

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

|  |  |
|--|--|
| 5. Lease Serial No.<br>UTU-0579  |  |
| 6. If Indian, Allottee or Tribe Name<br>Ute Tribe  |  |
| 7. If Unit or CA Agreement, Name and No.<br>N/A  |  |
| 8. Lease Name and Well No.<br>Federal 920-24K  |  |
| 9. API Well No.<br>43-047-40422  |  |
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER   | 10. Field and Pool, or Exploratory<br>Natural Buttes Field           |
| 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone | 11. Sec., T. R. M. or Blk. and Survey or Area<br>Sec. 24 T 9S, R 20E |
| 2. Name of Operator<br>Kerr-McGee Oil & Gas Onshore, LP  | 12. County or Parish<br>Uintah                                       |
| 3a. Address<br>P.O. Box 173779, Denver, CO 80217-3779  | 13. State<br>UT  |
| 3b. Phone No. (include area code)<br>720.929.6226  |  |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At surface NESW 1899' FSL & 2032' FWL LAT 40.01885 LON -109.61611 (NAD 27)<br>At proposed prod. zone N/A             |  |
| 14. Distance in miles and direction from nearest town or post office*<br>9.1 miles east of Ouray, Utah   |  |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1899'  | 16. No. of acres in lease  |
| 17. Spacing Unit dedicated to this well<br>Not a Unit Well   |  |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1000'   | 19. Proposed Depth<br>10,400'  |
| 20. BLM/BIA Bond No. on file<br>WYB000291  |  |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br>4836' GL  | 22. Approximate date work will start*                                |
| 23. Estimated duration<br>10 days  |  |

24. Attachments

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

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

|                   |  |                    |
|-------------------|--|--------------------|
| 25. Signature<br> | Name (Printed/Typed)<br>Kevin McIntyre | Date<br>11/23/2008 |
|-------------------|--|--------------------|

Title  
Regulatory Analyst

|                             |   |                  |
|-----------------------------|---|------------------|
| Approved by (Signature)<br> | Name (Printed/Typed)<br>BRADLEY G. HILL | Date<br>12-02-08 |
|-----------------------------|---|------------------|

Title  
Office ENVIRONMENTAL MANAGER

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

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

(Continued on page 2)

\*(Instructions on page 2)

618091X  
44305434  
40.018727  
-109.616234

**Federal Approval of this  
Action is Necessary**

**RECEIVED**

DEC 01 2008

DIV. OF OIL, GAS & MINING

# T9S, R20E, S.L.B.&M.

S88°26'W 81.58 (G.L.O.)  
S88°26'58"W - 2692.14' (Meas.)

Found 1968  
Brass Cap.  
Pile of Stones.

## WELL LOCATION: NBU 920-24K

ELEV. UNGRADED GROUND = 4835.6'

|                                  |                                |
|----------------------------------|--------------------------------|
| NBU 920-24K (Proposed Well Head) |                                |
| NAD 83 LATITUDE                  | = 40.01882° (40° 01' 07.74")   |
| LONGITUDE                        | = 109.61680° (109° 37' 00.47") |
| NAD 27 LATITUDE                  | = 40.01885° (40° 01' 07.87")   |
| LONGITUDE                        | = 109.61611° (109° 36' 57.99") |

N2°48'W 81.08 (G.L.O.)  
N01°51'20"W - 2674.48' (Meas.)

Found 1968  
Brass Cap.  
Pile of Stones.

24

Found 1968  
Brass Cap.  
Pile of Stones.

N01°01'10"W - 2626.33' (Meas.)  
N1°02'W 39.79 (G.L.O.)

Proposed Well

2032'

1899'

N00°54'16"W (Basis of Bearings)  
2736.99' (Measured)  
N0°54'W 41.47 (G.L.O.)

Found 1968  
Brass Cap.  
Pile of Stones.  
Cap is on a  
Fence Line.

Found 1968  
Brass Cap.  
Galvanised Pipe  
& Cap.  
Pile of Stones.  
Cap is on a  
Fence Line.

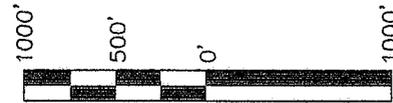
Found 1968  
Brass Cap.  
Pile of Stones.  
Cap is on a  
Fence Line.

S88°08'02"W - 2662.15' (Meas.)  
S88°07'W 40.35 (G.L.O.)

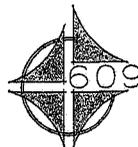
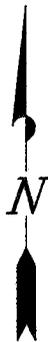
S89°04'00"W - 2551.20' (Meas.)  
S89°04'W 38.60 (G.L.O.)

### NOTES:

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
- 3. Bearings are based on Global Positioning Satellite observations.
- 4. Basis of elevation is the Northwest Corner of Section 12, T9S, R20E, S.L.B.&M. The elevation of this Section Corner is shown on the Ouray SE 7.5 Min. Quadrangle as being 4676'.



SCALE



### SURVEYOR'S CERTIFICATE

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

No. 6028691  
JOHN R. STAUGH  
REGISTERED LAND SURVEYOR  
REGISTRATION STATE OF UTAH

**Kerr-McGee**  
**Oil & Gas Onshore, LP**  
1099 18th Street, Suite 1200 - Denver, Colorado 80202

NBU 920-24K  
WELL PLAT  
1899' FSL, 2032' FWL  
NE 1/4 SW 1/4 OF SECTION 24, T9S, R20E,  
S.L.B.&M. UINTAH COUNTY, UTAH.

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

**TIMBERLINE** (435) 789-1365  
ENGINEERING & LAND SURVEYING, INC.  
38 WEST 100 NORTH - VERNAL, UTAH 84078

|                            |                     |                           |
|----------------------------|---------------------|---------------------------|
| DATE SURVEYED:<br>07-07-08 | SURVEYED BY: B.J.S. | SHEET<br><b>1</b><br>OF 9 |
| DATE DRAWN:<br>07-08-08    | DRAWN BY: B.R.B.    |                           |
| SCALE: 1" = 1000'          |                     | Date Last Revised:        |

**Federal 920-24K  
NESW Sec. 24, T9S,R20E  
UINTAH COUNTY, UTAH  
UTU-0579**

**ONSHORE ORDER NO. 1**

***DRILLING PROGRAM***

**1. Estimated Tops of Important Geologic Markers:**

| <u>Formation</u> | <u>Depth</u> |
|------------------|--------------|
| Uinta            | 0- Surface   |
| Green River      | 1671'        |
| Bird's Nest      | 1913'        |
| Mahogany         | 2425'        |
| Wasatch          | 5029'        |
| Mesaverde        | 8195'        |
| MVU2             | 9112'        |
| MVL1             | 9545'        |
| TD               | 10,400'      |

**2. Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

| <u>Substance</u> | <u>Formation</u> | <u>Depth</u> |
|------------------|------------------|--------------|
|                  | Green River      | 1671'        |
|                  | Bird's Nest      | 1913'        |
|                  | Mahogany         | 2425'        |
| Gas              | Wasatch          | 5029'        |
| Gas              | Mesaverde        | 8195'        |
| Gas              | MVU2             | 9112'        |
| Gas              | MVL1             | 9545'        |
| Water            | N/A              |              |
| Other Minerals   | N/A              |              |

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

*Please see the Natural Buttes Unit Standard Operating Procedure (SOP).*

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

*Please see the Natural Buttes Unit SOP. See attached drilling diagram.*

**5. Drilling Fluids Program:**

*Please see the Natural Buttes Unit SOP.*

6. **Evaluation Program:**

*Please see the Natural Buttes Unit SOP.*

7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 10,400' TD, approximately equals 6448 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 4160 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

8. **Anticipated Starting Dates:**

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

9. **Variances:**

*Please see Natural Buttes Unit SOP Onshore Order #2 – Air Drilling Variance  
Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2*

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

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

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

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

*Background*

*In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet.*

*The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.*

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

*surface casing and production string drilling operations.*

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

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

#### *Variance for BOPE Requirements*

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

#### *Variance for Mud Material Requirements*

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

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

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

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

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

*The design does put the booster and standby compressor opposite from the blooie line.*

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

*Conclusion*

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

**10. Other Information:**

*Please see Natural Buttes Unit SOP.*

NBU 920-24K  
NESW Sec. 24 ,T9S,R20E  
UINTAH COUNTY, UTAH  
UTU-0579

ONSHORE ORDER NO. 1

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

1. **Existing Roads:**

Refer to the attached location directions.

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

2. **Planned Access Roads:**

Approximately 500' +/- of new access road is proposed. Refer to Topo Map B.

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

*Please see the Natural Buttes Unit Standard Operating Procedure (SOP).*

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

Please refer to Topo Map C.

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

*Please see the Natural Buttes Unit SOP.*

Refer to Topo Map D for the location of the proposed pipelines.

**A right-of-way is required for the pipeline. The pipeline is approximately 448' in length and 30' in width. A 4" surface steel pipeline will be constructed utilizing existing disturbance where possible. The pipeline will be butt-welded together and pulled into place with a rubber tired tractor.**

**Variations to Best Management Practices (BMPs) Requested:**

Approximately 448' of 4" steel pipeline will be installed on surface within the access corridor for the well location. As a Best Management Practice (BMP), the pipeline would be buried within the access road corridor if possible. The construction of pipelines requires the corridor of 30 feet.

This exception to the BMP should be granted by the BLM Authorized Officer because indurated bedrock, such as sandstone, is at or within 2 feet of the surface and the soil has a poor history for successful rehabilitation.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Shadow gray (2.5Y 6/2), a non-reflective earthtone.

**Interim Surface Reclamation Plan:**

This exception is requested due to the current twin and multi-well program. If determined that this well will not be a candidate for either twinning &/or multi-well the operator shall spread the topsoil pile on the location up to the rig anchor points. The location will be reshaped to the original contour to the extent possible. The operator will reseed the area using the BLM recommended seed mixture and reclamation methods.

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

*Please see the Natural Buttes SOP.*

**6. Source of Construction Materials:**

*Please see the Natural Buttes SOP.*

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

*Please see the Natural Buttes SOP.*

A plastic reinforced liner is to be used as discussed during on-site inspection. It will be a minimum of 20 mil thick and felt, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites: RNI, Sec. 5, T9S, R22E, NBU #159, Sec. 35, T9S R21E, Ace Oilfield, Sec. 2, T6S, R20E, MC&MC, Sec. 12, T6S, R19E, Pipeline Facility Sec. 36, T9S, R20E, Goat Pasture Evaporation Pond SW/4 Sec. 16, T10S, R22E, Bonanza Evaporation Pond Sec. 2, T10S, R23E (*Request is in lieu of filing Form 3160-5, after initial production*).

**8. Ancillary Facilities:**

*Please see the Natural Buttes SOP.*

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

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

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

Location size may change prior to the drilling of the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig. The location will be re-surveyed and a form 3160-5 will be submitted.

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

*Please see the Natural Buttes SOP.*

Operator shall call the BIA for the seed mixture when the final reclamation occurs.

**11. Surface/Mineral Ownership:**

The well pad and access road are located on lands owned by:

Ute Indian Tribe  
P.O. Box 70  
Fort Duchesne, Utah 84026  
(435) 722-5141

The mineral ownership is listed below:

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

**12. Stipulations/Notices/Mitigation:**

There are no stipulations or notices for this location.

**13. Other Information:**

A Class III archaeological survey and a paleontological survey have been performed and will be submitted.

This location is not within 460' from the boundary of the Natural Buttes Unit, nor is it within 460' of any non-committed tract lying within the boundaries of the Unit.

**14. Lessee's or Operator's Representative & Certification:**

Kevin McIntyre  
Regulatory Analyst  
Kerr-McGee Oil & Gas Onshore LP  
P.O. Box 173779  
Denver, CO 80217-3779  
(720) 929-6226

Randy Bayne  
Drilling Manager  
Kerr-McGee Oil & Gas Onshore LP  
1368 South 1200 East  
Vernal, UT 84078  
(435) 781-7018

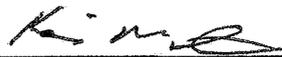
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

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 the terms and conditions of the lease for the operations conducted upon leased lands.

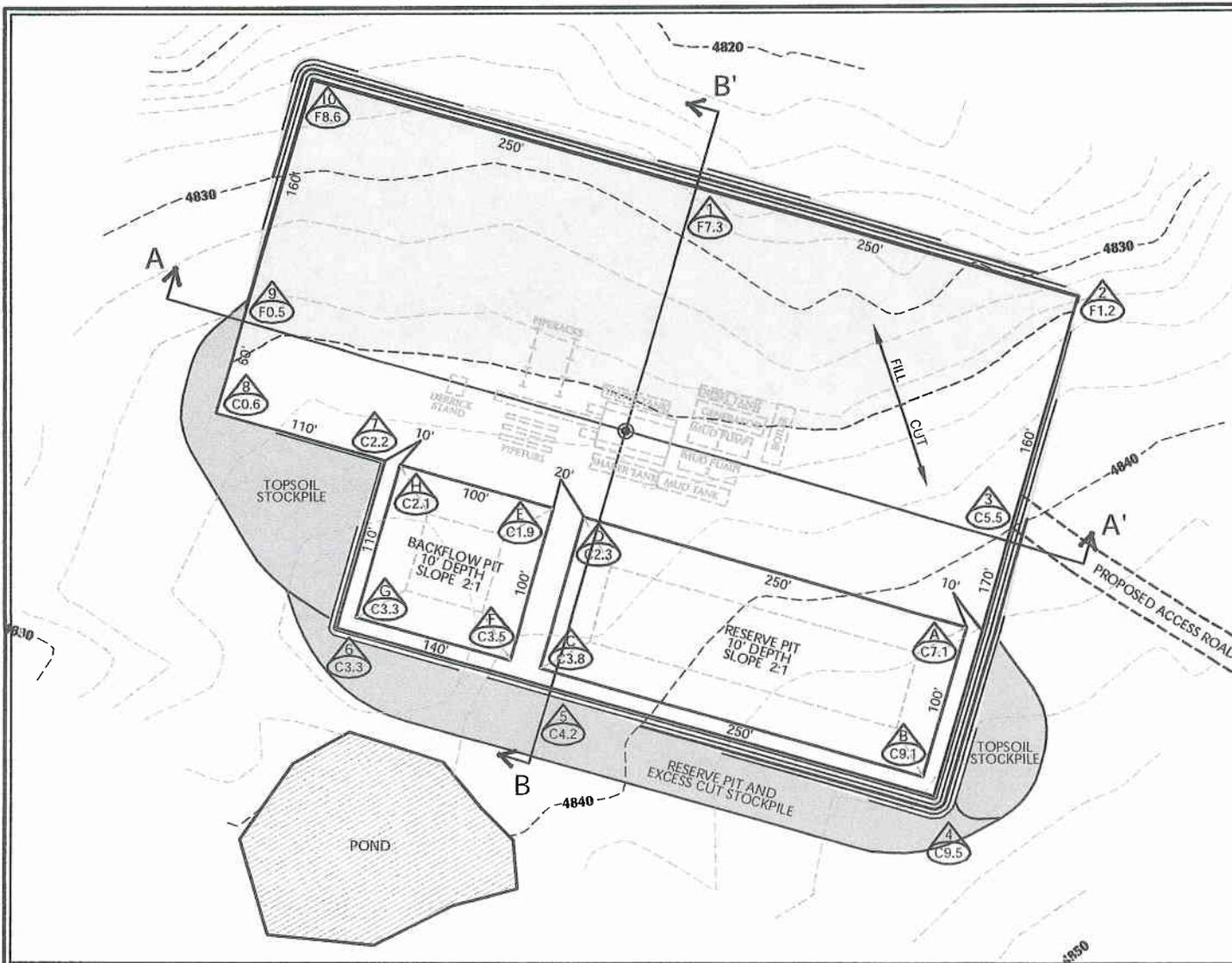
The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond #WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that 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 by the Operator, its contractors, and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

  
Kevin McIntyre

11/23/2008  
Date



**WELL PAD LEGEND**

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

**WELL PAD NBU 920-24K QUANTITIES**

EXISTING GRADE @ LOC. STAKE = 4,835.6'  
 FINISHED GRADE ELEVATION = 4,834.7'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 10,717 C.Y.  
 TOTAL FILL FOR WELL PAD = 10,212 C.Y.  
 TOPSOIL @ 6" DEPTH = 3,089 C.Y.  
 TOTAL DISTURBANCE = 3.83 ACRES  
 SHRINKAGE FACTOR = 1.15  
 SWELL FACTOR = 1.00  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 25,880 BARRELS  
 RESERVE PIT VOLUME  
 +/- 7,185 CY  
 BACKFLOW PIT CAPACITY (2' OF FREEBOARD)  
 +/- 8,780 BARRELS  
 BACKFLOW PIT VOLUME  
 +/- 2,520 CY

