

Scout Report sent out

Noted in the NID File

Location map pinned

Approval or Disapproval Letter

Date Completed, P. & A. or
operations suspended 1-4-60 UOR

Pin changed on location map

Affidavit and Record of A & P

Water Shut-Off Test

Gas-Oil Ratio Test

Well Log Filed

7-31-62
* Well classification changed from
A-1 to Gas Well to Gas Injection Well

PURE OIL COMPANY - WELL NO. NORTHWEST LISBON USA-A #1 LISBON
(GAS INJECTION WELL) AD 43 232 114 107 B610
Sec. 10, T. 30 S., R. 24 E., San Juan County

GI

FILE NOTATIONS

Entered in NID File

Entered On S R Sheet

Location Map Pinned

Card Indexed

IWR for State or Fee Land

Checked by Chief

Copy NID to Field Office

Approval Letter

Disapproval Letter

COMPLETION DATA: Dual Completion 3-25-61

Date Well Completed 1-2-60

OW WW TA

GW OS PA

Location Pinned

Bonded

State or Fee Land

LOGS FILED

Driller's Log 1-18-60

Electric Logs (No.) 7

E I

E-I

GR

GR-N

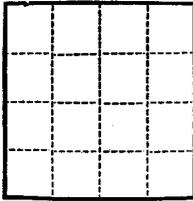
Micro

Lat.

Mi-L

Sonic

Others Section Gauge



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	<input checked="" type="checkbox"/>	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

July 8, 1959

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE NW Section 10 308 24E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~derrier~~ ground above sea level is 6573 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Proposed Casing Program is as follows:

- 1300' - 13-3/8" OD Surface Casing cemented to surface
- 9-5/8" OD Intermediate String, if necessary
- 7" OD Oil String, if necessary

The principle objective is the Cambrian, test the Devonian

Estimated total depth 10,000 feet

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By T. L. Hartburton
T. L. Hartburton
Title Division Chief Production Clerk

THE PURE OIL COMPANY LOCATION REPORT

Date July 7, 1959

A.F.E. No. 272

Division Rocky Mountain Producing Prospect District Northwest Lisbon Area Lease USA (Utah 014903)

Acres 880 Lease No. 8376 Elevation Gr. 6573 Well No. 1 (Serial No. _____)
Ungraded NW Lisbon USA

Quadrangle NE NW Sec. 10 Twp. 30S Rge. 24E
Bk. _____
Dist. _____
Twp. _____

Survey Salt Lake P.M. County San Juan State Utah

Operator The Pure Oil Company Map _____

563 Feet South of the North line of Section

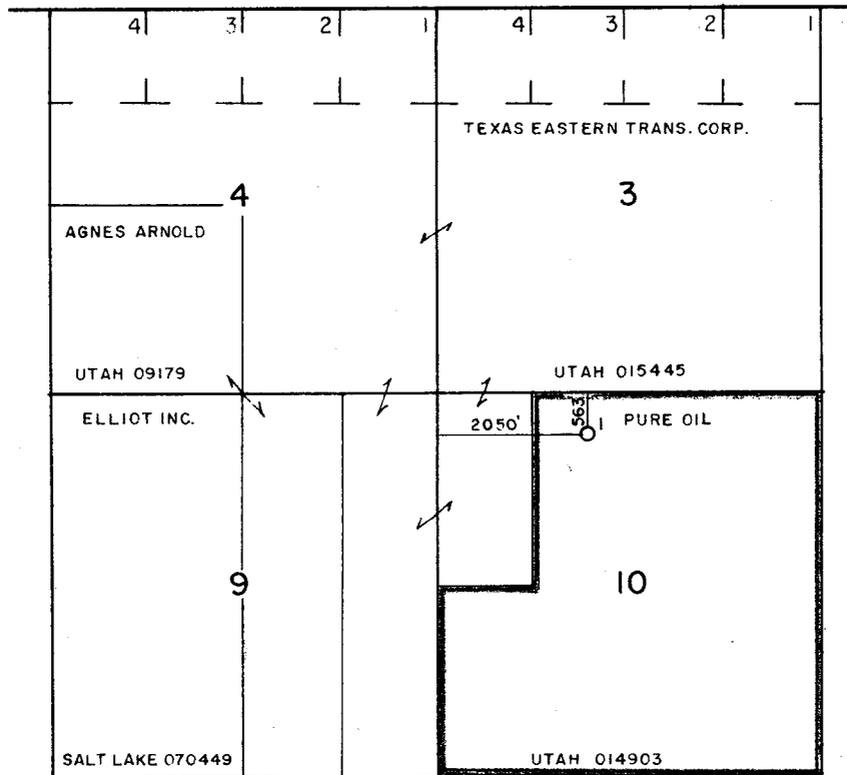
2050 Feet East of the West line of Section

Feet _____ of the _____ line of _____

Feet _____ of the _____ line of _____

LEGEND

- Location
- ☀ Gas Well
- Oil Well
- ☀ Gas-Distillate Well
- ∅ or ○ Dry Hole
- ⊗ Abandoned Location
- ☀ or ☀ Abandoned Gas Well
- or ● Abandoned Oil Well
- or ○ Input Well



Scale 2" = 1 MILE

Remarks: _____

Submitted by *Ray L. ...* Civil Engineer

Approved by *Harris ...* Division Manager

Approved by _____ Vice-President - General Manager

July 9, 1959

Pure Oil Company
1700 Broadway
Denver 2, Colorado

Attention: T. L. Warburton,
Division Chief Production Clerk

Gentlemen:

This is to acknowledge receipt of your notice of intention to drill Well No. NW Lisbon USA 1, which is to be located 563 feet from the north line and 2050 feet from the west line of Section 10, Township 30 South, Range 24 East, SLBM, San Juan County, Utah.

Please be advised that insofar as this office is concerned approval to drill said well is hereby granted.

This approval terminates within 90 days if the above mentioned well is not spudded in within said period.

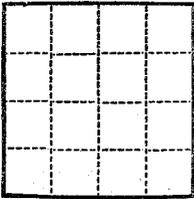
Yours very truly,

OIL & GAS CONSERVATION COMMISSION

CLEON B. FEIGHT
EXECUTIVE SECRETARY

CBF:cp

cc: P. T. McGrath, Dist. Eng.
USGS Farmington, New Mexico



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

September 9, 1959

Northwest Lisbon USA
Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE NE, Sec. 10 30-S 24-E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~druck floor~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spudded August 13, 1959.

Set 20" OD 9 1/2", 8-R, H-40 Conductor Pipe at 34' and cemented with 34 sacks Calseal, 15 sacks cement and 150 sacks Pozmix.

Set 13-3/8" OD 4 1/2", 8-R, J-55, SS, casing at 968' and cemented with 800 sacks cement.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By T. L. Warburton
T. L. Warburton
Title Division Chief Production Clerk

UTAH

Oct. 16, 17, + 18, 1959

SAN JUAN CO. - NORTHWEST LISBON PROSPECT

NW LISBON USA NO. 1. 7555-7643 (88') DOLOMITE AND LIME.

CORE NO. 1, 7590-7643, 53', RECOVERED 53'.

18 FT. DOLOMITE, BROWN, XLN, DENSE.

1 FT. LIMESTONE, BROWN, EARTHY.

5 FT. DOLOMITE, GRAY, XLN, DENSE.

20 FT. LIMESTONE AND DOLOMITE, GRAY, XLN, DENSE, SCATTERED VUGULAR POR.

6 FT. LIMESTONE, GRAY-BLACK, EARTHY.

3 FT. DOLOMITE, DARK GRAY, FINE XLN.

ENTIRE 53' HAS ABUNDANT HAIRLINE FRACTURES, BLEEDING LIGHT GREEN OIL
AND MUD FILTRATE, SCATTERED VUGULAR POR.

HOWCO DST NO. 1, 7543-7643.

3/4" CHOKE ON BOTTOM, 1" CHOKE ON TOP. INITIAL SHUT IN 30 MINS, TOOL OPEN 30

MINS. GAS TO SURFACE IN ONE MINUTE. AFTER 5 MINS, GAS READING 3,310 MCF,

INCREASED TO ESTIMATED 4,000 TO 5,000 MCF WHEN TOOL CLOSED. SHUT IN 1-1/4 HOURS,

UNSEATED PACKER AND REVERSED OUT. RECOVERED GAS, THEN GAS CUT MUD, BLACK EMULSION

AND 120' HEAVILY GAS CUT MUD WITH SMALL AMOUNT OF CONDENSATE. PRESSURES: IH 4200,

ISI 2710, IF 1360, FF 1473, FSI 2680, FH 4155.

GOING IN HOLE TO CUT CORE NO. 2.

UTAH

Oct. 20, 1959

SAN JUAN CO. - NORTHWEST LISBON PROSPECT

NW LISBON USA NO. 1. 7701-7705 (4') LIME.

CORE NO. 2, 7643-7701, 58', RECOVERED 58'.

2 FT. DOLOMITE, BROWN, XLN, DENSE.

19 FT. LIMESTONE, GRAY, XLN, DENSE.

1 FT. DOLOMITE AS ABOVE.

18 FT. LIMESTONE AS ABOVE.

18 FT. DOLOMITE AS ABOVE.

UPPER 40' SCATTERED PINPOINT POROSITY AND SMALL VUGS, SOME SHOWS. BOTTOM 18'

CONTINUOUS GOOD PINPOINT POROSITY AND GOOD ODOR, SCATTERED FL.

HOWCO DST NO. 2, 7643-7701.

ISI 30 MINS, OPEN 45 MINS, FSI 1 HOUR. GAS TO SURFACE IN ONE MINUTE. AFTER 5 MINS.,
GAS VOLUME 7,000 MCF INCREASING TO MAX. OF 17,300 MCF WHEN TOOL CLOSED. SHUT IN ONE
HOUR THEN REVERSED OUT. PRESSURES, IH 4210, ISI 2790, IF 1825, FF 2040, FSI 2770, FH 4160.

UTAH

Oct. 22, 1959

SAN JUAN CO. - NORTHWEST LISBON PROSPECT

NW LISBON USA NO. 1. 7746-7773 (27') CORE NO. 4.

CORE NO. 3, 7701-7746, 45', RECOVERED 41'.

17 FT. DOLOMITE, BROWN, XLN, DENSE.

1 FT. LIME, GRAY, XLN, DENSE.

23 FT. DOLOMITE AS ABOVE.

GOOD PINPOINT POR., HAIRLINE FRACTURES, GOOD ODOR THROUGHOUT CORE AS IN BOTTOM

18' OF CORE NO. 2.

UTAH

Oct. 23, 24 + 25, 1959

SAN JUAN CO. - NORTHWEST LISBON PROSPECT

NW LISBON USA NO. 1. 7773-7829 (56') DOLOMITE.

CORE NO. 4, 7746-7774, 28', RECOVERED 28'.

8 FT. DOLOMITE, GRAY BROWN, FINE KLN, HARD, DENSE, FEW RANDOM FRACS, GOOD
ODOR, STREAKS OF SMALL VUGULAR TO PINPOINT POR.

11 FT. LIMESTONE, GRAY TO BROWN, DENSE HARD CALCITE WITH STREAKS DOLOMITE,
GRAY TO BROWN, WITH PINPOINT POROSITY.

9 FT. DOLOMITE, GRAY, FINE TO MED. KLN, HARD, DENSE, WITH CALCITE VEINS,
STREAKS SMALL VUGULAR POR.

ENTIRE CORE HAS RANDOM FRACTURES BLEEDING OIL, GAS AND MUD.

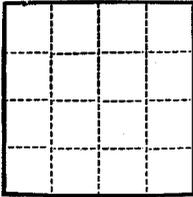
HOWCO DST NO. 3, 7701-7774. 3/4" CHOKE ON BOTTOM, 1" ON SURFACE.

ISI 30 MINS, OPEN 30 MINS, FSI 30 MINS. GAS TO SURFACE IN 2 MINS. ESTIMATED FLOW,
11,000 MCF PER DAY. FLOW LINE PRESSURE 190 POUNDS. REVERSED OUT, NO WATER. PRESSURES,
IH 4180, ISF 2750, IF 2180, FF 2305, FSI 2770, FH 4140, BOTTOM HOLE TEMP. 165.

CORE NO. 5, 7774-7829, 55', RECOVERED 55' DOLOMITE, LIGHT GRAY, GOOD PINPOINT POR.,

DENSE AND BRITTLE VUGULAR POROSITY, MANY FRACS BLEEDING OIL AND GAS.

CORE ABOUT SAME AS OTHER 4 CORES EXCEPT FROM 7797 TO 7800 WHICH HAD 3'
OF CHERT.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 014903
Unit _____

Handwritten notes:
7/14
11/9/59

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

October 26, 1959

Northwest Lisbon T34
Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10
NE NW, Sec. 10 30-3 24-2 Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~ground~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company
Address 1700 Broadway
Denver 2, Colorado

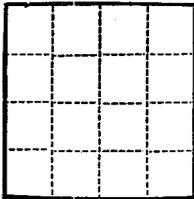
By T. L. Warburton
T. L. Warburton
Title Division Chief Production Clerk

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MH
11/9

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....		SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....		SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....		SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....		SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

October 27, 19 59

Northwest Lisbon USA

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE 1/4, Sec. 10
(1/4 Sec. and Sec. No.)

30-S
(Twp.)

24-R
(Range)

Salt Lake
(Meridian)

Wildcat
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation of the ~~formation~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

NW LISBON USA NO. 1. 7829-7838 (9') CORE NO. 6, INCOMPLETE.

HOWCO DST NO. 4, 7774-7829, 55' ANCHOR.

3/4" CHOKE BOTTOM, 1" CHOKE TOP. 30 MINS ISI, OPEN 1 HOUR, FSI 1 HOUR. GAS TO SURFACE IN 2 MINS. STEADY BLOW THROUGHOUT TEST. EST. GAS VOLUME, 1600 MCF.

REVERSED OUT. RECOVERED BLACK EMULSION. PRESSURES, ISI 2750, IF 300, FF 345, FSI 2730, FH 4180. BH TEMP. 165.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By T. L. Warburton
T. L. Warburton
Title Division Chief Production Clerk

NW LISBON USA NO. 1. 7866-7885 (19') CORE NO. 6.

Oct. 28, 1959

CORE NO. 6, 7829-7885. CUT AND RECOVERED 56'.

20 FT. DOLOMITE, DARK GRAY, FINE TO MEDIUM XLN, STREAKS OF DOLOMITE
WITH PINPOINT POR., ALSO WITH VUG. POR., FEW SCATTERED FRACS.
BLEEDING GAS.

4 FT. DOLOMITE, GRAY, DENSE, CHERT.

3 FT. DOLOMITE, GRAY, DENSE, WITH SMALL PINPOINT POR.

29 FT. DOLOMITE, DARK GRAY, DENSE, WITH SMALL VUG. POR.

ENTIRE CORE WITH EXCEPTION OF 4' OF DOLOMITE, BLEEDING GAS.

NW LISBON USA NO. 1. 7885-7925 (40') DOLOMITE.

Oct. 29, 1959

CORE NO. 7, 7885-7925, COR AND RECOVERED 40'.

16 FT. DOLOMITE, DARK BROWN, FINE XLN, FOSS. HIGHLY FRACTURED.

8 FT. DOLOMITE, LIGHT GRAY, TAN, FINE XLN, DENSE, MANY RANDOM FRACS.

4 FT. DOLOMITE AS ABOVE, VERY HIGHLY FRACTURED

12 FT. DOLOMITE, GRAY BROWN, FINE XLN, HARD, DENSE, MANY FRACTURES.

ENTIRE CORE HAS SLIGHT SULFUR ODOR ON FRESH BREAK BLEEDING GAS AND FILTRATE FROM POROSITY AND FRACS.

HOWCO DST NO. 5, 7829-7925, 96'. OPEN FOR 3 MINS. GAS TO SURFACE IN ONE MINUTE.

SHUT IN 40 MINS. FOR INITIAL BHP, OPEN 45 MINS, SHUT IN ONE HOUR FOR FINAL BHP.

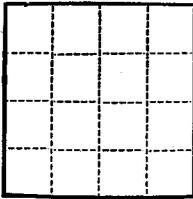
ESTIMATED EIGHT TO TEN MILLION C.F. GAS WITH SOME LIGHT BROWN CONDENSATE. NOW ✓

SHUT IN FOR BHP.

TOOL SHUT IN ONE HOUR FOR BOTTOM HOLE PRESSURES. PULLED TOOL AND RECOVERED

120' CLEAR YELLOWISH GREEN CONDENSATE. PRESSURES, IH 4260, ISI 2740, IF 2300, ✓

FF 2380, FSI 2800, FH 4260. GOING IN HOLE TO CORE AHEAD.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office **Salt Lake City**
Lease No. **Utah 014903**
Unit _____

[Handwritten signature]
7/14
11-2

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

October 30, 1959

Northwest Lisbon USA

Well No. **1** is located **563** ft. from **N** line and **2050** ft. from **W** line of sec. **10**

NE 1/4, Sec. 10
(1/4 Sec. and Sec. No.)

30 S
(Twp.)

2 1/2 E
(Range)

Salt Lake
(Meridian)

Wildcat
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation of the ~~bottom hole~~ **ground** above sea level is **6575** ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

BEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

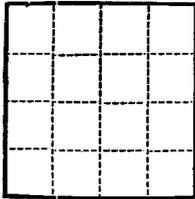
Company **The Pure Oil Company**

Address **1700 Broadway**

Denver 2, Colorado

By *[Signature]*
E. L. Harburton

Title **Division Chief Production Clerk**



(SUBMIT IN TRIPLICATE)
**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

Land Office Salt Lake City
Lease No. Utah 014903
Unit _____

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

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NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 2, 19 59

Northwest Lisbon USA

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE 1/4, Sec. 10
(1/4 Sec. and Sec. No.)

T0 S 24E
(Twp.) (Range)

Salt Lake
(Meridian)

Wildcat
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation of the ~~surface~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

CORE NO. 8, 7925-7983. CUT AND RECOVERED 58'.

13 FT. DOLOMITE, GRAY, FINE XLN, HARD, DENSE.

3 FT. DOLOMITE, BLUE-GRAY, VERY FINE XLN, HARD, DENSE.

42 FT. DOLOMITE, GRAY, FINE XLN, SLIGHTLY SANDY WITH SMALL VUG. POR.
FROM 7959-7964.

ENTIRE CORE BLEEDING OIL AND GAS.

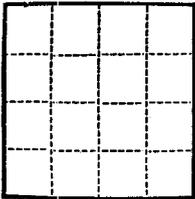
I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By T. L. Warburton
T. L. Warburton
Title Division Chief Production Clerk



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 011903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

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NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
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NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 4, 1959

Northwest Lisbon USA
Well No. 1 is located 563 ft. from $\left\{ \begin{matrix} N \\ E \end{matrix} \right\}$ line and 2050 ft. from $\left\{ \begin{matrix} E \\ W \end{matrix} \right\}$ line of sec. 10

NE NW. Sec. 10 308 21st Salt Lake
UTAH (Meridian)

SAN JUAN CO. - NORTHWEST LISBON PROSPECT

NW LISBON USA NO. 1. 8023-8044 (21') DOLOMITE.

CORE NO. 9, 7983-8027, CUT AND RECOVERED 44'.

- 15 FT DOLOMITE, GRAY, FINE TO MEDIUM XLN, HARD, DENSE WITH THIN BLUE SHALE LAM.
- 2 FT SHALE, GRAY, WAXY, PYRITIC.
- 1 FT LIME, GRAY, MEDIUM XLN, WITH GOOD BLEEDING OIL. GAS FROM FRAC.
- 5 FT SHALE, GRAY, WAXY, PYRITIC.
- 21 FT LIME, BLACK, GRAY, VERY FINE XLN.

ENTIRE CORE HAS GOOD OIL ON FRESH BREAKS. BLEEDING GAS FROM FRACTURES.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By
T. L. Warburton
Title Division Chief Production Clerk

NW LISBON USA NO. 1. 8099-8189 (90°) DOLOMITE AND SHALE.

*The Pure Oil Co.
Nov. 6, 7 & 8, 1959*

CORE NO. 11, 8085-8126, CUT AND REC. 41'.

17 FT. LIMESTONE, GRAY, MED. XLN, HARD AND DENSE WITH GREEN SHALE PARTINGS.

3 FT. LIMESTONE, TAN VERY FINE XLN, HARD AND DENSE WITH RANDOM FRACS
FILLED WITH CALCITE.

4 FT. LIMESTONE, GRAY, MED. XLN, HARD AND DENSE WITH GREEN SHALE PARTINGS.

4 FT. LIMESTONE, GRAY, TAN VERY FINE XLN WITH RANDOM FRACS FILLED WITH
CALCITE. ODOR ON FRESH BREAK.

4 FT. DOLOMITE, BROWN, DENSE EARTHY RANDOM FRACS.

4 FT. LAMINATIONS OF GREEN SHALE AND GRAY DOLOMITE.

5 FT. LIMESTONE, GRAY MED. XLN WITH GREEN SHALE LAM.

CORE BLEEDING OIL AND MUD FILTRATE FROM 8105-8106, 8110-8116.

HOWCO DST NO. 6, 7996-8126.

3/4" CHOKE BOTTOM, 1" CHOKE TOP. ISI 30 MINS, OPEN 2 HRS, FSI 1 HR. GAS TO SURFACE
IN 9 MINS, SMALL BLOW THROUGHOUT. APPROX. 300 MCF GAS. REC. 225' GAS CUT MUD.
PRESSURES, ISI 2460, FSI 2580, IF 100, FF 100, IH 4390, FH 4370, BHT 180 DEGREES.

CORE NO. 12, 8126-8183', CUT AND REC. 57'.

3 FT. LIMESTONE, GRAY, MED. XLN.

1 FT. SHALE, GREEN.

5 FT. DOLOMITE, GRAY, BROWN, FINE XLN WITH GREEN SHALE PARTINGS.

11 FT. DOLOMITE, BROWN FINE XLN WITH ABUNDANT RANDOM FRACS BLEEDING
OIL, GAS AND FILTRATE.

9 FT. SHALE, GREEN.

1 FT. DOLOMITE, LIGHT BROWN, VERY FINE XLN.

9 FT. SHALE, GREEN.

4 FT. DOLOMITE, GREEN, BROWN WITH ABUNDANT FRACS BLEEDING OIL, GAS
AND FILTRATE

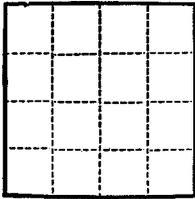
3 FT. SHALE, GREEN.

4 FT. DOLOMITE, GRAY, BROWN, FINE XLN, FINE PINPOINT POR, BLEEDING
OIL AND GAS FROM FRACS.

4 FT. SHALE, GREEN.

2 FT. DOLOMITE, GRAY, BROWN, MED. XLN, SAND, BLEEDING OIL AND GAS FROM FRACS.

1 FT. SHALE, GREEN.



(SUBMIT IN TRIPPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 9, 1959

Northwest Lisbon USA

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE NW, Sec. 10
(¼ Sec. and Sec. No.)

30S
(Twp.)

24E
(Range)

Salt Lake
(Meridian)

Wildcat
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation of the ~~drill~~ ^{ground} floor above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway
Denver 2, Colorado

By *[Signature]*
F. L. Warburton
Title Division Chief Production Clerk

NW LISBON USA NO. 1. 8234-8236 (2') DOLOMITE.

CORE NO. 13, 8183-8236, CUT AND RECOVERED 53'.

4 FT. SHALE, GREEN.

3 FT. DOLOMITE, GRAY-BROWN, WITH SMALL VUGULAR POROSITY. POROSITY
AND FRACS BLEEDING GREEN OIL AND GAS.

9 FT. SHALE, GREEN.

21 FT. DOLOMITE, SAME AS ABOVE.

1 FT. SHALE, GRAY, SANDY, SOME SHALE BLEEDING OIL.

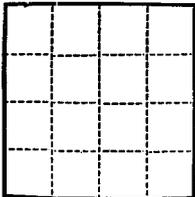
5 FT. DOLOMITE AS ABOVE.

1 FT. SHALE, GREEN

7 FT. DOLOMITE AS ABOVE.

2 FT. SHALE, GREEN.

LEFT 8-11/16" CHIRSTENSEN DIAMOND CORE HEAD IN HOLE. MADE TRIP WITH SUB AND TRIED TO
SCREW INTO HEAD BUT UNSUCCESSFUL. MADE TRIP WITH TAPER TAP BUT UNSUCCESSFUL. NOW
GOING BACK IN HOLE WITH TAPER TAP.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 011903
Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 11, 1959

Northwest Lisbon U.S.A.
Well No. 1 is located 563 ft. from N line and 2050 ft. from E line of sec. 10
NE 1/4 Sec. 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~driveway floor~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

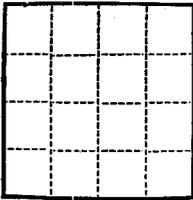
(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company
Address 1700 Broadway
Denver 2, Colorado

By T. L. Warburton
T. L. Warburton
Title Division Chief Production Clerk



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 014903
Unit _____

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 12, 1959

Northwest Lisbon USA
Well No. 1 is located 563 ft. from N line and 2050 ft. from EW line of sec. 10
NE NW Sec. 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~ground~~ derrick floor above sea level is 6575 ft.

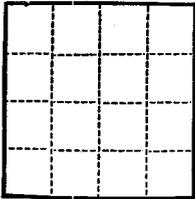
DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

NW LISBON USA NO. 1. PD 8236. *The Pure Oil Co. Nov. 11, 1959*
RAN TAPER TAP AND RECOVERED CORE HEAD, LEAVING PART OF MATRIX IN HOLE.
HOWCO DST NO. 7, 8176-8236.
3/4" CHOKE ON BOTTOM, 1" CHOKE ON TOP. ISI 30 MINS, OPEN 1-1/2 HOURS, FSI 1 HOUR. GAS TO SURFACE IN 1-1/2 HOURS. WEAK BLOW THROUGHOUT. REC. 180" HIGHLY GAS CUT MUD WITH TRACE OF GREEN OIL. PRESSURES, ISI 1730, IF 80, FF 115, FSI 2250, HYD. 4525. *mmenced.*

Company The Pure Oil Company
Address 1700 Broadway
Denver, Colorado
By *[Signature]*
T. L. Warburton
Title Division Chief Production Clerk



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 014903
Unit _____

[Handwritten signatures]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 16, 1959

Northwest Lisbon USA
Well No. 1 is located 563 ft. from N line and 2050 ft. from E line of sec. 10
NE NW Sec. 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

NW LISBON USA NO. 1. ~~8230-8291 (52')~~ ~~SHALE AND DOLOMITE.~~ *The Pure Oil Co.*
CORE NO. 14, 8238-8264, CUT AND RECOVERED 26'. *Nov. 13, 14 & 15, 1959*

- 9 FT. SHALE, GREEN, SANDY WITH STREAKS. FINE, MEDIUM GRAIN SAND.
- 14 FT. DOLOMITE, GREEN, FINE, MEDIUM XLN WITH STREAKS SHALE AND SAND.
- 3 FT. SANDSTONE, BROWN, MEDIUM GRAIN.

ENTIRE CORE HAS GOOD ODOR ON FRESH BREAKS, SOME PARTS BLEEDING GREEN OIL.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver, Colorado

By T. L. Warburton
Title Division Chief Production Clerk

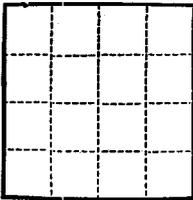
(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 18, 1959

Northwest Lisbon U.S.A.

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE NW 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~derrick floor~~ ^{ground surface} above sea level is 6575 ft.

NW LISBON USA NO. 1.

The Pure Oil Co.

CORE NO. 15, 8264-8316, CUT & REC. 52'.

Nov. 17, 1959

- 13 FT. SANDSTONE, BROWN, MEDIUM GRAIN, GOOD POR., STAIN, ODOR & RL.
 - 7 FT. SHALE, GREEN
 - 32 FT. SANDSTONE, BROWN, BLACK, MEDIUM, FINE GRAIN, QUARTZITIC WITH LAM. GREEN SHALE AND STREAKS FRIABLE SANDSTONE.
- BLEEDING OIL AND SCATTERED RANDOM FRACS BLEEDING OIL.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver, Colorado

By *[Signature]*
T. I. Warburton

Title Division Chief Production Clerk

NW LISBON USA NO. 1. 8365-8382 (17') SAND AND SHALE.

CORE NO. 16,, 8332-8382, CUT AND RECOVERED 50'.

The Pure Oil Co.
Nov. 19, 1959

23 FT. SANDSTONE, BROWN, MED. GRAIN, FRIABLE, WITH THIN LAM. OF BLACK SHALE. EXCELLENT STAIN AND ODOR. BLEEDING OIL FROM RANDOM FRACS.

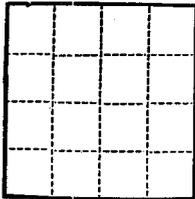
8 FT. SANDSTONE, BROWN, SHALEY, PINTO STAINS. BLEEDING THROUGHOUT.

18 FT. LAM. OF SHALE, GRAY TO DARK GREEN, SANDY AND DOLOMITIC, VERY FINE XLN, SANDY, SCATTERED FRACS BLEEDING OIL.

1 FT. SHALE, GRAY, SHINY, VERY HARD, DENSE.

HOWCO DST NO. 8, 8261-8382.

ISI 30 MINS, OPEN 1-1/4 HOURS, FSI 1 HOUR. GAS TO SURFACE IN 8 MINS, ESTIMATED 500 MCF, VERY RICH. AFTER 45 MINS, DECREASED TO WEAK BLOW. STARTED PULLING PIPE. 8000' FLUID IN DRILL PIPE. TOP 500' HEAVILY GAS AND OIL CUT MUD THEN 7500' HIGH POUR POINT OIL. REVERSED OUT. NOW PULLING TEST TOOL.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 014903
Unit _____

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 20, 1959

Northwest Lisbon USA

Well No. 1 is located 563 ft. from N line and 2050 ft. from EX line of sec. 10

NE NW 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~ground~~ derrick floor above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

*1 1/4 hr
7500' oil
= 1500' DOPD
open flow*

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Co.

Address 1700 Broadway

Denver, Colorado

By [Signature]
I. L. Warburton
Title Division Chief Production Clerk

NW LISBON USA NO. 1.

DRILLING COMPLETED 11/21/59. COMPLETION OF DST NO. 8 REPORTED 11/20/59. PULLED TEST TOOL. PRESSURES, IH 4530, ISI 2890, IF 285, FF 730 AND INCREASING, FSI 2675 AND INCREASING, FH 4530, B.H. TEMP. 188 DEGREES. CORR. GRAVITY OF 43.5, POUR POINT 65 DEGREES.

CORE NO. 17, 8382-8440, CUT AND RECOVERED 58'.

47 FT. DOLOMITE, GRAY, FINE, HARD, DENSE, LAM. OF GRAY SHALE.

1 FT. SHALE, GREEN, GRADING TO DOLOMITE, LIGHT GREEN, XLN.

6 FT. DOLOMITE, LIGHT GREEN, FINE-MED. XLN, WITH STREAKS DARK GRAY
MED. XLN DOLOMITE.

4 FT. AS ABOVE WITH PINPOINT POROSITY.

The Pure Oil Co.

Nov. 20, 21 & 22, 1959

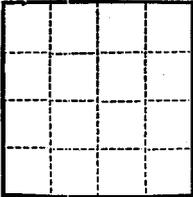
NOW RUNNING LOGS.

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 014901

Unit _____
[Handwritten Signature]



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 23, 19 59

Northwest Liabon USA
 Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10
NE NW Sec. 10 308 24R Salt Lake
 (1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
 (Field) (County or Subdivision) (State or Territory)

The elevation of the ~~corner~~ ^{ground} floor above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By [Signature]
F. L. Warburton

Title Division Chief Production Clerk

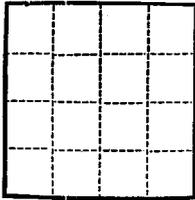
Salt Lake City

(SUBMIT IN TRIPLICATE)

Land Office Utah 014903

Lease No. _____

Unit _____



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 24, 25 & 26, 19 59

Northwest Lisbon USA
Well No. 1 is located 563 ft. from N line and 2050 ft. from E line of sec. 10
NE NW Sec. 10 30 S 24 E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~derrick floor~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

NW LISBON USA NO. 1. TD 8140. SECOND STAGE CEMENTED 7210-4310 WITH 1750 SX 50-50
POZMIX. 2 PERCENT GEL AND 17 PERCENT SALT. PLUG DOWN 1:00 P.M. 11/25/59. WOC. *The Pure Oil Co.*
Nov. 25 & 26, 1959

NW LISBON USA NO. 1. TD 8140. *The Pure Oil Co.* Nov. 24, 1959
SET 7" OD CASING AT 8140 AND CEMENTED WITH 250 SX 50-50 POZMIX, 2 PERCENT GEL AND 17 PERCENT
SALT - DV MULTIPLE STAGE CEMENTER AT 7210. FIRST STAGE COMPLETED AT 5:30 P.M. WOC. PREP.
TO CEMENT SECOND STAGE THIS A.M. THROUGH DV MULTIPLE STAGE CEMENTER.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Co.

Address 1700 Broadway

Denver, Colorado

By T. L. Warburton
T. L. Warburton
Division Chief Production Clerk
Title _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Salt Lake City
LEASE NUMBER Utah 014903
UNIT _____

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of November, 1959,

Agent's address 1700 Broadway Company The Pure Oil Company

Denver 2, Colorado Signed T. L. Warkentin

Phone AMherst 6-3331 Agent's title Division Chief Production Clerk

SEC. AND 1/4 OF 1/4	TWP.	RANGE	WELL No.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
NE NW Sec. 10 (Northwest	30S	24E	Lisbon USA Well No. 1)							Spudded August 14, 1959 and drilled to 44'. Set 20" OD Conductor pipe at 34', cemented with 4 sacks Cal-seal and 15 sacks regular cement. Drilled 44- to total depth of 8440'. 13-3/8" OD casing set at 968'. 9-5/8" OD casing set at 4317'. Halliburton DST No. 1, 7543-7643. Recovered gas then gas cut mud and oil. In 5 minutes calculated gas at 3310 MCF. Drilled 7643-7701. Halliburton DST No. 2, 7643-7701. Gas to surface in one minute. Measured 7000 MCF in 5 minutes and increased to maximum of 15,300 MCF when tool closed. Drilled 7701-7744. Halliburton DST No. 3, 7701-7774. Gas to surface in 2 minutes. Gas meter would not measure gas after 5 minutes. In five minutes gas was 7126 MCF. Drilled 7744-7829. Halliburton DST No. 4, 7774-7829. Gas to surface in 2 minutes. Estimated 1000 MCF gas. Drilled 7829-7925. Halliburton DST No. 5, 7829-7925. Gas to surface in one minute. Estimated 8000 to 10,000 MCF gas. Recovered 120' of condensate, corrected gravity 65.5. Drilled 7925-8126. Halliburton DST No. 6, 7996-8126. Gas to surface in 9 minutes. Approximately 300 MCF gas. Recovered 225' of gas cut mud. Drilled 8126-8236. Halliburton DST No. 7, 8176-8236. Gas to surface in 1-1/2 hours, small flow. Recovered 180' of gas cut mud and trace of green oil. Drilled 8236-8332. Halliburton DST No. 8, 8261-8332 open 1-1/4 hours. Gas to surface in 8 minutes. Estimated 500 MCF gas. After 45 minutes decreased to very weak. 8000' fluid in drill pipe. Top 500' heavily gas and oil cut mud. Then 7500' high pour point oil. Reversed out. Set 7" OD casing at 8440'. Cemented with 250 sacks Pozmix on first stage, 1750 sacks Pozmix on second stage. WOC.

NOTE.—There were _____ runs or sales of oil; _____ M cu. ft. of gas sold;

_____ runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

RAN MCCULLOUGH CO. LATION LOG 8400-7230. RAN 2-7. OD TUBING AND BROWN MODEL RS1B
PRODUCTION PACKER. SET PACKER AT 8246. MCCULLOUGH PERFORATED 7" OD CASING 8310-8348
AND 8261-8293 WITH TWO SUPER FORMATION JETS PER FOOT. DISPLACED MUD WITH WATER.
RIGGING UP TO SWAB.

The Pure Oil Co. Dec 14 2, 1959

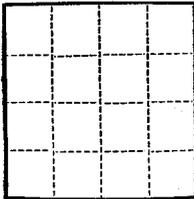
SWABBED WELL 10 HOURS, PULLING 3000' GAS OUT OIL EACH RUN. NO WATER. RECOVERED
APPROX. 10 BBLs. OIL PER HOUR. NOW SWABBING.

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 021903

Unit _____



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

December 3, 1959

Northwest Lisbon USA

Well No. 1 is located 563 ft. from $\left\{ \begin{matrix} N \\ S \end{matrix} \right\}$ line and 2050 ft. from $\left\{ \begin{matrix} E \\ W \end{matrix} \right\}$ line of sec. 10

NE NW Sec 10 30 S 24 E Salt Lake
(¼ Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wilcox San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ^{ground} derrick floor above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Co.

Address 1700 Broadway
Denver, Colorado

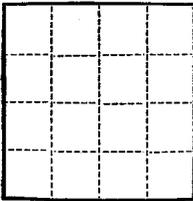
By *F. L. Harburton*
F. L. Harburton
Title Division Chief Production Clerk

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
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NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

December 8, 19 59

Northwest Lisbon USA

Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

30-8 24-8 Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

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Company The Pure Oil Co.

