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

FORM 3

AMENDED REPORT ☐
(highlight changes)

# APPLICATION FOR PERMIT TO DRILL

| | |
|---|---|
| 5. MINERAL LEASE NO: ST ML 22798 | 6. SURFACE: State |
| 1A. TYPE OF WORK: DRILL ☑ REENTER ☐ DEEPEN ☐ | 7. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A |
| B. TYPE OF WELL: OIL ☐ GAS ☒ OTHER _____ SINGLE ZONE ☐ MULTIPLE ZONE ☑ | 8. UNIT or CA AGREEMENT NAME: 891008900A |
| 2. NAME OF OPERATOR: Kerr-McGee Oil & Gas Onshore, LP | 9. WELL NAME and NUMBER: NBU 1022-32B3S |
| 3. ADDRESS OF OPERATOR: P.O. Box 173779 CITY Denver STATE CO ZIP 80217-3779 PHONE NUMBER: (720) 929-6226 | 10. FIELD AND POOL, OR WILDCAT: Natural Buttes Field |
| 4. LOCATION OF WELL (FOOTAGES) 631238X 4418914Y 39.912049 -109.464565 AT SURFACE: 185' FNL & 2114' FWL LAT 39.9122 LON -109.464717 (NAD 27) AT PROPOSED PRODUCING ZONE: NWNE 1150' FNL & 2130' FEL, Sec. 32, T10S, R22E 631556X 4418629Y 39.909434 -109.460906 | 11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NENW 32 10S 22E |
| 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 21.75 miles southeast of Ouray, Utah | 12. COUNTY: Uintah / 13. STATE: UTAH |

| 15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) | 16. NUMBER OF ACRES IN LEASE: | 17. NUMBER OF ACRES ASSIGNED TO THIS WELL: |
|---|---|---|
| 185' | 640 | 10 |
| **18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET)** | **19. PROPOSED DEPTH:** | **20. BOND DESCRIPTION:** |
| 500' | 8,835 | RLB0005237 |
| **21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.):** | **22. APPROXIMATE DATE WORK WILL START:** | **23. ESTIMATED DURATION:** |
| 5449' GR | | 10 days |

24. **PROPOSED CASING AND CEMENTING PROGRAM**

| SIZE OF HOLE | CASING SIZE, GRADE, AND WEIGHT PER FOOT | | | SETTING DEPTH | CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT | | | |
|---|---|---|---|---|---|---|---|---|
| 12 1/4" | 9 5/8" | J-55 | 36# | 1,800 | Premium Cement | 215 sx | 1.18 | 15.6 |
| | | | | | Premium Cement | 50 sx | 1.18 | 15.6 |
| | | | | | | | | |
| 7 7/8" | 4 1/2" | I-80 | 11.6# | 8,500 | Premium Lite II | 340 sx | 3.38 | 11.0 |
| | | | | | 50/50 Poz G | 1310 sx | 1.31 | 14.3 |
| | | | | | | | | |
| | | | | | | | | |

25. **ATTACHMENTS**

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

- ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- ☑ EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER
- ☑ COMPLETE DRILLING PLAN
- ☐ FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Kevin McIntyre TITLE Regulatory Analyst I

SIGNATURE _____ DATE 7/2/2008

**(This space for State use only)**

API NUMBER ASSIGNED: 43-047-40206

Approved by the
Utah Division of
Oil, Gas and Mining

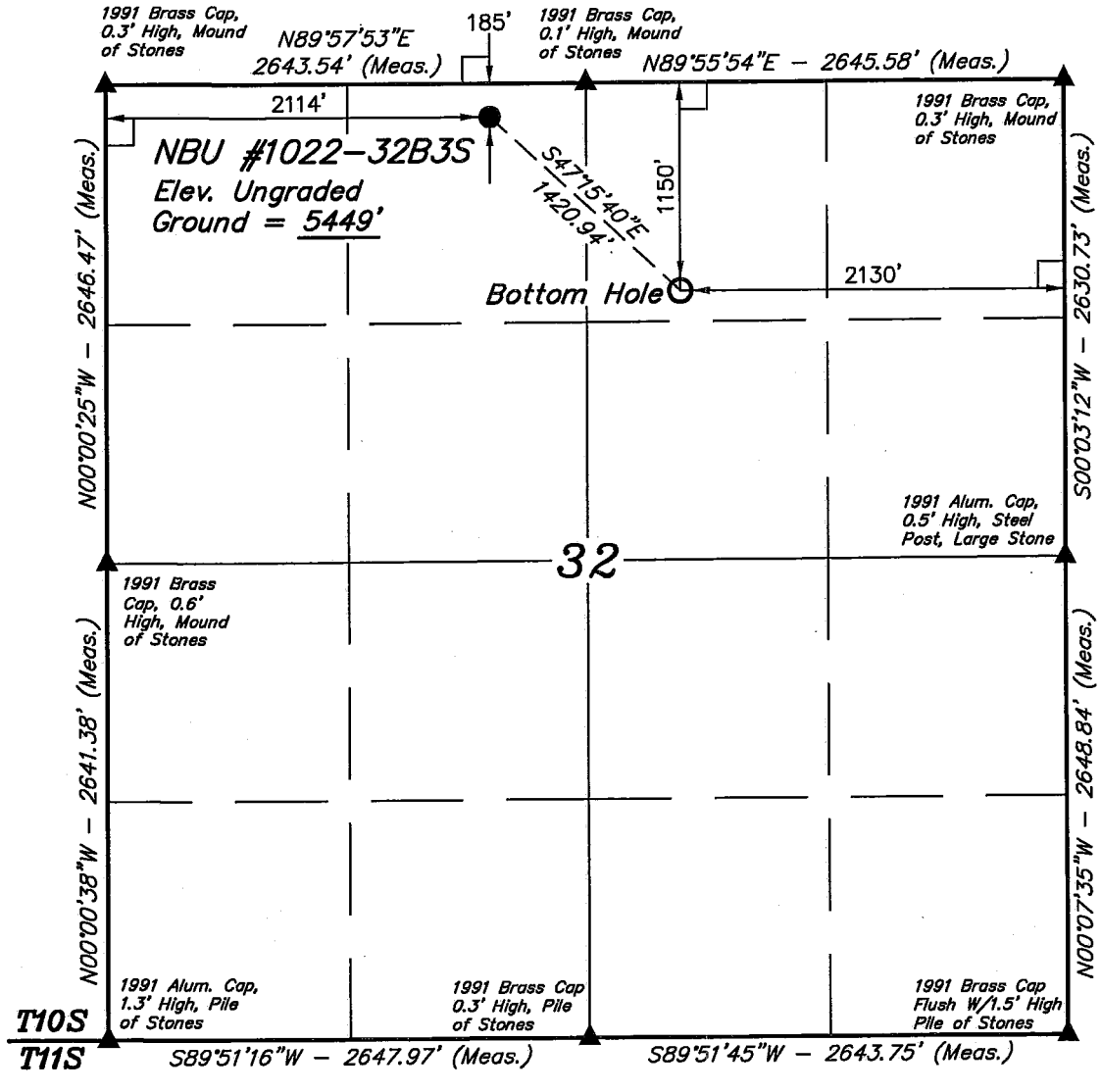
APPROVAL:

Date: 11-04-08
(See Instructions on Reverse Side)
By: _____

RECEIVED
JUL 08 2008
DIV. OF OIL, GAS & MINING

(11/2001)

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




## Kerr–McGee Oil & Gas Onshore LP

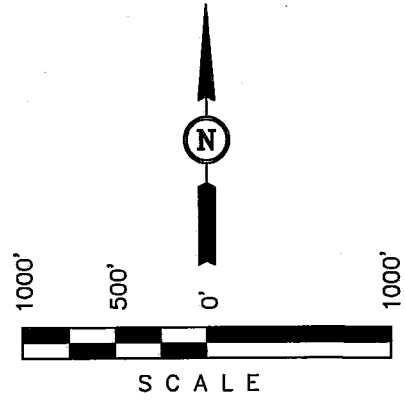
Well location, NBU #1022–32B3S, located as shown in the NE 1/4 NW 1/4 of Section 32, T10S, R22E, S.L.B.&M. Uintah County, Utah.

### BASIS OF ELEVATION

TWO WATER TRIANGULATION STATION LOCATED IN THE NW 1/4 OF SECTION 1, T10S, R21E, S.L.B.&M. TAKEN FROM THE BIG PACK MTN NE, QUADRANGLE, UTAH, UINTAH COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5238 FEET.

### BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.




### 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.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH

REGISTERED LAND SURVEYOR No. 161319 ROBERT L. KAY STATE OF UTAH

**LEGEND:**

└ = 90° SYMBOL

● = PROPOSED WELL HEAD.

▲ = SECTION CORNERS LOCATED.

| NAD 83 (TARGET BOTTOM HOLE) | NAD 83 (SURFACE LOCATION) |
|---|---|
| LATITUDE = 39°54'34.27" (39.909519) | LATITUDE = 39°54'43.80" (39.912167) |
| LONGITUDE = 109°27'42.05" (109.461681) | LONGITUDE = 109°27'55.44" (109.465400) |
| **NAD 27 (TARGET BOTTOM HOLE)** | **NAD 27 (SURFACE LOCATION)** |
| LATITUDE = 39°54'34.39" (39.909553) | LATITUDE = 39°54'43.92" (39.912200) |
| LONGITUDE = 109°27'39.59" (109.460997) | LONGITUDE = 109°27'52.98" (109.464717) |


**UINTAH ENGINEERING & LAND SURVEYING**
*85 SOUTH 200 EAST – VERNAL, UTAH 84078*
(435) 789-1017


| SCALE | DATE SURVEYED: | DATE DRAWN: |
|---|---|---|
| 1" = 1000' | 05-21-08 | 05-29-08 |
| **PARTY** | **REFERENCES** | |
| D.K. C.K. C.C. | G.L.O. PLAT | |
| **WEATHER** | **FILE** | |
| WARM | Kerr–McGee Oil & Gas Onshore LP | |

**NBU 1022-32B3S**
**NENW Sec. 32, T10S,R22E**
**UINTAH COUNTY, UTAH**
**ST ML 22798**

# ONSHORE ORDER NO. 1

## *DRILLING PROGRAM*

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

| Formation | Depth |
|---|---|
| Uinta | 0- Surface |
| Green River | 940' |
| Birds Nest | 1292' |
| Mahogany | 1663' |
| Wasatch | 3999' |
| Mesaverde | 6409' |
| MVU2 | 7376' |
| MVL1 | 8030' |
| TVD | 8500' |
| TD | 8835' |

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

| Substance | Formation | Depth |
|---|---|---|
| | Green River | 940' |
| Water | Birds Nest | 1292' |
| Water | Mahogany | 1663' |
| Gas | Wasatch | 3999' |
| Gas | Mesaverde | 6409' |
| Gas | MVU2 | 7376' |
| Gas | MVL1 | 8030' |
| Water | N/A | |
| Other Minerals | N/A | |

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

*Please refer to the attached Drilling Program.*

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

*Please refer to the attached Drilling Program.*

5. **Drilling Fluids Program:**

*Please refer to the attached Drilling Program.*

6. **Evaluation Program:**

*Please refer to the attached Drilling Program.*

7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 8500' TVD, approximately equals 5270 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 3400 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

8. **Anticipated Starting Dates:**

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

9. **Variances:**

*Please refer to the attached Drilling Program.*
*Onshore Order #2 – Air Drilling Variance*
*Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2*

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

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

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

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

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

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

*not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.*

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

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

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

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

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

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

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

*booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.*

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

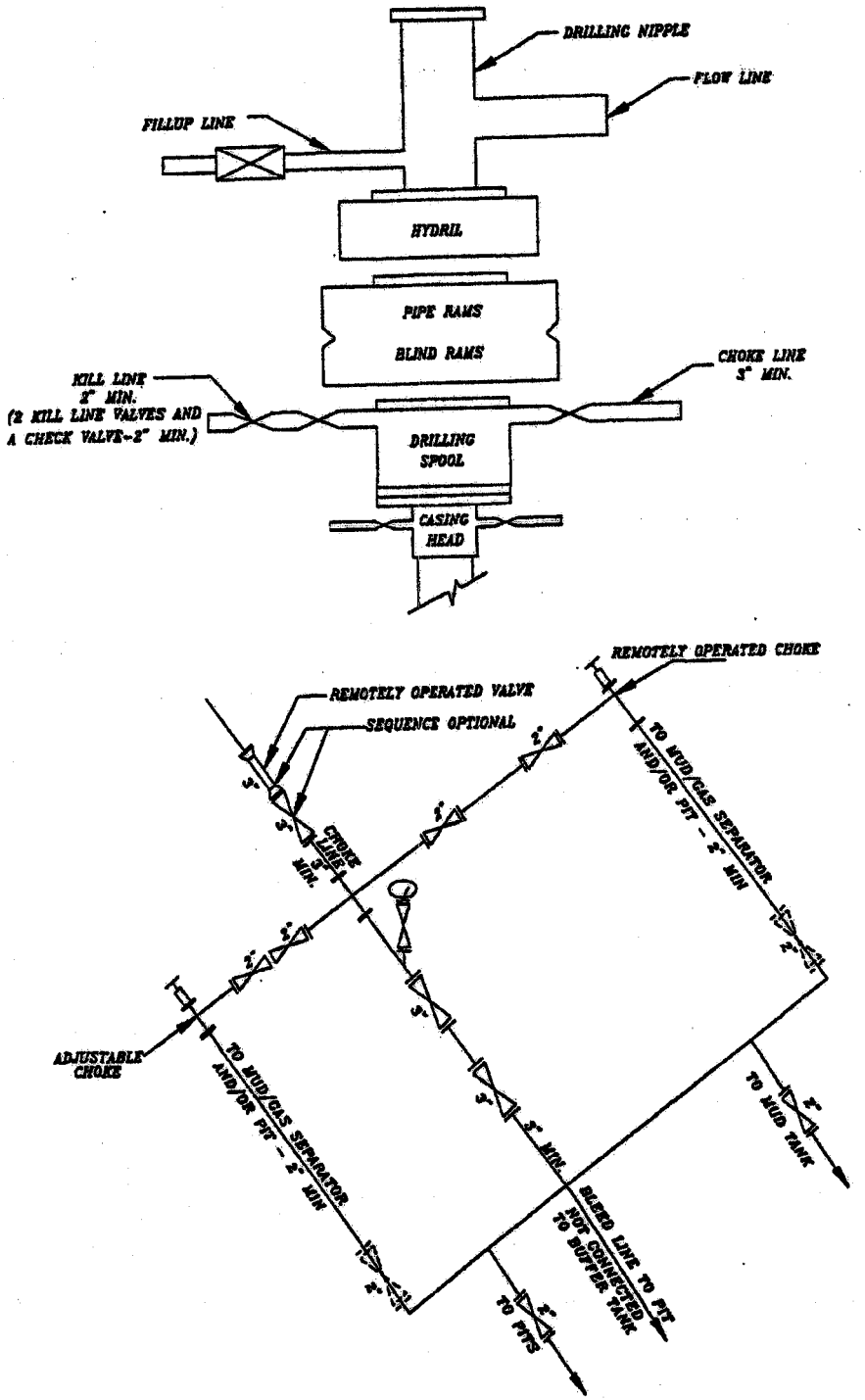
*Conclusion*
*The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.*

**10. Other Information:**

*Please refer to the attached Drilling Program.*

NBU 1022-32B3S

# EXHIBIT A




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

**NBU 1022-32B3S**
**NENW SEC. 32, T10S, R22E**
**UINTAH COUNTY, UTAH**
**ST ML 22798**

# ONSHORE ORDER NO. 1

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

**Directional Drilling:**

In accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, this well will be directionally drilled in order to access portions of our lease which are otherwise inaccessible due to topography.

1. **Existing Roads:**

Refer to Topo Map A for directions to the location.

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

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

All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

2. **Planned Access Roads:**

Approximately 0.2 mi. +/- of access road re-route is proposed. Please refer to the attached Topo Map B.

The upgraded and new portions of the access road will be crowned and ditched with a running surface of 18 feet and a maximum disturbed width of 30 feet. Appropriate water control will be installed to control erosion.

***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.***

The access road was centerline flagged during time of staking.

Surfacing material may be necessary, depending upon weather conditions.

Surface disturbance and vehicular traffic will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

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

Please refer to Topo Map C.

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

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

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain

fluids (i.e., production tanks, produced water tanks, and/or heater/treater). These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank, and be independent of the back cut.

All permanent (on-site six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earthtone color to match one of the standard environmental colors, as determined by the five state Rocky Mountain Inter-Agency Committee.

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 required color is Carlsbad Canyon, standard color number 2.5Y 6/2.

Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

**Approximately 1,019' of 4" pipeline is proposed. Refer to Topo D for the proposed pipeline.**

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

Water for drilling purposes will be obtained from Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32, T4S, R3E, Water User Claim #43-8496, Application #53617.

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

No water well is to be drilled on this lease.

6. **Source of Construction Materials:**

Surface and subsoil materials in the immediate area will be utilized.

Any gravel will be obtained from a commercial source.

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

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations, the liquid contents of the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break, or allow discharge of liquids.

A plastic reinforced liner and felt will be used, it will be a minimum of 20 mil thick, 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 spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical porta-toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash will be burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling of this well.

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.

8. **Ancillary Facilities:**

None are anticipated.

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.

The reserve pit will be lined, and when the reserve pit is closed, the pit liner will be buried below plow depth.

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

39 inch net wire will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.

The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.

Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.

Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance

between any 2 fence posts shall be no greater than 16 feet.

All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

The reserve pit fencing will be on three sides during drilling operations, and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.

Location size may change prior to the drilling of the well due to 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 9 shall be submitted.

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

*Producing Location:*

Immediately upon well completion, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 43 CFR 3162.7-1.

A plastic, nylon reinforced liner will be used, it shall be torn and perforated before backfilling of the reserve pit.

Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations.

The reserve pit and that portion of the location not needed for production facilities/operations will be recontoured to the approximate natural contours. The reserve pit will be reclaimed within 90 days from the date of well completion, weather permitting.

To prevent surface water (s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface three feet above surrounding ground surface to allow the reclaimed pit area to drain effectively.

Upon completion of backfilling, leveling, and recontouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

*Dry Hole/Abandoned Location:*

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and re-establishment of vegetation as specified.

All disturbed surfaces will be recontoured to the approximate natural contours, with reclamation of the well pad and access road to be performed as soon as practical after final abandonment. Reseeding operations will be performed after completion of other reclamation operations.

**11. Surface/Mineral Ownership:**

SITLA
675 East 500 South, Suite 500
Salt Lake City, UT 84102

**12. Other Information:**

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, the approved Plan of Operations, and any applicable Notice of Lessees. The Operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The Operator will control noxious weeds along Rights-Of-Way for roads, pipelines, well sites, or other applicable facilities.

A Class III archaeological survey will be submitted when report becomes available.

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.

**13. Lessee's or Operators'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.

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

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

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by State Surety Bond #RLB0005237.

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

7/2/2008
Date

IPC #08-115

# Paleontological Reconnaissance Survey Report

## Survey of Kerr McGee's Proposed Well Pads, Access Roads, and Pipelines for "NBU #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)" (Sec. 27, T 9 S, R 21 E) & "NBU #1022-32, B3S, D4DS, D4AS, D1S" (Sec. 32, T 10 S, R 22 E)

Archy Bench & Ouray SE
Topographic Quadrangle
Uintah County, Utah

June 11, 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 Oil & Gas Onshore LP and authorized by James Kirkland of the Office of the State Paleontologist, a paleontological reconnaissance survey of Kerr McGee's proposed "NBU #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)" (Sec. 27, T 9 S, R 21 E) & "NBU #1022-32, B3S, D4DS, D4AS, D1S" (Sec. 32, T 10 S, R 22 E) was conducted by Stephen Sandau and Daniel Burk on June 3, 2008. The survey was conducted under Utah Paleontological Investigations Permit #07-356. This survey to collect any paleontological materials discovered during the construction processes in danger of damage or destruction 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 State of Utah, paleontologically-sensitive geologic formations on State lands that 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).
3) The National Historic Preservation Act.16 U.S.C. § 470-1, P.L. 102-575 in conjunction with 42 U.S.C. § 5320; and
4) The Utah Geological Survey. S. C. A.: 63-73-1. (1-21) and U.C.A.: 53B-17-603.

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 #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)" (Sec. 27, T 9 S, R 21 E) & "NBU #1022-32, B3S, D4DS, D4AS, D1S" (Sec. 32, T 10 S, R 22 E) is located on lands managed by the State of Utah Trust Lands Administration (SITLA) one in the Cottonwood and Sand Wash area, 4 miles south of the White River, and approximately 9 miles southeast of Ouray, Utah, and the other in the East Bench area, approximately 16 miles southeast of Ouray, Utah. The project area can be found on the Archy Bench & 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.

**NBU #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)**
The proposed twin well pad upgrade and pipeline are located in the NE/NW quarter-quarter section of Sec. 27, T 9 S, R 21 E (Figure 1). The proposed twin well pad upgrade and pipeline are located on previously disturbed area and sandy colluvium derived from the underlying Wagonhound which outcrops on the west edge of the proposed well pad upgrade. The outcrops are on the surface and are gray-green, medium-grained, sandstone. No fossils were found.

**NBU #1022-32, B3S, D4DS, D4AS, D1S**
The proposed twin well pad upgrade, pipeline re-route, and road re-route are located in the NE/NW quarter-quarter section of Sec. 32, T 10 S, R 22 E (Figure 2). The proposed well pad upgrade is located on an existing road. The proposed pipeline and road re-routes are go around the proposed well pad to the north. The proposed twin well pad upgrade, pipeline re-route, and road re-route are located on sandy colluvium in an area surrounded by 75 to 100 feet high hills with outcrops of tan and maroon sandstones and siltstones. Scattered, unidentifiable bone chips were found along the east end of the proposed pipeline and road re-routes but no other fossil were found.

**SURVEY RESULTS**

| PROJECT | GEOLOGY | PALEONTOLOGY |
|---|---|---|
| **"NBU #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)"** (Sec. 27, T 9 S, R 21 E) | The proposed twin well pad upgrade and pipeline are located on previously disturbed area and sandy colluvium derived from the underlying Wagonhound which outcrops on the west edge of the proposed well pad upgrade. The outcrops are on the surface and are gray-green, medium-grained, sandstone. | No fossils were found. **Class 3a** |
| **"NBU #1022-32, B3S, D4DS, D4AS, D1S"** (Sec. 32, T 10 S, R 22 E) | The proposed twin well pad upgrade, pipeline re-route, and road re-route are located on sandy colluvium in an area surrounded by 75 to 100 feet high hills with outcrops of tan and maroon sandstones and siltstones. | Scattered, unidentifiable bone chips were found along the east end of the proposed pipeline and road re-routes but no other fossil were found. **Class 3a** |

**RECOMMENDATIONS**

A reconnaissance survey was conducted for Kerr McGee's proposed well pad, access road, and pipeline for "NBU #921-27, C2D, D2DS, D2AS, C2AS (Pad 57N)" (Sec. 27, T 9 S, R 21 E) & "NBU #1022-32, B3S, D4DS, D4AS, D1S" (Sec. 32, T 10 S, R 22 E). The well pads and the associated access roads and pipelines covered in this report showed no signs of vertebrate fossils. Therefore, we recommend that no paleontological restrictions should be placed on the development of the projects included in this report.

Buried pipeline will encounter Uinta formational sediments along most of the staked pipeline corridors yet indications from surface fossils predict that little if any vertebrate fossils will be disturbed.

**Nevertheless, if any vertebrate fossil(s) are found during construction within the project area, Operator (Lease Holder) will report all occurrences of paleontological resources discovered to a geologist with the Office of the State Paleontologist. The operator is responsible for informing all persons in the areas who are associated with this project of the requirements for protecting paleontological resources. Paleontological resources found on the public lands are recognized by the State as constituting a fragile and nonrenewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage.**

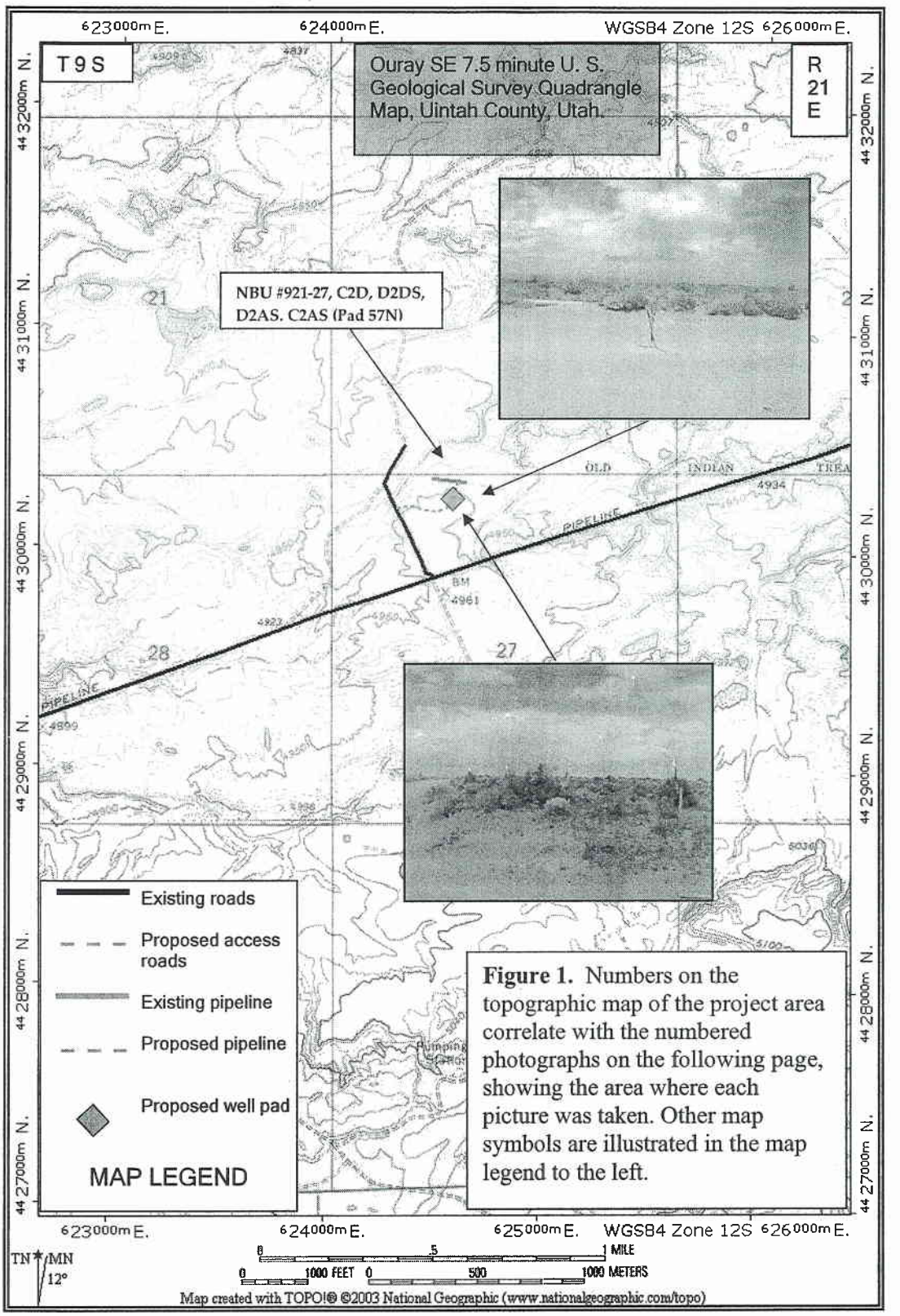



**Figure 1.** Numbers on the topographic map of the project area correlate with the numbered photographs on the following page, showing the area where each picture was taken. Other map symbols are illustrated in the map legend to the left.

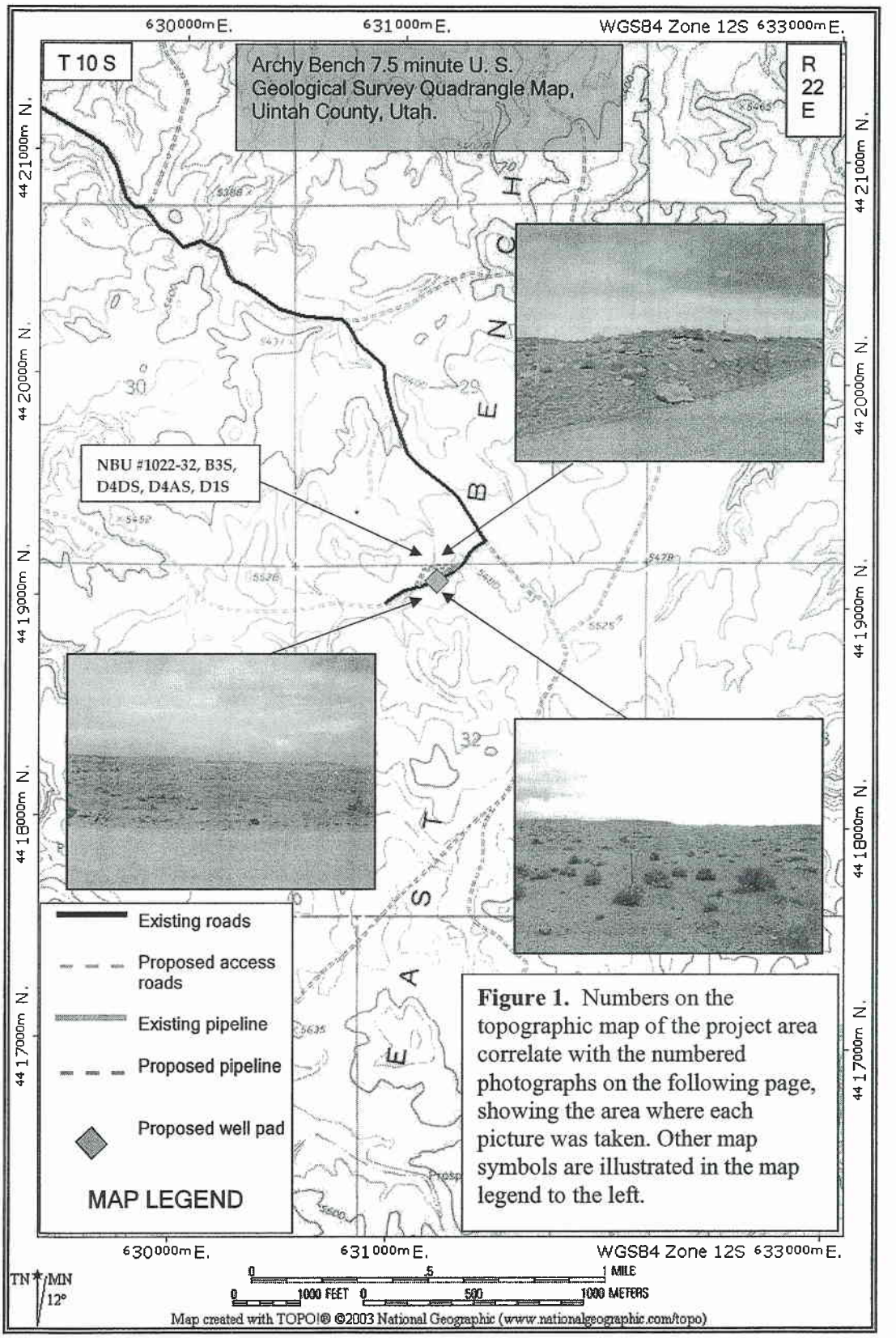



**Figure 1.** Numbers on the topographic map of the project area correlate with the numbered photographs on the following page, showing the area where each picture was taken. Other map symbols are illustrated in the map legend to the left.

