	12:00 - 15:00	3.00	COMP	37		P		PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SW
10/13/2011	7:00 - 17:00	10.00	COMP	36	B	P		FRAC STG 1)WHP 80 PSI, BRK 5020 PSI @ 4.6 BPM. ISIP 3846 PSI, FG .82 CALC HOLES OPEN @ 50.5 BPM @ 6102 PSI = 100% HOLES OPEN. ISIP 3563 PSI, FG .79, NPI -283 PSI. MP 9158 PSI, MR 50.6 BPM, AP 6118 PSI, AR 50.1 BPM X-OVER FOR WL PERF STG 2)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 10,050' P/U PERF AS PER PERF DESIGN. POOH. X-OVER FOR FRAC CREW FRAC STG 2)WHP 240 PSI, BRK 7863 PSI @ 4.6 BPM. ISIP 3602 PSI, FG .80 CALC HOLES OPEN @ 50.0 BPM @ 6533 PSI = 100% HOLES OPEN. ISIP 3468 PSI, FG .79, NPI -134 PSI. MP 7863 PSI, MR 50.3 BPM, AP 6359 PSI, AR 49.9 BPM X-OVER FOR WL PU 4 1/2 HAL CBP RIH SET KILL PLUG @ 9900 POOH RD W.L. AND FRAC CREW FROM WELL SW TOTAL SAND = 135,770 # 30/50 TLC TOTAL TOTAL CLFL = 4520 BBLS
10/14/2011	-							
10/24/2011	7:00 - 7:15	0.25	COMP	48		P		HSM
	7:15 - 16:00	8.75	COMP	44	C	P		MIRU, NDWH, NUBOP, P/U 311 JTS NEW 2 3/8" L-80 TBG OFF TRLR & RIH TO 9860', R/U PWR SWVL, PSI TEST BOP TO 3000# LOST 0# IN 15 MIN, SWIFN.
10/25/2011	7:00 - 7:15	0.25	COMP	48		P		HSM

**US ROCKIES REGION
Operation Summary Report**

Well: NBU 1021-29P1CS RED		Spud Conductor: 7/21/2011	Spud Date: 7/24/2011
Project: UTAH-UINTAH		Site: NBU 1021-29I PAD	Rig Name No: GWS 1/1
Event: COMPLETION		Start Date: 10/10/2011	End Date: 10/25/2011
Active Datum: RKB @5,154.00usft (above Mean Sea Level)		UWI: NBU 1021-29P1CS	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 15:00	7.75	COMP	44	C	P		<p>WHP = 0 PSI. CONT. TO PU 1 JT NEW 2 3/8" 4.7# L80 TBG. TAG FILL @ 9870'. EST CIRC. C/O 30' OF SND.</p> <p>CBP #1) DRLG OUT HAL 10K CBP @ 9900' IN 10 MIN. 1000 DIFF PSI. RIH TAG FILL @ 10000. C/O 50 OF SND. FCP =20 PSI.</p> <p>CBP #2) DRLG OUT HAL 8K CBP @ 10050' IN 5 MIN. 600 DIFF PSI. RIH & TAG FILL @ 10270'. C/O TO 10332'. PBTB @ 10332'. FCP = 50 PSI. CIRC WELL CLEAN.</p> <p>ND PWR SWWL, NU TBG EQUIP. LD 7 JTS ON FLOAT, (10 TOTAL ON FLAOT). LND TBG ON HNGR W/ 318 JTS NEW 2 3/8" 4.7# L-80. RD FLOOR & TBG EQUIP. ND BOP, DROP BALL, NUWH. PMP OFF BIT @ 4000 PSI. WAIT 30 MIN FOR BIT TO FALL TO BTM. TURN WELL OVER TO FBC.SICP=800 PSI SITP=300 PSI, RDMO, MOVE RIG TO CIGE 216, MOVE ONTO NBU 921-15G2S IN AM.</p> <p>KB 25' HANGER 0.83' TBG 318 JTS = 10082.10' POBS= 2.20' XN NIPPLE @ 10'107.93' EOT @ 10'110.13' (328 JTS DLVRD - 10 JTS RTND)</p> <p>TWTR = 4715 BBLS TWR = 205 BBLS TWLTR = 4510 BBLS FOAM UNIT FOR CIRCULATION FOAM UNIT FOR CIRCULATION</p>
10/29/2011	7:00 - 12:00	5.00						
10/30/2011	7:00 - 12:00	5.00						

WELL DETAILS: NBU 1021-29P1CS					
GL 5253' & KB 25' @ 5278.00ft (HP 311)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14498968.65	2042305.93	39° 55' 0.422 N	109° 34' 0.282 W



PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N	
Geodetic System:	Universal Transverse Mercator (US Survey Feet)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	Zone 12N (114 W to 108 W)
Location:	SECTION 29 T10S R21E
System Datum:	Mean Sea Level



