BOPCO, L.P.
201 MAIN ST.
FORT WORTH, TEXAS 76102-3131
817/390-8400



June 18, 2010

**Federal Express**

New Mexico State Land Office
Commissioner of Public Lands
P. O. Box 1148, 310 Old Santa Fe Trail
Santa Fe, New Mexico 87504-1148
Attention: Pete Martinez

New Mexico Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mark Fesmire

Re: Application for Approval of the Second Revision of
the Initial Delaware Participating Area
James Ranch Unit, No. 14-08-001-558
Eddy County, New Mexico

Ladies and Gentlemen:

BOPCO, L.P. as Unit Operator of the James Ranch Unit Agreement, pursuant to the provisions of Section 11 thereof, respectfully submits for your approval the selection of the following described lands to constitute the second revision to the Initial Delaware Participating Area. The revised participating area consists of 3126.30 acres to be comprised of the lands indicated on the plat attached hereto and further described as follows:

T22S-R30E
Section 35: All
Section 36: All

T22S-R31E
Section 31: All

T23S-R30E
Section 1: Lots 1, 2, 3, 4, S/2 NE/4, SE/4
Section 2: Lots 1, 2, 3, 4

T23S-R31E
Section 6: All

All in Eddy County, New Mexico and containing 3,126.30 acres of land.

In support of this application the following numbered items are attached hereto and made a part hereof:

1. An ownership map (Exhibit "A") depicting the boundaries of the proposed 2nd Revision participating area for the Delaware Formation and location of specific tracts.

2. A schedule (Exhibit "B") identifying the lands entitled to participation in the revised participating area with the percentage of participation of each lease or tract indicated thereon.

3. A geological report with accompanying geological maps supporting and justifying the proposed selection of the revised area based on the results obtained from the James Ranch Unit Well No. 107H.

This proposed second revision to the existing participating area is predicated upon the knowledge and information first obtained upon the completion of the James Ranch Unit Well No 107H (located in the NW/4 SW/4 Section 36, T22S-R30E) in June, 2009. It should be noted that the James Ranch Unit Well No. 107H has been previously determined as capable of producing in commercial quantities based on internal economic projections and production to date. According to Section 11 of the Unit Agreement it is our understanding that the effective date of this Second Revision of the participating area should be the first of the month in which the above information was obtained, or June 1st, 2009. Therefore, Bass respectively requests your approval of the hereinabove selection of lands to constitute the second revision to the existing participating area to be effective June 1st, 2009. Thank you very much for your cooperation in this regard and should you require additional information concerning same, please don't hesitate to contact the undersigned.

Very truly yours,

Brad Glasscock

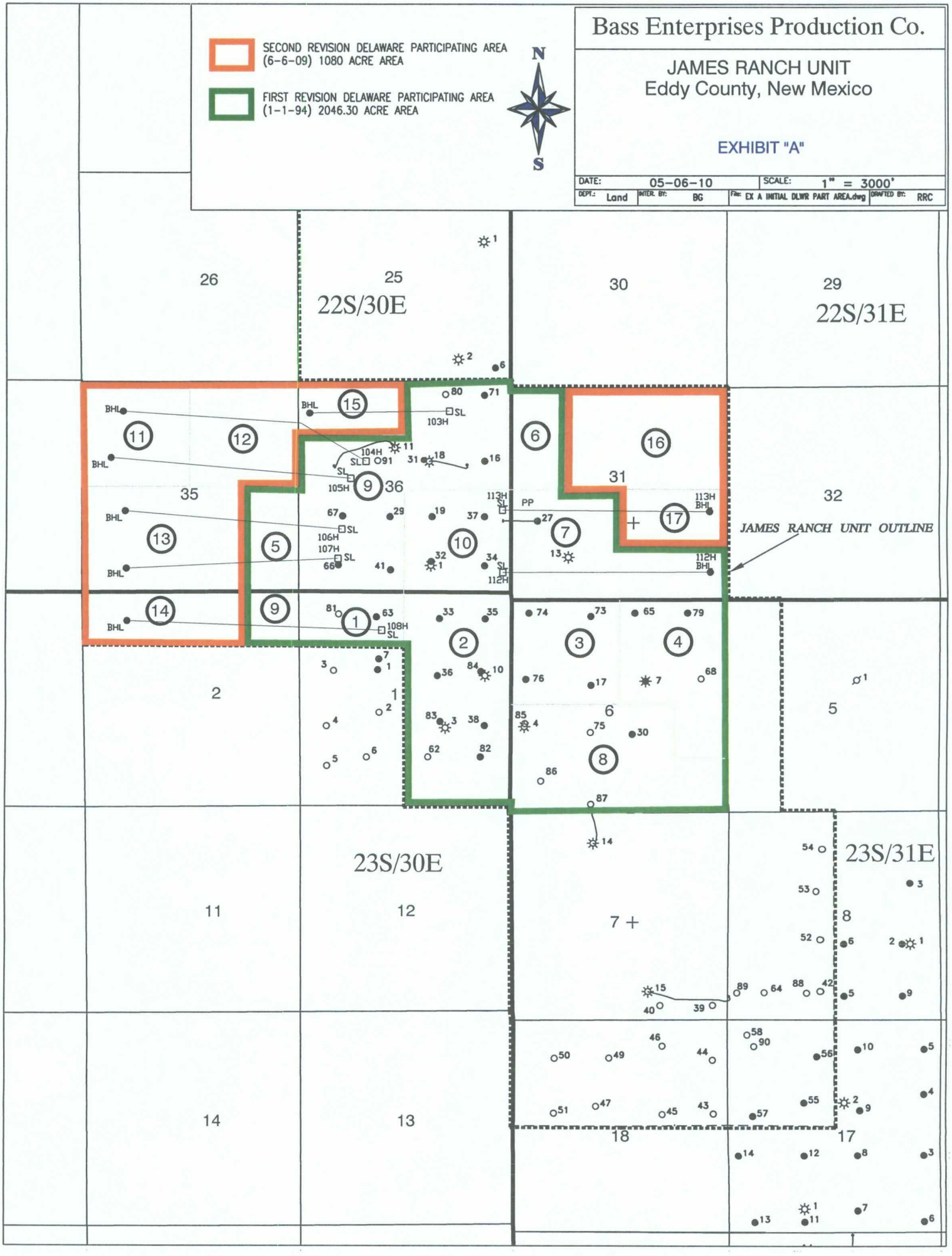
ACCEPTED AND AGREED this _____ day of _____, 2010.