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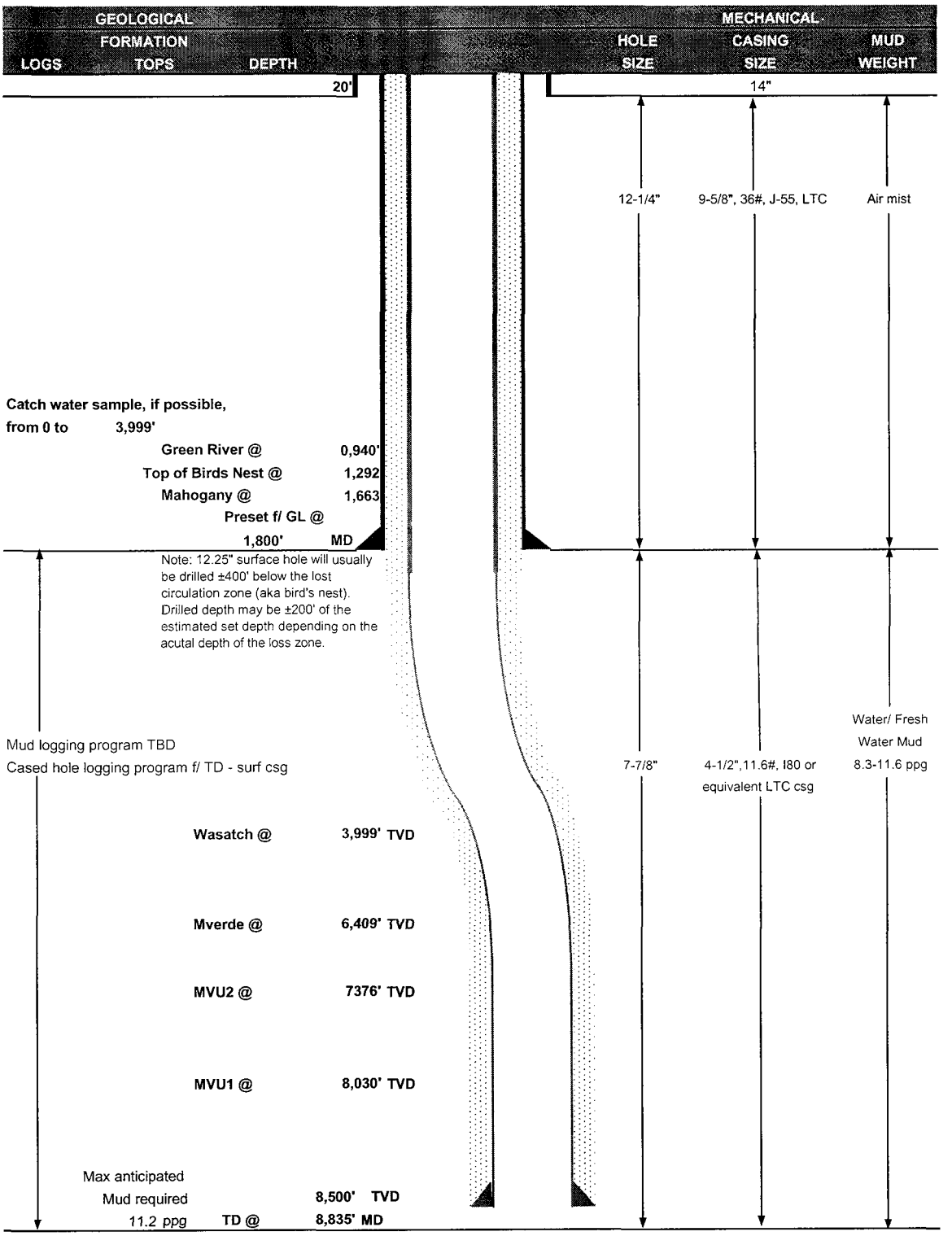
# KERR-McGEE OIL & GAS ONSHORE LP

# DRILLING PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | | DATE | July 2, 2008 | |
| WELL NAME | **NBU 1022-32B3S** | | TD | 8,500' TVD | 8,835' MD |
| FIELD | Natural Buttes | COUNTY Uintah | STATE Utah | ELEVATION | 5,449' GL KB 5,464' |
| SURFACE LOCATION | NENW 185' FNL & 2114' FWL, Sec. 32, T 10S R 22E | | | | |
| | Latitude: 39.9122 | Longitude: -109.464717 | | NAD 27 | |
| BTM HOLE LOCATION | NWNE 1150' FNL & 2130' FEL, Sec. 32, T 10S R 22E | | | | |
| | Latitude: 39.909553 | Longitude: -109.460997 | | NAD 27 | |
| OBJECTIVE ZONE(S) | Wasatch/Mesaverde | | | | |
| ADDITIONAL INFO | Regulatory Agencies: UDOGM (MINERALS AND SURFACE), BLM, Tri-County Health Dept. | | | | |



KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

**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 1800 | 36.00 | J-55 | LTC | 1.14 | 2.40 | 8.90 |
| | | | | | | 7780 | 6350 | 201000 |
| PRODUCTION | 4-1/2" | 0 to 8500 | 11.60 | I-80 | LTC | 2.53 | 1.28 | 2.25 |

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 = 11.2 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 3400 psi

**CEMENT PROGRAM**

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | YIELD |
|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500 | Premium cmt + 2% CaCl + .25 pps flocele | 215 | 60% | 15.60 | 1.18 |
| **Option 1** | | | | | | | |
| | TOP OUT CMT (1) | 200 | 20 gals sodium silicate + Premium cmt + 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 | 65/35 Poz + 6% Gel + 10 pps gilsonite +.25 pps Flocele + 3% salt BWOW | 360 | 35% | 12.60 | 1.81 |
| | TAIL | 500 | Premium cmt + 2% CaCl + .25 pps flocele | 180 | 35% | 15.60 | 1.18 |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| PRODUCTION | LEAD | 3,495' | Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender | 340 | 40% | 11.00 | 3.38 |
| | TAIL | 5,340' | 50/50 Poz/G + 10% salt + 2% gel +.1% R-3 | 1310 | 40% | 14.30 | 1.31 |

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

| | |
|---|---|
| SURFACE | Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe. |
| | |
| PRODUCTION | Float shoe, 1 jt, float collar. 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 System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

**DRILLING ENGINEER:** _____ **DATE:** _____

Brad Laney

**DRILLING SUPERINTENDENT:** _____ **DATE:** _____

Randy Bayne

# Kerr-McGee Oil & Gas Onshore LP
# NBU #1022-32B3S, #1022-32D4DS, #1022-32D4AS & #1022-32D1S
# SECTION 32, T10S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 11.2 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 9.6 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN RIGHT AND PROCEED IN A SOUTHEASTERLY DIRECTION APPROXIMATELY 0.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 0.15 MILES TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 52.75 MILES.

# Kerr-McGee Oil & Gas Onshore LP

## NBU #1022-32B3S, #1022-32D4DS, #1022-32D4AS & #1022-32D1S

LOCATED IN UINTAH COUNTY, UTAH

SECTION 32, T10S, R22E, S.L.B.&M.

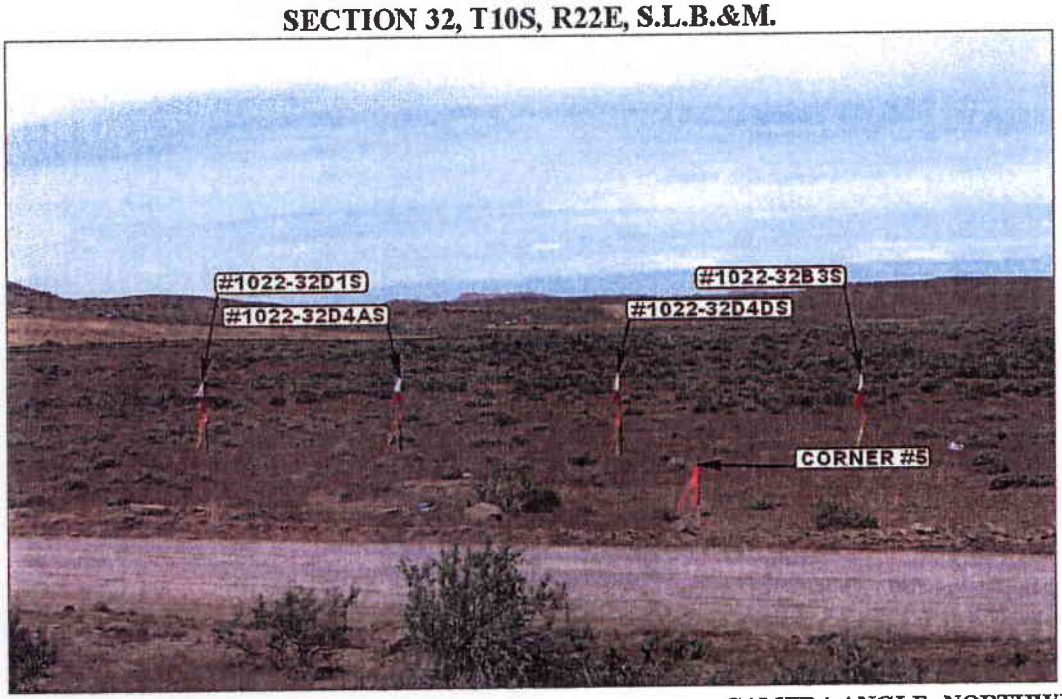



PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKE CAMERA ANGLE: NORTHWESTERLY

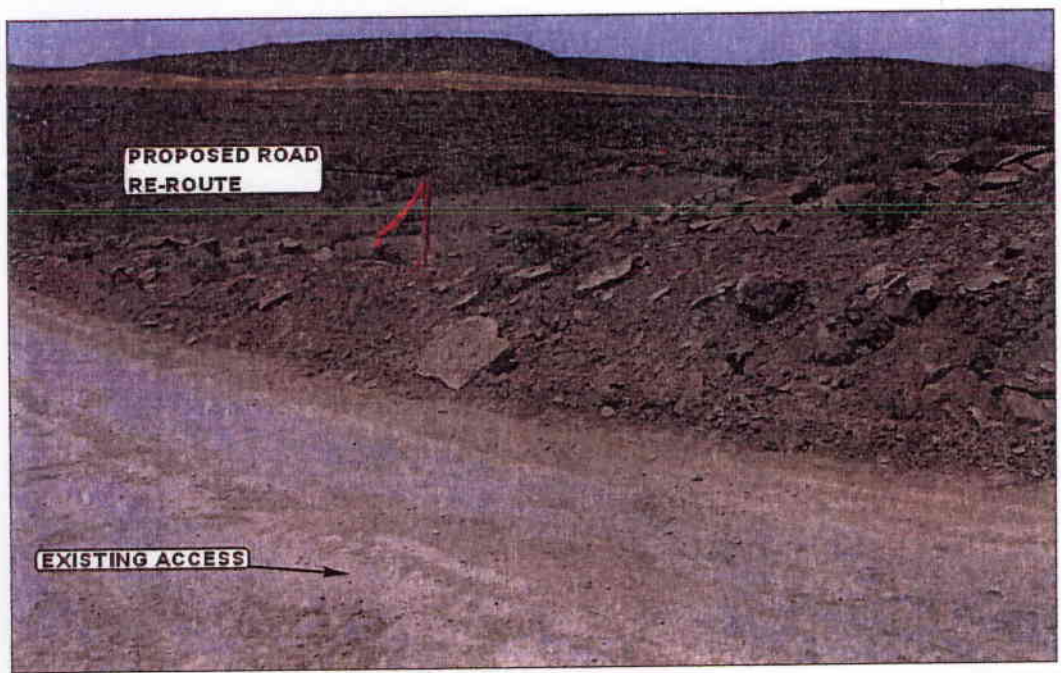



PHOTO: VIEW FROM BEGINNING OF PROPOSED ROAD RE-ROUTE CAMERA ANGLE: NORTHWESTERLY


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
435-789-1017 uels@uelsinc.com
- Since 1964 -


| LOCATION PHOTOS | 06 MONTH | 04 DAY | 08 YEAR | PHOTO |
|---|---|---|---|---|
| TAKEN BY: D.K. | DRAWN BY: Z.L. | REVISED: 00-00-00 | | |

# Kerr-McGee Oil & Gas Onshore LP

## NBU #1022-32B3S, #1022-32D4DS, #1022-32D4AS & #1022-32D1S

**LOCATED IN UINTAH COUNTY, UTAH**
**SECTION 32, T10S, R22E, S.L.B.&M.**


**PHOTO: VIEW OF TIE-IN POINT**

**CAMERA ANGLE: SOUTHWESTERLY**

- Since 1964 -
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
435-789-1017 uels@uelsinc.com

| PIPELINE PHOTOS | 06 MONTH | 04 DAY | 08 YEAR | PHOTO |
|---|---|---|---|---|
| TAKEN BY: D.K. | DRAWN BY: Z.L. | REVISED: 00-00-00 | | |

# Kerr-McGee Oil & Gas Onshore LP

SITE PLAN LAYOUT FOR

NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4

FIGURE #1

REGISTERED LAND SURVEYOR
No. 161319
ROBERT L.
STATE OF UTAH

Winds
Prevailing

SCALE: 1" = 50'
DATE: 05-29-08
Drawn By: C.C.

S41°51'08"W - 1481.08'
(To Bottom Hole)

S35°02'46"W - 250.87'
(To Bottom Hole)

S57°55'01"W - 1059.76'
(To Bottom Hole)

S47°15'40"E - 1420.94'
(To Bottom Hole)

C-2.6'
El. 51.2'

Existing Drainage

C-1.3'
El. 49.9'

Sta. 4+10

C-1.6'
El. 50.2'

Round Corners as Needed

Existing Drainage

Topsoil Stockpile

Existing Road

Existing Pipeline

200'

260'

Pit Topsoil

FLARE PIT

C-3.1'
El. 51.7'

C-1.1'
El. 49.7'

C-0.2'
El. 48.8'

52'

48'

88'

El. 58.8'
C-20.2'
(btm. pit)

100'

PIPE TUBS

CATWALK

PIPE RACKS

#1022-32B3S

C-0.3'
El. 48.9'

#1022-32D4AS

C-0.4'
El. 49.0'

#1022-32D4DS

70'

20'

120'

RESERVE PITS
(10' Deep)

40'

135'

Sta. 1+50

RIG

#1022-32B3S

C-0.4'
El. 49.0'

F-3.9'
El. 44.7'

C-1.3'
El. 49.9'

MUD TANKS

DOG HOUSE

TOILET

TRAILER

LIGHT PLANT

BOILER

COMPRESSOR

BOOSTER

PUMP HOUSE

WATER TANK

Sta. 0+50

Approx. Top of Cut Slope

15' WIDE BENCH

220'

Reserve Pit Backfill & Spoils Stockpile

Total Pit Capacity
W/2' of Freeboard
= 22,640 Bbls. ±
Total Pit Volume
= 6,140 Cu. Yds.

1 1/2:1 Slope

150'

PROPANE STORAGE

TRASH

C-1.3'
El. 49.9'

Approx. Toe of Fill Slope

Sta. 0+00

Existing Drainage

El. 54.4'
C-15.8'
(btm. pit)

15' WIDE DIKE

C-1.6'
El. 50.2'

F-0.9'
El. 47.7'

Proposed Road Re-Route

Proposed Pipeline Re-Route

SECTION LINE

NOTE:
Flare Pit is to be located a min. of 100' from the Well Head.

NOTES:

Elev. Ungraded Ground At #1022-32B3S Loc. Stake = 5449.0'

FINISHED GRADE ELEV. AT #1022-32B3S LOC. STAKE = 5448.6'

UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

# Kerr-McGee Oil & Gas Onshore LP

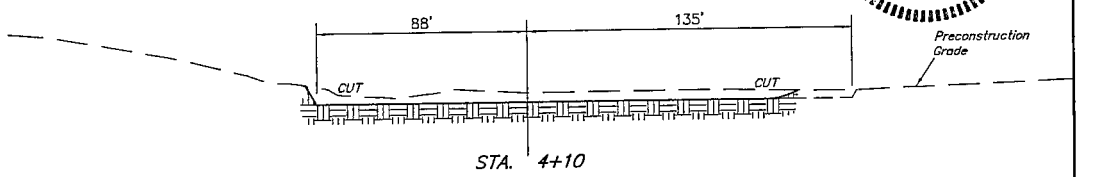
TYPICAL CROSS SECTIONS FOR
NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4

FIGURE #2

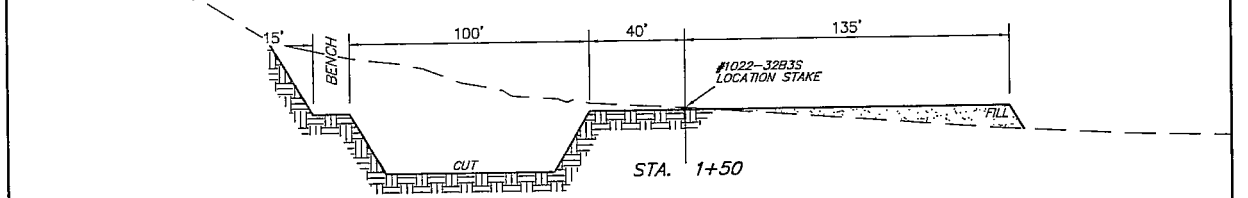
1" = 20'
X-Section Scale
1" = 50'

DATE: 05-29-08
Drawn By: C.C.

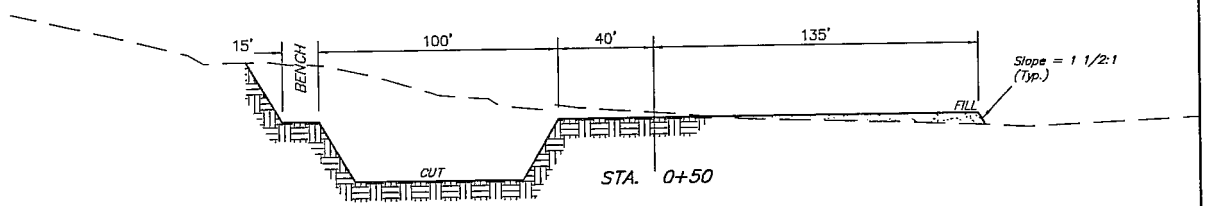
REGISTERED LAND SURVEYOR
No. 161319
ROBERT L. KAY
STATE OF UTAH



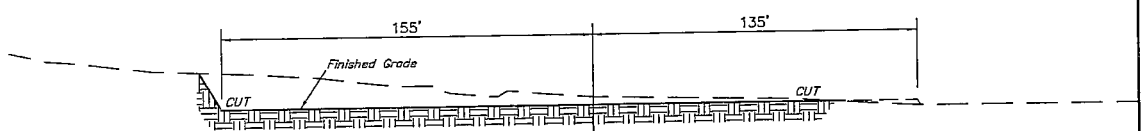

STA. 4+10




STA. 1+50




STA. 0+50




STA. 0+00

NOTE:
Topsoil should not be Stripped Below Finished Grade on Substructure Area.

* NOTE:
FILL QUANTITY INCLUDES 5% FOR COMPACTION

## APPROXIMATE YARDAGES

CUT
(6") Topsoil Stripping = 2,260 Cu. Yds.
Remaining Location = 13,830 Cu. Yds.

TOTAL CUT = 16,090 CU.YDS.
FILL = 3,200 CU.YDS.

EXCESS MATERIAL = 12,890 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.) = 5,330 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation) = 7,560 Cu. Yds.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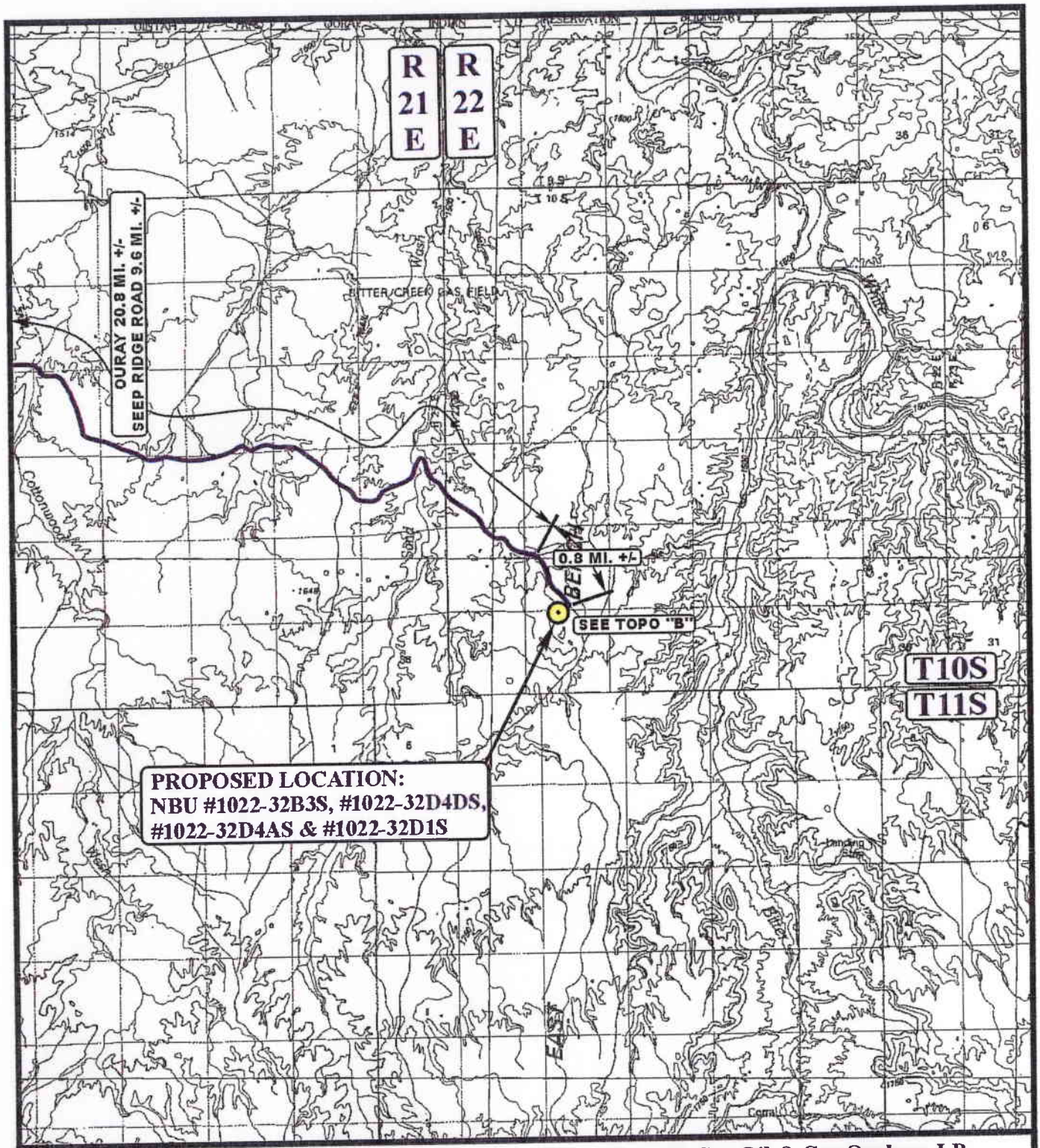
85 So. 200 East * Vernal, Utah 84078 * (435) 789-1017




**LEGEND:**

⊙ PROPOSED LOCATION

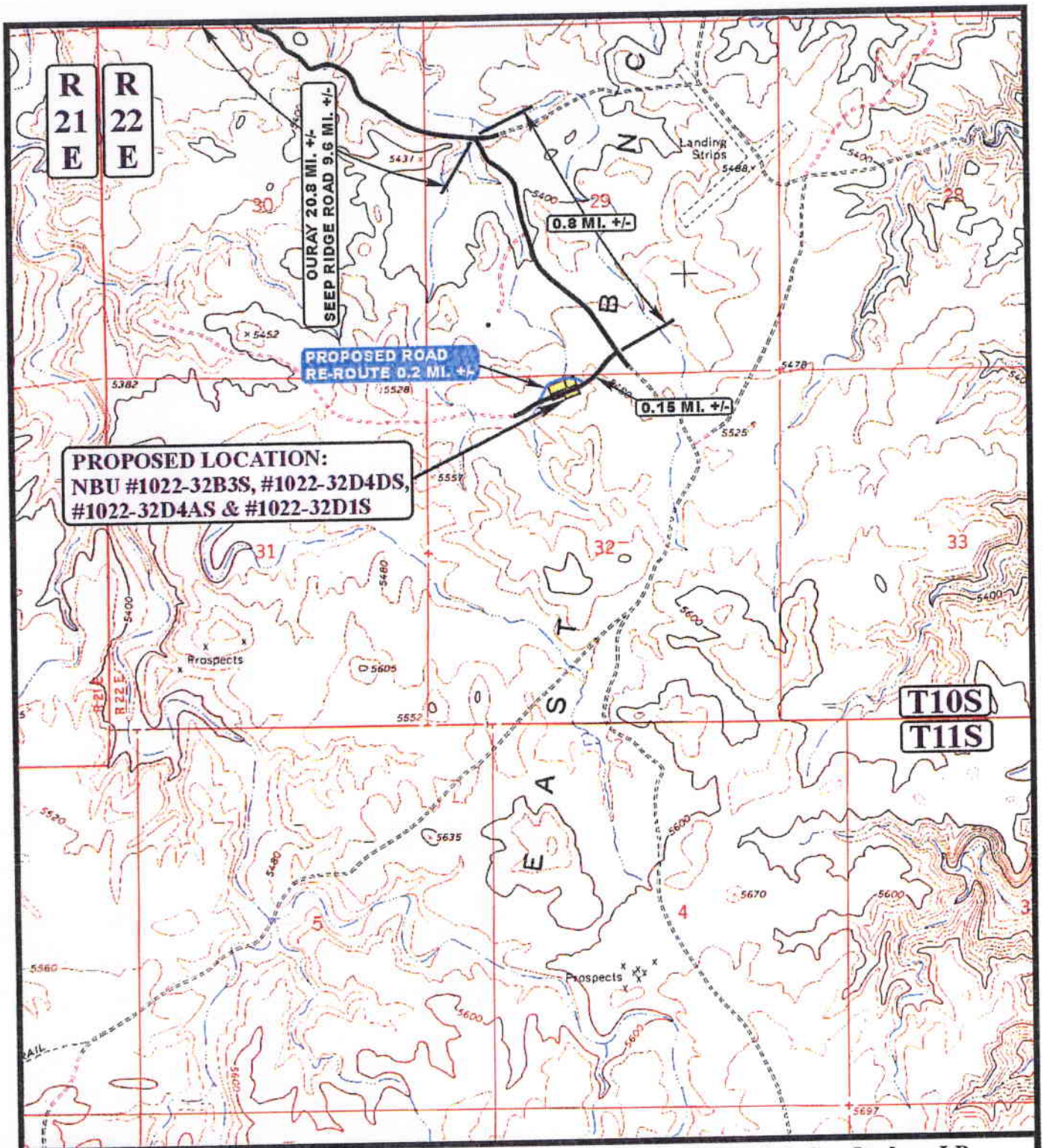
N

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

NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813


| TOPOGRAPHIC MAP | 06 MONTH | 04 DAY | 08 YEAR | A TOPO |
|---|---|---|---|---|
| SCALE: 1:100,000 | DRAWN BY: Z.L. | REVISED: 00-00-00 | | |




**LEGEND:**

EXISTING ROAD

PROPOSED ACCESS ROAD

N

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

NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4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85 South 200 East Vernal, Utah 84078
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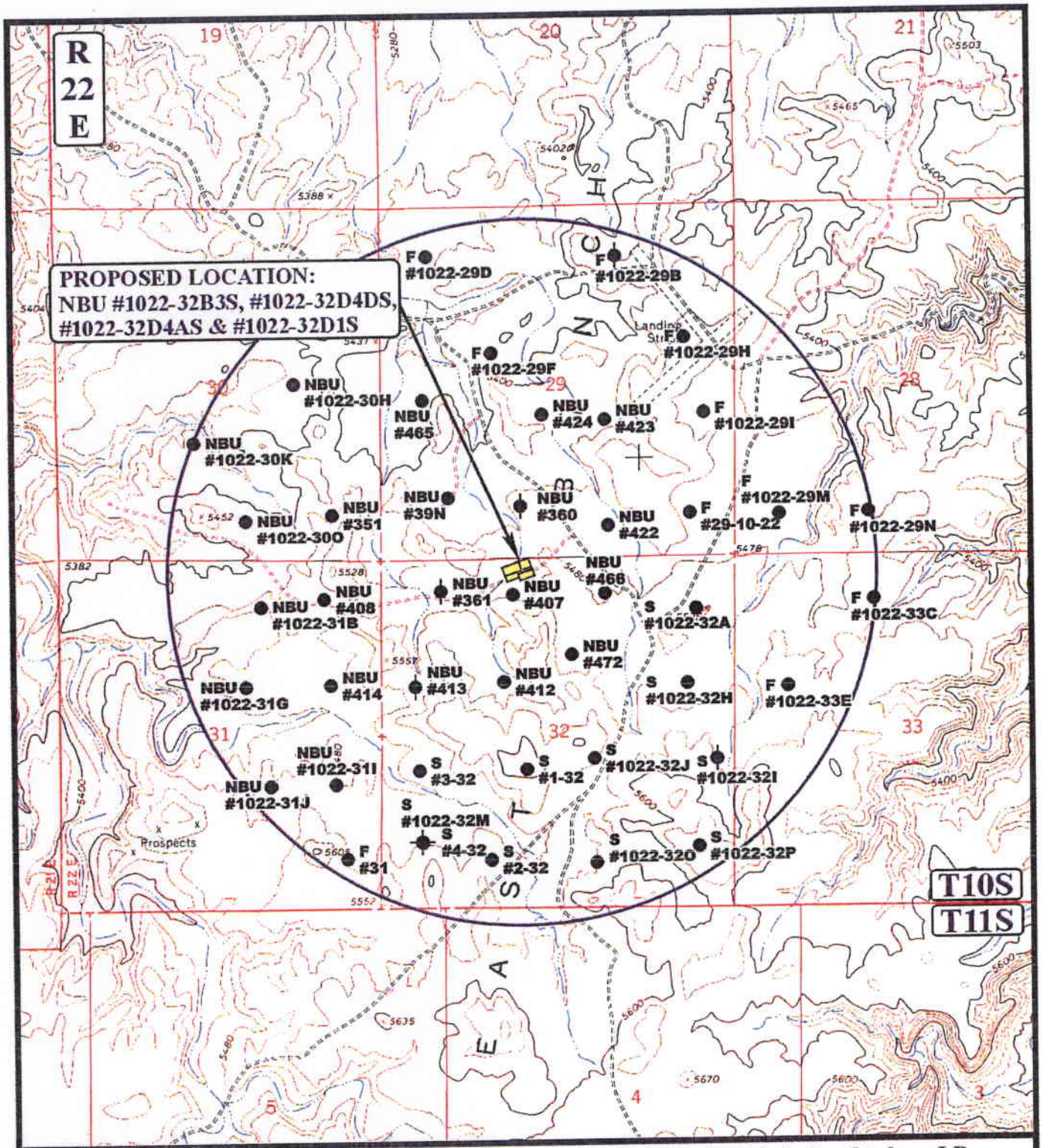
| TOPOGRAPHIC MAP | 06 MONTH | 04 DAY | 08 YEAR | B TOPO |
|---|---|---|---|---|
| SCALE: 1" = 2000' | DRAWN BY: Z.L. | REVISED: 00-00-00 | | |




## LEGEND:

- DISPOSAL WELLS
- PRODUCING WELLS
- SHUT IN WELLS
- WATER WELLS
- ABANDONED WELLS
- TEMPORARILY ABANDONED

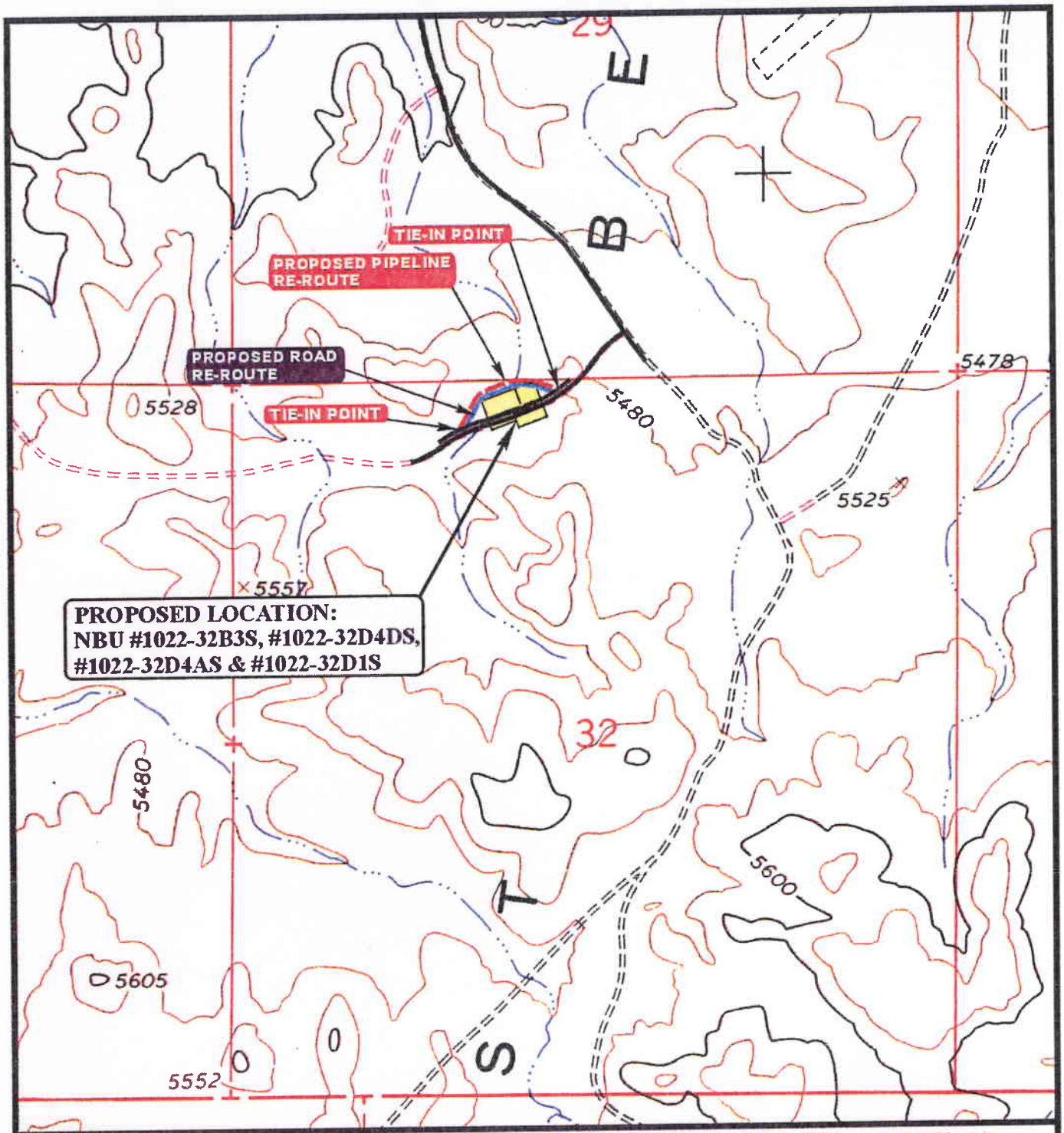
N

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

NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813


| TOPOGRAPHIC MAP | 06 MONTH | 04 DAY | 08 YEAR | C TOPO |
|---|---|---|---|---|
| SCALE: 1" = 2000' | DRAWN BY: Z.L. | REVISED: 00-00-00 | | |




APPROXIMATE TOTAL PIPELINE RE-ROUTE DISTANCE = 1,019' +/-

**LEGEND:**

PROPOSED ACCESS ROAD
EXISTING PIPELINE
PROPOSED PIPELINE

N

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

NBU #1022-32B3S, #1022-32D4DS,
#1022-32D4AS & #1022-32D1S
SECTION 32, T10S, R22E, S.L.B.&M.
NE 1/4 NW 1/4


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813


TOPOGRAPHIC MAP | 06 MONTH | 04 DAY | 08 YEAR | D TOPO

SCALE: 1" = 1000' | DRAWN BY: Z.L. | REVISED: 00-00-00

Weatherford

# Drilling Services

# Proposal

Anadarko KerrMcGee

## ANADARKO - KERR McGEE

NBU #1022-32B3S (1022-32C PAD)

UINTAH COUNTY, UTAH

WELL FILE: PLAN 1

JUNE 27, 2008

**Weatherford International, Ltd.**
2000 OIL DRIVE
CASPER WYOMING 82604 USA
+1.281.260.1300 Main
+1.281.260.4730 Fax
www.weatherford.com

