

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator  
Unit Petroleum Company

3a. Address  
PO Box 702500  
Tulsa, OK 74170

3b. Phone No. (include area code)  
9184937700

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
3-24S-29E

5. Lease Serial No.  
NM53373

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.  
HB 3 Federal 4H

9. API Well No.  
30-015-38993

10. Field and Pool or Exploratory Area  
Cedar Canyon

11. Country or Parish, State  
Eddy, NM

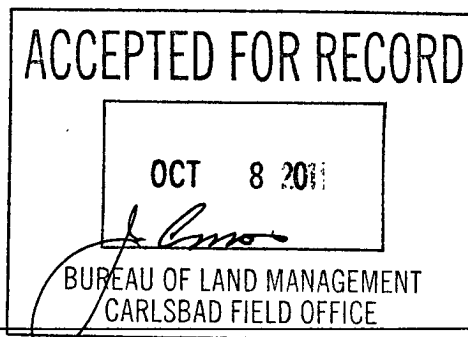
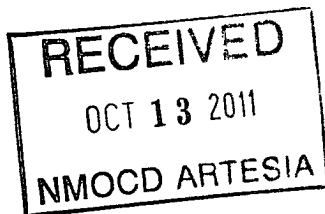
12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other TD'd and plan for casing and cement
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomple in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

UPC has reached a total depth of 11,520'. UPC will run 5.5", 17#, P-110 casing from surface to T.D. and cement using a two stage cement method. The first stage will be 1160 sx of cement and raise cement above the DV tool at 3,700'. The second stage will be 900 sx of cement and be pumped through the DV-tool at 3,700' ( 9-5/8" casing shoe at 3,023') and raise cement to surface. (Halliburton proposals attached)  
Note: Both cement jobs went as planned. Cement was circulated to surface while circulating thru DV-tool after pumping first stage and cement was cemented to surface (100 sx) on second stage.

RDude 10/19/2011  
Accepted for record  
NMOCD



14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)  
Brent Keys

Title Engineer

Signature

Date 09/12/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

Office

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

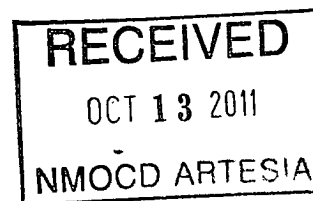
(Instructions on page 2)

**HALLIBURTON**

**Unit Petroleum Company Ebusiness  
PO Box 702500 - Do Not Mail  
Attn: Production  
Tulsa, Oklahoma 74170**

HB3 Federal 4H

Eddy County, New Mexico  
United States of America  
S:3 T:24S R:29E  
API/UWI 30-015-38993



**Rig: JW Drilling #1**

## **Cementing Cost Estimate – 2-Stage Long String**

Prepared for: Brent A. Keys

September 9, 2011  
Version: 2

Submitted by:  
Mark R. Briney

Halliburton  
210 Park Avenue  
Suite 2000  
Oklahoma City, Oklahoma 73102  
405-231-1827

**HALLIBURTON**

# HALLIBURTON

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***Halliburton appreciates the opportunity to present  
this proposal and looks forward to being of service to you.***

## ***Foreword***

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Halliburton Energy Services is pleased to have this opportunity to present this proposal for your consideration. We earnestly request the service work to be performed on this well.

These Service Coordinators can be reached in our District, at the following phone numbers:

### **MIDLAND SALES OFFICE**

**1-800-844-8451**

#### **ODESSA DISTRICT**

**1-800-417-5096**

##### **CEMENTING:**

B. J. Wheeler / Scott Kerby  
Brian Israel / Robert Lopez

##### **STIMULATION:**

Larry Staples

##### **LOGGING & PERFORATING**

Mike Wood / Josh Stumpner

##### **COILED TUBING & NITROGEN**

Larry Staples / Gary Pacheco  
Jerry Thurman

##### **TOOLS & TESTING, PROD. SVCS., TCP, COMPL. PRODUCTS**

Steve Engleman /Kevin Warren

##### **BAROID**

Fernando Arizpe

#### **HOBBS DISTRICT**

**1-800-416-6081**

##### **CEMENTING**

Louis Sosa / Eric Elliott  
Jaime Gonzales

##### **STIMULATION:**

Jerry Thurman

##### **LOGGING & PERFORATING**

Josh Mount / Vernon Reeve

##### **DRILL BITS:**

Matt Bose

##### **TOOLS & TESTING, PROD. SVCS., TCP, COMPL. PRODUCTS**

John Breeden

##### **BAROID**

Freddy Redmon

PREPARED BY: Mark Briney

We look forward to working with you to provide the very best quality services available in the Permian Basin.