COMMISSIONER OF PUBLIC LANDS

By: _____

NEW MEXICO OIL CONSERVATION DIVISION

By: _____


SECOND REVISION DELAWARE PARTICIPATING AREA
(6-6-09) 1080 ACRE AREA
FIRST REVISION DELAWARE PARTICIPATING AREA
(1-1-94) 2046.30 ACRE AREA
N
S
Bass Enterprises Production Co.
JAMES RANCH UNIT
Eddy County, New Mexico
EXHIBIT "A"
DATE: 05-06-10
SCALE: 1" = 3000'
DEPT.: Land
ENTER. BY: BG
File: EX A INITIAL DLWR PART AREA.dwg
DRAFTED BY: RRC
26
25
22S/30E
30
29
22S/31E
35
36
31
32
JAMES RANCH UNIT OUTLINE
2
1
6
5
11
12
7
8
23S/30E
7
23S/31E
14
13
18
17

# EXHIBIT "B"

## Initial Delaware Participating Area
## James Ranch Federal Unit
## Eddy County, New Mexico

| Tract No. | Lease No. | Description | Participating Acres | Percentage of Participation | Working Interest Owners |
|---|---|---|---|---|---|
| 1 | NM 02884-A | Section 1 T23S-R30E; Lots 3, 4 | 80.72 | 2.5820% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 2 | NM 02884-B | Section 1 T23S-R30E; Lots 1,2 S/2 NE/4, SE/4 | 320.24 | 10.2434% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 3 | NM 02887-D | Section 6 T23S-R31E; Lots 3, 4, 5 SE/4 NW/4 | 161.08 | 5.1524% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 4 | NM 02887-A | Section 6 T23S-R31E; Lots 1,2 S/2 NE/4, NE/4 SE/4 | 199.92 | 6.3948% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 5 | NM 02952-A | Section 35 T22S-R30E; E/2 SE/4 | 80.00 | 2.5589% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 6 | NM 02953 | Section 31 T22S-R31E; Lots 1,2 | 80.86 | 2.5864% | 33.333%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C.<br><br>EOG RESOURCES - 66.667% |
| 7 | NM 02953-C | Section 31 T22S-R31E; Lots 3, 4 E/2 SW/4, S/2 SE/4 | 240.98 | 7.7082% | 33.33%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C.<br><br>EOG RESOURCES - 66.667% |

# EXHIBIT "B"

## Initial Delaware Participating Area
## James Ranch Federal Unit
## Eddy County, New Mexico

| Tract No. | Lease No. | Description | Participating Acres | Percentage of Participation | Working Interest Owners |
|---|---|---|---|---|---|
| 8 | NM 04473 | Section 6 T23S-R31E; Lots 6, 7 E/2 SW/4, W/2 SE/4, SE/4 SE/4 | 282.15 | 9.0250% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 9 | E-5229-1 | Section 1 T23S-R30E; Lot 1 Section 36 T22S-R30E NE/4, SW/4, S/2 NW/4 | 440.35 | 14.0853% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 10 | E-5229-2 | Section 1 T22S-R30E; SE/4 | 160.00 | 5.1179% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 11 | NM-02952-B | Section 35 T22S-R30E; NW/4 | 160.00 | 5.1179% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 12 | NM-02952-C | Section 35 T22S-R30E; NE/4 | 160.00 | 5.1179% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 13 | NM-02952-A | Section 35 T22S-R30E; SW/4; W/2SE/4 | 240.00 | 7.6768% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |
| 14 | E-5229 | Section 2 T23S-R30E; N/2NW/4; NW/4NE/4 | 120.00 | 3.8384% | 100% CTV O&G NM, L.L.C. SRBI O&G NM, L.L.C. LMBI O&G NM, L.L.C. KEYSTONE O&G NM, L.L.C. THRU LINE O&G NM, L.L.C. |