Anadarko Petroleum Corporation

NBU 1022-32B3S
869' FSL, 447' FWL
CARBON COUNTY, UT
Latitude: 39° 54' 43.920 N
Longitude: 109° 27' 52.981 W

Weatherford

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 1860.00 | 0.00 | 0.00 | 1860.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 2860.01 | 30.00 | 132.72 | 2814.94 | -173.59 | 187.99 | 3.00 | 132.72 | 255.88 | |
| 4 | 4687.06 | 30.00 | 132.72 | 4397.20 | -793.32 | 859.17 | 0.00 | 0.00 | 1169.41 | |
| 5 | 5353.74 | 10.00 | 132.72 | 5020.50 | -947.22 | 1025.84 | 3.00 | 180.00 | 1396.27 | |
| 6 | 5687.07 | 0.00 | 0.00 | 5352.14 | -966.91 | 1047.16 | 3.00 | 180.00 | 1425.29 | |
| 7 | 8834.93 | 0.00 | 0.00 | 8500.00 | -966.91 | 1047.16 | 0.00 | 0.00 | 1425.29 | PBHL NBU 1022-32B3S |

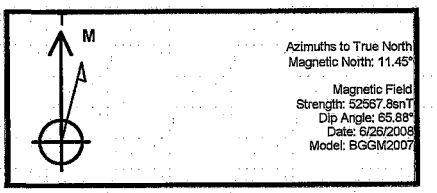
WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

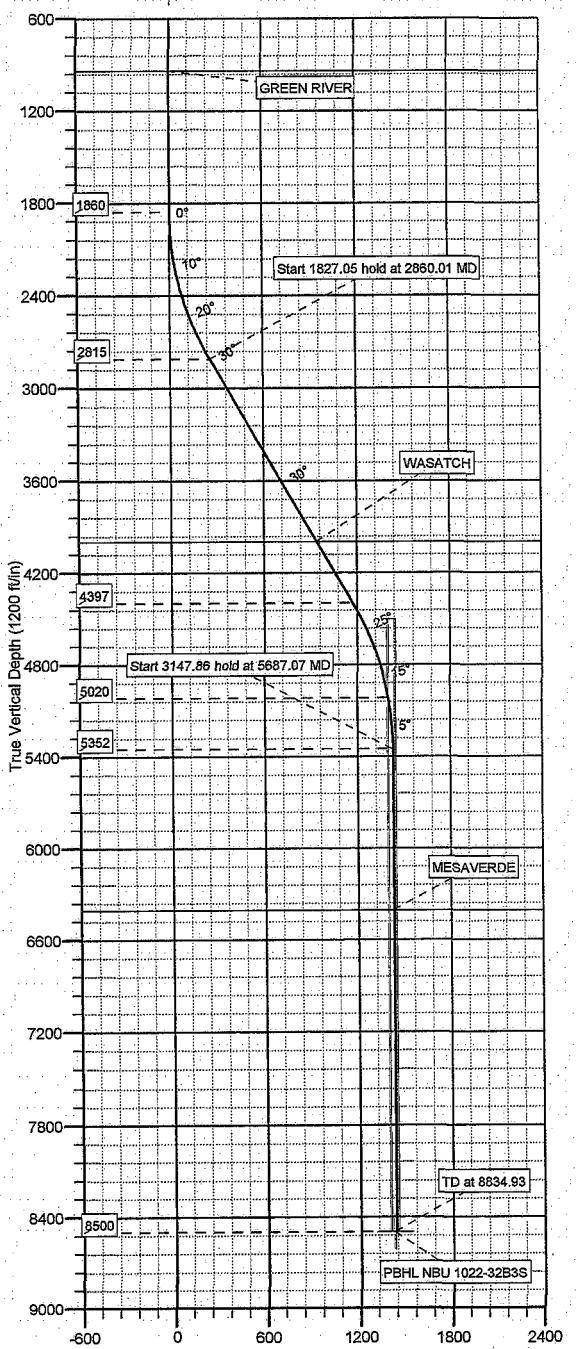
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| PBHL NBU 1022-32B3S | 8500.00 | -964.07 | 1043.50 | 580619.89 | 2571914.29 | 39° 54' 34.391 N | 109° 27' 39.589 W | Circle (Radius: 25.00) |

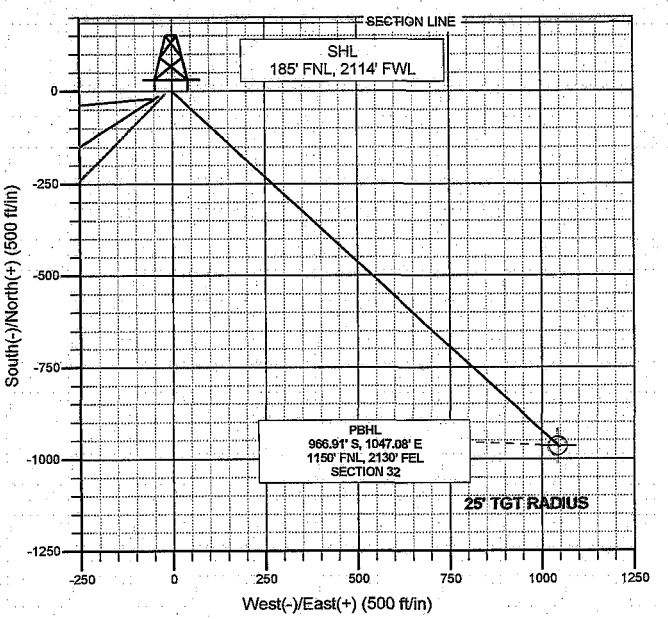
KB ELEV: WELL @ 5467.00ft (Original Well Elev)
GR ELEV: 5449.00

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---|---|---|
| 940.00 | 940.00 | GREEN RIVER |
| 3999.00 | 4227.25 | WASATCH |
| 6409.00 | 6743.93 | MESAVERDE |




Plan: Design #1 (NBU 1022-32B3S/NBU 1022-32B3S)

Created By: TRACY WILLIAMS Date: 16:02, June 27 2008

Anadarko
Petroleum Corporation

# ANADARKO PETROLEUM CORP.

**UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27)**
**ANADARKO 1022-32C PAD**
**NBU 1022-32B3S**

**NBU 1022-32B3S**

**Plan: Design #1**

# Standard Planning Report

**27 June, 2008**

Weatherford®

| | | | |
|---|---|---|---|
| **Database:** | EDM 2003.21 Single User Db | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Company:** | ANADARKO PETROLEUM CORP. | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site:** | ANADARKO 1022-32C PAD | **North Reference:** | True |
| **Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-32B3S | | |
| **Design:** | Design #1 | | |

| | | | |
|---|---|---|---|
| **Project** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | | |
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Utah Central 4302 | | |

| | | | | | |
|---|---|---|---|---|---|
| **Site** | ANADARKO 1022-32C PAD | | | | |
| **Site Position:** | | **Northing:** | 581,559.99 ft | **Latitude:** | 39° 54' 43.920 N |
| **From:** | Lat/Long | **Easting:** | 2,570,849.12 ft | **Longitude:** | 109° 27' 52.981 W |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | " | **Grid Convergence:** | 1.30 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | NBU 1022-32B3S | | | | | |
| **Well Position** | **+N/-S** | -0.03 ft | **Northing:** | 581,559.96 ft | **Latitude:** | 39° 54' 43.920 N |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,570,849.12 ft | **Longitude:** | 109° 27' 52.981 W |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | 5,449.00 ft | **Ground Level:** | 5,449.00 ft |

**Wellbore** NBU 1022-32B3S

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | BGGM2007 | 6/26/2008 | 11.45 | 65.88 | 52,568 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | Design #1 | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0.00 | 0.00 | 0.00 | 132.72 | |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,860.00 | 0.00 | 0.00 | 1,860.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,860.01 | 30.00 | 132.72 | 2,814.94 | -173.59 | 187.99 | 3.00 | 3.00 | 0.00 | 132.72 | |
| 4,687.06 | 30.00 | 132.72 | 4,397.20 | -793.32 | 859.17 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,353.74 | 10.00 | 132.72 | 5,020.50 | -947.22 | 1,025.84 | 3.00 | -3.00 | 0.00 | 180.00 | |
| 5,687.07 | 0.00 | 0.00 | 5,352.14 | -966.91 | 1,047.16 | 3.00 | -3.00 | 0.00 | 180.00 | |
| 8,834.93 | 0.00 | 0.00 | 8,500.00 | -966.91 | 1,047.16 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL NBU 1022-3 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 2003.21 Single User Db | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Company:** | ANADARKO PETROLEUM CORP. | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site:** | ANADARKO 1022-32C PAD | **North Reference:** | True |
| **Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-32B3S | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 940.00 | 0.00 | 0.00 | 940.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **GREEN RIVER** | | | | | | | | | |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 0.00 | 0.00 | 1,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 0.00 | 0.00 | 1,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,860.00 | 0.00 | 0.00 | 1,860.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Start Build 3.00** | | | | | | | | | |
| 1,900.00 | 1.20 | 132.72 | 1,900.00 | -0.28 | 0.31 | 0.42 | 3.00 | 3.00 | 0.00 |
| 2,000.00 | 4.20 | 132.72 | 1,999.87 | -3.48 | 3.77 | 5.13 | 3.00 | 3.00 | 0.00 |
| 2,100.00 | 7.20 | 132.72 | 2,099.37 | -10.22 | 11.06 | 15.06 | 3.00 | 3.00 | 0.00 |
| 2,200.00 | 10.20 | 132.72 | 2,198.21 | -20.48 | 22.18 | 30.18 | 3.00 | 3.00 | 0.00 |
| 2,300.00 | 13.20 | 132.72 | 2,296.12 | -34.23 | 37.07 | 50.46 | 3.00 | 3.00 | 0.00 |
| 2,400.00 | 16.20 | 132.72 | 2,392.83 | -51.44 | 55.71 | 75.83 | 3.00 | 3.00 | 0.00 |
| 2,500.00 | 19.20 | 132.72 | 2,488.09 | -72.07 | 78.05 | 106.23 | 3.00 | 3.00 | 0.00 |
| 2,600.00 | 22.20 | 132.72 | 2,581.62 | -96.04 | 104.02 | 141.58 | 3.00 | 3.00 | 0.00 |
| 2,700.00 | 25.20 | 132.72 | 2,673.18 | -123.31 | 133.54 | 181.77 | 3.00 | 3.00 | 0.00 |
| 2,800.00 | 28.20 | 132.72 | 2,762.51 | -153.79 | 166.55 | 226.69 | 3.00 | 3.00 | 0.00 |
| 2,860.01 | 30.00 | 132.72 | 2,814.94 | -173.59 | 187.99 | 255.88 | 3.00 | 3.00 | 0.00 |
| **Start 1827.05 hold at 2860.01 MD** | | | | | | | | | |
| 2,900.00 | 30.00 | 132.72 | 2,849.57 | -187.15 | 202.68 | 275.87 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 30.00 | 132.72 | 2,936.17 | -221.07 | 239.42 | 325.87 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 30.00 | 132.72 | 3,022.78 | -254.99 | 276.15 | 375.87 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 30.00 | 132.72 | 3,109.38 | -288.91 | 312.89 | 425.87 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 30.00 | 132.72 | 3,195.98 | -322.83 | 349.63 | 475.87 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 30.00 | 132.72 | 3,282.58 | -356.75 | 386.36 | 525.87 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 30.00 | 132.72 | 3,369.18 | -390.67 | 423.10 | 575.88 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 30.00 | 132.72 | 3,455.79 | -424.59 | 459.83 | 625.88 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 30.00 | 132.72 | 3,542.39 | -458.51 | 496.57 | 675.88 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 30.00 | 132.72 | 3,628.99 | -492.43 | 533.30 | 725.88 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 30.00 | 132.72 | 3,715.59 | -526.35 | 570.04 | 775.88 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 30.00 | 132.72 | 3,802.20 | -560.27 | 606.77 | 825.88 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 30.00 | 132.72 | 3,888.80 | -594.19 | 643.51 | 875.88 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 30.00 | 132.72 | 3,975.40 | -628.11 | 680.24 | 925.88 | 0.00 | 0.00 | 0.00 |
| 4,227.25 | 30.00 | 132.72 | 3,999.00 | -637.35 | 690.25 | 939.50 | 0.00 | 0.00 | 0.00 |
| **WASATCH** | | | | | | | | | |
| 4,300.00 | 30.00 | 132.72 | 4,062.00 | -662.03 | 716.98 | 975.88 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 30.00 | 132.72 | 4,148.60 | -695.95 | 753.71 | 1,025.88 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 2003.21 Single User Db | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Company:** | ANADARKO PETROLEUM CORP. | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site:** | ANADARKO 1022-32C PAD | **North Reference:** | True |
| **Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-32B3S | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,500.00 | 30.00 | 132.72 | 4,235.21 | -729.87 | 790.45 | 1,075.88 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 30.00 | 132.72 | 4,321.81 | -763.79 | 827.19 | 1,125.88 | 0.00 | 0.00 | 0.00 |
| 4,687.06 | 30.00 | 132.72 | 4,397.20 | -793.32 | 859.17 | 1,169.41 | 0.00 | 0.00 | 0.00 |
| **Start DLS 3.00 TFO 180.00** | | | | | | | | | |
| 4,700.00 | 29.61 | 132.72 | 4,408.43 | -797.68 | 863.89 | 1,175.84 | 3.00 | -3.00 | 0.00 |
| 4,800.00 | 26.61 | 132.72 | 4,496.63 | -829.64 | 898.51 | 1,222.96 | 3.00 | -3.00 | 0.00 |
| 4,900.00 | 23.61 | 132.72 | 4,587.16 | -858.43 | 929.68 | 1,265.39 | 3.00 | -3.00 | 0.00 |
| 5,000.00 | 20.61 | 132.72 | 4,679.80 | -883.96 | 957.34 | 1,303.03 | 3.00 | -3.00 | 0.00 |
| 5,100.00 | 17.61 | 132.72 | 4,774.28 | -906.17 | 981.39 | 1,335.77 | 3.00 | -3.00 | 0.00 |
| 5,200.00 | 14.61 | 132.72 | 4,870.34 | -925.00 | 1,001.78 | 1,363.52 | 3.00 | -3.00 | 0.00 |
| 5,300.00 | 11.61 | 132.72 | 4,967.72 | -940.39 | 1,018.44 | 1,386.20 | 3.00 | -3.00 | 0.00 |
| 5,353.74 | 10.00 | 132.72 | 5,020.50 | -947.22 | 1,025.84 | 1,396.27 | 3.00 | -3.00 | 0.00 |
| **Start Drop -3.00** | | | | | | | | | |
| 5,400.00 | 8.61 | 132.72 | 5,066.15 | -952.30 | 1,031.34 | 1,403.75 | 3.00 | -3.00 | 0.00 |
| 5,500.00 | 5.61 | 132.72 | 5,165.37 | -960.69 | 1,040.43 | 1,416.13 | 3.00 | -3.00 | 0.00 |
| 5,600.00 | 2.61 | 132.72 | 5,265.10 | -965.56 | 1,045.70 | 1,423.30 | 3.00 | -3.00 | 0.00 |
| 5,687.07 | 0.00 | 0.00 | 5,352.14 | -966.91 | 1,047.16 | 1,425.29 | 3.00 | -3.00 | 0.00 |
| **Start 3147.86 hold at 5687.07 MD** | | | | | | | | | |
| 5,700.00 | 0.00 | 0.00 | 5,365.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,465.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,565.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 5,665.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 5,765.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 5,865.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 5,965.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,065.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,165.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,265.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,365.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,743.93 | 0.00 | 0.00 | 6,409.00 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| **MESAVERDE** | | | | | | | | | |
| 6,800.00 | 0.00 | 0.00 | 6,465.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,565.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 6,665.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 6,765.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 6,865.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 6,965.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,065.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,165.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,265.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,365.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,465.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,565.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,665.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 7,765.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 7,865.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 7,965.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,065.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 0.00 | 0.00 | 8,165.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 0.00 | 0.00 | 8,265.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 0.00 | 0.00 | 8,365.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 0.00 | 0.00 | 8,465.07 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 2003.21 Single User Db | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Company:** | ANADARKO PETROLEUM CORP. | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site:** | ANADARKO 1022-32C PAD | **North Reference:** | True |
| **Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | NBU 1022-32B3S | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,834.93 | 0.00 | 0.00 | 8,500.00 | -966.91 | 1,047.16 | 1,425.29 | 0.00 | 0.00 | 0.00 |
| **TD at 8834.93 - PBHL NBU 1022-32B3S** | | | | | | | | | |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 940.00 | 940.00 | GREEN RIVER | | 0.00 | |
| 4,227.25 | 3,999.00 | WASATCH | | 0.00 | |
| 6,743.93 | 6,409.00 | MESAVERDE | | 0.00 | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,860.00 | 1,860.00 | 0.00 | 0.00 | Start Build 3.00 |
| 2,860.01 | 2,814.94 | -173.59 | 187.99 | Start 1827.05 hold at 2860.01 MD |
| 4,687.06 | 4,397.20 | -793.32 | 859.17 | Start DLS 3.00 TFO 180.00 |
| 5,353.74 | 5,020.50 | -947.22 | 1,025.84 | Start Drop -3.00 |
| 5,687.07 | 5,352.14 | -966.91 | 1,047.16 | Start 3147.86 hold at 5687.07 MD |
| 8,834.93 | 8,500.00 | -966.91 | 1,047.16 | TD at 8834.93 |

Anadarko Petroleum Corporation

# ANADARKO PETROLEUM CORP.

UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27)
ANADARKO 1022-32C PAD
NBU 1022-32B3S

NBU 1022-32B3S
Design #1

# Anticollision Report

27 June, 2008

Weatherford®

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Reference** | Design #1 | | |
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | Stations | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 10,000.00ft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | | |

**Survey Tool Program** **Date** 6/26/2008

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.00 | 8,834.90 | Design #1 (NBU 1022-32B3S) | MWD | MWD - Standard |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| ANADARKO 1022-32C PAD | | | | | | |
| NBU 1022-32D1S - NBU 1022-32D1S - Design #1 | 1,860.00 | 1,860.00 | 60.20 | 52.10 | 7.436 | CC, ES |
| NBU 1022-32D1S - NBU 1022-32D1S - Design #1 | 1,900.00 | 1,899.01 | 60.71 | 52.45 | 7.352 | SF |
| NBU 1022-32D4AS - NBU 1022-32D4AS - Design #1 | 1,860.00 | 1,860.00 | 40.06 | 31.96 | 4.948 | CC, ES |
| NBU 1022-32D4AS - NBU 1022-32D4AS - Design #1 | 1,900.00 | 1,899.18 | 40.64 | 32.39 | 4.923 | SF |
| NBU 1022-32D4DS - NBU 1022-32D4DS - Design #1 | 1,860.00 | 1,860.00 | 19.92 | 11.82 | 2.461 | CC, ES, SF |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D1S - NBU 1022-32D1S - Design #1 — **Offset Site Error:** 0.00 ft

**Survey Program:** 0-MWD — **Offset Well Error:** 0.00 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -111.26 | -21.83 | -56.10 | 60.20 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | -111.26 | -21.83 | -56.10 | 60.20 | 60.01 | 0.18 | 326.619 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | -111.26 | -21.83 | -56.10 | 60.20 | 59.56 | 0.63 | 94.975 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | -111.26 | -21.83 | -56.10 | 60.20 | 59.12 | 1.08 | 55.566 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | -111.26 | -21.83 | -56.10 | 60.20 | 58.67 | 1.53 | 39.271 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | -111.26 | -21.83 | -56.10 | 60.20 | 58.22 | 1.98 | 30.366 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | -111.26 | -21.83 | -56.10 | 60.20 | 57.77 | 2.43 | 24.753 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | -111.26 | -21.83 | -56.10 | 60.20 | 57.32 | 2.88 | 20.891 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | -111.26 | -21.83 | -56.10 | 60.20 | 56.87 | 3.33 | 18.072 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | -111.26 | -21.83 | -56.10 | 60.20 | 56.42 | 3.78 | 15.923 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | -111.26 | -21.83 | -56.10 | 60.20 | 55.97 | 4.23 | 14.231 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | -111.26 | -21.83 | -56.10 | 60.20 | 55.52 | 4.68 | 12.864 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.56 | 2.56 | -111.26 | -21.83 | -56.10 | 60.20 | 55.07 | 5.13 | 11.737 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | -111.26 | -21.83 | -56.10 | 60.20 | 54.62 | 5.58 | 10.791 | |
| 1,400.00 | 1,400.00 | 1,400.00 | 1,400.00 | 3.01 | 3.01 | -111.26 | -21.83 | -56.10 | 60.20 | 54.17 | 6.03 | 9.986 | |
| 1,500.00 | 1,500.00 | 1,500.00 | 1,500.00 | 3.24 | 3.24 | -111.26 | -21.83 | -56.10 | 60.20 | 53.72 | 6.48 | 9.293 | |
| 1,600.00 | 1,600.00 | 1,600.00 | 1,600.00 | 3.46 | 3.46 | -111.26 | -21.83 | -56.10 | 60.20 | 53.27 | 6.93 | 8.690 | |
| 1,700.00 | 1,700.00 | 1,700.00 | 1,700.00 | 3.69 | 3.69 | -111.26 | -21.83 | -56.10 | 60.20 | 52.82 | 7.38 | 8.161 | |
| 1,800.00 | 1,800.00 | 1,800.00 | 1,800.00 | 3.91 | 3.91 | -111.26 | -21.83 | -56.10 | 60.20 | 52.37 | 7.83 | 7.692 | |
| 1,860.00 | 1,860.00 | 1,860.00 | 1,860.00 | 4.05 | 4.05 | -111.26 | -21.83 | -56.10 | 60.20 | 52.10 | 8.10 | 7.436 | CC, ES |
| 1,900.00 | 1,900.00 | 1,899.01 | 1,899.00 | 4.13 | 4.13 | 116.44 | -21.86 | -56.43 | 60.71 | 52.45 | 8.26 | 7.352 | SF |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D1S - NBU 1022-32D1S - Design #1

**Offset Site Error:** 0.00 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.00 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,000.00 | 1,999.87 | 1,996.08 | 1,996.00 | 4.31 | 4.32 | 120.69 | -22.18 | -60.12 | 66.68 | 58.06 | 8.62 | 7.733 | |
| 2,100.00 | 2,099.37 | 2,091.69 | 2,091.29 | 4.50 | 4.52 | 127.39 | -22.83 | -67.76 | 80.23 | 71.24 | 8.99 | 8.924 | |
| 2,200.00 | 2,198.21 | 2,184.87 | 2,183.78 | 4.72 | 4.73 | 133.90 | -23.80 | -79.00 | 102.26 | 92.91 | 9.35 | 10.936 | |
| 2,300.00 | 2,296.12 | 2,274.74 | 2,272.48 | 4.96 | 4.95 | 138.99 | -25.03 | -93.39 | 132.90 | 123.20 | 9.70 | 13.702 | |
| 2,400.00 | 2,392.83 | 2,360.55 | 2,356.58 | 5.27 | 5.18 | 142.59 | -26.48 | -110.35 | 171.80 | 161.75 | 10.04 | 17.108 | |
| 2,500.00 | 2,488.09 | 2,441.71 | 2,435.48 | 5.64 | 5.43 | 145.00 | -28.11 | -129.26 | 218.35 | 207.97 | 10.38 | 21.031 | |
| 2,600.00 | 2,581.62 | 2,517.74 | 2,508.74 | 6.11 | 5.70 | 146.52 | -29.84 | -149.49 | 271.96 | 261.23 | 10.73 | 25.350 | |
| 2,700.00 | 2,673.18 | 2,588.33 | 2,576.13 | 6.68 | 5.98 | 147.39 | -31.64 | -170.44 | 332.01 | 320.91 | 11.09 | 29.935 | |
| 2,800.00 | 2,762.51 | 2,653.29 | 2,637.54 | 7.37 | 6.28 | 147.74 | -33.44 | -191.53 | 397.90 | 386.41 | 11.49 | 34.642 | |
| 2,860.01 | 2,814.94 | 2,689.54 | 2,671.54 | 7.85 | 6.46 | 147.74 | -34.52 | -204.05 | 440.00 | 428.26 | 11.74 | 37.477 | |
| 2,900.00 | 2,849.57 | 2,712.79 | 2,693.24 | 8.18 | 6.58 | 148.30 | -35.23 | -212.36 | 468.81 | 456.86 | 11.95 | 39.220 | |
| 3,000.00 | 2,936.17 | 2,769.09 | 2,745.44 | 9.06 | 6.90 | 149.39 | -37.03 | -233.40 | 542.04 | 529.53 | 12.51 | 43.326 | |
| 3,100.00 | 3,022.78 | 2,822.84 | 2,794.77 | 9.98 | 7.22 | 150.14 | -38.86 | -254.67 | 616.82 | 603.73 | 13.09 | 47.108 | |
| 3,200.00 | 3,109.38 | 2,882.76 | 2,849.30 | 10.93 | 7.61 | 150.77 | -40.98 | -279.41 | 692.77 | 679.06 | 13.71 | 50.541 | |
| 3,300.00 | 3,195.98 | 2,947.52 | 2,908.19 | 11.90 | 8.06 | 151.31 | -43.28 | -306.23 | 768.84 | 754.50 | 14.34 | 53.613 | |
| 3,400.00 | 3,282.58 | 3,012.27 | 2,967.08 | 12.89 | 8.52 | 151.75 | -45.58 | -333.05 | 844.94 | 829.95 | 14.99 | 56.375 | |
| 3,500.00 | 3,369.18 | 3,077.02 | 3,025.97 | 13.90 | 9.00 | 152.12 | -47.88 | -359.88 | 921.05 | 905.40 | 15.65 | 58.843 | |
| 3,600.00 | 3,455.79 | 3,141.77 | 3,084.86 | 14.91 | 9.48 | 152.43 | -50.18 | -386.70 | 997.18 | 980.85 | 16.33 | 61.062 | |
| 3,700.00 | 3,542.39 | 3,206.52 | 3,143.75 | 15.94 | 9.98 | 152.70 | -52.48 | -413.52 | 1,073.32 | 1,056.30 | 17.02 | 63.064 | |
| 3,800.00 | 3,628.99 | 3,271.28 | 3,202.65 | 16.97 | 10.49 | 152.94 | -54.78 | -440.34 | 1,149.47 | 1,131.75 | 17.72 | 64.867 | |
| 3,900.00 | 3,715.59 | 3,336.03 | 3,261.54 | 18.01 | 11.00 | 153.14 | -57.08 | -467.16 | 1,225.63 | 1,207.20 | 18.43 | 66.501 | |
| 4,000.00 | 3,802.20 | 3,400.78 | 3,320.43 | 19.05 | 11.52 | 153.32 | -59.38 | -493.98 | 1,301.79 | 1,282.64 | 19.15 | 67.988 | |
| 4,100.00 | 3,888.80 | 3,465.53 | 3,379.32 | 20.10 | 12.05 | 153.48 | -61.68 | -520.80 | 1,377.95 | 1,358.08 | 19.87 | 69.336 | |
| 4,200.00 | 3,975.40 | 3,530.28 | 3,438.21 | 21.15 | 12.58 | 153.63 | -63.98 | -547.62 | 1,454.12 | 1,433.52 | 20.61 | 70.569 | |
| 4,300.00 | 4,062.00 | 3,595.03 | 3,497.10 | 22.21 | 13.11 | 153.76 | -66.28 | -574.45 | 1,530.30 | 1,508.95 | 21.34 | 71.698 | |
| 4,400.00 | 4,148.60 | 3,675.69 | 3,570.51 | 23.26 | 13.75 | 153.91 | -69.13 | -607.73 | 1,606.43 | 1,584.31 | 22.12 | 72.621 | |
| 4,500.00 | 4,235.21 | 3,862.77 | 3,744.43 | 24.32 | 14.91 | 154.40 | -75.01 | -676.29 | 1,679.59 | 1,656.52 | 23.07 | 72.819 | |
| 4,600.00 | 4,321.81 | 4,080.10 | 3,952.69 | 25.38 | 15.99 | 155.23 | -80.29 | -737.88 | 1,747.24 | 1,723.24 | 24.00 | 72.798 | |
| 4,687.06 | 4,397.20 | 4,296.32 | 4,164.78 | 26.31 | 16.78 | 156.27 | -83.85 | -779.39 | 1,800.62 | 1,775.84 | 24.78 | 72.659 | |
| 4,700.00 | 4,408.43 | 4,330.77 | 4,198.89 | 26.44 | 16.87 | 156.56 | -84.26 | -784.16 | 1,808.02 | 1,783.10 | 24.92 | 72.550 | |
| 4,800.00 | 4,496.63 | 4,621.02 | 4,488.27 | 27.26 | 17.44 | 158.76 | -85.96 | -803.92 | 1,857.80 | 1,831.85 | 25.94 | 71.611 | |
| 4,900.00 | 4,587.16 | 4,719.91 | 4,587.16 | 28.00 | 17.55 | 159.72 | -85.96 | -803.95 | 1,897.95 | 1,871.21 | 26.74 | 70.990 | |
| 5,000.00 | 4,679.80 | 4,812.55 | 4,679.80 | 28.66 | 17.67 | 160.49 | -85.96 | -803.95 | 1,933.64 | 1,906.16 | 27.47 | 70.381 | |
| 5,100.00 | 4,774.28 | 4,907.03 | 4,774.28 | 29.24 | 17.78 | 161.13 | -85.96 | -803.95 | 1,964.74 | 1,936.59 | 28.15 | 69.803 | |
| 5,200.00 | 4,870.34 | 5,003.09 | 4,870.34 | 29.73 | 17.91 | 161.65 | -85.96 | -803.95 | 1,991.14 | 1,962.39 | 28.75 | 69.259 | |
| 5,300.00 | 4,967.72 | 5,100.47 | 4,967.72 | 30.13 | 18.03 | 162.06 | -85.96 | -803.95 | 2,012.75 | 1,983.47 | 29.28 | 68.748 | |
| 5,353.74 | 5,020.50 | 5,153.25 | 5,020.50 | 30.31 | 18.10 | 162.23 | -85.96 | -803.95 | 2,022.35 | 1,992.82 | 29.53 | 68.487 | |
| 5,400.00 | 5,066.15 | 5,198.90 | 5,066.15 | 30.45 | 18.16 | 162.36 | -85.96 | -803.95 | 2,029.49 | 1,999.76 | 29.73 | 68.270 | |
| 5,500.00 | 5,165.37 | 5,298.12 | 5,165.37 | 30.70 | 18.29 | 162.58 | -85.96 | -803.95 | 2,041.30 | 2,011.20 | 30.10 | 67.821 | |
| 5,600.00 | 5,265.10 | 5,397.85 | 5,265.10 | 30.87 | 18.42 | 162.70 | -85.96 | -803.95 | 2,048.15 | 2,017.76 | 30.39 | 67.396 | |
| 5,687.07 | 5,352.14 | 5,484.90 | 5,352.14 | 30.96 | 18.54 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,019.46 | 30.58 | 67.040 | |
| 5,700.00 | 5,365.07 | 5,497.82 | 5,365.07 | 30.97 | 18.56 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,019.42 | 30.62 | 66.953 | |
| 5,800.00 | 5,465.07 | 5,597.82 | 5,465.07 | 31.04 | 18.70 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,019.11 | 30.93 | 66.280 | |
| 5,900.00 | 5,565.07 | 5,697.82 | 5,565.07 | 31.12 | 18.84 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,018.80 | 31.24 | 65.614 | |
| 6,000.00 | 5,665.07 | 5,797.82 | 5,665.07 | 31.20 | 18.98 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,018.48 | 31.56 | 64.955 | |
| 6,100.00 | 5,765.07 | 5,897.82 | 5,765.07 | 31.29 | 19.12 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,018.16 | 31.88 | 64.303 | |
| 6,200.00 | 5,865.07 | 5,997.82 | 5,865.07 | 31.37 | 19.27 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,017.84 | 32.20 | 63.657 | |
| 6,300.00 | 5,965.07 | 6,097.82 | 5,965.07 | 31.46 | 19.41 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,017.51 | 32.53 | 63.019 | |
| 6,400.00 | 6,065.07 | 6,197.82 | 6,065.07 | 31.54 | 19.56 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,017.18 | 32.86 | 62.388 | |
| 6,500.00 | 6,165.07 | 6,297.82 | 6,165.07 | 31.63 | 19.71 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,016.85 | 33.19 | 61.765 | |
| 6,600.00 | 6,265.07 | 6,397.82 | 6,265.07 | 31.72 | 19.86 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,016.52 | 33.53 | 61.148 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D1S - NBU 1022-32D1S - Design #1