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

1099 18th Street - Denver, Colorado 80202



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

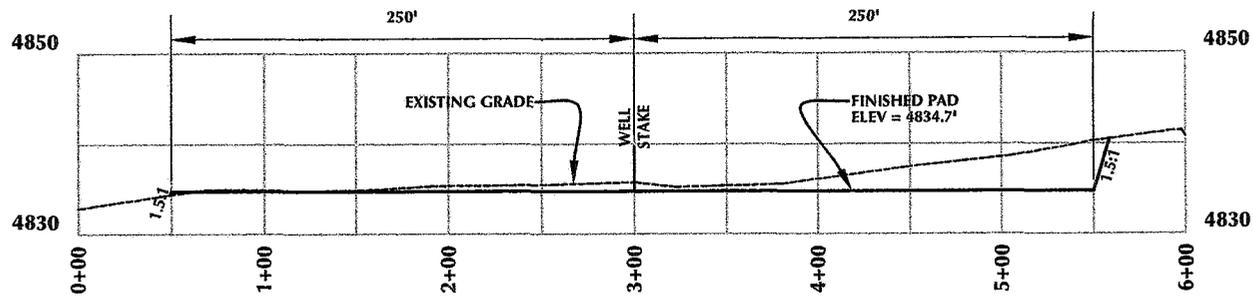
**NBU 920-24K  
 WELL PAD - LOCATION LAYOUT**  
 1899' FSL, 2032' FWL  
 NE1/4SW1/4, SECTION 24, T.9S., R.20E.  
 S.L.B.&M., UINTAH COUNTY, UTAH

|                |               |           |
|----------------|---------------|-----------|
| Scale: 1"=100' | Date: 8/18/08 | SHEET NO: |
| REVISED:       | BY DATE       | 2 2 OF 9  |

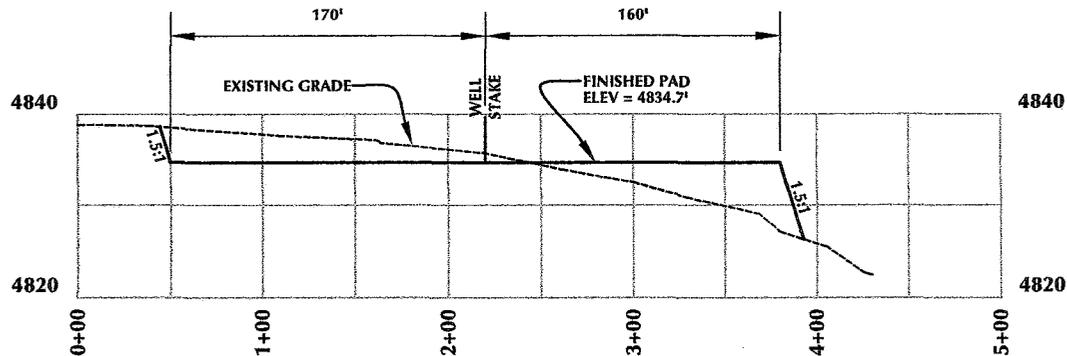


HORIZONTAL 0 50 100 1" = 100'  
 2' CONTOURS

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



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

1099 18th Street - Denver, Colorado 80202



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

**NBU 920-24K  
WELL PAD - CROSS SECTIONS  
1899' FSL, 2032' FWL  
NE1/4SW1/4, SECTION 24, T.9S., R.20E.  
S.L.B.&M., Uintah County, Utah**

Scale: 1"=100'

Date: 8/18/08

SHEET NO:

REVISED:

BY  
DATE

**3**

3 OF 9



HORIZONTAL 0 50 100 1" = 100'  
VERTICAL 0 10 20 1" = 20'

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

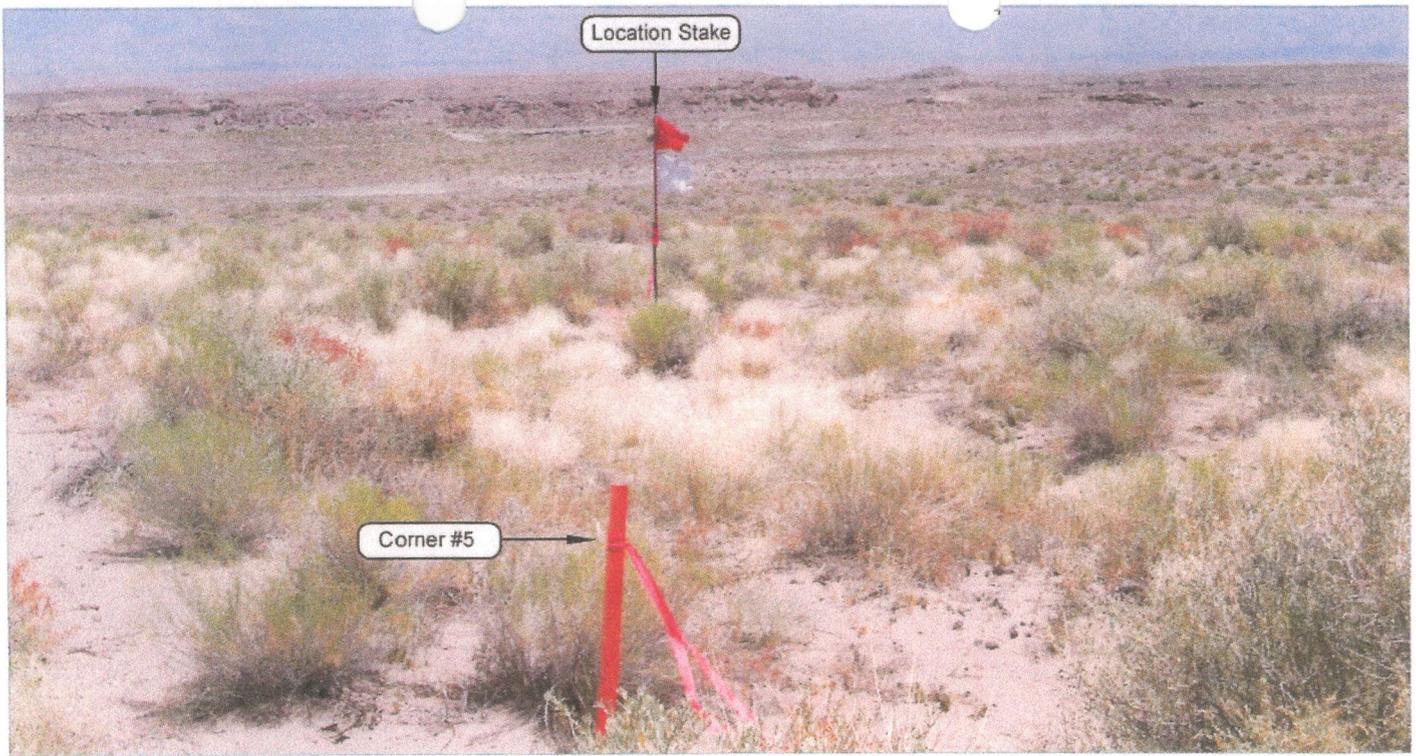


PHOTO VIEW: FROM CORNER #5 TO LOCATION STAKE

CAMERA ANGLE: NORTHEASTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: NORTHWESTERLY

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

1099 18th Street, Suite 1200 - Denver, Colorado 80202

NBU 920-24K  
1899' FSL, 2032' FWL  
NE 1/4 SW 1/4 OF SECTION 24, T9S, R20E,  
S.L.B.&M. UINTAH COUNTY, UTAH.

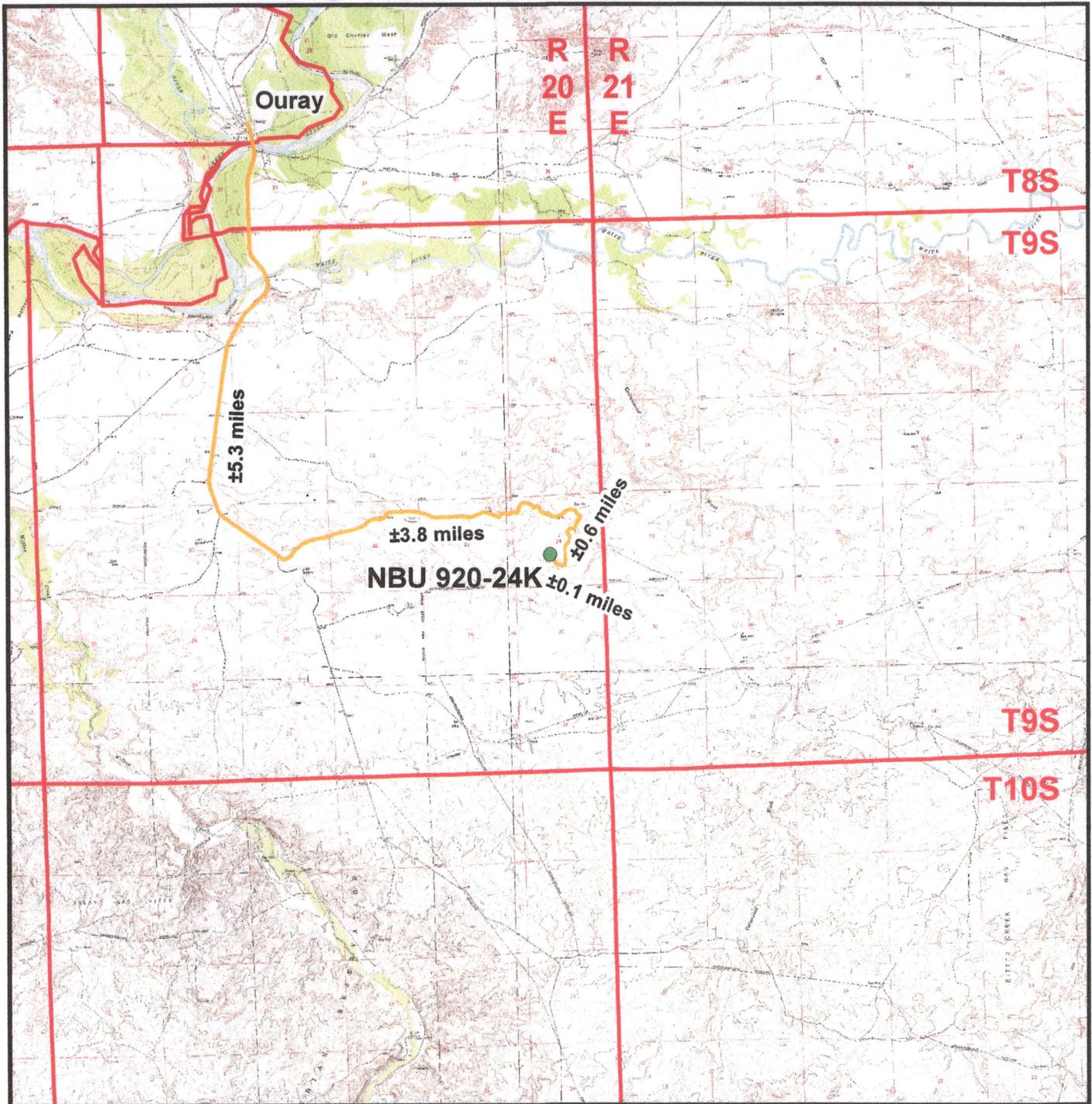


CONSULTING, LLC  
371 Coffeen Avenue  
Sheridan WY 82901  
Phone 307-674-0609  
Fax 307-674-0182

| LOCATION PHOTOS  |                  | DATE TAKEN: 07-31-08 |
|------------------|------------------|----------------------|
|                  |                  | DATE DRAWN: 08-01-08 |
| TAKEN BY: B.J.S. | DRAWN BY: B.R.B. | REVISED:             |

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

SHEET  
**4**  
OF 9



**Legend**

- Proposed NBU 920-24K Well Location
- Access Route - Proposed

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

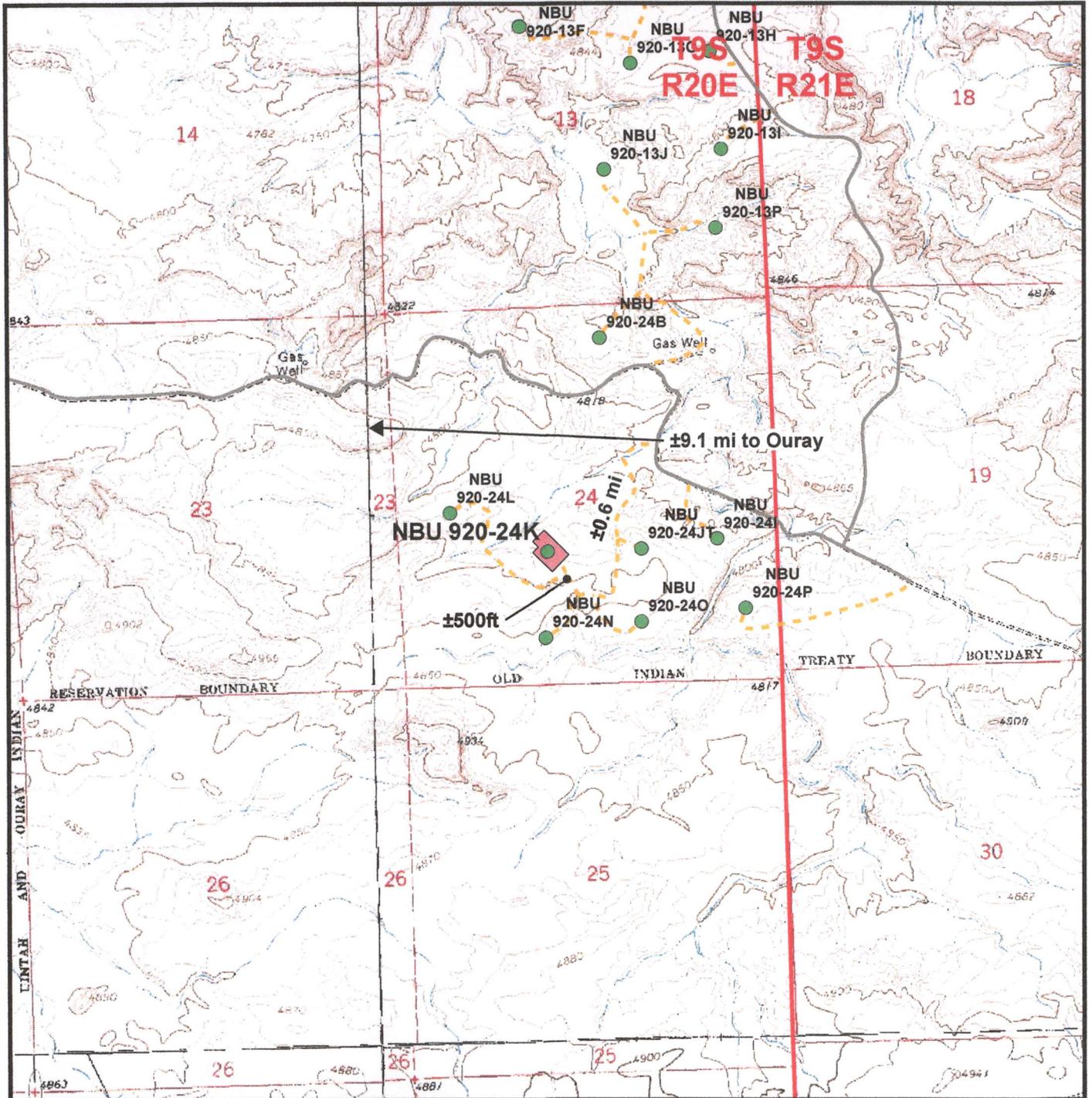
**NBU 920-24K**  
**Topo A**  
 1899' FSL, 2032' FWL  
 NE¼ SW¼, Section 24, T9S, R20E  
 S.L.B.&M., Uintah County, Utah



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



|                  |                   |           |
|------------------|-------------------|-----------|
| Scale: 1:100,000 | NAD83 USP Central | Sheet No: |
| Drawn: JELO      | Date: 18 Aug 2008 | 5         |
| Revised:         | Date:             |           |