# EXHIBIT "B"

## Initial Delaware Participating Area
## James Ranch Federal Unit
## Eddy County, New Mexico

| Tract No. | Lease No. | Description | Participating Acres | Percentage of Participation | Working Interest Owners |
|---|---|---|---|---|---|
| 15 | E-5229 | Section 36 T22S-R30E; N/2NW/4 | 80.00 | 2.5589% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 16 | NM-02953 | Section 31 T22S-R31E; NE/4; E/2NW/4 | 240.00 | 7.6768% | 100%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C. |
| 17 | NM-02953-C | Section 31 T22S-R31E N/2 SE/4 | 80.00 | 2.5589% | 33.333%<br>CTV O&G NM, L.L.C.<br>SRBI O&G NM, L.L.C.<br>LMBI O&G NM, L.L.C.<br>KEYSTONE O&G NM, L.L.C.<br>THRU LINE O&G NM, L.L.C.<br><br>EOG RESOURCES - 66.667% |
| | | **Totals** | **3126.30** | **100.00%** | |

| | |
|---|---|
| **Total Federal Land:** | **2286.3 Acres** |
| **Total State Lands:** | **800 Acres** |
| **Total Fee Lands:** | **40 Acres** |
| **Total** | **3126.3 Acres** |

BASS ENTERPRISES PRODUCTION COMPANY
JAMES RANCH UNIT (DELAWARE)
PROPOSED PARTICIPATING AREAS

GEOLOGICAL ATTACHMENTS

1. Type Log: JRU No. 66 (SW/4 Section 36, T22S-R30E)

2. Wireline Logs/Mudlogs: Mudlogs for all new wells in the area of the proposed second revision and E-logs for the JRU 105H and JRU 107H.

3. Structure Map: Top Lower Brushy Canyon "D" ("8A" Marker)

4. Net Pay Isopach Map: Lower Brushy Canyon "D" – critical contour @ 25' > 10%

# BOPCO, L.P.
# JAMES RANCH UNIT
# EDDY COUNTY, NEW MEXICO
# PROPOSED SECOND REVISION TO PARTICIPATION AREA
# (DELAWARE)

## RECOMMENDATION

Based upon the results from additional testing of the Delaware Formation within the James Ranch Unit during 2009, BOPCO, L.P. recommends a Second Revision to the Initial Delaware Participating Area. This proposed extension encompasses the following area:

Section 35-T22S-R30E: N/2, SW/4, and W/2 of SE/4
Section 36-T22S-R30E: N/2 of NW/4
Section 2-T23S-R30E: N/2 of NW/4, and NW/4 of NE/4
Section 31-T22S-R31E: E/2 of NW/4, NE/4, and N/2 of SE/4

The proposed extension for a Second Revision totals approximately 1,000 acres and the proposed date of the extension is June 6th, 2009 which is the date of reaching total depth on the James Ranch Unit No.107H and the understanding at that time from the mudlog that this would be a commercial well.

## INTRODUCTION

Drilling for deeper horizons below the Delaware from the 1950's through the early 1990's at James Ranch Unit essentially identified that a significant hydrocarbon reservoir existed within the Cherry and Brushy Canyon sections of the Delaware formation. This identification was based primarily from drill stem tests, mudlog shows, and log evaluation. For example, as early as 1954 the Richardson and Bass Legg No. 1 (Section 27, T22S-R30E) potentialed for 67 BOPD (6,112'-6,118') from the Lower Brushy Canyon, and in 1957, Shell's No. 1 James Ranch Unit (Section 36, T22S-R30E) recovered 450' oil on a Brushy Canyon drill stem test (6,719'-6,758'). Continued deep drilling through the 1980's confirmed the Delaware potential prior to it becoming a targeted reservoir.

During the 1990's attention became more focused on the Delaware, very much aided by fracture treatment technology. This led to successful commercial exploitation of the Delaware reserve base and the initiation of the Initial Delaware Participating Area and subsequent revisions in 1993 and 1994 respectively.

At that stage BOPCO, L.P. had essentially developed all accessible locations but realized, as documented in our proposal, that if potash-restricted areas were to become accessible for drilling, further reserves could be developed.

This proposed revision to the Participating Area reflects the above. Due to modern technology and development of a relationship with Mosaic Potash, BOPCO, L.P. has been able to gain some success toward further developing the James Ranch Unit Delaware reserves.

## GEOLOGICAL SETTING

The Delaware sands at James Ranch Unit were deposited as part of an extensive submarine fan complex, with thinly bedded sandstones and siltstones encasing stacked channel sequences of reservoir quality sandstones. The trapping mechanism is primarily stratigraphic with some subtle structure influence.

## PETROPHYSICS

Based upon in-house studies and production experiences of the Delaware at James Ranch Unit and elsewhere, the Lower Brushy Canyon is oil-bearing and productive at a density porosity cut-off of ≥ 10% (sandstone matrix at 2.66 gm/cc). As we climb into the Cherry Canyon, the porosity cut-off increases to 15% sandstone porosity. The log database at James Ranch Unit is a very unique mixture of porosity and resistivity log types and of varying logging companies. For this reason, quality control of the logs has been essential. Typically we like to see the water saturations to be 65% or less. Mudlogs have been a very critical ingredient in pay recognition – it is difficult to question a zone's potential when you have good drilling shows ranging from good sample shows to oil in the trap or on the pits!