Address 1700 Broadway
Denver, Colorado

By T. L. Warburton
T. L. Warburton
Division Chief Production Clerk
Title _____

NW LISBON USA NO. 1.

12/12/59. FLOWED 42 BBLS. OIL IN 5 HOURS. SHUT IN 19 HOURS FOR BHP. 12/13/59.

ACIDIZED THRU PERFORATIONS WITH 2000 GAL. MUD ACID, MAX. PRESSURE 2700 POUNDS.

AFTER 10 MINS. SHUT IN, WENT ON VACUUM. INJECTION RATE 1/2 BPM. FLUSHED WITH 55

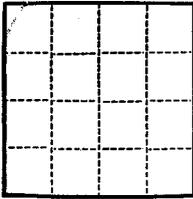
BBLS. CRUDE. COMPLETED AT 12:00 NOON. SWABBED 45 BBLS. LOAD OIL IN 5 HOURS. STARTED

SWABBING ACID WATER AND TURNED TO PIT. SWABBED OVERNIGHT. AT 6:00 A.M., SWABBING FROM

7000', 100 PERCENT OIL WITH GAS INCREASING.

The Pure Oil Co.

Dec 11, 12 + 13, 1959



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. Utah 011903
Unit _____

[Handwritten signature]

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

December 11, 19 59

Northwest Lisbon USA

Well No. 1 is located 563 ft. from $\begin{Bmatrix} N \\ S \end{Bmatrix}$ line and 2050 ft. from $\begin{Bmatrix} E \\ W \end{Bmatrix}$ line of sec. 10

NS 10 Sec. 10 30S 24E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~drill floor~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

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Company The Pure Oil Company

Address 1700 Broadway

Denver, Colorado

By [Signature]
F. L. Warburton
Title Division Chief Production Clerk

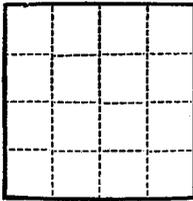
SAN JUAN CO. - WEST LISBON PROSPECT

The Pure Oil Co.

12/23/59

NW LISBON USA NO. 1. TD 8140. PSTD 8100.

SAND FRAC JOB NO. 1 THROUGH PERFORATIONS 8310-8348 AND 8261-8293. USED TOTAL OF 28,000 POUNDS 20-40 SAND, 733 BELS LEASE CRUDE, 165 GALLONS U-34 CHEMICAL AND 275 GALLONS U-38 CHEMICAL. MAXIMUM PRESSURE DURING TREATMENT, 6300 POUNDS, MINIMUM 5800 POUNDS. AVERAGE INJECTION RATE 8.5 BPM. PRESSURE IMMEDIATELY AFTER PUMP SHUT DOWN 4000 POUNDS. AFTER 15 MIN., SHUT IN PRESSURE 1000 POUNDS. AFTER 30 MIN., 800 POUNDS. AFTER 2 HOURS, 500 POUNDS. LEFT WELL SHUT IN 4-1/4 HOURS. OPENED TO TANK AT 6 PM, TUBING PRESSURE 200 POUNDS. WELL FLOWED 1/2 BELS. LOAD OIL TO TANK, THEN DIED. MADE TRIP WITH SINKER BARS, UNABLE TO GET BELOW 7600'. RAN SWAB AT 8 PM, FLUID AT SURFACE. PULLED SWAB SLOWLY FROM 600' ON FIRST RUN. ON SECOND RUN, PULLED FROM 800', FLUID LEVEL AT 400'. SWABBED DOWN TO 2000'. RECOVERED TOTAL OF 52 BELS. LOAD OIL, FLUID RISING FAST, 200' TO 600' FILL UP PER HOUR BETWEEN EACH RUN. SWAB STUCK IN TUBING AT 3000' AT 2 AM. AT 1:30 AM, RAN SWAB TO 3500' AND TOUCHED NOTHING. 6 AM TRYING TO FREE SWAB.



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
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NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

December 28, 1959

Northwest Lisbon USA
Well No. 1 is located 563 ft. from N line and 2050 ft. from W line of sec. 10

NE 1/4 Sec. 10 30S 24E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~drill floor~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver 2, Colorado

By T. L. Warburton
Title Division Chief Production Clerk

JAN 18 1960

NORTHWEST LIBRON VEA #1

Section 10, T. 50S., R. 24E.

558' PNL & 2050' PNL

SAN JUAN COUNTY, UTAH

SPUNDED AUGUST 14, 1959

COMPLETED NOVEMBER 21, 1959

SAMPLE ANALYSIS BY HARVEY W. HERRILL AND JOHN V. WALKER

FORMATION TOPS

<u>Formation</u>	<u>Sample</u>	<u>Log Top</u>	<u>Return</u>
Wingate	Spuds in		
Chinle	515	308	/0201
Koonkopi	805	387	/0720
Cutler	1430	1433	/0155
Hermosa	2255	2258	/4801
Paradox "A"	4045	3975	/0616
Paradox "B"		4217	/0572
Salt, Top	4508	4299	/0290
Salt, Base	7270	7258	- 589
Moles	7515	7435	- 939
Mississippian	7544	7522	- 225
Curry	7998	8008	-1419
Elbert		8098	-1479
McCrecken	8247	8255	-1604
Cambrian	8829	8859	-1717
Total Depth	8640	8640	-1681

- 50 - 60 Sandstone, tan to light brown, fine grain, sub-rounded, slightly calcareous, poorly cemented.
- 60 - 70 Sandstone, tan as above; little sandstone, brown-red, fine grain, sub-rounded, calcareous.
- 70 - 90 Sandstone, brown, red, fine grain, sub-angular to sub-rounded, calcareous, poorly cemented, color grades to red-tan.
- 90 - 100 Sandstone, orange-tan, fine grain, sub-rounded, slightly calcareous cement, argillaceous specks.
- 100 - 120 As above, trace of shale, black.
- 120 - 150 As above, becoming red in color; no shale.
- 150 - 200 Sandstone, light red brown, fine grain, sub-angular to sub-rounded, calcareous cement, friable.
- 200 - 210 Sandstone, light red brown to light orange, fine grain, sub-angular, well sorted, calcareous cement, friable.
- 210 - 310 As above.
- 310 - 320 As above, some shale, light brown-chocolate, silty in part, slightly micaceous in part; trace of shale, blue-green, very calcareous, silty.
- 320 - 350 Shale, brown-chocolate brown, slightly micaceous in part, silty in part; some siltstone, light blue green, very calcareous; little siltstone, brown, micaceous in part, slightly calcareous.
- 350 - 360 Shale, chocolate brown, mottled green in part, micaceous in part, silty in part.
- 360 - 370 As above, trace of sandstone, light blue-green, very fine grain, calcareous.
- 370 - 390 As above, blue green shale increased to little.
- 390 - 410 As above w/abundant cavings of wingate.
- 410 - 440 Shale, chocolate brown, silty in part; some siltstone, purple brown, slightly calcareous; little shale, blue-green, sandy, very calcareous.
- 440 - 450 Siltstone, red-brown, calcareous, tite; little shale, brown; little siltstone, green, calcareous, shaly.
- 450 - 480 As above, brown shale increased to some.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT.</u>	<u>P.P.</u>	<u>MUD WT.</u>	<u>VISC.</u>
205-315	45	29,000	200	9.2	40
315-455	45	40,000	200	9.2	39

Kelly Bushing 6589' Elevation

Top Chinle 315' (48274)

- 460 - 470 Cement.
- 470 - 500 No Samples.
- 500 - 510 Siltstone, red-brown, calcareous cement, very argillaceous.
- 510 - 520 As above; some shale, brown-chocolate brown.
- 520 - 530 Siltstone as above, becoming sandy and micaceous; little shale, brown and light green.
- 530 - 550 As above, shale increased to some.
- 550 - 610 Shale, chocolate brown, calcareous, micaceous in part; some siltstone, gray-brown, calcareous; some shale, light green, calcareous.
- 610 - 680 Shale, chocolate brown, calcareous in part; some shale, light green, calcareous, silty; some siltstone, red-brown, calcareous.
- 680 - 700 Siltstone, red-brown, calcareous, hard; some shale, chocolate brown, calcareous in part; little shale, light green, very calcareous.
- 700 - 720 No Samples.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT.</u>	<u>P.P.</u>	<u>SURVEYS</u>	<u>DEV.</u>
457-497	60	25,000	200	250	0
497-521	60	30,000	300	288	4
521-717	60		300	518	0
				548	5/4
				578	4
				408	0
				457	4

- 720 - 770 No Samples.
- 770 - 780 Sandstone, cream, fine grain, sub-angular, poorly sorted, calcareous, specks of green grains thru out; some shale, gray, silty in part, slightly calcareous.
- 780 - 790 Shale, brown, slightly calcareous; little shale, light green, very calcareous; trace of fossil wood? replaced with black mineral w/veinlets of calcite and pyrite.
- 790 - 810 Shale as above; little siltstone, red-brown, calcareous, micaceous; little shale, cream-light green, very silty, calcareous.
- 810 - 830 As above, trace of sandstone, cream, fine grain, sub-angular, silty, calcareous.
- 830 - 850 As above, siltstone increased to some (Poor Sample)
- 850 - 880 No Sample.
- 880 - 870 Siltstone, red-brown, calcareous, sandy in part; some shale, chocolate brown; little shale, blue-gray, calcareous.

- 870 - 890 Sandstone, cream-light brown, fine grain, sub-angular, poorly sorted, calcareous; some shale, brown-chocolate brown; little shale, gray green, silty, calcareous; little shale, gray, conglomerate, w/gray chert pebbles.
- 890 - 910 Siltstone, red-brown, calcareous; little shale, brown; little shale, gray green, calcareous; some sandstone, cream, fine grain, sub-angular, calcareous.
- 910 - 920 As above, shale increased to some.
- 920 - 925 As above.

<u>DEPTH</u>	<u>RVN</u>	<u>RII WT</u>	<u>PF</u>	<u>RUE WT</u>	<u>VEEG</u>
717-860	60	25/50,000	800	10.8	38
860-925	60	15,000	400	10.4	37

Sample Tops Shinerump 885' (#5724), Moonkopi 905' (#5634)

- 925- 930 No samples. Air Samples.
- 930 -1010 Siltstone, orange-red, slightly micaceous; little sandstone, orange-red, very fine grain, sub-rounded.
- 1010-1040 Sandstone, orange-red, fine grain to silty, slightly micaceous, sub-rounded to rounded, slightly calcareous.
- 1040-1070 Siltstone, red-brown, micaceous, slightly calcareous.
- 1070-1120 Siltstone, red-brown, slightly calcareous, micaceous.
- 1120-1150 Siltstone, pinkish tan, slightly micaceous, slightly calcareous.
- 1150-1210 Siltstone, pinkish tan, slightly micaceous, slightly calcareous.
- 1210-1220 Siltstone, reddish brown, calcareous, slightly micaceous.
- 1220-1240 Siltstone, reddish brown, calcareous, slightly micaceous.
- 1240-1310 Siltstone, reddish tan, slightly micaceous, calcareous.
- 1310-1380 Siltstone, pinkish tan, calcareous, micaceous.
- 1380-1370 Siltstone, buff to tan, micaceous, calcareous.
- 1370-1400 Siltstone, reddish tan, micaceous, calcareous.
- 1400-1420 Siltstone, pinkish tan, micaceous, calcareous.
- 1420-1430 No sample.
- 1430-1450 As above, becoming more red.
- 1450-1470 Sandstone, red-brown, very fine grain, very micaceous, slightly calcareous.

- 1470-1500 Siltstone, tan, very micaceous, calcareous.
- 1500-1520 Siltstone, red-brown, micaceous, calcareous.
- 1520-1540 Siltstone, red-brown, micaceous, calcareous, nearing very fine grain sand size.
- 1540-1580 Siltstone, pinkish tan, calcareous, micaceous.
- 1580-1630 No sample.
- 1630-1640 Sandstone, red-brown, very fine grain, calcareous, silty, micaceous; some shale, red brown, micaceous; little limestone, dark gray-gray, fine crystalline, dense.
- 1640-1650 As above; trace siltstone, dark green, sandy, very hard; trace feldspar, pink and white; trace sandstone, white, medium-coarse grain, angular, poorly cemented.
- 1650-1660 Sandstone, red-brown, fine grain, sub-angular, calcareous cement, micaceous; little sandstone, orange-brown, coarse grain, arkosic, angular to sub-angular, loose grains; some shale, red-brown, micaceous; trace siltstone, light green, very calcareous.
- 1660-1670 Sandstone, red-brown, fine grain, sub-angular, calcareous cement, micaceous.
- 1670-1680 Sandstone, red-brown, fine grain, sub-angular, calcareous cement, micaceous; little sandstone, light green gray, medium-fine grain, very micaceous, sub-angular, slightly calcareous; little sandstone, red-brown, coarse grain, sub-angular, loose grains, arkosic.
- 1680-1690 Sandstone, brown, medium grain, sub-angular, micaceous; little shale, brown, micaceous.
- 1690-1700 Becoming coarse grain.
- 1700-1720 Grading from fine to coarse grain.
- 1720-1740 Sandstone, red-brown, medium-fine grain, sub-angular, slightly calcareous, micaceous; little shale, brown, micaceous.
- 1740-1750 Shale increased to some.
- 1750-1760 Sandstone, red brown, fine-very fine grain, calcareous, sub-angular to sub-rounded, micaceous; little shale, brown, micaceous.
- 1760-1770 Shale, brown, silty, micaceous; some sandstone, red-brown, very coarse grain, arkosic (loose grains).
- 1770-1790 Sandstone, red-brown, fine grain, sub-angular, calcareous, micaceous; little shale, brown, micaceous; little sandstone, coarse grain, arkosic.
- 1790-1810 Coarse grain sandstone decreased to nil.

- 1810-1820 As above, shale increased to some.
- 1820-1830 Sandstone, red-brown, fine grain, sub-angular, calcareous, micaceous; some shale, brown, micaceous in part.
- 1830-1840 Sandstone, red-brown, medium-coarse grain, sub-angular to sub-rounded, very micaceous.
- 1840-1850 As above and shale, brown to red brown, micaceous.
- 1850-1860 Sandstone, red brown, coarse-very coarse grain, arkosic, micaceous, angular to sub-angular; little shale, brown, micaceous.
- 1860-1860 As above and shale, brown, micaceous.
- 1860-1860 Siltstone, red-brown, very shaly, micaceous, slightly calcareous; little sandstone, coarse grain, angular to sub-angular.
- 1860-1860 No sample.
- 1910-1920 Siltstone, red-brown, micaceous; some shale, red-brown, micaceous; trace sandstone, light green, very micaceous, very calcareous; trace sandstone, white, medium-coarse grain.
- 1920-1930 No sample.
- 1930-1970 Sandstone, red-brown, medium-fine grain, sub-angular, calcareous, micaceous; little shale, brown, micaceous.
- 1970-2000 Sandstone, light purple brown, medium-coarse grain, angular to sub-angular, arkosic, micaceous; little shale, brown; little sandstone, light brown, very fine grain, very calcareous.
- 2000-2010 As above; some sandstone, light green, fine grain, micaceous in part, very calcareous; trace limestone, red-brown, silty.
- 2010-2050 Sandstone, red-brown, fine grain, micaceous, calcareous; some shale, red-brown, micaceous in part; trace limestone, gray, fine crystalline, silty.
- 2050-2040 As above; some sandstone, light green to gray, medium grain, micaceous, very calcareous.
- 2040-2050 Siltstone, red-brown, calcareous, micaceous in part; little shale, red-brown, micaceous in part; little sandstone, light green, very fine grain, very calcareous.
- 2050-2060 Sandstone, red brown, very fine grain, micaceous, calcareous.
- 2060-2110 Sandstone, red-brown, medium grain, sub-angular to angular, micaceous, calcareous.
- 2110-2120 Siltstone, red-brown, micaceous, calcareous; some shale, brown, micaceous; trace limestone, red-brown, silty.

- 2120-2130 As above, some sandstone, red brown, medium grain, sub-angular.
- 2130-2140 Sandstone, light brown, very coarse grain, angular, arkosic; some shale, red-brown, micaceous in part; little sandstone, red-brown, fine grain, sub-angular; trace sandstone, light green, very fine grain, calcareous.
- 2140-2150 Sandstone, red-green, very fine grain, calcareous, micaceous; some shale, red brown, micaceous; trace sandstone, coarse grain.
- 2150-2190 As above, trace limestone, red-brown, silty.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>AIR PRESSURE</u>	<u>DEPTH</u>	<u>DEV.</u>
1145-1247	75	12,000	85 # w/air	1088	1-3/4°
1247-1395	75	12,000	90 # w/air	1089	1-3/4°
B 95-1570	75	15,000	80 # w/air	1191	2°
1570-1587	75	12/14,000	80 # w/air	1182	2°
1587-1589	75	10,000	90 # w/air	1166	1-3/4°
1589-1684	70	15,000	90 # w/air & water	1228	1-3/4°
1684-1790	70	10,000	120 # w/air, soap, & water	1291	1-3/4°
1790-1890	55/70	8/15,000	125	1354	1-3/4°
1890-2017	60	10,000	120	1417	1-3/4°
2017-2074	70	10/12,000	150	1584	1-3/4°
2074-2174	70	5/12,000	150	1692	2 1/2°
				1755	2 1/2°
				1828	2-3/4°
				1885	2°
				1948	2°
				2011	2 1/2°
				2074	2°
				2189	2°

- 2190-2200 As above, little sandstone, light green, very fine grain, very calcareous, very micaceous.
- 2200-2220 Sandstone, red-brown, very fine grain, micaceous, calcareous in part; some shale, brown, micaceous; little sandstone, light green-gray, fine grain, very calcareous, micaceous; trace limestone, grey, fine crystalline.
- 2220-2230 Sandstone, purple gray, fine grain, angular to sub-angular, very micaceous, arkosic; some shale, brown, micaceous, silty; little sandstone, red-brown, very fine grain, micaceous, calcareous; trace shale, green; trace sandstone, light green, fine grain, calcareous, micaceous.
- 2230-2240 Shale, gray-green, very micaceous; some shale, red, micaceous in part; little sandstone, red to gray, medium-fine grain.
- 2240-2250 Sandstone, light gray, medium grain, angular to sub-angular, very poorly cemented, micaceous, well sorted; some limestone, tan, fine crystalline; some shale and sandstone as above.
- 2250-2260 Limestone decreased to little, red shale and sandstone decreased to little.
- 2260-2270 Limestone, tan, fine crystalline, dense; some sandstone, dark gray, very fine grain, micaceous, slightly calcareous, silty; little shale, red, micaceous in part; little sandstone, light green, medium grain, angular, calcareous, micaceous.

- 2270-2280 Limestone, tan, fine crystalline, dense; some shale, dark gray to black, calcareous.
- 2280-2290 Shale, dark gray to black, calcareous, pyritic, micaceous in part; some limestone, tan to gray; some sandstone, white to light green, very fine grain, micaceous, slightly calcareous, hard.
- 2290-2300 Limestone, tan, fine crystalline, dense; some limestone, white-gray, sugrosic, silty; some shale, black-dark gray, calcareous; little sandstone, white, very fine grain, hard; trace shale, red.
- 2300-2310 As above; black shale increased to and.
- 2310-2320 No sample.
- 2320-2330 Shale, gray to dark gray, calcareous; some limestone, tan, fine crystalline, dense; some limestone, white, sugrosic; trace shale, red.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>PP</u>	
2174-2276	70	12/14,000	150 air	∅ w/air, soap, & water
2276-2302	70	14/16,000	150 air	
2302-2330	70	16,000		

- 2330-2350 Shale, dark gray to black, calcareous, blocky, micaceous in part; some sandstone, white to gray, fine grain, sugrosic, very calcareous; little limestone, tan, fine crystalline, dense.
- 2350-2370 Limestone, tan, fine crystalline, dense; some sandstone, white-gray, sugrosic, calcareous; some shale, black, calcareous, blocky.
- 2370-2390 Shale, gray-dark gray, very calcareous, blocky and limestone, tan to light brown, fine crystalline, dense.
- 2390-2400 Sandstone, white-gray, fine grain, sub-angular, well sorted, micaceous; little sandstone, gray-brown, very calcareous.
- 2400-2420 Shale, dark gray, micaceous in part, calcareous in part; little limestone, tan-gray, fine crystalline, dense.
- 2420-2440 Sandstone, white-gray, fine grain, sub-angular, well sorted, calcareous, micaceous; little shale, dark gray-black, calcareous in part.
- 2440-2450 Limestone, light tan-brown, fine crystalline, dense.
- 2450-2460 As above; little shale, black, calcareous, pyritic.
- 2460-2470 No sample.
- 2470-2480 Shale, black-dark gray, calcareous, micaceous, pyritic; little limestone, tan, fine crystalline, dense.

2480-2510 Shale, black, very calcareous, micaceous in part; little sandstone, light gray, fine grain, sub-angular, poorly sorted, calcareous, micaceous; little limestone, tan, fine crystalline.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>PP</u>
2380-2387	70	20,000	250
2387-2471	70	18,000	250
2471-2510	70	16,000	250

/ w/lime water and air

Sample Log Cutler 1480' (~~5159~~) Hermosa (?) 2265' (~~4324~~)

2510-2520 Siltstone, gray, micaceous, very slightly calcareous, argillaceous; some sandstone, white-gray, fine grain, sub-angular, micaceous, good porosity, no fluorescent; trace limestone, gray-brown, fine crystalline.

2520-2540 Siltstone, as above; some limestone as above.

2540-2550 Siltstone, light tan, very calcareous, micaceous; some limestone, tan, fine crystalline, dense, and sugrosic; little shale, black, calcareous; trace shale, red, micaceous.

2550-2560 Sandstone, light gray, fine-very fine grain, very micaceous (mainly biotite), slightly calcareous; some siltstone, light gray, micaceous, argillaceous.

2560-2570 As above; some limestone, light gray, very silty, sugrosic.

2570-2580 Shale, gray to black, calcareous, micaceous in part; little limestone, dark brown, fine crystalline, silty.

2580-2590 As above, limestone decreased to trace.

2590-2610 Shale, gray-black, calcareous, micaceous in part; and limestone, gray to tan, fine crystalline, silty.

2610-2620 Limestone, gray to tan, fine crystalline, silty in part, dense; some shale, gray-black, calcareous, micaceous in part.

2620-2630 No sample.

2630-2640 As above.

2640-2660 As above, some sandstone, gray, medium grain, sub-angular, loose grains.

2660-2680 Sandstone, cross-light gray, medium grain, sub-angular to sub-rounded, loose grains, mainly clear quartz, w/some orange grains and some light green grains, slightly calcareous, micaceous.

2680-2690 Shale, chocolate brown to brown, very micaceous, silty; little shale, red, silty in part.

2690-2700 As above; little shale, blue green.

- 2700-2710 Limestone, light tan, fine crystalline, dense; little shale, brown, silty; trace shale, red; trace chert, bright orange-red.
- 2710-2720 Limestone, as above; trace shale, black, calcareous.
- 2720-2730 No sample.
- 2730-2750 Shale, black, slightly micaceous to very micaceous; some limestone, tan, fine crystalline, silty in part; little sandstone, green, fine-medium grain, very micaceous, calcareous.
- 2750-2760 Siltstone, black to dark gray-brown, micaceous in part; some sandstone, light gray, fine-medium grain, calcareous, micaceous.
- 2760-2800 No sample.
- 2800-2810 Siltstone, dark brown, very micaceous, slightly calcareous; and sandstone, light gray, medium grain, sub-angular, calcareous, micaceous.
- 2810-2820 No sample.
- 2820-2850 Sandstone, light gray, medium grain, sub-angular to sub-rounded, loose grains, very slightly calcareous; little shale, dark gray-green, micaceous; trace shale, red.
- | <u>DEPTH</u> | <u>RPM</u> | <u>BIT WT</u> | <u>AIR PRESSURE</u> | |
|--------------|------------|---------------|---------------------|-------------------------|
| 2810-2807 | 70 | 18,000 | 350 | ∅ w/lime water and air. |
| 2807-2808 | 70 | 20,000 | | " |
| 2808-2805 | 70 | 20/50,000 | 350 | " |
- 2850-2840 Sandstone, light gray, medium grain, sub-angular, loose grain, slightly calcareous, micaceous; little siltstone, dark green-gray, argillaceous, micaceous; trace shale, red.
- 2840-2850 As above; some limestone, gray, fine crystalline, dense to white, chalky.
- 2850-2860 Limestone, tan to gray, fine crystalline; some sandstone, gray, medium grain, sub-angular, loose grain; trace shale, red.
- 2860-2880 As above, no sandstone.
- 2880-2890 Limestone, dark gray, fine crystalline, dense; little shale, red, micaceous, silty, dolomitic.
- 2890-2900 Shale, dark gray to black, calcareous, blocky, very slightly micaceous.
- 2900-2920 Limestone, tan to light gray, fine crystalline to chalky; little shale, black, calcareous; trace shale, red, dolomitic.
- 2920-2950 As above and sandstone, light gray to light gray green, medium grain, calcareous, micaceous, sub-angular; trace shale, brown, micaceous, silty.

- 2930-2940 Sandstone, light gray, medium grain, calcareous, micaceous, sub-angular; some shale, chocolate brown, micaceous, silty in part; trace limestone, white, chalky.
- 2940-2950 As above; some limestone, tan to gray, fine crystalline.
- 2950-2970 Shale, brown-dark gray, micaceous, calcareous, silty; some limestone, tan to gray, fine crystalline; trace shale, red, micaceous, dolomitic.
- 2970-2980 Limestone, light gray, fine crystalline, dense; some shale, chocolate brown, micaceous in part; trace shale, red, micaceous.
- 2980-2990 Limestone, light gray to tan, fine crystalline, dense; little shale, black, calcareous, micaceous.
- 2990-3000 Siltstone, dark gray, very calcareous, slightly micaceous; little limestone, light gray, coarse crystalline, dirty.
- 3000-3010 As above; little sandstone, gray, medium-fine grain, poorly sorted, micaceous, calcareous.
- 3010-3020 Siltstone, dark gray, very micaceous, slightly calcareous; little sandstone, cream, medium grain, sub-angular, calcareous; trace shale, red, dolomitic.
- 3020-3030 Limestone, light gray to tan, fine crystalline; some siltstone, gray, micaceous, slightly calcareous; little sandstone, cream, medium grain, micaceous, calcareous.
- 3030-3040 Shale, dark gray-black, slightly micaceous, calcareous in part; little limestone, dark gray, fine crystalline.
- 3040-3050 No sample.
- 3050-3070 As above.
- 3070-3080 As above; trace limestone, pinkish brown, fine crystalline.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>AIR PRESSURE</u>
2920-2955	70	25,000	350
2955-3005	70	14,000	350
3005-3061	70	10,000	350

g w/line water and air.

- 3080-3110 Shale, dark gray, slightly micaceous, silty, dolomitic; little dolomite, gray-tan, very fine crystalline, shaly; trace shale, red, dolomitic, micaceous in part.
- 3110-3120 Limestone, tan, medium crystalline; little shale, gray-green, micaceous, slightly calcareous; little shale, dark gray, calcareous; little sandstone, gray, medium grain, very micaceous (green), very calcareous; little chert, brownish tan; little limestone, white-gray, chalky.
- 3120-3130 As above, chert, tan to dark brown.
- 3130-3140 As above, chert decreased to trace.

- 3140-3150 Limestone, brownish tan, fine crystalline, crinoidal in part; some shale, black-dark gray, calcareous, micaceous in part; little limestone, white, chalky; trace chert, dark brown.
- 3150-3160 Shale, dark gray-black, very slightly micaceous, dolomitic; little limestone, tan, fine crystalline, crinoidal.
- 3160-3180 Shale as above.
- 3180-3190 Sandstone, white, medium grain, angular-sub-angular, micaceous, slightly calcareous; some shale, dark gray, calcareous; some limestone, brownish tan, fine crystalline; little limestone, white, chalky.
- 3190-3200 Shale, dark gray-black; calcareous, very silty, micaceous; some sandstone, gray, very fine grain, calcareous; little sandstone, white, medium grain, micaceous, slightly calcareous; little limestone, tan, fine crystalline.
- 3200-3210 Shale, dark brown, very micaceous, slightly dolomitic; some shale, gray-green, silty, slightly micaceous, slightly calcareous; trace limestone, tan, fine crystalline; trace sandstone, white, medium grain, angular to sub-angular.
- 3210-3220 No sample.
- 3220-3250 Shale, dark gray-black, dolomitic; trace limestone, grayish tan, fine crystalline; trace sandstone, pale green, medium grain, angular to sub-angular, poorly sorted, micaceous, calcareous, argillaceous.
- 3250-3240 Shale, dark gray, dolomitic, micaceous in part; some limestone, dark gray-tan, fine crystalline; some sandstone, pale green, medium grain, angular, very micaceous, calcareous.
- 3240-3250 As above, some siltstone, light gray, very calcareous.
- 3250-3260 Limestone, brownish gray, fine crystalline to finely spongy; some dolomite, light gray, fine crystalline; trace chert, light tan-brown.
- | <u>DEPTH</u> | <u>RPM</u> | <u>HIT WT</u> | <u>AIR PRESSURE</u> |
|--------------|------------|---------------|---------------------|
| 3077-3253 | 70 | 10/15,000 | 300 |
- 3260-3270 Limestone, tan to light brown, fine crystalline; little siltstone, dark gray, calcareous; little shale, dark gray to black, silty, dolomitic; trace chert, light brown.
- 3270-3280 Shale, dark gray-black, silty, dolomitic, hard; some limestone, tan, fine crystalline; little siltstone, white, very calcareous; trace chert, light brown and white.
- 3280-3300 Shale as above.
- 3300-3310 As above, little limestone, gray brown, silty.
- 3310-3330 Sandstone, gray-white, fine-very fine grain, micaceous, calcareous, poorly cemented, poorly sorted; some shale, light gray, very micaceous, calcareous.

- 3330-3340 As above; some shale, dark gray-black, dolomitic.
- 3340-3350 Limestone, tan, fine crystalline, dense; some sandstone, gray, fine grain, silty, micaceous; some shale, dark gray-black, micaceous in part.
- 3350-3360 Limestone, light gray-tan, fine crystalline, chalky in part; some shale, gray-black.
- 3360-3370 Limestone as above.
- 3370-3380 As above, some limestone, light gray, chalky, soft.
- 3380-3390 Limestone, light gray to light tan, fine crystalline, good oolastic porosity (fine grain sand size), good fluorescent on surface of few fragments, no cut, slightly fossiliferous.
- 3390-3400 Limestone, gray, fine crystalline, dense.
- 3400-3410 No sample.
- 3410-3420 Limestone, gray-dark gray, fine crystalline, dense; some limestone, white-gray, chalky, soft.
- 3420-3430 Limestone, light gray, fine crystalline, soft, some pin point porosity to oolastic porosity, no fluorescent.
- 3430-3450 Limestone as above, very ground up sample, therefore can't determine any porosity.
- 3450-3460 No sample.
- 3460-3480 Limestone, tan to light brown, fine crystalline, dense; little shale, chocolate brown, waxy.
- | <u>DEPTH</u> | <u>RPM</u> | <u>RET WT</u> | <u>PP</u> |
|--------------|------------|---------------|-----------|
| 3250-3315 | 80 | 13,000 | 400 |
| 3315-3385 | 80 | 13/25,000 | 400 |
| 3385-3480 | 80 | 20,000 | 400 |
- 3480-3490 Limestone, light gray, fine crystalline, dense, argillaceous; poor sample, much shale cavings.
- 3490-3500 Limestone, dark gray-brown, medium crystalline, silty; little shale, black-dark gray, blocky, calcareous; trace chert, dark gray (red shale cavings).
- 3500-3510 Shale, dark gray, very calcareous, blocky; little limestone, dark gray brown, medium crystalline, dolomitic; trace chert, white.
- 3510-3530 Shale as above; little limestone, light gray, silty, soft.
- 3530-3550 Limestone, light grayish-tan, fine crystalline, silty in part; little shale, dark gray, calcareous.

- 3550-3560 As above; some limestone, dark gray-black, medium crystalline, dense, hard.
- 3560-3570 Shale, dark gray to black, calcareous; little limestone, light gray to tan, fine crystalline; trace fossiliferous hash.
- 3570-3590 Shale as above.
- 3590-3600 Limestone, light gray-tan, fine crystalline, dense; little limestone, light gray, chalky, silty in part; little shale, black, calcareous; trace chert, dark brown.
- 3600-3610 Limestone, dark gray-brown, fine crystalline, dense, w/trace of crinoid stems; little limestone, light tan, fine crystalline to chalky.
- 3610-3620 Limestone, dark gray-brown, fine crystalline; some shale, black-dark gray, blocky, calcareous;
- 3620-3630 Limestone, light gray to tan, fine crystalline to chalky; some shale, dark gray, blocky, calcareous.
- | <u>DEPTH</u> | <u>RPM</u> | <u>BIT WT</u> | <u>PP</u> |
|--------------|------------|---------------|-----------|
| 3676-3682 | 7080 | 20,000 | 400 |
- 3680-3690 Dolomite, dark gray to dark tan, fine crystalline, dense, argillaceous, limy.
- 3690-3700 Shale, dark gray-black, calcareous, blocky; little dolomite, gray-tan, argillaceous, fine crystalline.
- 3700-3710 Shale, dark gray, calcareous and limestone, tan, fine crystalline, dense.
- 3710-3720 Sandstone, light gray, fine grain, sub-angular, slightly calcareous, very micaceous, poorly sorted.
- 3720-3730 Siltstone, light gray, slightly calcareous, micaceous; some shale, light gray, silty, micaceous; some sandstone, light gray, fine grain, micaceous.
- 3730-3740 Limestone, light gray to tan, fine crystalline, dense; some shale, dark gray, calcareous.
- 3740-3750 Limestone, light gray, very silty; some limestone, dark tan, fine crystalline; trace quartz (crystalline in part) white.
- 3750-3760 Limestone as above; trace chert, tan-light brown.
- 3760-3770 Limestone as above and shale, dark gray-black, calcareous to dolomitic.
- 3770-3780 Shale, dark gray-black, dolomitic, hard, blocky, slightly micaceous in part.
- 3780-3790 Shale, dark gray-black, dolomitic, slightly micaceous, hard, blocky.
- 3790-3800 As above; little limestone, light gray, silty, chalky.

- 3800-3810 Limestone, tan, fine crystalline, dense; some shale, dark gray-black, dolomitic.
- 3810-3820 Limestone as above; little limestone, light gray, silty, chalky, soft.
- 3820-3830 As above, trace chert, dark brown.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>PP</u>	<u>AIR</u>
3832-3830	75-80	20,000	400	500

- 3830-3840 Limestone, gray-dark gray, fine crystalline, very silty in part, very argillaceous, dolomitic; some shale, black, dark gray, calcareous, blocky; trace chert, black to dark brown.
- 3840-3850 As above, no chert.
- 3850-3860 Shale, black, calcareous, silty; some anhydrite, white to light gray, fine crystalline.
- 3860-3870 Dolomite, light gray to light grayish tan, silty; little shale, black, calcareous; trace anhydrite, white, fine crystalline.
- 3870-3880 No sample.
- 3880-3890 Shale, dark gray, very dolomitic, slightly micaceous; trace chert, dark brown.
- 3890-3900 Shale as above; little siltstone, light gray, sandy, very dolomitic.
- 3900-3910 Shale, black to dark gray, dolomitic, slightly micaceous, fissile to blocky; trace siltstone, light gray, dolomitic.
- 3910-3920 As above, no siltstone.
- 3920-3930 As above, becoming more calcareous.
- 3930-3940 Shale, black, calcareous, blocky to fissile, slightly micaceous; little limestone, dark brown, fine crystalline, dense; little anhydrite, white, fine crystalline to sucrosic w/dolomite.
- 3940-4010 Siltstone, gray to tan, very dolomitic; some shale, black, calcareous, micaceous in part; little anhydrite, white, fine crystalline.
- 4010-4020 Siltstone, light gray, very dolomitic, argillaceous in part, micaceous in part.

<u>DEPTH</u>	<u>RPM</u>	<u>BIT WT</u>	<u>PP</u>	
3925-3922	75	20,000	400	∅ w/line water and air
3922-4015	74	20,000	500	

- 4020-4030 Dolomite, light gray-gray, sucrosic, silty; some anhydrite, white, medium crystalline, soft; trace tan anhydrite, slightly dolomitic.
- 4030-4040 Anhydrite, white to light tan, medium crystalline; some dolomite, light gray-gray, silty, sucrosic.