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Mark Briney, Senior Account Representative

## Technical Discussion

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### Cementing Best Practices

1. **Cement quality and weight:** You must choose cement slurry that is designed to solve the problems specific to each string of pipe.
2. **Waiting time:** You must hold the cement slurry in place and under pressure until it hardens. A cement slurry is a time-dependent liquid and must be allowed to undergo a hydration reaction to produce a competent cement sheath. A fresh cement slurry can be worked (thickening or pump time) as long as it is plastic, and the initial set of cement occurs during the rapid reaction stage. If the cement is not allowed to hydrate, it will be subject to changes in density, dilution, settling, water separation, and gas cutting that can lead to lack of zonal isolation with resultant bridging in the annulus.
3. **Pipe movement:** Pipe movement may be one of the single most influential factors in mud removal. Reciprocation and/or rotation mechanically breaks up gelled mud and constantly changes the flow patterns in the annulus for better cement bonding.
4. **Mud properties:** Plastic viscosity (PV) should be less than 15 centipoise (cp), and less than 10 cp, if possible, yield point (YP) should be less than 10 pound/100-square feet (lb/100ft<sup>2</sup>) decreasing down to about 5 lb/100 ft<sup>2</sup>.
5. **Mud gel strength:** A nonthixotropic mud is desirable for good mud removal. Mud left in the hole prior to running casing should have 10-second/10-minute/30-minute gel strength such that the 10-minute is less than double the 10-second and the 30-minute is less than 20 lb/100 ft<sup>2</sup>. Sufficient shear strength may not be achieved on a primary cement job to remove mud left in the hole should the mud develop more than 25 lb/100 ft<sup>2</sup>.
6. **Mud fluid loss:** Decreasing the filtrate loss into a permeable zone enhances the creation of a thin filter cake. This increases the fluid mud in the hole, which is more easily removed. Generally, an API fluid loss of 7 or 8 milliliter (ml) is sufficient with high-temperature/high-pressure fluid loss (HTHP) no more than double this amount.
7. **Circulation:** Circulate bottoms up twice, or until well conditioned mud is being returned to the surface. There should be no cutting in the mud returns. An annular velocity of 260 feet per minute is optimum (SPE/IADC 18617), if possible.
8. **Flow rate:** Turbulent flow is more desirable flow regime for mud removal. If turbulence cannot be achieved, better mud removal is found when maximum flow energy is used. The maximum pump rate should be determined to obtain the best flow regime.
9. **Hole size:** The optimum hole size recommended for good mud removal is 1.5 to 2 inches larger than the casing or liner size. Hole sizes larger than 2 inches annular space can be dealt with, but those that are smaller than 1.5 inches present difficult problems.
10. **Pipe Centralization:** This helps to create a uniform flow area perpendicular to flow direction. Cement will take the path of least resistance so that centralization is important in keeping the pipe off the walls of the hole. At least a 70 percent standoff should be achieved for centralization.
11. **Rat hole:** When applicable, a weighted viscous pill in the rat hole prevents cement from swapping with lighter weight mud when displacement stops.
12. **Shoe joint:** A shoe joint is recommended on all primary casings and liners. The length of the shoe joint will vary, although the absolute minimum length is one joint of pipe. If conditions exist, such as not running a bottom plus, two joints should be the minimum lengths.