**Legend**

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

Total Proposed Road Length = ±500 ft

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

**NBU 920-24K**  
Topo B  
1899' FSL, 2032' FWL  
NE¼ SW¼, Section 24, T9S, R20E  
S.L.B.&M., Uintah County, Utah

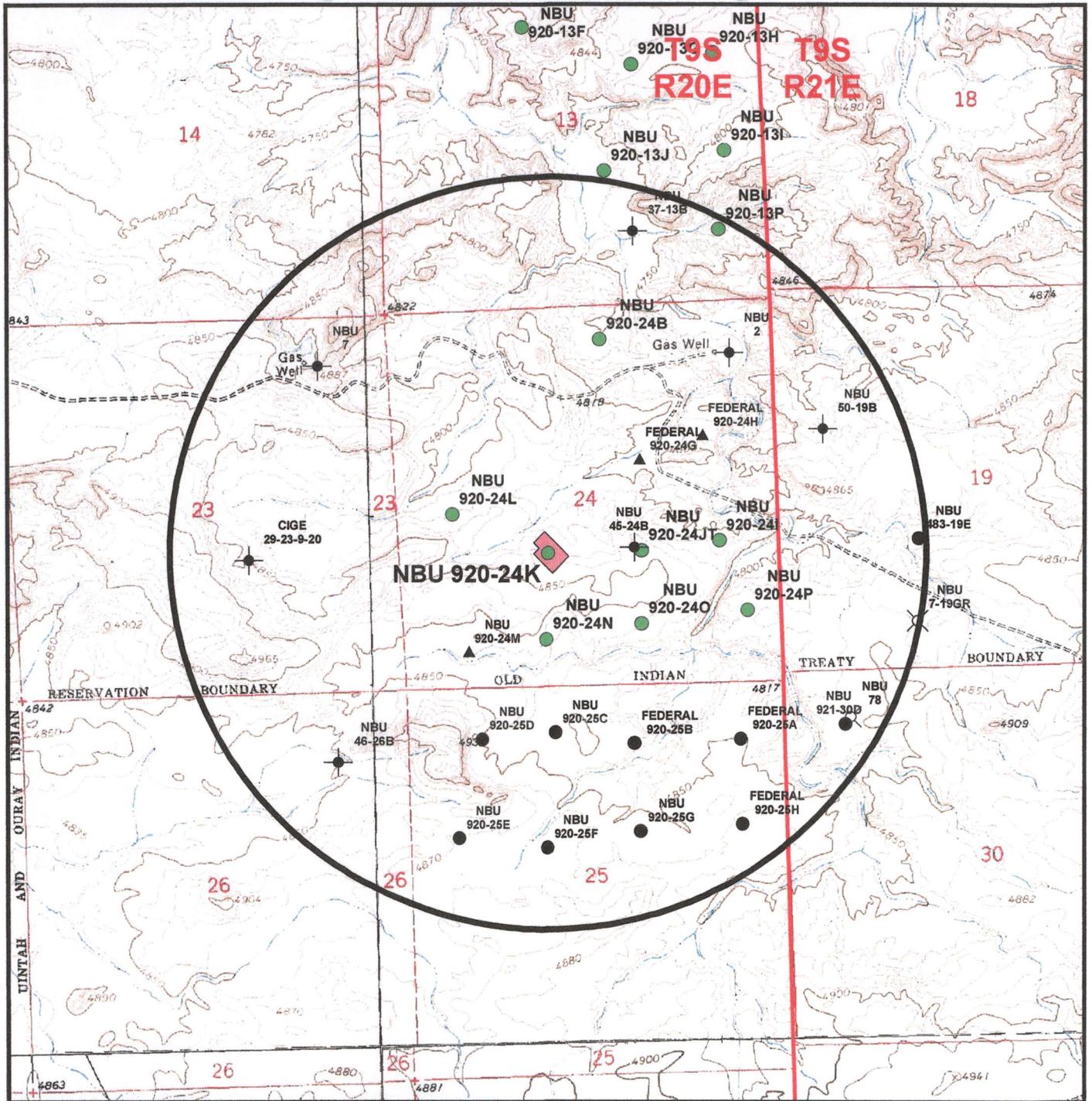


CONSULTING, LLC  
371 Coffeen Avenue  
Sheridan, WY 82801  
Phone (307) 674-0609  
Fax (307) 674-0182



Scale: 1" = 2000ft NAD83 USP Central  
Drawn: JELO Date: 18 Aug 2008  
Revised: Date:

Sheet No:  
**6**  
6 of 9



**Legend**

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

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

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

**NBU 920-24K**  
 Topo C  
 1899' FSL, 2032' FWL  
 NE¼ SW¼, Section 24, T9S, R20E  
 S.L.B.&M., Uintah County, Utah

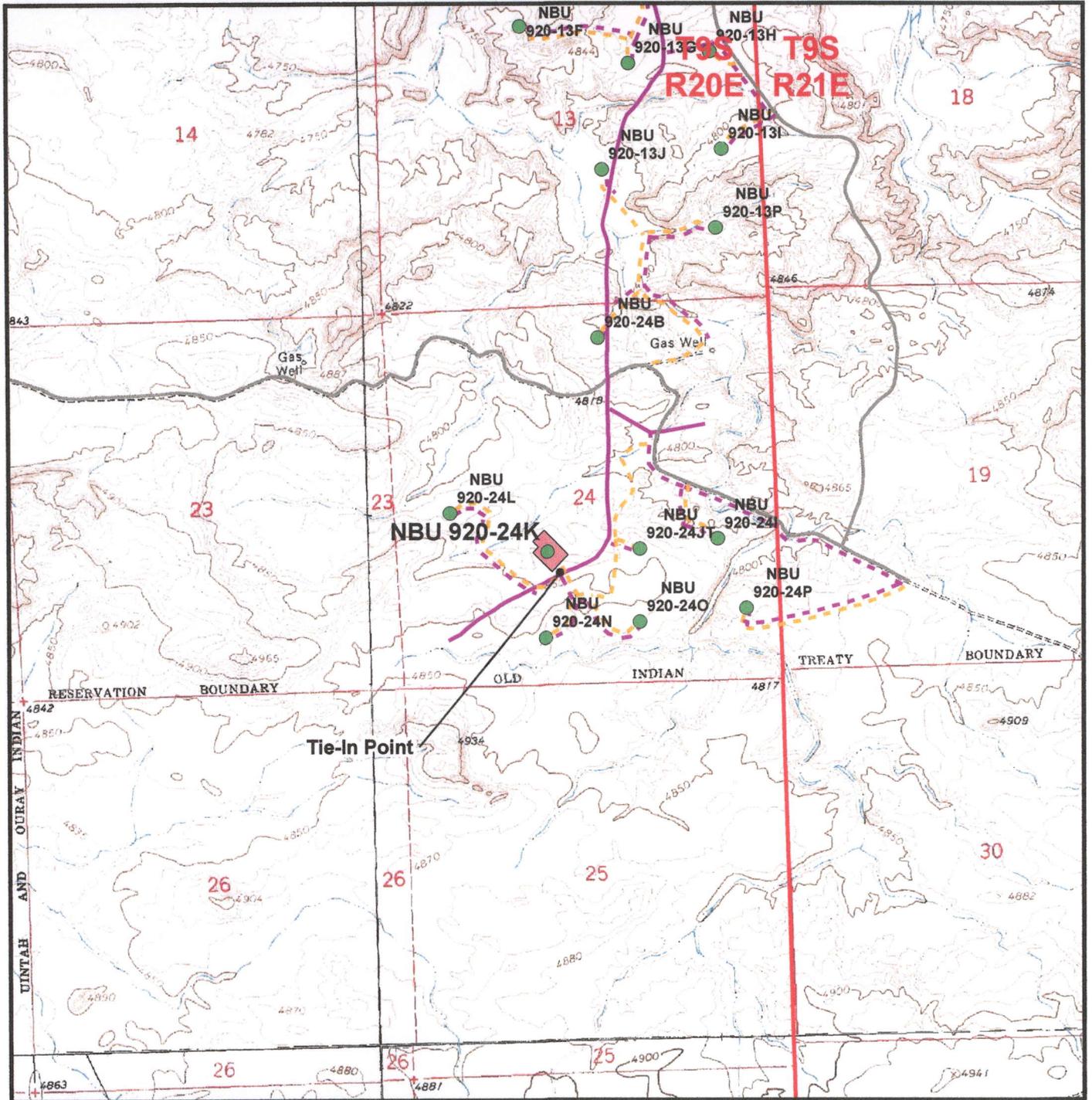
**CONSULTING, LLC**  
 371 Coffeen Avenue  
 Sheridan, WY 82801  
 Phone (307) 674-0609  
 Fax (307) 674-0182



Scale: 1" = 2000ft  
 Drawn: JELo  
 Revised:

NAD83 USP Central  
 Date: 18 Aug 2008  
 Date:

Sheet No:  
**7**  
 7 of 9



**Legend**

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

Total Proposed Pipeline Length: ±448ft

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

**NBU 920-24K**  
**Topo D**  
**1899' FSL, 2032' FWL**  
**NE¼ SW¼, Section 24, T9S, R20E**  
**S.L.B.&M., Uintah County, Utah**



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



|                    |                   |
|--------------------|-------------------|
| Scale: 1" = 2000ft | NAD83 USP Central |
| Drawn: JELo        | Date: 18 Aug 2008 |
| Revised:           | Date:             |

Sheet No:  
**8**  
 8 of 9

**Kerr-McGee Oil & Gas Onshore, LP**  
**NBU 920-24K**  
**Section 24, T9S, R20E, S.L.B.&M.**

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 13.9 MILES TO THE JUNCTION OF STATE HIGHWAY 88. EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG STATE HIGHWAY 88 APPROXIMATELY 16.8 MILES TO OURAY, UTAH. FROM OURAY, PROCEED IN A SOUTHERLY DIRECTION ALONG THE SEEP RIDGE ROAD (COUNTY B ROAD 2810) APPROXIMATELY 5.3 MILES TO THE INTERSECTION OF AN EXISTING ROAD TO THE EAST. EXIT LEFT AND PROCEED IN A NORTHEASTERLY DIRECTION ALONG EXISTING ROAD APPROXIMATELY 3.8 MILES TO THE PROPOSED ACCESS ROAD FOR NBU 920-24N. FOLLOW 920-24N ROAD FLAGS IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 3,040 FEET TO THE PROPOSED ACCESS ROAD. FOLLOW ROAD FLAGS IN A NORTHWESTERLY DIRECTION APPROXIMATELY 500 FEET TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 40.5 MILES IN A SOUTHERLY DIRECTION.



**CASING PROGRAM**

|            | SIZE   | INTERVAL   | WT.   | GR.  | CPLG. | DESIGN FACTORS |          |         |
|------------|--------|------------|-------|------|-------|----------------|----------|---------|
|            |        |            |       |      |       | BURST          | COLLAPSE | TENSION |
| CONDUCTOR  | 14"    | 0-40'      |       |      |       | 3520           | 2020     | 453000  |
| SURFACE    | 9-5/8" | 0 to 2800  | 36.00 | J-55 | LTC   | 0.79           | 1.54     | 5.72    |
| PRODUCTION | 4-1/2" | 0 to 10400 | 11.60 | I-80 | LTC   | 1.74           | 0.94     | 1.91    |

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point)
- 2) MASP (Prod Casing) = Pore Pressure at TD - (.22 psi/ft-partial evac gradient x TD)
- (Burst Assumptions: TD = 12.5 ppg) .22 psi/ft = gradient for partially evac wellbore
- (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)
- MASP 4160 psi

**CEMENT PROGRAM**

|            |                 | FT. OF FILL  | DESCRIPTION   | SACKS   | EXCESS | WEIGHT | YIELD |
|------------|-----------------|--|---|---------|--------|--------|-------|
| SURFACE    | LEAD            | 500  | Premium cmt + 2% CaCl<br>+ .25 pps flocele  | 215     | 60%    | 15.60  | 1.18  |
| Option 1   | TOP OUT CMT (1) | 200  | 20 gals sodium silicate + Premium cmt<br>+ 2% CaCl + .25 pps flocele                              | 50      |        | 15.60  | 1.18  |
|            | TOP OUT CMT (2) | as required  | Premium cmt + 2% CaCl   | as req. |        | 15.60  | 1.18  |
| SURFACE    |                 | NOTE: If well will circulate water to surface, option 2 will be utilized |   |         |        |        |       |
| Option 2   | LEAD            | 1500   | Prem cmt + 16% Gel + 10 pps gilsonite<br>+ 25 pps Flocele + 3% salt BWOC                          | 170     | 35%    | 11.00  | 3.82  |
|            | TAIL            | 500  | Premium cmt + 2% CaCl<br>+ .25 pps flocele  | 160     | 35%    | 15.60  | 1.18  |
|            | TOP OUT CMT     | as required  | Premium cmt + 2% CaCl   | as req. |        | 15.60  | 1.18  |
| PRODUCTION | LEAD            | 4,520'   | Premium Lite II + 3% KCl + 0.25 pps<br>cellulofake + 5 pps gilsonite + 10% gel<br>+ 0.5% extender | 490     | 60%    | 11.00  | 3.38  |
|            | TAIL            | 5,630'   | 50/50 Poz/G + 10% salt + 2% gel<br>+ 1% R-3   | 1340    | 80%    | 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. Centralize first 3 joints & every third joint to top of tail cement with bow spring centralizers. |

**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. Test to 5,000 psi (annular to 2,500 psi) prior to drilling out. Record on chart recorder & tour sheet. Function test rams on each trip. Maintain safety valve & inside BOP on rig floor at all times. Kelly to be equipped with upper & lower kelly valves.

Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.

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

DRILLING ENGINEER: Brad Laney

DRILLING SUPERINTENDENT: Randy Bayne Federal 920-24K.xls

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

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

## **Paleontological Reconnaissance Survey Report**

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**Survey of Kerr McGee's Proposed Pad Expansion, Road  
and Pipeline Re-Route, Well Pads, Access Roads, and  
Pipelines for "NBU #920-14D & #920-24 I, JT, K, L,  
N, O, P" (Sec. 14, 15 & 24, T 9 S, R 20 E) &  
(Sec. 19, T 9 S, R 21 E)**

Ouray & Ouray, SE  
Topographic Quadrangle  
Uintah County, Utah

September 3, 2008

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

## INTRODUCTION

At the request of Raleen White of Kerr McGee Onshore LP and authorized by Bruce Pargeets of the Ute Indian Tribe and by Lynn Becker, EMD Land Division Manager of the Ute Indian Tribe's Energy and Minerals Department, a paleontological reconnaissance survey of Kerr McGee's proposed well pads, access roads, and pipelines for "NBU #920-14D & #920-24I, JT, K, L, N, O, & P" (Sec. 14, 15 & 24, T 9 S, R 20 E) & (Sec. T 9 S, R 21 E) was conducted by Simon Masters and Dan Burk on August 19 & 21, 2008. The survey was conducted under the Ute Indian Tribe Business License FY 2008, #A08-1308 and the accompanying Access Permit (effective 3/26/2008 through 9/30/2008). This survey to locate, identify and evaluate paleontological resources was done to meet requirements of the National Environmental Policy Act of 1969 and other State and Federal laws and regulations that protect paleontological resources.

## FEDERAL AND STATE REQUIREMENTS

As mandated by the Federal and State government, paleontologically sensitive geologic formations on State lands that are considered for exchange or may be impacted due to ground disturbance require paleontological evaluation. This requirement complies with:

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

The new Potential Fossil Yield Classification (PFYC) System (October, 2007) replaces the Condition Classification System from Handbook H-8270-1. Geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential.

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

little information about the paleontological resources of the unit or the area is known.

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

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

## LOCATION

Kerr McGee's proposed well pads, access roads, and pipelines for "NBU #920-14D & #920-24I, JT, K, L, N, O, & P" (Sec. 14, 15 & 24, T 9 S, R 20 E) & (Sec. 19, T 9 S, R 21 E) are located on Ute Indian Reservation land. "NBU #920-14D" is located slightly west of Cottonwood Wash, approximately 6 miles southeast of Ouray, Utah, 2 miles south of the White River on Cottonwood Wash, and some 27 miles west of Bonanza, Utah. The remainder of the NBU wells are located about 3.5 miles southwest of the White River on Cottonwood Wash, some 26 miles west of Bonanza, Utah and approximately 10 miles southeast of Ouray, Utah. The project area can be found on the Ouray and Ouray, SE 7.5 minute U. S. Geological Survey Quadrangle Maps, Uintah County, Utah.

## PREVIOUS WORK

The basins of western North America have long produced some of the richest fossil collections in the world. Early Cenozoic sediments are especially well represented throughout the western interior. Paleontologists started field work in Utah's Uinta Basin as early as 1870

(Betts, 1871; Marsh, 1871, 1875a, 1875b). The Uinta Basin is located in the northeastern corner of Utah and covers approximately 31,000 sq. km (12,000 sq. miles) ranging in elevation from 1,465 to 2,130 m (4,800 to 7,000 ft) (Marsell, 1964; Hamblin et al., 1987). Middle to late Eocene time marked a period of dramatic change in the climate, flora, (Stucky, 1992) and fauna (Black and Dawson, 1966) of North America.

## **GEOLOGICAL AND PALEONTOLOGICAL OVERVIEW**

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

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

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

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

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

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

## **FIELD METHODS**

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

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

## **PROJECT AREA**

The project area is situated in the Wagonhound Member (Uinta A & B) of the Uinta Formation. The following list provides a description of the individual wells and their associated pipelines and access roads. All of these wells were originally reported in the paleontological reconnaissance survey report "IPC #08-160" (Sandau, 2008)

### **NBU #920-14D**

The proposed pipeline begins in the NE/NE quarter-quarter section of Sec. 15, T 9 S, R 20 E and terminates at the well pad located in the NW/NW quarter-quarter section of Sec. 14, T 9 S, R 20 S. The proposed well pad, access road, and pipeline remainder are located in the NW/NW quarter-quarter section of Sec. 14, T 9 S, R 20 E (Figure 1). The proposed well pad, access road, and pipeline are located in a modern low-lying, seasonally-flooded, drainage system. Small knolls, consisting of gray mudstone from which the flats are derived, are present on the southern edge of the access road. There is little to no shrub cover present. An astragalus and partial metapodial elements of a brontothere were discovered along with the other fossils discovered in the original paleontological survey (IPC #08-160).