Scientific Drilling
Rocky Mountain Operations

US ROCKIES REGION PLANNING

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

NBU 1021-29I PAD

NBU 1021-29P1CS

OH

Design: OH

Standard Survey Report

12 September, 2011

Anadarko 
Petroleum Corporation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Site:	NBU 1021-29I PAD	MD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM5000-RobertS-Local

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

Site	NBU 1021-29I PAD, SECTION 29 T10S R21E				
Site Position:		Northing:	14,498,964.15 usft	Latitude:	39° 55' 0.379 N
From:	Lat/Long	Easting:	2,042,297.02 usft	Longitude:	109° 34' 0.397 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.92 °

Well	NBU 1021-29P1CS, 1993 FSL 400 FEL					
Well Position	+N/-S	0.00 ft	Northing:	14,498,968.66 usft	Latitude:	39° 55' 0.422 N
	+E/-W	0.00 ft	Easting:	2,042,305.93 usft	Longitude:	109° 34' 0.282 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,253.00 ft

Wellbore	OH				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/26/11	11.14	65.80	52,310

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	184.96	

Survey Program		Date			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
197.00	2,191.00	Survey #1 WFT MWD SURFACE (OH)	MWD	MWD - Standard	
2,295.00	8,617.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
10,413.00	10,500.00	Survey #3 ANADARKO SURVEY (OH)	MWD	MWD - Standard	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
197.00	0.00	292.99	197.00	0.00	0.00	0.00	0.00	0.00	0.00	
FIRST WFT MWD SURFACE SURVEY										
281.00	1.38	189.44	280.99	-1.00	-0.17	1.01	1.64	1.64	0.00	
367.00	2.98	186.63	366.93	-4.24	-0.59	4.28	1.86	1.86	-3.27	
451.00	4.81	185.12	450.73	-9.92	-1.16	9.98	2.18	2.18	-1.80	
541.00	6.50	189.00	540.29	-18.71	-2.29	18.84	1.92	1.88	4.31	
631.00	8.38	186.75	629.53	-30.25	-3.86	30.47	2.11	2.09	-2.50	
721.00	9.81	185.00	718.39	-44.40	-5.30	44.70	1.62	1.59	-1.94	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Site:	NBU 1021-29I PAD	MD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM5000-RobertS-Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
811.00	11.13	183.25	806.89	-60.72	-6.46	61.05	1.51	1.47	-1.94	
901.00	12.00	183.75	895.06	-78.72	-7.57	79.08	0.97	0.97	0.56	
991.00	14.25	184.12	982.71	-99.11	-8.97	99.52	2.50	2.50	0.41	
1,081.00	16.63	182.75	1,069.45	-123.03	-10.39	123.46	2.68	2.64	-1.52	
1,171.00	18.81	182.50	1,155.18	-150.39	-11.64	150.83	2.42	2.42	-0.28	
1,261.00	19.25	182.12	1,240.26	-179.71	-12.82	180.15	0.51	0.49	-0.42	
1,351.00	18.99	184.11	1,325.30	-209.14	-14.42	209.61	0.78	-0.29	2.21	