- 4040-4050 Anhydrite as above, slightly dolomitized in part; no dolomite.
- 4050-4060 Dolomite, light gray to tan, fine crystalline to sugrosic, good fluorescent, good oil stain, no cut, fair inter-crystalline porosity, trace pin point porosity.
- 4060-4090 Dolomite, tan to light brown, fine-medium crystalline, sugrosic, good inter-crystalline porosity, good stain, slight odor, good fluorescent, slight pin point porosity.
- 4090-4100 As above and shale, black, carbonaceous, slightly calcareous, fissile.
- 4100-4110 Shale, black, carbonaceous, fissile, slightly calcareous.
- Sample Paradox Top 4048' (2546)
- 4110-4130 Shale, black, carbonaceous, fissile (abundant cavings).
- 4130-4140 Shale as above; little limestone, light gray, sugrosic, very dolomitic, trace faint fluorescent, silty argillaceous.
- 4140-4150 Limestone, light gray, sugrosic, dolomitized, very faint fluorescent, silty, argillaceous.
- 4150-4160 As above; some anhydrite, white, fine crystalline, inter-bedded w/limestone in part.
- 4160-4180 Anhydrite, white to light gray, fine crystalline, dense; trace dolomite, brown, fine crystalline to sugrosic, interbeds.
- 4180-4200 Limestone, light brown, dolomitic, fine crystalline to sugrosic; little dolomite, light brown, sugrosic, dull yellow tan fluorescent.
- 4200-4220 Dolomite, light gray to gray, fine crystalline, sugrosic; some dolomite, light brown, sugrosic, light brown yellow fluorescent; and dolomite, light gray to light brown, fine crystalline to sugrosic, little inter-crystalline and trace pin point porosity, faint fluorescent, dull tan, slight odor.
- 4220-4230 Shale, black, carbonaceous, slightly calcareous, fissile; some dolomite as above.
- 4230-4260 Shale as above.
- 4260-4290 Shale, black, carbonaceous, calcareous, fissile.
- 4290-4300 As above; trace limestone, gray-light gray, fine crystalline to sugrosic, silty.
- 4300-4310 Limestone as above and salt (no salt in sample).

<u>LOGS TOPS</u>	<u>DEPTH</u>	<u>DATUM</u>
Chiale	308	/5281
Shinarump	369	/5720
Moenkopi	387	/5582
Gutler	1455	/5158
Hermosa	2268	/4321
Paradox "A"	3975	/2618
Paradox "B"	4217	/2372
Paradox "C" (Salt)	4306	
4310-4340	Salt.	
4340-4360	Salt and shale, light gray, soft, anhydritic.	
4360-4370	Salt.	
4370-4380	Shale, light gray, anhydritic, soft.	
4380-4399	Shale, light gray, soft, anhydritic; chert, opal, white; salt.	
4390-4400	Shale, light gray, soft, anhydritic.	
4400-4420	Shale as above and salt. Trace limestone, lithographic, tan, w/fine black hairline laminations and dolomite, gray, fine crystalline, w/anhydrite inclusions and pin point to small vugular porosity, dull yellow fluorescent floats on acid.	
4420-4460	Shale, gray, soft, anhydritic; shale, dark gray, calcareous; shale, black, calcareous, hard; salt.	
	Mud check @ 4428. wt. 9.9, ph 12.0, ppm salt 235,000, wt. 8,000 @ 55 RPM's w/300 lbs. pump pres.	
4460-4470	Missing.	
4470-4490	Shale, light gray, soft, anhydritic, slightly calcareous; shale, dark gray, soft, anhydritic, calcareous; shale, black, no calcareous; salt, large grain, crystalline.	
4490-4500	As above w/anhydrite, white, sucrosia, soft.	
4500-4510	Shale, light gray w/black flecks, calcareous, soft; anhydrite, white, very fine, sucrosia; salt, white, crystalline and honeycomb.	
4510-4520	As above w/anhydrite decreased.	
4520-4530	Shale, gray, mottled w/white anhydrite blebs; salt, white, w/orange inclusions.	
4530-4550	As above w/shale decreased.	
4550-4590	Salt, white, crystalline w/orange inclusions.	

- 4590-4600 Shale, gray, gray-brown, w/black flecks, soft, calcareous.
- 4600-4610 Missing.
- 4610-4620 Salt, white, large grain, crystalline, w/orange inclusions; shale, dark gray to gray, carbonaceous flecks, dolomitic.
- 4620-4630 Shale, light gray, dark gray, fissile, soft, carbonaceous, dolomitic; shale, black, carbonaceous, fissile.
- 4630-4640 Shale as above; salt, white, crystalline, w/orange inclusions.
- 4640-4650 Salt as above. 55 RPM, 800 stand by pump pres.
65 str. per min., 8,000 wt.
- 4650-4660 Missing.
- 4660-4670 Shale, black, fissile, dolomitic; shale, light gray, brown, carbonaceous, dolomitic; anhydrite, white, fine crystalline, sucrosic.
- 4670-4680 Missing.
- 4680-4690 Salt, white, large grain crystalline w/ interbeds of anhydrite, white to dark gray, fine crystalline to sucrosic, mottled gray and white, slightly dolomitic
- 4690-4700 As above, anhydrite decreased. Drilling data.
wt. 6000, RPM's 72, Pump 800.
- 4700-4710 Salt, white-light buff, transparent, large crystalline; trace anhydrite.
- 4710-4720 As above w/some salt, becoming light gray, orange.
- 4720-4730 As above w/slight increase in trace of anhydrite.
- 4730-4740 Salt as above; shale, black, fissile, calcareous,; anhydrite, gray, mottled white, sucrosic, argillaceous.
- 4740-4750 Salt, white, translucent, large crystalline; trace black, brown shale and anhydrite.
- 4750-4800 Salt, white-buff, translucent, large crystalline.
- 4800-4810 Salt as above w/trace anhydrite, gray to white, sucrosic.
- 4810-4830 Salt, white, translucent, large crystalline, w/trace anhydrite, dark gray to white, sucrosic.
- 4830-4840 As above w/increase in anhydrite and scattered salt crystals w/light gray-orange cast.
- 4840-4850 As above, anhydrite decreased and orange decreased.
- 4850-4860 As above w/trace yellow paint!

- 4880-4950 As above, no paint, some scattered crystals w/light gray orange cast.
- 4950-4980 Salt, white, translucent, some orange; trace dark gray to white; anhydrite, sucrosic.
- 4980-4990 Salt, white, light gray orange, translucent, large crystalline w/trace anhydrite, gray to white, sucrosic to granular.
- 4990-5000 Salt as above, interbedded with shale, black to light gray, carbonaceous, soft, dolomitic to anhydritic, some silty.
- 5000-5010 Missing.
- 5010-5060 Salt, white, translucent, large crystalline w/trace gray anhydrite, fine crystalline to sucrosic.
- 5060-5080 As above w/trace shale, black, soft, very carbonaceous, very slightly dolomitic.
Drilling Data.
Wt. 10,000, RPM 80, Pump P. 800 psi.
- 5090-5110 Missing.
- 5110-5130 No Samples.
- 5130-5150 Salt, white, large crystalline.
- 5150-5210 Salt, white, large crystalline w/trace dark gray, mottled, white, sucrosic anhydrite.
- 5210-5230 Shale, black, fissile, calcareous; anhydrite, white, sucrosic, very soft and white, mottled gray to black, hard; dolomite, gray, brown, fine grain, arenaceous, argillaceous.
- 5230-5240 As above w/salt, white, translucent, large crystalline.
Drilling w/10,000 lbs to 5500.
- 5240-5250 Shale, black, very carbonaceous, soft, pasty, slightly dolomitic; salt as above.
- 5250-5260 Shale as above; salt as above; siltstone, gray-brown, dolomitic, carbonaceous.
- 5260-5280 Salt, white, translucent, large crystalline w/trace black shale and gray anhydrite.
- 5280-5300 As above, no shale or anhydrite.
- 5300-5350 Salt, white, translucent, large crystalline, w/trace gray anhydritic inclusions.
Drilling w/8,000.
- 5350-5390 Salt, white, translucent, large crystalline; trace shale, black, soft, carbonaceous and anhydrite, gray, sucrosic.
Mud Chk @ 5365. Drilling data.
wt. 10.1, ph 11.8, salt 350,000 wt. 8,000, RPM 80, Pump 800 psi.

- 5590-5600 Salt as above; siltstone, gray, anhydritic, slightly calcareous, flecked w/ carbon matter.
- 5600-5610 Shale, black, very carbonaceous, soft, slightly dolomitic; anhydrite, white, sucrosic, soft; siltstone, gray, brown, dolomitic.
Drilling data.
Wt. 19,000, RPM 80, psi 800.
- 5610-5620 Shale and anhydrite as above; limestone, light gray, soft, very argillaceous, slightly arenaceous, carbonaceous.
- 5620-5640 Shale, black, soft, very carbonaceous, dolomitic; anhydrite, gray, sucrosic to earthy, dolomitic; dolomite, gray, soft, carbonaceous, argillaceous,
- 5640-5660 Salt, white, translucent, large crystalline; trace anhydrite, gray, sucrosic and shale, black, very carbonaceous, soft.
- 5660-5670 As above w/trace siltstone, gray, tan, dolomitic.
- 5670-5680 Salt as above; shale, black as above; dolomite, gray, fine grain, sucrosic, argillaceous, a trace.
- 5680-5690 As above w/trace of anhydrite, gray, sucrosic, two chips in sample have bright fluorescent and stain, no cut fluorescent.
- 5690-5695 Salt, white, translucent, large crystalline.
- 5695-5698 As above w/trace gray-dark gray; sucrosic anhydrite. Drilling wt. 15,000.
- 5698-5699 As above w/anhydrite becoming mottled white and gray. Drilling wt. 10,000.
- 5699-5699 As above w/trace of shale, black, carbonaceous, hard, calcareous.
- 5699-5699 Anhydrite, tan, translucent, sucrosic; dolomite, gray, fine grain, earthy, soft, carbonaceous; shale, black, soft, slightly dolomitic. Dolomite and shale interbedded w/salt, white, large crystalline, spotty bright yellow fluorescent, no stain, cut, or visual evidence of oil or resid. (porosity).
Drilling wt. 9,000.
- 5699-5699 Shale, black, soft, dolomitic, very carbonaceous; dolomite, gray, sucrosic, w/carbonaceous flecks, arenaceous, argillaceous.
- 5699-5699 Anhydrite, white, very soft, pasty, some gray, sucrosic; shale as above and dolomite as above.
Drilling data
Wt. 12,000, RPM 80, Pump 800 psi.
- 5699-5699 Missing.
- 5699-5699 Salt, white, transparent, large crystalline, w/trace shale, black, soft, very carbonaceous, slightly dolomitic.
- 5699-5699 As above w/trace of white sucrosic anhydrite.
- 5699-5699 As above w/one chip of salt, tan to light brown, translucent w/thin black inclusions, excellent bright fluorescent, no cut or visible porosity.

- 5690-5700 As above to 95.5385 to 5700. Shale, black, very carbonaceous, soft, dolomitic; anhydrite, white to gray, soft, chalky to sugrosic; siltstone, tan, gray, slightly dolomitic, carbonaceous.
- 5700-5710 Anhydrite, white, cream, sugrosic, soft; shale, black, soft, carbonaceous, slightly dolomitic; salt, white, light gray, orange, large crystalline.
Drilling Data
Wt. 10,000, RPM 90, Pump 800 psi.
- 5710-5720 Shale, black, carbonaceous, blacky, soft, slightly dolomitic; anhydrite, white, green, gray, sugrosic to soft, earthy; dolomite, light gray, w/ carbonaceous flecks, earthy to sugrosic, argillaceous and arenaceous.
- 5720-5730 As above w/salt, white, translucent, large crystalline.
- 5730-5740 Shale, black as above; anhydrite, white, gray, slightly dolomitic, sugrosic to earthy.
- 5740-5750 As above w/dolomite, light gray, brown, mottled white, sugrosic, carbonaceous, argillaceous and arenaceous.
- 5750-5760 As above w/white, soft anhydrite.
- 5760-5770 Missing.
- 5770-5780 Salt, white, translucent, large crystalline w/trace of shale, black, carbonaceous and anhydrite, tan, buff, sugrosic.
- 5780-5810 As above w/salt, becoming in part light gray, orange, and trace of white, very fine grain, soft anhydrite.
- 5810-5820 Salt as above w/increase in shale, black, carbonaceous.
Drilling wt. 6,000.
- 5820-5830 Salt, white, translucent, large crystalline, w/anhydrite, sugrosic, white, w/ bright to dull yellow fluorescent, open vugular porosity, no cut fluorescent, stain or odor.
- 5830-5850 Salt as above; dolomite, gray-tan, very argillaceous, slightly arenaceous; shale, black, carbonaceous; anhydrite as above.
- 5850-5880 Salt, white, translucent, large crystalline; trace anhydrite, gray, white, earthy and shale, black.
- 5880-5890 Anhydrite, white-gray, mottled, fine sugrosic to earthy; dolomite, tan, fine grain, very argillaceous, slightly arenaceous; shale, black, dark brown, hard, fissile, dolomitic.
- 5890-5900 Sample is composed mostly of salt scale from pipe w/excellent fluorescent due to abundant pipe dope. Very very poor sample.
- 5900-5920 Shale, black, blacky, very carbonaceous, very slightly dolomitic.
- 5920-5930 Shale, black, blacky, very carbonaceous, slightly dolomitic; shale, light gray, tan, dark gray, w/black, carbonaceous flecks, very slightly dolomitic.

- 5930-5940 Anhydrite, white, soft, earthy, trace gray, sucrosic; salt, white, transparent, large crystalline.
- 5940-5950 Salt as above.
- 5950-5960 Salt, white, transparent, large crystalline.
- 5960-5970 Salt as above; shale, black, soft, very carbonaceous, pyritic, very slightly dolomitic.
Drilling data
Wt. 5,000, RPM 80, Pump 800 psi.
- 5970-5980 Shale as above.
- 5980-5990 Shale, black, soft, very carbonaceous, pyritic, very slightly dolomitic; anhydrite, tan, cream, coarse, sucrose, w/inter-crystalline and vugular porosity, no stain, odor, bright orange fluorescent; dolomite, gray, fine grain, very argillaceous, slightly arenaceous.
- 5990-6000 Salt, white, transparent, large crystalline; trace shale, black.
Mud chk @ 6000
Wt. 10.1, Ph 10.4, Salt 330,000.
- 6000-6010 Salt, recrystallized, pit seam, pipe case., small perfect cubic crystals.
- 6010-6020 Shale, black, blocky, very carbonaceous, pyritic, slightly dolomitic; anhydrite, white, gray, sucrose.
- 6020-6030 Salt, white, transparent, large crystalline; shale, black as above; anhydrite, white, very fine sucrose.
- 6030-6070 Salt, w/trace anhydrite and shale as above.
- 6070-6080 Shale, black, soft, blocky, very carbonaceous. Drilling data: 5,000 lbs.
- 6080-6100 Salt, white, large crystalline w/irregular orange inclusions and trace shale as above.
- 6100-6110 Salt, white, large crystalline; trace shale, black. Drilling wt. 5,000.
- 6110-6120 Shale, black, blocky, very carbonaceous.
- 6120-6150 Shale, black, very carbonaceous. (Samples are very badly contaminated with salt crust being knocked off the pipe while drilling.) Drilling wt. 5,000.
- 6150-6150 Missing.
- 6150-6170 Salt, white, clear, large crystalline w/trace shale, black and anhydrite, white, earthy, soft.
Lost 75 bbls. drilling fluid while drilling at 6155, 11:50 A.M., 10/10/59.
- 6170-6180 Salt as above; shale, black, very carbonaceous; anhydrite, white, soft and gray, crystalline, sucrose.

- 6180-6190 Anhydrite and salt as above; dolomite, gray, very argillaceous, very fine grain, carbonaceous.
- 6190-6200 Salt, white, transparent, large crystalline; anhydrite, white-gray, earthy, soft to medium crystalline, sucrose. Drilling wt. 8,000.
- 6200-6210 Salt as above; shale, black, very carbonaceous; dolomite, gray, fine sucrose, soft, carbonaceous.
- 6210-6220 Salt, white, large crystalline w/trace shale, black; anhydrite, white-gray.
- 6220-6230 Shale, black, very carbonaceous, soft, very slightly dolomitic; anhydrite, white-gray; dolomite, gray, very argillaceous, soft, carbonaceous.
- 6230-6240 Anhydrite, brown, gray, large crystalline, sucrose, soft, crumbly, w/vugular and inter-crystalline porosity, no show; salt, white, large crystalline; trace black shale.
- 6240-6270 Salt as above w/trace anhydrite and black shale.
- 6270-6290 Salt, white, large crystalline, w/trace black shale.
- 6290-6300 As above w/trace fine crystalline, soft, earthy, anhydritic.
- 6300-6310 Missing.
- 6310-6320 Salt, white, transparent, large crystalline w/trace black shale, white anhydrite, and gray, carbonaceous dolomite.
- 6320-6400 Salt, white, clear, large crystalline, w/trace anhydrite, gray, medium crystalline to fine sucrose and dolomite, light gray, very argillaceous, soft, carbonaceous.
- 6400-6410 Salt, white, clear, large crystalline w/trace shale, black, soft, carbonaceous.
- 6410-6430 Missing.
- 6430-6450 Salt, white, clear, large crystalline w/trace shale, black.
- 6450-6460 As above w/trace white, sucrose anhydrite.
- 6460-6470 As above, anhydrite decreased.
- 6470-6490 Salt, white, clear, large crystalline; trace shale, black and anhydrite, white, sucrose.
- 6490-6560 As above w/trace anhydrite, gray, medium crystalline as inclusions in salt.
- 6560-6570 Salt as above; shale, black, very carbonaceous; anhydrite, gray, soft, sucrose, fine medium crystalline w/inter-crystalline and small vugular porosity, probably due to dissolving out salt. Some porosity is cubic casts.
- 6570-6580 As above w/dolomite, gray, very fine crystalline, sucrose, soft, w/pin point porosity and small vugular porosity, no show, very argillaceous, some porosity is cubic casts.
- 6580-6590 Missing.

- 6590-6620 Salt, white, large crystalline w/trace anhydrite, gray, soft, crumbly (like gran crackers) shale, black, soft, very carbonaceous.
- 6620-6670 Salt, white, clear, large crystalline.
- 6670-6680 Salt, white, clear, large crystalline; trace anhydrite, soft, white and gray, medium crystalline, sucrose.
- 6680-6710 As above w/anhydrite decreased.
- 6710-6720 Salt, white, clear, large crystalline w/trace anhydrite, gray, medium crystalline w/solution porosity.
- 6720-6740 Salt, white, clear, large crystalline w/trace shale, black, soft and anhydrite, gray, crumbly, soft and white, chalky.
- 6740-6750 As above w/trace dolomite, gray, fine grain, very argillaceous, soft, w/carbonaceous flecks.
- 6750-6760 As above w/trace brown dolomite, very fine grain, soft.
- 6760-6850 Salt, white, clear, large crystalline w/trace anhydrite, white, very fine sucrose, soft and shale, black, very carbonaceous.
 Mud chk. 8819.
 wt. 10.25, ph 8.1 salt 328,000,
 Mud carrying high solids content from black shale.
- 6850-6850 As above, shale interbedded w/anhydrite, becoming pyritic, hairline laminations.
- 6850-6870 First sample after trip. Abundant pipe dope and recrystallized salt.
- 6870-6900 Abundant cavings and recrystallized salt.
- 6900-6930 Salt, white, clear, large crystalline w/abundant cavings.
- 6930-6930 Salt as above w/trace shale, black, soft and anhydrite, white, soft, sucrose and gray, earthy, carbonaceous.
- 6930-6940 As above w/increase in black shale.
- 6940-7010 Salt, white, clear, large grain, crystalline w/trace shale, black and anhydrite, white and gray.
- 7010-7020 Salt, white, clear, large crystalline w/shale, black, soft, carbonaceous.
- 7020-7030 Shale, black, very carbonaceous, soft.
- 7030-7040 Salt, white, clear, large crystalline; anhydrite, gray, soft, carbonaceous flecks, clay; trace shale, black as above.
- 7040-7100 Salt, white, clear, large crystalline; trace anhydrite and black shale.
- 7100-7110 Salt, white, clear, large crystalline w/trace shale, black.

- 7110-7140 As above w/trace shale, black, pyritic and anhydrite, gray, sucrose inclusions in salt. Scattered chips of salt in sample have streaks of minute bubbles inside crystalline, these streaks have bright blue fluorescent, no cut, fluorescent, no stain.
- 7140-7150 Salt as above; shale, black, anhydrite, white, soft and gray, medium sucrose as inclusions.
- 7150-7170 As above, anhydrite increased.
- 7170-7200 Salt, white, large crystalline; trace shale, black; anhydrite, gray, sucrose and white, crumbly, soft, inclusions in salt have good bright fluorescent, no cut odor or stain. Drilling wt. 16,000.
- 7200-7210 As above, increase in anhydrite, white, chalky.
- 7210-7220 As above w/increase anhydrite; dolomite, gray-brown, fine grain, soft, very argillaceous; slight increase in shale, black, very carbonaceous.
- 7220-7260 Salt, white, clear, large crystalline w/bright fluorescent from inclusions of oil; trace pyrite, anhydrite, white, sucrose, and shale, black, soft, very carbonaceous.
- 7260-7270 As above w/trace of dark brown dolomite, fine grain, argillaceous.
- 7270-7280 Shale, black to dark brown, very carbonaceous, dolomitic; trace interbedded salt with iron stain and black shale salt has bright blue fluorescent; dolomite, tan, dark brown, fine grain, crumbly, slightly micaceous, very slightly silty.
- 7290-7290 Shale, brown, soft, slightly micaceous, very dolomitic; shale, black, soft, very carbonaceous; shale, white, clay, w/carbonaceous flecks, very silty, slightly dolomitic; anhydrite, white, soft, very fine sucrose interbedded w/salt; anhydrite, very light gray, crumbly, as inclusions in salt.
- 7290-7300 As above; indication of fracturing or floage, angular black shale inclusions in white, clay shale. Trace very scattered pin point holes in white, clay shale as above w/bright blue fluorescent around holes.
- 7300-7310 Shale, black, very pyritic, slightly dolomitic; anhydrite as above.
- 7310-7320 Shale, anhydrite and salt as above; salt w/scattered bright fluorescent, some iron stained salt, gray, orange.
- 7320-7330 Shale, black, soft, pyritic, carbonaceous; shale, white, clay, w/carbonaceous flecks and very silty; salt, white, clear, large crystalline and light gray orange w/black shale inclusions and oil inclusions, earthy, fracture filling in shale or distorted by flow has bright blue fluorescent (very very poor sample after trip).
- 7330-7340 As above, abundant pipe dips.
- 7340-7350 Shale, black, soft; salt, white, gray, orange, w/flow structure and as crack filling bright fluorescent; dolomite, brown, dark brown, soft, fine grain, argillaceous; shale, white, clay, w/carbonaceous flecks, slightly silty.

- 7350-7360 Dolomite, light-dark brown, medium grain, very arenaceous and argillaceous, slightly micaceous (might be called brown siltstone) 90% of sample is pipe cake salt, recrystallized from mud and shale, black, soft, very slightly dolomitie. Very poor sample.
- 7360-7370 Trace dolomite and shale as above; 95% wall cake salt from pipe.
- 7370-7390 Shale, white, clay, carbonaceous flecks; shale, black, soft, brown; dolomite, brown, fine grain, argillaceous, arenaceous, micaceous; anhydrite, white, soft, chalky to very fine sucrose.
- 7390-7400 Salt, white, clear, large crystalline w/very scattered cuttings having bright blue fluorescent from inclusions; shale, black, soft, blocky, very carbonaceous; trace limestone, tan brown, very fine crystalline, very slightly argillaceous.
- 7400-7410 Salt savings; shale, black, soft, very carbonaceous; siltstone, buff brown, dolomitie.
- 7410-7420 Salt and shale as above; trace siltstone as above.
- 7420-7430 Sample at 30 after trip is 90% salt, 8% black shale, 2% anhydrite and shale. Sample caught at 7428 before the trip consisting of 4 qts. of material coming over shaker was washed w/fresh water to remove all salt. When all the salt was dissolved 1/4" of cuttings remained on bottom of pan, consisting of: Shale, black, soft, very carbonaceous; dolomite, brown, sub-lithographic, hard, dense; dolomite, gray-brown, fine grain, hard, dense, very silty, slightly argillaceous; limestone, brown-gray, argillaceous; dolomite, gray, mottled tan, fine grain, slightly sucrose; anhydrite, white, fine crystalline, sucrose; siltstone, tan-brown, slightly micaceous.
- 7430-7440 Salt washed out of sample. Limestone, gray, white, fine crystalline to chalky, fossiliferous; siltstone, tan, brown, slightly dolomitie; shale, black, soft, pyritic; shale, white, clay, w/carbonaceous flecks and sand grains.
- 7440-7450 Limestone, gray-soft, fine grain; dolomite, tan brown, fine grain, slightly argillaceous; siltstone, brown, micaceous, soft, trace cream, fracture filled, calcareous, very fine grain; shale, black, soft, blocky; trace fracture filled dolomite w/bright blue fluorescent and cut; anhydrite, white, soft, very fine sucrose.
- 7450-7460 Shale, black, soft, very carbonaceous; limestone and dolomite as above; anhydrite decreased; trace dolomite, tan, brown, sucrose, soft, very slightly argillaceous w/excellent fluorescent and cut fluorescent; siltstone as above.
- 7460-7470 As above w/excellent fluorescent and cut on large crystalline fracture filling of dolomite.
- 7470-7480 Siltstone, brown, micaceous, dolomitie; dolomite, tan brown, very fine crystalline to sub-lithographic, hard, dense; shale, black, soft, very carbonaceous.
- 7480-7490 Siltstone, brown, micaceous; dolomite, tan, brown, fine crystalline to sub-lithographic, hard, dense; shale, black, soft, very carbonaceous.
- 7490-7500 Shale, black, soft; siltstone, brown, micaceous; dolomite, brown, very crystalline.

- 7500-7510 Limestone, white, gray, fine crystalline; shale, siltstone, dolomite as above.
- 7510-7520 Shale, light gray, green; limestone, buff, cream, very fine crystalline; chert, tan, buff.
- MOLAS 7515'
- 7520-7530 Limestone, white, cream, gray, fine crystalline, fossil fusulinid; shale, light green, light gray green, slightly calcareous;
- 7530-7540 Shale, light green, blue green, mottled red; shale, red, mottled cream; trace limestone as above.
- 7540-7560 Limestone, white, tan, sub-lithographic; shale as above w/trace becoming bright red.
- MISSISSIPPIAN 7544 by drilling time, 7560 in samples.
- 7560-7570 Limestone, tan, cream, light gray, very fine crystalline, calcarenite, w/oolite shadows; shale, red and light green, waxy; sand, red, w/apparent lamination.
- 7570-7580 As above w/trace tan, transparent chert; trace large crystalline dolomite as fracture filling? w/very dull blue fluorescent, very very slightly cut.
- 7580-7590 Limestone, white, cream, fine crystalline, calcarenite; limestone, cream, tan, sub-lithographic; dolomite, tan brown, medium crystalline w/inter-crystalline porosity and small vugular porosity from 85 to 90.
- 7590-7595 Dolomite, tan-brown, medium to large crystalline, no fluorescent. Sample has excellent odor, good porosity.
- Circ. 15". Dolomite, tan-brown, large to medium crystalline w/good inter-crystalline porosity; limestone, white, cream, fine crystalline, calcarenite.
- Circ. 30". As above w/dolomite, gray, medium crystalline w/porosity. Dolomite porosity is along fronds exactly like Toaton well porosity.
- Circ. 45". As above w/trace slickensides on sluffing Molas shale.
- Circ. 60". Becoming almost completely Lower Harness brown siltstone sluff; trace of dolomite as above.
- Cora #1, 7590-7648', (SW. 7595 = 7590) Cut and recovered 55'.
- 7590-7591 Dolomite, brown, very fine grain, earthy, w/disseminated fossil trash, calcareous, slight pin point porosity; limestone, gray, medium crystalline as streaks; chert, gray, w/dolomitic chert contact filled w/thin partings of shale, black.
- 7591-7592 Dolomite, brown, very fine grain, earthy, w/streaks of fair pin point porosity, disseminated calcareous fossil trash.

- 7592-7593 Limestone, brown, fine crystalline w/ slight gray mottling, fair fossil solution porosity, streaks of limestone, brown, medium crystalline, sucrose w/ good pin point porosity.
- 7593-7594 Limestone, brown, dolomitic, fine crystalline to sucrose, good pin point porosity, abundant random fractures w/ calcareous filling, rock has crushed appearance.
- 7594-7595 Dolomite, gray, brown, fine crystalline, good fossil solution pin point porosity w/ calcareous filled cracks and disseminated calcareous clear crystalline in some fossil solution holes.
- 7595-7596 Brecciated dolomite w/ pieces gray, fine crystalline dolomite in matrix of calcite, clear and limestone, brown, fine crystalline, sucrose.
- 7596-7597 Dolomite, gray, fine crystalline, earthy, extremely fractured w/ fractures filled w/ calcite.
- 7597-7600 Dolomite, brown, very fine crystalline, hard, dense, fractured and filled as above.
- 7600-7601 Limestone, breccia angular pieces, light gray, fine crystalline, limestone in matrix of clear calcite, scattered fossil solution porosity.
- 7601-7605 Dolomite, gray, fine crystalline, hard, dense, w/ excellent fossil solution porosity partially filled w/ anhydrite, medium crystalline, brown, excellent fluorescent in porosity, bright blue-green.
- 7605-7604 As above w/ excellent open fossil solution porosity lined w/ anhydrite crystals, brown.
- 7604-7605 Dolomite, light gray, very fine grain, calcarenite w/ good open fossil solution porosity, abundant random fractures.
- 7605-7606 Dolomite, gray, fine grain, scattered calcareous fossil (crinoidal stems) which etch out w/ acid; trace small vugular porosity.
- 7606-7607 Dolomite, very fine crystalline, mottled brown and light gray, brown dolomite is sucrose, pyritic.
- 7607-7608 Limestone, brown, fine grain, earthy, white, calcite, crinoidal stems, random fractures.
- 7609-7609 Limestone, brown, fine grain, earthy, w/ abundant calcite crinoidal stems, mud invasion into small vugs; dolomite, gray, banded w/ brown, fine to medium crystalline crinoidal.
- 7609-7610 Limestone and dolomite as above, w/ pyrite on fractures and stylitic black shale partings, very scattered pin point porosity in brown limestone.
- 7610-7611 Dolomite, gray, fine crystalline, very crinoidal, hard, dense.
- 7611-7612 Dolomite, gray, fine grain, w/ streaks of dolomite, brown, fine grain, sucrose, abundant random fractures filled w/ calcite.

- 7612-7613 Dolomite, gray, fine grain, fine crystalline w/clear anhydrite crystals filling fossil solution porosity, hard, dense, brittle.
- 7615-7614 Dolomite, gray, fine crystalline, scattered vugs filled w/black residue.
- 7614-7615 Dolomite, gray, very fine crystalline, sucrose w/vugs lined w/black residue and inclusions of pyrite, large crystalline, calcite in fractures and some vugs.
- 7615-7616 Dolomite, gray, very fine crystalline, hard, dense, fractures filled w/calcareous and very fine granules of dolomite.
- 7616-7617 Dolomite, gray as above and dolomite, gray, medium crystalline, w/large crystalline, cream dolomite in glubs.
- 7617-7618 Limestone, gray, medium crystalline, abundant calcareous fossil trash brachiopods and crinoid (calcarenite).
- 7618-7619 Limestone, gray, medium crystalline (calcarenite).
- 7619-7620 As above, becoming stylitic w/black shale on stylites.
- 7620-7622 As above, no stylites.
- 7622-7624 Limestone, brown, medium crystalline (calcarenite).
- 7624-7625 Breccia dolomite, gray, fine crystalline in matrix of dolomite, brown, fine-medium crystalline w/pin point porosity, abundant random fractures filled w/calcite.
- 7625-7626 Limestone, brown, fine grain, earthy, soft, random blebs of calcite, large crystalline.
- 7626-7627 Dolomite, brown to dark brown, medium crystalline, sucrose, crumbly, excellent inter-crystalline porosity, scattered blebs, calcareous, excellent fossil removal porosity.
- 7627-7628 Dolomite, gray, very fine grain, very scattered small vugs lined w/dolomite as above.
- 7628-7635 Dolomite, brown, as above.
- 7635-7636 As above and limestone, gray, medium crystalline, blebs of calcite in soft, white to gray, matrix fossil fault gouge.
- 7636-7638 Limestone, brown, gray, earthy, w/blebs crystalline, calcareous, slight pin point porosity.
- 7638-7639 Limestone, gray, very fine crystalline, pyritic, hard, dense.
- 7639-7640 Limestone, gray-brown, medium crystalline w/blebs large crystalline calcite.
- 7640-7642 Limestone, gray, fine crystalline, hard, dense, pyritic.
- 7642-7643 Shale, gray blue, pyritic, interbedded w/shale, black, pyritic and dolomite, gray, medium crystalline, hard, dense, crinoidal.

Core #1, 7645-7645', Open before ISIP 6" for IFF-FFP, Open 30", closed 1' 12", Gas to surface 2", increased to good blow, bled off during ISIP. Burned 10-15' yellow and blue flame. Put out flame to install 2" orifice. Gas to surface 1" during open period for IFF and FFP. Steady increase in blow of gas with spray of distillate and mud in 5", gaged 3500 MCF after 5" and increased to too strong to measure during remainder of flow. Reversed out black sulfide out mud and distillate out mud for 5". No measure of fluid recovered. Recovered 120' distillate above tool and below circulating sub. ISIP 2710; IFF 1360; FFP 1473, PSIP 2680, IHH 4200, FHH 4080, BHT 170°f.

Core #2, 7645-7701', Out and recovered 58'.

- 7645-7644 Dolomite, brown, soft, earthy, w/trace black shale streaks and limestone, grey, fine crystalline, fossil w/gradation to dolomite, brown w/calcareous fossil trash.
- 7644-7645 Dolomite, gray, fine crystalline w/scattered fossil solution, vugs lined w/brown crystals (anhydrite?).
- 7645-7646 Dolomite, gray and brown, mottled, very fine crystalline w/fossil solution vugs and disseminated calcareous fossil, excellent brown stain in vugs, very scattered fluorescent, bright blue.
- 7646-7647 Limestone, brown, fine crystalline w/disseminated calcareous crystals in fossil solution vugs and as fossil replacement, crinoidal buttons, brachs casts (calcarenite).
- 7647-7648 As above, slight dolomite, w/fossil solution vugs.
- 7648-7650 As above, no visible porosity.
- 7650-7652 As above w/streaks of dolomite, gray, fine crystalline.
- 7652-7653 Dolomite, very fine grain to fine crystalline, light gray, w/crinoidal buttons, large crystalline dolomite?
- 7653-7654 Chert, tan, w/fossil inclusions, crinoidal calcite.
- 7654-7655 Chert, tan-cream, w/fossil inclusions, calcareous, inter-bedded w/brown calcarenite.
- 7655-7656 Limestone, brown, fine grain, earthy, abundant large crystalline, calcareous crinoidal stems, leaves oily scum when dissolved in acid.
- 7656-7657 Dolomite, light gray, fine crystalline, streaked w/dolomite, brown, fine sucrose, scattered fossils.
- 7657-7659 Limestone, brown, fine grain w/abundant calcareous fossil crinoidal (calcarenite).
- 7659-7660 Limestone as above w/streaks of brown sucrose dolomite w/slight pin point porosity in dolomite.
- 7660-7661 Limestone as above without dolomite streaks.
- 7661-7662 Dolomite, gray, medium-fine crystalline w/excellent fossil solution porosity with good bright fluorescent and brown stain on vugs.

- 7662-7665 Limestone, gray brown, medium crystalline (calcareous).
- 7666-7669 Limestone, brown, dolomitic, fine crystalline, sucrose w/dolomite, gray, very fine grain, inter-crystalline porosity w/brown stain and fluorescent, abundant fractures w/brown stain.
- 7669-7670 Limestone, brown, medium crystalline, abundant calcareous fossil (calcareous).
- 7670-7671 Dolomite, brown, fine crystalline w/excellent fossil solution vug porosity w/bright fluorescent.
- 7671-7675 Limestone, gray, brown, fine crystalline, abundant crinoidal stems, calcareous.
- 7675-7676 Dolomite, dark brown black, fine crystalline w/excellent fossil solution porosity w/black residue in vugs, excellent bright fluorescent in porosity; abundant random fractures.
- 7675-7677 Dolomite as above, porosity decreased to fair.
- 7677-7678 Limestone, brown, fine crystalline w/abundant crinoidal large crystalline, calcareous (calcareous).
- 7678-7679 As above w/scattered fossil replaced by brown sucrose dolomite.
- 7679-7684 As above, no dolomite.
- 7684-7688 Dolomite, dark brown black, medium to fine crystalline, excellent fossil solution, small vugular porosity, bright blue fluorescent, scattered around vugs; looks like coke!!
- 7688-7690 As above, porosity decreased.
- 7690-7694 As above, porosity increased to excellent.
- 7694-7695 Dolomite, brown, black, fine crystalline to dense, very fine grain, scattered vugular porosity.
- 7695-7696 Dolomite as above, 7694-95.
- 7696-7697 As above w/porosity decreased to good, scattered random fractures.
- 7697-7699 As above w/porosity decreased to fair.
- 7699-7700 As above (core badly broken).
- 7700-7701 Dolomite, brown-black, very fine crystalline, dense, w/dolomite, white, filled small vugular porosity and some scattered open vugs.

DSI #2, 7645-7701, Open 45", closed 1", gas to surface 1". Gas measured by press and pitot tube 62' behind end of flow line, gas measures 7 million in 5 minutes, gas leveled off at 59,511 MCF. Press reading on gage behind 1" choke 450 lbs. IFP 1885; FFP 2040; ISIP 2790/30"; PSIP 2770.

Core #5, 7701-7748', Cut 45', recovered 41'.