**Job Information****Production Casing**

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Well Name: HB3 Federal

Well #: 4H

**Intermediate Casing**0 - 3029 ft (MD)  
0 - 4000 ft (TVD)

Outer Diameter

9.625 in

Inner Diameter

8.835 in

Linear Weight

40 lbm/ft

Thread

LTC

Casing Grade

J-55

**8-3/4" Open Hole**

3029 - 3700 ft (MD)

Inner Diameter

8.750 in

Job Excess

30 % (over caliper)

**8-3/4" Open Hole**

3700 - 11520 ft (MD)

3700 - 7850 ft (TVD)

Inner Diameter

8.750 in

Job Excess

20 % (over caliper)

**Production Casing**

0 - 3700 ft (MD)

Outer Diameter

5.500 in

Inner Diameter

4.892 in

Linear Weight

17 lbm/ft

Casing Grade

P-110

**Multiple Stage Cementer**

3700 ft (MD)

**Production Casing**

3700 - 11520 ft (MD)

0 - 7850 ft (TVD)

Outer Diameter

5.500 in

Inner Diameter

4.892 in

Linear Weight

17 lbm/ft

Thread

LTC

Casing Grade

P-110

Mud Type

Brine

Mud Weight

9.40 lbm/gal

**Job Recommendation****Production Casing**

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Install floating equipment, run casing to bottom, and circulate a minimum of 2-3 hole volumes prior to cementing as follows:

**Fluid Instructions****Stage 1**

Fluid 1: Mix and Pump 24 bbl  
MUD FLUSH III

Fluid Density: 8.40 lbm/gal  
Fluid Volume: 24 bbl

Fluid 2: Mix and Pump 500 sks  
EXTENDACEM (TM) SYSTEM  
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)  
0.3 % HR-601 (Retarder)

Fluid Weight 11.50 lbm/gal  
Slurry Yield: 2.80 ft<sup>3</sup>/sk  
Total Mixing Fluid: 16.78 Gal/sk  
Top of Fluid: 3600 ft  
Calculated Fill: 3600 ft  
Volume: 249.08 bbl  
Calculated Sacks: 500 sks  
Proposed Sacks: 500 sks

Fluid 3: Mix and Pump 660 sks  
SOLUCEM (TM) CEMENT  
0.7 % Halad(R)-344 (Low Fluid Loss Control)  
0.25 lbm/sk D-AIR 3000 (Defoamer)  
1 % HR-601 (Retarder)

Fluid Weight 15 lbm/gal  
Slurry Yield: 2.63 ft<sup>3</sup>/sk  
Total Mixing Fluid: 11.41 Gal/sk  
Top of Fluid: 7200 ft  
Calculated Fill: 4320 ft  
Volume: 308.92 bbl  
Calculated Sacks: 660 sks  
Proposed Sacks: 660 sks

Fluid 3: Pump first 20 bbl of displacement with Fresh Water  
0.25 gal/bbl Micro Matrix Retarder (Retarder)

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 20 bbl

**Multiple Stage Cementer****3700 ft (MD)**

**Circulate a minimum of 4 hours between stages.**

# HALLIBURTON

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## Stage 2

Fluid 1: Precede cement with 20 bbl Fresh Water

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 20 bbl

Fluid 2: Mix and Pump 800 sks

ECONOCEM (TM) SYSTEM

0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight 12.20 lbm/gal  
Slurry Yield: 2.11 ft<sup>3</sup>/sk  
Total Mixing Fluid: 12.02 Gal/sk  
Top of Fluid: 0 ft  
Calculated Fill: 3500 ft  
Volume: 300.64 bbl  
Calculated Sacks: 800 sks  
Proposed Sacks: 800 sks

Fluid 3: Mix and Pump 100 sks

HALCEM (TM) SYSTEM

Fluid Weight 14.80 lbm/gal  
Slurry Yield: 1.33 ft<sup>3</sup>/sk  
Total Mixing Fluid: 6.34 Gal/sk  
Top of Fluid: 3500 ft  
Calculated Fill: 200 ft  
Volume: 23.62 bbl  
Calculated Sacks: 100 sks  
Proposed Sacks: 100 sks

These cement volumes are based on customer specified coverages and should be recalculated if a caliper log should become available.

All discounts quoted will only be honored if HES is awarded if ALL strings of this well. If not, 2<sup>nd</sup> call discounts will be charged on services and materials as well as a default of 25% will be charged for additional hours and standby truck for all work on this well.

Note: Actual retarder concentrations to be determined through lab testing.

**Pricing includes a 8 hours of "On Location" time.**