1,441.00	18.94	187.00	1,410.41	-238.25	-17.25	238.85	1.04	-0.06	3.21	
1,531.00	18.31	184.87	1,495.70	-266.83	-20.23	267.58	1.03	-0.70	-2.37	
1,621.00	17.63	184.87	1,581.31	-294.50	-22.59	295.35	0.76	-0.76	0.00	
1,711.00	18.13	185.62	1,666.96	-322.01	-25.11	322.98	0.61	0.56	0.83	
1,801.00	18.63	184.00	1,752.37	-350.29	-27.49	351.35	0.79	0.56	-1.80	
1,891.00	18.88	184.25	1,837.59	-379.15	-29.57	380.29	0.29	0.28	0.28	
1,981.00	19.00	186.87	1,922.72	-408.22	-32.40	409.49	0.95	0.13	2.91	
2,071.00	20.13	188.12	2,007.52	-438.10	-36.34	439.60	1.34	1.26	1.39	
2,191.00	20.02	186.34	2,120.23	-478.95	-41.53	480.75	0.52	-0.09	-1.48	
LAST WFT MWD SURFACE SURVEY										
2,295.00	19.26	183.77	2,218.18	-513.76	-44.62	515.70	1.11	-0.73	-2.47	
FIRST SDI MWD PRODUCTION SURVEY										
2,390.00	20.75	182.72	2,307.45	-546.21	-46.45	548.18	1.61	1.57	-1.11	
2,484.00	20.14	181.14	2,395.53	-579.02	-47.56	580.97	0.88	-0.65	-1.68	
2,578.00	21.46	176.92	2,483.41	-612.38	-46.96	614.14	2.12	1.40	-4.49	
2,673.00	21.10	185.35	2,571.95	-646.76	-47.62	648.46	3.24	-0.38	8.87	
2,767.00	20.66	190.36	2,659.78	-679.92	-52.18	681.89	1.96	-0.47	5.33	
2,861.00	21.54	190.19	2,747.48	-713.22	-58.22	715.58	0.94	0.94	-0.18	
2,956.00	20.49	190.36	2,836.16	-746.74	-64.29	749.50	1.11	-1.11	0.18	
3,050.00	20.22	189.84	2,924.29	-778.93	-70.03	782.07	0.35	-0.29	-0.55	
3,144.00	19.90	186.58	3,012.59	-810.83	-74.64	814.25	1.24	-0.34	-3.47	
3,239.00	18.99	184.56	3,102.17	-842.30	-77.72	845.87	1.19	-0.96	-2.13	
3,333.00	19.17	185.00	3,191.01	-872.92	-80.28	876.59	0.25	0.19	0.47	
3,427.00	15.56	183.33	3,280.71	-900.89	-82.36	904.64	3.88	-3.84	-1.78	
3,522.00	13.04	182.26	3,372.76	-924.32	-83.52	928.08	2.67	-2.65	-1.13	
3,616.00	11.52	183.16	3,464.61	-944.29	-84.46	948.06	1.63	-1.62	0.96	
3,710.00	10.73	183.86	3,556.84	-962.40	-85.56	966.19	0.85	-0.84	0.74	
3,805.00	10.64	185.88	3,650.19	-979.94	-87.06	983.80	0.41	-0.09	2.13	
3,899.00	10.02	191.77	3,742.67	-996.58	-89.61	1,000.60	1.30	-0.66	6.27	
3,994.00	8.97	188.87	3,836.37	-1,011.99	-92.44	1,016.19	1.21	-1.11	-3.05	
4,088.00	8.09	186.94	3,929.33	-1,025.80	-94.37	1,030.12	0.98	-0.94	-2.05	
4,182.00	7.19	186.87	4,022.49	-1,038.21	-95.87	1,042.61	0.96	-0.96	-0.07	
4,277.00	6.42	189.05	4,116.82	-1,049.35	-97.42	1,053.85	0.85	-0.81	2.29	
4,371.00	6.07	190.28	4,210.26	-1,059.43	-99.13	1,064.04	0.40	-0.37	1.31	
4,465.00	6.24	184.04	4,303.72	-1,069.42	-100.38	1,074.09	0.73	0.18	-6.64	
4,560.00	5.98	185.18	4,398.18	-1,079.50	-101.19	1,084.20	0.30	-0.27	1.20	
4,654.00	5.89	184.65	4,491.68	-1,089.18	-102.02	1,093.92	0.11	-0.10	-0.56	