#### **NBU 920-24I**

The proposed pipeline approaching the well pad extends from the SE/SW quarter-quarter section of Sec. 19, T 9 S, R 21 E. The well pad, access road, and pipeline remainder are located in the NE/SE quarter-quarter section of Sec. 24, T 9 S, R 20 E (Figure 1). The disturbance area is fairly level with little to no colluvium cover. Outcropping sediments include the purple siltstone and more of the white-gray, medium-grained sandstone than on the other pads surveyed. The area contains a tan, medium- to coarse-grained sandstone of the Wagonhound Member (Uinta A and B) of the Uinta Formation. The section's base is white-gray sandstone; the section's top is the tan, medium- to coarse-grained sandstone, which supports the purple siltstone hills. The well pad borders a modern wash. Three additional individual fossilized turtle scatters were discovered along with those reported in (IPC #08-160).

#### **NBU 920-24JT**

The proposed access road, pipeline, and well pad are located in the NW/SE quarter-quarter section of Sec. 24, T 9 S, R 20 E, primarily on outcropping Wagonhound Member (Uinta A and B) of the Uinta Formation (Figure 2). About half of the pad is located on a previously disturbed area (which is a capped well pad of BELCO). The outcrop is typified by gray mudstone comprising the valley floors. Above this mudstone foundation is a purple siltstone layer, followed by gray-tan sandstone. The gray-tan sandstone creating the resistant beds subsequently caps the peaks. The well pad is situated on modern eolian sand deposits derived from the gray sandstone of the Wagonhound Member. No additional fossil resources were recovered than those previously reported in (IPC #08-160).

#### **NBU 920-24K**

The well pad, access road, and pipeline are located in the NE/SW quarter-quarter section of Sec. 24, T 9 S, R 20 E. The proposed disturbance area is located primarily on rolling, colluvium-covered hills cut by modern drainage (Figure 2). This colluvium is derived from the Wagonhound Member (Uinta A and B) of the Uinta Formation. There are existing outcropping areas of the purple siltstone and the white-gray, medium-grained sandstone. No additional fossil resources were recovered than those previously reported in (IPC #08-160).

#### **NBU 920-24L**

The well pad is located in the NW/SW quarter-quarter section of Sec. 24, T 9 S, R 20 E, while the access road and pipeline begin in the NE/SW of Sec. 24, T 9 S, R 20 E (Figure 2). The access road is located on rolling, colluvium-covered hills cut by modern drainages. Moderate to high shrub cover throughout indicates a moderately deep soil horizon. The colluvium is derived from the white-gray, medium-grained sandstone of the Wagonhound Member of the Uinta Formation. Outcrops of the purple and green siltstone are present along the access road. The well pad is located in a low-lying bowl, surrounded by outcrops of purple, green, and gray siltstone which is subsequently capped by white-gray, medium-grained sandstone. The transition between the purple and green to the purple and gray siltstone produced many turtle fragments. No fossil resources were recovered.

**NBU 920-24N**

The well pad, access road, and pipeline are located in the SE/SW quarter-quarter section of Sec. 24, T 9 S, R 20 E (Figure 2). The well pad is primarily situated on rolling, colluvium-covered hills cut by modern drainages. The colluvium is derived from the Wagonhound Member (Uinta A and B) of the Uinta Formation. The majority of the pad is located on purple siltstone, green mudstone, and gray, medium-grained sandstone. No fossil resources were recovered.

**NBU 920-24O**

The well pad and pipeline are located in the SW/SE quarter-quarter section of Sec. 24, T 9 S, R 20 E (Figure 2). The access road begins in the NW/SE quarter-quarter section and terminates at the well pad. The staked well pad, access road and pipeline are located in the Wagonhound Member (Uinta A and B) of the Uinta Formation. Gray-white, medium-grained sandstone dominates the staked area. The remainder of the pad consists of shrub-covered colluvium derived from the Wagonhound Member. No fossil resources were discovered.

**NBU 920-24P**

The access road and pipeline begin in the SE/SW quarter-quarter section of Sec. 19, T 9 S, R 21 E and terminate at the well pad in the SE/SE quarter-quarter section of Sec. 24, T 9 S, R 20 E (Figure 2). The proposed access road, pipeline, and well pad are exclusively located on modern eolian sand derived from the underlying tan, thin, medium- to coarse-grained sandstone of the Wagonhound Member (Uinta A and B) of the Uinta Formation. This thin sandstone, a purple siltstone, a green mudstone, and a massive tan, fluvial, medium- to coarse-grained sandstone outcrop near the western edge of the proposed well. Moderate to intense shrub cover indicates the eolian sand deposits are prominent. Two fossilized turtle scatters were discovered in addition to the other fossils discovered in the original paleontological survey (IPC #08-160) weathering from the thin, tan, medium-grained sandstone from which the colluvium cover is derived.

**SURVEY RESULTS**

| <b>Project</b>                               | <b>Geology</b>  | <b>Paleontology</b>   |
|--|---|---|
| "NBU #920-14D" (Sec. 14 & 15, T 9 S, R 20 E) | The proposed well pad, access road, and pipeline are located in a modern low-lying, seasonally-flooded, drainage system. Small knolls are present on the southern edge of the access road and consist of gray mudstone from which the flats are derived. There is little to no shrub cover present. | An astragalus and partial metapodial elements of a brontothere were discovered along with the other fossils discovered in the original paleontological survey (IPC #08-160).<br><b>Class 5a</b> |

|   |   |  |
|---|---|--|
| <p>“NBU #920-24I” (Sec. 24, T 9 S, R 20 E) &amp; (Sec. 19, T 9 S, R 21 E)</p> | <p>The disturbance area is fairly level with little to no colluvium cover. Outcropping sediments include the purple siltstone and more of the white-gray, medium-grained sandstone than on the other pads surveyed. The area contains a tan, medium- to coarse-grained sandstone of the Wagonhound Member (Uinta A and B) of the Uinta Formation. The section’s base is white-gray sandstone; the section’s top is the tan, medium- to coarse-grained sandstone, which supports the purple siltstone hills. The well pad borders a modern wash.</p>   | <p>Three additional individual fossilized turtle scatters were discovered along with those reported in (IPC #08-160). <b>Class 5a</b></p>  |
| <p>“NBU #920-24JT” (Sec. 24, T 9 S, R 20 E)</p>                               | <p>The proposed access road, pipeline, and well pad are located primarily on outcropping Wagonhound Member (Uinta A and B) of the Uinta Formation. About half of the pad is located on a previously disturbed area (which is a capped well pad of BELCO). The outcrop is typified by gray mudstone comprising the valley floors. Above this mudstone foundation is a purple siltstone layer followed by gray-tan sandstone. The gray-tan sandstone creating the resistant beds subsequently caps the peaks. The well pad is situated on modern eolian sand deposits derived from the gray sandstone of the Wagonhound Member.</p> | <p>No additional fossil resources were recovered than those previously reported in (IPC #08-160). <b>Class 4a</b></p>  |
| <p>“NBU #920-24K” (Sec. 24, T 9 S, R 20 E)</p>                                | <p>The proposed disturbance area is located primarily on rolling, colluvium-covered hills cut by modern drainage. This colluvium is derived from the Wagonhound Member (Uinta A and B) of the Uinta Formation. There are existing outcropping areas of the purple siltstone and the white-gray, medium-grained sandstone.</p>   | <p>No additional fossil resources were recovered than those previously reported in (IPC #08-160). <b>Class 4a</b></p>  |
| <p>“NBU #920-24L” (Sec. 24, T 9 S, R 20 E)</p>                                | <p>The access road is located on rolling, colluvium-covered hills cut by modern drainages. Moderate to high shrub cover throughout indicates a moderately deep soil horizon. The colluvium is derived from the white-gray, medium-grained sandstone of the Wagonhound Member of the Uinta Formation. Outcrops of the purple and green siltstone are present along the access road. The well pad is located in a low-lying bowl, surrounded by outcrops of purple, green, and gray siltstone which is subsequently capped by white-gray, medium-grained sandstone.</p>   | <p>The transition between the purple and green to the purple and gray siltstone produced many turtle fragments. No additional fossil resources were recovered than those previously reported in (IPC #08-160). <b>Class 5a</b></p> |

|  |  |   |
|--|--|---|
| <p><b>“NBU #920-24N”</b> (Sec. 24, T 9 S, R 20 E)</p>                                | <p>The well pad is primarily situated on rolling, colluvium-covered hills cut by modern drainages. The colluvium is derived from the Wagonhound Member (Uinta A and B) of the Uinta Formation. The majority of the pad is located on purple siltstone, green mudstone, and gray, medium-grained sandstone.</p>   | <p>No additional fossil resources were recovered than those previously reported in (IPC #08-160).<br/><b>Class 5a</b></p>   |
| <p><b>“NBU #920-24O”</b> (Sec. 24, T 9 S, R 20 E)</p>                                | <p>The staked well pad, access road and pipeline are located in the Wagonhound Member (Uinta A and B) of the Uinta Formation. Gray-white, medium-grained sandstone dominates the staked area. The remainder of the pad consists of shrub-covered colluvium derived from the Wagonhound Member.</p>   | <p>No fossil resources were discovered.<br/><b>Class 3a</b></p>   |
| <p><b>“NBU #920-24P”</b> (Sec. 24, T 9 S, R 20 E) &amp; (Sec. 19, T 9 S, R 21 E)</p> | <p>The proposed access road, pipeline, and well pad are exclusively located on modern eolian sand derived from the underlying tan, thin, medium- to coarse-grained sandstone of the Wagonhound Member (Uinta A and B) of the Uinta Formation. This thin sandstone, a purple siltstone, a green mudstone, and a massive tan, fluvial, medium- to coarse-grained sandstone outcrop near the western edge of the proposed well. Moderate to intense shrub cover indicates the eolian sand deposits are prominent.</p> | <p>Two fossilized turtle scatters were discovered in addition to the other fossils discovered in the original paleontological survey (IPC #08-160) weathering from the thin, tan, medium-grained sandstone from which the colluvium cover is derived.<br/><b>Class 4a</b></p> |

## RECOMMENDATIONS

A reconnaissance survey was conducted for Kerr McGee's proposed well pads, access roads, and pipelines for "NBU #920-14D & #920-24I, JT, K, L, N, O, & P" (Sec. 14, 15 & 24, T 9 S, R 20 E) & (Sec. 19, T 9 S, R 21 E). The well pads and the associated access roads and pipelines covered in this report showed some signs of vertebrate fossils therefore we advise the following recommendations.

**Due to the abundance of vertebrate fossil found in the proposed construction area we recommend that a permitted paleontologist be present to monitor the construction of the proposed access road, pipeline and well pads for "NBU #920-14D & #920-24I, L, & N."**

**We also recommend that a permitted paleontologist be present to monitor the start of the construction process of the proposed access road, pipeline and well pads for "NBU#920-24JT, K, & P" and thereafter spot-check the development of construction area.**

Finally, we recommend that no paleontological restrictions should be placed on the development of the proposed access road, pipeline and well pads for "NBU#920-24O"

Nevertheless, if any vertebrate fossil(s) are found during construction within the project area, recommendations are that a paleontologist is immediately notified in order to collect fossil materials in danger of being destroyed. Any vertebrate fossils found should be carefully moved outside of the construction areas to be checked by a permitted paleontologist.

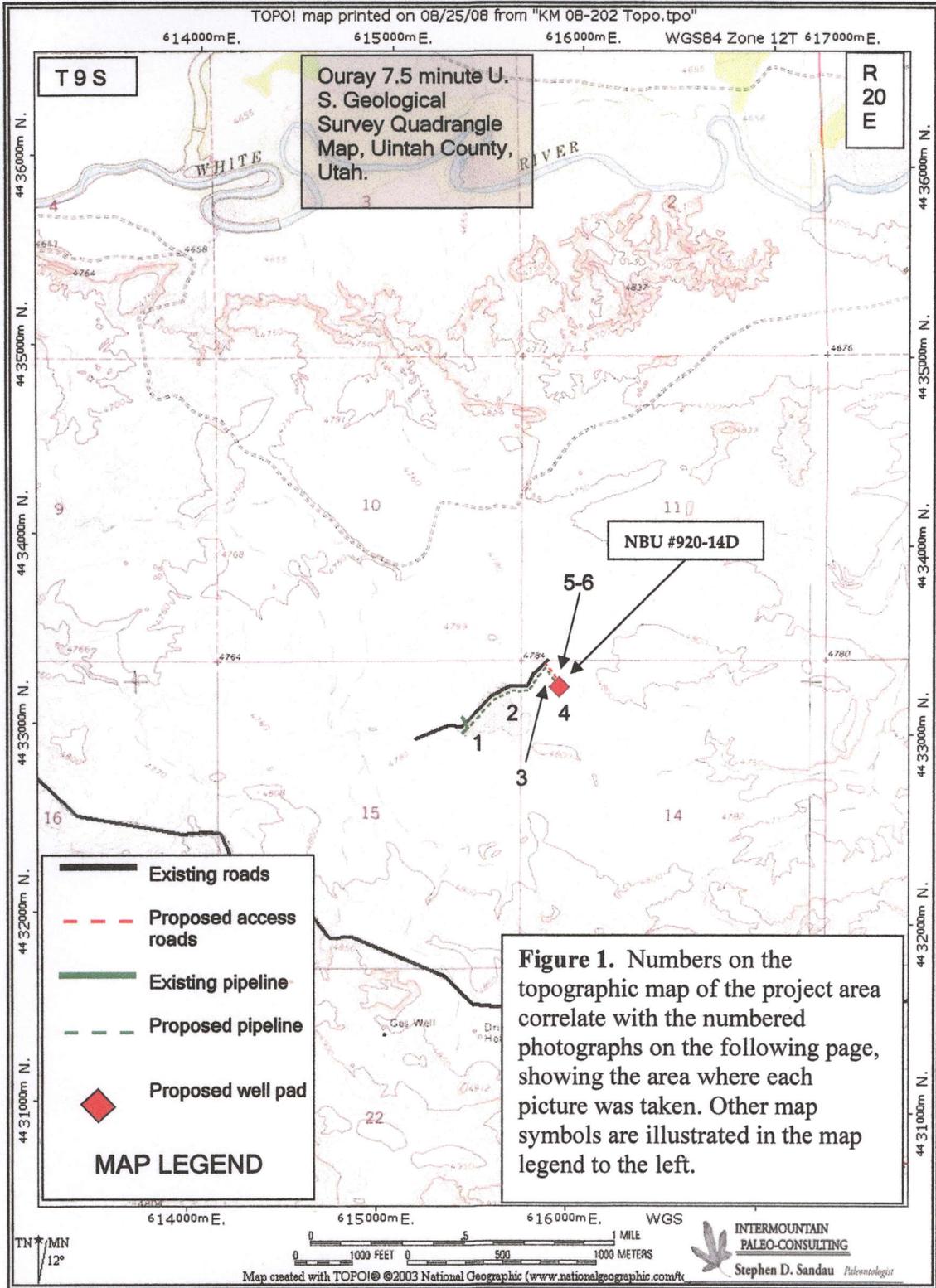
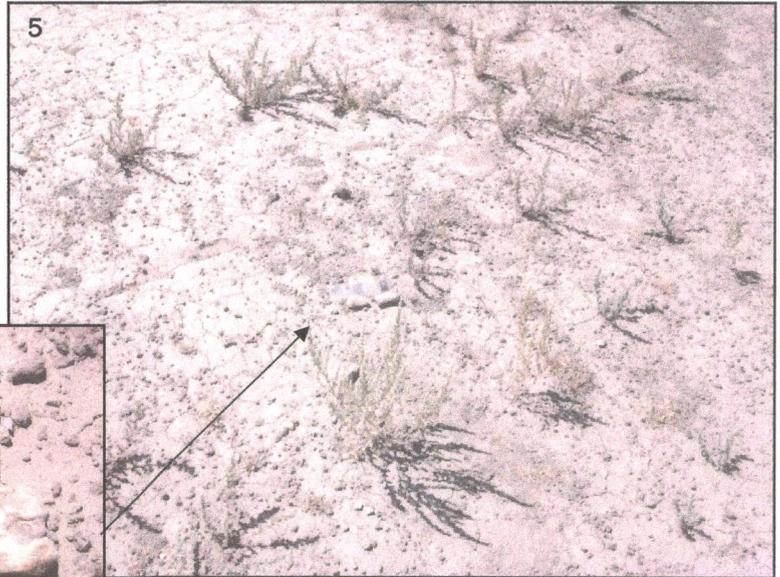