- 7701-7702 Dolomite, grey-black, very fine crystalline, hard, w/excellent small fossil solution vugular porosity, dark brown, medium crystalline, vugular lining anhydrite?
- 7702-7703 As above, porosity filled w/mud.
- 7703-7704 As above, becoming stylonitic w/large crystalline anhydrite, partially filled vugs.
- 7704-7705 Limestone, dolomitic, fine-medium crystalline, earthy w/large crystalline calcareous inclusions and scattered small vugular porosity.
- 7705-7707 Limestone, dark brown, fine-medium crystalline, sugrose w/appearance of coke, excellent pin point porosity.
- 7707-7709 Dolomite, dark brown gray, fine crystalline, sugrose, w/excellent fossil solution porosity as pin points and small vugs.
- 7709-7710 As above w/scattered inclusions of anhydrite, clear, large crystalline.
- 7710-7711 As above, slight decrease in porosity.
- 7711-7712 As above w/excellent porosity, becoming slightly calcareous.
- 7712-7713 Dolomite, gray, medium-large crystalline, dolomitic (calcareous) some streaks of limestone, hard, dense, medium crystalline w/good fossil solution porosity, some porosity filled w/anhydrite.
- 7713-7714 As above, porosity 90% filled w/white dolomite, very fine crystalline.
- 7714-7715 As above, porosity increased to good.
- 7715-7716 As above, good porosity.
- 7716-7717 As above, vugs filled w/black residue.
- 7717-7718 Dolomite, gray, medium crystalline w/white dolomite or anhydrite in vugs, open vugs have black residue, good small vugular porosity.
- 7718-7719 As above w/good porosity.
- 7719-7720 As above, good to excellent small vugular porosity.
- 7720-7721 Dolomite, gray, medium crystalline, mottled w/white, very fine crystalline anhydrite or earthy dolomite, no porosity, stylonitic, w/light gray green shale partings.
- 7721-7723 Dolomite, light gray, very fine crystalline, mottled and streaked w/dolomite, tan, medium crystalline, excellent small vugular pin point porosity.
- 7723-7724 Dolomite, brown, fine-medium crystalline, sugrose w/fair pin point porosity.

- 7724-7725 Dolomite, gray, fine crystalline, streaks of dolomite, brown, medium crystalline, w/good pin point porosity.
- 7725-7726 Dolomite, gray brown, sucrose, medium crystalline w/excellent pin point porosity.
- 7726-7727 Dolomite, gray, white, fine crystalline w/streaks of dolomite, brown, medium crystalline, fair pin point porosity.
- 7727-7728 Dolomite, brown-black, fine crystalline w/dolomite, brown, medium crystalline vugs, fair to good porosity.
- 7728-7729 As above w/anhydrite filled vugs.
- 7729-7730 As above, porosity fair.
- 7730-7731 Dolomite, brown-gray, fine crystalline, hard, dense, no visible porosity.
- 7731-7732 Dolomite, brown, medium crystalline, brittle w/good fossil solution porosity, partially filled w/anhydrite, large crystalline.
- 7732-7733 As above w/fair porosity.
- 7733-7734 Dolomite, brown-black, very fine crystalline, earthy w/streaks of dolomite, brown, medium crystalline in fossil solution vugs. Some large crystalline anhydrite in vugs and replaced crinoidal stems.
- 7734-7735 As above w/porosity increased.
- 7735-7740 Dolomite, medium crystalline, brown-black, soft, crumbly, sponge like, large crystalline anhydrite and dolomite crystals may be gouge some on small fault, some lamination?
- 7740-7741 Dolomite, gray, medium crystalline w/white anhydrite inclusions and dolomite (calcarenite).
- 7741-7742 Dolomite, brown, black, fine crystalline, matrix w/streaks of large crystalline dolomite and anhydrite, good pin point porosity-small vugular porosity.
- 7742-7744 Missing.
- 7744-7745 Missing to 44.5. 44.5 to 46 recovered from top of Core #4. Limestone, white gray, coarse grain, calcarenite.
- 7745-7746 As above, grading to dolomite, brown, fine crystalline, earthy.
- Core #4, 7746-7774', Out and recovered 28' plus 1 1/2' of Core #3.
- 7746-7747 Dolomite, gray-brown, medium crystalline, hard, dense.
- 7747-7748 Dolomite, gray, medium crystalline w/dolomite, brown, fine crystalline, earthy.
- 7748-7749 Dolomite, brown black (dolomite calcarenite) w/excellent to good fossil solution porosity as small vugs.
- 7749-7750 Dolomite, dark brown black, very fine crystalline, sucrose, hard, dense, no porosity.

Core #5, 7774-7829', Out and recovered 55'.

- 7774-7777 Dolomite, dark gray, fine crystalline, sacrose, w/scattered fossil solution porosity, some small vugs lined w/large crystalline dolomite, some w/black residue, abundant fenestrellina casts.
- 7777-7778 Dolomite, gray-tan, very fine crystalline, hard, dense w/porosity as above.
- 7778-7779 Dolomite, dark gray, very fine crystalline, mottled w/dolomite, brown, fine crystalline in streaks; very hard, dense, w/very scattered porosity as above, black residue on fractures.
- 7779-7780 Dolomite, gray, very fine crystalline, hard, dense, fenestrellina cast porosity, very scattered.
- 7780-7781 Dolomite, gray, very fine crystalline mottled w/streaks of dolomite, brown, medium crystalline, fossil solution porosity as above, increased to fair.
- 7781-7782 Dolomite, light gray, very fine crystalline, hard, dense, very scattered porosity as above, black residue on fractures.
- 7782-7785 Dolomite, medium-fine crystalline, slight sacrose w/fair fossil solution small vugular porosity, nodules of chert, tan, very fine grain, large crystalline, calcareous, associated w/chert nodules, black residue on fractures, black residue in porosity.
- 7785-7786 Dolomite as above, no chert.
- 7786-7788 Dolomite, dark brown-black, very fine grain, earthy, mottled and streaked w/dolomite, brown, medium crystalline, fair porosity, scattered calcite crystals in porosity, black residue on fractures.
- 7788-7789 Dolomite, gray, very fine crystalline, slight sacrose, hard, dense, very scattered fenestrellina cast porosity.
- 7789-7791 Dolomite as above; chert, cream-tan-gray, w/fossil solution porosity and fossil inclusions, black residue and filled in fractures.
- 7791-7793 Dolomite, gray-tan, fine crystalline w/fair fossil solution small vugular porosity lined w/medium crystalline dolomite, some black residue.
- 7793-7795 Dolomite as above, porosity decreased; chert, gray, beds w/dolomite.
- 7795-7796 Dolomite as above, no chert.
- 7796-7798 Dolomite, brown-black, fine-medium crystalline, fair fossil solution small vugular porosity, very hard, dense, siliceous streaks, large crystalline, calcareous on fractures.
- 7798-7799 Dolomite as above, no visible calcareous.
- 7799-7800 Dolomite, dark gray-black, very fine crystalline, slight sacrose, very hard and dense, very scattered fossil solution small vugs.

- 7793-7714 Dolomite as above, streaks w/brown, fine crystalline dolomite, black residue in vugs and on fractures.
- 7794-7715 Dolomite, light gray-green, fine crystalline, hard, w/good open fossil solution vugs, streaked w/dolomite, brown, fine crystalline, sucrose, some vugs filled w/large crystalline calcite, reaction w/HCL gives off strong H₂S odor.
- 7795-7716 Dolomite, gray-brown, fine crystalline, hard, siliceous w/fossil solution small vugs lined and filled w/brown residue; chert, white, very fine grain w/porosity filled w/brown residue and calcite crystals.
- 7796-7717 Dolomite, gray-dark brown, very fine crystalline calcite on fractures margins filled w/large crystalline, clear calcite, siliceous in part, very hard and dense.
- 7797-7718 Dolomite, gray, very fine crystalline, hard, dense, trace pin point porosity and black hairline inclusions.
- 7798-7719 Dolomite, gray-tan, fine crystalline, hard, brittle w/poor fenestralline cast porosity lined w/medium crystalline dolomite w/large crystalline calcite on fractures.
- 7799-7800 Dolomite as above w/chert, tan-brown-green, calcite on fractures.
- 7800-7801 Dolomite, light gray, very fine crystalline, hard, dense, and brittle w/good fossil solution porosity (crinoid) in streaks of medium crystalline, tan dolomite, scattered calcite in porosity and on fractures.
- 7801-7802 As above, porosity fair.
- 7802-7803 Dolomite, light gray, very fine crystalline to medium crystalline, fair fossil solution small vug porosity (crinoid), porosity lined w/brown, medium crystalline dolomite, or black residue calcite on fractures w/bright fluorescent, fractures filled w/black residue and calcite.
- 7803-7804 As above w/some large crystalline calcite in porosity.
- 7804-7805 Dolomite, dark brown-black, medium grain to medium crystalline, some earthy, fossil casts filled w/large, clear crystalline anhydrite w/yellow inclusions (realgar and orr) and large crystalline calcite; earthy dolomite shows lincation, may be dolomitic black shale? ; fracture filled calcite and fossil filled crystals show lincation.
- 7805-7806 As above w/good porosity and permeability.
- 7806-7808 Dolomite, gray-light gray, very fine crystalline, hard, dense, brittle in matrix of dolomite, gray, medium crystalline w/good fossil solution porosity, stylitic.
- 7806-7811 Dolomite, white-light gray, very fine crystalline w/good small vugular fossil solution porosity, hard, brittle, fractures coated w/black residue and calcite crystals and large crystalline anhydrite.

- 7750-7751 Dolomite, gray brown, medium crystalline (dolomite calcarenite) w/good small vugular porosity.
- 7751-7752 As above, fair porosity.
- 7752-7753 Limestone, gray, brown, fine-medium crystalline, calcarenite.
- 7753-7754 Limestone, gray, light gray, very fine crystalline to very fine grain, hard, dense.
- 7754-7755 Dolomite, light gray, very fine grain, very hard, dense and brittle, very scattered fossil solution vugs.
- 7755-7756 Dolomite, brown (dolomite calcarenite) w/fossil solution porosity and scattered large crystalline calcite.
- 7756-7758 Dolomite, gray, very fine crystalline to very fine grain, very hard, dense, w/scattered small vugular porosity lined w/black residue.
- 7758-7760 Dolomite, light gray, very fine crystalline, hard, dense, w/calcite in veins and fractures.
- 7760-7764 Dolomite, gray-brown, medium crystalline (dolomite calcarenite) calcareous fossil and vein filled.
- 7764-7765 Limestone, gray-tan, medium-fine crystalline, very hard, dense, vein filled calcareous.
- 7765-7767 Dolomite, gray-tan, fine crystalline, sucrose, hard, w/very scattered pin point porosity and fractures filled w/brown dolomite, sucrose.
- 7767-7768 As above w/calcite filled fractures.
- 7768-7769 Limestone, tan-brown, fine crystalline, sucrose, very scattered pin point porosity lined w/dolomite crystals.
- 7769-7770 Dolomite, tan, very fine crystalline, very hard, dense w/scattered fossil solution porosity and calcareous fracture filled.
- 7770-7771 Dolomite as above w/fair to good small vugular porosity, trace bright fluorescent in fossil solution porosity.
- 7771-7772 Dolomite as above, porosity decreased.
- 7772-7774 As above, porosity increased.

BHT #5, 7701-7774, Open 5" before ISIP. Open 30" for IFP and FFP, shut-in 30" for ISIP, 1'5" for FSIP. Gas to surface in 2" before initial shut-in. Gas to surface 2", good blow estimated at 14,000 MCF at end of test. Gaged 7,000 MCF in 5". Gas burned with bright yellow orange flame. Recovered 60' very highly distillate and gas out mud between reversed circulating sub and tool. No water. IFP 2180; FFP 2505; ISIP 2750; FSIP 2770; IHH 4180; PHH 4140; BHT 165°.

- 7750-7751 Dolomite, gray brown, medium crystalline (dolomite calcarenite) w/good small vugular porosity.
- 7751-7752 As above, fair porosity.
- 7752-7753 Limestone, gray, brown, fine-medium crystalline, calcarenite.
- 7753-7754 Limestone, gray, light gray, very fine crystalline to very fine grain, hard, dense.
- 7754-7755 Dolomite, light gray, very fine grain, very hard, dense and brittle, very scattered fossil solution vugs.
- 7755-7756 Dolomite, brown (dolomite calcarenite) w/fossil solution porosity and scattered large crystalline calcite.
- 7756-7758 Dolomite, gray, very fine crystalline to very fine grain, very hard, dense, w/scattered small vugular porosity lined w/black residue.
- 7758-7760 Dolomite, light gray, very fine crystalline, hard, dense, w/calcite in veins and fractures.
- 7760-7764 Dolomite, gray-brown, medium crystalline (dolomite calcarenite) calcareous fossil and vein filled.
- 7764-7765 Limestone, gray-tan, medium-fine crystalline, very hard, dense, vein filled calcareous.
- 7765-7767 Dolomite, gray-tan, fine crystalline, sucrose, hard, w/very scattered pin point porosity and fractures filled w/brown dolomite, sucrose.
- 7767-7768 As above w/calcite filled fractures.
- 7769-7769 Limestone, tan-brown, fine crystalline, sucrose, very scattered pin point porosity lined w/dolomite crystals.
- 7769-7770 Dolomite, tan, very fine crystalline, very hard, dense w/scattered fossil solution porosity and calcareous fracture filled.
- 7770-7771 Dolomite as above w/fair to good small vugular porosity, trace bright fluorescent in fossil solution porosity.
- 7771-7772 Dolomite as above, porosity decreased.
- 7772-7774 As above, porosity increased.

BHT #5, 7769-7774, Open 5" before ISIP. Open 30" for IFF and FFF, shut-in 30" for ISIP, 1'5" for FSIP. Gas to surface in 2" before initial shut-in. Gas to surface 2", good blow estimated at 14,000 MCF at end of test. Gaged 7,000 MCF in 5". Gas burned with bright yellow orange flame. Recovered 60' very highly distillate and gas out and between reversed circulating sub and tool. No water. IFF 2180; FFF 2305; ISIP 2750; FSIP 2770; IHH 4180; EHH 4140; BHT 165°.

- 7811-7812 As above w/excellent porosity and permeability.
- 7812-7814 Dolomite, light gray, fine crystalline, sucrose w/slight fenestrellina porosity, calcite filled veins and fractures.
- 7814-7815 As above w/black residue on fractures and coating of medium crystalline dolomite and calcite.
- 7815-7816 Dolomite, gray-tan, medium-fine crystalline, hard, brittle, scattered fenestrellina porosity, black residue on fractures; chert, tan, in nodules coated w/black dolomitic shale.
- 7816-7817 Dolomite as above, porosity increased to good.
- 7817-7818 Dolomite, very fine crystalline, gray black, scattered fossil solution porosity, hard, dense, and brittle.
- 7818-7819 Dolomite, tan-gray, medium crystalline, slight sucrose w/fair fossil solution porosity, black residue and calcite on fractures; hard, dense, brittle.
- 7819-7820 As above, porosity increased to good.
- 7820-7821 As above, porosity decreased to poor.
- 7821-7822 Dolomite as above and fossiliferous chert, tan.
- 7822-7825 Dolomite, gray brown, fine crystalline, sucrose, good fossil solution porosity (crinoid).
- 7825-7827 Dolomite, tan-gray, fine crystalline, very hard, dense, scattered fossil solution porosity fractures w/coating of black residue and calcite and anhydrite crystals, very fine crystalline.
- 7827-7828 Dolomite, gray, fine crystalline, hard, dense, brittle, scattered small vugular porosity, calcite filled fractures and veins, some bright blue fluorescent in porosity.
- 7828-7829 As above, no porosity.
- BMT #4, 7774-7829', Open 5" before ISIP, 1' before FSIP, shut-in for FSIP 1', for ISIP 30". Gas to surface 2" before ISIP. Gas to surface 2" during 1' open period flowing at the rate of 1,600 MCF per day. As calculated by D. J. Haines from a differential on mercury "U" tube of 4" and a 2 1/2" flow line gage pressure of 14 p.s.i. FFP 300; FFP 345; ISIP 2750; FSIP 2750; IHH 4200; FHH 4180; BMT 185°F.
- Core #8, 7829-7835', Cut and recovered 56'.
- 7829-7830 Dolomite, light gray, fine crystalline, sucrose, hard, dense, w/medium vugular porosity filled w/dolomite and calcite crystals.
- 7830-7832 Dolomite as above w/good small vugular porosity and dolomite, brown, fine crystalline on fractures and as vugular lining.

- 7832-7835 Dolomite, dark brown, fine crystalline w/inclusions of porosity fill of dolomite, fine crystalline, white, scattered streaks of good small vugular porosity, black residue, dolomite and calcite crystals on fractures.
- 7833-7834 Dolomite, dark gray, dark brown, fine crystalline, sucrose, w/excellent fossil solution porosity, appearance of gray coke.
- 7834-7835 Dolomite, white cream, fine crystalline, dense, w/fair fossil solution porosity lined w/dolomite, brown, medium crystalline and black residue; chert, tan, brown, gray.
- 7835-7836 Dolomite as above in matrix of dolomite, brown-black, fine crystalline, sucrose, black residue on fractures, scattered fossil solution porosity and inter-crystalline porosity in brown dolomite.
- 7836-7837 As above w/large crystalline anhydrite in vugs.
- 7837-7840 As above w/streaks and vug fill of large crystalline calcite, excellent fossil solution small vugular porosity in streaks.
- 7840-7841 Dolomite, gray-brown, medium crystalline w/inclusions of dolomite, white, fine-medium crystalline, good fossil solution porosity full of anhydrite crystals and calcite crystals; chert, tan, fossiliferous.
- 7841-7843 Dolomite, white-cream, fine-medium crystalline mottled w/brown dolomite w/good fossil solution porosity lined w/black residue, fractures lined w/brown-black, fine crystalline dolomite and calcite.
- 7843-7844 As above 7840-41, no chert.
- 7844-7845 Dolomite, gray-brown, medium crystalline, hard, dense, mottled w/dolomite, white-cream, medium crystalline, streaks of dolomite, brown, fine crystalline, earthy w/excellent porosity, appearance of coke.
- 7845-7846 Dolomite, dark brown, fine crystalline, hard, dense, black shale on fracs.
- 7846-7847 Dolomite as above mottled w/dolomite, white-cream, medium crystalline, good fossil solution porosity partially filled w/large crystalline calcite and anhydrite.
- 7847-7848 As above, no visible porosity, fractures coated w/fine crystalline dolomite and brown black on fractures.
- 7848-7849 As above w/good fossil solution porosity.
- 7849-7850 Dolomite, light gray, fine crystalline, hard, dense, w/streaks of dolomite, brown, medium crystalline w/good fossil solution porosity.
- 7850-7851 As above, porosity increased to good.
- 7851-7852 Dolomite, light gray, very fine crystalline, hard, dense, very scattered fossil solution porosity lined w/dolomite, brown, fine crystalline, fractures coated w/black shale.
- 7852-7853 As above, no visible porosity.
- 7853-7854 Dolomite, gray-brown, medium crystalline, hard, dense, no visible porosity.

- 7854-7855 Dolomite as above w/good fossil solution porosity lined w/fine crystalline dolomite, brown.
- 7856-7858 Dolomite, gray, medium crystalline, good fossil solution small vugular porosity, scattered calcareous crystals in vugs.
- 7858-7857 Dolomite, gray, tan, medium crystalline, porosity as above w/black residue in vugs and black shale on fractures.
- 7857-7859 Dolomite, gray-brown, fine-medium crystalline, hard, dense, abundant brachiopod casts, very scattered fossil solution porosity.
- 7859-7860 As above, scattered large crystalline, clear calcite.
- 7860-7862 Dolomite, tan-gray, medium crystalline w/excellent fossil solution porosity partially filled w/dolomite, soft, brown, medium crystalline, appearance of coke.
- 7862-7863 As above, porosity decreased to good.
- 7863-7864 As above, porosity decreased to fair, fractures lined w/black shale and scattered large anhydrite crystals.
- 7864-7866 As above, porosity increased to good.
- 7866-7868 Dolomite, gray-dark gray, fine crystalline, hard, brittle w/excellent fossil solution porosity, appearance of coke, large crystalline, white calcite on fractures and in some porosity.
- 7868-7870 As above, porosity decreased to good.
- 7870-7871 As above, porosity decreased to fair w/large crystalline calcite in porosity.
- 7871-7873 Dolomite, tan-gray, medium crystalline w/good fossil solution porosity, black shale coating on fractures.
- Mud Check @ 7871
wt. 10.25, vis. 70, wl 9.1,
salt 330,000, oil 11%
- 7873-7875 Dolomite, tan-light gray, very fine crystalline, good fossil solution porosity and lined w/brown, medium crystalline dolomite, black shale and brown dolomite on fractures.
- 7875-7877 Dolomite, gray-tan, medium crystalline, hard, brittle w/excellent fossil solution porosity, appearance of gray coke, black shale and medium crystalline dolomite on fractures.
- 7877-7879 Dolomite, tan-green, medium crystalline w/lobes of disseminated dolomite, white-gray, medium crystalline, good fossil solution porosity in brown dolomite; dolomite, dark brown, medium crystalline, soft, in porosity.
- 7879-7881 Dolomite as above and dolomite, white-green, medium crystalline w/scattered clean fossil solution porosity.

- 7881-7885 Dolomite, white-cream, medium crystalline, w/good fossil solution porosity lined and surrounded w/dolomite, brown, medium crystalline.
- Core #7, 7885-7925', Cut and recovered 40'.
- 7885-7886 Dolomite, cream-tan, medium crystalline, hard, dense in matrix of dolomite, brown, large crystalline w/excellent small vugular porosity, black residue on fractures.
- 7886-7887 Dolomite, gray-brown w/streaks of cream dolomite, fine crystalline; large crystalline calcite in fractures and some porosity; black residue and fine crystalline dolomite on fractures.
- 7887-7889 Dolomite, gray-tan, fine crystalline, hard, dense, fractures filled w/dolomite, brown, medium crystalline, earthy, soft.
- 7889-7890 Dolomite, light gray-tan, medium-fine crystalline, hard, dense, w/very scattered small vugular porosity, fractures filled as above.
- 7890-7891 Dolomite as above w/dolomite, brown, medium-large crystalline, soft, earthy, crumbly.
- 7891-7892 Dolomite, brown-tan, medium crystalline, very hard, dense, scattered small vugular porosity.
- 7892-7894 Limestone, brown-black, fine crystalline and dolomite, brown, fine-medium crystalline, soft, crumbly.
- 7894-7895 Dolomite, gray, very fine crystalline, dense, highly fractured; dolomite, brown, medium-large crystalline, crumbly; black shale on fractures and stylolite surface.
- 7895-7897 Dolomite, dark brown-black, fine-medium crystalline, soft, earthy, appearance of loose sandstone, fine crystals of dolomite w/earthy, dolomitic cement.
- 7897-7899 As above, becoming slightly more consolidated.
- 7899-7900 Dolomite as above and as matrix w/dolomite, tan, medium crystalline, hard, dense as streaks, good small vugular porosity.
- 7900-7901 Dolomite, tan-brown, medium crystalline, soft, w/streaks of dolomite, cream-gray, fine crystalline, hard, dense, fair small vugular porosity.
- 7900-7901 Dolomite, gray, fine crystalline, hard, dense, w/fractures filled of dolomite, brown, medium crystalline w/excellent small vugular porosity.
- 7901-7902 Dolomite, gray-brown, very fine crystalline, hard, dense.
- 7902-7904 As above w/black residue on fractures.
- 7904-7905 As above, becoming slightly tan.
- 7905-7906 Dolomite, gray-tan, medium crystalline w/slight pin point porosity.
- 7906-7907 As above, very fractured.

- 7907-7908 As above w/black residus on fractures.
- 7908-7909 As above w/slight pin point porosity.
- 7909-7910 Dolomite, gray, fine crystalline w/inclusions of dolomite, white-tan, very fine crystalline; black shale on fractures.
- 7910-7915 Dolomite, tan, very fine crystalline, hard, dense.
- 7913-7914 Dolomite, tan-gray, fine crystalline, very hard and dense.
- 7914-7915 Dolomite, light gray, tan, very fine crystalline, very hard, dense, many fractures filled w/calcite and smeared w/black residus.
- 7915-7918 Dolomite, gray-tan, very fine crystalline, hard, dense, many fractures.

Mud check @ 7915'
 wt. 10.5, vis. 59, wl 4.9
 salt 330,000, oil 12%.

- 7918-7919 Dolomite, gray, very fine crystalline, hard, dense in matrix of dolomite, brown, medium crystalline, mottled gray and brown appearance.
- 7919-7920 Dolomite, brown, very fine crystalline, hard, dense, fractured.
- 7920-7921 As above, becoming slightly earthy w/black shale on fractures.
- 7921-7925 As above w/very slight pin point porosity.
- 7925-7924 Dolomite, light gray, very fine crystalline, hard, dense; black shale and trace of calcite on fractures.
- 7924-7925 Dolomite, tan, medium crystalline, interbedded w/dolomite, gray, very fine crystalline, hard, dense.

DST #5, 7922-7925', Mississippian. Open 5" before ISIP, gas to surface in 1", burned w/orange flame. Dried slowly during ISIP time. Open tool for 45" open time. Gas to surface immediately, burned w/bright red orange flame, mud to surface in 4". Flow of gas estimated at 10,000,000 cu. ft. per day. Pressure behind 1" choke 535 lbs./sq. in. Flow line pressure measured 62' behind end of flow line, minimum 180# - maximum 260#. Turned 50 lb. pressure through separator and recovered light greenish brown distillate. Recovered 120' of distillate as above from above DST tool. ISIP 2740/40"; IVP 2500, INH 4200; FFP 2500/45"; PSIP 2800/60"; FWH 4200; BHT 174°F.

Core #8, 7925-7925', Cut and recovered 53'.

- 7925-7926 Dolomite, gray, fine crystalline, streaks of dolomite, brown, medium crystalline, sacrosis, soft in vugs and on fractures, some large crystalline, clear calcite on fractures and as porosity fill, scattered pyrite crystals, scattered open pin point porosity, slight fossil.
- 7926-7929 As above w/black shale on fractures.

Mud check @ 7927
 wt. 10.1, visc. 51, wl 8
 salt 350,000, oil 11%

- 7929-7930 Dolomite, gray, medium crystalline w/slight pin point porosity.

- 7980-7983 As above w/brown, medium crystalline dolomite on fractures.
- 7985-7984 As above w/black residus filled fractures.
- 7984-7983 Dolomite, light gray, very fine crystalline, hard, dense; black shale on fractures.
- 7985-7986 Dolomite, tan-gray, medium-coarse crystalline, hard, dense, w/slight pin point porosity.
- 7986-7987 Dolomite, gray, very fine crystalline, hard, dense w/very scattered calcite crystals and brown, medium crystalline dolomite filling vugs.
- 7987-7988 As above, no vugs.
- 7988-7989 Shale, light gray, hard, arenaceous, dolomitic, pyritic.
- 7989-7941 Dolomite, very light gray, very fine grain, slightly earthy, arenaceous, pyritic, very hard and dense w/very thin laminations of blue gray shale.
- 7941-7942 Dolomite, gray, fine crystalline, very hard and dense, black shale on fractures, large crystalline, clear to light yellow calcite in some fractures.
- 7942-7944 As above, becoming argillaceous and slightly arenaceous.
- 7944-7945 Dolomite, light gray, fine-medium crystalline w/small vugular porosity filled w/brown-black residus.
- 7945-7946 As above, fair pin point porosity.
- 7946-7947 As above, fair porosity, pin point to small vugular.
- 7947-7948 As above, poor pin point porosity.
- 7948-7949 Dolomite, gray, very fine crystalline, hard, dense; shale, black and medium crystalline dolomite on fractures.
- 7949-7950 Dolomite, gray, medium crystalline, hard, dense, w/pin point porosity, bands of dolomite, fine crystalline, dark gray, and dolomite, very fine crystalline, gray, and dolomite, medium crystalline, brown/black residus on fractures and in porosity.
- 7950-7952 Dolomite, gray, fine-medium crystalline, hard, w/slight pin point porosity, casts of large brachiopods.
- 7952-7953 Dolomite, gray, fine crystalline, hard, dense w/calcite filled veins.
- 7953-7955 Dolomite, gray, fine crystalline, hard, dense, oolitic shadows, w/small vugular porosity filled w/black residus, calcite on fractures and brown, granular dolomite in fractures.
- 7955-7956 As above; shale, black and dolomite, brown, on fractures.

- 7955-7957 As above w/good small vugular porosity open, lined w/dolomite, brown, medium crystalline; shale, black and dolomite, brown-earthy on fractures, becoming very slightly arenaceous.
- 7957-7961 As above w/porosity decreased to slightly
Mud check @ 7957
wt. 10.25, visc. 55, wl 6.9
salt 330,000, oil 15%
- 7961-7962 Dolomite, gray, fine-medium crystalline, oolitic w/excellent small vugular porosity, fractures and porosity lined w/dolomite, medium-large crystalline and partially filled w/shale, brown, dolomitic w/excellent bright blue and white fluorescent.
- 7962-7966 Dolomite as above w/fair small vugular and pin point porosity.
- 7966-7968 As above, becoming more dense and porosity decreased.
- 7968-7969 Breccia of dolomite, cream, very fine crystalline as angular pieces in matrix of dolomite, tan-gray, medium crystalline, black residue or shale on fractures, scattered veins of large crystalline, clear calcite.
- 7969-7970 Dolomite, gray-brown, medium to fine crystalline w/abundant inclusions of large crystalline calcite and black shale, disseminated and on fractures.
- 7970-7971 Dolomite, tan-gray, fine crystalline, hard, dense, slightly arenaceous.
- 7971-7972 As above w/very slight pin point porosity filled w/medium crystalline dolomite and black residue.
- 7972-7975 As above w/very scattered, disseminated, large crystalline calcite.
- 7975-7975 Dolomite, gray-tan, very fine crystalline, hard, dense, slightly arenaceous.
- 7975-7978 Dolomite, gray, very fine crystalline, hard, dense w/black residue on fractures.
- 7978-7979 As above w/very slight small vugular porosity filled w/black residue and on fractures.
- 7979-7982 Dolomite, gray-tan, very fine crystalline, hard, dense, w/black shale partings w/slickensided appearance, very slightly arenaceous.
- 7982-7985 Dolomite, light gray, fine-medium crystalline, pseudo oolitic w/good pin point porosity, very slightly arenaceous.
Mud check @ 7985
wt. 10.2, visc. 59, wl 5.9
salt 330,000, oil 15%
- Sere #9, 7985-3027', Out and rec. 44'.
- 7985-7984 Dolomite, light gray, medium-fine crystalline, small vugular porosity filled w/black residue, fractures coated w/black shale, thin laminations of shale, black.
- 7984-7988 Dolomite, gray, fine crystalline, hard, dense; thin laminations of black shale, slight calcite on fractures mottled w/interbeds of dolomite, sub-lithographic, very hard, dense, slightly argillaceous.

- 7988-7989 Dolomite as above; shale, blue-green, very fissile, waxy, w/inclusions of angular chips of dolomite as above.
- 7989-7990 As above w/very thin laminations of shale as above.
- 7990-7991 Dolomite, gray-tan, sub-lithographic, slightly argillaceous; shale, dark gray, hard, fissile, slightly waxy on bed planes w/inclusions of fine crystalline, gray dolomite and pyrite; pyrite on very scattered fractures.
- 7991-7992 As above w/shale decreased.
- 7992-7993 Dolomite, gray, sub-lithographic, very hard, dense, slightly arenaceous.
- 7993-7994 Dolomite, gray, medium crystalline, hard, dense, w/slight black residue on fractures.
- 7994-7995 Dolomite as above; shale, blue-green to blue-gray, slightly arenaceous.
- 7995-7997 Dolomite as above, becoming slightly arenaceous.
- 7997-7998 Dolomite, gray-black, very fine crystalline to sub-lithographic, interbedded w/shale, black to gray-green.
- 7998-7999 Shale, blue-green, very hard and dense, pyritic w/inclusions of fine, calcareous sand.
- 7999-8000 Limestone, gray, mottled w/green shale as above, argillaceous, pyritic, w/medium grain, rounded quartz grains floating in limestone.
- 8000-8001 Dolomite, gray-tan, fine crystalline to sub-lithographic, many hairline fractures filled w/calcite.
- 8001-8002 Shale, green, waxy, w/fine to large grain, well rounded quartz grains, floating in shale mottled w/brown, medium crystalline dolomite, pyritic.
- 8002-8004 Shale as above w/angular, sub-lithographic limestone inclusions and many floating quartz grains, becoming calcareous.
- 8004-8005 Shale, green, fissile, waxy, interbedded w/limestone, gray-tan, fine crystalline, pyritic.
- 8005-8006 Limestone, tan, medium to fine crystalline w/abundant clear, well rounded, medium to large grain quartzite sand grains, slightly pyritic.
- 8006-8007 Limestone, tan, lithographic w/abundant calcite filled fractures, pyritic, appearance of calcite filled porosity.
- 8007-8008 Limestone as above w/partings of green shale, waxy, pyritic, slickensided.
- 8008-8009 As above, no shale partings.
- 8009-8010 Limestone as above w/partings of light green, waxy shale.
- 8010-8011 As above, filled vugs and some fractures lined w/brown stain.

- 8011-8012 Limestone, tan, lithographic w/fractures and very scattered small vugular porosity filled w/large crystalline, clear calcite.
- 8012-8013 As above w/partings of gray, calcareous, arenaceous shale.
- 8013-8017 Limestone, tan, lithographic w/fractures and very scattered small vugular porosity filled w/large crystalline, clear calcite, brown residue on some fractures.
- 8017-8021 Limestone as above w/green shale partings.
- 8021-8023 Limestone as above.
- 8023-8027 Limestone w/shale partings as above.

Mud check @ 8027
 wt. 10.5, visc. 55, wl 6.8
 salt 550,000, oil 15%

Core #10, 8027-8035', Cut and recovered 58'.

- 8027-8031 Limestone, white-gray, fine-medium crystalline, hard, dense, w/inclusions of large crystalline, clear calcite and thin laminations of green shale.
- 8031-8033 Limestone as above and limestone, brown, fine crystalline, argillaceous, arenaceous w/scattered large calcite crystals.
- 8033-8035 Dolomite, dark brown, fine crystalline, argillaceous, earthy, veins of gray calcite; scattered inclusions of light gray, angular, medium crystalline dolomite.
- 8035-8036 As above w/fair pin point porosity.
- 8036-8037 As above, no visible porosity.
- 8037-8038 Breccia, angular, dolomite, fine crystalline, white-light gray w/matrix of dolomite, brown, medium crystalline; veins and secondary cementation of calcite, clear, large crystalline.
- 8038-8040 Limestone, white-light gray, fine crystalline w/veins of clear calcite, partings and laminations of shale, green and gray, waxy.
- 8040-8042 Limestone, white-cream, sublithographic; shale and calcite as above.
- 8042-8043 Limestone, tan-gray, medium crystalline w/scattered blebs of large crystalline, clear calcite (lime, sand, cemented w/calcite).
- 8043-8044 Limestone as above; shale, clay, green, waxy, pyritic, w/veins filled w/clear calcite.
- 8044-8045 Limestone as above w/gray shale partings.
- 8045-8048 Limestone as above w/green shale partings.
- 8048-8051 As above, brown residue on fractures.

- 8051-8052 Dolomite, dark brown, fine-medium crystalline, earthy, argillaceous w/veins of clear calcite, mottled slightly w/limestone as above.
- 8052-8053 As above, no limestone.
- 8053-8054 As above w/pin point porosity.
- 8054-8055 As above w/pin point porosity and mottled slightly w/limestone, gray, medium crystalline.
- 8055-8056 Limestone, light gray, cream, medium crystalline, hard, dense.
- 8056-8058 Limestone as above w/gray, waxy, clay shale partings.
- 8058-8059 Limestone, light gray-green, fine crystalline, hard, dense.
- 8059-8060 Limestone as above w/pyritic black shale partings.
- 8060-8063 Limestone, gray-tan, medium-fine crystalline w/light gray-green, waxy shale partings.
- 8063-8064 Limestone as above.
- 8064-8065 Limestone as above w/green shale partings.
- 8065-8066 As above, fossils (brachiopods).
- 8066-8067 As above, no fossils, abundant shale partings.
- 8067-8068 Limestone, tan-gray, medium-fine crystalline, hard, dense w/abundant partings of green, waxy, clay shale.
- 8068-8069 As above, fossils.
- 8069-8075 As above, no visible fossils.
- 8075-8076 As above, becoming fossiliferous.
- 8076-8079 As above, no visible fossils.
- 8079-8081 Limestone, gray-tan, very fine crystalline, hard, dense, w/partings and laminations of dark gray-green, clay shale, waxy.
- 8081-8084 As above, becoming pyritic.
- 8084-8085 Limestone, tan-brown, medium crystalline, hard, dense; lime sand w/calcareous cement.
- Core #11, 8085-8126', Cut and recovered 41'.
- 8085-8090 Limestone, gray, medium crystalline, w/laminations and partings of gray, clay shale, waxy, large inclusions of calcite, clear, large crystalline, filling crinoid butts, detrital lime particles cemented w/clear calcite.