**Offset Site Error:** 0.00 ft
**Offset Well Error:** 0.00 ft

**Survey Program:** 0-MWD

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6,700.00 | 6,365.07 | 6,497.82 | 6,365.07 | 31.81 | 20.01 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,016.18 | 33.86 | 60.540 | |
| 6,800.00 | 6,465.07 | 6,597.82 | 6,465.07 | 31.90 | 20.16 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,015.84 | 34.20 | 59.939 | |
| 6,900.00 | 6,565.07 | 6,697.82 | 6,565.07 | 31.99 | 20.32 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,015.50 | 34.54 | 59.345 | |
| 7,000.00 | 6,665.07 | 6,797.82 | 6,665.07 | 32.09 | 20.47 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,015.15 | 34.89 | 58.759 | |
| 7,100.00 | 6,765.07 | 6,897.82 | 6,765.07 | 32.19 | 20.63 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,014.81 | 35.24 | 58.181 | |
| 7,200.00 | 6,865.07 | 6,997.82 | 6,865.07 | 32.28 | 20.79 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,014.46 | 35.58 | 57.611 | |
| 7,300.00 | 6,965.07 | 7,097.82 | 6,965.07 | 32.38 | 20.95 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,014.11 | 35.94 | 57.048 | |
| 7,400.00 | 7,065.07 | 7,197.82 | 7,065.07 | 32.48 | 21.11 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,013.75 | 36.29 | 56.492 | |
| 7,500.00 | 7,165.07 | 7,297.82 | 7,165.07 | 32.58 | 21.27 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,013.40 | 36.64 | 55.944 | |
| 7,600.00 | 7,265.07 | 7,397.82 | 7,265.07 | 32.68 | 21.43 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,013.04 | 37.00 | 55.404 | |
| 7,700.00 | 7,365.07 | 7,497.82 | 7,365.07 | 32.79 | 21.60 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,012.68 | 37.36 | 54.871 | |
| 7,800.00 | 7,465.07 | 7,597.82 | 7,465.07 | 32.89 | 21.76 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,012.32 | 37.72 | 54.346 | |
| 7,900.00 | 7,565.07 | 7,697.82 | 7,565.07 | 33.00 | 21.93 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,011.96 | 38.09 | 53.828 | |
| 8,000.00 | 7,665.07 | 7,797.82 | 7,665.07 | 33.10 | 22.09 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,011.59 | 38.45 | 53.317 | |
| 8,100.00 | 7,765.07 | 7,897.82 | 7,765.07 | 33.21 | 22.26 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,011.23 | 38.82 | 52.814 | |
| 8,200.00 | 7,865.07 | 7,997.82 | 7,865.07 | 33.32 | 22.43 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,010.86 | 39.18 | 52.317 | |
| 8,300.00 | 7,965.07 | 8,097.82 | 7,965.07 | 33.43 | 22.60 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,010.49 | 39.55 | 51.828 | |
| 8,400.00 | 8,065.07 | 8,197.82 | 8,065.07 | 33.54 | 22.77 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,010.12 | 39.93 | 51.346 | |
| 8,500.00 | 8,165.07 | 8,297.82 | 8,165.07 | 33.66 | 22.94 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,009.74 | 40.30 | 50.871 | |
| 8,600.00 | 8,265.07 | 8,397.82 | 8,265.07 | 33.77 | 23.12 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,009.37 | 40.67 | 50.402 | |
| 8,700.00 | 8,365.07 | 8,497.82 | 8,365.07 | 33.89 | 23.29 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,008.99 | 41.05 | 49.940 | |
| 8,800.00 | 8,465.07 | 8,597.82 | 8,465.07 | 34.00 | 23.46 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,008.61 | 41.43 | 49.485 | |
| 8,834.93 | 8,500.00 | 8,632.75 | 8,500.00 | 34.04 | 23.53 | -64.55 | -85.96 | -803.95 | 2,050.04 | 2,008.48 | 41.56 | 49.328 | |

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D4AS - NBU 1022-32D4AS - Design #1

**Offset Site Error:** 0.00 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.00 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -111.29 | -14.55 | -37.32 | 40.06 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | -111.29 | -14.55 | -37.32 | 40.06 | 39.87 | 0.18 | 217.338 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | -111.29 | -14.55 | -37.32 | 40.06 | 39.42 | 0.63 | 63.198 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | -111.29 | -14.55 | -37.32 | 40.06 | 38.97 | 1.08 | 36.975 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | -111.29 | -14.55 | -37.32 | 40.06 | 38.52 | 1.53 | 26.132 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | -111.29 | -14.55 | -37.32 | 40.06 | 38.07 | 1.98 | 20.206 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | -111.29 | -14.55 | -37.32 | 40.06 | 37.63 | 2.43 | 16.471 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | -111.29 | -14.55 | -37.32 | 40.06 | 37.18 | 2.88 | 13.901 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | -111.29 | -14.55 | -37.32 | 40.06 | 36.73 | 3.33 | 12.025 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | -111.29 | -14.55 | -37.32 | 40.06 | 36.28 | 3.78 | 10.596 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | -111.29 | -14.55 | -37.32 | 40.06 | 35.83 | 4.23 | 9.470 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | -111.29 | -14.55 | -37.32 | 40.06 | 35.38 | 4.68 | 8.560 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.56 | 2.56 | -111.29 | -14.55 | -37.32 | 40.06 | 34.93 | 5.13 | 7.810 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | -111.29 | -14.55 | -37.32 | 40.06 | 34.48 | 5.58 | 7.180 | |
| 1,400.00 | 1,400.00 | 1,400.00 | 1,400.00 | 3.01 | 3.01 | -111.29 | -14.55 | -37.32 | 40.06 | 34.03 | 6.03 | 6.645 | |
| 1,500.00 | 1,500.00 | 1,500.00 | 1,500.00 | 3.24 | 3.24 | -111.29 | -14.55 | -37.32 | 40.06 | 33.58 | 6.48 | 6.184 | |
| 1,600.00 | 1,600.00 | 1,600.00 | 1,600.00 | 3.46 | 3.46 | -111.29 | -14.55 | -37.32 | 40.06 | 33.13 | 6.93 | 5.783 | |
| 1,700.00 | 1,700.00 | 1,700.00 | 1,700.00 | 3.69 | 3.69 | -111.29 | -14.55 | -37.32 | 40.06 | 32.68 | 7.38 | 5.430 | |
| 1,800.00 | 1,800.00 | 1,800.00 | 1,800.00 | 3.91 | 3.91 | -111.29 | -14.55 | -37.32 | 40.06 | 32.23 | 7.83 | 5.118 | |
| 1,860.00 | 1,860.00 | 1,860.00 | 1,860.00 | 4.05 | 4.05 | -111.29 | -14.55 | -37.32 | 40.06 | 31.96 | 8.10 | 4.948 | CC, ES |
| 1,900.00 | 1,900.00 | 1,899.18 | 1,899.18 | 4.13 | 4.13 | 116.39 | -14.76 | -37.66 | 40.64 | 32.39 | 8.26 | 4.923 | SF |
| 2,000.00 | 1,999.87 | 1,996.72 | 1,996.61 | 4.31 | 4.31 | 120.16 | -17.14 | -41.47 | 47.37 | 38.76 | 8.61 | 5.501 | |
| 2,100.00 | 2,099.37 | 2,092.90 | 2,092.32 | 4.50 | 4.50 | 125.29 | -22.07 | -49.34 | 61.96 | 52.99 | 8.97 | 6.908 | |
| 2,200.00 | 2,198.21 | 2,186.81 | 2,185.22 | 4.72 | 4.70 | 129.52 | -29.35 | -60.97 | 84.62 | 75.28 | 9.33 | 9.066 | |
| 2,300.00 | 2,296.12 | 2,277.64 | 2,274.32 | 4.96 | 4.92 | 132.37 | -38.68 | -75.87 | 115.12 | 105.41 | 9.71 | 11.861 | |
| 2,400.00 | 2,392.83 | 2,364.71 | 2,358.85 | 5.27 | 5.17 | 134.11 | -49.72 | -93.52 | 153.07 | 142.97 | 10.10 | 15.159 | |
| 2,500.00 | 2,488.09 | 2,447.46 | 2,438.24 | 5.64 | 5.46 | 135.06 | -62.11 | -113.30 | 197.99 | 187.47 | 10.52 | 18.823 | |
| 2,600.00 | 2,581.62 | 2,525.50 | 2,512.11 | 6.11 | 5.78 | 135.44 | -75.45 | -134.61 | 249.40 | 238.42 | 10.98 | 22.713 | |
| 2,700.00 | 2,673.18 | 2,600.00 | 2,581.62 | 6.68 | 6.12 | 135.40 | -89.66 | -157.33 | 306.79 | 295.29 | 11.50 | 26.674 | |
| 2,800.00 | 2,762.51 | 2,666.44 | 2,642.69 | 7.37 | 6.50 | 134.95 | -103.55 | -179.51 | 369.65 | 357.55 | 12.10 | 30.555 | |
| 2,860.01 | 2,814.94 | 2,700.00 | 2,673.18 | 7.85 | 6.69 | 134.44 | -110.99 | -191.40 | 409.82 | 397.35 | 12.47 | 32.856 | |
| 2,900.00 | 2,849.57 | 2,729.34 | 2,699.63 | 8.18 | 6.88 | 134.97 | -117.72 | -202.16 | 437.26 | 424.48 | 12.78 | 34.214 | |
| 3,000.00 | 2,936.17 | 2,789.10 | 2,752.88 | 9.06 | 7.29 | 135.73 | -132.10 | -225.13 | 507.27 | 493.72 | 13.55 | 37.446 | |
| 3,100.00 | 3,022.78 | 2,846.21 | 2,802.96 | 9.98 | 7.72 | 136.14 | -146.67 | -248.40 | 578.97 | 564.61 | 14.36 | 40.315 | |
| 3,200.00 | 3,109.38 | 2,911.46 | 2,859.49 | 10.93 | 8.25 | 136.40 | -163.95 | -276.02 | 651.82 | 636.58 | 15.24 | 42.776 | |
| 3,300.00 | 3,195.98 | 2,979.89 | 2,918.76 | 11.90 | 8.83 | 136.62 | -182.11 | -305.02 | 724.71 | 708.56 | 16.15 | 44.879 | |
| 3,400.00 | 3,282.58 | 3,048.32 | 2,978.03 | 12.89 | 9.44 | 136.80 | -200.26 | -334.02 | 797.61 | 780.53 | 17.09 | 46.682 | |
| 3,500.00 | 3,369.18 | 3,116.76 | 3,037.30 | 13.90 | 10.05 | 136.95 | -218.41 | -363.02 | 870.51 | 852.47 | 18.04 | 48.242 | |
| 3,600.00 | 3,455.79 | 3,185.19 | 3,096.56 | 14.91 | 10.68 | 137.08 | -236.56 | -392.01 | 943.42 | 924.39 | 19.02 | 49.589 | |
| 3,700.00 | 3,542.39 | 3,253.62 | 3,155.83 | 15.94 | 11.33 | 137.19 | -254.71 | -421.01 | 1,016.32 | 996.30 | 20.02 | 50.756 | |
| 3,800.00 | 3,628.99 | 3,322.06 | 3,215.10 | 16.97 | 11.98 | 137.28 | -272.86 | -450.01 | 1,089.23 | 1,068.20 | 21.04 | 51.781 | |
| 3,900.00 | 3,715.59 | 3,390.49 | 3,274.37 | 18.01 | 12.63 | 137.36 | -291.02 | -479.01 | 1,162.14 | 1,140.08 | 22.06 | 52.680 | |
| 4,000.00 | 3,802.20 | 3,458.92 | 3,333.63 | 19.05 | 13.30 | 137.43 | -309.17 | -508.01 | 1,235.05 | 1,211.95 | 23.10 | 53.470 | |
| 4,100.00 | 3,888.80 | 3,527.35 | 3,392.90 | 20.10 | 13.97 | 137.50 | -327.32 | -537.01 | 1,307.96 | 1,283.82 | 24.14 | 54.172 | |
| 4,200.00 | 3,975.40 | 3,595.79 | 3,452.17 | 21.15 | 14.65 | 137.56 | -345.47 | -566.01 | 1,380.87 | 1,355.67 | 25.20 | 54.797 | |
| 4,300.00 | 4,062.00 | 3,664.22 | 3,511.44 | 22.21 | 15.33 | 137.61 | -363.62 | -595.01 | 1,453.78 | 1,427.52 | 26.26 | 55.352 | |
| 4,400.00 | 4,148.60 | 3,732.65 | 3,570.70 | 23.26 | 16.01 | 137.65 | -381.77 | -624.01 | 1,526.70 | 1,499.36 | 27.33 | 55.852 | |
| 4,500.00 | 4,235.21 | 3,801.09 | 3,629.97 | 24.32 | 16.70 | 137.70 | -399.93 | -653.01 | 1,599.61 | 1,571.20 | 28.41 | 56.303 | |
| 4,600.00 | 4,321.81 | 3,869.52 | 3,689.24 | 25.38 | 17.39 | 137.73 | -418.08 | -682.01 | 1,672.52 | 1,643.03 | 29.49 | 56.707 | |
| 4,687.06 | 4,397.20 | 3,929.10 | 3,740.83 | 26.31 | 17.99 | 137.77 | -433.88 | -707.26 | 1,736.00 | 1,705.56 | 30.44 | 57.029 | |
| 4,700.00 | 4,408.43 | 3,937.98 | 3,748.53 | 26.44 | 18.08 | 138.04 | -436.24 | -711.02 | 1,745.41 | 1,714.83 | 30.58 | 57.068 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D4AS - NBU 1022-32D4AS - Design #1

**Offset Site Error:** 0.00 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.00 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.00 | 4,496.63 | 4,129.58 | 3,918.00 | 27.26 | 19.62 | 139.95 | -483.57 | -786.65 | 1,815.02 | 1,782.90 | 32.12 | 56.499 | |
| 4,900.00 | 4,587.16 | 4,429.44 | 4,198.71 | 28.00 | 21.41 | 141.80 | -539.05 | -875.29 | 1,873.72 | 1,839.80 | 33.92 | 55.239 | |
| 5,000.00 | 4,679.80 | 4,783.85 | 4,546.55 | 28.66 | 22.64 | 143.99 | -573.65 | -930.57 | 1,917.87 | 1,882.42 | 35.46 | 54.090 | |
| 5,100.00 | 4,774.28 | 5,011.83 | 4,774.28 | 29.24 | 22.95 | 145.72 | -577.99 | -937.50 | 1,946.75 | 1,910.38 | 36.36 | 53.536 | |
| 5,200.00 | 4,870.34 | 5,107.89 | 4,870.34 | 29.73 | 23.04 | 146.57 | -577.99 | -937.50 | 1,970.07 | 1,933.04 | 37.03 | 53.201 | |
| 5,300.00 | 4,967.72 | 5,205.27 | 4,967.72 | 30.13 | 23.14 | 147.24 | -577.99 | -937.50 | 1,989.23 | 1,951.62 | 37.61 | 52.897 | |
| 5,353.74 | 5,020.50 | 5,258.05 | 5,020.50 | 30.31 | 23.19 | 147.53 | -577.99 | -937.50 | 1,997.76 | 1,959.88 | 37.88 | 52.744 | |
| 5,400.00 | 5,066.15 | 5,303.70 | 5,066.15 | 30.45 | 23.24 | 147.75 | -577.99 | -937.50 | 2,004.10 | 1,966.01 | 38.09 | 52.619 | |
| 5,500.00 | 5,165.37 | 5,402.92 | 5,165.37 | 30.70 | 23.33 | 148.11 | -577.99 | -937.50 | 2,014.61 | 1,976.14 | 38.48 | 52.360 | |
| 5,600.00 | 5,265.10 | 5,502.65 | 5,265.10 | 30.87 | 23.44 | 148.31 | -577.99 | -937.50 | 2,020.71 | 1,981.94 | 38.77 | 52.114 | |
| 5,687.07 | 5,352.14 | 5,589.69 | 5,352.14 | 30.96 | 23.53 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,983.44 | 38.97 | 51.903 | |
| 5,700.00 | 5,365.07 | 5,602.62 | 5,365.07 | 30.97 | 23.54 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,983.41 | 39.00 | 51.862 | |
| 5,800.00 | 5,465.07 | 5,702.62 | 5,465.07 | 31.04 | 23.65 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,983.17 | 39.23 | 51.547 | |
| 5,900.00 | 5,565.07 | 5,802.62 | 5,565.07 | 31.12 | 23.75 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,982.93 | 39.48 | 51.231 | |
| 6,000.00 | 5,665.07 | 5,902.62 | 5,665.07 | 31.20 | 23.86 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,982.68 | 39.72 | 50.913 | |
| 6,100.00 | 5,765.07 | 6,002.62 | 5,765.07 | 31.29 | 23.97 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,982.43 | 39.97 | 50.596 | |
| 6,200.00 | 5,865.07 | 6,102.62 | 5,865.07 | 31.37 | 24.08 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,982.18 | 40.22 | 50.277 | |
| 6,300.00 | 5,965.07 | 6,202.62 | 5,965.07 | 31.46 | 24.20 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,981.92 | 40.48 | 49.959 | |
| 6,400.00 | 6,065.07 | 6,302.62 | 6,065.07 | 31.54 | 24.31 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,981.66 | 40.74 | 49.641 | |
| 6,500.00 | 6,165.07 | 6,402.62 | 6,165.07 | 31.63 | 24.43 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,981.40 | 41.00 | 49.322 | |
| 6,600.00 | 6,265.07 | 6,502.62 | 6,265.07 | 31.72 | 24.55 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,981.13 | 41.27 | 49.004 | |
| 6,700.00 | 6,365.07 | 6,602.62 | 6,365.07 | 31.81 | 24.67 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,980.86 | 41.54 | 48.687 | |
| 6,800.00 | 6,465.07 | 6,702.62 | 6,465.07 | 31.90 | 24.79 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,980.59 | 41.81 | 48.369 | |
| 6,900.00 | 6,565.07 | 6,802.62 | 6,565.07 | 31.99 | 24.91 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,980.32 | 42.09 | 48.053 | |
| 7,000.00 | 6,665.07 | 6,902.62 | 6,665.07 | 32.09 | 25.04 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,980.04 | 42.37 | 47.737 | |
| 7,100.00 | 6,765.07 | 7,002.62 | 6,765.07 | 32.19 | 25.16 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,979.76 | 42.65 | 47.422 | |
| 7,200.00 | 6,865.07 | 7,102.62 | 6,865.07 | 32.28 | 25.29 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,979.47 | 42.93 | 47.108 | |
| 7,300.00 | 6,965.07 | 7,202.62 | 6,965.07 | 32.38 | 25.42 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,979.19 | 43.22 | 46.796 | |
| 7,400.00 | 7,065.07 | 7,302.62 | 7,065.07 | 32.48 | 25.55 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,978.90 | 43.51 | 46.484 | |
| 7,500.00 | 7,165.07 | 7,402.62 | 7,165.07 | 32.58 | 25.68 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,978.60 | 43.80 | 46.174 | |
| 7,600.00 | 7,265.07 | 7,502.62 | 7,265.07 | 32.68 | 25.81 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,978.31 | 44.09 | 45.865 | |
| 7,700.00 | 7,365.07 | 7,602.62 | 7,365.07 | 32.79 | 25.94 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,978.01 | 44.39 | 45.557 | |
| 7,800.00 | 7,465.07 | 7,702.62 | 7,465.07 | 32.89 | 26.08 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,977.71 | 44.69 | 45.251 | |
| 7,900.00 | 7,565.07 | 7,802.62 | 7,565.07 | 33.00 | 26.21 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,977.41 | 45.00 | 44.947 | |
| 8,000.00 | 7,665.07 | 7,902.62 | 7,665.07 | 33.10 | 26.35 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,977.10 | 45.30 | 44.644 | |
| 8,100.00 | 7,765.07 | 8,002.62 | 7,765.07 | 33.21 | 26.49 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,976.80 | 45.61 | 44.343 | |
| 8,200.00 | 7,865.07 | 8,102.62 | 7,865.07 | 33.32 | 26.63 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,976.49 | 45.92 | 44.044 | |
| 8,300.00 | 7,965.07 | 8,202.62 | 7,965.07 | 33.43 | 26.77 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,976.17 | 46.23 | 43.747 | |
| 8,400.00 | 8,065.07 | 8,302.62 | 8,065.07 | 33.54 | 26.91 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,975.86 | 46.54 | 43.452 | |
| 8,500.00 | 8,165.07 | 8,402.62 | 8,165.07 | 33.66 | 27.05 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,975.54 | 46.86 | 43.158 | |
| 8,600.00 | 8,265.07 | 8,502.62 | 8,265.07 | 33.77 | 27.20 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,975.22 | 47.18 | 42.867 | |
| 8,700.00 | 8,365.07 | 8,602.62 | 8,365.07 | 33.89 | 27.34 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,974.90 | 47.50 | 42.577 | |
| 8,800.00 | 8,465.07 | 8,702.62 | 8,465.07 | 34.00 | 27.49 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,974.58 | 47.82 | 42.290 | |
| 8,834.93 | 8,500.00 | 8,737.55 | 8,500.00 | 34.04 | 27.54 | -78.91 | -577.99 | -937.50 | 2,022.40 | 1,974.47 | 47.94 | 42.190 | |

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D4DS - NBU 1022-32D4DS - Design #1 — **Offset Site Error:** 0.00ft

**Survey Program:** 0-MWD — **Offset Well Error:** 0.00ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -111.42 | -7.28 | -18.54 | 19.92 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | -111.42 | -7.28 | -18.54 | 19.92 | 19.74 | 0.18 | 108.083 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | -111.42 | -7.28 | -18.54 | 19.92 | 19.29 | 0.63 | 31.428 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | -111.42 | -7.28 | -18.54 | 19.92 | 18.84 | 1.08 | 18.388 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | -111.42 | -7.28 | -18.54 | 19.92 | 18.39 | 1.53 | 12.995 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | -111.42 | -7.28 | -18.54 | 19.92 | 17.94 | 1.98 | 10.049 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | -111.42 | -7.28 | -18.54 | 19.92 | 17.49 | 2.43 | 8.191 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | -111.42 | -7.28 | -18.54 | 19.92 | 17.04 | 2.88 | 6.913 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | -111.42 | -7.28 | -18.54 | 19.92 | 16.59 | 3.33 | 5.980 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | -111.42 | -7.28 | -18.54 | 19.92 | 16.14 | 3.78 | 5.269 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | -111.42 | -7.28 | -18.54 | 19.92 | 15.69 | 4.23 | 4.709 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | -111.42 | -7.28 | -18.54 | 19.92 | 15.24 | 4.68 | 4.257 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.56 | 2.56 | -111.42 | -7.28 | -18.54 | 19.92 | 14.79 | 5.13 | 3.884 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | -111.42 | -7.28 | -18.54 | 19.92 | 14.34 | 5.58 | 3.571 | |
| 1,400.00 | 1,400.00 | 1,400.00 | 1,400.00 | 3.01 | 3.01 | -111.42 | -7.28 | -18.54 | 19.92 | 13.89 | 6.03 | 3.305 | |
| 1,500.00 | 1,500.00 | 1,500.00 | 1,500.00 | 3.24 | 3.24 | -111.42 | -7.28 | -18.54 | 19.92 | 13.44 | 6.48 | 3.075 | |
| 1,600.00 | 1,600.00 | 1,600.00 | 1,600.00 | 3.46 | 3.46 | -111.42 | -7.28 | -18.54 | 19.92 | 12.99 | 6.93 | 2.876 | |
| 1,700.00 | 1,700.00 | 1,700.00 | 1,700.00 | 3.69 | 3.69 | -111.42 | -7.28 | -18.54 | 19.92 | 12.54 | 7.38 | 2.700 | |
| 1,800.00 | 1,800.00 | 1,800.00 | 1,800.00 | 3.91 | 3.91 | -111.42 | -7.28 | -18.54 | 19.92 | 12.09 | 7.83 | 2.545 | |
| 1,860.00 | 1,860.00 | 1,860.00 | 1,860.00 | 4.05 | 4.05 | -111.42 | -7.28 | -18.54 | 19.92 | 11.82 | 8.10 | 2.461 | CC, ES, SF |
| 1,900.00 | 1,900.00 | 1,899.61 | 1,899.61 | 4.13 | 4.13 | 116.43 | -7.57 | -18.83 | 20.48 | 12.23 | 8.26 | 2.481 | |
| 2,000.00 | 1,999.87 | 1,998.29 | 1,998.17 | 4.31 | 4.31 | 121.13 | -10.82 | -22.08 | 26.92 | 18.32 | 8.61 | 3.128 | |
| 2,100.00 | 2,099.37 | 2,095.83 | 2,095.23 | 4.50 | 4.49 | 126.02 | -17.57 | -28.81 | 40.76 | 31.80 | 8.96 | 4.548 | |
| 2,200.00 | 2,198.21 | 2,191.44 | 2,189.78 | 4.72 | 4.69 | 129.09 | -27.59 | -38.80 | 61.97 | 52.64 | 9.33 | 6.643 | |
| 2,300.00 | 2,296.12 | 2,284.43 | 2,280.94 | 4.96 | 4.91 | 130.75 | -40.53 | -51.71 | 90.29 | 80.58 | 9.71 | 9.296 | |
| 2,400.00 | 2,392.83 | 2,374.20 | 2,368.01 | 5.27 | 5.17 | 131.53 | -56.00 | -67.13 | 125.41 | 115.28 | 10.13 | 12.378 | |
| 2,500.00 | 2,488.09 | 2,460.25 | 2,450.42 | 5.64 | 5.46 | 131.78 | -73.52 | -84.60 | 166.96 | 156.37 | 10.60 | 15.756 | |
| 2,600.00 | 2,581.62 | 2,542.21 | 2,527.79 | 6.11 | 5.80 | 131.65 | -92.64 | -103.67 | 214.57 | 203.45 | 11.12 | 19.294 | |
| 2,700.00 | 2,673.18 | 2,619.79 | 2,599.90 | 6.68 | 6.16 | 131.23 | -112.89 | -123.86 | 267.83 | 256.11 | 11.72 | 22.849 | |
| 2,800.00 | 2,762.51 | 2,692.81 | 2,666.67 | 7.37 | 6.56 | 130.56 | -133.83 | -144.74 | 326.32 | 313.91 | 12.41 | 26.305 | |
| 2,860.01 | 2,814.94 | 2,734.41 | 2,704.18 | 7.85 | 6.83 | 130.05 | -146.56 | -157.43 | 363.75 | 350.89 | 12.87 | 28.269 | |
| 2,900.00 | 2,849.57 | 2,761.37 | 2,728.28 | 8.18 | 7.00 | 130.39 | -155.12 | -165.97 | 389.41 | 376.20 | 13.21 | 29.487 | |
| 3,000.00 | 2,936.17 | 2,827.02 | 2,786.23 | 9.06 | 7.46 | 130.87 | -176.96 | -187.75 | 454.86 | 440.77 | 14.09 | 32.274 | |
| 3,100.00 | 3,022.78 | 2,895.70 | 2,845.84 | 9.98 | 7.98 | 131.04 | -201.10 | -211.82 | 521.85 | 506.79 | 15.06 | 34.654 | |
| 3,200.00 | 3,109.38 | 2,969.73 | 2,909.96 | 10.93 | 8.59 | 131.14 | -227.32 | -237.96 | 589.07 | 572.98 | 16.09 | 36.620 | |
| 3,300.00 | 3,195.98 | 3,043.77 | 2,974.07 | 11.90 | 9.21 | 131.23 | -253.54 | -264.10 | 656.28 | 639.14 | 17.14 | 38.279 | |
| 3,400.00 | 3,282.58 | 3,117.80 | 3,038.18 | 12.89 | 9.86 | 131.30 | -279.75 | -290.25 | 723.50 | 705.27 | 18.23 | 39.681 | |
| 3,500.00 | 3,369.18 | 3,191.84 | 3,102.30 | 13.90 | 10.51 | 131.36 | -305.97 | -316.39 | 790.72 | 771.37 | 19.35 | 40.869 | |
| 3,600.00 | 3,455.79 | 3,265.88 | 3,166.41 | 14.91 | 11.18 | 131.41 | -332.19 | -342.53 | 857.94 | 837.45 | 20.49 | 41.879 | |
| 3,700.00 | 3,542.39 | 3,339.91 | 3,230.53 | 15.94 | 11.86 | 131.45 | -358.41 | -368.67 | 925.16 | 903.52 | 21.64 | 42.749 | |
| 3,800.00 | 3,628.99 | 3,413.95 | 3,294.64 | 16.97 | 12.55 | 131.48 | -384.62 | -394.81 | 992.38 | 969.57 | 22.81 | 43.503 | |
| 3,900.00 | 3,715.59 | 3,487.99 | 3,358.75 | 18.01 | 13.25 | 131.52 | -410.84 | -420.96 | 1,059.60 | 1,035.60 | 24.00 | 44.157 | |
| 4,000.00 | 3,802.20 | 3,562.02 | 3,422.87 | 19.05 | 13.95 | 131.54 | -437.06 | -447.10 | 1,126.82 | 1,101.62 | 25.19 | 44.727 | |
| 4,100.00 | 3,888.80 | 3,636.06 | 3,486.98 | 20.10 | 14.66 | 131.57 | -463.27 | -473.24 | 1,194.04 | 1,167.64 | 26.40 | 45.230 | |
| 4,200.00 | 3,975.40 | 3,710.09 | 3,551.10 | 21.15 | 15.37 | 131.59 | -489.49 | -499.38 | 1,261.26 | 1,233.64 | 27.61 | 45.675 | |
| 4,300.00 | 4,062.00 | 3,784.13 | 3,615.21 | 22.21 | 16.08 | 131.61 | -515.71 | -525.52 | 1,328.48 | 1,299.64 | 28.84 | 46.068 | |
| 4,400.00 | 4,148.60 | 3,858.17 | 3,679.33 | 23.26 | 16.80 | 131.63 | -541.92 | -551.67 | 1,395.70 | 1,365.63 | 30.07 | 46.419 | |
| 4,500.00 | 4,235.21 | 3,932.20 | 3,743.44 | 24.32 | 17.52 | 131.64 | -568.14 | -577.81 | 1,462.92 | 1,431.61 | 31.30 | 46.733 | |
| 4,600.00 | 4,321.81 | 4,006.24 | 3,807.55 | 25.38 | 18.25 | 131.66 | -594.36 | -603.95 | 1,530.14 | 1,497.59 | 32.54 | 47.016 | |
| 4,687.06 | 4,397.20 | 4,070.69 | 3,863.37 | 26.31 | 18.88 | 131.67 | -617.18 | -626.71 | 1,588.66 | 1,555.03 | 33.63 | 47.239 | |
| 4,700.00 | 4,408.43 | 4,080.29 | 3,871.68 | 26.44 | 18.98 | 131.93 | -620.58 | -630.10 | 1,597.33 | 1,563.54 | 33.80 | 47.260 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** ANADARKO 1022-32C PAD - NBU 1022-32D4DS - NBU 1022-32D4DS - Design #1

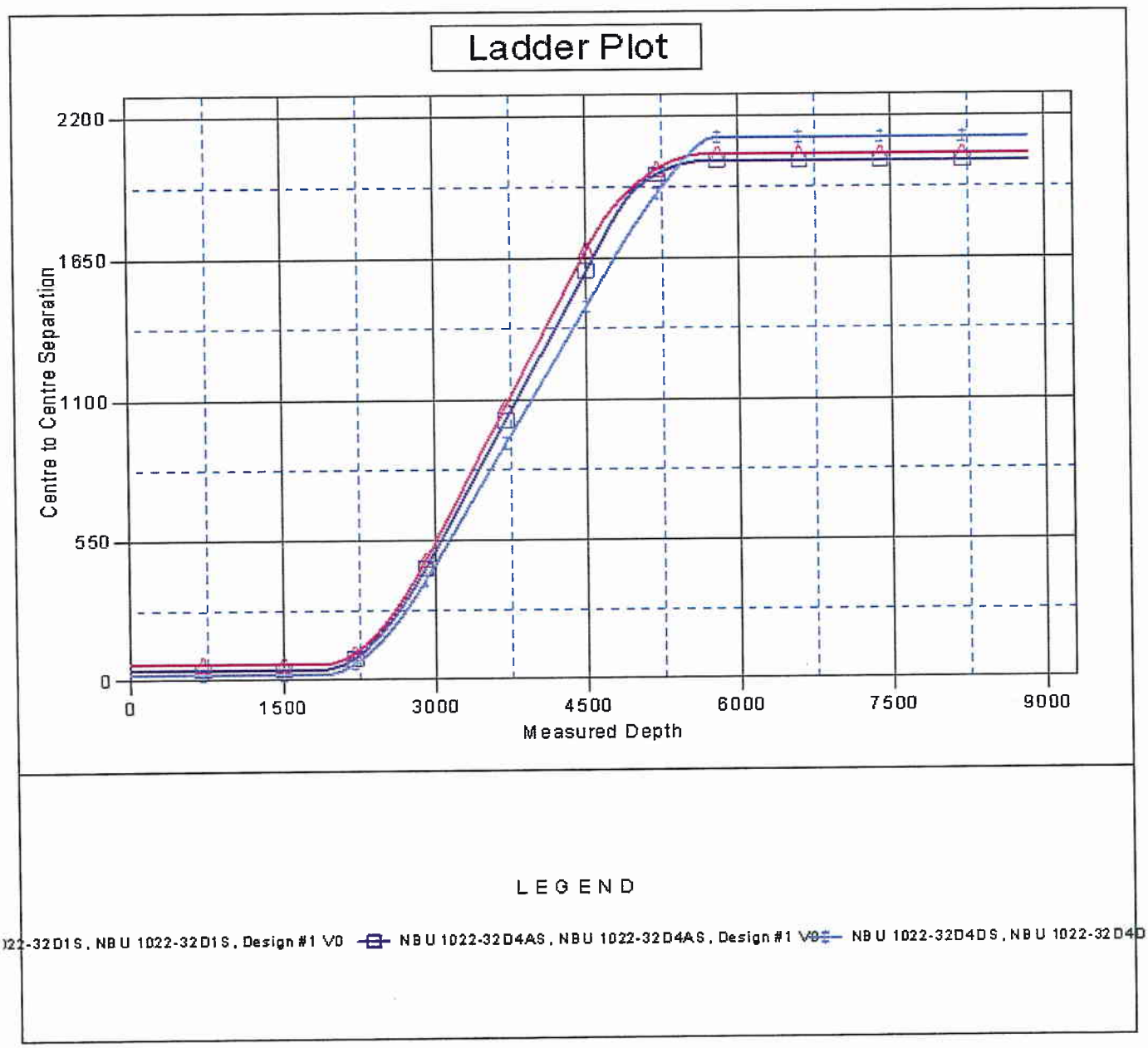
**Offset Site Error:** 0.00 ft
**Offset Well Error:** 0.00 ft