## PROPOSED REVISION -- DETAIL

Eight horizontal wells have been drilled in support of the proposed revision. All are judged to be commercial oil wells. Six of these have been drilled to the west of the existing Participation Area. All six wells were drilled within the Lower section of the Lower Brushy "C" (also recognized as the "U" internally at BOPCO, L.P. ), but the fracture stimulation completion on each well is intended to also capture reserves within the Lower Brushy "D".

- James Ranch Unit No. 107H – spudded on May 18th, 2009, the James Ranch Unit No. 107H was drilled to a total depth of 12,424' MD on June 6th, 2009, with initial production on July 23rd, 2009. Thru' April 7th, 2010 the well has produced 80,801 BO + 75,103 MCF + 169,203 BW, with the rate on April 7th, 2010 being 224 BO + 386 MCF + 602 BW per day. EUR for the well is 386 MBOE.
- James Ranch Unit No. 105H – spudded on June 14th, 2009, the James Ranch Unit No. 105H was drilled to a total depth of 13,017' MD on July 6th, 2009, with initial production on August 12th, 2009. Thru' April 7th, 2010 the well has produced 94,207 BO + 116,991 MCF + 250,938 BW, with the rate on April 7th, 2010 being 239 BO + 464 MCF + 938 BW per day. EUR for the well is 472 MBOE.
- James Ranch Unit No. 106H – spudded on September 9th, 2009, the James Ranch Unit No. 106H was drilled to a total depth of 13,234' MD on September 30th, 2009, with initial production on November 11th, 2009. Thru' April 7th, 2010 the well has produced 75,042 BO + 90,665 MCF + 171,520 BW, with the rate on April 7th, 2010 being 351 BO + 598 MCF + 1,114 BW per day. EUR for the well is 503 MBOE.
- James Ranch Unit No. 103H – spudded on October 7th, 2009, the James Ranch Unit No. 103H was drilled to the total depth of 10,610' MD on October 25th, 2009, with initial production on December 18th, 2009. Thru' April 7th, 2010 the well has produced 57,903 BO + 83,946 MCF + 119,586 BW, with the rate on April 7th, 2010 being 349 BO + 650 MCF + 937 BW per day. EUR for the well is 483 MBOE.
- James Ranch Unit No. 104H – spudded on October 31st, 2009, the James Ranch Unit No. 104H was drilled to a total depth of 14,132' MD on November 26th, 2009, with initial production on January 14th, 2010. Thru' April 7th, 2010 the well has produced 49,881 BO + 49,883 MCF + 106,000 BW, with the rate on April 7th, 2010 being 583 BO + 579 MCF + 1,533 BW per day. EUR for the well is 496 MBOE.
- James Ranch Unit No. 108H – spudded on December 6th, 2009, the James Ranch Unit No. 108H was drilled to a total depth of 14,087' MD on December 28th, 2009, with initial production on March 24th, 2010. As of April 7th, 2010 the well is producing at a rate of 452 BO + 470 MCF + 1,887 BW per day. EUR for the well is 450 MBOE.

Two of the eight horizontal wells have been drilled adjacent to the northeastern sector of the existing Participation Area. Both of these wells were drilled within the Lower Brushy "D" but the fracture stimulation completion on both wells is intended to also capture reserves within the Lower Brushy "C" (also recognized as the "U" internally at BOPCO, L.P.)

- James Ranch Unit No. 112H – spudded on January 12th, 2009, the James Ranch Unit No. 112H was drilled to a total depth of 12,070' MD on April 28th, 2009, with initial production on April 21st, 2009. As of April 7th, 2010 the well is producing at around a rate of 68 BO + 131 MCF + 179 BW per day and had produced 39,975 BO + 72,828 MCF + 122,718 BW. EUR for the well is 94 MBOE.
- James Ranch Unit No. 113H – spudded on May 5th, 2009, the James Ranch Unit No. 113H was drilled to a total depth of 12,090' MD on May 19th, 2009, with initial production on July 25th, 2009. As of April 7th, 2010 the well is producing at around a rate of 103 BO + 220 MCF + 384 BW per day and had produced 37,907 BO + 44,064 MCF + 106,011 BW. EUR for the well is 149 MBOE.

Please note that the results from the James Ranch Unit No. 112H and 113H wells essentially proves-up the N/2 of Section 31, T22S-R31E.

**ATTACHMENTS**

- Type Log – James Ranch Unit No. 66 (SW/4 Section 36, T22S-R30E)
- Structure Map – Top Lower Brushy Canyon "D"("8A" Marker)
- Net Pay Isopach Map – Lower Brushy "D" – critical contour at 25' ≥ 10% porosity.
- Mudlogs for all new wells with in the area of the proposed Second extension to the Delaware Participating Area, and e-logs ran on the James Ranch Unit No. 105H and No. 107H.