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1021-29I PAD
Well: NBU 1021-29P1CS
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NBU 1021-29P1CS
TVD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
MD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM5000-RobertS-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,749.00	5.63	183.68	4,586.20	-1,098.69	-102.72	1,103.46	0.29	-0.27	-1.02
4,843.00	4.57	176.92	4,679.83	-1,107.03	-102.81	1,111.77	1.29	-1.13	-7.19
4,937.00	4.57	178.59	4,773.53	-1,114.51	-102.52	1,119.20	0.14	0.00	1.78
5,032.00	2.81	168.39	4,868.33	-1,120.58	-101.96	1,125.20	1.97	-1.85	-10.74
5,126.00	1.49	169.97	4,962.26	-1,124.04	-101.28	1,128.59	1.41	-1.40	1.68
5,220.00	1.67	158.81	5,056.22	-1,126.52	-100.57	1,131.00	0.38	0.19	-11.87
5,314.00	0.53	130.95	5,150.21	-1,128.08	-99.75	1,132.48	1.30	-1.21	-29.64
5,409.00	0.77	145.52	5,245.20	-1,128.90	-99.06	1,133.23	0.30	0.25	15.34
5,503.00	1.06	161.01	5,339.19	-1,130.24	-98.42	1,134.52	0.40	0.31	16.48
5,597.00	0.35	96.41	5,433.18	-1,131.09	-97.85	1,135.32	1.02	-0.76	-68.72
5,691.00	0.62	148.53	5,527.18	-1,131.56	-97.30	1,135.73	0.52	0.29	55.45
5,786.00	0.70	157.23	5,622.17	-1,132.53	-96.80	1,136.66	0.13	0.08	9.16
5,880.00	0.79	154.68	5,716.16	-1,133.65	-96.30	1,137.73	0.10	0.10	-2.71
5,975.00	0.97	157.76	5,811.15	-1,134.98	-95.72	1,139.01	0.20	0.19	3.24
6,069.00	0.00	282.30	5,905.15	-1,135.72	-95.42	1,139.72	1.03	-1.03	0.00
6,164.00	0.35	138.60	6,000.15	-1,135.94	-95.23	1,139.92	0.37	0.37	0.00
6,258.00	0.35	171.12	6,094.15	-1,136.44	-94.99	1,140.40	0.21	0.00	34.60
6,352.00	0.53	181.22	6,188.14	-1,137.16	-94.96	1,141.11	0.21	0.19	10.74
6,447.00	0.79	188.69	6,283.14	-1,138.24	-95.07	1,142.20	0.29	0.27	7.86
6,541.00	0.79	190.28	6,377.13	-1,139.52	-95.28	1,143.49	0.02	0.00	1.69
6,636.00	0.26	309.02	6,472.13	-1,140.03	-95.56	1,144.02	0.99	-0.56	124.99
6,730.00	0.26	321.85	6,566.12	-1,139.73	-95.86	1,143.75	0.06	0.00	13.65
6,824.00	0.18	310.16	6,660.12	-1,139.46	-96.11	1,143.51	0.10	-0.09	-12.44
6,919.00	0.07	300.38	6,755.12	-1,139.34	-96.27	1,143.40	0.12	-0.12	-10.29
7,013.00	0.18	226.31	6,849.12	-1,139.41	-96.43	1,143.48	0.19	0.12	-78.80
7,108.00	0.26	250.92	6,944.12	-1,139.59	-96.74	1,143.68	0.13	0.08	25.91
7,202.00	0.09	223.06	7,038.12	-1,139.71	-96.99	1,143.83	0.20	-0.18	-29.64
7,296.00	0.09	200.38	7,132.12	-1,139.83	-97.07	1,143.96	0.04	0.00	-24.13
7,391.00	0.18	244.94	7,227.12	-1,139.97	-97.23	1,144.10	0.14	0.09	46.91
7,485.00	0.26	150.64	7,321.12	-1,140.21	-97.26	1,144.35	0.35	0.09	-100.32
7,580.00	0.44	168.88	7,416.12	-1,140.76	-97.08	1,144.88	0.22	0.19	19.20
7,674.00	0.97	174.72	7,510.11	-1,141.91	-96.94	1,146.01	0.57	0.56	6.21
7,768.00	0.26	134.20	7,604.11	-1,142.85	-96.71	1,146.93	0.84	-0.76	-43.11
7,863.00	0.09	173.23	7,699.11	-1,143.07	-96.55	1,147.14	0.21	-0.18	41.08
7,957.00	0.44	151.25	7,793.11	-1,143.46	-96.37	1,147.51	0.38	0.37	-23.38
8,051.00	0.81	157.15	7,887.10	-1,144.39	-95.93	1,148.40	0.40	0.39	6.28
8,146.00	1.32	157.93	7,982.08	-1,146.02	-95.26	1,149.97	0.54	0.54	0.82
8,240.00	1.67	150.29	8,076.05	-1,148.22	-94.18	1,152.06	0.43	0.37	-8.13
8,334.00	0.70	139.04	8,170.03	-1,149.84	-93.12	1,153.59	1.06	-1.03	-11.97
8,429.00	1.06	346.81	8,265.02	-1,149.42	-92.94	1,153.15	1.80	0.38	-160.24
8,523.00	1.41	350.15	8,359.00	-1,147.44	-93.34	1,151.21	0.38	0.37	3.55
8,617.00	0.97	345.40	8,452.98	-1,145.53	-93.74	1,149.34	0.48	-0.47	-5.05