**Survey Program:** 0-MWD

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.00 | 4,496.63 | 4,155.76 | 3,937.04 | 27.26 | 19.72 | 133.74 | -647.31 | -656.75 | 1,662.89 | 1,627.85 | 35.04 | 47.453 | |
| 4,900.00 | 4,587.16 | 4,233.35 | 4,004.23 | 28.00 | 20.49 | 135.21 | -674.78 | -684.15 | 1,725.68 | 1,689.40 | 36.29 | 47.558 | |
| 5,000.00 | 4,679.80 | 4,312.85 | 4,073.07 | 28.66 | 21.27 | 136.39 | -702.93 | -712.22 | 1,785.58 | 1,748.07 | 37.51 | 47.601 | |
| 5,100.00 | 4,774.28 | 4,394.04 | 4,143.38 | 29.24 | 22.08 | 137.32 | -731.68 | -740.88 | 1,842.47 | 1,803.76 | 38.71 | 47.600 | |
| 5,200.00 | 4,870.34 | 4,476.69 | 4,214.96 | 29.73 | 22.90 | 138.02 | -760.95 | -770.07 | 1,896.28 | 1,856.42 | 39.86 | 47.574 | |
| 5,300.00 | 4,967.72 | 4,560.59 | 4,287.61 | 30.13 | 23.73 | 138.53 | -790.66 | -799.69 | 1,946.94 | 1,905.98 | 40.96 | 47.536 | |
| 5,353.74 | 5,020.50 | 4,606.10 | 4,327.03 | 30.31 | 24.19 | 138.73 | -806.78 | -815.76 | 1,972.85 | 1,931.33 | 41.52 | 47.516 | |
| 5,400.00 | 5,066.15 | 4,645.50 | 4,361.14 | 30.45 | 24.58 | 138.86 | -820.73 | -829.67 | 1,994.42 | 1,952.43 | 41.99 | 47.500 | |
| 5,500.00 | 5,165.37 | 4,731.18 | 4,435.34 | 30.70 | 25.44 | 139.03 | -851.07 | -859.93 | 2,038.71 | 1,995.77 | 42.94 | 47.474 | |
| 5,600.00 | 5,265.10 | 4,869.43 | 4,555.62 | 30.87 | 26.72 | 138.56 | -899.32 | -908.05 | 2,079.64 | 2,035.47 | 44.17 | 47.083 | |
| 5,687.07 | 5,352.14 | 5,271.70 | 4,927.92 | 30.96 | 29.17 | -91.08 | -1,005.82 | -1,014.24 | 2,104.96 | 2,058.66 | 46.29 | 45.471 | |
| 5,700.00 | 5,365.07 | 5,336.94 | 4,990.94 | 30.97 | 29.45 | -91.41 | -1,017.76 | -1,026.15 | 2,107.41 | 2,060.87 | 46.54 | 45.282 | |
| 5,800.00 | 5,465.07 | 5,815.71 | 5,465.07 | 31.04 | 30.60 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,067.69 | 47.66 | 44.382 | |
| 5,900.00 | 5,565.07 | 5,915.71 | 5,565.07 | 31.12 | 30.68 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,067.50 | 47.86 | 44.201 | |
| 6,000.00 | 5,665.07 | 6,015.71 | 5,665.07 | 31.20 | 30.75 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,067.30 | 48.05 | 44.021 | |
| 6,100.00 | 5,765.07 | 6,115.71 | 5,765.07 | 31.29 | 30.84 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,067.10 | 48.25 | 43.839 | |
| 6,200.00 | 5,865.07 | 6,215.71 | 5,865.07 | 31.37 | 30.92 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,066.90 | 48.46 | 43.656 | |
| 6,300.00 | 5,965.07 | 6,315.71 | 5,965.07 | 31.46 | 31.00 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,066.69 | 48.66 | 43.471 | |
| 6,400.00 | 6,065.07 | 6,415.71 | 6,065.07 | 31.54 | 31.09 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,066.48 | 48.87 | 43.284 | |
| 6,500.00 | 6,165.07 | 6,515.71 | 6,165.07 | 31.63 | 31.17 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,066.27 | 49.08 | 43.097 | |
| 6,600.00 | 6,265.07 | 6,615.71 | 6,265.07 | 31.72 | 31.26 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,066.06 | 49.30 | 42.908 | |
| 6,700.00 | 6,365.07 | 6,715.71 | 6,365.07 | 31.81 | 31.35 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,065.84 | 49.52 | 42.719 | |
| 6,800.00 | 6,465.07 | 6,815.71 | 6,465.07 | 31.90 | 31.44 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,065.62 | 49.74 | 42.528 | |
| 6,900.00 | 6,565.07 | 6,915.71 | 6,565.07 | 31.99 | 31.53 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,065.39 | 49.97 | 42.336 | |
| 7,000.00 | 6,665.07 | 7,015.71 | 6,665.07 | 32.09 | 31.63 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,065.16 | 50.19 | 42.144 | |
| 7,100.00 | 6,765.07 | 7,115.71 | 6,765.07 | 32.19 | 31.72 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,064.93 | 50.42 | 41.951 | |
| 7,200.00 | 6,865.07 | 7,215.71 | 6,865.07 | 32.28 | 31.82 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,064.70 | 50.66 | 41.757 | |
| 7,300.00 | 6,965.07 | 7,315.71 | 6,965.07 | 32.38 | 31.91 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,064.46 | 50.90 | 41.563 | |
| 7,400.00 | 7,065.07 | 7,415.71 | 7,065.07 | 32.48 | 32.01 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,064.22 | 51.14 | 41.368 | |
| 7,500.00 | 7,165.07 | 7,515.71 | 7,165.07 | 32.58 | 32.11 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,063.98 | 51.38 | 41.172 | |
| 7,600.00 | 7,265.07 | 7,615.71 | 7,265.07 | 32.68 | 32.21 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,063.73 | 51.62 | 40.977 | |
| 7,700.00 | 7,365.07 | 7,715.71 | 7,365.07 | 32.79 | 32.31 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,063.48 | 51.87 | 40.781 | |
| 7,800.00 | 7,465.07 | 7,815.71 | 7,465.07 | 32.89 | 32.42 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,063.23 | 52.12 | 40.585 | |
| 7,900.00 | 7,565.07 | 7,915.71 | 7,565.07 | 33.00 | 32.52 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,062.98 | 52.38 | 40.388 | |
| 8,000.00 | 7,665.07 | 8,015.71 | 7,665.07 | 33.10 | 32.63 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,062.72 | 52.63 | 40.192 | |
| 8,100.00 | 7,765.07 | 8,115.71 | 7,765.07 | 33.21 | 32.73 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,062.47 | 52.89 | 39.995 | |
| 8,200.00 | 7,865.07 | 8,215.71 | 7,865.07 | 33.32 | 32.84 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,062.20 | 53.15 | 39.799 | |
| 8,300.00 | 7,965.07 | 8,315.71 | 7,965.07 | 33.43 | 32.95 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,061.94 | 53.42 | 39.602 | |
| 8,400.00 | 8,065.07 | 8,415.71 | 8,065.07 | 33.54 | 33.06 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,061.67 | 53.68 | 39.406 | |
| 8,500.00 | 8,165.07 | 8,515.71 | 8,165.07 | 33.66 | 33.17 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,061.41 | 53.95 | 39.210 | |
| 8,600.00 | 8,265.07 | 8,615.71 | 8,265.07 | 33.77 | 33.29 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,061.13 | 54.22 | 39.014 | |
| 8,700.00 | 8,365.07 | 8,715.71 | 8,365.07 | 33.89 | 33.40 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,060.86 | 54.49 | 38.818 | |
| 8,800.00 | 8,465.07 | 8,815.71 | 8,465.07 | 34.00 | 33.52 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,060.59 | 54.77 | 38.622 | |
| 8,834.93 | 8,500.00 | 8,850.64 | 8,500.00 | 34.04 | 33.56 | -92.47 | -1,057.96 | -1,066.24 | 2,115.36 | 2,060.49 | 54.87 | 38.554 | |

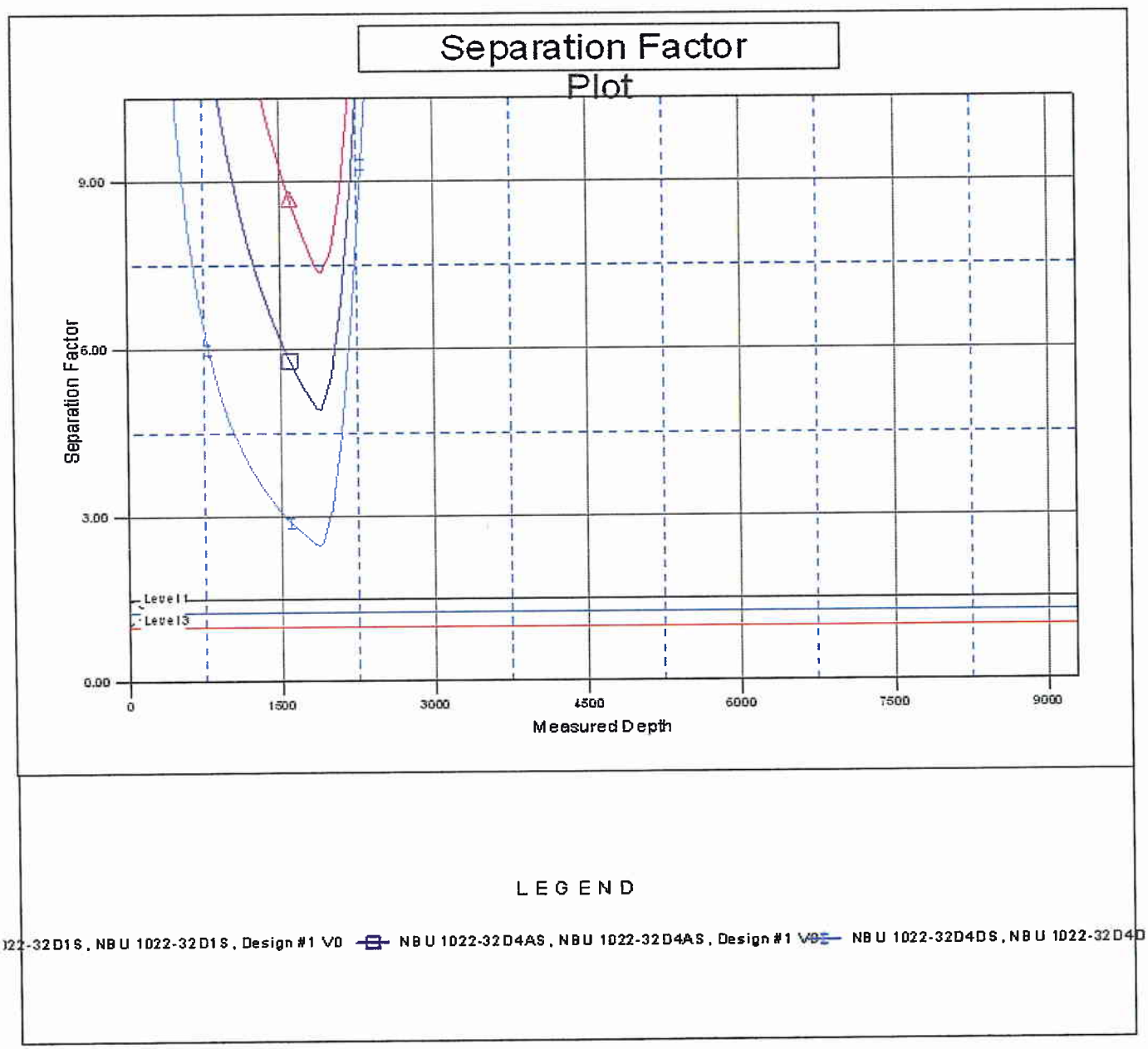
| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 5467.00ft (Original Well Ele\Coordinates are relative to: NBU 1022-32B3S
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1927 (Exact solution), Utah Central 4302
Central Meridian is 111° 30' 0.000 W °
Grid Convergence at Surface is: 1.30°



| | | | |
|---|---|---|---|
| **Company:** | ANADARKO PETROLEUM CORP. | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | UINTAH COUNTY, UTAH (UTM Zone 12N-NAD 27) | **TVD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Reference Site:** | ANADARKO 1022-32C PAD | **MD Reference:** | WELL @ 5467.00ft (Original Well Elev) |
| **Site Error:** | 0.00ft | **North Reference:** | True |
| **Reference Well:** | NBU 1022-32B3S | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | NBU 1022-32B3S | **Database:** | EDM 2003.21 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 5467.00ft (Original Well Ele\Coordinates are relative to: NBU 1022-32B3S
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1927 (Exact solution), Utah Central 4302
Central Meridian is 111° 30' 0.000 W °
Grid Convergence at Surface is: 1.30°




CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

**WORKSHEET**

**APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 07/08/2008

API NO. ASSIGNED: 43-047-40206

WELL NAME: NBU 1022-32B3S

OPERATOR: KERR-MCGEE OIL & GAS ( N2995 )

PHONE NUMBER: 720-929-6226

CONTACT: KEVIN MCINTYRE

PROPOSED LOCATION:

NENW 32 100S 220E

SURFACE: 0185 FNL 2114 FWL

BOTTOM: 1150 FNL 2130 FEL

NW NE

COUNTY: UINTAH

LATITUDE: 39.91205 LONGITUDE: -109.4646

UTM SURF EASTINGS: 631238 NORTHINGS: 4418914

FIELD NAME: NATURAL BUTTES ( 630 )

INSPECT LOCATN BY: / /

| Tech Review | Initials | Date |
|---|---|---|
| Engineering | DKD | 9/16/08 |
| Geology | | |
| Surface | | |

LEASE TYPE: 3 - State

LEASE NUMBER: ST ML 22798

PROPOSED FORMATION: WSMVD

SURFACE OWNER: 3 - State

COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

✓ Plat

✓ Bond: Fed[] Ind[] Sta[] Fee[]
(No. 22013542 )

NA Potash (Y/N)

Y Oil Shale 190-5 (B) or 190-3 or 190-13

✓ Water Permit
(No. 43-8496 )

NA RDCC Review (Y/N)
(Date: )

N/A Fee Surf Agreement (Y/N)

N/A Intent to Commingle (Y/N)

LOCATION AND SITING:

___ R649-2-3.

Unit: NATURAL BUTTES

___ R649-3-2. General

Siting: 460 From Qtr/Qtr & 920' Between Wells

___ R649-3-3. Exception

✓ Drilling Unit

Board Cause No: 173-14

Eff Date: 12-2-1999

Siting: 460 fr u bdry & uncomm tr

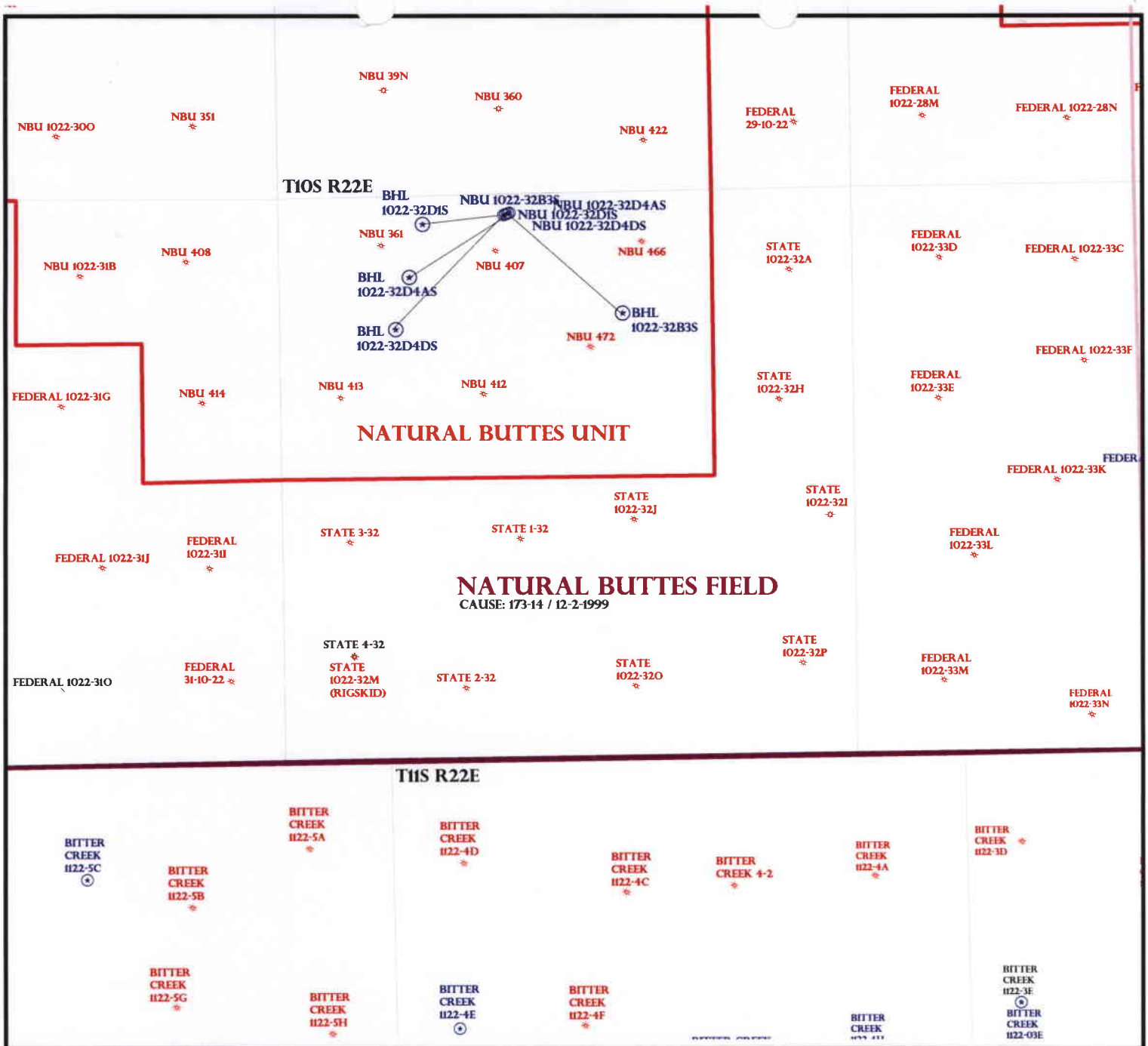
✓ R649-3-11. Directional Drill

COMMENTS: Need Presite (06-18-08)

STIPULATIONS: 1- STATEMENT OF BASIS

2- OIL SHALE

3- Surface Csg Cent Stip




OPERATOR: KERR MCGEE O&G (N2995)

SEC: 32 T.10S R. 22E

FIELD: NATURAL BUTTES (630)

COUNTY: UINTAH

CAUSE: 173-14 / 12-2-1999

Field Status
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED

Unit Status
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Wells Status
- GAS INJECTION
- GAS STORAGE
- LOCATION ABANDONED
- NEW LOCATION
- PLUGGED & ABANDONED
- PRODUCING GAS
- PRODUCING OIL
- SHUT-IN GAS
- SHUT-IN OIL
- TEMP. ABANDONED
- TEST WELL
- WATER INJECTION
- WATER SUPPLY
- WATER DISPOSAL
- DRILLING

UTAH DNR
OIL, GAS & MINING

N
W E
S

PREPARED BY: DIANA MASON
DATE: 14-JULY-2008

# Application for Permit to Drill
# Statement of Basis



| APD No | API WellNo | Status | Well Type | Surf Ownr | CBM |
|---|---|---|---|---|---|
| 869 | 43-047-40206-00-00 | | GW | S | No |

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P. **Surface Owner-APD**
**Well Name** NBU 1022-32B3S **Unit**
**Field** UNDESIGNATED **Type of Work**
**Location** NENW 32 10S 22E S 185 FNL 2114 FWL GPS Coord (UTM) 631238E 4418914N

**Geologic Statement of Basis**

Kerr McGee proposes to set 1,800' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 3,400'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 32. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

Brad Hill — 8/20/2008
**APD Evaluator** — **Date / Time**

**Surface Statement of Basis**

This location is in the East Bench area of the Natural Buttes Unit approximately 20.8 road miles southeast of Ouray, Ut.. It is accessed by the Seep Ridge Road, Uintah County roads and existing or planned oil field development roads to within 0.2 mile of the site, which will require new or re-construction.

The general area is within an unnamed drainage between Sand Wash and Bitter Creek. This un-named wash drains northerly to the White River a distance of approximately 7 miles. The area is characterized by rolling hills, which are frequently divided by somewhat gentle draws. This unnamed wash is an ephemeral drainage. No springs, seeps or streams exist in the area. An occasional pond constructed to supply water for cattle and antelope exists. The washes are sometimes rimed with steep side hills, which have exposed sand stone bedrock cliffs along the rims.

Four gas wells are proposed on this pad. The location is on the out-slope of a lower level bench. Higher benches and a ridge are to the south. The pad will be constructed by excavating into the toe of the slope to the south, with the fill moved to the north into an open wide swale. Drainages intersect the site on both the east and west. These drainages are planned for re-routing around the pad. The selected site has no apparent concerns for constructing a pad, drilling and operating the planned wells and is the best location in the immediate area.

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA reviewed the site and had no concerns regarding the proposal.

Ben Williams of the Utah Division of Wildlife Resources was invited the pre-site visit and did not attend

Floyd Bartlett — 6/8/2008
**Onsite Evaluator** — **Date / Time**

**Conditions of Approval / Application for Permit to Drill**

| Category | Condition |
|---|---|
| Pits | A synthetic liner with a minimum thickness of 16 mils with a felt subliner shall be properly installed and maintained in the reserve pit. |
| Surface | Drainages adjacent to the proposed pad shall be diverted around the location. |
| Surface | The reserve pit shall be fenced upon completion of drilling operations. |

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | | | | | |
| **Well Name** | NBU 1022-32B3S | | | | | | |
| **API Number** | 43-047-40206-0 | | **APD No** 869 | | | **Field/Unit** UNDESIGNATED | |
| **Location: 1/4,1/4** NENW | | **Sec** 32 | **Tw** 10S | **Rng** 22E | 185 FNL 2114 FWL | | |
| **GPS Coord (UTM)** 631211 | | 4418923 | **Surface Owner** | | | | |

**Participants**

Floyd Bartlett and David Hackford (DOGM), Jim Davis (SITLA), Raleen White, Kevin McIntyre, Clay Einerson and Tony Kzneck (Kerr McGee) and David Kay (Uintah Engineering and Land Surveying).

**Regional/Local Setting & Topography**

This location is in the East Bench area of the Natural Buttes Unit approximately 20.8 road miles southeast of Ouray, Ut.. It is accessed by the Seep Ridge Road, Uintah County roads and existing or planned oil field development roads to within 0.2 mile of the site, which will require new or re-construction.

The general area is within an unnamed drainage between Sand Wash and Bitter Creek. This un-named wash drains northerly to the White River a distance of approximately 7 miles. The area is characterized by rolling hills, which are frequently divided by somewhat gentle draws. This unnamed wash is an ephemeral drainage. No springs, seeps or streams exist in the area. An occasional pond constructed to supply water for cattle and antelope exists. The washes are sometimes rimed with steep side hills, which have exposed sand stone bedrock cliffs along the rims.

Four gas wells are proposed on this pad. The location is on the out-slope of a lower level bench. Higher benches and a ridge are to the south. The pad will be constructed by excavating into the toe of the slope to the south, with the fill moved to the north into an open wide swale. Drainages intersect the site on both the east and west. These drainages are planned for re-routing around the pad. The selected site has no apparent concerns for constructing a pad, drilling and operating the planned wells and is the best location in the immediate area.

Both the surface and minerals are owned by SITLA.

**Surface Use Plan**

**Current Surface Use**

Grazing
Recreational
Wildlfe Habitat

| New Road Miles | Well Pad | | Src Const Material | Surface Formation |
|---|---|---|---|---|
| 0.2 | **Width** 291 | **Length** 350 | Onsite | UNTA |

**Ancillary Facilities** N

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetland** N

**Flora / Fauna**

Vegetation is a salt desert shrub type. Principal species present are cheatgrass, prickly pear, horsebrush, greasewood, bottle brush, globemallow, shadscale, Indian ricegrass, Russian thistle, halogeton, pepper grass and curly mesquite grass.

Cattle, antelope and small mammals and birds.

**Soil Type and Characteristics**

Soils are a shallow sandy loam with some exposed rock..

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diverson Required** Y

Drainages intersect the site on both the east and west. These drainages are planned for re-routing around the pad.

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

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

**Reserve Pit**

| Site-Specific Factors | | Site Ranking |
|---|---|---|
| **Distance to Groundwater (feet)** | >200 | 0 |
| **Distance to Surface Water (feet)** | >1000 | 0 |
| **Dist. Nearest Municipal Well (ft)** | >5280 | 0 |
| **Distance to Other Wells (feet)** | <300 | 20 |
| **Native Soil Type** | Mod permeability | 10 |
| **Fluid Type** | Fresh Water | 5 |
| **Drill Cuttings** | Normal Rock | 0 |
| **Annual Precipitation (inches)** | <10 | 0 |
| **Affected Populations** | <10 | 0 |
| **Presence Nearby Utility Conduits** | Not Present | 0 |
| | **Final Score** | 35 1 **Sensitivity Level** |

**Characteristics / Requirements**

The reserve pit is planned in an area of cut in the northeast corner of the location. Dimensions are 100' x 220' x 10' deep with 2' of freeboard. A liner with a minimum thickness of 16 mils. and a felt sub-liner are required.

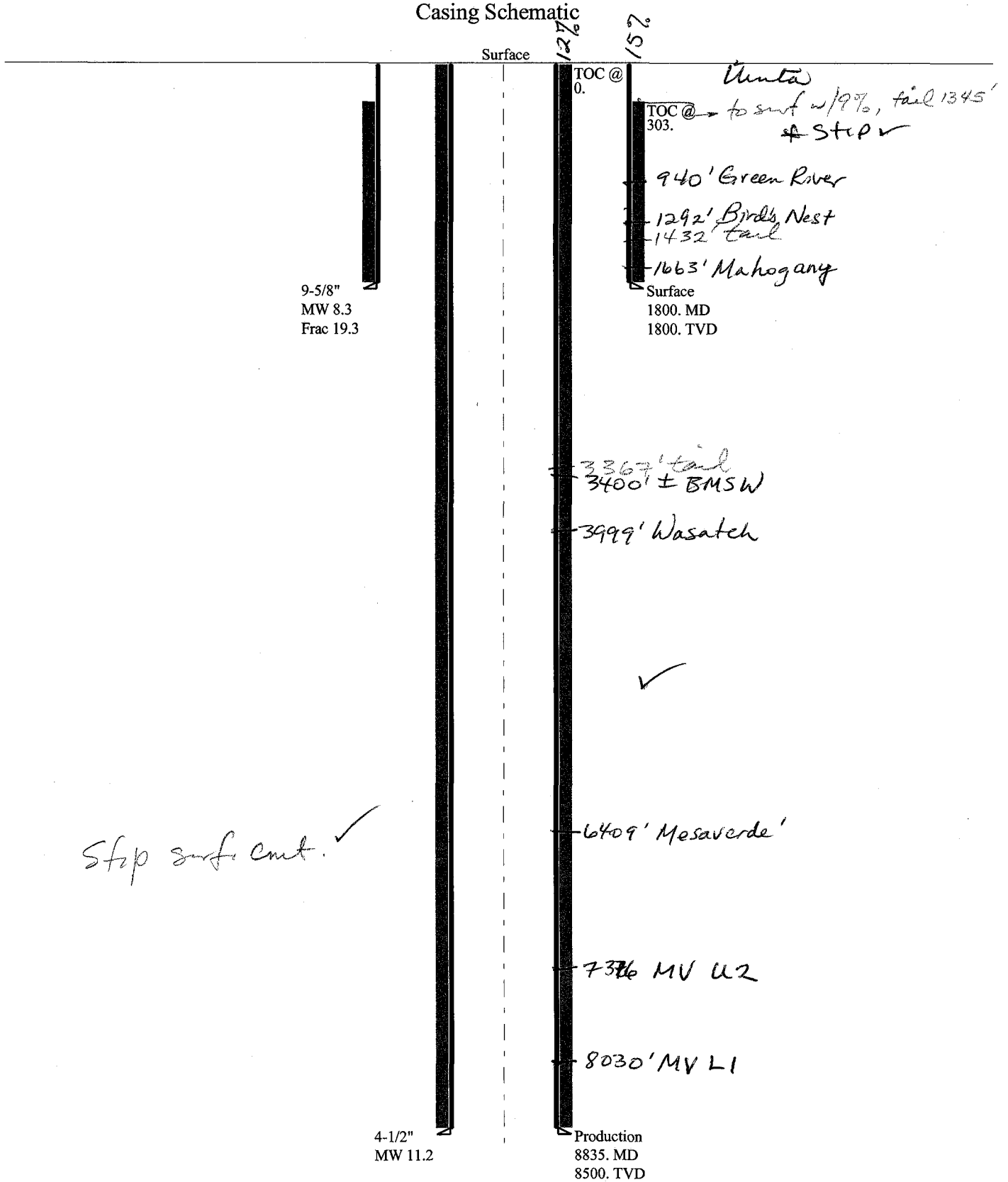
**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 16 **Pit Underlayment Required?** Y

**Other Observations / Comments**

| | |
|---|---|
| Floyd Bartlett | 6/8/2008 |
| **Evaluator** | **Date / Time** |

# 43047402060000 NBU 1022-32B3S

## Casing Schematic



| | |
|---|---|
| Well name: | **43047402060000 NBU 1022-32B3S** |
| Operator: | **Kerr McGee Oil & Gas Onshore L.P.** |
| String type: | Surface |
| Project ID: | 43-047-40206-0000 |
| Location: | Uintah County, Utah |

**Design parameters:**

**Collapse**

Mud weight: 8.330 ppg
Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 1,584 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 1,800 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

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

Tension is based on buoyed weight.
Neutral point: 1,578 ft

**Environment:**

H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 100 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,300 ft

Cement top: 303 ft

Completion type is subs
**Non-directional string.**

**Re subsequent strings:**

Next setting depth: 8,500 ft
Next mud weight: 11.200 ppg
Next setting BHP: 4,946 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 1,800 ft
Injection pressure: 1,800 psi

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Internal Capacity ($ft^3$) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1800 | 9.625 | 36.00 | J-55 | LT&C | 1800 | 1800 | 8.796 | 781.3 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (Kips) | Tension Strength (Kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 779 | 2020 | 2.594 | 1800 | 3520 | 1.96 | 57 | 453 | 7.97 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Minerals
Phone: (801) 538-5357
FAX: (801) 359-3940
Date: September 15,2008
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 1800 ft, a mud weight of 8.33 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

| | |
|---|---|
| Well name: | **43047402060000 NBU 1022-32B3S** |
| Operator: | **Kerr McGee Oil & Gas Onshore L.P.** |
| String type: | Production |
| Project ID: | 43-047-40206-0000 |
| Location: | Uintah County, Utah |

**Design parameters:**

**Collapse**
Mud weight: 11.200 ppg
Design is based on evacuated pipe.

**Burst**
Max anticipated surface pressure: 3,075 psi
Internal gradient: 0.220 psi/ft
Calculated BHP 4,946 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**
Design factor 1.125

**Burst:**
Design factor 1.00

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

Tension is based on buoyed weight.
Neutral point: 7,412 ft

**Environment:**
H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 194 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,500 ft

Cement top: Surface

Completion type is subs

**Directional well information:**
Kick-off point 1860 ft
Departure at shoe: 1425 ft
Maximum dogleg: 3 °/100ft
Inclination at shoe: 0 °

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Internal Capacity ($ft^3$) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8835 | 4.5 | 11.60 | I-80 | LT&C | 8500 | 8835 | 3.875 | 771 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (Kips) | Tension Strength (Kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4946 | 6360 | 1.286 | 4946 | 7780 | 1.57 | 82 | 212 | 2.58 J |

Prepared by: Helen Sadik-Macdonald, Div of Oil,Gas & Minerals
Phone: (801) 538-5357
FAX: (801) 359-3940
Date: September 15,2008
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 8500 ft, a mud weight of 11.2 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

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

## BOPE REVIEW — Kerr-McGee NBU 1022-32B3S API 43-047-40206-0000

### INPUT

| Well Name | Kerr-McGee NBU 1022-32B3S API 43-047-40206-0000 | | | |
|---|---|---|---|---|
| | String 1 | String 2 | | |
| Casing Size (") | 9 5/8 | 4 1/2 | | |
| Setting Depth (TVD) | 1800 | 8500 | | |
| Previous Shoe Setting Depth (TVD) | 20 | 1800 | | |
| Max Mud Weight (ppg) | 8.4 | 11.2 ✓ | | |
| BOPE Proposed (psi) | 500 | 5000 | | |
| Casing Internal Yield (psi) | 3520 | 7780 | | |
| Operators Max Anticipated Pressure (psi) | 5270 | 11.9 ppg ✓ | | |

| Calculations | String 1 | 9 5/8 " | |
|---|---|---|---|
| **Max BHP [psi]** | .052*Setting Depth*MW = | 786 | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) [psi]** | Max BHP-(0.12*Setting Depth) = | 570 | NO -o.k. Air Drill to surface shoe with diverter |
| **MASP (Gas/Mud) [psi]** | Max BHP-(0.22*Setting Depth) = | 390 | YES |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth) = | 395 | ← NO - Reasonable Depth |
| **Required Casing/BOPE Test Pressure** | | 1800 | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe =** | | 20 | psi *Assumes 1psi/ft frac gradient |

| Calculations | String 2 | 4 1/2 " | |
|---|---|---|---|
| **Max BHP [psi]** | .052*Setting Depth*MW = | 4950 | |
| | | | **BOPE Adequate For Drilling And Setting Casing at Depth?** |
| **MASP (Gas) [psi]** | Max BHP-(0.12*Setting Depth) = | 3930 | YES ✓ |
| **MASP (Gas/Mud) [psi]** | Max BHP-(0.22*Setting Depth) = | 3080 | YES |
| | | | ***Can Full Expected Pressure Be Held At Previous Shoe?** |
| **Pressure At Previous Shoe** | Max BHP-.22*(Setting Depth - Previous Shoe Depth) = | 3476 | ← NO Reasonable |
| **Required Casing/BOPE Test Pressure** | | 5000 | psi |
| ***Max Pressure Allowed @ Previous Casing Shoe =** | | 1800 | psi *Assumes 1psi/ft frac gradient |

# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

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

**IN REPLY REFER TO:**
**3160**
**(UT-922)**

July 15, 2008

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2008 Plan of Development Natural Buttes Unit
Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2008 within the Natural Buttes Unit, Uintah County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ Wasatch/MesaVerde) | | |
| 43-047-40184 | NBU 921-30FT | Sec 30 T09S R21E 1585 FNL 2614 FWL |
| 43-047-40185 | NBU 921-31BT | Sec 31 T09S R21E 0670 FNL 2008 FEL |
| 43-047-40170 | NBU 921-27KT | Sec 27 T09S R21E 1527 FSL 1821 FWL |
| 43-047-40171 | NBU 921-27MT | Sec 27 T09S R21E 0634 FSL 0931 FWL |
| 43-047-40172 | NBU 921-27OT | Sec 27 T09S R21E 0646 FSL 2211 FEL |
| 43-047-40173 | NBU 921-27HT | Sec 27 T09S R21E 2025 FNL 0623 FEL |
| 43-047-40174 | NBU 921-27LT | Sec 27 T09S R21E 1954 FSL 0641 FWL |
| 43-047-40175 | NBU 921-33K | Sec 33 T09S R21E 2066 FSL 1926 FWL |
| 43-047-40227 | NBU 921-27C2D | Sec 27 T09S R21E 0650 FNL 1730 FWL |
| 43-047-40203 | NBU 921-27D2DS | Sec 27 T09S R21E 0660 FNL 1713 FWL |
| | BHL | Sec 27 T09S R21E 0395 FNL 0350 FWL |
| 43-047-40202 | NBU 921-27D2AS | Sec 27 T09S R21E 0640 FNL 1747 FWL |
| | BHL | Sec 27 T09S R21E 0050 FNL 0350 FWL |
| 43-047-40201 | NBU 921-27C2AS | Sec 27 T09S R21E 0630 FNL 1765 FWL |
| | BHL | Sec 27 T09S R21E 0300 FNL 1730 FWL |
| 43-047-40169 | NBU 921-26IT | Sec 26 T09S R21E 1964 FSL 0674 FEL |
| 43-047-40176 | NBU 922-29NT | Sec 29 T09S R22E 0845 FSL 1627 FWL |
| 43-047-40177 | NBU 922-29KT | Sec 29 T09S R22E 1795 FSL 1936 FWL |
| 43-047-40178 | NBU 922-31BT | Sec 31 T09S R22E 0888 FNL 2191 FEL |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 43-047-40179 | NBU 922-32ET | | Sec 32 | T09S | R22E | 2477 | FNL | 0094 FWL |
| 43-047-40186 | NBU 922-33OT | | Sec 33 | T09S | R22E | 0692 | FSL | 1465 FEL |
| 43-047-40187 | NBU 922-33NT | | Sec 33 | T09S | R22E | 0890 | FSL | 2291 FWL |
| 43-047-40188 | NBU 922-33IT | | Sec 33 | T09S | R22E | 2115 | FSL | 0579 FEL |
| 43-047-40191 | NBU 1022-04GT | | Sec 04 | T10S | R22E | 1897 | FNL | 1861 FEL |
| 43-047-40189 | NBU 922-35IT | | Sec 35 | T09S | R22E | 2133 | FSL | 0627 FEL |
| 43-047-40190 | NBU 1022-01CT | | Sec 01 | T10S | R22E | 0819 | FNL | 2106 FWL |
| 43-047-40192 | NBU 1022-08IT | | Sec 08 | T10S | R22E | 1757 | FSL | 0323 FEL |
| 43-047-40193 | NBU 1022-08GT | | Sec 08 | T10S | R22E | 2313 | FNL | 1922 FEL |
| 43-047-40194 | NBU 1022-09AT | | Sec 09 | T10S | R22E | 0472 | FNL | 0582 FEL |
| 43-047-40195 | NBU 1022-10HT | | Sec 10 | T10S | R22E | 1798 | FNL | 0297 FEL |
| 43-047-40196 | NBU 1022-10FT | | Sec 10 | T10S | R22E | 2200 | FNL | 2094 FWL |
| 43-047-40204 | NBU 1022-32D1S | | Sec 32 | T10S | R22E | 0205 | FNL | 2058 FWL |
| | | BHL | Sec 32 | T10S | R22E | 0270 | FNL | 1310 FWL |
| 43-047-40205 | NBU 1022-32D4AS | | Sec 32 | T10S | R22E | 0198 | FNL | 2077 FWL |
| | | BHL | Sec 32 | T10S | R22E | 0760 | FNL | 1180 FWL |
| 43-047-40206 | NBU 1022-32B3S | | Sec 32 | T10S | R22E | 0185 | FNL | 2114 FWL |
| | | BHL | Sec 32 | T10S | R22E | 1150 | FNL | 2130 FEL |
| 43-047-40207 | NBU 1022-32D4DS | | Sec 32 | T10S | R22E | 0192 | FNL | 2096 FWL |
| | | BHL | Sec 32 | T10S | R22E | 1240 | FNL | 1050 FWL |

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:7-15-08

KerrMcGee

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

June 24, 2008

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

Re: Directional Drilling R649-3-11
NBU 1022-32B3S
T10S-22E
Section 32: NWNE
Surface: 185' FNL, 2114' FWL
Bottom Hole: 1150' FNL, 2130 FEL
Uintah County, Utah

Dear Mrs. Mason:

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

- Kerr-McGee's NBU 1022-32B3S is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore and all of section 32 (State Lease UT ST ML 22798).