- 8090-8095 As above, becoming pyritic.
- 8095-8095 As above w/shale casts and limestone, becoming slightly shaly.
- 8095-8099 Limestone, gray, medium-fine crystalline, hard w/crinoid buttons, large crystalline, clear calcite (calcaremite), laminations and partings of green and gray shale.
- 8099-8100 As above, calcareous blebs in shale.
- 8100-8101 As above.
- 8101-8105 Limestone and shale as above, pyritic.
- 8105-8105 Limestone as above, becoming fine crystalline and shale, gray-green, waxy, pyritic.
- 8105-8106 Limestone, light gray-green, fine-medium crystalline, slightly arenaceous.
- 8106-8107 As above w/gray shale partings.
- 8107-8108 Limestone, dark gray, very fine crystalline, hard, dense, w/calcareous fossil and vein filling, laminations and partings of olive green, waxy, pyritic shale.
- 8108-8109 Limestone, light gray, medium-fine crystalline, calcite fossils and veins.
- 8109-8110 Limestone, light gray-tan, fine crystalline (calcaremite), partings of blue-green shale, vein fill calcite.
- 8110-8111 Dolomite, gray, fine crystalline, inter-crystalline porosity bleeding light green oil and gas, excellent bright blue fluorescent, very spotty.
- 8111-8112 Dolomite, gray, very fine crystalline, hard, dense and dolomite, tan, sub-lithographic w/fracture filling calcite.
- 8112-8115 As above w/green shale partings.
- 8115-8114 Dolomite, gray, sub-lithographic w/calcite filling fractures.
- 8114-8115 Dolomite, gray-dark brown, fine grain, inclusions of large crystalline calcite, calcite filling fractures.
- 8115-8116 Dolomite as above.
- 8116-8117 Dolomite, gray, very fine crystalline, hard, dense, w/fractures and inclusions of clear calcite.
- 8117-8120 Dolomite as above and shale, green, clay, pyritic.
- 8120-8121 Limestone, gray, fine crystalline, pyritic, partings of bright green, waxy shale.
- 8121-8122 Limestone as above.

- 8122-8124 Limestone, light cream w/green casts, very fine crystalline, hard, dense, partings of blue-green shale.
- 8124-8125 Limestone, tan, very fine crystalline to sub-lithographic, pyritic, calcite, cemented, calcarenite.
- 8125-8126 Limestone, gray, very fine crystalline, slightly argillaceous w/inclusions of green shale.
- EST #6, 7220 to 8126', Devonian Gurray. Fair blow of air on 5" initial open before ISIP. Gas to surface in 3", burned w/bright orange yellow flame. Gage w/ "U" tube and water. diff. .6, pressure 4. Estimated 300,000 cu. ft. per day. Recovered 225' of highly gas cut mud. INH 4590; ISIP 2480/30 min; IPP 100; FPP 100, open 1 hour, FSIP 2590/1 hr; FWH 4570; BHT 180°.
- Core #12, 8126-8128', Cut and recovered 57'. Shale partings in core show dips of 15 to 20°.
- 8126-8127 Limestone, gray, medium-fine crystalline (calcarenite) w/laminations of gray-green shale.
- 8127-8129 Limestone as above. Mud Check @ 8127'
wt. 10.2, vis. 60, wl 5.1
salt 525,000, oil 15%
- 8128-8129 Limestone as above, becoming sub-lithographic, pyritic.
- 8129-8130 Shale, light gray-light gray-green, fissile, very hard, pyritic, calcite filled fractures.
- 8130-8131 Shale as above and shale, green, grading to dolomite, green, very fine crystalline, pyritic, argillaceous.
- 8131-8132 Dolomite, gray, very fine grain to fine crystalline, pyritic, micaceous, very arenaceous, calcite filled fractures.
- 8132-8133 Dolomite, gray, grading to shale, gray-green, w/streaks of sand, white, clear, medium grain and micaceous, pyritic.
- 8133-8134 Shale and dolomite as above and dolomite, tan, light green, sub-lithographic, abundant calcite filled fractures.
- 8134-8135 Shale, green, waxy, slightly arenaceous.
- 8135-8141 Shale as above and dolomite, brown, medium crystalline, to fine crystalline, argillaceous w/good odor and very slight dull yellow fluorescent, slight pin point porosity.
- 8141-8142 Dolomite as above, becoming light tan, medium crystalline, less argillaceous.
- 8142-8143 Dolomite as above grading to dolomite, tan gray, very fine grain, argillaceous.
- 8143-8144 Dolomite, cream-tan-gray, very fine crystalline w/gray shale partings.

- 8144-8145 Dolomite, dark brown, medium crystalline, sucrosic, scattered small vugular porosity, highly fractured w/anhydrite on fractures, very light yellow fluorescent on porosity.
- 8145-8148 Dolomite as above, becoming gray.
- 8148-8152 Shale, green, waxy, pyritic w/streaks of clear, angular quartzite sand, micaceous, and grading to dolomite, light gray-green, fine crystalline, argillaceous, sandy.
- 8152-8153 Dolomite, gray, very fine crystalline, argillaceous.
- 8153-8154 Dolomite, tan, sub-lithographic, argillaceous; shale as above.
- 8154-8158 Dolomite, gray, fine crystalline, micaceous, slightly arenaceous w/shale, green partings and anhydrite on fractures.
- 8158-8164 Shale, green, micaceous, grading to dolomite, green-light green, argillaceous, micaceous.
- Nud check @ 8151'
wt. 10.5, visc 50, wl 7.0
salt 380,000, oil 15%
- 8164-8165 Shale as above and dolomite, brown, medium crystalline, sucrosic w/slight pin point porosity mottled w/dolomite, cream, tan, fine crystalline, sucrosic, calcite on fractures.
- 8165-8166 Dolomite, tan-brown, medium crystalline, brown, mottled, has fluorescent, bright yellow blue, excellent fluorescent on fractures.
- 8166-8167 Dolomite as above w/fluorescent and anhydrite on fractures and in medium vugular porosity, good oil stain.
- 8167-8168 Dolomite, gray-mottled w/brown streaks, fine crystalline to sub-lithographic, slight fluorescent on fractures, pyritic.
- 8168-8169 Shale, green, waxy, micaceous, pyritic, streaked w/ and grading to dolomite, gray, fine-medium crystalline, argillaceous.
- 8169-8170 Shale, green, very brittle, micaceous, pyritic, dolomitic.
- 8170-8171 Shale as above w/many floating, large, well rounded sand grains.
- 8171-8172 Shale, bright blue-green, abundant floating sandstone grains as above; sandstone, white, gray, fine to large grain, well rounded, compact cement w/clay shale, gray.
- 8172-8173 Dolomite, light gray-dark brown, fine crystalline, sucrosic, anhydrite filled fractures.
- 8173-8174 Dolomite, gray, very fine crystalline, argillaceous, hard, dense, black residue on fractures.
- 8174-8175 Dolomite as above.

- 8175-8176 Dolomite as above, grading to shale, gray-green.
- 8176-8177 As above w/large, well rounded, floating sand grains, frosted.
- 8177-8178 As above w/streaks of brown-black matrix.
- 8178-8180 Shale, green, waxy, w/streaks of sand as above.
- 8180-8181 Dolomite, light gray, fine crystalline, sucrosic w/excellent small vugular porosity lined w/dolomite, brown, medium crystalline.
- 8181-8182 Dolomite as above, no porosity, brown residue on fractures and shale, light green w/abundant large, well rounded, quartz grains.
- 8182-8183 Shale, gray-green, waxy, pyritic, grading to dolomite, gray-green, few streaks of sand as above.
- Cave #15, 8183-8226', Cut and recovered 55'. Shale partings show dips of 20°, fractures are random w/some horizontal.
- 8183-8184 Shale, green-gray-tan, dolomitic, w/streaks of black, fine grain, quartzite sand.
- 8184-8185 Dolomite, tan, medium crystalline, fractures filled w/calcite and black residue.
- 8185-8186 Shale, green, waxy; sandstone, white, medium-large grain, sub-rounded w/white, clay cement and streaks of black, inter-granular porosity and appearance of permeability.
- 8186-8187 Dolomite, gray-brown, medium crystalline w/fair pin point porosity, slightly arenaceous, calcite in porosity and on fractures, very faint blue fluorescent on fractures.
- 8187-8188 Dolomite as above w/porosity decreased and inclusions of green shale.
- 8188-8189 As above.
- 8189-8190 Dolomite, gray-brown, fine crystalline, dense, brecciated appearance w/streaks of shale, blue-green, w/large, well rounded, quartz grains, floating.
- 8190-8191 Shale, green, hard, dense, micaceous, arenaceous, slightly dolomitic.
- 8191-8192 Shale as above and dolomite, gray-tan, very fine grain, hard, dense, calcite and brown residue on fractures.
- 8192-8193 Dolomite, gray, fine crystalline, hard, dense, w/floating, large grain, well rounded quartz grains and streaks of fine-medium grain, sub-angular, unsorted quartzite sand, brown to black; calcite on fractures, partings of shale, green, waxy.
- 8193-8197 Shale, green-gray green, w/floating sand grains as above, micaceous, pyritic, grading to dolomite, tan, sub-lithographic, pyritic.

- 8197-8199 Shale, green and gray, hard, dense, dolomitic; dolomite, tan-brown, very fine crystalline, hard, dense, w/brown residue on fractures.
- 8199-8200 Dolomite, dark brown, very fine to medium crystalline w/inclusions of angular, green shale, brown
- 8200-8201 Dolomite, gray-tan, medium crystalline w/good small vugular porosity lined w/brown residue.
- 8201-8202 As above w/trace anhydrite crystals in porosity.
- 8202-8203 Dolomite, gray-tan, medium crystalline w/pin point porosity.
- 8203-8204 As above w/porosity increased to excellent and gypsum on fractures.
- 8204-8205 As above porosity decreased, partings of green, micaceous shale.
- 8205-8206 Dolomite, gray-tan, medium crystalline, sucrosic, very slightly arenaceous, some scattered pin point of blue fluorescent possible in crystalline porosity.
- 8206-8207 As above w/pin point to small vugular porosity.
- 8207-8208 Dolomite as above, becoming fine crystalline, hard, dense, w/shale inclusions.
- 8208-8209 As above w/small vugular and pin point porosity.
- 8209-8210 Dolomite, gray, grading to green, very fine crystalline, argillaceous, hard, dense.
 Mud check @ 8210'
 wt. 10.5, visc 51, vl 6.4
 salt 830,000, oil 15%.
- 8210-8211 Dolomite, tan, large crystalline w/small vugular and pin point porosity.
- 8211-8212 Dolomite, gray-tan, fine crystalline, hard, dense and medium crystalline, sucrosic w/excellent pin point and small vugular porosity, porosity lined w/brown residue.
- 8212-8213 Dolomite, gray-tan, medium crystalline, sucrosic, porosity as above.
- 8213-8214 Dolomite as above.
- 8214-8215 Dolomite, tan-brown, fine crystalline w/fair pin point porosity, highly fractured w/brown residue on fractures; shale, light green w/floating, well rounded, quartz grains, micaceous, pyritic.
- 8215-8216 Shale, green as above, grading to dolomite, gray-tan, very fine crystalline.
- 8216-8217 Shale as above; dolomite, tan, very fine crystalline w/pin point porosity.
- 8217-8218 Dolomite, tan, very large crystalline, coarse sucrose w/small vugular porosity, excellent permeability (you can blow smoke through it!!!).
- 8218-8219 As above, w/inter-crystalline porosity.

- 3219-3220 Dolomite, tan-brown, fine crystalline, brecciated w/matrix of medium-coarse crystalline dolomite w/pin point porosity, brown-black residue on fractures, gypsum on some fractures.
- 3220-3221 Dolomite as above; shale, green w/floating sand grains.
- 3221-3222 Dolomite, tan, fine crystalline w/pin point porosity and fractures filled w/gypsum.
- 3222-3223 Dolomite, tan, medium crystalline w/good small vugular pin point and inter-crystalline porosity.
- 3223-3224 As above, porosity becoming excellent.
- 3225-3226 As above, becoming highly fractured w/black residue on fractures.
- 3226-3227 Dolomite, tan, fine-medium crystalline as brecciated in matrix of dolomite, dark brown-black, medium crystalline; shale, green-blue green, micaceous.
- 3227-3228 Dolomite, tan-grey, fine crystalline, sacrosic, w/pin point porosity.
- 3228-3229 Dolomite, brown, medium crystalline, sacrosic w/pin point porosity.
- 3229-3231 Dolomite, light tan, fine crystalline, sacrosic, brecciated in matrix of dolomite, medium crystalline, sacrosic, dark brown w/good pin point porosity.
- 3231-3232 Dolomite as above, tan, highly fractured w/brown-black residue on fractures.
- 3232-3233 Dolomite, grey, medium crystalline w/black streaks of excellent pin point and inter-crystalline porosity.
- 3233-3234 Dolomite, tan, fine crystalline, sacrosic, w/ slight pin point porosity, abundant shale partings and laminations; shale, green, waxy; gypsum in fractures.
- 3234-3235 Shale, blue-green, w/streaks of dolomite, brown, medium crystalline, sacrosic, floating, large, quartz grains.
- 3235-3236 Shale, blue-green, very hard, dense; dolomite, cream, very fine crystal line, hard, dense.
- 3236-3238 Drilled. No sample.

WY #7, 3173-3236', Devonian Elbert. Weak blow of air immediately and throughout 5" open before ISIP. Weak blow of air immediately and throughout 30 minute open. Gas to surface in 90", sweet, burned w/yellow flame, blue at base, too small to measure. Recovered 190' highly gas cut and w/trace of oil. ISIP 4525; ISIP 1730/30"; IFP 80; FYP 115 in 90"; PSIP 2250 in 60"; FPH 4510; BMT 132".

Core #14, 3233-3234', Cut and recovered 28'. (Drilling data - core head #1, run 7, 300 psi pump, 55 rpm, 40,000 lb. wt.). Shale bedding shows dips of 15-20°, scattered vertical and horizontal fractures.

- 8239-8242 Shale, green, gray-green, hard, dense, w/streaks of gray, medium crystalline, argillaceous, arenaceous, micaceous dolomite, pyritic, and sandstone, white-light green, medium-large grain, well rounded, frosted quartz grains.
- Mud check @ 8239'
wt. 10.55, visc 55, wl 7.1
salt 330,000, oil 12%.
- 8242-8243 Shale as above and sandstone, brown, fine-medium grain, sub-angular, slightly sorted, poor porosity, friable, brown clay cement.
- 8243-8244 Shale as above; dolomite, gray, very fine crystalline, arenaceous, micaceous.
- 8244-8246 Shale, green, pyritic, micaceous w/inclusions of dolomite, gray, very fine crystalline, pyritic.
- 8246-8247 Dolomite, light gray, fine crystalline, hard, w/slight pin point porosity, arenaceous, micaceous.
- 8247-8248 As above w/partings of green shale.
- 8249-8249 Dolomite, gray, medium crystalline, slightly sacrosic w/good small vugular porosity, slightly arenaceous and argillaceous; laminations, partings and inclusions of shale, blue-green, bright blue-green fluorescent on vugs.
- 8249-8250 Dolomite as above.
- 8250-8251 Breccia of dolomite, cream, fine crystalline, hard, dense in matrix of dolomite, tan-brown, medium crystalline, abundant random hairline fractures, arenaceous gypsum on some large fractures.
- 8251-8252 Shale, green, w/floating sand grains and stringers of sandstone and inclusions of dolomite, tan, sub-lithographic, very slightly micaceous.
- 8252-8253 Shale, green, w/floating sand grains and grading to dolomite, gray, fine crystalline, argillaceous w/floating sand grains, micaceous.
- 8253-8255 Shale as above and sandstone, tan-gray, fine-large grain, sub-angular to rounded frosted, unsorted, w/dolomite, cemented, no porosity.
- 8255-8256 Dolomite, gray-tan, medium crystalline, very arenaceous w/streaks and inclusions of shale, green, arenaceous, pyritic.
- 8256-8257 Dolomite, gray-green, sub-lithographic, highly fractured.
- Mud check @ 8256' wt. 10.5, visc 55, wl 5.1,
salt 330,000, oil 12%.
- 8257-8258 Dolomite, gray, medium crystalline w/small vugular porosity partially filled dolomite crystals and black residue, glauconitic, pyritic.
- 8258-8259 Dolomite, gray, fine crystalline, very arenaceous.

- 3259-3261 Sandstone, brown, fine-medium grain, sub-angular to sub-rounded, clear, transparent quartz grains, cemented w/brown clay, friable, good odor, slight fluorescent and cut fluorescent, appears to be porous.
- 3262-3262 Sandstone, white-tan, large grain, well-rounded, frosted quartz grains, white clay and green shale cemented, glauconitic.
- 3263-3264 Sandstone, white, brown, fine to large grain, sub-angular to well-rounded, frosted quartz grains cemented, white and brown clay, cemented, good odor on fresh break, streaks of fair porosity pervasively w/and.
- Sore #15, 3264-3266', Cut and recovered 52'. Shale laminations show dips of 15 to 20°.
- 3264-3267 Sandstone, brown, large, clear, sub-rounded quartz grains, some milk white, cemented w/medium-fine grain, sub-angular, clear quartz grains in brown clay cement, excellent odor, friable, fair visible porosity, faint, even yellow-blue fluorescent and excellent cut fluorescent.
- 3267-3275 As above, becoming medium-fine grain.
- 3275-3276 Sandstone, black-brown, fine grain, slightly dolomitic, clay cement, no visible porosity, inclusions and streaks of light blue-green, pyritic shale.
- 3276-3277 Shale, light blue-gray, slightly dolomitic w/inclusions of large grain, sub-rounded quartz, broken across grains.
- 3277-3278 As above w/streaks of very fine grain quartzite sand.
- 3278-3279 Shale as above w/stringers of dolomite, white-green, medium crystalline, very arenaceous, slightly glauconitic.
- 3279-3282 Sandstone, light green, very fine grain, dolomitic; gypsum on fractures.
- 3282-3285 As above, grading to dolomite, green, medium crystalline, slightly arenaceous.
- 3285-3284 Sandstone, tan-brown, large grain, clear and soaky quartz, cemented w/slightly dolomitic clay, very arenaceous, has quartzitic fracture across grains, slight fluorescent on fractures.
- 3284-3285 As above w/faint fluorescent around visible porosity, very scattered.
- 3285-3289 Sandstone, brown, medium grain, friable, slightly quartzitic fractures, some visible porosity, good odor, brown clay cement, slightly glauconitic.
- 3289-3290 Sandstone, gray, fine-medium grain, sub-angular, very dolomitic, cemented w/black residue, glauconitic.
- 3290-3292 As above w/streaks of light gray-green, medium crystalline dolomite.
- 3292-3294 Sandstone, white-gray, medium grain, sub-angular, clear w/inclusions and streaks of dolomite, green, medium crystalline, glauconitic.

- 8294-8295 Dolomite, gray-brown, medium-large crystalline, glauconitic, fair inter-crystalline porosity w/good bright fluorescent and stain.
- 8296-8298 As above w/scattered floating, large, frosted, well rounded quartz grains, porosity and fluorescent decreased.
- 8299-8297 As above w/white, soft crystalline sucrose, gypsum fracture fill.
- 8297-8299 As above w/sand grains increased and bright-light blue fluorescent on fractures.
- 8299-8301 Dolomite, brown-black, coarse crystalline w/inclusions of sucrosic gypsum and anhydrite, slightly brecciated w/inclusions of fine crystalline, gray dolomite w/pin point porosity, slight fluorescent.
- 8301-8302 Dolomite, cream-tan-brown, medium-large crystalline, slight inter-crystalline porosity w/faint fluorescent, glauconitic.
- 8302-8304 As above, slightly pyritic.
- 8304-8308 Dolomite, gray-black, fine-medium crystalline, hard, dense, w/streaks of fair small vugular porosity, glauconitic, pyritic black shale partings.
- 8308-8309 Dolomite, gray-brown, medium-fine crystalline, very arenaceous.
- 8309-8310 Sandstone, brown, fine grain.
- 8310-8311 Sandstone, cream-white, medium grain, very dolomitic cement as large to small crystalline dolomite.
- 8311-8315 Sandstone as above w/large, well rounded, frosted quartz grains, slight fluorescent and cut.
- 8315-8316 Sandstone as above and shale, green.
- 8316-8320 Shale, gray-green; dolomite, gray, medium-fine crystalline, pyritic; sandstone, cream-tan, medium grain, dolomite w/good stain fluorescent and cut fluorescent.
- 8320-8325 Sandstone, white-brown, fine-medium grain, fair visible porosity, sub-angular to sub-rounded, medium sorted, friable; shale, blue-green, w/floating, large grain, green quartz; fluorescent as above.
- 8325-8330 Sandstone as above becoming dolomitic and grading to dolomite, tan-cream, large crystalline w/good inter-crystalline pin point porosity, fluorescent and stain as above.
- Core #15, 8332-8332', Cut 50 and recovered 52'.
- 8332-8333 Sandstone, brown-black, w/clear quartz grains, medium grain, sub-rounded, well sorted, friable, good stain and odor, no visible fluorescent, slight cut fluorescent from crushed sample, brown, clay cement, possible fair porosity.

- 8533-8534 As above w/white spots mottled and thin laminations of black and gray, very micaceous shale.
- 8534-8535 As above, no shale.
- 8536-8537 Sandstone, brown, medium-fine grain as above, becoming slightly micaceous.
- 8537-8539 Sandstone becoming black micaceous.
- 8539-8540 Sandstone, brown, medium-fine grain, sub-angular, fair sorted, micaceous, brown clay cement, good stain and odor.
- 8540-8541 Dolomite, tan-light brown, medium-large crystalline, very arenaceous, micaceous, and glauconitic, fair to good fluorescent, excellent stain, small blebs of shale, light gray, micaceous and sandstone as above.
- 8541-8543 Sandstone, brown, medium grain, sub-rounded, fairly sorted, brown clay cement, friable, good stain and odor, mottled slightly w/white blebs of sandstone.
- 8543-8544 As above w/very thin laminations of black, micaceous shale.
- 8544-8545 As above w/gradation to dolomite, tan, medium crystalline, glauconitic, very scattered, thin.
- 8545-8546 Sandstone as above, no dolomite.
- 8546-8547 Sandstone as above w/micaceous, black shale partings.
- 8547-8548 Sandstone as above, no shale.
- 8548-8549 Sandstone as above, micaceous, black shale partings.
- 8549-8550 Sandstone as above, becoming quartzitic.
- 8550-8551 Sandstone, brown-black, fine grain, quartzitic, slightly micaceous.
- 8551-8552 Sandstone, gray-tan, fine grain, quartzitic, micaceous.
- 8552-8554 Sandstone, gray, fine-medium grain, sub-angular, poorly sorted, micaceous w/partings and blebs of shale, gray and black, micaceous.
- 8554-8556 Sandstone, brown-gray, fine-medium grain, poorly sorted, slightly quartzitic w/inclusions of shale, black and gray, glauconitic and micaceous.
- 8556-8557 As above, shale increased.
- 8557-8558 Very thin laminations of shale, gray, micaceous, glauconitic and dolomite, medium crystalline, arenaceous, glauconitic, micaceous.
- 8558-8559 Dolomite, gray-black, very fine crystalline to fine crystalline, argillaceous, arenaceous, micaceous, glauconitic.
- 8559-8560 Dolomite as above, becoming less shaly and arenaceous.
- 8560-8565 Dolomite, gray-black, fine crystalline, micaceous, slightly arenaceous, very argillaceous, very glauconitic.

- 8366-8368 Sandstone, gray, fine grain, poorly sorted, dolomitic, micaceous, argillaceous.
- 8368-8369 Dolomite, gray, medium crystalline, very glauconitic, micaceous, pyritic, argillaceous, slightly arenaceous.
- 8369-8370 As above w/partings of black shale, micaceous.
- 8370-8371 As above, no black shale.
- 8371-8372 Shale, dark gray, very glauconitic, slightly arenaceous w/large, floating dolomite crystals.
- 8372-8373 Dolomite, gray, very fine grain to fine crystalline, glauconitic, micaceous, slightly arenaceous.
- 8373-8374 As above, grading to shale, black, very glauconitic, arenaceous, dolomite crystals.
- 8374-8375 Dolomite, gray, fine-medium crystalline, argillaceous, arenaceous, micaceous, glauconitic.
- 8375-8376 Dolomite as above, grading to shale, black, micaceous.
- 8376-8377 Dolomite, gray, fine crystalline, micaceous, glauconitic, slightly arenaceous.
- 8377-8378 Dolomite as above grading to shale, black, micaceous, glauconitic.
- 8378-8379 Dolomite, white-green, fine crystalline.
- 8379-8380 Dolomite, gray, fine-medium crystalline, arenaceous, argillaceous, grading to shale, black-gray, dolomitic, glauconitic, micaceous.
- 8380-8381 Dolomite, gray, medium-large crystalline, micaceous, argillaceous, glauconitic, grading to shale as above.
- 8381-8382 Dolomite, gray, fine-medium crystalline w/black shale inclusions, micaceous, thin laminations of shale, gray, metallic, micaceous.
- 8382-8383 Dolomite, gray, medium crystalline, micaceous, glauconitic; shale as above.

8382 to 8385' Error in Kelly measurement.

Test #8, 8381-8382', NoCracken. ISH 4530; ISIP 2890/30 min; IFF 285; FFF 750/75 min; FSIP 2875/60 min; FSH 4530; ENT 199°f. Gas to surface in 6 minutes, too small to measure. Recovered out 8000' of oil and highly gas out mud. Oil is light yellow-green, 44 gravity @ 66°f., 65° $\frac{1}{2}$ pour point.

Core #17, 8382-8440', Out and recovered 59'. Cambrian.

- 8382-8383 Dolomite, dark gray, medium crystalline, argillaceous, grading to shale, dark silver gray, micaceous, thin partings of dark silver gray, micaceous shale.

Mud check @ 8383'
wt. 10.5, vis 57, wl 6.2
Salt 518,710, oil 13%.

- 8395-8396 Shale, silver gray, very micaceous.
- 8396-8402 Shale as above grading to dolomite, gray black, medium crystalline, very glauconitic, laminations and partings of gray shale.
- 8402-8408 As above, no glauconitic.
- 8408-8409 Dolomite as above, becoming large crystalline w/slight pin point porosity.
- 8409-8410 Dolomite, dark gray, medium-fine crystalline, grading to shale, gray, micaceous.
- 8410-8416 Dolomite, gray-brown, medium crystalline, argillaceous, grading to shale, dark gray, micaceous, glauconitic, pyritic.
- 8416-8421 As above, becoming less shaly.
- 8421-8427 Dolomite, brown-gray, medium-fine crystalline, pyritic, glauconitic, argillaceous.
- 8427-8428 As above, becoming very glauconitic.
- 8428-8429 As above w/gray shale partings.
- 8429-8426 Dolomite, gray, fine crystalline w/shale, gray-black, micaceous.
- 8426-8427 Dolomite, gray-brown, fine crystalline, glauconitic, argillaceous.
- 8427-8428 As above w/shale partings.
- 8428-8430 Shale, light green, micaceous, very slightly dolomitic, glauconitic.
- 8430-8431 Dolomite, gray-light gray, fine crystalline, dense, tight, slightly glauconitic.
- 8431-8434 Dolomite, light gray, fine-large crystalline w/slight inter-crystalline porosity filled w/black residue and dark gray dolomite.
- 8434-8435 As above w/porosity increased to fair. Mud check @ 8435:
wt 10.6, vis 55, wl 6.0, salt 330,000,
oil 12%.
- 8435-8436 Dolomite, white to cream, fine-medium crystalline w/black to dark gray dolomite in porosity.
- 8436-8440 As above, becoming brecciated, thin green shale laminations, pyritic.

DEPTH	MUD WT	VISC	WATER LOSS	SALT	OIL
8256	10.5	58	5.1	330,000	12%
8227	10.6	62	4.4	330,000	12%
8297	10.5	55	5.6	330,000	12%
8519	10.5	58	6.5	330,000	12%
8532	10.45	50	5.0	290,000	13%
8572	10.5	54	5.2	325,000	12%

Survey # 8227 - 4°

TOTAL DEPTH Driller 8440', Log 8440'.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Utah 014903
LEASE NUMBER
UNIT

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of December, 1959

Agent's address 1700 Broadway Company The Pure Oil Company
Denver 2, Colorado Signed T. L. Warburton
Phone AMherst 6-3331 Agent's title Division Chief Production Clerk

SEC. AND 1/4 OF 1/4	TWP.	RANGE	WELL NO.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)		
NE NW Sec. 10 (Northwest)	30S	24E	USA Well No. 1)		McCullough perforated 7" OD casing with 2 Super Formation Jets per foot. Swabbed 2 days, recovered oil and some water. Shut in 2 days for bottom hole pressure tests. Pumped in 50 gallons Hi-Flu mixed with 100 bbls crude. Made 2 runs with swab and well started flowing. Flowed 161 bbls oil, including 150 bbls load oil, in 11 hours through 3/4" choke, then died. Started swabbing, recovered total of 148 bbls oil in 2 days and well flowed 492 bbls oil in 4 days. Acidized with 2000 gallons mud acid. Swabbed well 4 days, recovered 172 bbls oil, no water. McCullough reperforated through tubing 8310-8343 and 8261-8293 with two 2-1/16" 20 gram Mac Jet Shots per foot. Opened well to tank and flowed 24 bbls oil in 30 minutes on 32/64" choke, then died. Shut down 2 days spooling new swab line. Opened well on 10/64" choke, flowed gas, no oil; opened choke to one inch, produced 13 bbls oil in 2 hours and well died. Swabbed 47 bbls oil, no water, in 15 hours. Sand frac'd with 733 bbls oil, 28,000 pounds 20-40 sand, 165 gallons of U-34 and 275 gallons U-38. Opened well to tank, flowed 4 bbls load oil then died. Swabbed 6 hours, recovered 75 bbls load oil and swab stuck at 3000'. Down 7 days fishing for swab line and swab.							8310-8343 and 8261-8293 Ran tubing and packer Shut in 2 days Pumped in 50 gallons Made 2 runs with swab Flowed 161 bbls oil, including 150 bbls load oil, in 11 hours through 3/4" choke, then died. Recovered total of 148 bbls oil in 2 days and well flowed 492 bbls oil in 4 days. Swabbed well 4 days, recovered 172 bbls oil, no water. Reperforated through tubing 8310-8343 and 8261-8293 with two 2-1/16" 20 gram Mac Jet Shots per foot. Opened well to tank and flowed 24 bbls oil in 30 minutes on 32/64" choke, then died. Shut down 2 days spooling new swab line. Opened well on 10/64" choke, flowed gas, no oil; opened choke to one inch, produced 13 bbls oil in 2 hours and well died. Swabbed 47 bbls oil, no water, in 15 hours. Sand frac'd with 733 bbls oil, 28,000 pounds 20-40 sand, 165 gallons of U-34 and 275 gallons U-38. Opened well to tank, flowed 4 bbls load oil then died. Swabbed 6 hours, recovered 75 bbls load oil and swab stuck at 3000'. Down 7 days fishing for swab line and swab.
NE NW Sec. 14 (Northwest)	30S	24E	2 Lisbon USA No. 2)		Levelling location and building road.							

NOTE.—There were _____ runs or sales of oil; _____ M cu. ft. of gas sold; _____ runs or sales of gasoline during the month. (None, no units applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

NW LISBON USA NO. 1.

The Pure Oil Co. Dec 4,

IN 24 HOUR PERIOD ENDING AT 10:00 P.M., WELL FLOWED 586 BBLs. OIL THRU 14/64" CHOKE TUBING PRESSURE CONSTANT AT 250 POUNDS. NO TRACE OF WATER OR BS. CORRECTED GRAVI' 45.2. I.P. FOR RECORD. WELL SHUT IN AT 10:00 P.M. FOR BOTTOM HOLE PRESSURE TESTS

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

January 6, 19 60

Northwest Lisbon USA

Well No. 1 is located 563 ft. from $\left\{ \begin{matrix} N \\ S \end{matrix} \right\}$ line and 2050 ft. from $\left\{ \begin{matrix} E \\ W \end{matrix} \right\}$ line of sec. 10

NE 1/4 10 30S 24E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Wildcat San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Co.

Address 1700 Broadway

Denver, Colorado

By T. I. Harburton

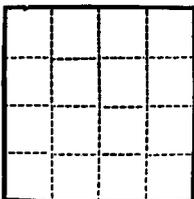
Title Division Chief Production Clerk

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 011903

Unit _____



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

H. G. G.

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
	SUBSEQUENT REPORT OF ABANDONMENT.....	X

NW LISBON USA NO. 1. TD 8440. PBTD 8400. *Dec 6, 1959* *The Pure Oil Co.*
 SHUT IN DEC. 4 & 5 FOR BHP TESTS AND BOTTOM HOLE SAMPLES. 12/6/59. PUMPED IN 50
 GALLONS HI-FLOW MIXED WITH 100 BARRELS CRUDE. BREAKDOWN PRESSURE 6500 POUNDS DROPPED
 TO 5000 POUNDS. ADDED ADDITIONAL PUMP AND INCREASED PRESSURE TO 6200 POUNDS, BROKE
 BACK TO 4800 POUNDS. COMPLETED WITH 4500 POUNDS. FLUSHED WITH 50 BBL. CRUDE. JOB
 COMPLETED AT 115 P.M. LET SET 2 HOURS, PRESSURE DECREASED TO 400 POUNDS. BLED OFF
 PRESSURE AND MADE 2 RUNS WITH SWAB AND WELL STARTED FLOWING. FLOWED 161 BBL. OIL,
 INCLUDING 150 BBL. LOAD OIL, IN 11 HOURS THROUGH 3/4" CHOKE THEN DIED. STARTED SWABBING
 AT 2:00 A.M. RECOVERED TOTAL OF 54 BBL. NEW OIL, NO WATER. GAS INCREASING. 6:00 A.M.
 1500' FLUID IN HOLE.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address 1700 Broadway

Denver, Colorado

By *T. L. Harburton*
T. L. Harburton

Title Division Chief Production Clerk

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake City

Lease No. Utah 011903

Unit _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HGH

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	<input checked="" type="checkbox"/>

NW LISBON USA NO. 1. TD 8440. PBD 8400. *The Pure Oil Co.* Dec 31, 1959 & Jan 1, 2 & 3, 1960
 CIRCULATED SAND ^{ON} OF HOLE TO 8325. WASHED DOWN TO 8363, NO SAND. PULLED 1-5/8"
 DRILL PIPE, RAN TUBING, REMOVED BOP AND LANDED TUBING. STARTED SWABBING. FIRST RUN,
 FLUID 200' FROM SURFACE. MADE 3 RUNS, MAXIMUM DEPTH 2000', FLUID RISING. SHUT DOWN
 2 HOURS TO CLEAN RIG FLOOR. RESUMED SWABBING. SWABBED 3-1/2 HOURS AND WELL STARTED
 FLOWING. SWABBED 43 BBLs. OIL. FIRST 10 HOURS, WELL FLOWED 346 BBLs. OIL THRU 16/64"
 CHOKE, TP 200 POUNDS. NEXT 14 HOURS WELL FLOWED 418 BBLs. OIL, 14/64" CHOKE, TP 250
 POUNDS. IN 32-1/2 HOUR PERIOD ENDING 6:00 A.M. WELL FLOWED 998 BBLs. OIL, NO TRACE OF
 WATER OR BS. ABOVE TOTAL INCLUDES 822 BBLs. LOAD OIL AND 219 BBLs. NEW OIL. NOW
 FLOWING STEADILY TO TANK THRU 14/64" CHOKE, TP 250 POUNDS.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

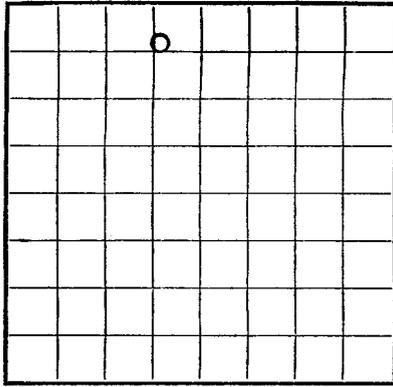
Company The Pure Oil Company

Address 1700 Broadway

Denver, Colorado

By *[Signature]*
T. L. WARDEN
Title Division Chief Production Clerk

U. S. LAND OFFICE Salt Lake City
SERIAL NUMBER Utah 004203
LEASE OR PERMIT TO PROSPECT _____



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company The Pure Oil Company Address 1700 Broadway - Denver 2, Colorado
Lessor or Tract U. S. Government Field Mildcat State Utah
Northwest 1/4 Sec 10
Well No. 1 Sec. 10 T. 30N R. 2E Meridian Salt Lake County San Juan
Location 563 ft. N. of N. Line and 2050 ft. E. of S. Line of Sec. 10 Elevation 6539' KB
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed [Signature]

Date January 15, 1960 Title Division Chief, Production Clerk

The summary on this page is for the condition of the well at above date.

Commenced drilling August 14, 1959 Finished drilling November 21, 1959

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 8261 to 8223 No. 4, from _____ to _____
No. 2, from 8310 to 8348 No. 5, from _____ to _____
No. 3, from 8350 to 8350 No. 6, from _____ to _____

*Gas zones drill stem tested throughout
436' of Mississippian.

IMPORTANT WATER SANDS

No. 1, from None to None No. 3, from _____ to _____
No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
20"	94 lbs.	8-V	H-40	34'	Coupling				oriented to surface.
13-3/8"	113 lbs.	8-V	H-40	134'	Coupling				oriented to surface.
9-5/8"	62 lbs.	8-V	H-40	131'	Coupling				oriented to surface.
7-1/2"	42 lbs.	8-V	H-40	131'	Coupling				oriented to surface.