Please feel free to contact me for any questions or additional data required on this application for the Second Revision of the Delaware Participating Area at the James Ranch Federal Unit.

George A. Hillis

817-390-8661
or ghillis@basspet.com

# JRU # 66

Geological Attachment No. 1

TYPE LOG

**COMPANY:** BASS ENTERPRISES PRODUCTION CO.

**WELL:** JAMES RANCH UNIT 66

**FIELD:** QUAHADA RIDGE, SE

**COUNTY:** EDDY **STATE:** NEW MEXICO

Company: BASS ENTERPRISES PRODUC
Well: JAMES RANCH UNIT 66
Location: 660' FSL & 990' FEL
Field: QUAHADA RIDGE, SE
COUNTY: EDDY

**Schlumberger**

**PLATFORM EXPRESS**
**Three Detector Litho-Densit**
**Compensated Neutron / GR**

LOCATION: 660' FSL & 990' FEL

Elev.: K.B. 3307.2 ft
G.L. 3293.4 ft
D.F. 3306.2 ft

Permanent Datum: GROUND LEVEL Elev.: 3293.4 ft
Log Measured From: KELLY BUSHING 13.8 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

| API Serial No. | SECTION | TOWNSHIP | RANGE |
|---|---|---|---|
| 30-015-31065 | 36 | 22S | 30E |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Logging Date | | | 6-MAY-2000 | | | | | |
| Run Number | | | ONE | | | | | |
| Depth Driller | | | 7730 ft | | | | | |
| Schlumberger Depth | | | 7736 ft | | | | | |
| Bottom Log Interval | | | 7718.2 ft | | | | | |
| Top Log Interval | | | 3795 ft | | | | | |
| Casing Driller Size @ Depth | | | 8.625 in | @ | 3795 ft | | @ | |
| Casing Schlumberger | | | 3795 ft | | | | | |
| Bit Size | | | 7.875 in | | | | | |
| Type Fluid In Hole | | | FRESH WATER | | | | | |
| MUD | Density | Viscosity | 8.7 lbm/gal | 35 s | | | | |
| | Fluid Loss | PH | 10 cm3 | 10 | | | | |
| | Source Of Sample | | CIRCULATION TANK | | | | | |
| RM @ Measured Temperature | | | 0.277 ohm.m | @ | 63 degF | | @ | |
| RMF @ Measured Temperature | | | 0.208 ohm.m | @ | 61 degF | | @ | |
| Measured Temperature | | | | @ | | | @ | |
| RMF | RMC | | CALCULATED | | | | | |
| RT | RMF @ MRT | | 0.149 @ 123 | 0.109 @ 123 | | @ | | @ |
| n Recorded Temperatures | | | 123 degF | | | | | |
| on Stopped | Time | | 5-MAY-2000 | 22:00 | | | | |
| On Bottom | Time | | 6-MAY-2000 | 3:30 | | | | |
| ber | Location | | 3178 | ROSWELL | | | | |
| d By | | | T. SCHNEIDER | | | | | |
| By | | | SIMIANNE HAYDEN | | | | | |

OP System Version: 9C0-413
MCM

HILTB-CTS OP9-KP2

Changed Parameter Summary

New Value

DLIS Name

T/BRUSHY CANYON "C"
(also known as "U" Sand)

L^R "U"

7268' - 7273'
45,755 gals VIKING 30
188,593 # 16/30 BRADY
50,346 # RC-4000

T/BRUSHY CANYON "D"
(also known as "8A" Marker)

SC 7200

SC 7300

SC 7400

TR11 66

T/BRUSHY CANYON "D"

sc 7400

sc 7500

7484' - 7489'
63,134 gals VIKING 30
175,527 # 16/30 BRADY
53,895 # RC-4000

sc 7600

T/BONE SPRING

COMPANY: BASS ENTERPRISES PRODUCTION CO.

WELL: JAMES RANCH UNIT 66

FIELD: QUAHADA RIDGE, SE

COUNTY: EDDY STATE: NEW MEXICO

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION / GR

COUNTY: EDDY
Field: QUAHADA RIDGE, SE
Location: 660' FSL & 990' FEL
Well: JAMES RANCH UNIT 66
Company: BASS ENTERPRISES PRODUCTION CO.

LOCATION

660' FSL & 990' FEL

Elev.: K.B. 3307.2 ft
G.L. 3293.4 ft
D.F. 3306.2 ft

Permanent Datum: GROUND LEVEL Elev.: 3293.4 ft
Log Measured From: KELLY BUSHING 13.8 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