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

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Jason K. Rayburn
Landman

**From:** Jim Davis
**To:** Bonner, Ed; Mason, Diana
**Date:** 10/23/2008 8:34 AM
**Subject:** A few more KMG approvals.

The following wells have been cleared by SITLA including arch and paleo clearance.

Kerr-McGee's NBU 1022-32D1S [API #4304740204]
Kerr-McGee's NBU 1022-32D4AS [API #4304740205]
Kerr-McGee's NBU 1022-32B3S [API #4304740206]
Kerr-McGee's NBU 1022-32D4DS [API #4304740207]

I've sent out three approval e-mails this morning. Sorry I didn't have them all grouped together- they've just been in a jumble on my desk.
-Jim

Jim Davis
Utah Trust Lands Administration
jimdavis1@utah.gov
Phone: (801) 538-5156

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*

November 4, 2008

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

Re: NBU 1022-32B3S Well, 185' FNL, 2114' FWL, NE NW, Sec. 32, T. 10 South, R. 22 East, Bottom Location 1150' FNL, 2130' FEL, NW NE, Sec. 32, T. 10 South, R. 22 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 43-047-40206.

Sincerely,

Gil Hunt
Associate Director

pab
Enclosures

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

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

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

**Well Name & Number** NBU 1022-32B3S

**API Number:** 43-047-40206

**Lease:** ST ML 22798

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Location:** | NE NW | **Sec.** | 32 | **T.** | 10 South | **R.** | 22 East |
| **Bottom Location:** | NW NE | **Sec.** | 32 | **T.** | 10 South | **R.** | 22 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**

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

   - 24 hours prior to cementing or testing casing – contact Dan Jarvis
   - 24 hours prior to testing blowout prevention equipment – contact Dan Jarvis
   - 24 hours prior to spudding the well – contact Carol Daniels
   - Within 24 hours of any emergency changes made to the approved drilling program – contact Dustin Doucet
   - Prior to commencing operations to plug and abandon the well – contact Dan Jarvis

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

   - Plugging and abandonment or significant plug back of this well – contact Dustin Doucet
   - Any changes to the approved drilling plan – contact Dustin Doucet

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

   - Dan Jarvis at: (801) 538-5338 office (801) 942-0871 home
   - Carol Daniels at: (801) 538-5284 office
   - 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. Compliance with the State of Utah Antiquities Act forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during your operations, you are required to immediately suspend all operations and immediately inform the Trust Lands Administration and the Division of State History of the discovery of such remains.

5. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

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

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

8. Surface casing shall be cemented to the surface.

API Well No: 43047402060000

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

FORM 9

## SUNDRY NOTICES AND REPORTS ON WELLS

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ST ML 22798

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-32B3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047402060000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6587 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0185 FNL 2114 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NENW Section: 32 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ✓ SPUD REPORT Date of Spud: 4/30/2009 | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 04/30/2009 AT 1400 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
May 06, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Sheila Upchego | 435 781-7024 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 5/1/2009 |

**RECEIVED** May 01, 2009

API Well No: 43047402060000

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ST ML 22798

## SUNDRY NOTICES AND REPORTS ON WELLS

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

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-32B3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047402060000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6587 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0185 FNL 2114 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NENW Section: 32 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 6/5/2009 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

MIRU PROPETRO AIR RIG ON 06/01/2009. DRILLED 12 1/4" SURFACE HOLE TO 1934'. RAN 9 5/8" 40# J-55 SURFACE CSG. PMP 150 SX HIFILL CLASS G @11.0 PPG 3.82 YIELD. TAILED CMT W/200 SX PREM CLASS G @15.8 PPG 1.15 YIELD. DROP PLUG ON FLY DISPLACE W/146 BBLS OF FRESH WATER. LIFT 150 PSI @3 BBL/MIN BUMP PLUG 700 PSI FLOAT HELD 1 BBL OF CMT TO SURFACE. RAN 200' OF 1" PIPE. CMT W/100 SX PREM CLASS G @15.8 PPG 1.15 YIELD. DOWN 1' PIPE. CMT TO SURFACE HOLE STAYED FULL. WORT

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
June 10, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Sheila Upchego | 435 781-7024 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 6/10/2009 |

**RECEIVED** June 10, 2009

API Well No: 43047402060000

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ST ML 22798

## SUNDRY NOTICES AND REPORTS ON WELLS

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

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-32B3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047402060000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0185 FNL 2114 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NENW Section: 32 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 7/31/2009 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

FINISHED DRILLING FROM 1934' TO 8850' ON 07/28/2009. RAN 4-1/2" 11.6# I-80 PRODUCTION CSG. CMT PRODUCTION CSG W/40 BBLS FRESH WATER SPACER. LEAD CMT W/515 SX PREM LITE @ 11.7 PPG 2.45 YIELD. TAILED CMT W/1350 SX 50/50 POZ MIX @ 14.3 PPG 1.25 YIELD. DROPPED PLUG & DISPLACED W/137 BBLS OF FRESH WATER W/0.1 GAL/BBL CLAYTA II AND 0.01 GAL/BBL ALDACIDE G @ 2314 PSI-BUMPED PLUG @ 2950 PSI-FLOATS HELD W/1.25 BBL RETURN. GOOD RETURNS THOUGHOUT CMT JOB W/17 BBLS CEMENT BACK TO SURFACE. RELEASE ENSIGN 139 RIG ON 07/31/2009 AT 11:30 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
August 03, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 8/3/2009 |

**RECEIVED** August 03, 2009

API Well No: 43047402060000

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ST ML 22798

## SUNDRY NOTICES AND REPORTS ON WELLS

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

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-32B3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047402060000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0185 FNL 2114 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NENW Section: 32 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 1/27/2010 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ✓ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 01/27/2010 AT 1:30 P.M. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
January 28, 2010

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 1/28/2010 |

**RECEIVED** January 28, 2010

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

AMENDED REPORT ☐ (highlight changes) FORM 8

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER: ST ML 22798
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME: UTU63047A
8. WELL NAME and NUMBER: NBU 1022-32B3S
9. API NUMBER: 4304740206
10 FIELD AND POOL, OR WILDCAT: NATURAL BUTTES
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NENW 32 10S 22E
12. COUNTY: UINTAH
13. STATE: UTAH

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ DRY ☐ OTHER

b. TYPE OF WORK: NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER

2. NAME OF OPERATOR: KERR McGEE OIL & GAS ONSHORE LP

3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY DENVER STATE CO ZIP 80217

PHONE NUMBER: (720) 929-6100

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: NENW 185 FNL & 2114 FWL
AT TOP PRODUCING INTERVAL REPORTED BELOW: NWNE 1133 FNL & 2139 FEL SEC.32-10S-22E
AT TOTAL DEPTH: NWNE 1142 FNL & 2123 FEL SEC.32-10S-22E

14. DATE SPUDDED: 4/30/2009
15. DATE T.D. REACHED: 7/28/2009
16. DATE COMPLETED: 1/27/2010 ABANDONED ☐ READY TO PRODUCE ☑
17. ELEVATIONS (DF, RKB, RT, GL): 5449' GL

18. TOTAL DEPTH: MD 8,850 TVD 8,581
19. PLUG BACK T.D.: MD 8,787 TVD 8,518
20. IF MULTIPLE COMPLETIONS, HOW MANY? *
21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
ACOUSTIC CBL-CHI TRIPLE COMBO-BHV-SDL/DSN/ACTR

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

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

| HOLE SIZE | SIZE/GRADE | WEIGHT (#/ft.) | TOP (MD) | BOTTOM (MD) | STAGE CEMENTER DEPTH | CEMENT TYPE & NO. OF SACKS | SLURRY VOLUME (BBL) | CEMENT TOP ** | AMOUNT PULLED |
|---|---|---|---|---|---|---|---|---|---|
| 20" | 14" STL | 36.7# | | 40 | | 28 | | | |
| 12 1/4" | 9 5/8 J-55 | 40# | | 1,946 | | 450 | | | |
| 7 7/8" | 4 1/2 I-80 | 11.6# | | 8,831 | | 1865 | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**25. TUBING RECORD**

| SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|---|---|---|---|---|---|
| 2 3/8" | 8,244 | | | | | | | |

**26. PRODUCING INTERVALS**

| FORMATION NAME | TOP (MD) | BOTTOM (MD) | TOP (TVD) | BOTTOM (TVD) |
|---|---|---|---|---|
| (A) MESAVERDE | 6,720 | 8,682 | | |
| (B) | | | | |
| (C) | | | | |
| (D) | | | | |

**27. PERFORATION RECORD**

| INTERVAL (Top/Bot - MD) | SIZE | NO. HOLES | PERFORATION STATUS |
|---|---|---|---|
| 6,720 8,682 | 0.36 | 230 | Open ☑ Squeezed ☐ |
| | | | Open ☐ Squeezed ☐ |
| | | | Open ☐ Squeezed ☐ |
| | | | Open ☐ Squeezed ☐ |

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

| DEPTH INTERVAL | AMOUNT AND TYPE OF MATERIAL |
|---|---|
| 6,720-8,682 | PMP 8,675 BBLS SLICK H20 & 331,774 LBS 30/50 SD. |
| | |
| | |

**29. ENCLOSED ATTACHMENTS:**

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☑ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER:

RECEIVED
MAR 01 2010
DIV. OF OIL, GAS & MINING

**30. WELL STATUS:** PROD

(5/2000) **(CONTINUED ON BACK)**

**31. INITIAL PRODUCTION**

**INTERVAL A (As shown in item #26)**

| DATE FIRST PRODUCED: | | TEST DATE: | | HOURS TESTED: | | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|---|---|---|
| 1/27/2010 | | 2/3/2010 | | 24 | | | 0 | 1,756 | 240 | FLOWING |
| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
| 20/64 | 647 | 1,041 | | | | | 0 | 1,756 | 240 | PROD |

**INTERVAL B (As shown in item #26)**

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

**INTERVAL C (As shown in item #26)**

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

**INTERVAL D (As shown in item #26)**

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

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

SOLD

**33. SUMMARY OF POROUS ZONES (Include Aquifers):**

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

**34. FORMATION (Log) MARKERS:**

| Formation | Top (MD) | Bottom (MD) | Descriptions, Contents, etc. | Name | Top (Measured Depth) |
|---|---|---|---|---|---|
| GREEN RIVER | 968 | | | | |
| MAHOGANY | 1,793 | | | | |
| WASATCH | 4,281 | 6,668 | | | |
| MESAVERDE | 6,676 | 8,736 | | | |

**35. ADDITIONAL REMARKS (Include plugging procedure)**

ATTACHED TO THIS COMPLETION REPORT IS THE CHRONOLOGICAL WELL HISTORY AND EOWR.

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

NAME (PLEASE PRINT) ANDY LYTLE TITLE REGULATORY ANALYST

SIGNATURE DATE 2/25/2010

This report must be submitted within 30 days of

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

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

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

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

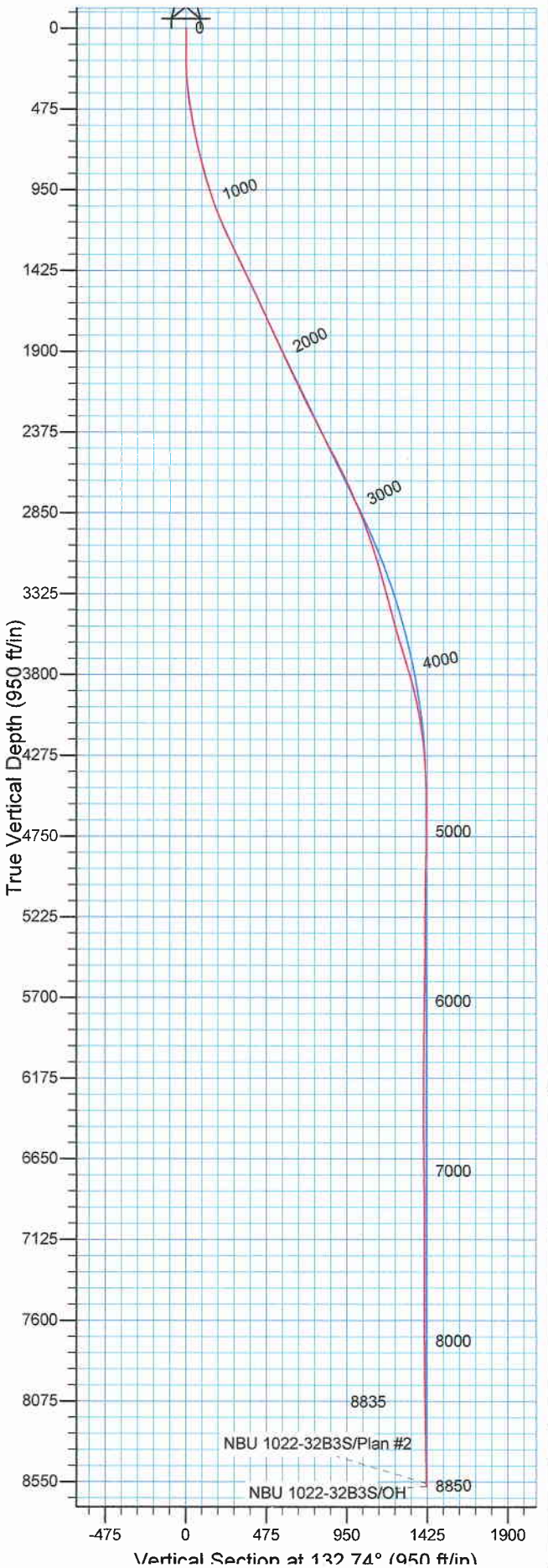
Scientific Drilling
Rocky Mountain Operations

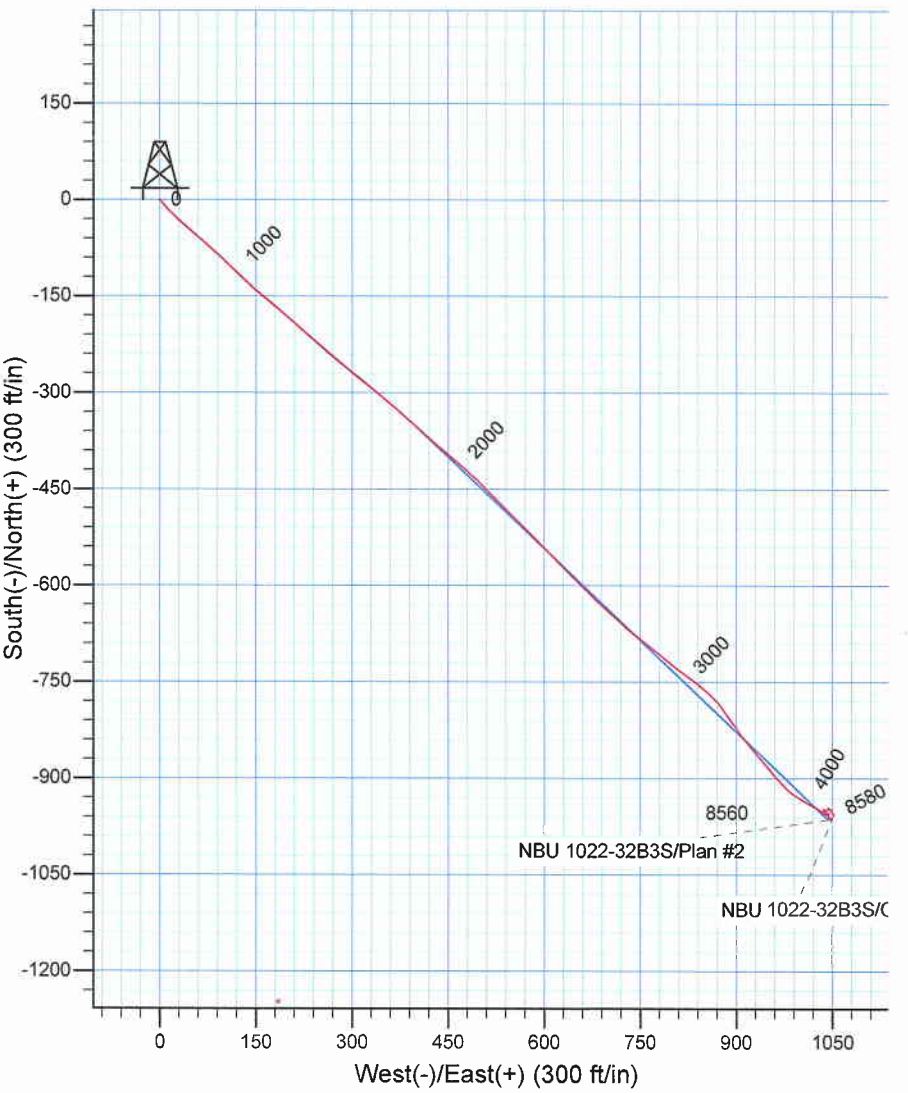
# TABLE OF CONTENTS

Scientific Drilling
Rocky Mountain Operations

Project: Uintah County, UT NAD27
Site: NBU 1022-32C Pad
Well: NBU 1022-32B3S
Wellbore: OH
Design: OH

# Kerr McGee Oil and Gas Onshore LI




## WELL DETAILS: NBU 1022-32B3S

Ground Level GL 5449' & RKB 13' @ 5462.00ft (Ensign 139)

| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 581559.98 | 2570849.20 | 39° 54' 43.920 N | 109° 27' 52.980 W |

## REFERENCE INFORMATION

| | |
|---|---|
| Co-ordinate (N/E) Reference: | Well NBU 1022-32B3S, True North |
| Vertical (TVD) Reference: | GL 5449' & RKB 13' @ 5462.00ft (Ensign 13 |
| Section (VS) Reference: | Slot - (0.00N, 0.00E) |
| Measured Depth Reference: | GL 5449' & RKB 13' @ 5462.00ft (Ensign 13 |
| Calculation Method: | Minimum Curvature |
| Local North: | True |
| Location: | Sec 32 T10S R22E |

## PROJECT DETAILS: Uintah County, UT NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Utah Central 4302

Design: OH (NBU 1022-32B3S/OH)

Created By: Julie Cruse Date: 2009-08-05

Scientific Drilling
Rocky Mountain Operations

# Kerr McGee Oil and Gas Onshore LP

**Uintah County, UT NAD27**
**NBU 1022-32C Pad**
**NBU 1022-32B3S**
**OH**

**Design: OH**

# Standard Survey Report

**05 August, 2009**

# Scientific Drilling
Survey Report

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

| | | | |
|---|---|---|---|
| **Project** | Uintah County, UT NAD27 | | |
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Utah Central 4302 | | |

| | | | | | |
|---|---|---|---|---|---|
| **Site** | NBU 1022-32C Pad, Sec 32 T10S R22E | | | | |
| **Site Position:** | | **Northing:** | 581,560.00 ft | **Latitude:** | 39° 54' 43.920 N |
| **From:** | Lat/Long | **Easting:** | 2,570,849.20 ft | **Longitude:** | 109° 27' 52.980 W |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | in | **Grid Convergence:** | 1.30 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | NBU 1022-32B3S, 185' FNL 2114' FWL | | | | | |
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 581,559.98 ft | **Latitude:** | 39° 54' 43.920 N |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,570,849.20 ft | **Longitude:** | 109° 27' 52.980 W |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 5,449.00 ft |

| **Wellbore** | OH | | | | |
|---|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF200510 | 2009-06-01 | 11.29 | 65.86 | 52,512 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | OH | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0.00 | 0.00 | 0.00 | 132.74 | |

**Survey Program** **Date** 2009-08-05

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 92.00 | 1,909.00 | Survey #1 - Surface (OH) | MWD SDI | MWD - Standard ver 1.0.1 |
| 1,982.00 | 8,850.00 | Survey #2 - Production (OH) | MWD SDI | MWD - Standard ver 1.0.1 |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 92.00 | 0.18 | 19.04 | 92.00 | 0.14 | 0.05 | -0.06 | 0.20 | 0.20 | 0.00 |
| 117.00 | 0.24 | 71.96 | 117.00 | 0.19 | 0.11 | -0.05 | 0.78 | 0.24 | 211.68 |
| 207.00 | 1.96 | 145.29 | 206.98 | -1.02 | 1.17 | 1.55 | 2.12 | 1.91 | 81.48 |
| 297.00 | 4.79 | 143.16 | 296.82 | -5.29 | 4.30 | 6.75 | 3.15 | 3.14 | -2.37 |
| 387.00 | 7.09 | 139.58 | 386.33 | -12.53 | 10.15 | 15.96 | 2.59 | 2.56 | -3.98 |
| 477.00 | 9.35 | 134.92 | 475.40 | -21.92 | 18.93 | 28.78 | 2.62 | 2.51 | -5.18 |
| 567.00 | 10.51 | 131.17 | 564.05 | -32.49 | 30.29 | 44.29 | 1.47 | 1.29 | -4.17 |
| 657.00 | 12.12 | 129.71 | 652.30 | -43.93 | 43.73 | 61.93 | 1.82 | 1.79 | -1.62 |
| 747.00 | 13.61 | 131.01 | 740.04 | -56.91 | 58.99 | 81.95 | 1.69 | 1.66 | 1.44 |
| 837.00 | 15.42 | 131.25 | 827.16 | -71.75 | 75.98 | 104.50 | 2.01 | 2.01 | 0.27 |
| 927.00 | 16.46 | 133.64 | 913.70 | -88.44 | 94.21 | 129.21 | 1.37 | 1.16 | 2.66 |

# Scientific Drilling
Survey Report

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1,017.00 | 18.63 | 134.28 | 999.51 | -107.28 | 113.73 | 156.33 | 2.42 | 2.41 | 0.71 |
| 1,107.00 | 21.70 | 132.20 | 1,083.98 | -128.50 | 136.35 | 187.35 | 3.50 | 3.41 | -2.31 |
| 1,197.00 | 24.62 | 130.11 | 1,166.72 | -151.76 | 163.02 | 222.72 | 3.37 | 3.24 | -2.32 |
| 1,289.00 | 25.17 | 130.40 | 1,250.17 | -176.78 | 192.58 | 261.41 | 0.61 | 0.60 | 0.32 |
| 1,379.00 | 25.42 | 132.07 | 1,331.54 | -202.13 | 221.49 | 299.85 | 0.84 | 0.28 | 1.86 |
| 1,469.00 | 26.17 | 130.69 | 1,412.58 | -228.01 | 250.88 | 339.00 | 1.07 | 0.83 | -1.53 |
| 1,559.00 | 26.03 | 129.03 | 1,493.40 | -253.39 | 281.27 | 378.54 | 0.83 | -0.16 | -1.84 |
| 1,649.00 | 24.92 | 129.06 | 1,574.65 | -277.77 | 311.33 | 417.17 | 1.23 | -1.23 | 0.03 |
| 1,739.00 | 24.66 | 129.54 | 1,656.35 | -301.67 | 340.54 | 454.84 | 0.37 | -0.29 | 0.53 |
| 1,829.00 | 24.83 | 130.81 | 1,738.09 | -325.98 | 369.32 | 492.47 | 0.62 | 0.19 | 1.41 |
| 1,909.00 | 25.60 | 132.25 | 1,810.47 | -348.58 | 394.82 | 526.54 | 1.23 | 0.96 | 1.80 |
| **Last Survey in 12 1/4" Hole** | | | | | | | | | |
| 1,982.00 | 24.79 | 131.94 | 1,876.52 | -369.41 | 417.88 | 557.62 | 1.12 | -1.11 | -0.42 |
| **First Survey in 7 7/8" Hole** | | | | | | | | | |
| 2,073.00 | 25.24 | 130.76 | 1,958.99 | -394.83 | 446.77 | 596.08 | 0.74 | 0.49 | -1.30 |
| 2,163.00 | 26.51 | 129.92 | 2,039.96 | -420.25 | 476.71 | 635.32 | 1.47 | 1.41 | -0.93 |
| 2,254.00 | 26.41 | 135.40 | 2,121.44 | -447.69 | 506.50 | 675.83 | 2.68 | -0.11 | 6.02 |
| 2,344.00 | 25.79 | 135.72 | 2,202.26 | -475.96 | 534.22 | 715.38 | 0.71 | -0.69 | 0.36 |
| 2,435.00 | 25.79 | 134.72 | 2,284.20 | -504.06 | 562.11 | 754.93 | 0.48 | 0.00 | -1.10 |
| 2,525.00 | 27.44 | 135.23 | 2,364.66 | -532.56 | 590.63 | 795.22 | 1.85 | 1.83 | 0.57 |
| 2,616.00 | 27.96 | 135.98 | 2,445.23 | -562.79 | 620.22 | 837.46 | 0.69 | 0.57 | 0.82 |
| 2,706.00 | 27.93 | 135.02 | 2,524.74 | -592.87 | 649.78 | 879.59 | 0.50 | -0.03 | -1.07 |
| 2,797.00 | 26.37 | 132.76 | 2,605.71 | -621.67 | 679.69 | 921.10 | 2.05 | -1.71 | -2.48 |
| 2,887.00 | 24.84 | 133.04 | 2,686.87 | -648.14 | 708.18 | 959.99 | 1.71 | -1.70 | 0.31 |
| 2,978.00 | 22.89 | 129.64 | 2,770.09 | -672.48 | 735.78 | 996.78 | 2.62 | -2.14 | -3.74 |
| 3,068.00 | 22.45 | 127.23 | 2,853.14 | -694.05 | 762.94 | 1,031.37 | 1.14 | -0.49 | -2.68 |
| 3,159.00 | 20.58 | 130.13 | 2,937.80 | -714.87 | 789.01 | 1,064.64 | 2.36 | -2.05 | 3.19 |
| 3,249.00 | 19.10 | 127.09 | 3,022.45 | -733.95 | 812.85 | 1,095.10 | 2.00 | -1.64 | -3.38 |
| 3,340.00 | 16.57 | 126.07 | 3,109.07 | -750.57 | 835.22 | 1,122.81 | 2.80 | -2.78 | -1.12 |
| 3,431.00 | 15.85 | 131.90 | 3,196.46 | -766.51 | 854.96 | 1,148.13 | 1.95 | -0.79 | 6.41 |
| 3,521.00 | 15.06 | 140.03 | 3,283.22 | -783.68 | 871.62 | 1,172.02 | 2.56 | -0.88 | 9.03 |
| 3,611.00 | 15.94 | 145.80 | 3,369.95 | -802.86 | 886.08 | 1,195.65 | 1.97 | 0.98 | 6.41 |
| 3,702.00 | 15.67 | 144.38 | 3,457.51 | -823.19 | 900.26 | 1,219.86 | 0.52 | -0.30 | -1.56 |
| 3,793.00 | 16.50 | 140.39 | 3,544.95 | -843.13 | 915.66 | 1,244.71 | 1.52 | 0.91 | -4.38 |
| 3,883.00 | 17.34 | 141.34 | 3,631.05 | -863.45 | 932.19 | 1,270.64 | 0.98 | 0.93 | 1.06 |
| 3,974.00 | 17.76 | 140.35 | 3,717.82 | -884.73 | 949.51 | 1,297.80 | 0.57 | 0.46 | -1.09 |
| 4,064.00 | 16.69 | 137.59 | 3,803.78 | -904.84 | 966.99 | 1,324.29 | 1.50 | -1.19 | -3.07 |
| 4,155.00 | 13.95 | 128.94 | 3,891.55 | -921.39 | 984.34 | 1,348.26 | 3.91 | -3.01 | -9.51 |
| 4,245.00 | 10.98 | 120.27 | 3,979.42 | -932.53 | 1,000.18 | 1,367.46 | 3.89 | -3.30 | -9.63 |
| 4,336.00 | 8.90 | 119.40 | 4,069.05 | -940.36 | 1,013.80 | 1,382.77 | 2.29 | -2.29 | -0.96 |
| 4,426.00 | 8.12 | 122.01 | 4,158.06 | -947.14 | 1,025.26 | 1,395.79 | 0.97 | -0.87 | 2.90 |
| 4,517.00 | 6.41 | 119.63 | 4,248.33 | -953.06 | 1,035.12 | 1,407.05 | 1.91 | -1.88 | -2.62 |
| 4,608.00 | 4.30 | 128.12 | 4,338.93 | -957.68 | 1,042.22 | 1,415.40 | 2.47 | -2.32 | 9.33 |
| 4,698.00 | 2.56 | 134.06 | 4,428.76 | -961.16 | 1,046.32 | 1,420.78 | 1.97 | -1.93 | 6.60 |
| 4,789.00 | 0.97 | 95.45 | 4,519.72 | -962.65 | 1,048.55 | 1,423.42 | 2.09 | -1.75 | -42.43 |
| 4,879.00 | 0.83 | 222.67 | 4,609.71 | -963.20 | 1,048.87 | 1,424.03 | 1.79 | -0.16 | 141.36 |
| 4,970.00 | 0.88 | 272.26 | 4,700.71 | -963.66 | 1,047.72 | 1,423.50 | 0.79 | 0.05 | 54.49 |
| 5,060.00 | 1.60 | 317.29 | 4,790.69 | -962.70 | 1,046.18 | 1,421.72 | 1.29 | 0.80 | 50.03 |
| 5,151.00 | 1.08 | 302.95 | 4,881.66 | -961.30 | 1,044.60 | 1,419.61 | 0.68 | -0.57 | -15.76 |
| 5,241.00 | 1.73 | 351.48 | 4,971.64 | -959.50 | 1,043.69 | 1,417.71 | 1.44 | 0.72 | 53.92 |
| 5,332.00 | 1.54 | 7.50 | 5,062.60 | -956.93 | 1,043.64 | 1,415.93 | 0.54 | -0.21 | 17.60 |
| 5,422.00 | 1.28 | 15.25 | 5,152.57 | -954.76 | 1,044.06 | 1,414.77 | 0.36 | -0.29 | 8.61 |
| 5,513.00 | 0.65 | 260.01 | 5,243.56 | -953.87 | 1,043.82 | 1,413.99 | 1.83 | -0.69 | -126.64 |
| 5,603.00 | 0.49 | 239.97 | 5,333.56 | -954.15 | 1,042.99 | 1,413.57 | 0.28 | -0.18 | -22.27 |