LAST SDI MWD PRODUCTION SURVEY

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1021-29I PAD
Well: NBU 1021-29P1CS
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NBU 1021-29P1CS
TVD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
MD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM5000-RobertS-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,413.00	2.70	123.70	10,248.41	-1,154.29	-62.37	1,155.36	0.19	0.10	7.70
FIRST ANADARKO SURVEY									
10,500.00	2.70	123.70	10,335.31	-1,156.56	-58.96	1,157.33	0.00	0.00	0.00
ANADARKO PROJECTION TO TD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N-S (ft)	+E-W (ft)	
197.00	197.00	0.00	0.00	FIRST WFT MWD SURFACE SURVEY
2,191.00	2,120.23	-478.95	-41.53	LAST WFT MWD SURFACE SURVEY
2,295.00	2,218.18	-513.76	-44.62	FIRST SDI MWD PRODUCTION SURVEY
8,617.00	8,452.98	-1,145.53	-93.74	LAST SDI MWD PRODUCTION SURVEY
10,413.00	10,248.41	-1,154.29	-62.37	FIRST ANADARKO SURVEY
10,500.00	10,335.31	-1,156.56	-58.96	ANADARKO PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____



Scientific Drilling
Rocky Mountain Operations

US ROCKIES REGION PLANNING

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

NBU 1021-29I PAD

NBU 1021-29P1CS

OH

Design: OH

Survey Report - Geographic

12 September, 2011

Anadarko 
Petroleum Corporation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well NBU 1021-29P1CS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	TVD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Site:	NBU 1021-29I PAD	MD Reference:	GL 5253' & KB 25' @ 5278.00ft (HP 311)
Well:	NBU 1021-29P1CS	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM5000-RobertS-Local

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

Site	NBU 1021-29I PAD, SECTION 29 T10S R21E				
Site Position:		Northing:	14,498,964.15 usft	Latitude:	39° 55' 0.379 N
From:	Lat/Long	Easting:	2,042,297.02 usft	Longitude:	109° 34' 0.397 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.92 °

Well	NBU 1021-29P1CS, 1993 FSL 400 FEL					
Well Position	+N/-S	0.00 ft	Northing:	14,498,968.66 usft	Latitude:	39° 55' 0.422 N
	+E/-W	0.00 ft	Easting:	2,042,305.93 usft	Longitude:	109° 34' 0.282 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,253.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/26/11	11.14	65.80	52,310

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	184.96	

Survey Program	Date	09/12/11			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
197.00	2,191.00	Survey #1 WFT MWD SURFACE (OH)	MWD	MWD - Standard	
2,295.00	8,617.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
10,413.00	10,500.00	Survey #3 ANADARKO SURVEY (OH)	MWD	MWD - Standard	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W
197.00	0.00	292.99	197.00	0.00	0.00	14,498,968.66	2,042,305.93	39° 55' 0.422 N	109° 34' 0.282 W
FIRST WFT MWD SURFACE SURVEY									
281.00	1.38	189.44	280.99	-1.00	-0.17	14,498,967.66	2,042,305.78	39° 55' 0.413 N	109° 34' 0.284 W
367.00	2.98	186.63	366.93	-4.24	-0.59	14,498,964.41	2,042,305.40	39° 55' 0.380 N	109° 34' 0.290 W
451.00	4.81	185.12	450.73	-9.92	-1.16	14,498,958.72	2,042,304.93	39° 55' 0.324 N	109° 34' 0.297 W
541.00	6.50	189.00	540.29	-18.71	-2.29	14,498,949.92	2,042,303.93	39° 55' 0.237 N	109° 34' 0.311 W
631.00	8.38	186.75	629.53	-30.25	-3.86	14,498,938.35	2,042,302.55	39° 55' 0.123 N	109° 34' 0.332 W
721.00	9.81	185.00	718.39	-44.40	-5.30	14,498,924.18	2,042,301.34	39° 54' 59.983 N	109° 34' 0.350 W
811.00	11.13	183.25	806.89	-60.72	-6.46	14,498,907.85	2,042,300.44	39° 54' 59.822 N	109° 34' 0.365 W