| API Serial No. | SECTION | TOWNSHIP | RANGE |
|---|---|---|---|
| 30-015-31065 | 36 | 22S | 30E |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Logging Date | | 6-MAY-2000 | | | | | |
| Run Number | | ONE | | | | | |
| Depth Driller | | 7730 ft | | | | | |
| Schlumberger Depth | | 7736 ft | | | | | |
| Bottom Log Interval | | 7728.1 ft | | | | | |
| Top Log Interval | | 3795 ft | | | | | |
| Casing Driller Size @ Depth | | 8.625 in @ 3795 ft | | | | @ | |
| Casing Schlumberger | | 3795 ft | | | | | |
| Bit Size | | 7.875 in | | | | | |
| Type Fluid In Hole | | FRESH WATER | | | | | |
| MUD Density | Viscosity | 8.7 lbm/gal | 35 s | | | | |
| MUD Fluid Loss | PH | 10 cm3 | 10 | | | | |
| MUD Source Of Sample | | CIRCULATION TANK | | | | | |
| RM @ Measured Temperature | | 0.277 ohm.m @ 63 degF | | | | @ | |
| RMF @ Measured Temperature | | 0.208 ohm.m @ 61 degF | | | | @ | |
| RMC @ Measured Temperature | | @ | | | | @ | |
| Source RMF | RMC | CALCULATED | | | | | |
| RM @ MRT | RMF @ MRT | 0.149 @ 123 | 0.109 @ 123 | | @ | | @ |
| Maximum Recorded Temperatures | | 123 degF | | | | | |
| Circulation Stopped | Time | 5-MAY-2000 | 22:00 | | | | |
| Logger On Bottom | Time | 6-MAY-2000 | 3:30 | | | | |
| Unit Number | Location | 3178 | ROSWELL | | | | |
| Recorded By | | T. SCHNEIDER | | | | | |
| Witnessed By | | SIMIANNE HAYDEN | | | | | |

PIP SUMMARY

- Integrated Borehole Volume Every 10 F3
- Integrated Borehole Volume Every 100 F3
- Integrated Annulus Volume Every 10 F3
- Integrated Annulus Volume Every 100 F3

Time Mark Every 60 S

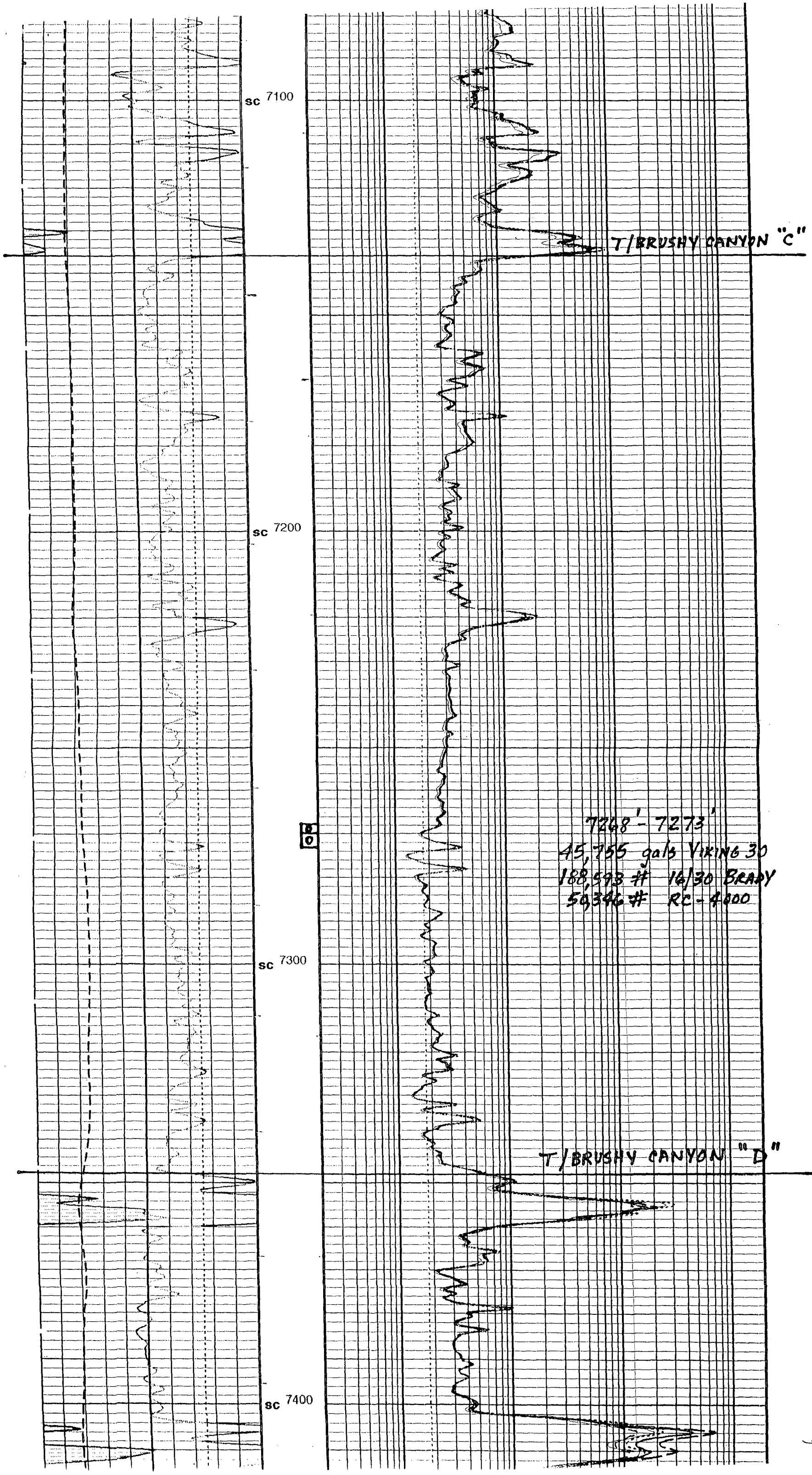
| | | |
|---|---|---|
| AIT Mud Full Cal (AHMF) (OHMM) | 0.02 | 200 |
| AIT-H 90 Inch Investigation (AHT90) (OHMM) | 0.2 | 2000 |
| AIT-H 60 Inch Investigation (AHT60) (OHMM) | 0.2 | 2000 |
| AIT-H 30 Inch Investigation (AHT30) (OHMM) | 0.2 | 2000 |
| AIT-H 20 Inch Investigation (AHT20) (OHMM) | 0.2 | 2000 |
| AIT-H 10 Inch Investigation (AHT10) (OHMM) | 0.2 | 2000 |