# Scientific Drilling
Survey Report

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,694.00 | 0.45 | 226.21 | 5,424.56 | -954.59 | 1,042.39 | 1,413.43 | 0.13 | -0.04 | -15.12 |
| 5,784.00 | 1.25 | 314.57 | 5,514.55 | -954.15 | 1,041.44 | 1,412.43 | 1.46 | 0.89 | 98.18 |
| 5,875.00 | 0.91 | 310.42 | 5,605.53 | -952.98 | 1,040.18 | 1,410.71 | 0.38 | -0.37 | -4.56 |
| 5,966.00 | 0.70 | 319.95 | 5,696.52 | -952.09 | 1,039.27 | 1,409.44 | 0.27 | -0.23 | 10.47 |
| 6,056.00 | 0.74 | 263.74 | 5,786.52 | -951.73 | 1,038.34 | 1,408.51 | 0.75 | 0.04 | -62.46 |
| 6,147.00 | 1.14 | 335.14 | 5,877.51 | -950.97 | 1,037.38 | 1,407.29 | 1.26 | 0.44 | 78.46 |
| 6,237.00 | 0.69 | 325.84 | 5,967.50 | -949.71 | 1,036.70 | 1,405.94 | 0.52 | -0.50 | -10.33 |
| 6,328.00 | 0.40 | 304.78 | 6,058.49 | -949.08 | 1,036.13 | 1,405.09 | 0.38 | -0.32 | -23.14 |
| 6,418.00 | 0.34 | 339.25 | 6,148.49 | -948.65 | 1,035.77 | 1,404.54 | 0.25 | -0.07 | 38.30 |
| 6,509.00 | 0.43 | 316.12 | 6,239.49 | -948.15 | 1,035.44 | 1,403.95 | 0.20 | 0.10 | -25.42 |
| 6,600.00 | 0.26 | 98.08 | 6,330.49 | -947.93 | 1,035.41 | 1,403.78 | 0.72 | -0.19 | 156.00 |
| 6,690.00 | 0.62 | 83.57 | 6,420.48 | -947.91 | 1,036.10 | 1,404.27 | 0.42 | 0.40 | -16.12 |
| 6,781.00 | 0.52 | 119.42 | 6,511.48 | -948.06 | 1,036.94 | 1,404.99 | 0.40 | -0.11 | 39.40 |
| 6,871.00 | 0.66 | 149.52 | 6,601.48 | -948.70 | 1,037.56 | 1,405.89 | 0.37 | 0.16 | 33.44 |
| 6,962.00 | 0.95 | 157.93 | 6,692.47 | -949.85 | 1,038.11 | 1,407.07 | 0.34 | 0.32 | 9.24 |
| 7,052.00 | 1.44 | 61.23 | 6,782.45 | -950.00 | 1,039.38 | 1,408.11 | 2.02 | 0.54 | -107.44 |
| 7,143.00 | 1.68 | 62.60 | 6,873.42 | -948.84 | 1,041.57 | 1,408.92 | 0.27 | 0.26 | 1.51 |
| 7,233.00 | 0.68 | 11.19 | 6,963.40 | -947.71 | 1,042.85 | 1,409.09 | 1.52 | -1.11 | -57.12 |
| 7,324.00 | 0.75 | 3.40 | 7,054.40 | -946.58 | 1,042.99 | 1,408.43 | 0.13 | 0.08 | -8.56 |
| 7,414.00 | 0.33 | 22.83 | 7,144.39 | -945.75 | 1,043.12 | 1,407.97 | 0.50 | -0.47 | 21.59 |
| 7,505.00 | 0.05 | 230.86 | 7,235.39 | -945.54 | 1,043.19 | 1,407.87 | 0.41 | -0.31 | -167.00 |
| 7,595.00 | 0.24 | 191.62 | 7,325.39 | -945.75 | 1,043.12 | 1,407.97 | 0.23 | 0.21 | -43.60 |
| 7,686.00 | 0.18 | 174.87 | 7,416.39 | -946.08 | 1,043.10 | 1,408.17 | 0.09 | -0.07 | -18.41 |
| 7,776.00 | 0.42 | 169.15 | 7,506.39 | -946.54 | 1,043.17 | 1,408.54 | 0.27 | 0.27 | -6.36 |
| 7,867.00 | 0.19 | 172.81 | 7,597.39 | -947.02 | 1,043.25 | 1,408.92 | 0.25 | -0.25 | 4.02 |
| 7,957.00 | 0.40 | 138.24 | 7,687.39 | -947.40 | 1,043.48 | 1,409.35 | 0.30 | 0.23 | -38.41 |
| 8,048.00 | 0.63 | 103.81 | 7,778.38 | -947.76 | 1,044.18 | 1,410.11 | 0.41 | 0.25 | -37.84 |
| 8,138.00 | 0.65 | 75.45 | 7,868.38 | -947.75 | 1,045.15 | 1,410.81 | 0.35 | 0.02 | -31.51 |
| 8,229.00 | 0.88 | 92.65 | 7,959.37 | -947.65 | 1,046.35 | 1,411.63 | 0.35 | 0.25 | 18.90 |
| 8,319.00 | 0.93 | 168.20 | 8,049.36 | -948.40 | 1,047.19 | 1,412.75 | 1.23 | 0.06 | 83.94 |
| 8,409.00 | 0.87 | 156.61 | 8,139.35 | -949.74 | 1,047.61 | 1,413.97 | 0.21 | -0.07 | -12.88 |
| 8,500.00 | 1.02 | 145.95 | 8,230.34 | -951.04 | 1,048.34 | 1,415.39 | 0.25 | 0.16 | -11.71 |
| 8,590.00 | 1.04 | 157.18 | 8,320.32 | -952.46 | 1,049.11 | 1,416.91 | 0.23 | 0.02 | 12.48 |
| 8,681.00 | 1.28 | 142.58 | 8,411.30 | -954.03 | 1,050.04 | 1,418.67 | 0.42 | 0.26 | -16.04 |
| 8,797.00 | 1.31 | 152.15 | 8,527.27 | -956.23 | 1,051.45 | 1,421.20 | 0.19 | 0.03 | 8.25 |
| 8,850.00 | 1.31 | 152.15 | 8,580.26 | -957.30 | 1,052.02 | 1,422.34 | 0.00 | 0.00 | 0.00 |
| **Projection to TD** | | | | | | | | | |

Scientific Drilling
Rocky Mountain Operations

# Scientific Drilling
Survey Report

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | *EDM 2003.16 Multi User Db* |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| NBU 1022-32B3S PBHL | 0.00 | 0.00 | 8,560.00 | -964.18 | 1,043.35 | 580,619.79 | 2,571,914.21 | 39° 54' 34.390 N | 109° 27' 39.590 W |
| - actual wellpath misses target center by 11.16ft at 8829.79ft MD (8560.06 TVD, -956.89 N, 1051.80 E) | | | | | | | | | |
| - Circle (radius 25.00) | | | | | | | | | |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,909.00 | 1,810.47 | -348.58 | 394.82 | Last Survey in 12 1/4" Hole |
| 1,982.00 | 1,876.52 | -369.41 | 417.88 | First Survey in 7 7/8" Hole |
| 8,850.00 | 8,580.26 | -957.30 | 1,052.02 | Projection to TD |

Checked By: _____ Approved By: _____ Date: _____

Scientific Drilling
Rocky Mountain Operations

# Kerr McGee Oil and Gas Onshore LP

**Uintah County, UT NAD27**
**NBU 1022-32C Pad**
**NBU 1022-32B3S**
**OH**

**Design: OH**

# Survey Report - Geographic

**05 August, 2009**

# Scientific Drilling

## Survey Report - Geographic

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

| | | | |
|---|---|---|---|
| **Project** | Uintah County, UT NAD27 | | |
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Utah Central 4302 | | |

| | | | | | |
|---|---|---|---|---|---|
| **Site** | NBU 1022-32C Pad, Sec 32 T10S R22E | | | | |
| **Site Position:** | | **Northing:** | 581,560.00 ft | **Latitude:** | 39° 54' 43.920 N |
| **From:** | Lat/Long | **Easting:** | 2,570,849.20 ft | **Longitude:** | 109° 27' 52.980 W |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | in | **Grid Convergence:** | 1.30 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | NBU 1022-32B3S, 185' FNL 2114' FWL | | | | | |
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 581,559.98 ft | **Latitude:** | 39° 54' 43.920 N |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,570,849.20 ft | **Longitude:** | 109° 27' 52.980 W |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 5,449.00 ft |

| **Wellbore** | OH | | | | |
|---|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF200510 | 2009-06-01 | 11.29 | 65.86 | 52,512 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | OH | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0.00 | 0.00 | 0.00 | 132.74 | |

**Survey Program** **Date** 2009-08-05

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 92.00 | 1,909.00 | Survey #1 - Surface (OH) | MWD SDI | MWD - Standard ver 1.0.1 |
| 1,982.00 | 8,850.00 | Survey #2 - Production (OH) | MWD SDI | MWD - Standard ver 1.0.1 |

# Scientific Drilling

## Survey Report - Geographic

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 581,559.98 | 2,570,849.20 | 39° 54' 43.920 N | 109° 27' 52.980 W |
| 92.00 | 0.18 | 19.04 | 92.00 | 0.14 | 0.05 | 581,560.12 | 2,570,849.24 | 39° 54' 43.921 N | 109° 27' 52.979 W |
| 117.00 | 0.24 | 71.96 | 117.00 | 0.19 | 0.11 | 581,560.17 | 2,570,849.30 | 39° 54' 43.922 N | 109° 27' 52.979 W |
| 207.00 | 1.96 | 145.29 | 206.98 | -1.02 | 1.17 | 581,558.99 | 2,570,850.39 | 39° 54' 43.910 N | 109° 27' 52.965 W |
| 297.00 | 4.79 | 143.16 | 296.82 | -5.29 | 4.30 | 581,554.79 | 2,570,853.61 | 39° 54' 43.867 N | 109° 27' 52.925 W |
| 387.00 | 7.09 | 139.58 | 386.33 | -12.53 | 10.15 | 581,547.69 | 2,570,859.63 | 39° 54' 43.796 N | 109° 27' 52.850 W |
| 477.00 | 9.35 | 134.92 | 475.40 | -21.92 | 18.93 | 581,538.50 | 2,570,868.62 | 39° 54' 43.703 N | 109° 27' 52.737 W |
| 567.00 | 10.51 | 131.17 | 564.05 | -32.49 | 30.29 | 581,528.19 | 2,570,880.21 | 39° 54' 43.599 N | 109° 27' 52.591 W |
| 657.00 | 12.12 | 129.71 | 652.30 | -43.93 | 43.73 | 581,517.06 | 2,570,893.92 | 39° 54' 43.486 N | 109° 27' 52.419 W |
| 747.00 | 13.61 | 131.01 | 740.04 | -56.91 | 58.99 | 581,504.42 | 2,570,909.47 | 39° 54' 43.357 N | 109° 27' 52.223 W |
| 837.00 | 15.42 | 131.25 | 827.16 | -71.75 | 75.98 | 581,489.98 | 2,570,926.79 | 39° 54' 43.211 N | 109° 27' 52.005 W |
| 927.00 | 16.46 | 133.64 | 913.70 | -88.44 | 94.21 | 581,473.70 | 2,570,945.39 | 39° 54' 43.046 N | 109° 27' 51.771 W |
| 1,017.00 | 18.63 | 134.28 | 999.51 | -107.28 | 113.73 | 581,455.32 | 2,570,965.34 | 39° 54' 42.859 N | 109° 27' 51.520 W |
| 1,107.00 | 21.70 | 132.20 | 1,083.98 | -128.50 | 136.35 | 581,434.62 | 2,570,988.44 | 39° 54' 42.650 N | 109° 27' 51.230 W |
| 1,197.00 | 24.62 | 130.11 | 1,166.72 | -151.76 | 163.02 | 581,411.97 | 2,571,015.63 | 39° 54' 42.420 N | 109° 27' 50.888 W |
| 1,289.00 | 25.17 | 130.40 | 1,250.17 | -176.78 | 192.58 | 581,387.62 | 2,571,045.75 | 39° 54' 42.173 N | 109° 27' 50.508 W |
| 1,379.00 | 25.42 | 132.07 | 1,331.54 | -202.13 | 221.49 | 581,362.94 | 2,571,075.23 | 39° 54' 41.922 N | 109° 27' 50.137 W |
| 1,469.00 | 26.17 | 130.69 | 1,412.58 | -228.01 | 250.88 | 581,337.73 | 2,571,105.20 | 39° 54' 41.666 N | 109° 27' 49.760 W |
| 1,559.00 | 26.03 | 129.03 | 1,493.40 | -253.39 | 281.27 | 581,313.06 | 2,571,136.16 | 39° 54' 41.415 N | 109° 27' 49.370 W |
| 1,649.00 | 24.92 | 129.06 | 1,574.65 | -277.77 | 311.33 | 581,289.36 | 2,571,166.77 | 39° 54' 41.174 N | 109° 27' 48.984 W |
| 1,739.00 | 24.66 | 129.54 | 1,656.35 | -301.67 | 340.54 | 581,266.13 | 2,571,196.51 | 39° 54' 40.938 N | 109° 27' 48.610 W |
| 1,829.00 | 24.83 | 130.81 | 1,738.09 | -325.98 | 369.32 | 581,242.49 | 2,571,225.84 | 39° 54' 40.698 N | 109° 27' 48.240 W |
| 1,909.00 | 25.60 | 132.25 | 1,810.47 | -348.58 | 394.82 | 581,220.48 | 2,571,251.85 | 39° 54' 40.475 N | 109° 27' 47.913 W |
| **Last Survey in 12 1/4" Hole** | | | | | | | | | |
| 1,982.00 | 24.79 | 131.94 | 1,876.52 | -369.41 | 417.88 | 581,200.17 | 2,571,275.38 | 39° 54' 40.269 N | 109° 27' 47.617 W |
| **First Survey in 7 7/8" Hole** | | | | | | | | | |
| 2,073.00 | 25.24 | 130.76 | 1,958.99 | -394.83 | 446.77 | 581,175.42 | 2,571,304.83 | 39° 54' 40.017 N | 109° 27' 47.246 W |
| 2,163.00 | 26.51 | 129.92 | 2,039.96 | -420.25 | 476.71 | 581,150.69 | 2,571,335.35 | 39° 54' 39.766 N | 109° 27' 46.862 W |
| 2,254.00 | 26.41 | 135.40 | 2,121.44 | -447.69 | 506.50 | 581,123.93 | 2,571,365.75 | 39° 54' 39.495 N | 109° 27' 46.480 W |
| 2,344.00 | 25.79 | 135.72 | 2,202.26 | -475.96 | 534.22 | 581,096.30 | 2,571,394.11 | 39° 54' 39.215 N | 109° 27' 46.124 W |
| 2,435.00 | 25.79 | 134.72 | 2,284.20 | -504.06 | 562.11 | 581,068.84 | 2,571,422.63 | 39° 54' 38.938 N | 109° 27' 45.766 W |
| 2,525.00 | 27.44 | 135.23 | 2,364.66 | -532.56 | 590.63 | 581,040.99 | 2,571,451.79 | 39° 54' 38.656 N | 109° 27' 45.400 W |
| 2,616.00 | 27.96 | 135.98 | 2,445.23 | -562.79 | 620.22 | 581,011.45 | 2,571,482.06 | 39° 54' 38.357 N | 109° 27' 45.020 W |
| 2,706.00 | 27.93 | 135.02 | 2,524.74 | -592.87 | 649.78 | 580,982.05 | 2,571,512.30 | 39° 54' 38.060 N | 109° 27' 44.641 W |
| 2,797.00 | 26.37 | 132.76 | 2,605.71 | -621.67 | 679.69 | 580,953.94 | 2,571,542.85 | 39° 54' 37.775 N | 109° 27' 44.257 W |
| 2,887.00 | 24.84 | 133.04 | 2,686.87 | -648.14 | 708.18 | 580,928.12 | 2,571,571.94 | 39° 54' 37.514 N | 109° 27' 43.891 W |
| 2,978.00 | 22.89 | 129.64 | 2,770.09 | -672.48 | 735.78 | 580,904.41 | 2,571,600.09 | 39° 54' 37.273 N | 109° 27' 43.537 W |
| 3,068.00 | 22.45 | 127.23 | 2,853.14 | -694.05 | 762.94 | 580,883.47 | 2,571,627.73 | 39° 54' 37.060 N | 109° 27' 43.189 W |
| 3,159.00 | 20.58 | 130.13 | 2,937.80 | -714.87 | 789.01 | 580,863.25 | 2,571,654.27 | 39° 54' 36.854 N | 109° 27' 42.854 W |
| 3,249.00 | 19.10 | 127.09 | 3,022.45 | -733.95 | 812.85 | 580,844.72 | 2,571,678.54 | 39° 54' 36.666 N | 109° 27' 42.548 W |
| 3,340.00 | 16.57 | 126.07 | 3,109.07 | -750.57 | 835.22 | 580,828.61 | 2,571,701.28 | 39° 54' 36.501 N | 109° 27' 42.261 W |
| 3,431.00 | 15.85 | 131.90 | 3,196.46 | -766.51 | 854.96 | 580,813.12 | 2,571,721.37 | 39° 54' 36.344 N | 109° 27' 42.008 W |
| 3,521.00 | 15.06 | 140.03 | 3,283.22 | -783.68 | 871.62 | 580,796.34 | 2,571,738.42 | 39° 54' 36.174 N | 109° 27' 41.794 W |
| 3,611.00 | 15.94 | 145.80 | 3,369.95 | -802.86 | 886.08 | 580,777.49 | 2,571,753.31 | 39° 54' 35.984 N | 109° 27' 41.608 W |
| 3,702.00 | 15.67 | 144.38 | 3,457.51 | -823.19 | 900.26 | 580,757.49 | 2,571,767.95 | 39° 54' 35.784 N | 109° 27' 41.426 W |
| 3,793.00 | 16.50 | 140.39 | 3,544.95 | -843.13 | 915.66 | 580,737.90 | 2,571,783.80 | 39° 54' 35.586 N | 109° 27' 41.229 W |
| 3,883.00 | 17.34 | 141.34 | 3,631.05 | -863.45 | 932.19 | 580,717.96 | 2,571,800.79 | 39° 54' 35.386 N | 109° 27' 41.017 W |
| 3,974.00 | 17.76 | 140.35 | 3,717.82 | -884.73 | 949.51 | 580,697.08 | 2,571,818.59 | 39° 54' 35.175 N | 109° 27' 40.794 W |
| 4,064.00 | 16.69 | 137.59 | 3,803.78 | -904.84 | 966.99 | 580,677.38 | 2,571,836.52 | 39° 54' 34.976 N | 109° 27' 40.570 W |
| 4,155.00 | 13.95 | 128.94 | 3,891.55 | -921.39 | 984.34 | 580,661.23 | 2,571,854.24 | 39° 54' 34.813 N | 109° 27' 40.347 W |
| 4,245.00 | 10.98 | 120.27 | 3,979.42 | -932.53 | 1,000.18 | 580,650.45 | 2,571,870.34 | 39° 54' 34.703 N | 109° 27' 40.144 W |
| 4,336.00 | 8.90 | 119.40 | 4,069.05 | -940.36 | 1,013.80 | 580,642.94 | 2,571,884.13 | 39° 54' 34.625 N | 109° 27' 39.969 W |
| 4,426.00 | 8.12 | 122.01 | 4,158.06 | -947.14 | 1,025.26 | 580,636.41 | 2,571,895.74 | 39° 54' 34.558 N | 109° 27' 39.822 W |
| 4,517.00 | 6.41 | 119.63 | 4,248.33 | -953.06 | 1,035.12 | 580,630.72 | 2,571,905.74 | 39° 54' 34.500 N | 109° 27' 39.696 W |
| 4,608.00 | 4.30 | 128.12 | 4,338.93 | -957.68 | 1,042.22 | 580,626.26 | 2,571,912.94 | 39° 54' 34.454 N | 109° 27' 39.604 W |

# Scientific Drilling

## Survey Report - Geographic

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 4,698.00 | 2.56 | 134.06 | 4,428.76 | -961.16 | 1,046.32 | 580,622.88 | 2,571,917.12 | 39° 54' 34.420 N | 109° 27' 39.552 W |
| 4,789.00 | 0.97 | 95.45 | 4,519.72 | -962.65 | 1,048.55 | 580,621.44 | 2,571,919.38 | 39° 54' 34.405 N | 109° 27' 39.523 W |
| 4,879.00 | 0.83 | 222.67 | 4,609.71 | -963.20 | 1,048.87 | 580,620.90 | 2,571,919.71 | 39° 54' 34.400 N | 109° 27' 39.519 W |
| 4,970.00 | 0.88 | 272.26 | 4,700.71 | -963.66 | 1,047.72 | 580,620.41 | 2,571,918.57 | 39° 54' 34.395 N | 109° 27' 39.534 W |
| 5,060.00 | 1.60 | 317.29 | 4,790.69 | -962.70 | 1,046.18 | 580,621.33 | 2,571,917.01 | 39° 54' 34.405 N | 109° 27' 39.554 W |
| 5,151.00 | 1.08 | 302.95 | 4,881.66 | -961.30 | 1,044.60 | 580,622.69 | 2,571,915.40 | 39° 54' 34.418 N | 109° 27' 39.574 W |
| 5,241.00 | 1.73 | 351.48 | 4,971.64 | -959.50 | 1,043.69 | 580,624.48 | 2,571,914.44 | 39° 54' 34.436 N | 109° 27' 39.586 W |
| 5,332.00 | 1.54 | 7.50 | 5,062.60 | -956.93 | 1,043.64 | 580,627.05 | 2,571,914.34 | 39° 54' 34.462 N | 109° 27' 39.586 W |
| 5,422.00 | 1.28 | 15.25 | 5,152.57 | -954.76 | 1,044.06 | 580,629.22 | 2,571,914.71 | 39° 54' 34.483 N | 109° 27' 39.581 W |
| 5,513.00 | 0.65 | 260.01 | 5,243.56 | -953.87 | 1,043.82 | 580,630.11 | 2,571,914.45 | 39° 54' 34.492 N | 109° 27' 39.584 W |
| 5,603.00 | 0.49 | 239.97 | 5,333.56 | -954.15 | 1,042.99 | 580,629.81 | 2,571,913.62 | 39° 54' 34.489 N | 109° 27' 39.595 W |
| 5,694.00 | 0.45 | 226.21 | 5,424.56 | -954.59 | 1,042.39 | 580,629.35 | 2,571,913.04 | 39° 54' 34.485 N | 109° 27' 39.602 W |
| 5,784.00 | 1.25 | 314.57 | 5,514.55 | -954.15 | 1,041.44 | 580,629.78 | 2,571,912.07 | 39° 54' 34.489 N | 109° 27' 39.615 W |
| 5,875.00 | 0.91 | 310.42 | 5,605.53 | -952.98 | 1,040.18 | 580,630.91 | 2,571,910.79 | 39° 54' 34.501 N | 109° 27' 39.631 W |
| 5,966.00 | 0.70 | 319.95 | 5,696.52 | -952.09 | 1,039.27 | 580,631.78 | 2,571,909.86 | 39° 54' 34.509 N | 109° 27' 39.642 W |
| 6,056.00 | 0.74 | 263.74 | 5,786.52 | -951.73 | 1,038.34 | 580,632.12 | 2,571,908.92 | 39° 54' 34.513 N | 109° 27' 39.654 W |
| 6,147.00 | 1.14 | 335.14 | 5,877.51 | -950.97 | 1,037.38 | 580,632.86 | 2,571,907.94 | 39° 54' 34.520 N | 109° 27' 39.667 W |
| 6,237.00 | 0.69 | 325.84 | 5,967.50 | -949.71 | 1,036.70 | 580,634.10 | 2,571,907.23 | 39° 54' 34.533 N | 109° 27' 39.675 W |
| 6,328.00 | 0.40 | 304.78 | 6,058.49 | -949.08 | 1,036.13 | 580,634.72 | 2,571,906.65 | 39° 54' 34.539 N | 109° 27' 39.683 W |
| 6,418.00 | 0.34 | 339.25 | 6,148.49 | -948.65 | 1,035.77 | 580,635.14 | 2,571,906.29 | 39° 54' 34.543 N | 109° 27' 39.687 W |
| 6,509.00 | 0.43 | 316.12 | 6,239.49 | -948.15 | 1,035.44 | 580,635.63 | 2,571,905.94 | 39° 54' 34.548 N | 109° 27' 39.691 W |
| 6,600.00 | 0.26 | 98.08 | 6,330.49 | -947.93 | 1,035.41 | 580,635.85 | 2,571,905.90 | 39° 54' 34.551 N | 109° 27' 39.692 W |
| 6,690.00 | 0.62 | 83.57 | 6,420.48 | -947.91 | 1,036.10 | 580,635.89 | 2,571,906.59 | 39° 54' 34.551 N | 109° 27' 39.683 W |
| 6,781.00 | 0.52 | 119.42 | 6,511.48 | -948.06 | 1,036.94 | 580,635.76 | 2,571,907.44 | 39° 54' 34.549 N | 109° 27' 39.672 W |
| 6,871.00 | 0.66 | 149.52 | 6,601.48 | -948.70 | 1,037.56 | 580,635.13 | 2,571,908.08 | 39° 54' 34.543 N | 109° 27' 39.664 W |
| 6,962.00 | 0.95 | 157.93 | 6,692.47 | -949.85 | 1,038.11 | 580,633.99 | 2,571,908.65 | 39° 54' 34.532 N | 109° 27' 39.657 W |
| 7,052.00 | 1.44 | 61.23 | 6,782.45 | -950.00 | 1,039.38 | 580,633.87 | 2,571,909.93 | 39° 54' 34.530 N | 109° 27' 39.641 W |
| 7,143.00 | 1.68 | 62.60 | 6,873.42 | -948.84 | 1,041.57 | 580,635.09 | 2,571,912.09 | 39° 54' 34.542 N | 109° 27' 39.613 W |
| 7,233.00 | 0.68 | 11.19 | 6,963.40 | -947.71 | 1,042.85 | 580,636.25 | 2,571,913.33 | 39° 54' 34.553 N | 109° 27' 39.596 W |
| 7,324.00 | 0.75 | 3.40 | 7,054.40 | -946.58 | 1,042.99 | 580,637.38 | 2,571,913.45 | 39° 54' 34.564 N | 109° 27' 39.595 W |
| 7,414.00 | 0.33 | 22.83 | 7,144.39 | -945.75 | 1,043.12 | 580,638.20 | 2,571,913.57 | 39° 54' 34.572 N | 109° 27' 39.593 W |
| 7,505.00 | 0.05 | 230.86 | 7,235.39 | -945.54 | 1,043.19 | 580,638.42 | 2,571,913.63 | 39° 54' 34.574 N | 109° 27' 39.592 W |
| 7,595.00 | 0.24 | 191.62 | 7,325.39 | -945.75 | 1,043.12 | 580,638.21 | 2,571,913.57 | 39° 54' 34.572 N | 109° 27' 39.593 W |
| 7,686.00 | 0.18 | 174.87 | 7,416.39 | -946.08 | 1,043.10 | 580,637.88 | 2,571,913.55 | 39° 54' 34.569 N | 109° 27' 39.593 W |
| 7,776.00 | 0.42 | 169.15 | 7,506.39 | -946.54 | 1,043.17 | 580,637.42 | 2,571,913.63 | 39° 54' 34.564 N | 109° 27' 39.592 W |
| 7,867.00 | 0.19 | 172.81 | 7,597.39 | -947.02 | 1,043.25 | 580,636.94 | 2,571,913.73 | 39° 54' 34.560 N | 109° 27' 39.591 W |
| 7,957.00 | 0.40 | 138.24 | 7,687.39 | -947.40 | 1,043.48 | 580,636.57 | 2,571,913.96 | 39° 54' 34.556 N | 109° 27' 39.588 W |
| 8,048.00 | 0.63 | 103.81 | 7,778.38 | -947.76 | 1,044.18 | 580,636.23 | 2,571,914.67 | 39° 54' 34.552 N | 109° 27' 39.579 W |
| 8,138.00 | 0.65 | 75.45 | 7,868.38 | -947.75 | 1,045.15 | 580,636.26 | 2,571,915.64 | 39° 54' 34.552 N | 109° 27' 39.567 W |
| 8,229.00 | 0.88 | 92.65 | 7,959.37 | -947.65 | 1,046.35 | 580,636.38 | 2,571,916.84 | 39° 54' 34.553 N | 109° 27' 39.551 W |
| 8,319.00 | 0.93 | 168.20 | 8,049.36 | -948.40 | 1,047.19 | 580,635.66 | 2,571,917.69 | 39° 54' 34.546 N | 109° 27' 39.541 W |
| 8,409.00 | 0.87 | 156.61 | 8,139.35 | -949.74 | 1,047.61 | 580,634.32 | 2,571,918.15 | 39° 54' 34.533 N | 109° 27' 39.535 W |
| 8,500.00 | 1.02 | 145.95 | 8,230.34 | -951.04 | 1,048.34 | 580,633.04 | 2,571,918.90 | 39° 54' 34.520 N | 109° 27' 39.526 W |
| 8,590.00 | 1.04 | 157.18 | 8,320.32 | -952.46 | 1,049.11 | 580,631.64 | 2,571,919.70 | 39° 54' 34.506 N | 109° 27' 39.516 W |
| 8,681.00 | 1.28 | 142.58 | 8,411.30 | -954.03 | 1,050.04 | 580,630.09 | 2,571,920.67 | 39° 54' 34.490 N | 109° 27' 39.504 W |
| 8,797.00 | 1.31 | 152.15 | 8,527.27 | -956.23 | 1,051.45 | 580,627.92 | 2,571,922.13 | 39° 54' 34.469 N | 109° 27' 39.486 W |
| 8,850.00 | 1.31 | 152.15 | 8,580.26 | -957.30 | 1,052.02 | 580,626.86 | 2,571,922.72 | 39° 54' 34.458 N | 109° 27' 39.479 W |
| **Projection to TD** | | | | | | | | | |

# Scientific Drilling

Survey Report - Geographic

| | | | |
|---|---|---|---|
| **Company:** | Kerr McGee Oil and Gas Onshore LP | **Local Co-ordinate Reference:** | Well NBU 1022-32B3S |
| **Project:** | Uintah County, UT NAD27 | **TVD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Site:** | NBU 1022-32C Pad | **MD Reference:** | GL 5449' & RKB 13' @ 5462.00ft (Ensign 139) |
| **Well:** | NBU 1022-32B3S | **North Reference:** | True |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | OH | **Database:** | EDM 2003.16 Multi User Db |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| NBU 1022-32B3S PBHL | 0.00 | 0.00 | 8,560.00 | -964.18 | 1,043.35 | 580,619.79 | 2,571,914.21 | 39° 54' 34.390 N | 109° 27' 39.590 W |
| - actual wellpath misses target center by 11.16ft at 8829.79ft MD (8560.06 TVD, -956.89 N, 1051.80 E) | | | | | | | | | |
| - Circle (radius 25.00) | | | | | | | | | |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,909.00 | 1,810.47 | -348.58 | 394.82 | Last Survey in 12 1/4" Hole |
| 1,982.00 | 1,876.52 | -369.41 | 417.88 | First Survey in 7 7/8" Hole |
| 8,850.00 | 8,580.26 | -957.30 | 1,052.02 | Projection to TD |