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1021-29I PAD
Well: NBU 1021-29P1CS
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NBU 1021-29P1CS
TVD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
MD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM5000-RobertS-Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
901.00	12.00	183.75	895.06	-78.72	-7.57	14,498,889.82	2,042,299.63	39° 54' 59.644 N	109° 34' 0.379 W	
991.00	14.25	184.12	982.71	-99.11	-8.97	14,498,869.42	2,042,298.55	39° 54' 59.443 N	109° 34' 0.397 W	
1,081.00	16.63	182.75	1,069.45	-123.03	-10.39	14,498,845.48	2,042,297.52	39° 54' 59.206 N	109° 34' 0.415 W	
1,171.00	18.81	182.50	1,155.18	-150.39	-11.64	14,498,818.10	2,042,296.70	39° 54' 58.936 N	109° 34' 0.431 W	
1,261.00	19.25	182.12	1,240.26	-179.71	-12.82	14,498,788.77	2,042,295.99	39° 54' 58.646 N	109° 34' 0.447 W	
1,351.00	18.99	184.11	1,325.30	-209.14	-14.42	14,498,759.31	2,042,294.87	39° 54' 58.355 N	109° 34' 0.467 W	
1,441.00	18.94	187.00	1,410.41	-238.25	-17.25	14,498,730.17	2,042,292.51	39° 54' 58.067 N	109° 34' 0.503 W	
1,531.00	18.31	184.87	1,495.70	-266.83	-20.23	14,498,701.54	2,042,289.98	39° 54' 57.785 N	109° 34' 0.542 W	
1,621.00	17.63	184.87	1,581.31	-294.50	-22.59	14,498,673.84	2,042,288.07	39° 54' 57.511 N	109° 34' 0.572 W	
1,711.00	18.13	185.62	1,666.96	-322.01	-25.11	14,498,646.29	2,042,285.99	39° 54' 57.239 N	109° 34' 0.604 W	
1,801.00	18.63	184.00	1,752.37	-350.29	-27.49	14,498,617.97	2,042,284.07	39° 54' 56.960 N	109° 34' 0.635 W	
1,891.00	18.88	184.25	1,837.59	-379.15	-29.57	14,498,589.08	2,042,282.45	39° 54' 56.675 N	109° 34' 0.662 W	
1,981.00	19.00	186.87	1,922.72	-408.22	-32.40	14,498,559.97	2,042,280.08	39° 54' 56.387 N	109° 34' 0.698 W	
2,071.00	20.13	188.12	2,007.52	-438.10	-36.34	14,498,530.04	2,042,276.62	39° 54' 56.092 N	109° 34' 0.748 W	
2,191.00	20.02	186.34	2,120.23	-478.95	-41.53	14,498,489.10	2,042,272.09	39° 54' 55.688 N	109° 34' 0.815 W	
LAST WFT MWD SURFACE SURVEY										
2,295.00	19.26	183.77	2,218.18	-513.76	-44.62	14,498,454.25	2,042,269.56	39° 54' 55.344 N	109° 34' 0.855 W	
FIRST SDI MWD PRODUCTION SURVEY										
2,390.00	20.75	182.72	2,307.45	-546.21	-46.45	14,498,421.78	2,042,268.25	39° 54' 55.023 N	109° 34' 0.878 W	
2,484.00	20.14	181.14	2,395.53	-579.02	-47.56	14,498,388.95	2,042,267.67	39° 54' 54.699 N	109° 34' 0.893 W	
2,578.00	21.46	176.92	2,483.41	-612.38	-46.96	14,498,355.61	2,042,268.80	39° 54' 54.369 N	109° 34' 0.885 W	
2,673.00	21.10	185.35	2,571.95	-646.76	-47.62	14,498,321.22	2,042,268.70	39° 54' 54.029 N	109° 34' 0.893 W	
2,767.00	20.66	190.36	2,659.78	-679.92	-52.18	14,498,287.99	2,042,264.67	39° 54' 53.702 N	109° 34' 0.952 W	
2,861.00	21.54	190.19	2,747.48	-713.22	-58.22	14,498,254.60	2,042,259.17	39° 54' 53.372 N	109° 34' 1.029 W	
2,956.00	20.49	190.36	2,836.16	-746.74	-64.29	14,498,220.98	2,042,253.63	39° 54' 53.041 N	109° 34' 1.107 W	
3,050.00	20.22	189.84	2,924.29	-778.93	-70.03	14,498,188.71	2,042,248.41	39° 54' 52.723 N	109° 34' 1.181 W	
3,144.00	19.90	186.58	3,012.59	-810.83	-74.64	14,498,156.74	2,042,244.32	39° 54' 52.408 N	109° 34' 1.240 W	