MAIN PASS 5" = 100'

sc 3700

CASING-

| | | |
|---|---|---|
| Cable Tension (TENS) (LBF) | 10000 | 0 |
| HRMS Caliper (HCAL) (IN) | 6 | 16 |
| GR (GR) (GAPI) | 0 | 100 |
| Gamma Ray on Backup | | |


sc 7100
T/BRUSHY CANYON "C"
sc 7200
7268' - 7273'
45,755 gals VIKING 30
188,593 # 16/30 BRADY
50,346 # RC-4000
sc 7300
T/BRUSHY CANYON "D"
sc 7400

TRU 1of6

T/BRUSHY CANYON "D"

sc 7400

sc 7500

sc 7600

7484' - 7489'
63,134 gals VIKING 30
175,520 # 16/30 BRADY
53,895 # RC-4000

T/BONE SPRING

TRU 1060

Company: BASS
Well: JAMES RANCH UNIT #66
Location: Sec: ____ Twn: 22S Rge: 30E Blk: ____
Survey: ____ API: ____
County: EDDY State: NEW MEXICO
Elevation: KB: ____ GL: ____
Contractor: WEK Spud Date: ____
Depth Logged: From: 3300 To: ____
Date Logged: From: 4/29/00 To: ____
Logger: TINE, MCNEELY Unit: ____

# MORCO GEOLOGICAL SERVICES

Carlsbad, New Mexico - (800) 748-2340

| | | |
|---|---|---|
| Shale | Limestone | Salt |
| Siltstone | Dolomite | Igneous |
| Sandstone | Anhydrite | Metamorphic |
| Conglomerate | Chert | NS No Sample |

505-390-0509

KB: 3301

Nick- 5860 → 6100

| | |
|---|---|
| Total Gas Calibration: | 100 Gas Units = 1% Methane Equivalent |
| Chromatograph Calibration: | 1 Unit = 100 ppm of each component: |
| Total Gas Detector Type: | Catalytic Combustion Filament (Hot Wire) |
| Chromatograph Type: | Catalytic Combustion Filament (Hot Wire) |
| Extractor Evacuation Rate: | 10 Standard Cubic Feet per Hour |

DRILLING RATE (min/ft) | DEPTH (OFF BTM, OFF PMP) | POROSITY (G F T) | LITH | CUT (T F G) | FLUOR | STAIN | Total gas (Units) | C1 (Units) | C2 (Units) | C3 (Units) | C4 (Units) | C5 (Units) | REMARKS

BEGIN 2 MAN LOGGING
4/29/00
CALIBRATE EQUIPMENTIN
CARBIDE LAG 51 MIN

HALITE
HALITE
HALITE
HALITE
HALITE

SH:dk.brn,blk,blky,frm ,dolo in pt

TOP L^R Brushy C ("U")

SS:clr,lt.gry,v/f gr, sbrnd,wl/srtd,no show in smpl

SS:clr,lt.gry,v/f gr, wl/srtd,sbrnd,lsly cnsl,occ dolo cmt,no show in smpl

DOLO:tn,wht,microxln, dns,mod hrd-frm

T/LR"U"

SH:dk.brn,sm brn,blky, frm,carb in pt

SS:clr,sm lt.gry,v/f gr,wl/srtd,sbrnd,lsly cnsl,80% yell-grn flu ,tr-fair slow even wt cut,abndt floating gr

SS:clr,sm lt.gry,sm frstd,v/fn grn,wl/ srtd,sub rnd-rnd,lsly cons,80% yell-grn flu ,tr-fair slow even wt cut