Checked By: _____ Approved By: _____ Date: _____

Scientific Drilling
Rocky Mountain Operations

# END OF WELL REPORT

**Prepared For:**

# Kerr McGee Oil & Gas Onshore LP
## NBU 1022-32B3S
## NBU 1022-32C Pad
## Ensign 139
## Uintah County, UT

***Prepared By:***


***Julie Cruse, Rockies Region Engineer***
***Scientific Drilling***
***Rocky Mountain Region***

Scientific Drilling International
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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: ENSIGN 139/139, PROPETRO/ |
| Event: DRILLING | Start Date: 6/1/2009 | End Date: 7/31/2009 |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 6/1/2009 | 6:00 - 8:30 | 2.50 | MIRU | 01 | A | P | | MOVE RIG TO LOCATION |
| | 8:30 - 11:00 | 2.50 | MIRU | 01 | B | P | | RIG UP RIG. |
| | 11:00 - 12:00 | 1.00 | DRLPRO | 02 | A | P | | DRILL W/ AIR HAMMER 40'- 129'. |
| | 12:00 - 12:30 | 0.50 | DRLPRO | 06 | A | P | | TRIP OUT OF HOLE. |
| | 12:30 - 16:00 | 3.50 | MAINT | 07 | A | P | | RIG SERVICE. LUBE RIG. |
| | 16:00 - 18:00 | 2.00 | DRLPRO | 06 | A | P | | P/U MAKE UP 12-1/4" HC507Z SN 7008622 , SCIENTIFIC DIRECTIONAL TOOLS |
| | 18:00 - 19:00 | 1.00 | DRLPRO | 07 | A | P | | RIG SERVICE OILCHANGE IN #1 PUMP. |
| | 19:00 - 0:00 | 5.00 | DRLPRO | 02 | D | P | | DRILL SLIDE 129'- 438' (SLIDE 22.56%, ROT 77.4% |
| 6/2/2009 | 0:00 - 13:30 | 13.50 | DRLSUR | 02 | D | P | | DRILL SLIDE 438'- 1310' WT ON BIT 18-20K ROP 60-80, MM 94 RPM, OFF/ON PSI 1450/1650 |
| | 13:30 - 15:00 | 1.50 | MAINT | 08 | B | Z | | MUD #2 PUMP OVER HEATING. |
| | 15:00 - 16:30 | 1.50 | DRLPRO | 02 | D | P | | DRILL AND SLIDE 1310'-1370 |
| | 16:30 - 18:30 | 2.00 | MAINT | 08 | B | Z | | CHANGE OUT #2 PUMP, THE NEW PUMP WOULD NOT PRIME UP. |
| | 18:30 - 0:00 | 5.50 | DRLPRO | 02 | D | P | | DRILL 1370' TO 1650' 18-20K, RPM 20, OFF/ON 1500/1700 PSI. TORQUE 3200 |
| 6/3/2009 | 0:00 - 9:00 | 9.00 | DRLSUR | 02 | D | P | | DRILL SLIDE 1650'- 1960' WT 20-22K, RPM 45, OFF/0N 1500/1700 PSI 3200 TORQUE. |
| | 9:00 - 10:00 | 1.00 | CSG | 05 | A | P | | CIRC AND CONDITION HOLE |
| | 10:00 - 14:30 | 4.50 | CSG | 06 | D | P | | LAY DOWN DRILL STRING. |
| | 14:30 - 16:30 | 2.00 | CSG | 12 | C | P | | RUN 45 JTS OF 40# J-55 LT&C 9 5/8 CSG TO 1939' GL, FLOAT COLLAR @ 1891' GL, RUN 200' OF 1" PIPE. |
| | 16:30 - 0:00 | 7.50 | CSG | 12 | C | Z | | RIG DOWN RIG AND MOVE, RIG UP & STARTED PUMPING DOWN CSG. CSG WOULD NOT CIRC. MOVE RIG #9 BACK OVER HOLE AND PULL 2 JTS OF CSG. STILL WOULD NOT CIRC, RIG DOWN RIG #9. RIG UP RIG #11 AND PULL SURFACE CSG BACK OUT OF THE HOLE. |
| 6/4/2009 | 0:00 - 10:30 | 10.50 | CSG | 12 | C | X | | LAYDOWN CSG 9 5/8 40# CSG PLUGGED 4' UP FROM SHALE AND SAND. |
| | 10:30 - 18:00 | 7.50 | CSG | 06 | E | X | | RIG UP FLOAT AND PUMPS AND P/U DRILL STRING, WIPER TRIP TO BOTTOM 1934'. |
| | 18:00 - 19:00 | 1.00 | CSG | 05 | F | X | | CIRC HOLE CLEAN W/ WATER AND AIR ASSIST. |
| | 19:00 - 22:00 | 3.00 | CSG | 06 | D | X | | LAYDOWN DRILL STRING. |
| | 22:00 - 0:00 | 2.00 | CSG | 12 | C | P | | RIG UP AND START TO RUN 40# J-55 LT&C 9-5/8 CSG. |
| 6/5/2009 | 0:00 - 2:30 | 2.50 | CSG | 12 | C | P | | RUN 45 JTS OF 40# J-55 LT&C 9-5/* CSG TO FLOAT SHOE DEPTH 1932' GL, FLOAT COLLAR TO 1889'. |
| | 2:30 - 6:00 | 3.50 | CSG | 12 | E | P | | START 40 BBLS OF PRE FLUSH 8.3# H20, PUMP 150 SX OF 11.1# YEILD 3.82, 23 GAL/SK. 200 SX OF TAIL 15.8# 1.15 YD, 5 GAL/SK, DROP PLUG ON FLY, DISPLACE W 146 BBLS OF FRESH WATER. LIFT 150 PSI @ 3 BBL/MIN, BUMP PLUG 700 PSI, FLOAT HELD. 1 BBL OF CEMENT TO SURFACE. PUMP 100SX OF 15.8# 1.15YD, 5 GAL/SK. DOWN 200' OF 1" PIPE. CEMENT TO SURFACE AND STAYED. RIG DOWN PROPETRO CEMENTERS. |

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: ENSIGN 139/139, PROPETRO/ |
| Event: DRILLING | Start Date: 6/1/2009 | End Date: 7/31/2009 |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 7/19/2009 | 6:00 - 18:00 | 12.00 | RDMO | 01 | E | P | | RDRT - MOVE RIG - 45% MOVED, 45% RIGGED DOWN - AC HOUSE, GENERATORS, MUD PUMPS, KOOMEY HOUSE, SUB, DRAWWORKS, DERRICK & TOOLPUSHER/TOP DRIVE HAND SKIDS STILL ON OLD LOCATION - 8 TRUCKS TOTAL, 6 HAUL TRUCKS, 2 BED TRUCKS & 1 FORKLIFT |
| | 18:00 - 0:00 | 6.00 | RDMO | 01 | A | P | | IDLE |
| 7/20/2009 | 0:00 - 6:00 | 6.00 | MIRU | 01 | A | P | | IDLE |
| | 6:00 - 19:00 | 13.00 | MIRU | 01 | A | P | | MOVE & SET IN RIG, 100% MOVED, 75% SET IN - 8 TRUCKS TOTAL, 6 HAUL TRUCKS, 2 BED TRUCKS, 1 FORKLIFT |
| | 19:00 - 0:00 | 5.00 | MIRU | 01 | B | P | | IDLE |
| 7/21/2009 | 0:00 - 6:00 | 6.00 | MIRU | 01 | B | P | | IDLE |
| | 6:00 - 9:30 | 3.50 | MIRU | 01 | B | P | | FINISH SET IN RIG - TRUCKS OFF LOCATION @ 09:30 |
| | 9:30 - 0:00 | 14.50 | MIRU | 01 | B | P | | RURT - RAISE DERRICK @ 17:00 HRS - CONTINUE RURT |
| 7/22/2009 | 0:00 - 6:00 | 6.00 | DRLPRO | 01 | B | P | | CONT. RURT |
| | 6:00 - 10:00 | 4.00 | DRLPRO | 14 | A | P | | CHANGE OVER F/ FMC TO CAMERON WELL HEAD ADAPTOR & NIPPLE UP B.O.P'S |
| | 10:00 - 16:00 | 6.00 | DRLPRO | 15 | A | P | | TEST B,O.P'S - PIPE - BLINDS - 4-2 " VALUES - CHOKE LINE & CHOKE MAINFOLD 250 LOW - 5000 HIGH - HYDRILL 250 LOW - 2500 HIGH & CASING @ 1500 PSI. R/U FLARES LINES & INSTALL WEAR BUSHING |
| | 16:00 - 17:30 | 1.50 | DRLPRO | 23 | | P | | PRE SPUD RIG INSPECTION REPORT |
| | 17:30 - 0:00 | 6.50 | DRLPRO | 06 | A | P | | P/U DIR TOOLS & SCRIBE & BHA & D,P & TAG CENENT @ 1809 & INSTALL ROTHEAD. |
| 7/23/2009 | 0:00 - 1:30 | 1.50 | DRLPRO | 02 | F | P | | DRILL CEMENT & F.E |
| | 1:30 - 8:30 | 7.00 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 1974 TO 2533 - 559' @ 79.8 FPH W/ 8.4 PPG MUD WT VIS 27 - RPM 45 - MRPM 112 - WOB 15/18 - TQ 4/11 - GPM 487 |
| | 8:30 - 9:00 | 0.50 | DRLPRO | 07 | B | P | | LEVEL RIG |
| | 9:00 - 12:00 | 3.00 | DRLPRO | 02 | D | P | | DRILL SLIDE F/ 2533 TO 2850 - 317' @ 105.6 FPH W/ 8.4 PPG MUD WT VIS 27 - RPM 45 - MRPM 112 - WOB 15/18 - TQ 4/11 - GPM 487 |
| | 12:00 - 12:30 | 0.50 | DRLPRO | 07 | A | P | | SER RIG |
| | 12:30 - 0:00 | 11.50 | DRLPRO | 02 | D | P | | DRILL SLIDE F/ 2850 TO 3846 - 996' @ 86.6 FPH W/ 8.4 PPG MUD WT VIS 27 - RPM 45 - MRPM 112 - WOB 15/18 - TQ 4/11 - GPM 487 |
| 7/24/2009 | 0:00 - 7:30 | 7.50 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 3846 TO 4525 - 679' @ 90.5 FPH W/ 8.4 PPG MUD WT VIS 27 - RPM 45 - MRPM 112 - WOB 15/18 - TQ 9/14 - GPM 487 |
| | 7:30 - 8:00 | 0.50 | DRLPRO | 07 | A | P | | RIG SER |
| | 8:00 - 0:00 | 16.00 | DRLPRO | 02 | D | P | | DRILL - SLIDE F/ 4525 TO 5715 - 1190' @ 74.3 FPH W/ 8.4 PPG MUD WT VIS 27 - RPM 50 - MRPM 112 - WOB 15/18 - TQ 10/14 - GPM 487 |
| 7/25/2009 | 0:00 - 14:30 | 14.50 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 5715 TO 6426 - 711' @ 49.0 FPH W/ 9.5 PPG MUD WT VIS 42 - RPM 50 - MRPM 112 - WOB 16/21 - TQ 10/16 - GPM 487 ( MUD SYSTEM @ 6,000' ) |
| | 14:30 - 15:00 | 0.50 | DRLPRO | 07 | A | P | | SER RIG |
| | 15:00 - 0:00 | 9.00 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 6426 TO 6892 - 466' @ 51.7 FPH W/ 10.0 PPG MUD WT VIS 42 - RPM 50 - MRPM 112 - WOB 18/22 - TQ 10/15 - GPM 487 |
| 7/26/2009 | 0:00 - 10:30 | 10.50 | DRLPRO | 02 | D | P | | DRILL-SLIDE - F/ 6892 TO 7241 - 349' @ 33.2 FPH W/ 10.5 PPG MUD WT VIS 39 - RPM 50 - MRPM 112 - WOB 18/23 - TQ 10/18 - GPM 487 |
| | 10:30 - 11:00 | 0.50 | DRLPRO | 07 | A | P | | SER RIG |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: ENSIGN 139/139, PROPETRO/ |
| Event: DRILLING | Start Date: 6/1/2009 | End Date: 7/31/2009 |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 11:00 - 0:00 | 13.00 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 7241TO 7728 - 487' @ 37.4 FPH W/ 10.8 PPG MUD WT VIS 39 - RPM 45 - MRPM 112 WOB 18/23 - TQ 10/19 - GPM 487 |
| 7/27/2009 | 0:00 - 11:00 | 11.00 | DRLPRO | 02 | D | P | | DRILL-SLIDE F/ 7728 TO 8056 - 328' @ 29.8 FPH W/ 11.0 PPG MUD WT VIS 40 - RPM 45 - MRPM 112 - WOB 20/22 - TQ 11/19 - GPM 487 |
| | 11:00 - 11:30 | 0.50 | DRLPRO | 07 | A | P | | SER RIG |
| | 11:30 - 0:00 | 12.50 | DRLPRO | 02 | D | P | | DRILL-SLIDE - F/ 8056 TO 8372 - 316' @ 25.28 FPH W/ 11.1 PPG MUD WT VIS 40 - RPM 50 - MRPM 112 - WOB 20/22 - TQ 11/20 - GPM 487 |
| 7/28/2009 | 0:00 - 13:00 | 13.00 | DRLPRO | 02 | D | P | | DRILL F/ 8372 TO 8643 - 271' @ 20.8 FPH W/ 11.2 PPG MUD WT VIS 42 - RPM 50 - MRPM 112 - WOB 20/23 - TQ 12/22 - GPM 487 |
| | 13:00 - 13:30 | 0.50 | DRLPRO | 07 | A | P | | SER RIG |
| | 13:30 - 23:00 | 9.50 | DRLPRO | 02 | D | P | | DRILL F/ 8643 TO 8850 - 207' @ 21.7 FPH W/ 11.6 PPG MUD WT VIS 42 - RPM 45 - MRPM 112 - WOB 20/23 - TQ 13/23 - GPM 487 |
| | 23:00 - 0:00 | 1.00 | DRLPRO | 05 | A | P | | CIRC BTM UP |
| 7/29/2009 | 0:00 - 0:30 | 0.50 | DRLPRO | 05 | A | P | | CIRC |
| | 0:30 - 14:30 | 14.00 | DRLPRO | 06 | E | P | | W/TRIP TO 9 5/8" CSG SHOE, BACKREAM OUT 1st 14 STDS 110+K O/PULL |
| | 14:30 - 16:00 | 1.50 | DRLPRO | 05 | A | P | | CIRC - PUMP HI-VIS SWEEP |
| | 16:00 - 23:30 | 7.50 | DRLPRO | 06 | A | P | | POOH F/LOGS - BACK REAM 1st 10 STDS 110+K O/PULL, L/DN MM |
| | 23:30 - 0:00 | 0.50 | DRLPRO | 06 | A | P | | RETRIEVE WEARBUSHING |
| 7/30/2009 | 0:00 - 3:00 | 3.00 | DRLPRO | 11 | D | P | | HPJSM - R/UP HALLIBURTON & RUN TRIPLE COMBO TO 5370' - BRIDGED OUT @ 5370' - POOH LOGGING TOOLS - R/DN |
| | 3:00 - 6:00 | 3.00 | DRLPRO | 06 | F | P | | P/UP BIT & MM - RIH TO 2806' |
| | 6:00 - 6:30 | 0.50 | DRLPRO | 08 | B | Z | | REPLACE HYD HOSE IRON DERRICKHAND |
| | 6:30 - 14:30 | 8.00 | DRLPRO | 06 | F | P | | RIH F/2806' TO 5370' - TAG TIGHT AREA @ 5370' - WORK THRU TIGHT AREA F/5370' TO 5470' TILL CLEAN - POOH |
| | 14:30 - 18:30 | 4.00 | DRLPRO | 11 | D | P | | HPJSM - R/UP HALLIBURTON RUN TRIPLE COMBO TO 5623', BRIDGED OUT - POOH - R/DN HALLIBURTON |
| | 18:30 - 0:00 | 5.50 | CSG | 12 | C | P | | HPJSM - R/UP KIMZEY - RUN 114 JTS 4.5" 11.60 I-80 PROD CASING TO 4809' - P/UP MARKER JOINT UNABLE TO MOVE PIPE - SWEDGE UP & CIRC WORKING PIPE 110K O/PULL - PIPE FREE CONTINUE RIH TO 5623' - WORK THROUGH TIGHT AREA 5623' |
| 7/31/2009 | 0:00 - 2:30 | 2.50 | CSG | 12 | C | P | | RUN TOTAL 209 JTS, 1 MARKER JT, 15 CENTRALIZERS & AUTO FILL FLOAT EQUIP. 4.5" I-80 11.60 PROD CASING SPACE OUT CSG @ 8830' - 2' ABOVE WELL HEAD |
| | 2:30 - 4:00 | 1.50 | CSG | 05 | A | P | | CIRC |
| | 4:00 - 7:00 | 3.00 | CSG | 12 | E | P | | HPJSM - R/UP HALLIBURTON CMT HEAD & TEST LINE 5000 PSI, CMT PROD CASING - 40 BBLS FRESH WATER SPACER, 515 SKS LEAD 11.7 PPG 2.45 YIELD, 1350 SKS TAIL 14.3 PPG 1.25 YIELD, DROPPED PLUG & DISPLACED W/137 BBLS OF FRESH WATER W/0.1 gal/bbl CLAYFIX II AND 0.01 gal/bbl ALDACIDE G @ 2314 PSI - BUMPED PLUG @ 2950 PSI - FLOATS HELD W/1.25 BBL RETURN - GOOD RETURNS THROUGHOUT CMT JOB W/17 BBLS CEMENT BACK TO SURFACE - R/DN HALLIBURTON |
| | 7:00 - 7:30 | 0.50 | CSG | 12 | C | P | | WASH OUT BOPE - LANDED CASING @ 8832' - L/OUT LANDING JT |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: ENSIGN 139/139, PROPETRO/ |
| Event: DRILLING | Start Date: 6/1/2009 | End Date: 7/31/2009 |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:30 - 11:30 | 4.00 | CSG | 14 | A | P | | N/DN BOPE - TRANSFER 700 BBLS MUD TO SECONDARY TANKS - CLEAN RIG TANKS - RELEASE RIG @ 11:30 HRS 7/31/09 |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 | |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | | Rig Name No: LEED 698/698 |
| Event: COMPLETION | Start Date: 12/24/2009 | | End Date: |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 6/1/2009 | - | | | | | | | |
| 12/28/2009 | 6:00 - 6:30 | 0.50 | COMP | 48 | | P | | HSM, MIRU / PERF |
| | 6:30 - 21:00 | 14.50 | COMP | | | | | STG #1] P/U RIH W/ PERF GUN 3-3/8 EXPEND [SCALLOP] 23 GRM, 0.36" HOLE, PERF MESAVERDE.<br>8677'-8682' 4 SPF, 90* PH, 20 HOLES.<br>8654'-8659' 4 SPF, 90* PH, 20 HOLES. [40 HOLES]<br><br>WAIT ON SCHLUMBERGER TO RIG UP & FIX FRAC VAN. [9-1/2 HRS]<br>P/T SURFACE LINES TO 8500#.<br><br>WHP= 140#, BRK DN PERF @ 4540 # @ 6 B/M, INJ RT= 51.5 B/M, INJ PSI= 5500 #, ISIP= 2500#, FG= 0.72., PUMP'D 1615 BBLS SLK WTR & 58965 # 30/5( OTTAWA SD,W/ 5000# RESIN COAT IN TAIL, CALC 75% PERF OPEN, ISIP= 2785#, FG= 0.75., AR= 47.1 AP= 4797#, MR= 51.9, MP= 6555#, NPI= 285#,<br><br>( STG #2 ) RIH W/ HALLIBURTON 8K CBP AND PERF GUNS, CBP SET DOWN @ 6517', HOOK UP PUMP, PUMP DN WELL W/ PUMPING @ 2.5 B/M W/ PRESSURE @ 2560#, PUMP 6.5 BBL PAST CBP, PRESSURE CAME UP TO 5148#, BLEED OFF W/ PRESSURE DN TO 1000#, REPRESSURE UP TO 6000#, HOLDING, WIRELINE PULLED TO 2200# PULL FREE, P/U @ 200', RIH W/ SET DN @ 6517', P/O HOLE, CBP WAS GONE, BLEED WELL DN TO ZERO, NO PRESSURE BUILD UP, CBP HAS TO BE SET @ 6517', |
| 1/7/2010 | 7:00 - 7:15 | 0.25 | COMP | 48 | | P | | DAY 3 - JSA & SM. NO H2S PRESENT. |
| | 7:15 - 18:30 | 11.25 | COMP | 30 | A | P | | RDMO NBU 1022-32D1S. MIRU ON NBU 1022-32B3S. WHP = 0 PSI. ND FRAC VALVES, NU BOP. RU FLOOR & TBG EQUIP. PREP & TALLY TBG. PU 3 7/8" BIT & POBS, RIH ON NEW 2 3/8" 4.7# L80 TBG. TAG CBP @ 6497'.<br><br>RU PWR SWVL & PMP. EST CIRC., PT BOP TO 3000 PSI.<br><br>DRLG OUT HALCO CBP @ 6497' IN 18 MIN. 700 PSI DIFF. RIH & TAG FILL @ 8683'. C/O 30' OF SND. EOT @ 8713'. PBTD @ 8786'. (BTM PERF @ 8682'). CIRC WELL CLEAN. RD PWR SWVL, LD 6 JTS TBG ON FLOAT. EOT @ 8491'. FCP = 50 PIS , SIT, LET CSG FLOW OVER NIGHT. 18:30 - SDFN. |
| 1/8/2010 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | DAY 4 - JSA & SM. NO H2S PRESENT. |
| | 7:30 - 7:30 | 0.00 | COMP | 31 | I | P | | WHP = 100 PSI. CONT. TO POOH & LD TBG ON FLOAT. (300 JTS ON FLOAT) LD POBS & BIT. ND BOP, NUWH. SWI<br>RD RIG, ROAD RIG TO NBU 922-32F PAD. |
| 1/19/2010 | 7:00 - 14:00 | 7.00 | COMP | 33 | C | P | | MIRU CUTTERS WIRE LINE, 1950# SICP, BLOW WELL TO PIT, PUMP'D 15 BBLS T/MAC W/ HOT OILER PRESSURE CAME UP TO 1500#, OPEN WELL TO PIT, WELL FLOWING ON FULL 2" W/ 600#, BLOW WELL FOR 4 HRS, PUM'D 10 BBLS 10# BRINE KILLED WELL LONG ENOUGH TO N/D WELL HEAD & GET FRAC VALVES N/U, |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: LEED 698/698 |
| Event: COMPLETION | Start Date: 12/24/2009 | End Date: |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 14:00 - 19:00 | 5.00 | COMP | 37 | B | P | | P/U & RIH W/ BKR 8K CBP, SET CBP @ 8506', POOH, MIRU B&C TESTERS, FILL HOLE W/ 100 BBLS KCL, P/T CSG & FRAC VALVES TO 7000# [GOOD TEST] P/U 3-3/8 EXPEND [SCALLOP] 23 GRM, 0.36" HOLE, PERF MESAVERDE<br>8473'-8476' 4 SPF, 90* PH, 12 HOLES.<br>8452'-8454' 4 SPF, 90* PH, 8 HOLES.<br>8424'-8425' 4 SPF, 90* PH, 4 HOLES.<br>8339'-8341' 4 SPF, 90* PH, 8 HOLES.<br>8273'-7274' 4 SPF, 90* PH, 4 HOLES [36 HOLES] SWIFN. |
| 1/20/2010 | 7:00 - 7:15 | 0.25 | COMP | 48 | | P | | MIRU FRAC TECH EQUIP<br>HSM, FRACING & WORKING W/ WIRE LINE |

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: LEED 698/698 |
| Event: COMPLETION | Start Date: 12/24/2009 | End Date: |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:15 - 17:30 | 10.25 | COMP | 36 | E | P | | FRAC MESAVERDE 8273'-8476' 36 HOLES]<br>FRAC STG #2] WHP=1050#, BRK DN PERF=4559#, INJ RT=51, INJ PSI=4090#, ISIP=2909#, FG=.78, PUMP'D 2272 BBLS SLK WTR W/ 79729# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2690#, FG=.75, AR=50.9, AP=4100#, MR=51.4, MP=6201#, NPI=-219# 36/36 CALC PERFS OPEN<br><br>STG #3] P/U RIH W/ BKR 8K CBP & PERF GUN. SET CBP @ 8182', PERF MESAVERDE USING 3-3/8 EXPEND, [SCALLOP] 23 GRM, 0.36" HOLE.<br>8149'-8152' 4 SPF, 90* PH, 12 HOLES.<br>8102'-8104' 4 SPF, 90* PH, 8 HOLES.<br>8088'-8091' 4 SPF, 90* PH 12 HOLES.<br>8040'-8041' 4 SPF, 90* PH, 8 HOLES [40 HOLES]<br><br>WHP=896#, BRK DN PERF=3155#, INJ RT=51, INJ PSI=4482#, ISIP=2503#, FG=.74, PUMP'D 1077 BBLS SLK WTR W/ 44637# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2902#, FG=.79, AR=51, AP=4158#, MR=51.5, MP=5550#, NPI=399# 40/40 CALC PERFS OPEN<br><br>STG #4] P/U RIH W/ BKR 8K CBP & PERF GUN. SET CBP @ 7582', PERF MESAVERDE USING 3-3/8 EXPEND, [SCALLOP] 23 GRM, 0.36" HOLE.<br>7548'-7552' 4 SPF, 90* PH, 16 HOLES.<br>7428'-7430' 4 SPF, 90* PH, 8 HOLES.<br>7411'-7414' 4 SPF, 90* PH, 12 HOLES [36 HOLES]<br><br>WHP=235#, BRK DN PERF=2206#, INJ RT=51, INJ PSI=5090#, ISIP=1702#, FG=.66, PUMP'D 645 BBLS SLK WTR W/ 23171# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2418#, FG=.76, AR=51.2, AP=4240#, MR=51.7, MP=5153#, NPI=716# 24/36 CALC PERFS OPEN<br><br>STG #5] P/U RIH W/ BKR 8K CBP & PERF GUN. SET CBP @ 7188', PERF MESAVERDE USING 3-3/8 EXPEND, [SCALLOP] 23 GRM, 0.36" HOLE.<br>7156'-7158' 4 SPF, 90* PH, 8 HOLES.<br>7146'-7148' 4 SPF, 90* PH, 8 HOLES.<br>7110'-7113' 4 SPF, 90* PH, 12 HOLES.<br>7080'-7081' 4 SPF, 90* PH, 4 HOLES.<br>7059'-7061' 4 SPF, 90* PH, 8 HOLES. [40 HOLES]<br><br>WHP=0#, BRK DN PERF=2648#, INJ RT=50, INJ PSI=4050#, ISIP=1750#, FG=.68, PUMP'D 846 BBLS SLK WTR W/ 32839# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2277#, FG=.75, AR=50.1, AP=3698#, MR=50.8, MP=4653#, NPI=527# 35/40 CALC PERFS OPEN<br><br>STG #6] P/U RIH W/ BKR 8K CBP & PERF GUN. SET CBP @ 7188', PERF MESAVERDE USING 3-3/8 EXPEND, [SCALLOP] 23 GRM, 0.36" HOLE.<br>6902'-6905' 4 SPF, 90* PH, 12 HOLES.<br>6862'-6864' 4 SPF, 90* PH, 8 HOLES.<br>6800'-6802' 3 SPF, 120* PH, 6 HOLES.<br>6756'-6758' 3 SPF, 120* PH, 6 HOLES.<br>6720'-6722' 3 SPF, 120* PH, 6 HOLES. [38 HOLES]<br><br>WHP=220#, BRK DN PERF=2524#, INJ RT=51, INJ PSI=3525#, ISIP=1402#, FG=.64, PUMP'D 2220 |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-32B3S [RED] | Spud Conductor: 4/30/2009 | Spud Date: 6/1/2009 |
| Project: UTAH-UINTAH | Site: NBU 1022-32C PAD | Rig Name No: LEED 698/698 |
| Event: COMPLETION | Start Date: 12/24/2009 | End Date: |
| Active Datum: RKB @5,463.00ft (above Mean Sea Leve | UWI: 0/10/S/22/E/32/0/NENW/26/PM/N/185.00/W/0/2,114.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | BBLS SLK WTR W/ 92433# 30/50 MESH W/ 5000# RESIN COAT IN TAIL, ISIP=2318#, FG=.77, AR=50.8, AP=3310#, MR=51.1, MP=5497#, NPI=916# 38/38 CALC PERFS OPEN.<br><br>P/U RIH W/ BKR 8K CBP & SET @ 6670' POOH R/D CUTTERS & FRAC TECH EQUIP SWI. |
| 1/22/2010 | 7:00 - 7:15 | 0.25 | COMP | 48 | | P | | JSA ROADING ON SLICK ROADS |
| | 7:15 - 16:30 | 9.25 | COMP | 30 | | P | | MOVE RIG & EQUIP FROM BON 7JT TO NBU 32C PAD, SPOT RIG & EQUIP RU RIG, SPOT TUB FLOAT, 0 PSI ON WELL, ND FRAC VALVES, NU BOPS, RU FLOOR & TUB EQUIP, PU POBS & HURRICANE MILL, TALLEY & PU PIPE, RIH TAG KILL PLUG @ 6670' PU PWR SWVL, RU DRILLING HEAD, SDFW, READY TO DRILL MONDAY MORN. |
| 1/25/2010 | 7:00 - 7:30 | 0.50 | COMP | 48 | | P | | JSA DRILL PLUGS |
| | 7:30 - 17:00 | 9.50 | COMP | 30 | | P | | FILL HOLE TEST TO 3000 PSI EST CIRC.<br><br>PLUG #1] DRILL THRU TOP PLUG 8K BAKER CBP @6670' IN 13 MIN W/ 0 # INCREASE<br><br>PLUG #2] CONTINUE TO RIH TAG SAND @6900' (35' FILL) C/O & DRILL THRU BAKER 8K CBP @ 6935' IN 16 MIN W/ 0 # INCREASE<br><br>PLUG #3] CONTINUE TO RIH TAG SAND @7158' (30' FILL) C/O & DRILL THRU BAKER 8K CBP @ 7188' IN 12 MIN W/ 25 # INCREASE<br><br>PLUG #4] CONTINUE TO RIH TAG SAND @7547' (35' FILL) C/O & DRILL THRU BAKER 8K CBP @ 7582' IN 16 MIN W/ 125# INCREASE<br><br>PLUG #5] CONTINUE TO RIH TAG SAND @8157' (25' FILL) C/O & DRILL THRU BAKER 8K CBP @ 8182' IN 16 MIN W/ 100 # INCREASE<br><br>PLUG #6] CONTINUE TO RIH TAG SAND @8476' (30' FILL) C/O & DRILL THRU BAKER 8K CBP @ 8506' IN 17 MIN W/ 50 # INCREASE<br><br>CONTINUE TO RIH TAG SAND @ 8696' (90' FILL) C/O TO PBTD @ 8786' CIRC CLEAN RD SWVL LD 18 JNTS LAND TUBING ON HANGER ND BOPS NU WELLHEAD PUMP OFF BIT SUB @ 1800 PSI RIG DOWN RIG MOVE OFF TURN WELL OVER TO FBC W/ 8675 BBLS PUMPED, RIG REC 1900 BBLS, W/ 6775 BBLS LEFT TO REC. MOVE TO NBU 36N PAD |
| 1/26/2010 | 1:30 - | | | 50 | | | | WELL TURNED TO SALES @ 0130 HR ON 01/27/2010 – FTP 1100#, CP 2000#, CK 20/64", 1000 MCFD, 1250 BWPD |
| 2/3/2010 | 7:00 - | | PROD | 50 | | | | WELL IP'D ON 2/3/10 - 1756 MCFD, 0 BOPD, 240 BWPD, CP 1041#, FTP 647#, CK 20/64", LP 87#, 24 HRS |

API Well No: 43047402060000

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

FORM 9

## SUNDRY NOTICES AND REPORTS ON WELLS

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ST ML 22798

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-32B3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047402060000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6587 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 0185 FNL 2114 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NENW Section: 32 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ✓ SPUD REPORT Date of Spud: 4/30/2009 | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 04/30/2009 AT 1400 HRS.

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

**FOR RECORD ONLY**

May 06, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Sheila Upchego | 435 781-7024 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 5/1/2009 |

RECEIVED May 01, 2009

Division of Oil, Gas and Mining
Operator Change/Name Change Worksheet-for State use only

Effective Date: 6/30/2020

| FORMER OPERATOR: | NEW OPERATOR: |
|---|---|
| Kerr-McGee Oil and Gas Onshore, L.P. | Caerus Uinta, LLC |
| Groups: 10/9/2020 sent list to operators to review. | |

**WELL INFORMATION:**

| Well Name | API Number | Town | Dir | Range | Dir | Sec | Entity Number | Type | Status |
|---|---|---|---|---|---|---|---|---|---|
| See Attached list | | | | | | | | | |

see operator file

Total Well Count: 3508
Pre-Notice Completed: 11/10/2020

**OPERATOR CHANGES DOCUMENTATION:**

1. Sundry or legal documentation was received from the **FORMER** operator on: 8/11/2020
2. Sundry or legal documentation was received from the **NEW** operator on: 8/11/2020
3. New operator Division of Corporations Business Number: 11801118-0161

**REVIEW:**

Receipt of Acceptance of Drilling Procedures for APD on: 10/16/2020
Reports current for Production/Disposition & Sundries: 11/10/2020
OPS/SI/TA well(s) reviewed for full cost bonding: Approved by Dustin 11/9/2020
UIC5 on all disposal/injection/storage well(s) Approved on: Approved by Dayne 10/16/2020
Surface Facility(s) included in operator change:

East Bench
Archie Bench
Bonanza
Bridge
Goat Pasture
Goat Pasture Manifold
Morgan State 921-36P
Morgan States
NBU 1022-14B
NBU 921-25A
NBU 922-29J
NBU 922-32N
Pipeline
Sage Grouse
Sand Wash

**NEW OPERATOR BOND VERIFICATION:**

State/fee well(s) covered by Bond Number(s): 6135000111
LPM9344488-Shut-In Bond

**DATA ENTRY:**

Well(s) update in the RBDMS on: 11/19/2020
Group(s) update in RDBMS on: 11/19/2020
Surface Facilities update in RBDMS on: 11/19/2020
Entities Updated in RBDMS on: 11/19/2020

**COMMENTS:** Shut-In Wells that were reviewed.
CIGE 236 4304732861
CIGE 42 4304730492
CIGE 55 4304730512
Love 1121-16N 4304736256
Morgan State 16-36 4304733093
NBU 341-29E 4304733055
NBU 691-29E 4304750027
NBU 921-33F 4304736391
NBU 99 4304731745
Ouray SWD 1 4304733449
State 1022-32O 4304735315
State 921-32M 4304734872

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

FORM 9

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5. LEASE DESIGNATION AND SERIAL NUMBER: U-02278-ST

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER

8. WELL NAME and NUMBER: CIGE 20

2. NAME OF OPERATOR: CAERUS UINTA LLC

9. API NUMBER: 43047304850000

3. ADDRESS OF OPERATOR: 1001 17TH ST. STE 1600 CITY DENVER STATE CO ZIP 80202

PHONE NUMBER: 303-565-4600

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1162 FSL 1365 FWL

COUNTY: UINTAH

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 20 10S 21E S

STATE: UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☑ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: 06/30/2020 | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☑ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☐ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☒ OTHER: Transfer remediation liabilities |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

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

Effective June 30, 2020, operation of the following wells was taken over by:
Caerus Uinta LLC
1001 17th Street, Suite 1600
Denver, CO 80202
303-565-4600

The previous Operator was Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779

William C. Irons
Attorney-in-Fact

Please see the attached wells for a complete list that will be transferred upon approval. As the Attorney-in-Fact for Kerr-McGee Oil & Gas Onshore LP I ask that you accept this letter as Kerr-McGee's official resignation and request to transfer operating rights to Caerus Uinta LLC, whose operator number is 105039. UDOGM Bond# 6135000111 and BLM Bond# COB000387.

Kerr-McGee will be transferring cleanup/soils remediation to Caerus Uinta LLC for Incident #5772. The new contact for Caerus is Grizz Oleen, EHS Field Lead (435) 790-9669.

NAME (PLEASE PRINT) Aubree Besant TITLE Director of Land

SIGNATURE DATE

(This space for State use only)

**APPROVED**

By: Rachel Medina
Utah Division of
Oil, Gas, and Mining

**RECEIVED**

AUG 11 2020

DIV OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

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

FORM 9

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PHONE NUMBER: 303-565-4600

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COUNTY: UINTAH

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 20 10S 21E S

STATE: UTAH

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NAME (PLEASE PRINT) Aubree Besant TITLE Director of Land

SIGNATURE Aubree Besant DATE July 17, 2020

RECEIVED

(This space for State use only)

**APPROVED**

By: Rachel Medina
Utah Division of
Oil, Gas, and Mining

AUG 11 2020

DIV OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)