Figure 1. *continued...*



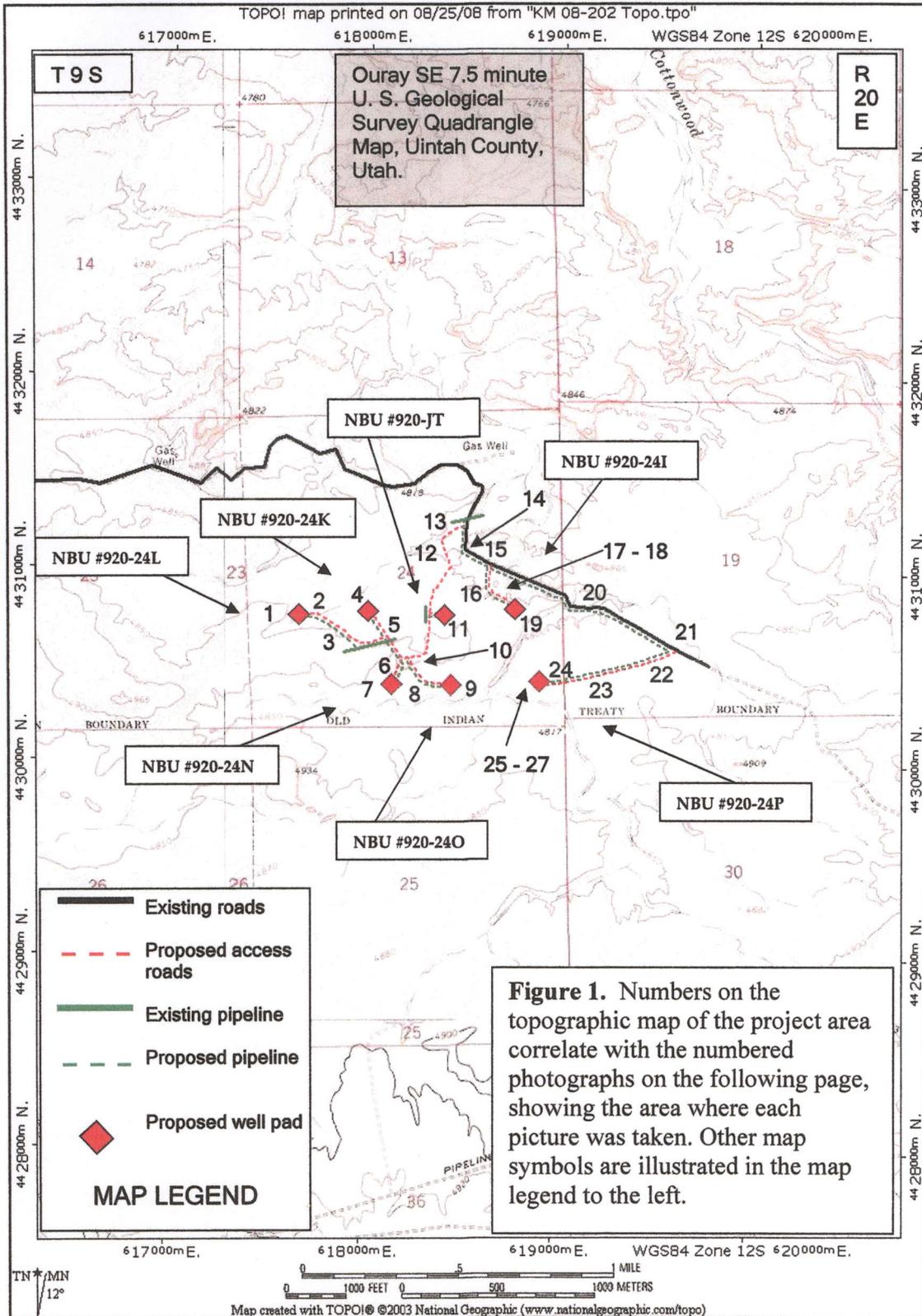


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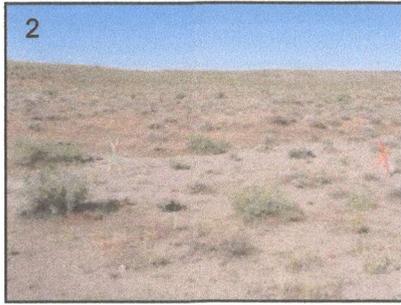


Figure 2. *continued...*

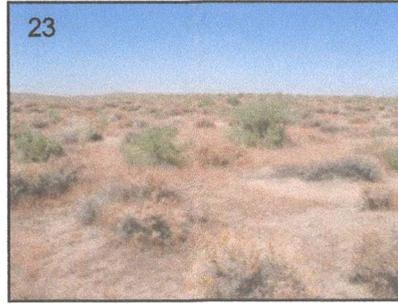
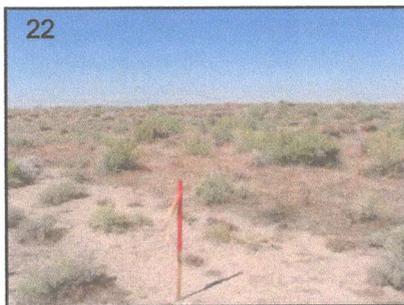
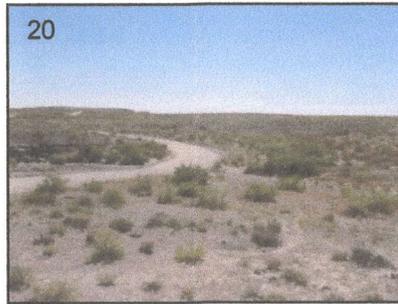
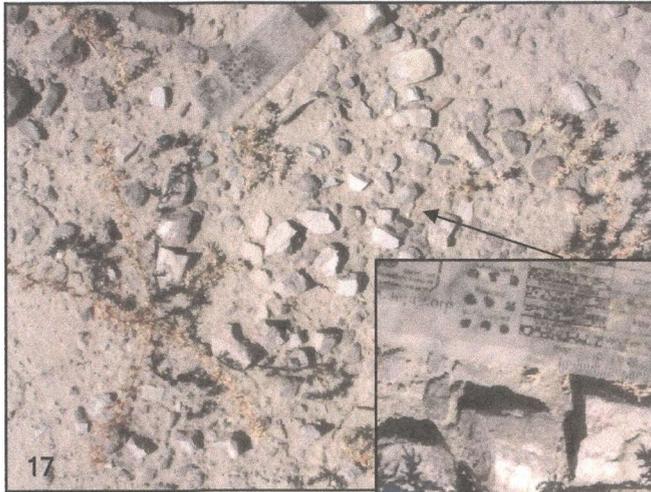
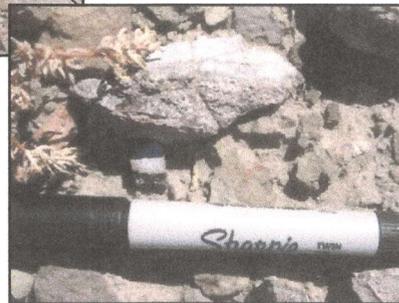
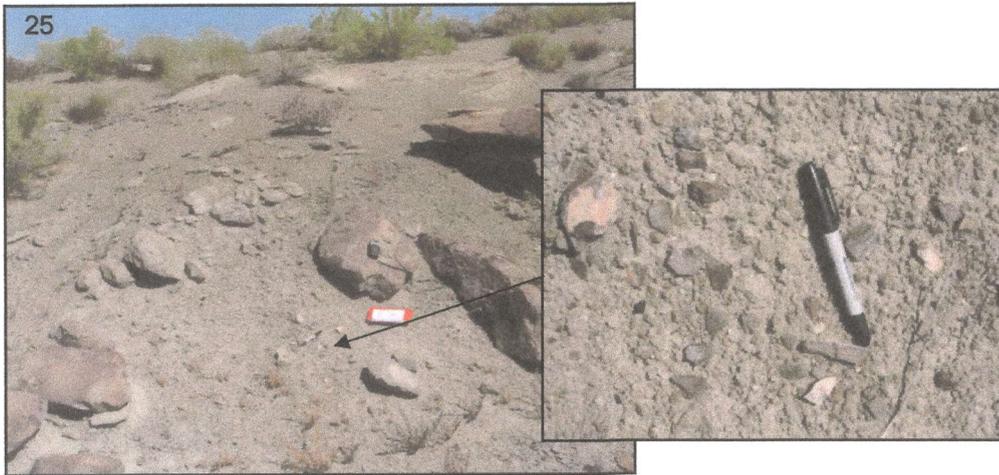


Figure 2. *continued...*



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CULTURAL RESOURCE INVENTORY OF  
KERR-MCGEE OIL & GAS ONSHORE LP'S  
PROPOSED 29 NBU WELL LOCATIONS  
(T9S, R20E, SECS. 12, 13, 14, AND 24)  
UINTAH COUNTY, UTAH

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UINTAH COUNTY, UTAH

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MOAC Report No. 08-177b

October 3, 2008

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

State of Utah Antiquities Project (Survey)  
Permit No. U-08-MQ-0569i

Ute Tribal Permit No. A08-363

## ABSTRACT

A cultural resource inventory was conducted by Montgomery Archaeological Consultants, Inc. (MOAC) in 2008 for the Kerr-McGee Oil and Gas Onshore LP's proposed 29 NBU well locations located south of the White River, Uintah County, Utah. The well locations are designated: NBU 920-12B, 920-12D, 920-12E, 920-12F, 920-12G, 920-12H, 920-12I, 920-12J, 920-12K, 920-12LT, 920-12P, 920-13A, 920-13B, 920-13D, 920-13F, 920-13G, 920-13H, 920-13I, 920-13J, 920-13P, 920-14D, 920-24AT, 920-24B, 920-24I, 920-24JT, 920-24K, 920-24L, 920-24N, and 920-24P. The survey was implemented at the request of Ms. Raleen White, Kerr-McGee Oil and Gas Onshore LP, Vernal, Utah. The legal description is Township 9 South, Range 20 East, Sections 12, 13, 14, 15, and 24; and Township 9 South, Range 21 East, Sections 7, 18, and 19. A total of 277 acres was inventoried for cultural resources, all of which occur on Ute Tribal Land (Uintah and Ouray Agency).

The inventory of Kerr-McGee Oil and Gas Onshore's 29 proposed NBU well locations resulted in the location of eight previously recorded prehistoric sites (42Un1183, 42Un1892, 42Un5150, 42Un5151, 42Un6823, 42Un6826, 42Un6864 and 42Un6867) and the documentation of two new prehistoric sites (42Un6926 and 42Un7023). The following avoidance recommendations are proposed for this undertaking:

42Un1183 is outside of the undertaking and will be avoided.

42Un1892 is evaluated as not eligible to the NRHP. Ute Tribal Technician (Brad Pinnecoose) granted permission for Kerr-McGee Onshore to construct the access/pipeline routes through the northeast portion of 42Un1892.

42Un5150 is outside of the undertaking and its west boundary was flagged with blue surveyor ribbon to facilitate avoidance.

42Un5151 is outside of the undertaking; however, the Ute Tribe recommends construction activities along the pipeline/access route be monitored by a qualified archaeologist.

42Un6823 should be fenced along the site boundary. Construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

42Un6826 is outside of the undertaking; however, the Ute Tribe recommends construction activities be monitored by a qualified archaeologist.

42Un6864 is outside of the undertaking and will be avoided.

42Un6867 should be fenced along the site boundary. Construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

42Un6926 is outside of the undertaking and will be avoided.

42Un7023 is outside of the undertaking and will be avoided.

Based on adherence to the above avoidance recommendations, a determination of "no historic properties affected" is proposed for the undertaking pursuant to Section 106, CFR 800.

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## INTRODUCTION

A cultural resource inventory was conducted by Montgomery Archaeological Consultants, Inc. (MOAC) in 2008 for the Kerr-McGee Oil and Gas Onshore LP's proposed 29 NBU well locations located south of the White River, Uintah County, Utah. The well locations are designated: NBU 920-12B, 920-12D, 920-12E, 920-12F, 920-12G, 920-12H, 920-12I, 920-12J, 920-12K, 920-12LT, 920-12P, 920-13A, 920-13B, 920-13D, 920-13F, 920-13G, 920-13H, 920-13I, 920-13J, 920-13P, 920-14D, 920-24AT, 920-24B, 920-24I, 920-24JT, 920-24K, 920-24L, 920-24N, and 920-24P. The survey was implemented at the request of Ms. Raleen White, Kerr-McGee Oil and Gas Onshore LP, Vernal, Utah. Land status is Ute Tribal Land (Uintah and Ouray Agency).

The objective of the inventory was to locate, document, and evaluate any cultural resources within the project area in order to comply with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental and Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

The fieldwork was performed between May 5 and September 28, 2008 by Kelly Jo Jackson (Field Supervisor), assisted by Amy Ackman, Joshua Dunn, and Josh Whitting. MOAC was accompanied to the field by Audie Appawoo (Energy and Minerals Ute Tribal Technician). The inventory was conducted under the auspices of U.S.D.I. (FLPMA) Permit No. 08-UT-60122, State of Utah Antiquities Permit (Survey) No. U-08-MQ-0569i, and Ute Tribal Permit No. A08-363 issued to Montgomery Archaeological Consultants, Moab, Utah.

A file search conducted at the USHPO by Marty Thomas on May 2, 2008 indicated that several previous inventories have been completed in the project area. In 1991, Grand River Institute surveyed Enron Oil & Gas Company's NBU 315-13 well location resulting in the documentation of an ineligible lithic scatter (42Un1892) that is situated within the current project area (Conner 1991). In 1992, Metcalf Archaeological Consultants surveyed well location NBU #369-22E in Section 22, Township 9 South, Range 20 East for Enron Oil and Gas, resulting in the documentation of a lithic scatter (42Un2051), which occurs outside of the present inventory (O'Brien 1992). In 2005, Montgomery Archaeological Consultants (MOAC) surveyed Questar Gas Management's Mesa Tap to Glen Bench pipeline resulting in the location of numerous sites; three of the sites (42Un1183, 42Un5150, and 42Un5151) are located in the current project area (Lower-Eskelson and Montgomery 2005). During the same year, MOAC inventoried ten well locations for Westport Oil & Gas Company in Township 9S, Range 20E, Sections 13, 14, 15, 22, and 24 (Jendresen 2006). The inventory resulted in the documentation of 16 new prehistoric sites and the relocation of five previously recorded sites; three of these sites occur in the present inventory (42Un1183, 42Un5150, and 42Un5151). In 2007, MOAC surveyed Kerr-McGee Onshore's NBU 920-12C and 920-12M resulting in no cultural resources (Seacat 2007a). Also in 2007, MOAC inventoried a Kerr-McGee Onshore pipeline from NBU 45N to NBU 370 resulting in the location of three previously documented sites (42Un1183, 42Un1186, and 42Un1892), one of which (42Un1892) occurs within the current project area (Seacat 2007b). In 2008, MOAC inventoried Anadarko's 3D Seismic project near Ouray resulting the location of over 300 archaeological sites (Jackson and Montgomery 2008). Four prehistoric sites (42Un6823, 42Un6826, 42Un6864, and 42Un6867) were documented within the current project area.

## DESCRIPTION OF THE PROJECT AREA

Kerr-McGee Oil and Gas Onshore's 29 proposed NBU well locations with access/pipeline corridors are situated south of the White River and west of Cottonwood Wash. The legal description is Township 9 South, Range 20 East, Sections 12, 13, 14, 15, and 24; and Township 9 South, Range 21 East, Sections 7, 18, and 19 (Table 1, Figure 1).