HISTORY OF OIL OR GAS WELL

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
20"	34'	19 sz.	Halliburton		
13-3/8"	96'	1025 sz.	Halliburton		
9-5/8"	1317'	400 sz.	Halliburton		
7-1/2"	1340'	2000 sz.	Halliburton		

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____
Adapters—Material _____ Size _____

FOLD MARK

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
20"	34'	19 ex.	Halliburton		
13-3/8"	963'	1025 ex.	Halliburton		
9-5/8"	4317'	400 ex.	Halliburton		
7"	3440'	2000 ex.	Halliburton		

FOLD MARK

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____
 Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet
 Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

Put to producing _____, 19____
 The production for the first 24 hours was _____ barrels of fluid of which _____ % was oil; _____ % emulsion; _____ % water; and _____ % sediment.
 Gravity, °Bé. _____
 Gallons gasoline per 1,000 cu. ft. of gas _____
 Rock pressure, lbs. per sq. in. _____

EMPLOYEES

_____, Driller
 _____, Driller
 _____, Driller

FORMATION RECORD

FROM-	TO-	TOTAL FEET	FORMATION
330'	330'	0'	
320'	320'	10'	
311'	311'	19'	
300'	300'	28'	
288'	288'	36'	
275'	275'	43'	
263'	263'	51'	
250'	250'	59'	
238'	238'	67'	
226'	226'	75'	
214'	214'	83'	
202'	202'	91'	
190'	190'	99'	
178'	178'	107'	
166'	166'	115'	
154'	154'	123'	
142'	142'	131'	
130'	130'	139'	
118'	118'	147'	
106'	106'	155'	
94'	94'	163'	
82'	82'	171'	
70'	70'	179'	
58'	58'	187'	
46'	46'	195'	
34'	34'	203'	
22'	22'	211'	
10'	10'	219'	
0'	0'	227'	
0'	0'	235'	
0'	0'	243'	
0'	0'	251'	
0'	0'	259'	
0'	0'	267'	
0'	0'	275'	
0'	0'	283'	
0'	0'	291'	
0'	0'	299'	
0'	0'	307'	
0'	0'	315'	
0'	0'	323'	
0'	0'	331'	
0'	0'	339'	

FROM- TO- TOTAL FEET [OVER] FORMATION 16-42

FORMATION RECORD—Continued

10-42003-4

FROM-	TO-	TOTAL FEET	(GALLES)	FORMATION
3207'	3250'	43'		Sand and shale.
3250'	3315'	65'		Lime and sand.
3315'	3390'	75'		Shale, sand and lime:
3390'	3473'	83'		Sand and shale.
3473'	3632'	159'		Shale and lime.
3632'	3922'	290'		Lime and sand.
3922'	4297'	375'		Lime and shale.
4297'	4387'	20'		Lime and salt.
4387'	4413'	96'		Salt.
4413'	5223'	810'		Salt and shale.
5223'	5316'	123'		Salt.
5316'	5699'	383'		Salt and shale.
5699'	5812'	113'		Shale and sand.
5812'	7311'	1499'		Salt and shale.
7311'	7317'	6'		Shale.
7317'	7427'	110'		Salt and shale.
7427'	7513'	86'		Shale and dolomite.
7513'	7531'	18'		Lime and dolomite.
7531'	7590'	59'		Shale and lime.
7590'	7643'	53'		Core No. 1. See attached.
7643'	7711'	68'		Core No. 2. See attached.
7711'	7746'	35'		Core No. 3. See attached.
7746'	7776'	30'		Core No. 4. See attached.
7776'	7827'	51'		Core No. 5. See attached.
7827'	7885'	58'		Core No. 6. See attached.
7885'	7925'	40'		Core No. 7. See attached.
7925'	8083'	158'		Core No. 8. See attached.
8083'	8085'	2'		Core No. 9. See attached.
8085'	8126'	41'		Core No. 10. See attached.
8126'	8133'	7'		Core No. 11. See attached.
8133'	8236'	103'		Core No. 12. See attached.
8236'	8264'	28'		Core No. 13. See attached.
8264'	8318'	54'		Shale.
8318'	8331'	13'		Core No. 14. See attached.
8331'	8332'	1'		Core No. 15. See attached.
8332'	8333'	1'		Core No. 16. See attached.
8333'	8334'	1'		Core No. 17. See attached.
8334'	8335'	1'		Core No. 18. See attached.

LOGS USED

Log No.	Depth	Remarks
1	0-43'	Sand and shale.
2	43-108'	Lime and sand.
3	108-183'	Shale, sand and lime.
4	183-242'	Sand and shale.
5	242-401'	Shale and lime.
6	401-491'	Lime and sand.
7	491-566'	Lime and shale.
8	566-619'	Lime and salt.
9	619-700'	Salt.
10	700-1510'	Salt and shale.
11	1510-1633'	Salt.
12	1633-2016'	Salt and shale.
13	2016-2129'	Salt and shale.
14	2129-2135'	Shale.
15	2135-2245'	Salt and shale.
16	2245-2331'	Shale and dolomite.
17	2331-2349'	Lime and dolomite.
18	2349-2408'	Shale and lime.
19	2408-2467'	Core No. 1. See attached.
20	2467-2535'	Core No. 2. See attached.
21	2535-2570'	Core No. 3. See attached.
22	2570-2600'	Core No. 4. See attached.
23	2600-2651'	Core No. 5. See attached.
24	2651-2709'	Core No. 6. See attached.
25	2709-2749'	Core No. 7. See attached.
26	2749-2907'	Core No. 8. See attached.
27	2907-2925'	Core No. 9. See attached.
28	2925-3083'	Core No. 10. See attached.
29	3083-3085'	Core No. 11. See attached.
30	3085-3126'	Core No. 12. See attached.
31	3126-3133'	Core No. 13. See attached.
32	3133-3236'	Shale.
33	3236-3264'	Core No. 14. See attached.
34	3264-3318'	Core No. 15. See attached.
35	3318-3331'	Core No. 16. See attached.
36	3331-3332'	Core No. 17. See attached.
37	3332-3333'	Core No. 18. See attached.
38	3333-3334'	Core No. 19. See attached.
39	3334-3335'	Core No. 20. See attached.

DATES

Cable tools were used from _____ feet to _____ feet

Rotary tools were used from _____ feet to _____ feet

TOOLS USED

Tool	Quantity	Date	Depth used	Depth cleaned out

SHOOTING RECORD

Heading	Material	Length	Depth set

BLUES AND ADVISERS

FIELD WORK

FOLD MARK

Adapters - Meters
 Heavy duty - Meters
 Length
 Depth set
LOGS AND ADAPTERS

Casing size	Weight per foot	Number sacks of cement	Depth below	Weight per foot	Amount

MIDDING AND CEMENTING RECORD

16-43094-2 U. S. GOVERNMENT PRINTING OFFICE
HISTORY OF OIL OR GAS WELL
 It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or testing.

Casing size	Depth	Depth	Make	Amount	Kind of shoe	Cut and pulled from	Perforated	Purpose
8-A	H-70							

IMPORTANT MARKERS

CASING RECORD

No. 5' from	308'	(+6281)	No. 4' from	
Chinle			No. 3' from	
No. 1' from	2263'	(+4321)	No. 2' from	
Hemlock			No. 1' from	
No. 1' from	3973'	(+2011)	No. 0' from	
			No. 0' from	
No. 3' from	7522'	(- 933)	No. 0' from	
Mississippian			No. 0' from	
No. 1' from	3003'	(-1119)	No. 0' from	
			No. 0' from	
No. 1' from	3359'	(-1717)	No. 0' from	
			No. 0' from	

OIL OR GAS SANDS OR ZONES

Commenced drilling _____ 19__ Finished drilling _____ 19__

The summary on this page is for the condition of the well at above date.

Date _____ Information correct _____

signed _____
 so far as can be determined from all available records.

The information given herewith is a complete and correct record of the well and all work done thereon.

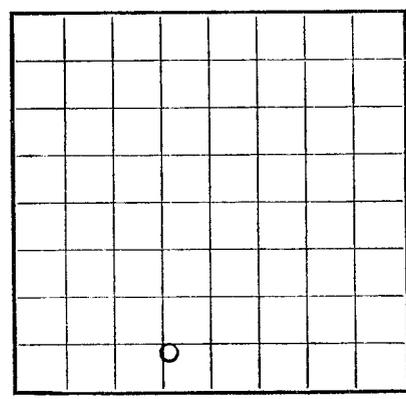
Location _____ of _____ line and _____ of _____ line of _____ Elevation _____

Well No. _____ Section _____ Township _____ Range _____ County _____

Owner of _____ Field _____ State _____

Company _____ Address _____

LOCATE WELL CORRECTLY



LOG OF OIL OR GAS WELL

GEOLOGICAL SURVEY

DEPARTMENT OF THE INTERIOR

UNITED STATES

PLEASE OR PERMIT TO PROSPECT _____

SERIAL NUMBER _____

U. S. LAND OFFICE _____

Approved expires 12-31-60
 Budget Bureau No. 43-15322-4

JAN 18 1960

THE PURE OIL COMPANY

GENERAL OFFICES, 35 EAST WACKER DRIVE, CHICAGO

ROCKY MOUNTAIN PRODUCING DIVISION
1700 BROADWAY
DENVER 2, COLORADO

January 15, 1960

Mr. Jerry W. Long
USGS District Engineer
P. O. Box 1809
Durango, Colorado

Dear Mr. Long:

Enclosed are the following records pertaining to the Northwest Lisbon USA Well No. 1, located NE NW, Section 10, T-30S, R-24E, San Juan County, Utah.

Two copies of Form 9-330 - Log Of Oil Or Gas Well.
Two copies of Geological Sample Log.
Two copies of Schlumberger Section Gauge.
Two copies of Schlumberger Sonic Log.
Two copies of Schlumberger Micro Latero Log.
Two copies of Schlumberger Induction-Electrical Log.
Two copies of Schlumberger Micro Logging.
Two copies of Schlumberger Laterolog.
Two copies of Schlumberger Gamma Ray-Neutron.

It would be greatly appreciated if you would keep this information confidential for the period your regulations permit.

Yours very truly,



T. L. Warburton
Division Chief Production Clerk

TLW:mc

Enclosure

cc: Mr. C. B. Feight

Enclosed is one copy of each of the above records. We also request you please keep this information confidential.

JAN 18 1960

THE PURE OIL COMPANY

GENERAL OFFICES, 35 EAST WACKER DRIVE, CHICAGO.

ROCKY MOUNTAIN PRODUCING DIVISION
1700 BROADWAY
DENVER 2, COLORADO

June 30, 1960

Oil and Gas Conservation Commission
of the State of Utah
310 Newhouse Building
10 Exchange Place
Salt Lake City 11, Utah

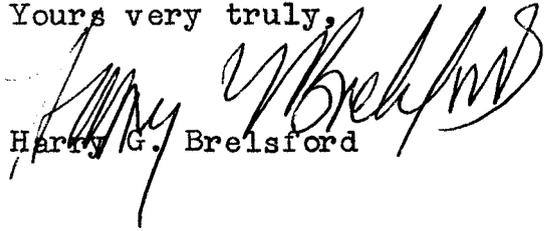
Attn: Mr. Cleon B. Feight
Secretary

Dear Mr. Feight:

Enclosed in triplicate find Application of Pure, for itself and Featherstone Corporation, to undertake multiple zone completion in the A-1 Well, together with Affidavit of mailing to Texas Eastern Transmission Corporation, a working interest owner within one-half mile of the well, the remaining interests being owned by Pure and Featherstone Corporation.

We would appreciate it if your decision with respect to said Application is directed to Mr. J. I. Morris, The Pure Oil Company, Farmers Union Building, 1575 Sherman Street, Denver 3, Colorado.

Yours very truly,


Harry G. Brelsford

/mh

A F F I D A V I T

STATE OF COLORADO)
City and) ss.
County of Denver)

C. W. HANCOCK, being first duly sworn, deposes and says that:

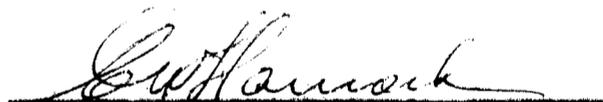
Affiant is a resident of the State of Colorado, above the age of 21 years, and is the Manager, Northern Producing Division of The Pure Oil Company, Applicant under the attached Application. Under date of June 30, 1960 Affiant served a copy of the attached Application upon:

John Anderson, Supervisor
United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

Texas Eastern Transmission Corporation
Memorial Professional Building
P. O. Box 1189
Houston, Texas

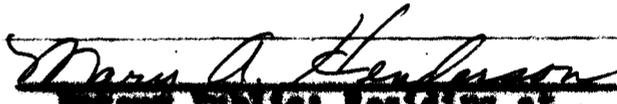
by placing copies of said Application in envelopes addressed as indicated and mailing same by registered mail through the United States Mails, postage and registry fee prepaid.

FURTHER Affiant sayeth not.


C. W. Hancock

SUBSCRIBED AND SWORN to before me this 30th day of June, 1960.

My Commission expires September 23, 1963
My Commission Expires


Mary A. Henderson
Notary Public; Residing at
City and County of Denver,
State of Colorado.

OIL AND GAS CONSERVATION COMMISSION

STATE OF UTAH

IN THE MATTER OF THE APPLICATION OF THE PURE OIL COMPANY (AS DESIGNATED OPERATOR, FOR ITSELF AND FEATHERSTONE CORPORATION) FOR AN ORDER AUTHORIZING APPLICANT TO PERFORM A MULTIPLE ZONE COMPLETION IN OPERATOR'S U.S.A. A-1 WELL, LOCATED IN THE NE $\frac{1}{4}$ NW $\frac{1}{4}$ OF SECTION 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, S.L.M., LISBON FIELD, SAN JUAN COUNTY, UTAH

)
}
}

APPLICATION

COMES NOW Applicant, THE PURE OIL COMPANY, as designated Operator, for itself and Featherstone Corporation, and avers as follows:

I.

(1) Applicant is a corporation organized and existing under the Laws of the State of Ohio, is duly qualified to do business in the State of Utah, and has a Northern Producing Division office at 1700 Broadway, Denver 2, Colorado.

(2) Applicant and Featherstone Corporation are the owners of United States Non-Competitive Oil and Gas Lease Utah Serial No. 014903, covering, among other land, all of Section 10, Township 30 South, Range 24 East, S.L.M., except the West Half of the Northwest Quarter (W $\frac{1}{2}$ NW $\frac{1}{4}$) thereof.

(3) Applicant represents that it is Operator with respect to said Lease by virtue of Designation of Operator from Featherstone Corporation dated July 20, 1959, heretofore filed with the appropriate office of the United States Geological Survey.

(4) Applicant represents that said A-1 Well is located within the confines of what has been designated as the Lisbon Field and that Applicant has heretofore received Commission approval for a multiple zone completion of its B-1 Well located in the same Field.

II.

Applicant desires to undertake multiple zone completion in its said U.S.A. A-1 Well in the McGracken Formation of Devonian Age and in rocks of Mississippian Age and in connection therewith as follows:

(1) Said A-1 Well was commenced on August 14, 1959 and subsequently drilled to a total depth of 8,440 feet, attaining such total depth on or about November 21, 1959.

(2) During the course of the drilling of said A-1 Well, information obtained during drilling and tests conducted in connection therewith indicated the possibility of commercial production of oil in said McGracken Formation at an interval of approximately 8,253 feet to 8,359 feet, and further indicated the possibility of commercial gas production in the Mississippian at an interval of approximately 7,650 feet to 7,925 feet.

(3) Applicant proposes to undertake multiple zone completion in said well in essentially the same manner as was approved in Cause No. 31 in connection with Applicant's B-1 Well, reference being here made to the Exhibits introduced in connection therewith at the hearing of said Cause No. 31, especially Exhibit "G", Applicant further stating as follows: Applicant would set a production packer between said McGracken and Mississippian at a depth of approximately 8,175 feet and would run and set 2-7/8 inch O.D. Hydril type tubing for the purpose of completing in and producing from the Devonian Formation; Applicant would further set a dual production packer above the Mississippian and at a depth of approximately 7,480 feet and thereafter run and set a 2-3/8 inch O.D. Hydril type tubing string for the purpose of completing in and producing from the Mississippian, and would thereafter produce Mississippian gas and condensate through said 2-3/8 inch string; additionally, Applicant would install and maintain the necessary dual completion equipment and well head and surface equipment facilities so as to allow production from both of the aforesaid zones without commingling.

(4) Applicant attaches hereto Affidavit evidencing mailing of a copy of this Application to Texas Eastern Transmission Corporation, Memorial Professional Building, P. O. Box 1189, Houston, Texas, the only owner of working interests (other than this Applicant and Featherstone Corporation) of any tract within one-half (1/2) mile of said A-1 Well, together with evidencing the mailing of a copy hereof to the District Supervisor, United States Geological Survey.

* * *

WHEREFORE, this Applicant, as designated Operator, for itself and Featherstone Corporation, respectfully requests that this Application be approved by the Commission, or its authorized agent, without further notice or hearing.

DATED this 30th day of June, 1960.

THE PURE OIL COMPANY

By 
G. W. Hancock
Manager, Northern Producing
Division

STATE OF COLORADO)
City and) ss.
County of Denver)

O. W. HANCOCK, being first duly sworn, deposes and says that he executed the above and foregoing petition on behalf of The Pure Oil Company by authority, and that it is his information and belief that the facts set forth therein are true and correct.

O. W. Hancock

Subscribed and sworn to before me this 30th day of

June, 1960.

My Commission expires September 23, 1963

My Commission Expires

Mary A. Henderson
Notary Public, Residing at
Denver, Colorado

A F F I D A V I T

STATE OF COLORADO)
City and) ss.
County of Denver)

C. W. HANCOCK, being first duly sworn, deposes and says that:

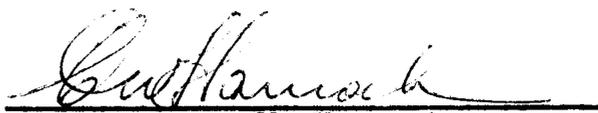
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P. O. Box 1189
Houston, Texas

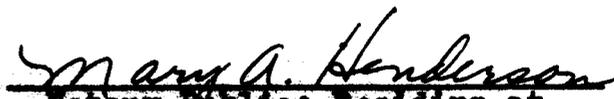
by placing copies of said Application in envelopes addressed as indicated and mailing same by registered mail through the United States Mails, postage and registry fee prepaid.

FURTHER Affiant sayeth not.


C. W. Hancock

SUBSCRIBED AND SWORN to before me this 30th day of June, 1960.

My Commission expires September 23, 1963
~~My Commission Expires~~


Notary Public; Residing at
City and County of Denver,
State of Colorado.

OIL AND GAS CONSERVATION COMMISSION
STATE OF UTAH

IN THE MATTER OF THE APPLICATION OF)	
THE PURE OIL COMPANY (AS DESIGNATED)	
OPERATOR, FOR ITSELF AND FEATHERSTONE)	
CORPORATION) FOR AN ORDER AUTHORIZING)	APPLICATION
APPLICANT TO PERFORM A MULTIPLE ZONE)	
COMPLETION IN OPERATOR'S U.S.A. A-1)	
WELL, LOCATED IN THE NE $\frac{1}{4}$ NW $\frac{1}{4}$ OF SEC-)	
TION 10, TOWNSHIP 30 SOUTH, RANGE 24)	
EAST, S.L.M., LISBON FIELD, SAN JUAN)	
COUNTY, UTAH)	

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I.

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(2) Applicant and Featherstone Corporation are the owners of United States Non-Competitive Oil and Gas Lease Utah Serial No. 014903, covering, among other land, all of Section 10, Township 30 South, Range 24 East, S.L.M., except the West Half of the Northwest Quarter (W $\frac{1}{2}$ NW $\frac{1}{4}$) thereof.

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II.

Applicant desires to undertake multiple zone completion in its said U.S.A. A-1 Well in the McCracken Formation of Devonian Age and in rocks of Mississippian Age and in connection therewith avers as follows:

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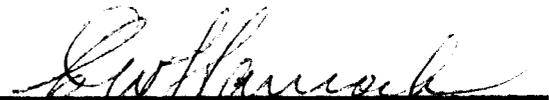
* * *

WHEREFORE, this Applicant, as designated Operator, for itself and Featherstone Corporation, respectfully requests that this Application be approved by the Commission, or its authorized agent, without further notice or hearing.

DATED this 30th day of June, 1960.

THE PURE OIL COMPANY

By



C. W. Hancock
Manager, Northern Producing
Division

STATE OF COLORADO)
City and) ss.
County of Denver)

C. W. HANCOCK, being first duly sworn, deposes and says that he executed the above and foregoing petition on behalf of The Pure Oil Company by authority, and that it is his information and belief that the facts set forth therein are true and correct.

C. W. Hancock

Subscribed and sworn to before me this 30th day of

June, 1960.

My Commission expires September 23, 1963
My Commission Expires

Mary A. Henderson
Notary Public; Residing at
Denver, Colorado.

July 11, 1960

**The Pure Oil Company
Farmers Union Building
1575 Sherman Street
Denver 3, Colorado**

Attention: Mr. J. I. Morris

**Re: Well No. U.S.A. - A-1, NE¼ NW¼
Section 10, Township 30 South,
Range 24 East, SLM, Lisbon Field,
San Juan County, Utah**

Gentlemen:

With reference to your application to dually complete the above mentioned well in the Devonian and Mississippian formations, this letter is to advise you that approval to effect such completion is hereby granted.

Yours very truly,

UTAH OIL & GAS CONSERVATION COMMISSION

**CLEON B. FREIGHT
EXECUTIVE SECRETARY**

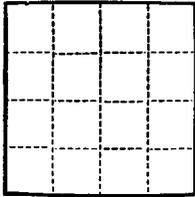
CBF:cc

**cc: Mr. Harry Drolsford
Pure Oil - Denver, Colorado**

**Texas Eastern Transmission
Houston - Texas**

**Mr. John Anderson, Supervisor
U. S. Geological Survey
Roswell, New Mexico**

**P. T. McGrath, U.S.G.S.
Farmington, New Mexico**



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

April 11, 19 61

NW Lisbon USA-A

Well No. 1 is located 563 ft. from N line and 2050 ft. from NE line of sec. 10

NE NW Sec. 10 30-S 24-E Salt Lake
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Lisbon San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

SEE ATTACHED SHEETS.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

Address P. O. Box 265

Moab, Utah

By J. B. Strong

Title District Chief Clerk

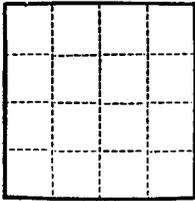
SUNDREY NOTICE

NW Lisbon USA-A No. 1

Sec. 10-308-24E
San Juan Co., Utah

Killed well. Pulled rods and pump. Pumped in 400 gallons Gel X-820 (mixed to break in 10 days) in well to block McCracken Formation. Circulated out oil but unable to circulate water. Pumped in another 400 gallons Gel X-820, this also failed. Formation has now taken approx. 600 bbls salt water. Pumped in 136 bbls J-101 with 2000 gallons salt water. Pumped in 100 bbls water with $3\frac{1}{4}$ lbs J-101 Fluid Loss Additive per 1000 gallons water. Pumped in 200 bbls salt water with 20 lbs J-101 Fluid Loss Additive per 1000 gallons water. Had circulation immediately. Ran Gamma-Ray and Collar Log from 8050'-7500' with Lane-Wells. Perforated Mississippian Formation 7576'-7610' with 2 shots per ft, 7610'-7680' with one shot per ft, 7680'-7730' with 2 shots per ft, 7730'-7850' with one shot per ft, 7850'-7900' with 2 shots per ft, and 7900'-7970' with one shot per ft, total of 528 shots. Set Baker Model "D" Packer at 8000' with wire line. Ran 2-7/8" O.S. Hydril tubing to 8000' with dual packer in string at approx. 7500' and landed in dual hanger in tubing spool. Ran 2-3/8" Buttress tubing, landed in "K" Packer at 7500'. Displaced salt water with fresh water. Swabbed well in from 3500'. Cleaned to pit. Flowed on 24 hour test on 25/64" choke, produced 179 bbls condensate, gas metered at 4376 MCF/D, GOR 24,490, tubing pressure 1625 lbs. Shut well in 3-10-61 thru 3-25-61 to set larger pumping unit to pump McCracken formation. Mississippian formation shut in.

WV



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City

Lease No. Utah 014903

Unit _____

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

June 19, _____, 19 61

Northwest Lisbon USA-A

Well No. 1 is located 563 ft. from $\left\{ \begin{matrix} N \\ S \end{matrix} \right\}$ line and 2050 ft. from $\left\{ \begin{matrix} E \\ W \end{matrix} \right\}$ line of sec. 10

NE NW Sec. 10
(1/4 Sec. and Sec. No.)

308 24E
(Twp.) (Range)

S.L.M.
(Meridian)

Northwest Lisbon
(Field)

San Juan
(County or Subdivision)

Utah
(State or Territory)

The elevation of the ~~surface~~ ^{ground} above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

6-15-61 Shut well in at 8:00 a.m. 6-15-61. Unseated pump and killed well with 75 bbls. oil. Pulled rods and hot oiled tubing with 40 bbls. Acidised McCracken formation with 1000 gallons MCA - 7-1/2% acid and displaced with 60 bbls. oil. Shut well in.

6-16-61 Swabbed to pit 9 hours. Recovered oil and acid water.

6-17-61 Swabbed to pit 3 hours. Recovered oil and acid water. Ran rods and hooked up well to pump.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company The Pure Oil Company

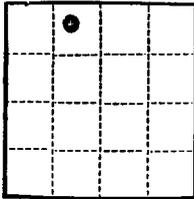
Address P. O. Box 265

Mosb, Utah

Alpine 3-3581

By J. B. Strong

Title District Chief Clerk



Sec. 10

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake
Lease No. U-014903
Unit Lisbon

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

June 18, 19 62

Lisbon Unit

Well No. B-610 is located 563 ft. from [N] line and 2050 ft. from [E] line of sec. 10

NE 1/4 Sec. 10 30S 24E SLM
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Lisbon San Juan Utah
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~ ground above sea level is 6575 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Well designation changed due to unitization of Lisbon Field effective 5/1/62.

OLD DESIGNATION

Northwest Lisbon USA "A" #1

NEW DESIGNATION

Lisbon Unit #B-610

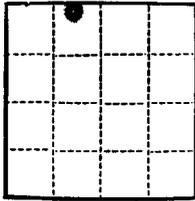
I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company THE PURE OIL COMPANY
Address P. O. Box 265
Moab, Utah
Alpine 3-3581

By [Signature]
L. K. Cogges
Title Office Manager

Copy to H.A.E.

Page 7



Sec. 10

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake
Lease No. U-014903
Unit Lisbon

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	X
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

July 31, 19 62

Lisbon Unit
Well No. **B-610** is located **563** ft. from **[N]** line and **2050** ft. from **[W]** line of sec. **10**
NE NW Sec.10 **30S** **24E** **SLM**
($\frac{1}{4}$ Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Lisbon **San Juan** **Utah**
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~ **ground** above sea level is **6575** ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Well classification changed from Shut In Gas Well to Gas Injection Well.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company THE PURE OIL COMPANY
Address P. O. Box 1336
Moab, Utah
Phone 253-3581
By *L. K. Cogan*
L. K. Cogan
Title Office Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

Salt Lake U-011903

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

Lisbon Unit

8. FARM OR LEASE NAME

Lisbon Unit

9. WELL NO.

B-610

10. FIELD AND POOL, OR WILDCAT

Lisbon - Mississippian

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Sec. 10, T-30S, R-24E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

OL 6,575'

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT*

Supplemental Well History

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Pulled McCracken tubing, rods and pump. Killed Mississippian zone with salt water. Pulled 2-3/8" Mississippian tubing. No restrictions in tubing. Pulled 2-7/8" McCracken tubing and Model K packer. Baker production tube on bottom of Model K Mississippian side was plugged with rubber and gunk.

On July 2, 1966, ran 2-7/8" CS Hydril tubing (McCracken) with Baker Model K dual packer. Set packer at 7,494'. Left 8,000# weight on Baker Model D packer at 8,000'. Ran 2-3/8" Buttress tubing (Mississippian) and landed in dual packer at 7,494' (open ended) with 12,000# weight. Treated 150 bbls. of annulus water with Cronox 235. Displaced water and tested packer. Held O.K. Ran pump and rods in McCracken zone. Resumed injecting gas into Mississippian formation at 5:00 p.m. 7-3-66. Plant pressure dropped from 3600 psi to 3380 psi.

18. I hereby certify that the foregoing is true and correct

SIGNED ORIGINAL SIGNED BY
RF E. Davis

TITLE District Office Manager

DATE 7-19-66

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

DATE _____

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

SUBMIT IN TRIPL
(Other instructions
verse side)

E*
re-

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

Salt Lake U-011903

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Gas Injection Well		7. UNIT AGREEMENT NAME Lisbon Unit	
2. NAME OF OPERATOR Union Oil Company of California		8. FARM OR LEASE NAME Lisbon Unit	
3. ADDRESS OF OPERATOR P. O. Box 1611 - Casper, Wyoming		9. WELL NO. B-610	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 563' FNL and 2,050' FWL, NE NW		10. FIELD AND POOL, OR WILDCAT Lisbon - Mississippian	
14. PERMIT NO.		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 10, T-30S, R-24E	
15. ELEVATIONS (Show whether DF, RT, GR, etc.) QL 6,575'		12. COUNTY OR PARISH San Juan	13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) Supplemental Well History <input checked="" type="checkbox"/>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Pulled McCracken tubing, rods and pump. Killed Mississippian zone with salt water. Pulled 2-3/8" Mississippian tubing. No restrictions in tubing. Pulled 2-7/8" McCracken tubing and Model K packer. Baker production tube on bottom of Model K Mississippian side was plugged with rubber and gunk.

On July 2, 1966, ran 2-7/8" CS Hydril tubing (McCracken) with Baker Model K dual packer. Set packer at 7,494'. Left 8,000# weight on Baker Model D packer at 8,000'. Ran 2-3/8" Buttress tubing (Mississippian) and landed in dual packer at 7,494' (open ended) with 12,000# weight. Treated 150 bbls. of annulus water with Cronox 235. Displaced water and tested packer. Held O.K. Ran pump and rods in McCracken zone. Resumed injecting gas into Mississippian formation at 5:00 p.m. 7-3-66. Plant pressure dropped from 3600 psi to 3380 psi.

18. I hereby certify that the foregoing is true and correct

ORIGINAL SIGNED BY

SIGNED R. E. DAVIS
R. E. Davis

TITLE **District Office Manager**

DATE **7-19-66**

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

DATE _____

(6)



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form approved, Budget Bureau No. 42-B
LAND OFFICE Salt Lake
LEASE NUMBER Utah 014903
UNIT

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Lisbon

The following is a correct report of operations and production (including drilling and producing wells) for the month of September, 1975.

Agent's address P. O. Box 2620 Company Union Oil Company of California
Casper, Wyoming 82601 Signed V. E. Dungan

Phone 234-1563 Agent's title Chief Clerk

SEC. AND 1/4 or 1/8	TWP.	RANGE	WELL NO.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
<u>SEC. 10</u>										
<u>NE NW</u>	<u>30S</u>	<u>24E</u>	<u>B610</u>	<u>30</u>	<u>405</u>	<u>49.0</u>	<u>528</u>		<u>NONE</u>	<u>Pumping</u>
<u>McCracken</u>										

GAS (MCF)
Sold 0
Vented 0
Off Lease 0
FUEL 528

OIL or CONDENSATE: (To be reported in Barrels)
On hand at beginning of month 1,218.64
Produced during month 404.85
Sold during month 1,005.30
Unavoidably lost NONE
Reason: _____
On hand at end of month 618.19

NOTE.—There were 1,005.30 runs or sales of oil; No M cu. ft. of gas sold; No runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Salt Lake
LEASE NUMBER Utah 014903
UNIT _____



LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Lisbon

The following is a correct report of operations and production (including drilling and producing wells) for the month of January, 1976.

Agent's address P. O. Box 2620 Company Union Oil Company of California

Casper, Wyoming 82601

Signed U R Dungan

Phone 234-1563

Agent's title Chief Clerk

SEC. AND 1/4 OF 1/4	TWP.	RANGE	WELL NO.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
<u>SEC. 10</u>										
<u>NE NW McCracken</u>	<u>30S</u>	<u>24E</u>	<u>B610</u>	<u>0</u>	<u>NONE</u>	<u>49.0</u>	<u>NONE</u>		<u>NONE</u>	<u>SI ALL MONTH WAITING REPAIRS DOWN HOLE</u>

GAS (MCF)

Sold 0
 Vented 0
 Off Lease 0
FUEL 0

OIL or CONDENSATE: (To be reported in Barrels)

On hand at beginning of month 433.93
 Produced during month NONE
 Sold during month NONE
 Unavoidably lost NONE
 Reason: _____
 On hand at end of month 433.93

NOTE.—There were NO runs or sales of oil; No M cu. ft. of gas sold; NO runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

(6)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form approved.
Budget Bureau No. 42-R356.5.

LAND OFFICE Salt Lake
LEASE NUMBER Utah 014903
UNIT

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Lisbon

The following is a correct report of operations and production (including drilling and producing wells) for the month of February, 19 76,

Agent's address P. O. Box 2620 Company Union Oil Company of California

Casper, Wyoming 82601 Signed V. P. Dungan

Phone 234-1563 Agent's title Chief Clerk

SEC. AND 1/4 OF 1/4	TWP.	RANGE	WELL NO.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
<u>SEC. 10</u>										
<u>NE NW McCracken</u>	<u>30S</u>	<u>24E</u>	<u>B610</u>	<u>0</u>	<u>NONE</u>		<u>NONE</u>	<u>NONE</u>	<u>NONE</u>	<u>SI - WAITING DOWN-HOLE REPAIR.</u>

GAS (MCF)

Sold NONE
Produced NONE
Off Lease NONE

OIL or CONDENSATE: (To be reported in Barrels)

On hand at beginning of month 433.93
Produced during month NONE
Sold during month NONE
Unavoidably lost NONE
Reason: _____
On hand at end of month 433.93

NOTE.—There were No. runs or sales of oil; No M cu. ft. of gas sold; No runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.



June 21, 1985

RECEIVED

JUN 28 1985

DIVISION OF OIL
GAS & MINING

Mr. Cleon B. Feight
Utah Oil, Gas & Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

LISBON FIELD
UIC REQUIREMENTS

Dear Mr. Feight:

In your letter dated May 18 you requested missing information required by Rule I-4. A location plat of the Lisbon Field is enclosed. Copies of the authorized existing enhanced recovery wells form DOGM-UIC-8, the authorized existing disposal wells form DOGM-UIC-9, and the notice of completion form DOGM-UIC-2 for each authorized existing well are attached. Also attached is a corrected schematic diagram of the Lisbon Unit #D-810 and an analysis of our produced/injected water.

All injection wells are completed in the Mississippian formation. This zone consists of limestone and dolomite. The overlying and underlying strata consists mainly of shale with little or no permeability. The fracturing pressure for the Mississippian is about 5,500 psig BHP. Since the gas injectors are operating at less than 3,000 psig and the water injectors are operating at pressures less than 2,000 psig, all wells are well below any fracture pressures.

Both injection systems are protected by high pressure shut downs. The gas injection compressors shut down at 3,500 psig and the water injection pumps shut down at 3,000 psig. If a well failure should occur, our contingency plan is to shut in the well, isolate the problem and correct the problem. The mechanical integrity of the tubing, casing and packer will be monitored by pressure tests every five years.

(To be filed within 30 days after drilling is completed)

DEPARTMENT OF NATURAL RESOURCES AND ENERGY

COUNTY
LEASE NO.

API NO. _____

640 Acres
N

DIVISION OF OIL, GAS, AND MINING
Room 4241 State Office Building
Salt Lake City, Utah 84114

W

E

S

Locate Well Correctly
and Outline Lease

COUNTY S Juan SEC. 10 TWP. 30S RGE. 24E
COMPANY OPERATING Union Oil Co. of Ca.
OFFICE ADDRESS P.O. Box 760
TOWN Moab STATE UT ZIP 84532
FARM NAME Lisbon Unit WELL NO. B-610
DRILLING STARTED 8-14-59 DRILLING FINISHED 11-21-59
DATE OF FIRST PRODUCTION 1-4-60 COMPLETED 1-3-60
WELL LOCATED ¼ NE ¼ NW ¼
563 FT. FROM NE ¼ OF ¼ SEC. & 2050 FT. FROM WL OF ¼ SEC.
ELEVATION DERRICK FLOOR 6589' GROUND 6575'

TYPE COMPLETION

Single Zone _____
Multiple Zone X
Comingled _____

LOCATION EXCEPTION

OIL OR GAS ZONES

Name	From	To	Name	From	To
Mississippian	7522	8008			
McCracken	8253	8359			

CASING & CEMENT

Casing Set				Csg. Test	Cement		
Size	Wgt.	Grade	Feet	Psi	Sax	Fillup	Top
20"	94#	H-40	34'		189		Surface
13-3/8"	48#	H-40	968'		1025		Surface
9-5/8"	<u>40 & 36</u>	J-55	4317'	2,000	400		
7"	<u>26 & 23</u>	N-80	8440'	1,600	2000		4,310'

TOTAL DEPTH 8,440'

PACKERS SET
DEPTH 7,999' & 7,496"

NOTE: THIS FORM MUST ALSO BE ATTACHED WHEN FILING PLUGGING FORM DOGM-UIC-6

COMPLETION & TEST DATA BY PRODUCING FORMATION

1

2

3

FORMATION	McCracken	Mississippian
SPACING & SPACING ORDER NO.		
CLASSIFICATION (DISPOSAL WELL, ENHANCED RECOVERY, LP GAS STORAGE)	Oil Producer	Gas Injector
PERFORATED	8261-8293'	7576-7970'
INTERVALS	8310-8348'	
ACIDIZED?	2,000 gal Mud Acid	
FRACTURE TREATED?	28,000# 20-40 Sd & 733 Bbl oil	

INITIAL TEST DATA

Date	1-4-60		
Oil, bbl./day	586		
Oil Gravity	45.2		
Gas, Cu. Ft./day	500	CF	CF
Gas-Oil Ratio Cu. Ft./Bbl.	853		
Water-Bbl./day	0		
Pumping or Flowing	F		
CHOKE SIZE	14/64		
FLOW TUBING PRESSURE	250		

A record of the formations drilled through, and pertinent remarks are presented on the reverse.
(use reverse side)

I, the undersigned, being first duly sworn upon oath, state that this well record is true, correct and complete according to the records of this office and to the best of my knowledge and belief.