3,239.00	18.99	184.56	3,102.17	-842.30	-77.72	14,498,125.22	2,042,241.74	39° 54' 52.096 N	109° 34' 1.280 W	
3,333.00	19.17	185.00	3,191.01	-872.92	-80.28	14,498,094.56	2,042,239.67	39° 54' 51.794 N	109° 34' 1.312 W	
3,427.00	15.56	183.33	3,280.71	-900.89	-82.36	14,498,066.56	2,042,238.04	39° 54' 51.517 N	109° 34' 1.339 W	
3,522.00	13.04	182.26	3,372.76	-924.32	-83.52	14,498,043.11	2,042,237.26	39° 54' 51.286 N	109° 34' 1.354 W	
3,616.00	11.52	183.16	3,464.61	-944.29	-84.46	14,498,023.13	2,042,236.64	39° 54' 51.088 N	109° 34' 1.366 W	
3,710.00	10.73	183.86	3,556.84	-962.40	-85.56	14,498,005.01	2,042,235.83	39° 54' 50.909 N	109° 34' 1.380 W	
3,805.00	10.64	185.88	3,650.19	-979.94	-87.06	14,497,987.44	2,042,234.61	39° 54' 50.736 N	109° 34' 1.399 W	
3,899.00	10.02	191.77	3,742.67	-996.58	-89.61	14,497,970.77	2,042,232.32	39° 54' 50.571 N	109° 34' 1.432 W	
3,994.00	8.97	188.87	3,836.37	-1,011.99	-92.44	14,497,955.31	2,042,229.74	39° 54' 50.419 N	109° 34' 1.469 W	
4,088.00	8.09	186.94	3,929.33	-1,025.80	-94.37	14,497,941.48	2,042,228.04	39° 54' 50.283 N	109° 34' 1.493 W	
4,182.00	7.19	186.87	4,022.49	-1,038.21	-95.87	14,497,929.05	2,042,226.73	39° 54' 50.160 N	109° 34' 1.513 W	
4,277.00	6.42	189.05	4,116.82	-1,049.35	-97.42	14,497,917.88	2,042,225.37	39° 54' 50.050 N	109° 34' 1.532 W	
4,371.00	6.07	190.28	4,210.26	-1,059.43	-99.13	14,497,907.77	2,042,223.82	39° 54' 49.950 N	109° 34' 1.554 W	
4,465.00	6.24	184.04	4,303.72	-1,069.42	-100.38	14,497,897.77	2,042,222.73	39° 54' 49.851 N	109° 34' 1.570 W	
4,560.00	5.98	185.18	4,398.18	-1,079.50	-101.19	14,497,887.68	2,042,222.08	39° 54' 49.752 N	109° 34' 1.581 W	
4,654.00	5.89	184.65	4,491.68	-1,089.18	-102.02	14,497,877.98	2,042,221.40	39° 54' 49.656 N	109° 34' 1.592 W	
4,749.00	5.63	183.68	4,586.20	-1,098.69	-102.72	14,497,868.46	2,042,220.86	39° 54' 49.562 N	109° 34' 1.600 W	
4,843.00	4.57	176.92	4,679.83	-1,107.03	-102.81	14,497,860.12	2,042,220.90	39° 54' 49.480 N	109° 34' 1.602 W	
4,937.00	4.57	178.59	4,773.53	-1,114.51	-102.52	14,497,852.64	2,042,221.31	39° 54' 49.406 N	109° 34' 1.598 W	
5,032.00	2.81	168.39	4,868.33	-1,120.58	-101.96	14,497,846.59	2,042,221.97	39° 54' 49.346 N	109° 34' 1.591 W	
5,126.00	1.49	169.97	4,962.26	-1,124.04	-101.28	14,497,843.14	2,042,222.70	39° 54' 49.312 N	109° 34' 1.582 W	
5,220.00	1.67	158.81	5,056.22	-1,126.52	-100.57	14,497,840.67	2,042,223.45	39° 54' 49.287 N	109° 34' 1.573 W	
5,314.00	0.53	130.95	5,150.21	-1,128.08	-99.75	14,497,839.12	2,042,224.30	39° 54' 49.272 N	109° 34' 1.562 W	
5,409.00	0.77	145.52	5,245.20	-1,128.90	-99.06	14,497,838.32	2,042,225.01	39° 54' 49.264 N	109° 34' 1.553 W	
5,503.00	1.06	161.01	5,339.19	-1,130.24	-98.42	14,497,836.99	2,042,225.67	39° 54' 49.250 N	109° 34' 1.545 W	
5,597.00	0.35	96.41	5,433.18	-1,131.09	-97.85	14,497,836.14	2,042,226.25	39° 54' 49.242 N	109° 34' 1.538 W	
5,691.00	0.62	148.53	5,527.18	-1,131.56	-97.30	14,497,835.69	2,042,226.81	39° 54' 49.237 N	109° 34' 1.531 W	
5,786.00	0.70	157.23	5,622.17	-1,132.53	-96.80	14,497,834.72	2,042,227.32	39° 54' 49.228 N	109° 34' 1.525 W	