Table 1. Kerr-McGee Oil & Gas Onshore LP's 29 Proposed NBU Well Locations.

| Well Location Designation | Legal Location              | Access/Pipeline                      | Cultural Resources | Avoidance Recommendations |
|---------------------------|-----------------------------|--------------------------------------|--------------------|---------------------------|
| NBU 920-12B               | T9S, R20E,<br>NW/NE Sec. 12 | Access: 815 ft<br>Pipeline: 1671 ft  | None               | None                      |
| NBU 920-12D               | T9S, R20E,<br>NW/NW Sec. 12 | Access: 177 ft<br>Pipeline: 3734 ft  | 42Un6823           | Avoid and Monitor         |
| NBU 920-12E               | T9S, R20E,<br>SW/NW Sec. 12 | Access: 461 ft<br>Pipeline: 471 ft   | 42Un6826           | Avoid and Monitor         |
| NBU 920-12F               | T9S, R20E,<br>SE/NW Sec. 12 | Access: 321 ft<br>Pipeline: 457 ft   | None               | None                      |
| NBU 920-12G               | T9S, R20E,<br>SW/NE Sec. 12 | Access: 758 ft<br>Pipeline: 779 ft   | None               | None                      |
| NBU 920-12H               | T9S, R20E,<br>SE/NE Sec. 12 | Access: 1264 ft<br>Pipeline: 2054 ft | None               | None                      |
| NBU 920-12I               | T9S, R20E,<br>NE/SE Sec. 12 | Access: 4323 ft<br>Pipeline: 2351 ft | None               | None                      |
| NBU 920-12J               | T9S, R20E,<br>NW/SE Sec. 12 | Access: 236 ft<br>Pipeline: 229 ft   | 42Un6926           | Avoid                     |
| NBU 920-12K               | T9S, R20E,<br>NE/SW Sec. 12 | Access: 39 ft<br>Pipeline: 207 ft    | None               | None                      |
| NBU 920-12LT              | T9S, R20E,<br>NW/SW Sec. 12 | In 10 Acre                           | None               | None                      |
| NBU 920-12P               | T9S, R20E,<br>SE/SE Sec. 12 | Access: 1108 ft<br>Pipeline: 3130 ft | None               | None                      |
| NBU 920-13A               | T9S, R20E,<br>NE/NE Sec. 13 | Access: 216 ft<br>Pipeline: 237 ft   | 42Un1892           | None                      |
| NBU 920-13B               | T9S, R20E,<br>NW/NE Sec. 13 | Access: 54 ft<br>Pipeline: 445 ft    | None               | None                      |
| NBU 920-13D               | T9S, R20E,<br>NW/NW Sec. 13 | Access: 2350 ft<br>Pipeline: 2345 ft | None               | None                      |
| NBU 920-13F               | T9S, R20E,<br>NE/NW Sec. 13 | Access: 1381 ft<br>Pipeline: 1393 ft | None               | None                      |

| Well Location Designation | Legal Location              | Access/Pipeline                      | Cultural Resources               | Avoidance Recommendations |
|---------------------------|-----------------------------|--------------------------------------|----------------------------------|---------------------------|
| NBU 920-13G               | T9S, R20E,<br>SW/NE Sec. 13 | Access: 516 ft<br>Pipeline: 512 ft   | None                             | None                      |
| NBU 920-13H               | T9S, R20E,<br>SE/NE Sec. 13 | Access: 189 ft<br>Pipeline: 50 ft    | None                             | None                      |
| NBU 920-13I               | T9S, R20E,<br>NE/SE Sec. 13 | Access: 655 ft<br>Pipeline: 2116 ft  | None                             | None                      |
| NBU 920-13J               | T9S, R20E,<br>NW/SE Sec. 13 | Access: 3842 ft<br>Pipeline: 175 ft  | None                             | None                      |
| NBU 920-13P               | T9S, R20E,<br>SE/SE Sec.13  | Access: 784 ft<br>Pipeline: 1513 ft  | None                             | None                      |
| NBU 920-14D               | T9S, R20E,<br>NW/NW Sec. 14 | Access: 321 ft<br>Pipeline: 2123 ft  | 42Un7023                         | None                      |
| NBU 920-24AT              | T9S, R20E,<br>NE/NE Sec. 24 | Pipeline: 1180 ft                    | 42Un6864                         | None                      |
| NBU 920-24B               | T9S, R20E,<br>NW/NE Sec. 24 | Access: 589 ft<br>Pipeline: 650 ft   | None                             | None                      |
| NBU 920-24I               | T9S, R20E,<br>NE/SE Sec. 24 | Access: 765 ft<br>Pipeline: 1874 ft  | 42Un5151                         | None                      |
| NBU 920-24JT              | T9S, R20E,<br>NW/SE Sec. 24 | Access: 1888 ft<br>Pipeline: 170 ft  | 42Un1183<br>42Un5150<br>42Un6867 | Avoid<br>Avoid<br>Avoid   |
| NBU 920-24K               | T9S, R20E,<br>NE/SW Sec. 24 | Access: 490 ft<br>Pipeline: 183 ft   | None                             | None                      |
| NBU 920-24L               | T9S, R20E,<br>NW/SW Sec. 24 | Access: 2297 ft<br>Pipeline: 4940 ft | None                             | None                      |
| NBU 920-24N               | T9S, R20E,<br>SE/SW Sec. 24 | Access: 1755 ft<br>Pipeline: 768 ft  | None                             | None                      |
| NBU 920-24P               | T9S, R20E,<br>SE/SE Sec. 24 | Access: 1546 ft<br>Pipeline: 601 ft  | None                             | None                      |



## Environmental Setting

The project area lies within the Uinta Basin physiographic unit, a distinctly bowl-shaped geologic structure (Stokes 1986:231). The entire Uinta Basin ecosystem is within the Green River drainage, considered to be the northernmost extension of the Colorado Plateau. Elevation in the project area averages 4800 ft asl. The topography is characterized by open, flat-topped mesas capped by relatively resistant outwash or older terrace deposits with bedrock exposures outcropping along the mesa sides. The lows between the mesas are delineated by alluvial valley fill and colluvial slope wash deposits. Eolian sands mantle both mesa tops and slopes as well as the alluvial valley fill and slope wash deposits. Alluvial deposits of the White and Green Rivers border the project area on the south and northwest. Geologically, the area includes recent alluvium (Qa), alluvial and colluvial deposits (Qac), eolian deposits (Qe), old piedmont-slope deposits (Qop), and the Upper Eocene Uinta Formation. The Uinta Formation occurs as eroded outcrops formed by fluvial deposited stream laid interbedded sandstone and mudstone. This formation is known for its fossil vertebrate turtles, crocodilians, fish, and mammals. Vegetation in the project area includes greasewood, shadscale, rabbitbrush, thorny horsebrush, snakeweed, winterfat, and prickly pear cactus. Modern disturbances include livestock grazing, roads, and oil/gas development.

## Cultural Overview

The cultural-chronological sequence represented in the area includes the Paleoindian, Archaic, Fremont, Protohistoric, and Euro-American stages. The earliest inhabitants of the region are representative of the Paleoindian stage (ca. 12,000-8000 B.P.), characterized by the adaptation to terminal Pleistocene environments and by the exploitation of big game fauna. The presence of Paleoindian hunters in the Uinta Basin region is implied by the discovery of Clovis and Folsom fluted points (ca. 12,000 B.P. - 10,000 B.P.), as well as the more recent Plano Complex lanceolate points (ca. 10,000 B.P. - 7000 B.P.). Near the project area, a variety of Plano Complex Paleoindian projectile points have been documented, including Goshen, Alberta, and Midland styles (Hauk 1998). No sites with evidence of Folsom lithic technology have previously been documented near the project area. Spangler (1995:332) reports that there are no sealed cultural deposits in association with extinct fauna or with chronologically distinct Paleoindian artifacts in Utah. Specifically in the Uinta Basin, few Paleoindian sites have been adequately documented, and most evidence of Paleoindian exploitation of the area is restricted to isolated projectile points recovered in nonstratigraphic contexts. Copeland and Fike (1998:21) argue that many areas in Utah are conducive to the herding behavior of megafauna, and that there is a high probability that many of the sites in Utah of unknown age are Paleoindian.

The Archaic stage (ca. 8000 B.P.-1500 B.P.) is characterized by the dependence on a foraging subsistence, with peoples seasonally exploiting a wide spectrum of plant and animal species in different ecozones. The shift to an Archaic lifeway was marked by the appearance of new projectile point types, and the development of the atlatl, perhaps in response to a need to pursue smaller and faster game (Holmer 1986). In the Uinta Basin, evidence of Early Archaic presence is relatively sparse compared to the subsequent Middle and Late Archaic periods. Early Archaic (ca. 6000-3000 B.C.) sites in the Basin include sand dune sites and rockshelters primarily clustered in the lower White River drainage (Spangler 1995:373). Early Archaic projectile points recovered from Uinta Basin contexts include; Pinto Series, Humboldt, Elko Series, Northern Side-notched, Hawken Side-notched, Sudden Side-notched, and Rocker Base Side-notched points. Excavated sites in the area with Early Archaic components include Deluge Shelter in Dinosaur National Monument, and open campsites along the Green River and on the Diamond Mountain

Plateau (Spangler 1995:374). The Middle Archaic era (ca. 3000-500 B.C.) is characterized by improved climatic conditions and an increase in human population on the northern Colorado Plateau. Several stratified Middle Archaic sites have been excavated and dozens of sites have been documented in the Uinta Basin. Middle Archaic sites in the area reflect cultural influences from the Plains, although a Great Basin and/or northern Colorado Plateau influence is represented in the continuation of the Elko Series projectile points. Subsistence data from Middle Archaic components indicate gathering and processing of plants as well as faunal exploitation (e.g., mule deer, antelope, bighorn sheep, cottontail rabbit, muskrat, prairie dog, beaver, and birds). The Late Archaic period (ca. 500 B.C.-A.D. 550) in the Uinta Basin is distinguished by the continuation of Elko Series projectile points with the addition of semi-subterranean residential structures at base camps. By about A.D. 100, maize horticulture and Rose Springs arrow points had been added to the Archaic lifeway. In the Uinta Basin, the earliest evidence of Late Archaic architecture occurs at the Cockleburr Wash Site (42Un1476) where a temporary structure, probably a brush shelter, yielded a date of 316 B.C. (Tucker 1986). The structure was probably associated with seasonal procurement of wild floral resources gathered along Cliff Creek.

The Formative stage (A.D. 500-1300) is recognized in the area as the Uinta Fremont as first defined by Marwitt (1970). This stage is characterized by a reliance upon domesticated corn and squash, increasing sedentism, and in its later periods, substantial habitation structures, pottery, and bow and arrow weapon technology. Based on the evidence from Caldwell Village, Boundary Village, Deluge Shelter, Mantles Cave, and others, the temporal range of the Uinta Fremont appears to be from A.D. 650 to 950. This variant is characterized by shallow, saucer-shaped pithouse structures with randomly placed postholes and off-center firepits, some of which were adobe-rimmed. Traits considered unique or predominate to the Uinta Basin include calcite-tempered pottery, two-handled wide-mouth vessels, Utah type metates, the use of gilsonite for pottery repair, settlement on tops of buttes, and large-shouldered bifaces (Shields 1970).

Archaeological evidence suggests that Numic peoples appeared in east-central Utah at approximately A.D. 1100 or shortly before the disappearance of Formative-stage peoples (Reed 1994). The archaeological remains of Numic-speaking Utes consist primarily of lithic scatters with low quantities of brown ware ceramics, rock art, and occasional wickiups. The brown ware ceramics appear to be the most reliable indicator of cultural affiliation, as Desert Side-notched and Cottonwood Triangular points were manufactured by other cultural groups beside the Ute (Horn, Reed, and Chandler 1994:130). The Ute appear to have been hunters and gatherers who exploited various fauna and flora resources. According to macrobotanical and faunal data from dated components, deer, elk, pronghorn, bison, and small game were acquired (Reed 1994:191). Plant materials thought to have been exploited for food include: goosefoot, grass seeds, pinyon nuts, juniper berries, squawbush berries and leaves, hackberry seeds, possibly saltbush seeds, knotweed, chokecherry, and chickweed (Reed 1994:191).

## SURVEY METHODOLOGY

An intensive pedestrian survey was performed for this project which is considered 100% coverage. At each of the proposed well locations, a 10 acre square was defined, centered on the well pad center stake. The interior of the well locations were examined for cultural resources by the archaeologists walking parallel transects spaced no more than 10 m (33 ft) apart. Access and pipeline corridors were surveyed to a width of 30 m (100 ft). Ground visibility was considered good. A total of 277 acres was inventoried for cultural resources, all of which occurs on Ute Tribal Land (Uintah and Ouray Agency). On September 11 and 12 an on-site meeting was held attended by

the following: Ramey Hoopes (Anadarko Petroleum), Josh Whiting (MOAC), Bucky Secakuku (BIA Uintah & Ouray Agency), and Brad Pinnecoose (Ute Indian Tribe). At this in-field consultation, several pipelines and access routes were moved which required additional inventory by MOAC.

## INVENTORY RESULTS

The inventory of Kerr-McGee Oil and Gas Onshore's 29 proposed NBU well locations resulted in the location of eight previously recorded prehistoric sites (42Un1183, 42Un1892, 42Un5150, 42Un5151, 42Un6823, 42Un6826, 42Un6864 and 42Un6867) and the documentation of two new prehistoric sites (42Un6926 and 42Un7023).

Smithsonian Site No.: 42Un1183  
Temporary Site No.: N/A  
Legal Description: Section 24, T9S, R20E  
Well Location No.: NBU #920-24JT  
NRHP Eligibility: Eligible

Description: This large lithic scatter was re-recorded by MOAC in 2005 and is situated south of the White River. A sample of flakes was documented with the total estimated to be 200-300 flakes. Twelve material types were noted in the sample with secondary the dominant stage of reduction predominant although primary flaking is also common. Chipped stone tools consist of six cores and a biface.

**Avoidance:** The site is outside of the undertaking and will be avoided

Smithsonian Site No.: 42Un1892  
Temporary Site No.: N/A  
Legal Description: Section 13, T9S, R20E  
Well Location No.: NBU #920-13A  
NRHP Eligibility: Not Eligible

Description: This is an Early Archaic and possibly Numic lithic scatter originally recorded by Grand River Institute in 1991 situated on a clayey bedrock (Conner 1991). Cultural materials include debitage, a projectile fragment (Pinto Shouldered), a biface, a bifacial edge, a scraper, a hammerstone, and six cores. The site was determined not eligible to the NRHP because it was adequately documented and lies on residual deposition lacking potential for additional research.

**Avoidance:** This site is evaluated as not eligible to the NRHP. Ute Tribal Technician (Brad Pinnecoose) granted permission for Kerr-McGee Onshore to construct the access/pipeline routes through the northeast portion of 42Un1892.

Smithsonian Site No.: 42Un5150  
Temporary Site No.: N/A  
Legal Description: Section 24, T9S, R20E  
Well Location No.: NBU #920-24JT  
NRHP Eligibility: Eligible

Description: This site is a large, medium density lithic scatter documented by MOAC in 2005. It is situated in a drainage at the edge of a dune. An estimated 250+ flakes are located on the site. A sample was taken in which 222 flakes were counted. Eight material types were documented with secondary and tertiary flaking dominating. Four cores and 27 tested nodules were also counted.

**Avoidance:** The site is outside of the undertaking and its west boundary was flagged with blue surveyors ribbon to facilitate avoidance.

Smithsonian Site No.: 42Un5151  
Temporary Site No.: N/A  
Legal Description: Section 24, T9S, R20E  
Well Location No.: NBU #920-24I  
NRHP Eligibility: Eligible

Description: This is a prehistoric temporary camp recorded by MOAC in 2005. The site is situated near the base of a bench by the head of an unnamed tributary of Cottonwood Wash. Prehistoric cultural materials include six pieces of debitage and a probable hearth. Debitage includes three secondary flakes and three tertiary flakes of chert and quartzite materials. The hearth (Feature A) is eroding from the small drainage, near a pile of wood (cottonwood). Based on the size of the stones, the feature fill is estimated to be between 10 and 15 cm deep. The drainage has eroded all the sediments around the feature, but there appears to be little affect to the interior feature fill. The condition of the feature, despite the erosion, is very good. The feature is presumed to be prehistoric based on its association with lithic artifacts. Also found at the site is a modern fire ring and a pile of wood. No historic artifacts were observed.

**Avoidance:** The site is outside of the undertaking; however, the Ute Tribe recommends construction activities along the pipeline/access route be monitored by a qualified archaeologist.

Smithsonian Site No.: 42Un6823  
Temporary Site No.: 08-011-FM24  
Legal Description: Section 12, T9S, R20E  
Well Location No.: NBU #920-12D  
NRHP Eligibility: Eligible

Description: This is a small lithic scatter of unknown aboriginal affiliation documented by MOAC in 2008 (Jackson and Montgomery 2008). The site is situated along the edge of a low dune along a ridge south of the White River. Vegetation includes greasewood and shadscale while soil is tan silt sand with areas of bedrock. Debitage (n=19) consists of primary, secondary and broken flakes as well as angular debris. No tools or features were observed on the surface.

**Avoidance:** The proposed well location (NBU #920-12D) was adjusted to avoid the eligible site. It was recommended by the Ute Tribe that a temporary fence be constructed along the site boundary. In addition, construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

Smithsonian Site No.: 42Un6826  
Temporary Site No.: 08-011-FM243  
Legal Description: Section 12, T9S, R20E  
Well Location No.: NBU #920-12E  
NRHP Eligibility: Eligible

Description: This is a lithic scatter of unknown cultural affiliation recorded by MOAC in 2008 (Jackson and Montgomery 2008). The site is situated in a deflated dune along a ridge overlooking a drainage system, south of the White River. Vegetation includes greasewood and shadscale and sediment is stable silt sand with a cover of rocks. Debitage (n=22) is represented by most stages of reduction manufactured from chert and quartzite. Tools consist of five cores, two Stage I bifaces, one utilized flake, and a flaked cobble.

**Avoidance:** Site 42Un6826 is situated along the north edge of the proposed well pad; however, the Ute Tribe recommends construction activities be monitored by a qualified archaeologist.