(801)

Telephone 686-2236

BRA

Area Supt.

Name and title of representative of company

Subscribed and sworn before me this _____ day of _____, 19 _____

(Over)

FORMATIONS TOPS DRILLED

Chinle	308'	(+6,281)
Hermosa	2,268'	(+4,321)
Paradox	3,973'	(+2,616)
Salt, top	4,299'	(+2,290)
Mississippian	7,522'	(- 933)
Ouray	8,008'	(-1,419)
McCracken	8,253'	(-1,664)

Well # B-610
 Field Lisbon
 Unit # 1. Lisbon
 Unit # 2. McCraker
 Date 7/14/81

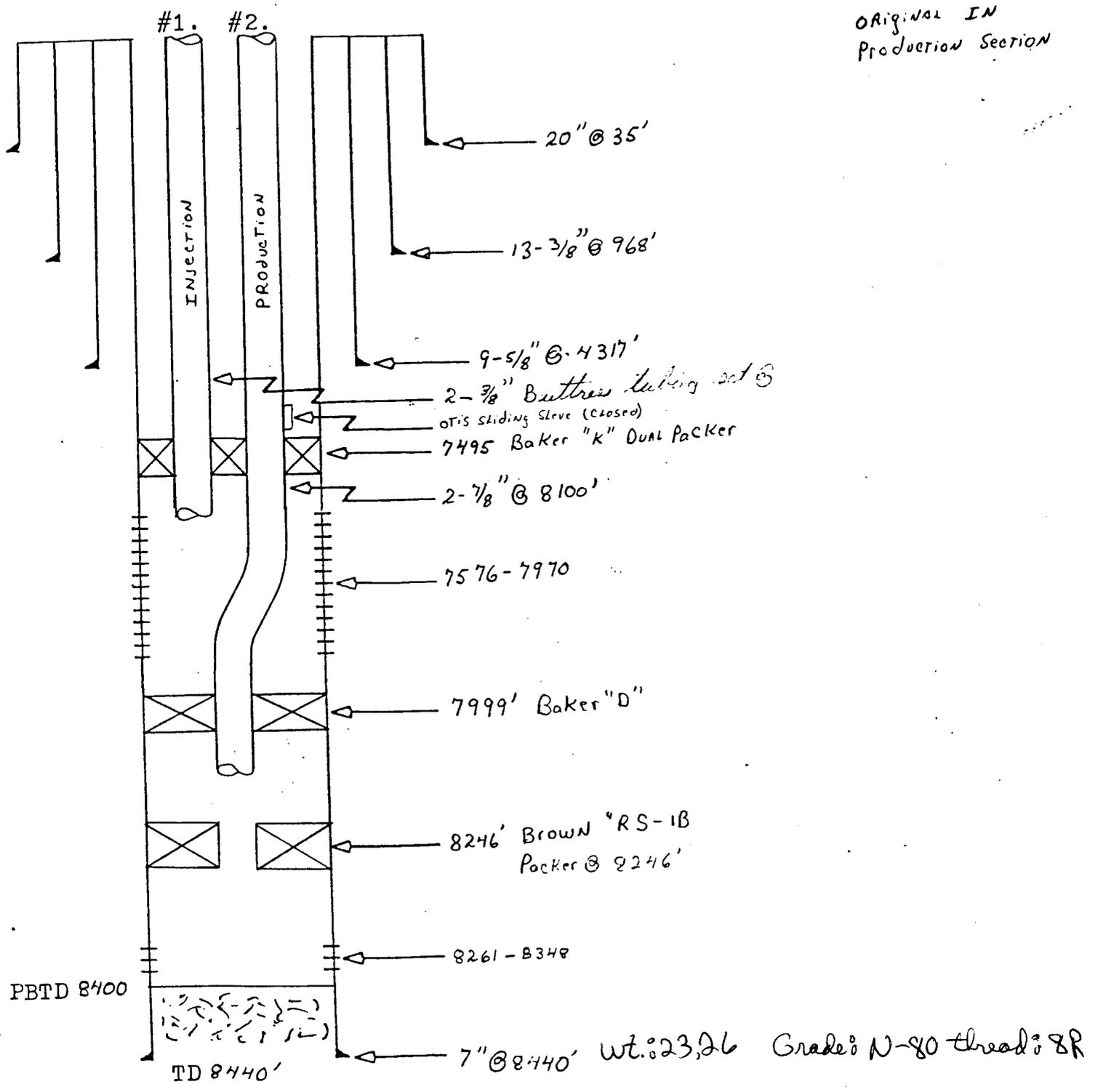
UNION OIL COMPANY OF CALIFORNIA
 CENTRAL REGION
 CASPER DISTRICT
 MOAB AREA

Elevation G.L. 6575' Datum is 11' Above G.L.

UNIT # 1
 Status Injection On Date 7/14/81 BOD (NONE) MCFD 11448 BWD (NONE)
 Pressure TP 2476 WH CP PKR BHP _____ Line 2550

UNIT # 2
 Status Flowing On Date 7/14/81 BOD 40 BWD 0 MCFD 110
 Pressure TP: 251 CP PKR BHP 1070

ORIGINAL IN
 Production Section



7

INJECTION WELLS

<u>NAME</u>	<u>LOCATION OF WELLS</u>	<u>TOTAL DEPTH (ft)</u>
B-614 43-037-16468	667/N & 2030/W NENW Sec. 14-T30S-R24E	9022
B-610 43-037-16469	563/N & 2050/W NENW Sec. 10-T30S-R24E	8440
D-810 16471	1895/S & 755/E NESE Sec. 10-T30S-R24E	9310
D-84 16250	1980/S & 660/E NESE Sec. 4-T30S-R24E	9126

DISPOSAL WELLS

B-624	710/N & 166/W NENW Sec. 24-T30S-R24E	9648
B-816	1860/W & 2250/S NESW Sec. 16-T30S-R24E	8650

PRODUCTION WELL within 1/2 mile of Injection Wells and Disposal Wells

C-84	2690/N & 1520/E NWSE Sec. 4-T30S-R24E	8964
B-84	1648/S & 2516/W, Sec. 4-T30S-R24E	8766
C-74	1980/N & 1980/E SWNE Sec. 4-T30S-R24E	9017
C-94	330/S & 1600/E SWSE Sec. 4-T30S-R24E	8859
C-93	765/S & 2105/E, Sec. 3-T30S-R24E	8430
D-610	565/N & 964/E, Sec. 10-T30S-R24E	8510
B-616	1310/N & 2660/E NENW Sec. 16-T30S-R24E	8689
D-816	1620/S & 1220/E, Sec. 16-T30S-R24E	8666
D-715	2450/N & 335/E, Sec. 15-T30S-R24E	8896
B-814	1482/W & 2601/S, Sec. 14-T30S-R24E	8735
A-814	1980/S & 660/W, Sec. 14-T30S-R24E	9015

WATER WELLS

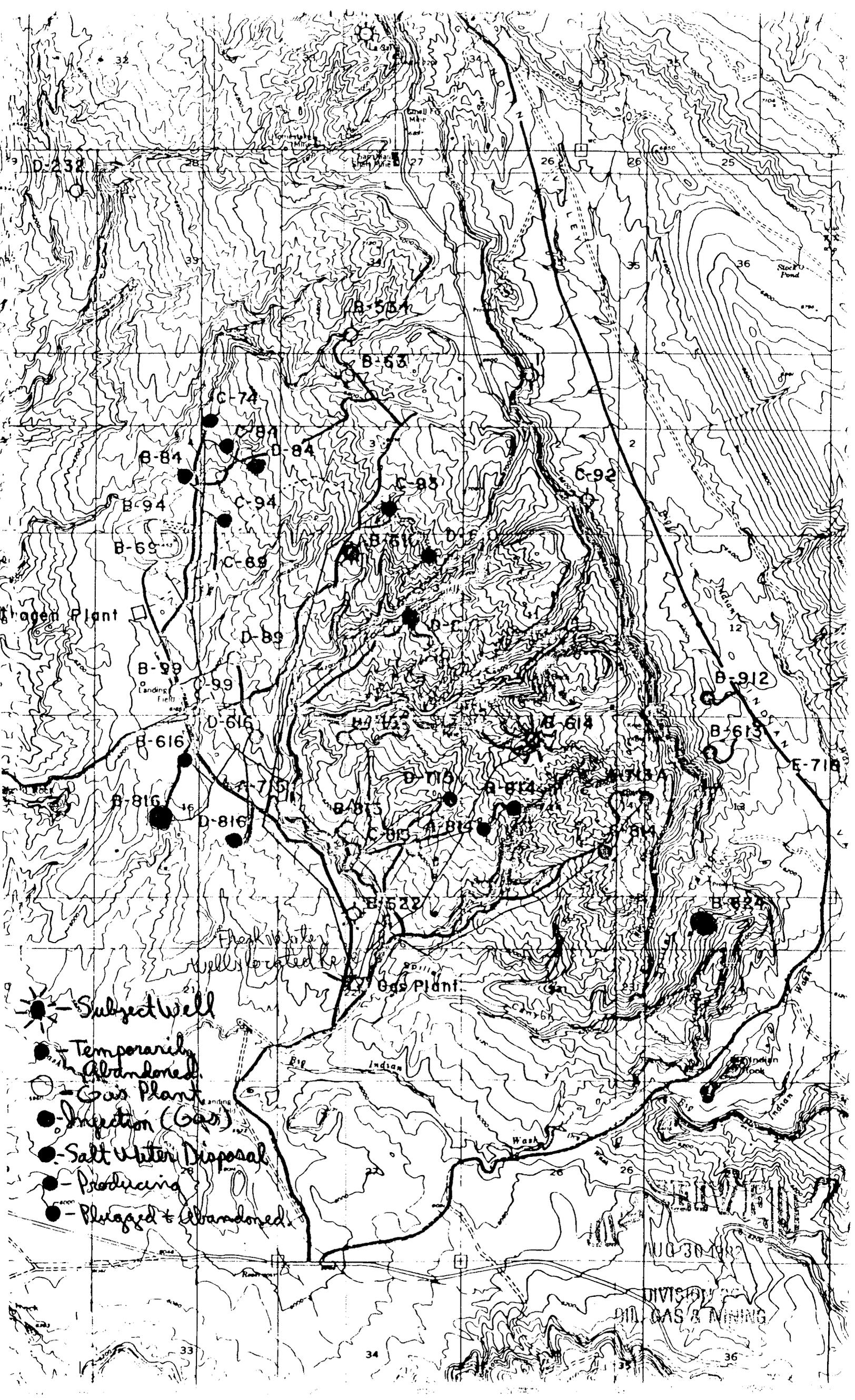
Plant Well #1	2780/N & 2450/E from SW corner Sec. 22-T30S-R24E	500
Shop Well #2	2346/N & 2586/E from Sw corner Sec. 22-T30S-R24E	500

All land within a half mile of each injection well is federally, state and Union owned and the operator of all the wells within a half mile of the injection wells is Union Oil of California.

6
LEASE NAME: Lisbon Unit

FIELD: Lisbon

<u>WELL NAME</u>	<u>LOCATION</u>	<u>TOTAL DEPTH</u>	<u>STATUS</u>	<u>SURFACE OWNER</u>	<u>OPERATOR</u>
D-84	S-4, T30S, R24E 1,980' FSL & 660' FEL	8,858'	Inj. well	Federal Gov.	Union Oil Co. of Ca
C-84	S-4, T30S, R24E 2,690' FNL & 1,520' FEL	8,922'	Prod.	Federal Gov.	Union Oil Co. of Ca
C-94	S-4, T30S, R24E 330' FSL & 1,600' FEL	8,859'	Prod.	Federal Gov.	Union Oil Co. of Ca
B-84	S-4, T30S, R24E 1,648' FSL & 2,516' FWL	8,841'	Prod.	Federal Gov.	Union Oil Co. of Ca
C-74	S-4, T30S, R24E 1,980' FNL & 1,980' FEL	9,017'	Temp. Abd.	Federal Gov.	Union Oil Co. of Ca



-  - Subject Well
-  - Temporarily Abandoned
-  - Gas Plant
-  - Injection (Gas)
-  - Salt Water Disposal
-  - Producing
-  - Plugged & Abandoned

DIVISION OF
OIL, GAS & MINING

CHECKLIST FOR INJECTION WELL APPLICATION AND FILE REVIEW

Operator: Union Oil Company Well No. B610
 County: San Juan T 30N R 24E Sec. 10 API# 43-037-16469
 New Well Conversion Disposal Well Enhanced Recovery Well

	<u>YES</u>	<u>NO</u>
UIC Forms Completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Plat including Surface Owners, Leaseholders, and wells of available record	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schematic Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fracture 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure :	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adequate 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fluid Sou	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Analysis to be i	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Known USC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Number of	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aquifer :	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mechanic	<input checked="" type="checkbox"/>	<input type="checkbox"/>

12/10/84
 This well has
 2 zones. MSSP
 is the injection
 zone and McCraker
 is the producing
 zone (pow)
 mssp can also be POW

McCraker - No. 1 Craker
 No. TDS
 No. TDS 50,000
 Depth 1200-1800
 Prcd. 2 P&A 0
 Water 0 Inj. 1
 NA
 No
 Type _____

Comments: #

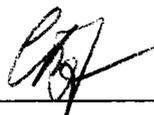
Reviewed by: *[Signature]*

CHECKLIST FOR INJECTION WELL APPLICATION AND FILE REVIEW

Operator: Union Oil Company Well No. 13610
 County: San Juan T 30S R 24E Sec. 10 API# 43-037-16469
 New Well Conversion Disposal Well Enhanced Recovery Well

	YES	NO
UIC Forms Completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Plat including Surface Owners, Leaseholders, and wells of available record	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schematic Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fracture Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure and Rate Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adequate Geologic Information	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fluid Source	<u>Mass - M. Crater</u>	
Analysis of Injection Fluid	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	TDS <input type="checkbox"/>
Analysis of Water in Formation to be injected into	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	TDS <u>50,000</u>
Known USDW in area	<u>Crater</u>	Depth <u>1200-1800</u>
Number of wells in area of review	<u>3</u>	Prd. <u>2</u> P&A <u>0</u>
	Water <u>0</u>	Inj. <u>1</u>
Aquifer Exemption	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
Mechanical Integrity Test	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	Date <input type="checkbox"/>	Type <input type="checkbox"/>

Comments: * Gas Injection

Reviewed by: 

Unocal Oil & Gas Division
Unocal Corporation
P.O. Box 760
Moab, Utah 84532
Telephone (801) 686-2236

UNOCAL 76

June 15, 1987

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
115 West 200 South
Moab, Utah 84532

Attn: Mr. Chip Hutchins

LISBON FIELD, SAN JUAN COUNTY, UTAH
WELL'S MCCRACKEN A-911 AND B-610
LEASE #'S SL-070008-A & SL-U-014903

Dear Mr. Hutchins:

Due to circumstances beyond our control, Trans Colorado Pipeline has shut in their gas gathering pipeline due to numerous leaks. Unocal request approval to flare produced natural gas from McCracken wells A-911 and B-610 during the period of time that TCP either replaces or repairs their pipeline. For additional information, I have enclosed a copy of a letter to the BLM.

Should you have any questions, please contact me at your earliest convenience.

Sincerely,



Robert J. Loewecke
Area Production Superintendent

RJL:aj

cc: L. Reed
D. Visser
File 4.25



June 15, 1987

U.S. Dept. of the Interior
Bureau of Land Management
Moab District
P.O. Box 970
Moab, Utah 84532

Attn: Mr. Paul Brown

LISBON FIELD, SAN JUAN COUNTY, UTAH
WELL'S MCCRACKEN A-911 AND B-610
LEASE #'S SL-070008-A & SL-U-014903

Dear Mr. Brown:

As per our telephone conversation last Friday, Trans Colorado Pipeline has shut in their 5 year old 8" pipeline which gathers natural gas from wells A-911 and B-610. This particular section of line has given TCP fits as it was installed with a bad wrap job and has a history of leaks due to external corrosion. We understand that the line currently has 17 leaks (23 leaks were repaired during last month) and that they are considering replacing the line. In either event TCP will most likely be shut in from 30 to 90 days, which is beyond our control and will result in both of these wells being shut in.

In accordance with NTL-4A, Part IIIA, Unocal request BLM approval to flare produced natural gas from both McCracken wells A-911 and B-610 for up to 90 days in order to recover the crude oil production. For the month of April 1987 the production from these wells was:

<u>WELL #</u>	<u>LOCATION</u>	<u>BOPD</u>	<u>BWPD</u>	<u>MCF/D</u>
A-911	SW SW SEC. 11 T30S R24E	52	0	146
B-610	NE NW SEC. 10 T30S R24E	19	0	87

U.S. Dept. of the Interior
Well's McCracken A-911 B-610
June 15, 1987

Should you have any questions, please contact me at your earliest convenience.

Sincerely,



Robert J. Loewecke
Area Production Superintendent

RJL:aj

cc: Lynn Jackson, BLM
L. Reed
D. Visser
File 4.25



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

3100
(U-065)

Moab District
P. O. Box 970
Moab, Utah 84532

JUN 23 1987

Robert J. Loewecke
Area Production Superintendent
Unocal Corporation
Unocal Oil and Gas Division
P. O. Box 760
Moab, Utah 84532

Re: Flaring of Cashinghead Gas
Federal Lease SL-070008-A, Well McCracken No. A-911
Federal Lease SL-U-014903, Well McCracken No. B-610
Lisbon Field
San Juan County, Utah

Dear Mr. Loewecke:

In response to your request dated June 15, 1987, flaring of less than 200 mcf per day per well of natural gas from the subject wells is hereby approved for a period of time not to exceed 90 days from the above date. After 90 days, flaring will be limited to a maximum of 3000 mcf per month per well for a period of time of one year from the above date.

Please report the volume of gas flared from each well on the Monthly Report of Operations.

Sincerely yours,

District Manager

cc:
GRA

John Baza, Petroleum Engineer
State of Utah Natural Resources
Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

ACTING

3100
(U-055)

Moab District
P. O. Box 970
Moab, Utah 84532

JUN 23 1987

Robert J. Loewecke
Area Production Superintendent
Unocal Corporation
Unocal Oil and Gas Division
P. O. Box 760
Moab, Utah 84532

RECEIVED
JUN 24 1987

**DIVISION OF
OIL, GAS & MINING**

Re: Flaring of Cashinghead Gas
Federal Lease SL-070008-A, Well McCracken No. A-911
Federal Lease SL-U-014903, Well McCracken No. B-510
Lisbon Field
San Juan County, Utah

Dear Mr. Loewecke:

In response to your request dated June 15, 1987, flaring of less than 200 mcf per day per well of natural gas from the subject wells is hereby approved for a period of time not to exceed 90 days from the above date. After 90 days, flaring will be limited to a maximum of 3000 mcf per month per well for a period of time of one year from the above date.

Please report the volume of gas flared from each well on the Monthly Report of Operations.

Sincerely yours,

/s/ Kenneth V. Rhea

District Manager

cc:
GRA

ACTING

John Baza, Petroleum Engineer
State of Utah Natural Resources
Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

SJones:km:6/22/87 Wang #1311f



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 30, 1987

Mr. Robert J. Loewecke
Unocal Corporation
P. O. Box 760
Moab, Utah 84532

Dear Mr. Loewecke:

Re: Gas Flaring Request

In response to your letter dated June 15, 1987, requesting approval to flare gas from McCracken wells A-911 and B-610, the Division of Oil, Gas and Mining hereby grants approval for the period of time that Trans Colorado Pipeline cannot transport gas from the wells and for not longer than 90 days. Please note that after 90 days, the wells shall be operated in accordance with Rule 311.3 of the Oil and Gas Conservation Rules which allows no more than 25 Mcf of gas per day to be vented or flared.

This approval represents a variance to Rule 311.3 and the Division will inform the Board of Oil, Gas and Mining of the approval during the informal briefing session of their next scheduled meeting. No Board action will be required at this time; however, any additional request for flaring beyond that stated in your letter will require the approval of the Board.

It is also necessary to comply with federal regulations and the federal lease requirements concerning oil and gas operations. Therefore, you are advised to contact the appropriate federal agency and ensure that they do not object to the proposed gas flaring.

Please contact this office again if you have any further questions.

Best regards,

A handwritten signature in cursive script that reads "Dianne R. Nielson".

Dianne R. Nielson
Director

JRB
cc: R. J. Firth
Well file
0314T-60



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 30, 1987

Mr. Robert J. Loewecke
Unocal Corporation
P. O. Box 760
Moab, Utah 84532

Dear Mr. Loewecke:

Re: Gas Flaring Request

In response to your letter dated June 15, 1987, requesting approval to flare gas from McCracken wells A-911 and B-610, the Division of Oil, Gas and Mining hereby grants approval for the period of time that Trans Colorado Pipeline cannot transport gas from the wells and for not longer than 90 days. Please note that after 90 days, the wells shall be operated in accordance with Rule 311.3 of the Oil and Gas Conservation Rules which allows no more than 25 Mcf of gas per day to be vented or flared.

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It is also necessary to comply with federal regulations and the federal lease requirements concerning oil and gas operations. Therefore, you are advised to contact the appropriate federal agency and ensure that they do not object to the proposed gas flaring.

Please contact this office again if you have any further questions.

Best regards,

Dianne R. Nielson
Director

JRB

cc: R. J. Firth
Well file

0314T-60

Unocal Oil & Gas Division
Unocal Corporation
P.O. Box 760
Moab, Utah 84532
Telephone (801) 686-2236

R. Frith
Well files

UNOCAL 76

July 10, 1987

120107

RECEIVED
JUL 13 1987

DIVISION OF
OIL, GAS & MINING

Dr. Dianne R. Nielson
State of Utah
Department of Natural Resources
Division of Oil, Gas & mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

B-610 43-037-16469 POW
A-911 43-037-31014 POW
30524E SC 10

GAS FLARING
LISBON FIELD, SAN JUAN COUNTY
WELL'S MCCRACKEN A-911-& B-610
LEASE #'S SL-070008-A & SL-U-014903

Dear Dr. Nielson:

Thank you for approval to flare produced natural gas at the above referenced wells during the period of time that Trans-Colorado Pipeline has their gas transmission line shut in for replacement. This letter is to advice the division that Trans-Colorado expect to have the pipeline replaced by early August which will result in flaring gas for less than 60 days.

In addition, I have enclosed a copy of BLM's letter of approval to flare gas. Should you have any questions, please contact me at your earliest convenience.

Sincerely,



Robert J. Loewecke
Area Production Superintendent

RJL:aj

Enclosures

cc: L. Reed w/enclosure
File 7.01 & 22.03 w/enclosure

Unocal Oil & Gas Division
Unocal Corporation
P.O. Box 760
Moab, Utah 84532
Telephone (801) 686-2236

2/11/87

072827

UNOCAL 76

July 10, 1987

RECEIVED
JUL 13 1987
(JW)

DIVISION OF
OIL, GAS & MINING

43-037-10469

B-610

Sec. 10, T 30S

R. J. E

Dr. Dianne R. Nielson
State of Utah
Department of Natural Resources
Division of Oil, Gas & mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

GAS FLARING
LISBON FIELD, SAN JUAN COUNTY
WELL'S MCCRACKEN A-911 & B-610
LEASE #'S SL-070008-A & SL-U-014903

Dear Dr. Nielson:

Thank you for approval to flare produced natural gas at the above referenced wells during the period of time that Trans-Colorado Pipeline has their gas transmission line shut in for replacement. This letter is to advice the division that Trans-Colorado expect to have the pipeline replaced by early August which will result in flaring gas for less than 60 days.

In addition, I have enclosed a copy of BLM's letter of approval to flare gas. Should you have any questions, please contact me at your earliest convenience.

Sincerely,



Robert J. Loewecke
Area Production Superintendent

RJL:aj

Enclosures

cc: L. Reed w/enclosure
File 7.01 & 22.03 w/enclosure

OPERATOR Union Oil Company of California
ADDRESS 3300 North Butler Avenue Suite 200
Farmington, New Mexico 87401

OPERATOR ACCT. NO. N1030

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION					SPUD DATE	EFFECTIVE DATE
					QQ	SC	TP	RG	COUNTY		
C	09750	09740	4303716469 <i>GW/PD</i>	LISBON UNIT #B-610	NENW	10	30S	24E	SAN JUAN	8/14/59	6/01/90
WELL 1 COMMENTS: TO CREATE THE MCCRACKEN UNIT <i>Fed.-Lease Prod. Zone - McCracken</i> <i>Field - Lisbon</i> <i>Unit - Lisbon "McCracken" eff. 2-1-90</i> <i>* changed 7-23-90</i> <i>FLR</i>											
C	10770	09740	4303731323	LISBON UNIT #C-910	SWSE	10	30S	24E	SAN JUAN	7/14/87	6/01/90
WELL 2 COMMENTS: TO CREATE THE MCCRACKEN UNIT <i>Fed.-Lease Prod. Zone - McCracken</i> <i>Field - Lisbon</i> <i>Unit - Lisbon "McCracken" eff. 2-1-90</i>											
C	10872	09740	4303731351	LISBON UNIT #B-614A	NENW	14	30S	24E	SAN JUAN	5/18/88	6/01/90
WELL 3 COMMENTS: TO CREATE THE MCCRACKEN UNIT <i>Fed.-Lease Prod. Zone - McCracken</i> <i>Field - Lisbon</i> <i>Unit - Lisbon "McCracken" eff. 2-1-90</i>											
C	10904	09740	4303731433	LISBON UNIT #B-810	NESW	10	30S	24E	SAN JUAN	7/31/88	6/01/90
WELL 4 COMMENTS: TO CREATE THE MCCRACKEN UNIT <i>Fed.-Lease</i> <i>Field - Lisbon</i> <i>Unit - Lisbon "McCracken" eff. 2-1-90</i>											
WELL 5 COMMENTS:											

ACTION CODES (See instructions on back of form)

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

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

RECEIVED
JUL 19 1990

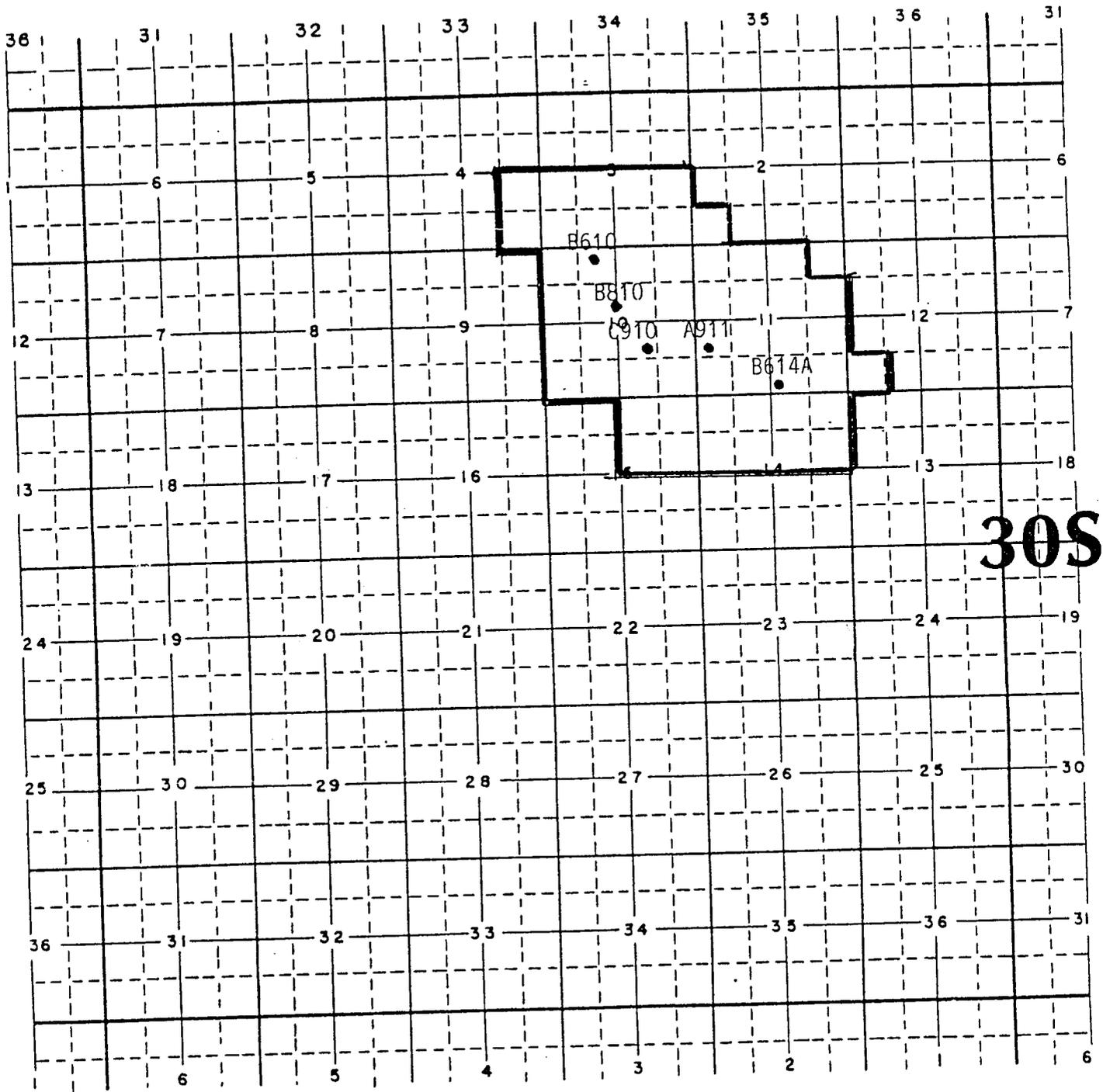
DIVISION OF
OIL, GAS & MINING

Paul West
Signature Paul West

District Production Title Manager 7-13-90 Date

Phone No. (505) 326-7600

LISBON (MC CRACEN) UNIT



30S

Allocation

Federal	99.9759%
State	0.0241%

24E

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
INJECTION WELL INSPECTION RECORD

OPERATOR: Union oil LEASE: Fed
WELL NAME: Lisbon W. B-1010 API: 43-037-16449
SEC/TWP/RNG: 10 30S 24E CONTRACTOR: _____
COUNTY: S/T FIELD NAME: Lisbon

INJECTION TYPE:

DISPOSAL: _____ ENHANCED RECOVERY: X OTHER: _____

SINGLE COMPLETION:

INJECTING: _____ SHUT-IN: _____
RATE: _____ TOTAL BARRELS: _____
TUBING PRESSURE: _____ CASING PRESSURE: _____
SURFACE CASING PRESSURE: _____

DUAL COMPLETION:

A. SHORT STRING:

INJECTING: X SHUT-IN: _____
RATE: _____ TOTAL BARRELS: _____
TUBING PRESSURE: _____ CASING PRESSURE: _____

B. LONG STRING:

INJECTING: _____ SHUT-IN: _____
RATE: _____ TOTAL BARRELS: _____
TUBING PRESSURE: _____ CASING PRESSURE: _____

REMARKS: Dual Completion - Flow Flowing From m^cCrack-en
Gas injection into ms.

INSPECTOR: AM

DATE: 1/29/91

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
INJECTION WELL INSPECTION RECORD

Operator: UNION OIL CO OF CALIFORNIA 43-037-16469

Well Name: B-610 Field Name: LISBON

SEC/TWP/RNG: 10/30S/24E

County: San Juan

Welltype-Status: INJG

Type of Inspection: Routine MIT Workover Conversion Plugging

Injection Type:

Disposal: _____ Enhanced Recovery: y Other: _____

Injecting: y Shut-In: _____

Rate: _____ (bpd) Totalizer: _____ (bbls)

Guages: Tubing N

Casing N Casing Pressure: _____ (psig)

Tubing Pressure: _____ (psig) Housekeeping: y

Equipment Condition: y

Remarks: Dual Completion injecting Lower Tbg.
Producing upper

Inspector: *Alvar*

Date: 1/28/93

Time: 8:45A

Unocal North American
Oil & Gas Division
Unocal Corporation
14141 Southwest Freeway
Sugar Land, Texas 77478
P.O. Box 4551
Houston, Texas 77210-4551
Telephone (713) 491-7600



May 14, 1993

RECEIVED

MAY 17 1993

DIVISION OF
OIL, GAS & MINING

State of Utah
Attn: Mr. Gil Hunt
Department of Natural Resources
Division of Oil, Gas, & Mining
335 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1200

RE: Conversion of a Gas Injection
Well to Helium Storage

Dear Mr. Hunt:

As per our conversation in November of 1992, please find enclosed copies of the sundry notice filed with the BLM. The sundry requests permission to convert a gas injection well at our Lisbon Unit to a helium storage well when reservoir blowdown commences in July 1993. This conversion requiring no surface or subsurface modifications.

If you require any additional information concerning this matter, please call the undersigned at (713) 287-7280.

Sincerely,

Union Oil Company of California
dba UNOCAL

Tom E. Baiar
Petroleum Engineer

TB/bjt



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.

SUBMIT IN TRIPLICATE

RECEIVED

MAY 17 1993

DIVISION OF

(713)287-7280

1. Lease Designation and Serial No.

2. Indian, Aliottee or Tribe Name

3. Unit or CA. Agreement Designation

Lisbon Unit

8. Well Name and No.

9. API Well No.

10. Field and Pool, or Exploratory Area

Lisbon

11. County or Parish, State

San Juan, Utah

Type of Well
 Oil Well Gas Well Other

1. Name of Operator
Union Oil Company of California

2. Address and Telephone No.
14141 SW Freeway, Sugar Land, TX 77478

3. Location of Well (Footage, Sec., T., R., M., or Survey Description)

CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

- Notice of Intent
- Subsequent Report
- Final Abandonment Notice

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other converting gas injection well to helium storage well

- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-Off
- Conversion to Injection
- Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Union Oil Company of California requests permission to convert one of the four gas injection wells (B-610, B-614, D-84, & D-810) at our Lisbon Unit to a helium storage well when reservoir blowdown commences in July 1993. At this time, the most likely candidate to be converted is the Lisbon Unit No. B-610 located in Sec. 10, T30S, R24E. This conversion requires no surface or subsurface modifications.

During plant start-up, the well will be used to temporarily store helium rich gas. After plant start-up, the well will be used for temporary helium and/or helium rich gas storage when the helium extraction facility is shut-down for repairs or when plant storage capacity is exceeded.

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

Date: 5-18-93

By: [Signature] Date: 5/14/93

I hereby certify that the foregoing is true and correct

Signed

[Signature]

Title

Petroleum Engineer

Date

5/14/93

This space for Federal or State office use

Approved by

Federal Approval of this

Title

Date

Conditions of approval, if any: Action is Necessary

Title 18 U.S.C. Section 1001, makes 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.



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

Rock Kastner
2/14/94

February 14, 1994

April 7th 9:00

Unocal
P.O. Box 760
Moab, Utah 84532

Re: Pressure Test for Mechanical Integrity, Lisbon Unit #D-84, B-610, D-610, B-614 Injection Wells, Sec. 4, 10, 14, T. 30 S., R. 24 E., San Juan County, Utah

Gentlemen:

The Underground Injection Control Program which the Division of Oil, Gas and Mining (DOGM) administers in Utah, requires that all Class II injection wells demonstrate mechanical integrity. It has been past policy of the Division to require pressure testing of all Class II salt water disposal wells and other injection wells not reporting monthly annulus pressures in accordance with rule R649-5-5.3 of the Oil and Gas Conservation General Rules. This rule requires that the casing-tubing annulus above the packer be pressure tested at a pressure equal to the maximum authorized injection pressure or 1,000 psi, whichever is lesser, provided that no test pressure is less than 300 psi. This test shall be performed at least every five year period beginning October, 1982. Our records indicate the above referenced wells are due for testing. Please make arrangements and ready the wells for testing during the week of April 4, 1994 as outlined below:

1. Operator must furnish connections, and accurate pressure gauges, hot oil truck (or other means of pressuring annulus), as well as personnel to assist in opening valves etc.
2. The casing-tubing annulus shall be filled prior to the test date to expedite testing, as each well will be required to hold pressure for a minimum of 15 minutes.
3. If mechanical difficulties or workover operations make it impossible for the wells to be tested on this date the tests may be rescheduled.

Page 2
Pressure Test
February 14, 1994

4. Company personnel should meet DOGM representatives at the field office or other location as negotiated.
5. All bradenhead valves with exception of the tubing on the injection wells must be shut in 24 hours prior to testing.

Please contact Dan Jarvis at (801)538-5340 to arrange a meeting time and place or negotiate a different date if this one is unacceptable.

Sincerely,

A handwritten signature in cursive script that reads "Gil Hunt". The signature is written in black ink and is positioned above the typed name.