TOP L^R Brushy D

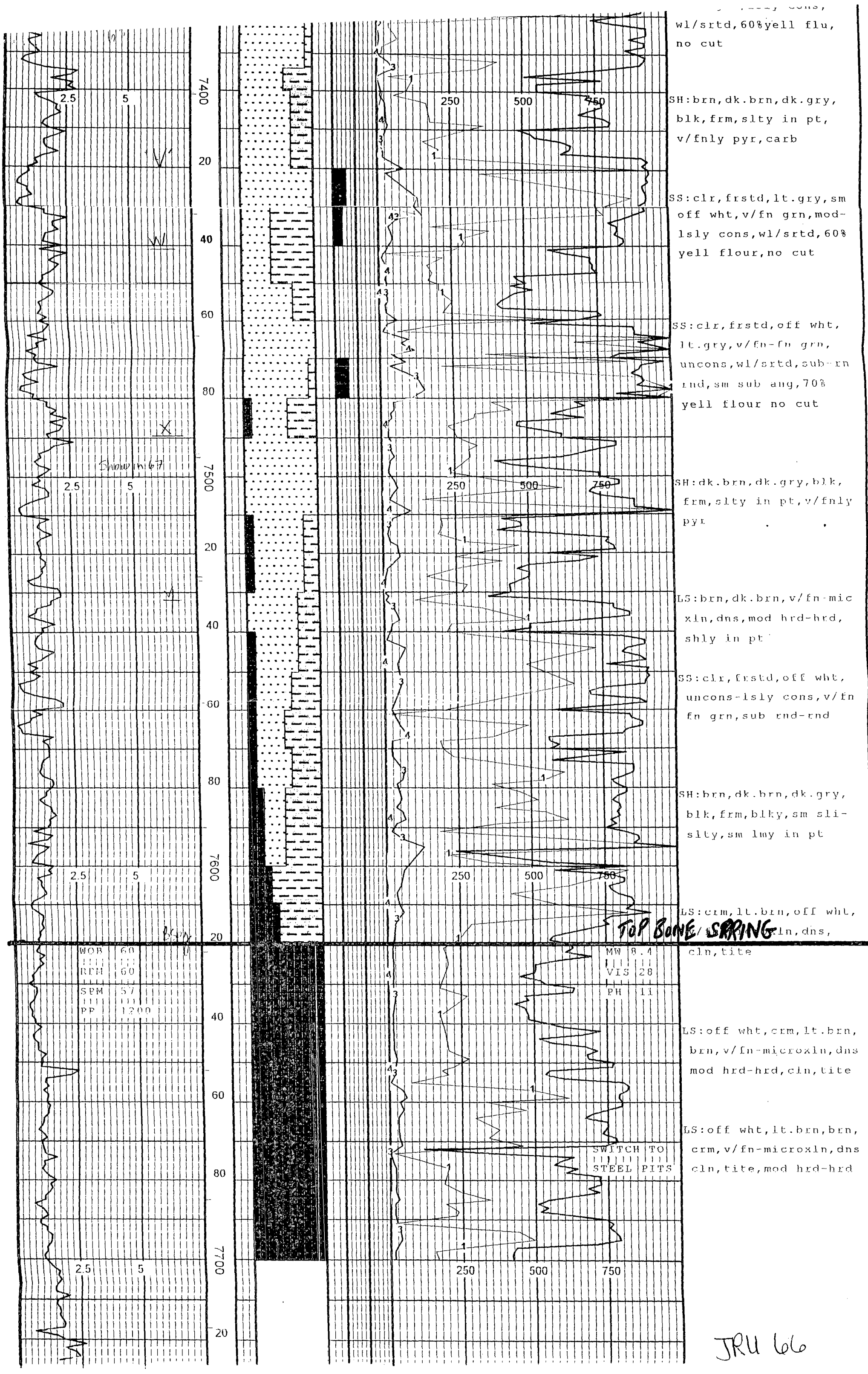
SH:dk.gry,dk.brn,blk, frm-mod hrd,slt-sndy, tr-v/fnly pyr,carb in part

SS:clr,frstd,lt.gry, v/fn grn,lsly cons, wl/srtd,60%yell flu, no cut

SH:brn,dk.brn,dk.gry, blk,frm,slty in pt, v/fnly pyr,carb

JRU 66

SS:clr,frstd,lt.gry,sm off wht,v/fn grn,mod-lsly cons,wl/srtd,60%


2.5
5
7400
20
40
60
80
7500
20
40
60
80
7600
20
40
60
80
7700
20
250
500
750
WOB 60
RPM 60
SPM 57
PP 1200
MW 8.4
VIS 28
PH 11
SWITCH TO STEEL PITS
TOP BONE SPRING
wl/srtd,60%yell flu, no cut
SH:brn,dk.brn,dk.gry, blk,frm,slty in pt, v/fnly pyr,carb
SS:clr,frstd,lt.gry,sm off wht,v/fn grn,mod-lsly cons,wl/srtd,60% yell flour,no cut
SS:clr,frstd,off wht, lt.gry,v/fn-fn grn, uncons,wl/srtd,sub-rn rnd,sm sub ang,70% yell flour no cut
SH:dk.brn,dk.gry,blk, frm,slty in pt,v/fnly pyr
LS:brn,dk.brn,v/fn-mic xln,dns,mod hrd-hrd, shly in pt
SS:clr,frstd,off wht, uncons-lsly cons,v/fn fn grn,sub rnd-rnd
SH:brn,dk.brn,dk.gry, blk,frm,blky,sm sli-slty,sm lmy in pt
LS:crm,lt.brn,off wht, cln,tite
LS:off wht,crm,lt.brn, brn,v/fn-microxln,dns mod hrd-hrd,cln,tite
LS:off wht,lt.brn,brn, crm,v/fn-microxln,dns cln,tite,mod hrd-hrd
JRU 66