Smithsonian Site No.: 42Un6864  
Temporary Site No.: 08-011-FM36  
Legal Description: Section 24, T9S, R20E  
Well Location No.: NBU #920-24AT Access Road  
NRHP Eligibility: Eligible

Description: This is a lithic scatter of unknown aboriginal affiliation recorded by MOAC in 2008 (Jackson and Montgomery 2008). The site is located on a western slope of a partially deflated north-south trending dune. Vegetation includes sagebrush, shadscale, and prickly pear cactus while soil is aeolian deposited sand. Artifacts consist of 164 chert, quartzite, or siltstone flakes (secondary flakes are the dominant reduction stage), and two quartzite flaked cobbles.

**Avoidance:** Site 42Un6864 is located on the south side of the proposed access road for NBU #920-24AT well location. The site will be avoided by the undertaking.

Smithsonian Site No.: 42Un6867  
Temporary Site No.: 08-011-FM38  
Legal Description: Section 24, T9S, R20E  
Well Location No.: NBU #920-24JT  
NRHP Eligibility: Eligible

Description: This is a lithic scatter of unknown aboriginal affiliation documented by MOAC in 2008 (Jackson and Montgomery 2008). The site lies on a large east-west trending dune complex. Vegetation includes little sagebrush, rabbitbrush, cheatgrass and prickly pear. Sediments consist of moderately vegetated aeolian deposited dunes composed of tan sand. Artifacts include 111 quartzite or chert flakes of which secondary flakes are the dominant reduction stage. No tools or features were observed. The presence of a collector's pile indicates recreational collecting.

**Avoidance:** Site 42Un6867 is situated along the north edge of the proposed well pad. It was recommended by the Ute Tribe that a temporary fence be constructed along the site boundary. In addition construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

Smithsonian Site No.: 42Un6926  
Temporary Site No.: 08-011-FM20  
Legal Description: Section 12, T9S, R20E  
Well Location No.: NBU #920-12J  
NRHP Eligibility: Eligible

Description: This is a lithic scatter of unknown aboriginal cultural affiliation situated west of Cottonwood Wash. The site occurs on a deflated dune along a bench overlooking an ephemeral wash. Vegetation includes low sagebrush and greasewood while soil is tan silty sand. Debitage (n=12) is dominated by secondary flakes followed by primary reduction and manufactured from a variety of quartzite and siltstone. Tools consist of three flaked cobbles, a core, and one utilized flake.

**Avoidance:** The site is outside of the undertaking and will be avoided.

Smithsonian Site No.: 42Un7023  
Temporary Site No.: 08-011-FM75  
Legal Description: Section 14, T9S, R20E  
Well Location No.: NBU #920-14D  
NRHP Eligibility: Not Eligible

Description: This is a prehistoric lithic scatter of unknown aboriginal cultural affiliation situated south of the White River. The site occurs on a flat ridgetop of a broad tableland. Sediment consists of rocky, hard pan residual sand with areas of desert pavement and vegetation includes shadscale, cheatgrass, halogeton, prickly pear cacti, and sagebrush. Cultural material consists of a biface, a hammerstone, two cores, three flaked cobbles, and 19 flakes of various color and quality. Lithic debitage is dominated by primary flakes.

**Avoidance:** The site is outside of the undertaking and will be avoided.

### NATIONAL REGISTER OF HISTORIC PLACES

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the National Register of Historic Places (NRHP) are outlined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they:

- a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
- b)...are associated with the lives of persons significant to our past; or
- c)...embody the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d)...have yielded or may be likely to yield information important in prehistory or history.

The inventory resulted in the documentation of two new archaeological sites (42Un6926 and 42Un7023). Site 42Un6926 is a prehistoric lithic scatter that retains integrity and a diversity of cultural materials. It lies in a sand dune with potential for buried diagnostic artifacts and features. Therefore, 42Un6926 is recommended eligible for National Register of Historic Places inclusion under Criterion D because it is likely to yield information important to the prehistory of the area. This site fails to meet Criteria A through C. Site 42Un7023 is a low density lithic scatter that exhibits a limited number of artifacts lacking temporally diagnostic tools, meaningful spatial organization, or features. Furthermore, little depth potential is suspected due to visual observation of artifacts on residual sediment with areas of exposed desert pavement. Therefore, 42Un7023 is not recommended eligible for National Register of Historic Places inclusion as it fails to meet Criteria A-D.

## MANAGEMENT RECOMMENDATIONS

The inventory of Kerr-McGee Oil and Gas Onshore's 29 proposed NBU well locations resulted in the location of eight previously recorded prehistoric sites (42Un1183, 42Un1892, 42Un5150, 42Un5151, 42Un6823, 42Un6826, 42Un6864 and 42Un6867) and the documentation of two new prehistoric sites (42Un6926 and 42Un7023). The following avoidance recommendations are proposed for this undertaking:

42Un1183 is outside of the undertaking and will be avoided.

42Un1892 is evaluated as not eligible to the NRHP. Ute Tribal Technician (Brad Pinnecoose) granted permission for Kerr-McGee Onshore to construct the access/pipeline routes through the northeast portion of 42Un1892.

42Un5150 is outside of the undertaking and its west boundary was flagged with blue surveyor ribbon to facilitate avoidance.

42Un5151 is outside of the undertaking; however, the Ute Tribe recommends construction activities along the pipeline/access route be monitored by a qualified archaeologist.

42Un6823 should be fenced along the site boundary. Construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

42Un6826 is outside of the undertaking; however, the Ute Tribe recommends construction activities be monitored by a qualified archaeologist.

42Un6864 is outside of the undertaking and will be avoided.

42Un6867 should be fenced along the site boundary. Construction of the well pad and associated access/pipeline route should be monitored by a qualified archaeologist.

42Un6926 is outside of the undertaking and will be avoided.

42Un7023 is outside of the undertaking and will be avoided.

Based on adherence to the above avoidance recommendations, a determination of "no historic properties affected" is proposed for the undertaking pursuant to Section 106, CFR 800.

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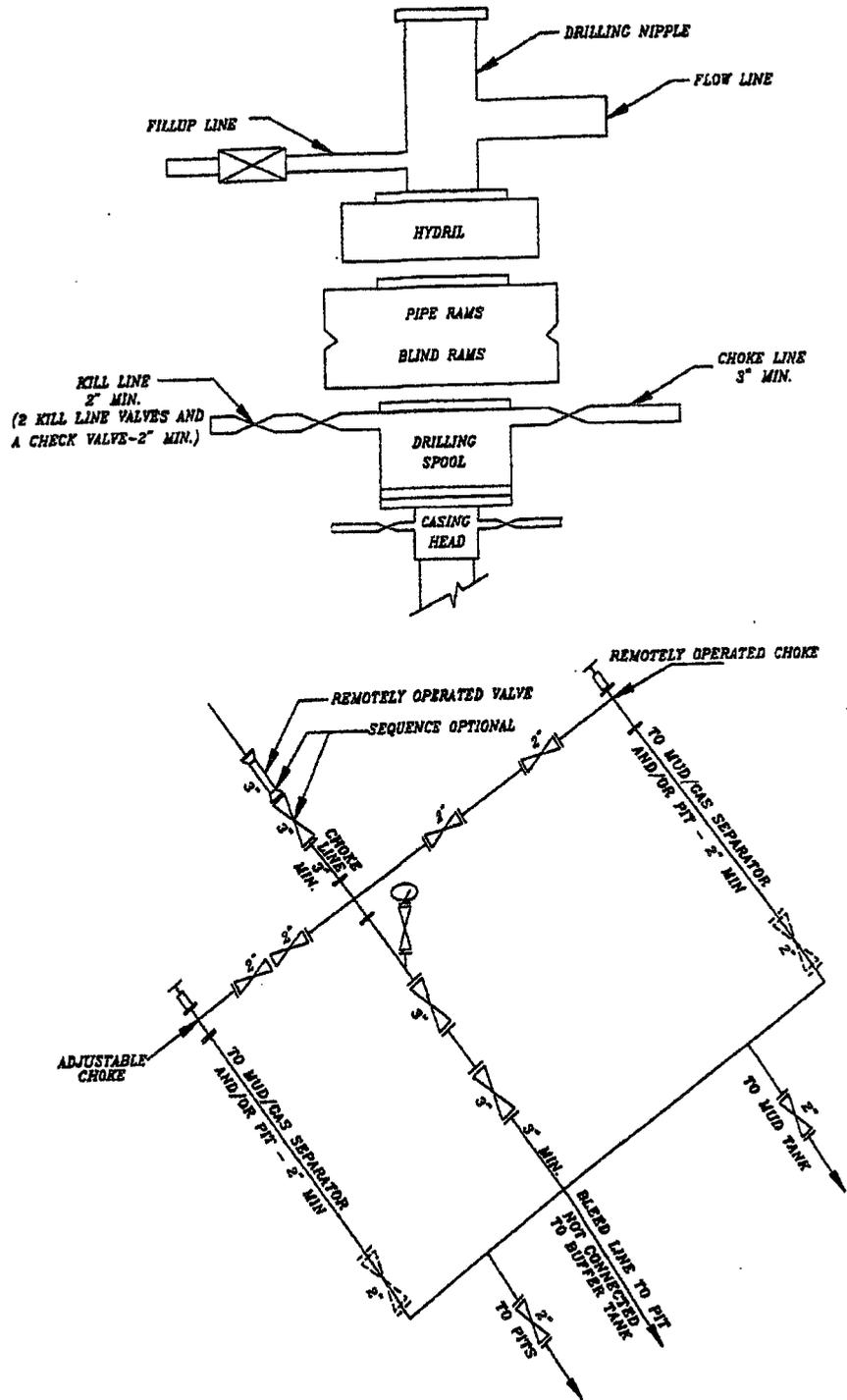
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APPENDIX A:  
INTERMOUNTAIN ANTIQUITIES COMPUTER  
SYSTEM (IMACS) SITE FORM  
42Un6926 and 42Un7023

On File at the Utah Division of State History  
Salt Lake City

EXHIBIT A



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

**WORKSHEET  
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 12/01/2008

API NO. ASSIGNED: 43-047-40422

WELL NAME: FEDERAL 920-24K  
 OPERATOR: KERR-MCGEE OIL & GAS ( N2995 )  
 CONTACT: KEVIN MCINTYRE

PHONE NUMBER: 720-929-6226

PROPOSED LOCATION:

| INSPECT LOCATN BY: / / |          |      |
|------------------------|----------|------|
| Tech Review            | Initials | Date |
| Engineering            |          |      |
| Geology                |          |      |
| Surface                |          |      |

NESW 24 090S 200E  
 SURFACE: 1899 FSL 2032 FWL  
 BOTTOM: 1899 FSL 2032 FWL  
 COUNTY: UINTAH  
 LATITUDE: 40.01873 LONGITUDE: -109.6162  
 UTM SURF EASTINGS: 618091 NORTHINGS: 4430543  
 FIELD NAME: UNDESIGNATED ( 2 )

LEASE TYPE: 1 - Federal  
 LEASE NUMBER: UTU-0579  
 SURFACE OWNER: 2 - Indian

PROPOSED FORMATION: WSMVD  
 COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

- Plat
- Bond: Fed[1] Ind[] Sta[] Fee[]  
(No. WYB000291 )
- Potash (Y/N)
- Oil Shale 190-5 (B) or 190-3 or 190-13
- Water Permit  
(No. 43-8496 )
- RDCC Review (Y/N)  
(Date: \_\_\_\_\_ )
- Fee Surf Agreement (Y/N)
- Intent to Commingle (Y/N)

LOCATION AND SITING:

- \_\_\_\_\_ R649-2-3.
- Unit: \_\_\_\_\_
- R649-3-2. General  
Siting: 460 From Qtr/Qtr & 920' Between Wells
- \_\_\_\_\_ R649-3-3. Exception
- \_\_\_\_\_ Drilling Unit
- Board Cause No: \_\_\_\_\_
- Eff Date: \_\_\_\_\_
- Siting: \_\_\_\_\_
- \_\_\_\_\_ R649-3-11. Directional Drill

COMMENTS:

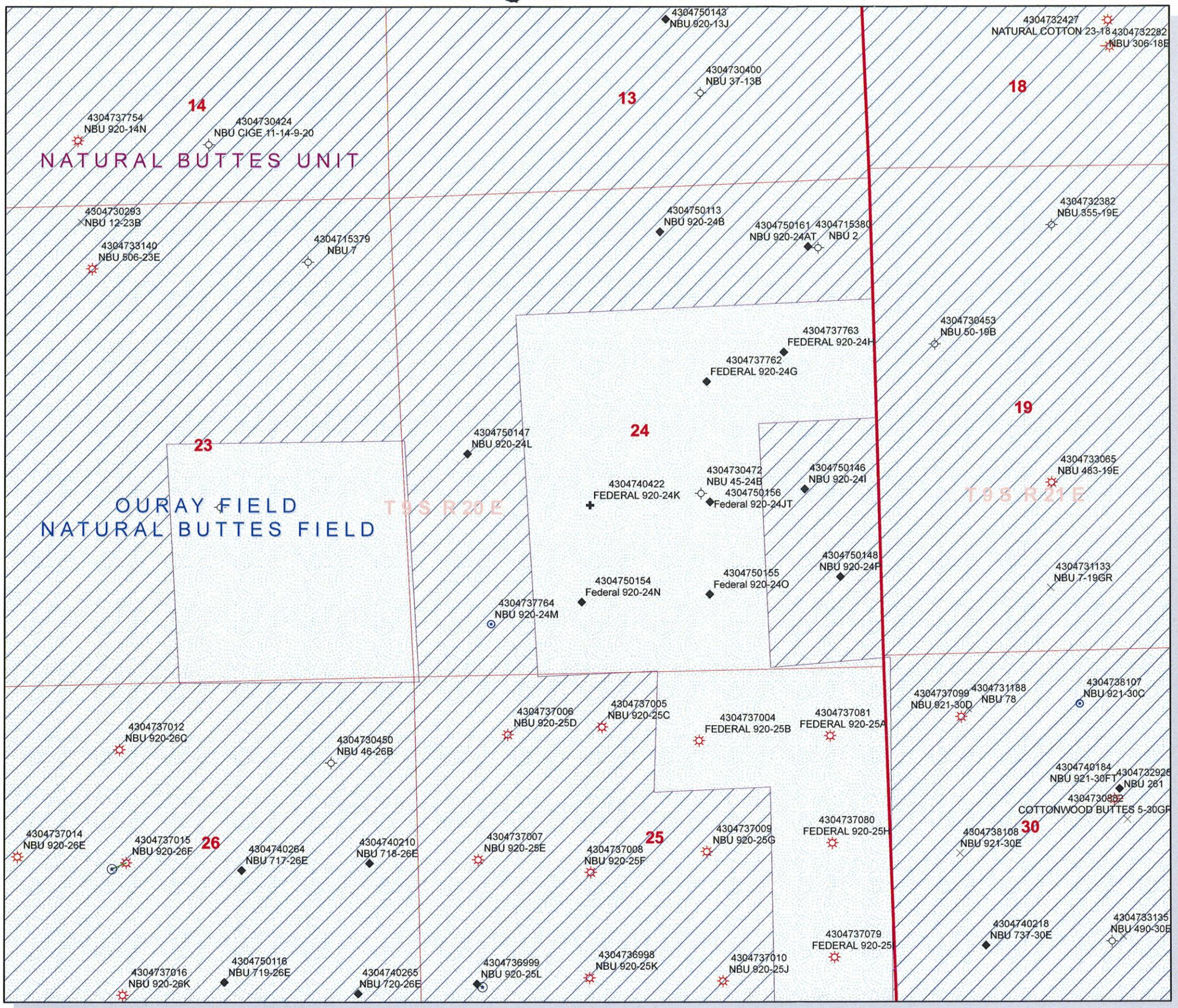
*SOP, Separate file*

STIPULATIONS:

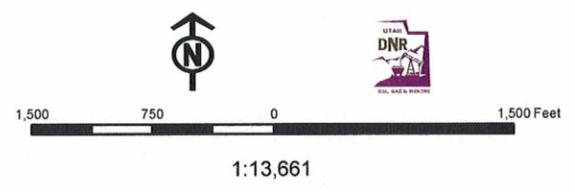
*1- Side Approval  
2- Spacing*

**API Number: 4304740422**  
**Well Name: FEDERAL 920-24K**  
**Township 09.0 S Range 20.0 E Section 24**  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason



| Units        | Wells Query Events    |
|--------------|-----------------------|
| STATUS       | ✗ <call other values> |
| ACTIVE       | GIS_STAT_TYPE         |
| EXPLORATORY  | <Null>                |
| GAS STORAGE  | APD                   |
| NF PP OIL    | DRL                   |
| NF SECONDARY | GI                    |
| PI OIL       | GS                    |
| PP GAS       | LA                    |
| PP GEOTHERML | NEW                   |
| PP OIL       | OPS                   |
| SECONDARY    | PA                    |
| TERMINATED   | PGW                   |
| Fields       | POW                   |
| STATUS       | RET                   |
| ACTIVE       | SGW                   |
| COMBINED     | SOW                   |
| Sections     | TA                    |
| Township     | TW                    |
|              | WD                    |
|              | WI                    |
|              | WS                    |





JON M. HUNTSMAN, JR.  
Governor

GARY R. HERBERT  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

December 2, 2008

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

Re: Federal 920-24K Well, 1899' FSL, 2032' FWL, NE SW, Sec. 24, T. 9 South, R. 20 East, Uintah County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. § 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

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. The API identification number assigned to this well is 43-047-40422.