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1021-29I PAD
Well: NBU 1021-29P1CS
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NBU 1021-29P1CS
TVD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
MD Reference: GL 5253' & KB 25' @ 5278.00ft (HP 311)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM5000-RobertS-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,880.00	0.79	154.68	5,716.16	-1,133.65	-96.30	14,497,833.61	2,042,227.83	39° 54' 49.217 N	109° 34' 1.518 W
5,975.00	0.97	157.76	5,811.15	-1,134.98	-95.72	14,497,832.29	2,042,228.44	39° 54' 49.203 N	109° 34' 1.511 W
6,069.00	0.00	282.30	5,905.15	-1,135.72	-95.42	14,497,831.55	2,042,228.75	39° 54' 49.196 N	109° 34' 1.507 W
6,164.00	0.35	138.60	6,000.15	-1,135.94	-95.23	14,497,831.34	2,042,228.95	39° 54' 49.194 N	109° 34' 1.504 W
6,258.00	0.35	171.12	6,094.15	-1,136.44	-94.99	14,497,830.84	2,042,229.19	39° 54' 49.189 N	109° 34' 1.501 W
6,352.00	0.53	181.22	6,188.14	-1,137.16	-94.96	14,497,830.13	2,042,229.24	39° 54' 49.182 N	109° 34' 1.501 W
6,447.00	0.79	188.69	6,283.14	-1,138.24	-95.07	14,497,829.04	2,042,229.15	39° 54' 49.171 N	109° 34' 1.502 W
6,541.00	0.79	190.28	6,377.13	-1,139.52	-95.28	14,497,827.76	2,042,228.95	39° 54' 49.158 N	109° 34' 1.505 W
6,636.00	0.26	309.02	6,472.13	-1,140.03	-95.56	14,497,827.24	2,042,228.68	39° 54' 49.153 N	109° 34' 1.509 W
6,730.00	0.26	321.85	6,566.12	-1,139.73	-95.86	14,497,827.54	2,042,228.38	39° 54' 49.156 N	109° 34' 1.512 W
6,824.00	0.18	310.16	6,660.12	-1,139.46	-96.11	14,497,827.80	2,042,228.13	39° 54' 49.159 N	109° 34' 1.516 W
6,919.00	0.07	300.38	6,755.12	-1,139.34	-96.27	14,497,827.92	2,042,227.96	39° 54' 49.160 N	109° 34' 1.518 W
7,013.00	0.18	226.31	6,849.12	-1,139.41	-96.43	14,497,827.85	2,042,227.81	39° 54' 49.160 N	109° 34' 1.520 W
7,108.00	0.26	250.92	6,944.12	-1,139.59	-96.74	14,497,827.67	2,042,227.50	39° 54' 49.158 N	109° 34' 1.524 W
7,202.00	0.09	223.06	7,038.12	-1,139.71	-96.99	14,497,827.54	2,042,227.25	39° 54' 49.157 N	109° 34' 1.527 W
7,296.00	0.09	200.38	7,132.12	-1,139.83	-97.07	14,497,827.42	2,042,227.17	39° 54' 49.155 N	109° 34' 1.528 W
7,391.00	0.18	244.94	7,227.12	-1,139.97	-97.23	14,497,827.28	2,042,227.01	39° 54' 49.154 N	109° 34' 1.530 W
7,485.00	0.26	150.64	7,321.12	-1,140.21	-97.26	14,497,827.03	2,042,226.99	39° 54' 49.152 N	109° 34' 1.530 W
7,580.00	0.44	168.88	7,416.12	-1,140.76	-97.08	14,497,826.49	2,042,227.17	39° 54' 49.146 N	109° 34' 1.528 W
7,674.00	0.97	174.72	7,510.11	-1,141.91	-96.94	14,497,825.35	2,042,227.33	39° 54' 49.135 N	109° 34' 1.526 W
7,768.00	0.26	134.20	7,604.11	-1,142.85	-96.71	14,497,824.41	2,042,227.58	39° 54' 49.126 N	109° 34' 1.523 W
7,863.00	0.09	173.23	7,699.11	-1,143.07	-96.55	14,497,824.19	2,042,227.74	39° 54' 49.123 N	109° 34' 1.521 W
7,957.00	0.44	151.25	7,793.11	-1,143.46	-96.37	14,497,823.80	2,042,227.93	39° 54' 49.120 N	109° 34' 1.519 W
8,051.00	0.81	157.15	7,887.10	-1,144.39	-95.93	14,497,822.88	2,042,228.38	39° 54' 49.110 N	109° 34' 1.513 W
8,146.00	1.32	157.93	7,982.08	-1,146.02	-95.26	14,497,821.26	2,042,229.08	39° 54' 49.094 N	109° 34' 1.505 W
8,240.00	1.67	150.29	8,076.05	-1,148.22	-94.18	14,497,819.08	2,042,230.20	39° 54' 49.073 N	109° 34' 1.491 W
8,334.00	0.70	139.04	8,170.03	-1,149.84	-93.12	14,497,817.48	2,042,231.28	39° 54' 49.056 N	109° 34' 1.477 W
8,429.00	1.06	346.81	8,265.02	-1,149.42	-92.94	14,497,817.90	2,042,231.45	39° 54' 49.061 N	109° 34' 1.475 W
8,523.00	1.41	350.15	8,359.00	-1,147.44	-93.34	14,497,819.87	2,042,231.02	39° 54' 49.080 N	109° 34' 1.480 W
8,617.00	0.97	345.40	8,452.98	-1,145.53	-93.74	14,497,821.78	2,042,230.59	39° 54' 49.099 N	109° 34' 1.485 W
LAST SDI MWD PRODUCTION SURVEY									
10,413.00	2.70	123.70	10,248.41	-1,154.29	-62.37	14,497,813.52	2,042,262.10	39° 54' 49.013 N	109° 34' 1.082 W
FIRST ANADARKO SURVEY									
10,500.00	2.70	123.70	10,335.31	-1,156.56	-58.96	14,497,811.30	2,042,265.55	39° 54' 48.990 N	109° 34' 1.039 W
ANADARKO PROJECTION TO TD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
197.00	197.00	0.00	0.00	FIRST WFT MWD SURFACE SURVEY
2,191.00	2,120.23	-478.95	-41.53	LAST WFT MWD SURFACE SURVEY
2,295.00	2,218.18	-513.76	-44.62	FIRST SDI MWD PRODUCTION SURVEY
8,617.00	8,452.98	-1,145.53	-93.74	LAST SDI MWD PRODUCTION SURVEY
10,413.00	10,248.41	-1,154.29	-62.37	FIRST ANADARKO SURVEY
10,500.00	10,335.31	-1,156.56	-58.96	ANADARKO PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____