Sincerely,

Gil Hunt  
Associate Director

pab  
Enclosures

cc: Uintah County Assessor  
Bureau of Land Management, Vernal Office



Operator: Kerr-McGee Oil & Gas Onshore, LP  
Well Name & Number Federal 920-24K  
API Number: 43-047-40422  
Lease: UTU-0579

Location: NE SW                      Sec. 24                      T. 9 South                      R. 20 East

### Conditions of Approval

1. 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.

2. Notification Requirements

Notify the Division within 24 hours of spudding the well.

- Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

- Contact Dustin Doucet at (801) 538-5281 office      (801) 733-0983 home

3. Reporting Requirements

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

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

5. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

|  |   |
|--|---|
| <b>STATE OF UTAH</b><br>DEPARTMENT OF NATURAL RESOURCES<br>DIVISION OF OIL, GAS, AND MINING  | <b>FORM 9</b><br><br><b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b><br>UTU-0579                                     |
| <b>SUNDRY NOTICES AND REPORTS ON WELLS</b><br><br>Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals. | <b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b><br>UTE<br><br><b>7. UNIT or CA AGREEMENT NAME:</b>                     |
| <b>1. TYPE OF WELL</b><br>Gas Well   | <b>8. WELL NAME and NUMBER:</b><br>FEDERAL 920-24K  |
| <b>2. NAME OF OPERATOR:</b><br>KERR-MCGEE OIL & GAS ONSHORE, L.P.  | <b>9. API NUMBER:</b><br>43047404220000   |
| <b>3. ADDRESS OF OPERATOR:</b><br>P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779  | <b>PHONE NUMBER:</b><br>720 929-6007 Ext  |
| <b>4. LOCATION OF WELL</b><br><b>FOOTAGES AT SURFACE:</b><br>1899 FSL 2032 FWL<br><b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b><br>Qtr/Qtr: NESW Section: 24 Township: 09.0S Range: 20.0E Meridian: S  | <b>9. FIELD and POOL or WILDCAT:</b><br>NATURAL BUTTES<br><br><b>COUNTY:</b><br>UINTAH<br><br><b>STATE:</b><br>UTAH |

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

| TYPE OF SUBMISSION   | TYPE OF ACTION   |   |   |
|--|--|---|---|
| <input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b><br>Approximate date work will start:<br>11/30/2009 | <input type="checkbox"/> ACIDIZE                       | <input type="checkbox"/> ALTER CASING                   | <input type="checkbox"/> CASING REPAIR                  |
| <input type="checkbox"/> <b>SUBSEQUENT REPORT</b><br>Date of Work Completion:                                  | <input type="checkbox"/> CHANGE TO PREVIOUS PLANS      | <input type="checkbox"/> CHANGE TUBING                  | <input type="checkbox"/> CHANGE WELL NAME               |
| <input type="checkbox"/> <b>SPUD REPORT</b><br>Date of Spud:   | <input type="checkbox"/> CHANGE WELL STATUS            | <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS | <input type="checkbox"/> CONVERT WELL TYPE              |
| <input type="checkbox"/> <b>DRILLING REPORT</b><br>Report Date:  | <input type="checkbox"/> DEEPEN                        | <input type="checkbox"/> FRACTURE TREAT                 | <input type="checkbox"/> NEW CONSTRUCTION               |
|  | <input type="checkbox"/> OPERATOR CHANGE               | <input type="checkbox"/> PLUG AND ABANDON               | <input type="checkbox"/> PLUG BACK                      |
|  | <input type="checkbox"/> PRODUCTION START OR RESUME    | <input type="checkbox"/> RECLAMATION OF WELL SITE       | <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION |
|  | <input type="checkbox"/> REPERFORATE CURRENT FORMATION | <input type="checkbox"/> SIDETRACK TO REPAIR WELL       | <input type="checkbox"/> TEMPORARY ABANDON              |
|  | <input type="checkbox"/> TUBING REPAIR                 | <input type="checkbox"/> VENT OR FLARE                  | <input type="checkbox"/> WATER DISPOSAL                 |
|  | <input type="checkbox"/> WATER SHUTOFF                 | <input type="checkbox"/> SI TA STATUS EXTENSION         | <input checked="" type="checkbox"/> APD EXTENSION       |
|  | <input type="checkbox"/> WILDCAT WELL DETERMINATION    | <input type="checkbox"/> OTHER                          | OTHER: _____  |

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

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

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

**Date:** November 30, 2009

**By:**

|  |                                     |                                    |
|--|-------------------------------------|------------------------------------|
| <b>NAME (PLEASE PRINT)</b><br>Danielle Piernot | <b>PHONE NUMBER</b><br>720 929-6156 | <b>TITLE</b><br>Regulatory Analyst |
| <b>SIGNATURE</b><br>N/A                        |                                     | <b>DATE</b><br>11/24/2009          |



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

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43047404220000**

**API:** 43047404220000

**Well Name:** FEDERAL 920-24K

**Location:** 1899 FSL 2032 FWL QTR NESW SEC 24 TWNP 090S RNG 200E MER S

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

**Date Original Permit Issued:** 12/2/2008

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

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

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

**Signature:** Danielle Piernot

**Date:** 11/24/2009

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

**Date:** November 30, 2009

**By:** 

|  |   |
|--|---|
| <b>STATE OF UTAH</b><br>DEPARTMENT OF NATURAL RESOURCES<br>DIVISION OF OIL, GAS, AND MINING  | <b>FORM 9</b><br><br><b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b><br>UTU-0579                                     |
| <b>SUNDRY NOTICES AND REPORTS ON WELLS</b><br><br>Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals. | <b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b><br>UTE<br><br><b>7. UNIT or CA AGREEMENT NAME:</b>                     |
| <b>1. TYPE OF WELL</b><br>Gas Well   | <b>8. WELL NAME and NUMBER:</b><br>FEDERAL 920-24K  |
| <b>2. NAME OF OPERATOR:</b><br>KERR-MCGEE OIL & GAS ONSHORE, L.P.  | <b>9. API NUMBER:</b><br>43047404220000   |
| <b>3. ADDRESS OF OPERATOR:</b><br>P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779  | <b>PHONE NUMBER:</b><br>720 929-6007 Ext  |
| <b>4. LOCATION OF WELL</b><br><b>FOOTAGES AT SURFACE:</b><br>1899 FSL 2032 FWL<br><b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b><br>Qtr/Qtr: NESW Section: 24 Township: 09.0S Range: 20.0E Meridian: S  | <b>9. FIELD and POOL or WILDCAT:</b><br>NATURAL BUTTES<br><br><b>COUNTY:</b><br>UINTAH<br><br><b>STATE:</b><br>UTAH |

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

| TYPE OF SUBMISSION  | TYPE OF ACTION   |   |   |
|---|--|---|---|
| <input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b><br>Approximate date work will start:<br>12/2/2010 | <input type="checkbox"/> ACIDIZE                       | <input type="checkbox"/> ALTER CASING                   | <input type="checkbox"/> CASING REPAIR                  |
| <input type="checkbox"/> <b>SUBSEQUENT REPORT</b><br>Date of Work Completion:                                 | <input type="checkbox"/> CHANGE TO PREVIOUS PLANS      | <input type="checkbox"/> CHANGE TUBING                  | <input type="checkbox"/> CHANGE WELL NAME               |
| <input type="checkbox"/> <b>SPUD REPORT</b><br>Date of Spud:  | <input type="checkbox"/> CHANGE WELL STATUS            | <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS | <input type="checkbox"/> CONVERT WELL TYPE              |
| <input type="checkbox"/> <b>DRILLING REPORT</b><br>Report Date:   | <input type="checkbox"/> DEEPEN                        | <input type="checkbox"/> FRACTURE TREAT                 | <input type="checkbox"/> NEW CONSTRUCTION               |
|   | <input type="checkbox"/> OPERATOR CHANGE               | <input type="checkbox"/> PLUG AND ABANDON               | <input type="checkbox"/> PLUG BACK                      |
|   | <input type="checkbox"/> PRODUCTION START OR RESUME    | <input type="checkbox"/> RECLAMATION OF WELL SITE       | <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION |
|   | <input type="checkbox"/> REPERFORATE CURRENT FORMATION | <input type="checkbox"/> SIDETRACK TO REPAIR WELL       | <input type="checkbox"/> TEMPORARY ABANDON              |
|   | <input type="checkbox"/> TUBING REPAIR                 | <input type="checkbox"/> VENT OR FLARE                  | <input type="checkbox"/> WATER DISPOSAL                 |
|   | <input type="checkbox"/> WATER SHUTOFF                 | <input type="checkbox"/> SI TA STATUS EXTENSION         | <input checked="" type="checkbox"/> APD EXTENSION       |
|   | <input type="checkbox"/> WILDCAT WELL DETERMINATION    | <input type="checkbox"/> OTHER                          | OTHER: <input style="width: 100px;" type="text"/>       |

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

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

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

Date: 12/06/2010  
By: 

|  |                                     |                                    |
|--|-------------------------------------|------------------------------------|
| <b>NAME (PLEASE PRINT)</b><br>Danielle Piernot | <b>PHONE NUMBER</b><br>720 929-6156 | <b>TITLE</b><br>Regulatory Analyst |
| <b>SIGNATURE</b><br>N/A                        | <b>DATE</b><br>11/30/2010           |                                    |



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

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43047404220000**

**API:** 43047404220000

**Well Name:** FEDERAL 920-24K

**Location:** 1899 FSL 2032 FWL QTR NESW SEC 24 TWNP 090S RNG 200E MER S

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

**Date Original Permit Issued:** 12/2/2008

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- Is bonding still in place, which covers this proposed well?  Yes  No

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

**Signature:** Danielle Piernot

**Date:** 11/30/2010

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

**Date:** 12/06/2010

**By:** 

| STATE OF UTAH<br>DEPARTMENT OF NATURAL RESOURCES<br>DIVISION OF OIL, GAS, AND MINING  |  | FORM 9  |
|---|--|---|
| <b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  |  | <b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b><br>UTU-0579  |
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|   |  | <b>7. UNIT or CA AGREEMENT NAME:</b>  |
| <b>1. TYPE OF WELL</b><br>Gas Well  | <b>8. WELL NAME and NUMBER:</b><br>FEDERAL 920-24K   |   |
| <b>2. NAME OF OPERATOR:</b><br>KERR-MCGEE OIL & GAS ONSHORE, L.P.   | <b>9. API NUMBER:</b><br>43047404220000  |   |
| <b>3. ADDRESS OF OPERATOR:</b><br>P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779   | <b>PHONE NUMBER:</b><br>720 929-6515 Ext   | <b>9. FIELD and POOL or WILDCAT:</b><br>NATURAL BUTTES  |
| <b>4. LOCATION OF WELL FOOTAGES AT SURFACE:</b><br>1899 FSL 2032 FWL<br><b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b><br>Qtr/Qtr: NESW Section: 24 Township: 09.0S Range: 20.0E Meridian: S   | <b>COUNTY:</b><br>UINTAH   |   |
|   |  | <b>STATE:</b><br>UTAH   |
| 11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA   |  |   |
| <b>TYPE OF SUBMISSION</b>   | <b>TYPE OF ACTION</b>  |   |
| <input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b><br>Approximate date work will start:<br>12/2/2011<br><br><input type="checkbox"/> <b>SUBSEQUENT REPORT</b><br>Date of Work Completion:<br><br><input type="checkbox"/> <b>SPUD REPORT</b><br>Date of Spud:<br><br><input type="checkbox"/> <b>DRILLING REPORT</b><br>Report Date: | <input type="checkbox"/> ACIDIZE<br><input type="checkbox"/> CHANGE TO PREVIOUS PLANS<br><input type="checkbox"/> CHANGE WELL STATUS<br><input type="checkbox"/> DEEPEN<br><input type="checkbox"/> OPERATOR CHANGE<br><input type="checkbox"/> PRODUCTION START OR RESUME<br><input type="checkbox"/> REPERFORATE CURRENT FORMATION<br><input type="checkbox"/> TUBING REPAIR<br><input type="checkbox"/> WATER SHUTOFF<br><input type="checkbox"/> WILDCAT WELL DETERMINATION<br><input type="checkbox"/> ALTER CASING<br><input type="checkbox"/> CHANGE TUBING<br><input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS<br><input type="checkbox"/> FRACTURE TREAT<br><input type="checkbox"/> PLUG AND ABANDON<br><input type="checkbox"/> RECLAMATION OF WELL SITE<br><input type="checkbox"/> SIDETRACK TO REPAIR WELL<br><input type="checkbox"/> VENT OR FLARE<br><input type="checkbox"/> SI TA STATUS EXTENSION<br><input type="checkbox"/> OTHER |   |
|   | <input type="checkbox"/> CASING REPAIR<br><input type="checkbox"/> CHANGE WELL NAME<br><input type="checkbox"/> CONVERT WELL TYPE<br><input type="checkbox"/> NEW CONSTRUCTION<br><input type="checkbox"/> PLUG BACK<br><input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION<br><input type="checkbox"/> TEMPORARY ABANDON<br><input type="checkbox"/> WATER DISPOSAL<br><input checked="" type="checkbox"/> APD EXTENSION<br>OTHER: <input style="width: 100px;" type="text"/>   |   |
| 12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  |  |   |
| <p>Kerr-McGee Oil &amp; Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.</p>   |  |   |
|   |  | <p><b>Approved by the<br/>Utah Division of<br/>Oil, Gas and Mining</b></p> <p><b>Date:</b> <u>11/23/2011</u></p> <p><b>By:</b> <u></u></p> |
| <b>NAME (PLEASE PRINT)</b><br>Danielle Piernot  | <b>PHONE NUMBER</b><br>720 929-6156  | <b>TITLE</b><br>Regulatory Analyst  |
| <b>SIGNATURE</b><br>N/A   | <b>DATE</b><br>11/22/2011  |   |



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

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43047404220000**

**API:** 43047404220000

**Well Name:** FEDERAL 920-24K

**Location:** 1899 FSL 2032 FWL QTR NESW SEC 24 TWNP 090S RNG 200E MER S

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

**Date Original Permit Issued:** 12/2/2008

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

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

**Signature:** Danielle Piernot

**Date:** 11/22/2011

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



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Green River District-Vernal Field Office

170 South 500 East

Vernal, UT 84078

(435) 781-4400 Fax: (435) 781-4410

<http://www.blm.gov/ut/st/en/fo/vernal.html>

**MAY 14 2012**



IN REPLY REFER TO:  
3160 (UTG011)

Julie Jacobson  
Anadarko Petroleum Corporation  
Kerr McGee Oil & Gas Onshore LP  
1099 18<sup>th</sup> Street, Suite 600  
Denver, CO 80202

43 047 40422

Re: Request to Return APD  
Well No. Federal 920-24K  
NESW, Sec. 24, T9S, R20E  
Uintah County, Utah  
Lease No. UTU-0579

Dear Ms. Jacobson:

The Application for Permit to Drill (APD) for the above referenced well received in this office on December 3, 2008, is being returned unapproved per a request to this office in an email message from you received on April 23, 2012. If you intend to drill at this location at a future date, a new Application for Permit to Drill must be submitted.

If you have any questions regarding APD processing, please contact Cindy Severson at (435) 781-4455.

Sincerely,

Jerry Kenczka  
Assistant Field Manager  
Lands & Mineral Resources

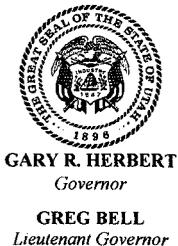
Enclosures

cc: UDOGM

RECEIVED

MAY 22 2012

DIV. OF OIL, GAS & MINING



# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

### Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

November 21, 2012

Luke Urban  
Kerr McGee Oil & Gas Onshore, L.P.  
P.O. Box 173779  
Denver, CO 80217

Re: APD Rescinded – NBU 920-24K, Sec. 24, T. 9S, R. 20E  
Uintah County, Utah API No. 43-047-40422

Dear Mr. Urban:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on December 2, 2008. On November 30, 2009, December 6, 2010 and November 23, 2011 the Division granted a one-year APD extension. On November 13, 2012, you requested that the division rescind the state approved APD. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective November 13, 2012.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason  
Environmental Scientist

cc: Well File  
Bureau of Land Management, Vernal