Gil Hunt
UIC Program Manager

ldc
Attachment
WOI52

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

INJECTION WELL - PRESSURE TEST

TEST DATE: 4/7/94 WELL OWNER/OPERATOR: UNOCAL
DISPOSAL WELL: ENHANCED RECOVERY WELL: X OTHER:
API NO: 43-037-16469 WELL NAME/NUMBER: B-610
SECTION: 10 TOWNSHIP: 30S RANGE: 24E

INITIAL CONDITIONS:

TUBING - rate: pressure:
CASING/TUBING ANNULUS - pressure: 0

CONDITIONS DURING TEST:

TUBING pressure: psi for minutes
CASING/TUBING ANNULUS pressure: 1000 psi
annulus pressure drop during test: 0 psi

CONDITIONS AFTER TEST:

TUBING pressure: psi
CASING/TUBING ANNULUS pressure: 0 psi

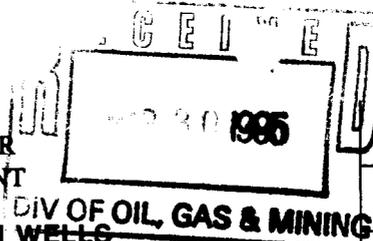
REMARKS:

NOT INJECTING AT PRESENT
HOT OIL TRUCK WAS OPERATED BY JESS TUCKER OF MO-TE, FARMINGTON, NM
ANNULUS FULL BEFORE TEST

RON & DAVE GARNER
OPERATOR REPRESENTATIVE

[Signature]
DOG M WITNESS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
Union Oil Company of California

3. Address and Telephone No.
P.O. Box 760 Moab, Utah 84532 801-686-2236

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NENW, S10, T30S, R24E

Lease Designation and Serial No.
U-014903

If Indian, Allottee or Tribe Name

If Unit or CA, Agreement Designation
Lisbon Unit

Well Name and No.
B-610

API Well No.
43-037-16469

Field and Pool, or Exploratory Area
Mississippian

County or Parish, State
San Juan Co., Utah

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

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other Temporary flow of Inj. well
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Lisbon Unit Well #D-84 is to be shut in for well workover. During this time to keep gas production to the Lisbon Plant at optimum flow rates, Lisbon Unit Injection Well B-610R will be turned into a Lisbon Production Well, flowing Mississippian formation gas thru the production equipment located at Lisbon Unit Well #D-84. This temporary setup has verbal approval from Jeff Brown, Oil & Gas Compliance Officer located in the San Juan Resource Area Office.

*Dual compl.
MCRN-POW
MSSP-GIW*

14. I hereby certify that the foregoing is true and correct

Signed *Neil L. Cortez* Title *Production Tech* Date *3-23-95*

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator

Union Oil Company of California

3. Address and Telephone No.

P.O. Box 760 Moab Utah 84532 (801) 686-2236

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NENW Sec 10 T30S R24E

*16469
43-037-30694*

5. Lease Designation and Serial No.

U-014903

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

Lisbon Unit

8. Well Name and No.

B-610R

9. API Well No.

U-014903

43-037-16469

10. Field and Pool, or Exploratory Area

Mississippian

11. County or Parish, State

San Juan County, Utah

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

TYPE OF SUBMISSION

TYPE OF ACTION

Notice of Intent
 Subsequent Report
 Final Abandonment Notice

Abandonment
 Recompletion
 Plugging Back
 Casing Repair
 Altering Casing
 Other _____

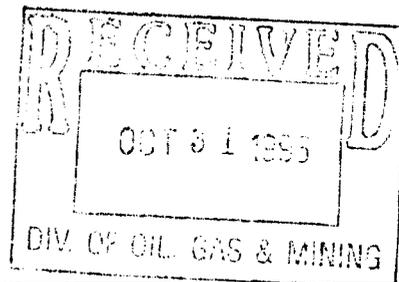
Change of Plans
 New Construction
 Non-Routine Fracturing
 Water Shut-Off
 Conversion to Injection
 Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Union Oil Company of California dba Unocal requests a dual status for Lisbon Unit well #B-610R. This is a reinjection well for the Lisbon Plant. When not used as reinjection it will flow gas to Lisbon Plant as well #B-610L. Site equipment will include a three phase separator, electronic and mechanical gas metering equipment. The present metering for reinjection of gas well #B-610R will be left in place.

**Accepted by the State
of Utah Division of
Oil, Gas and Mining
Date: 12-18-96
By: [Signature]**



14. I hereby certify that the foregoing is true and correct

Signed

[Signature]

Title

Production Tech

Date

8-9-96

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.

U-014903

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

Lisbon Unit

8. Well Name and No.

B-610R

9. API Well No.

U-014903

43-037-16469

10. Field and Pool, or Exploratory Area

Mississippian

11. County or Parish, State

San Juan County, Utah

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator

Union Oil Company of California

3. Address and Telephone No.

P.O. Box 760 Moab Utah 84532 (801) 686-2236

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NENW Sec 10 T30S R24E

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

TYPE OF SUBMISSION

Notice of Intent
 Subsequent Report
 Final Abandonment Notice

TYPE OF ACTION

Abandonment
 Recompletion
 Plugging Back
 Casing Repair
 Altering Casing
 Other

Change of Plans
 New Construction
 Non-Routine Fracturing
 Water Shut-Off
 Conversion to Injection
 Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Union Oil Company of California dba Unocal requests a dual status for Lisbon Unit well #B-610R. This is a reinjection well for the Lisbon Plant. When not used as reinjection it will flow gas to Lisbon Plant as well #B-610L. Site equipment will include a three phase separator, electronic and mechanical gas metering equipment. The present metering for reinjection of gas well #B-610R will be left in place.

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

Date: 4-1-97

By: [Signature]

14. I hereby certify that the foregoing is true and correct

Signed [Signature]

Title Production Tech

Date 8-9-96

(This space for Federal or State office use)

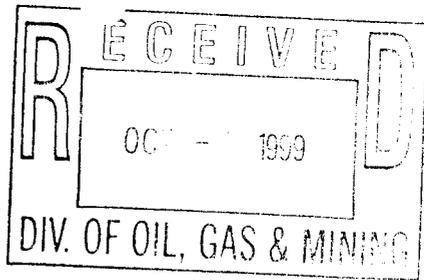
Approved by [Signature]
Conditions of approval, if any: [Text]

Title _____ Date _____

12-5-96
PER ARSIE & RICK @
UNION OIL CO OF CA

LISBON B-610 4303716469
3-95 MSSP & 9-96 MSSP
ARE DEFINITELY PROD VOLUMES
WELL IS DUAL COMPLETED
& MSSP CAN EITHER PRODUCE
OR INJ. WELL WILL MOST
LIKELY PROD ON A CONSISTENT
BASIS FOR A WHILE.

MSSP COULD BE CHANGED TO
EFF 2/96 - PGW
PGW - Tell Dan
then switch
status. ✓



TRANSFER OF AUTHORITY TO INJECT - UIC FORM 5

Well name and number: Lisbon B 610
Field or Unit name: Lisbon ME Unit/^{McCracken}Mississippian API no. 43-037-16469-00
Well location: QQ NENW section 10 township 30S range 24E county San Juan
Effective Date of Transfer: 01/01/99

CURRENT OPERATOR

Transfer approved by:

Name ROBERT C. GNAGY Company Union Oil Company of California
Signature *Robert C. Gnagy* Address 14141 SOUTHWEST FREEWAY
Title ATTORNEY-IN-FACT SUGAR LAND, TX 77478
Date 9/27/99 Phone (281) 287-7600

Comments:

NEW OPERATOR

Transfer approved by:

Name Peter R. Scherer Company Tom Brown, Inc.
Signature *Peter R. Scherer* Address P.O. Box 760
Title Executive V.P. Moab, Utah 84532
Date _____ Phone (435) 686-7676

Comments:

(State use only)
Transfer approved by *Art Hunt* Title *Field Services Manager*

Approval Date 5-31-00 Well is due for mechanical integrity test.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

FORM APPROVED
Budget Bureau no. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

<p>1. Type of Well</p> <p style="margin-left: 20px;">Oil <input type="checkbox"/> Gas <input type="checkbox"/></p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Well <input type="checkbox"/> Well <input type="checkbox"/> Other</p>	<p>5. Lease Designation and Serial No. U-014903</p> <p>6. If Indian, Allottee or Tribe Name</p> <p>7. If Unit or CA. Agreement Designation McCracken</p> <p>8. Well Name and No. B-610 McCracken</p> <p>9. API Well No. 43-037-16469</p> <p>10. Field and Pool, or Exploratory Area McCracken</p> <p>11. County or Parish, State San Juan, Utah</p>
<p>2. Name of Operator Tom Brown, Inc.</p> <p>3. Address and Telephone No. P.O. Box 760 Moab, UT 84532 (435) 686-2236</p> <p>4. Location of Well (Footage, Sec., T., R., M., or Survey Description) NENW S10, T30S, R24E</p>	

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

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent <input type="checkbox"/> Subsequent Report <input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Abandonment <input type="checkbox"/> Recompletion <input type="checkbox"/> Plugging Back <input type="checkbox"/> Casing Repair <input type="checkbox"/> Altering Casing <input checked="" type="checkbox"/> Other <u>retrun to production</u>
	<input type="checkbox"/> Change of Plans <input type="checkbox"/> New Consturction <input type="checkbox"/> Non-Routine Fracturing <input type="checkbox"/> Water Shut-off <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Dispose Water

(Note: report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Returned the McCracken well # B-610 to production on 4-14-00.
Well had been shut in for more than 90 days.

RECEIVED
MAY 01 2000
DIVISION OF
OIL, GAS AND MINING

14. I hereby certify that the foregoing is true and correct

Signed *Bill L. Longmire* Title Field Foreman Date 4-18-00

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes 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.

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM not yet BIA

8. **Federal and Indian Units:**

The BLM or BIA has approved the successor of unit operator for wells listed on: n/a

9. **Federal and Indian Communization Agreements ("CA"):**

The BLM or BIA has approved the operator for all wells listed within a CA on: n/a

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database** on: 2/24/2005
2. Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 2/24/2005
3. Bond information entered in RBDMS on: 2/24/2005
4. Fee/State wells attached to bond in RBDMS on: 2/24/2005
5. Injection Projects to new operator in RBDMS on: 2/24/2005
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: UT1005

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: n/a

FEE & STATE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number RLB0007875
2. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

Merger and rider of bond from Tom Brown, Inc.

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. Lease Designation and Serial No.

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

6. If Indian, Allote or Tribe Name

7. Unit Agreement Name

1. Type of Well

- Oil Well Gas Well Other

8. Well Name and Number

2. Name of Operator: EnCana Oil & Gas (USA) Inc.
(successor in interest of Tom Brown, Inc. effective 1/1/05)

Contact: Jane Washburn
Phone: 720/876-5431

9. API Well Number

3. Address and Telephone No.
370 Seventeenth Street, Suite 1700, Denver, CO 80202

10. Field and Pool, or Exploratory Area

4. Location of Well

Footages: SEE ATTACHED LIST OF WELLS
QQ, Sec T,R,M:

County:
State:

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

NOTICE OF INTENT
(Submit in Duplicate)

- | | |
|--|---|
| <input type="checkbox"/> Abandon | <input type="checkbox"/> New Construction |
| <input type="checkbox"/> Repair Casing | <input type="checkbox"/> Pull or Alter Casing |
| <input type="checkbox"/> Change Plans | <input type="checkbox"/> Recomplete |
| <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Reperforate |
| <input type="checkbox"/> Fracture Treat or Acidize | <input type="checkbox"/> Vent or Flare |
| <input type="checkbox"/> Multiple Completion | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Other | |

Approximate date work will start _____

SUBSEQUENT REPORT
(Submit Original Form Only)

- | | |
|--|---|
| <input type="checkbox"/> Abandon* | <input type="checkbox"/> New Construction |
| <input type="checkbox"/> Repair Casing | <input type="checkbox"/> Pull or Alter Casing |
| <input type="checkbox"/> Change Plans | <input type="checkbox"/> Recomplete |
| <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Reperforate |
| <input type="checkbox"/> Fracture Treat or Acidize | <input type="checkbox"/> Vent or Flare |
| <input type="checkbox"/> Water Shut-Off | <input type="checkbox"/> Water Shut-Off |

Other _____
Change of Operator

Date of work completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION REPORT AND LOG form.
* Must be accompanied by a cement verification report.

12. 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 recomplete 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 the BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, A form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

N9885 N2175

The merger of Tom Brown, Inc. with EnCana Oil & Gas (USA) Inc. was effective January 1, 2005.
It is, therefore, requested that the Operator of all properties on the attached list be changed from Tom Brown, Inc. to EnCana Oil & Gas (USA) Inc.

RECEIVED

JAN 2 / 2005

DIV. OF OIL, GAS & MINING

13. Name (Printed/Typed) Jane Washburn	Title Operations Engineering Tech
Signature <i>Jane Washburn</i>	Date 01/24/2005

(This space for State use only)

APPROVED 2/24/05

ER
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

well name	sec	twsp	rng	api	entity	lease	well	stat	flag	unit name	lease num	qtr	qtr	td	md	d	apd	op no
BIG INDIAN 36-42	36	290S	240E	4303731827		State	GW	APD			ST-UT-37067	SESW					5750	N9885
FEDERAL 14-18	18	250S	060E	4301530060	436	Federal	NA	PA			UTU-69447	SWSW						N9885
NW USA D-1 (B-624)	24	300S	240E	4303716516	99990	Federal		A			UTU-070034	NENW						N9885
FEDERAL 15-25	25	290S	230E	4303730317	4776	Federal	GW	S			UTU-986	SWSE						N9885
BIG INDIAN 35-24	35	290S	240E	4303731829	14409	Federal	GW	DRL	C		UTU-077077	SENE						N9885
BIG INDIAN 27-34	27	290S	240E	4303731828		Federal	GW	APD	C		N9885							
BIG INDIAN UNIT 1	33	290S	240E	4303716219	8122	Federal	OW	S		BIG INDIAN	UTSL-067131	SENE						N9885
BIG INDIAN 4	14	300S	250E	4303716221	8124	Federal	GW	TA		BIG INDIAN	UTSL-089097	SWSW						N9885
BIG INDIAN 34-11	34	290S	240E	4303731818	14004	Federal	D	PA	C	BIG INDIAN	UTU-014905	NWNW						N9885
BULL HORN U 10-43	10	300S	250E	4303731831	14393	Federal	GW	DRL	C	BULL HORN	UT-73190	SWSE						N9885
LISBON B-615	15	300S	240E	4303715123	8123	Federal	OW	P		LISBON	UTU-09179	NENW						N9885
LISBON FED 2-21F	21	300S	250E	4303715768	410	Federal	GW	S		LISBON	UTU-094674	SENE						N9885
LISBON B912	12	300S	240E	4303715769	8123	Federal	OW	S		LISBON	UTU-06922	SESW						N9885
LISBON A-713A	13	300S	240E	4303716236	8123	Federal	GW	PA		LISBON	UTSL-070034	SWNW						N9885
LISBON A-715	15	300S	240E	4303716237	8123	Federal		A		LISBON	UTU-020691A	SWNW						N9885
LISBON B-613	13	300S	240E	4303716240	8123	Federal	OW	S		LISBON	UTSL-070034	NENW						N9885
LISBON C-69	09	300S	240E	4303716245	8123	Federal	OW	S		LISBON	UTU-09179	NWNE						N9885
LISBON C-94	04	300S	240E	4303716247	8123	Federal	OW	S		LISBON	UTU-66582	SWSE						N9885
LISBON UNIT D-84	04	300S	240E	4303716250	8123	Federal	OW	P		LISBON	UTU-015445	NESE						N9885
LISBON D-89	09	300S	240E	4303716251	8123	Federal	OW	P		LISBON	UTU-015445	NESE						N9885
NW LISBON USA B-1 (B-614)	14	300S	240E	4303716468	8123	Federal		P		LISBON	UTSL-070008A	NENW						N9885
NW LISBON USA A-2 (D-810)	10	300S	240E	4303716471	8123	Federal		P		LISBON	UTU-14903	NESE						N9885
LISBON B-84	04	300S	240E	4303730054	8123	Federal	OW	S		LISBON	UTU-09179	NESW						N9885
LISBON B-814	14	300S	240E	4303730082	8123	Federal	OW	S		LISBON	UTSL-070008A	NESW						N9885
LISBON C-99	09	300S	240E	4303730693	8123	Federal	OW	P		LISBON	UTU-09179	SWSE						N9885
LISBON B-94	04	300S	240E	4303730695	8123	Federal	OW	S		LISBON	UTU-015445	SESW						N9885
LISBON C-910 I	10	300S	240E	4303731805	12892	Federal	D	PA		LISBON	UTU-0141903	SWSE						N9885
LISBON D-616	16	300S	240E	4303715049	8123	State	OW	P		LISBON	ML-13692	NENE	9120		9120			N9885
LISBON B-616	16	300S	240E	4303716242	8123	State	OW	S		LISBON	ML-8366	NESW	8689		8689			N9885
BELCO ST 4 (LISBON B-816)	16	300S	240E	4303716244	8123	State		A		LISBON	ML-8366	NESW	8730		9100			N9885
LISBON UNIT D-716	16	300S	240E	4303731034	8123	State	OW	P		LISBON	ML-13692	SENE	8794		8775			N9885
LISBON U B-610	10	300S	240E	4303716469	9740	Federal		P		LISBON (MCCRACKEN)	UTU-014903	NENW						N9885
LISBON U D-610	10	300S	240E	4303730694	9740	Federal		P		LISBON (MCCRACKEN)	UTU-014903	NENE						N9885
LISBON UNIT A-911	11	300S	240E	4303731014	9740	Federal		P		LISBON (MCCRACKEN)	UTSL-070008A	SWSW						N9885
LISBON C-910	10	300S	240E	4303731323	9740	Federal		P		LISBON (MCCRACKEN)	UTU-014903	SWSE						N9885
LISBON B-614A	14	300S	240E	4303731351	9740	Federal		TA		LISBON (MCCRACKEN)	UTSL-070008A	NENW						N9885
LISBON B-810	10	300S	240E	4303731433	9740	Federal		P		LISBON (MCCRACKEN)	UTU-014903	NESW						N9885
LISBON (MCCRACKEN) D-615	15	300S	240E	4303731817		Federal	OW	LA		LISBON (MCCRACKEN)	N9885							
LISBON (MCCRACKEN) A-610	10	300S	240E	4303731821		Federal	OW	LA		LISBON (MCCRACKEN)	N9885							
Dual Production (2 entities)																		

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

UIC FORM 5

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number Lisbon B-610	API Number 4303716469
Location of Well Footage : 563 FNL, 2050 FWL County : SAN JUAN QQ, Section, Township, Range: NENW 10 30S 24E State : UTAH	Field or Unit Name LISBON Lease Designation and Number UTU-014903

EFFECTIVE DATE OF TRANSFER: 1/1/2005

CURRENT OPERATOR

Company: Tom Brown, Inc. Name: Darrin Henke
Address: 555 17th Street, Suite 1850 Signature: *D. Henke*
city Denver state CO zip 80202 Title: Attorney-in-fact
Phone: (720) 876-5157 Date: 2/17/2005
Comments:

NEW OPERATOR

Company: EnCana Oil & Gas (USA) Inc. Name: Doug VanSteealandt
Address: 370 17th Street, Suite 1700 Signature: *Doug Van St*
city Denver state CO zip 80202 Title: Attorney-in-fact
Phone: (720) 876-5068 Date: 2/17/2005
Comments:

(This space for State use only)

Transfer approved by: *A. Z. J.*
Title: *Public Services Manager*

Approval Date: 2-23-05

Comments: well due for MIT.
CAUSE 102-71.1

RECEIVED
FEB 23 2005

DIV. OF OIL, GAS & MINING

Delaware

PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"TBI PIPELINE COMPANY", A DELAWARE CORPORATION,

"TBI WEST VIRGINIA, INC.", A DELAWARE CORPORATION,

"TOM BROWN, INC.", A DELAWARE CORPORATION,

WITH AND INTO "ENCANA OIL & GAS (USA) INC." UNDER THE NAME OF "ENCANA OIL & GAS (USA) INC.", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE TWENTY-SECOND DAY OF DECEMBER, A.D. 2004, AT 6:15 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF MERGER IS THE FIRST DAY OF JANUARY, A.D. 2005.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.



2137895 8100M

040934710

Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

AUTHENTICATION: 3584585

DATE: 12-29-04

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:15 PM 12/22/2004
FILED 06:15 PM 12/22/2004
SRV 040934710 - 2137895 FILE

**STATE OF DELAWARE
CERTIFICATE OF MERGER OF
DOMESTIC CORPORATIONS**

Pursuant to Title 8, Section 251(c) of the Delaware General Corporation Law, the undersigned corporation executed the following Certificate of Merger:

FIRST: The name of the surviving corporation is EnCana Oil & Gas (USA) Inc., and the names and jurisdictions of the corporations being merged into this surviving corporation are as follows:

<u>Name</u>	<u>Jurisdiction of Incorporation</u>
Tom Brown, Inc.	Delaware corporation
TBI Pipeline Company	Delaware corporation
TBI West Virginia, Inc.	Delaware corporation

SECOND: The Agreement and Plan of Merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations.

THIRD: The name of the surviving corporation is EnCana Oil & Gas (USA) Inc., a Delaware corporation.

FOURTH: The Certificate of Incorporation of the surviving corporation shall be its Certificate of Incorporation.

FIFTH: The merger is to become effective on January 1, 2005.

SIXTH: The Agreement and Plan of Merger is on file at 950 17th Street, Suite 2600, Denver, Colorado 80202, the place of business of the surviving corporation.

SEVENTH: A copy of the Agreement and Plan of Merger will be furnished by the surviving corporation on request, without cost, to any stockholder of the constituent corporations.

IN WITNESS WHEREOF, said surviving corporation has caused this certificate to be signed by an authorized officer, the 17th day of December, A.D., 2004.

ENCANA OIL & GAS (USA) INC.

By: Mary A. Viviano
Mary A. Viviano, Secretary

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET (for state use only)

ROUTING
 CDW

X - Change of Operator (Well Sold)

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

5/14/2010

FROM: (Old Operator): N2175-EnCana Oil & Gas (USA) Inc. 370 17th Street, Suite 1700 Denver, CO 80202 Phone: 1 (303) 623-2300	TO: (New Operator): N3670-Patara Oil & Gas, LLC 333 Clay Street, Suite 3960 Houston, TX 77002 Phone: 1 (713) 357-7171
---	---

CA No.

Unit:

LISBON McCracken

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
SEE ATTACHED								

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 5/11/2010
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 5/11/2010
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 5/11/2010
- a. Is the new operator registered in the State of Utah: Business Number: 7655540-0161
- 5a. (R649-9-2)Waste Management Plan has been received on: * * requested 9/27/10
- 5b. Inspections of LA PA state/fee well sites complete on: * * requested 9/27/10
- 5c. Reports current for Production/Disposition & Sundries on: ok
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM not yet BIA
- Federal and Indian Units:**
 The BLM or BIA has approved the successor of unit operator for wells listed on: 6/28/2010 & 9/2/2010
- Federal and Indian Communization Agreements ("CA"):**
 The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
- Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to Inject, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/29/2010
 Lisbon B-816 only

DATA ENTRY:

- Changes entered in the **Oil and Gas Database** on: 9/14/2010
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 9/14/2010
- Bond information entered in RBDMS on: 9/14/2010
- Fee/State wells attached to bond in RBDMS on: 9/14/2010
- Injection Projects to new operator in RBDMS on: 9/14/2010
- Receipt of Acceptance of Drilling Procedures for APD/New on: 5/11/2010

BOND VERIFICATION:

- Federal well(s) covered by Bond Number: UTB000428
- Indian well(s) covered by Bond Number: n/a
- a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number RLB0013207 & B006008
- b. The **FORMER** operator has requested a release of liability from their bond on: not yet

LEASE INTEREST OWNER NOTIFICATION:

- (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

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.

1. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER:
2. NAME OF OPERATOR: ENCANA OIL & GAS (USA) INC. <i>N2175</i>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
3. ADDRESS OF OPERATOR: 370 17th Street, Suite 1700 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 623-2300		7. UNIT or CA AGREEMENT NAME:
4. LOCATION OF WELL FOOTAGES AT SURFACE: See Attached List COUNTY:		8. WELL NAME and NUMBER:
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: STATE: UTAH		9. API NUMBER:
		10. FIELD AND POOL, OR WILDCAT:

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

Effective May 4, 2010 Patara Oil & Gas LLC, 333 Clay Street, Suite 3960, Houston, TX 77002, will take over completions and operations and is designated as agent operator for the subject wells on the attached list.

Bond coverage for all activities will be covered by Patara's BLM Statewide Oil & Gas Bond No. UTB000428 and UDOGM Bond No. Pending. *RIB 0013207 + B 006008*

Patara Oil & Gas LLC, Lane M. Kincannon, Vice-President, Land & Business Development *N3670*

Signature *[Signature]* Date 5/4/2010

NAME (PLEASE PRINT) <u>Ricardo D. Gallegos</u>	TITLE <u>Attorney-in-Fact</u>
SIGNATURE <i>[Signature]</i>	DATE <u>5/4/2010</u>

(This space for State use only)

APPROVED 9/14/2010
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(5/2000)

(See Instructions on Reverse Side)

RECEIVED
May 11 2010 ER
DIV. OF OIL, GAS & MINING

ENCANA O-G (N2175) to PATARA O-G (N3670)
effective May 4, 2010
LISBON (McCRACKEN)

well_name	sec	twp	rng	api	entity	lease	well	stat
					8123			
LISBON U B-610	10	300S	240E	4303716469	9740	Federal	OW	P
LISBON U D-610	10	300S	240E	4303730694	9740	Federal	GW	S



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
<http://www.blm.gov/ut/st/en.html>



IN REPLY REFER TO
3180
UT-922

June 28, 2010

David M. Laramie
Patara Oil & Gas, LLC
621 17th Street, Suite 1345
Denver, CO 80293

Re: Successor Operator
Lisbon (McCracken) Unit
UTU66515A
San Juan County, Utah

Dear Mr. Laramie:

On June 25, 2010, we received an indenture dated May 4, 2010, whereby EnCana Oil & Gas (USA), Inc. resigned as Unit Operator and Patara Oil & Gas, LLC was designated as Successor Unit Operator for the Lisbon (McCracken) Unit, San Juan County, Utah. The indenture was executed by both parties and the signatory parties (working interest owners) have complied with Sections 5 and 6 of the unit agreement.

The instrument is hereby approved effective June 28, 2010. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Lisbon (McCracken) Unit Agreement.

Your statewide oil and gas BLM Bond No. UTB000428 will be used to cover unit operations.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate Federal offices, with one copy returned herewith.

If you have any questions, contact Leslie Wilcken of this office at (801) 539-4112.

Sincerely,

/s/ Roger L. Bankert

Roger L. Bankert
Chief, Branch of Minerals

RECEIVED

JUL 06 2010

DIV. OF OIL, GAS & MINING

Enclosure

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.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: UTU 0 014903
2. NAME OF OPERATOR: Patara Oil & Gas LLC		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
3. ADDRESS OF OPERATOR: 600 17th St. Suite 1900s CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME: Lisbon MS Unit
4. LOCATION OF WELL FOOTAGES AT SURFACE: 563' FNL & 2050' FWL COUNTY: San Juan		8. WELL NAME and NUMBER: Lisbon B-610
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NENW 10 30S 24E STATE: UTAH		9. API NUMBER: 4303716469
		10. FIELD AND POOL, OR WILDCAT: Lisbon

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>5/12/2011</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>Install gas lift on McCracken tubing</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

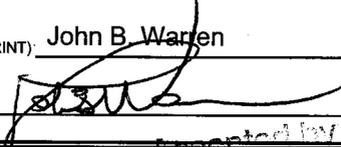
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Patara Oil & Gas, LLC proposes to install an orifice in the McCracken tubing to aid in restoring productivity from the formation utilizing gas lift. The Lisbon B-610 is currently completed as a dual producer from the McCracken and Mississippian formations. This work should not alter the productivity from the Mississippian formation.

The tubulars and packers in the Lisbon B-610 well have been in place since November 1959. A stuck rod pump with a parted rod has been in the McCracken tubing at 7177' since 1969 and is unable to be fished out. Patara proposes to use a Kinley Perforating Tool to mechanically perforate the tubing at 7164' and insert a 10/32" orifice with a check valve. Gas lift gas will be supplied from the Patara Lisbon Plant and will be metered prior to injection down the annulus. This gas will be credited from the residue sales meter. A proposed wellbore schematic is attached.

The existing tank battery for the McCracken is deemed unusable due to its age with the exception of the 400 bbl water tank which appears to be relatively new and is currently being tested. Patara proposes to construct a new battery on the original battery site. The gas production unit will be replaced, a new heater treater, meter runs and two (2) 400 bbl oil tanks w/ heaters will be installed. The oil tanks will be contained in a lined containment berm. The gas lift supply line and the flowline between the well and the battery site remain intact and will be tested prior to be placed in use. A field sketch of the battery layout is attached.

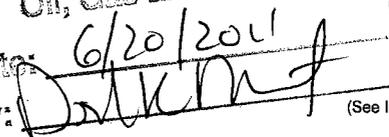
COPY SENT TO OPERATOR

NAME (PLEASE PRINT): <u>John B. Warren</u>	TITLE: <u>Production Manager</u>
SIGNATURE: 	DATE: <u>5/12/2011</u>
	DATE: <u>6-22-2011</u>
	Initials: <u>JS</u>

(This space for State use only)

Accepted by the
Utah Division of
Oil, Gas and Mining

Federal Approval Of This
Action Is Necessary

Date: 6/20/2011
By: 

(See Instructions on Reverse Side)

RECEIVED

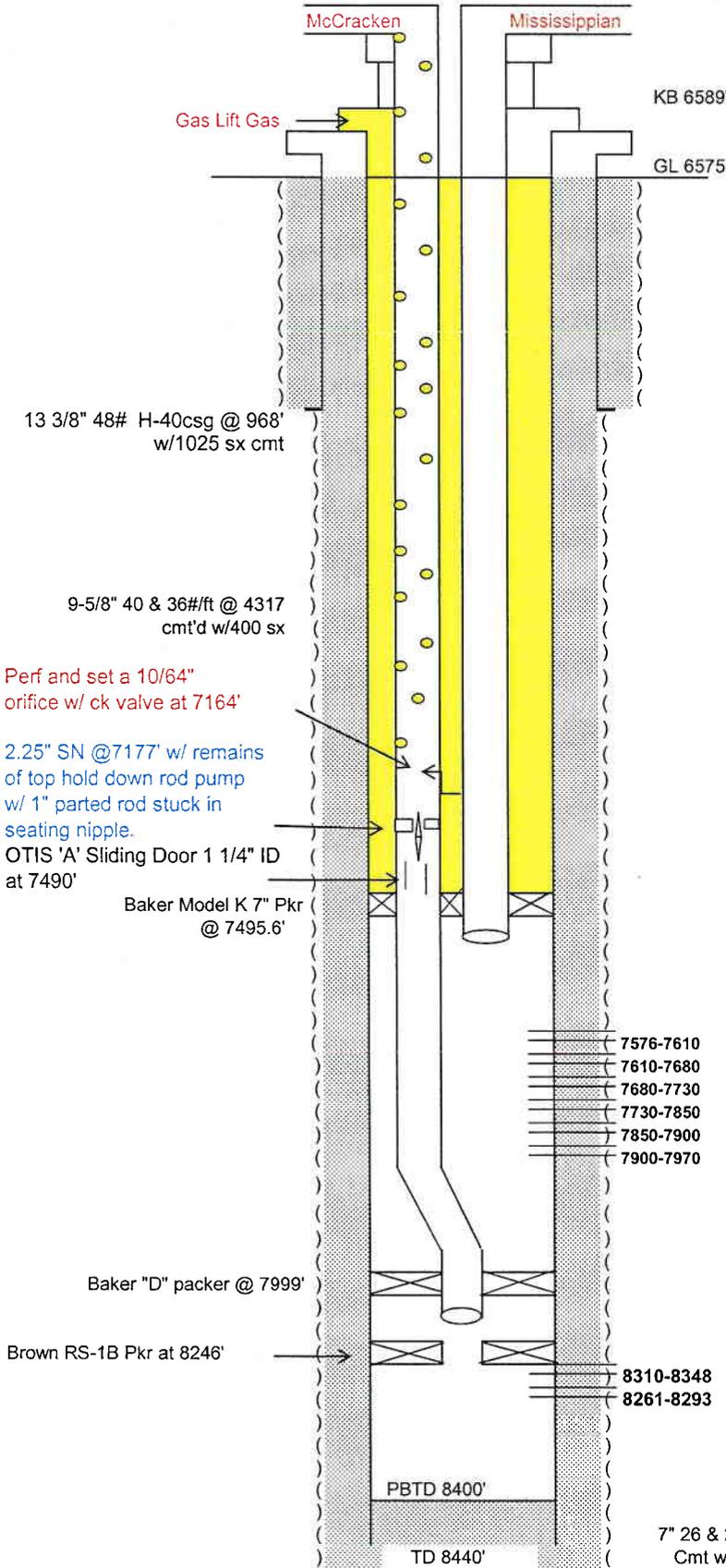
MAY 16 2011

DIV. OF OIL, GAS & MINING

WELLBORE DIAGRAM

Proposed Wellbore Diagram
Install Gas Lift Orifice for
McCracken

Company: Patara Oil & Gas, LLC
Lease Name: Lisbon B-610
Lease Number:
Location: NE NW Section 10-30S-24E
County: San Juan County, Utah
Date: 4/28/2011 J. Warren



WELL HISTORY

Spud Date: 8/14/1959
Completion: 1/4/1960

Tubing Detail

Mississippian Injection

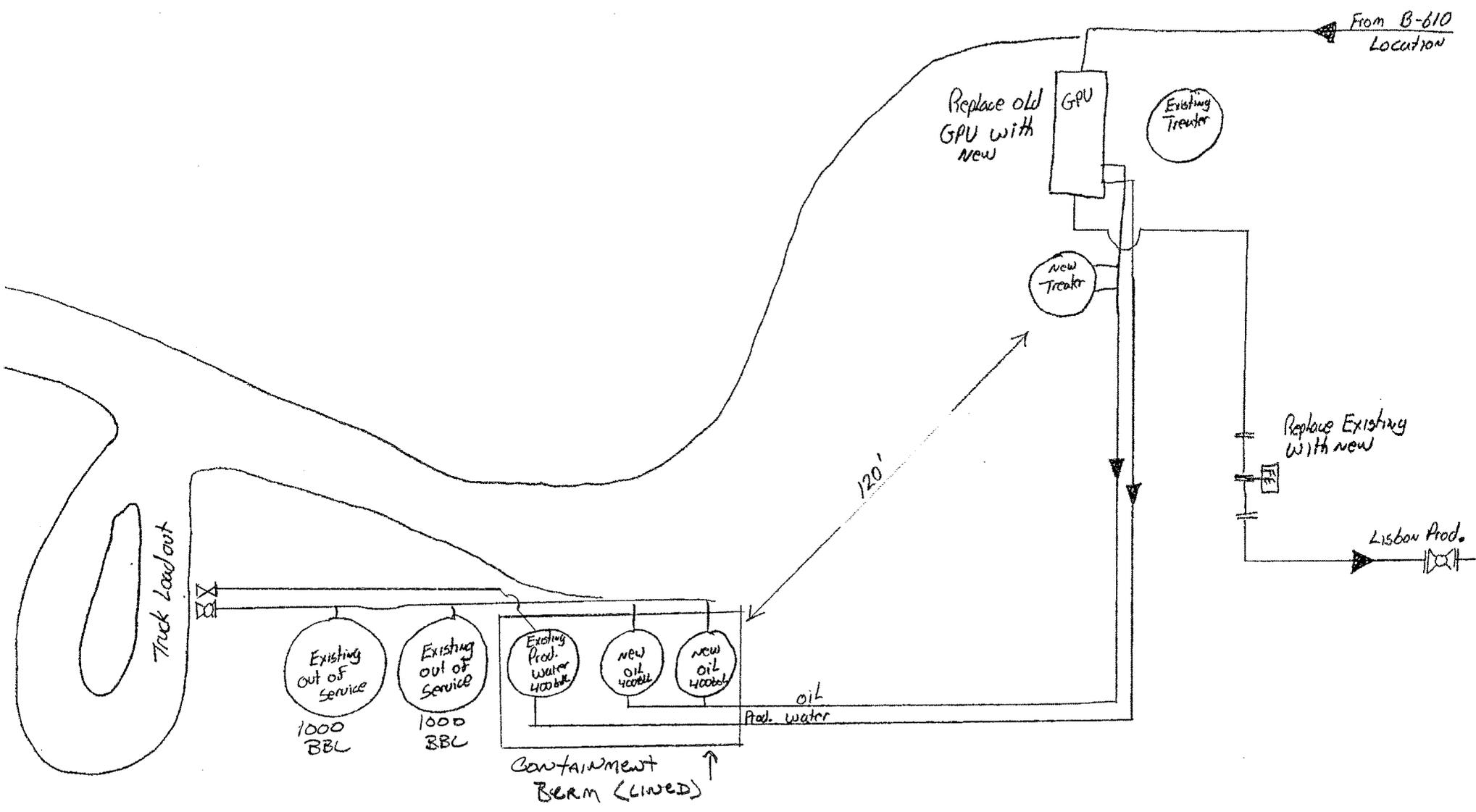
13.00	KB to tubing hanger
0.40	1 2-3/8" cs hydxbuttress box
7470.37	239 jts 2-3/8" 4.7# J-55 Butt tbg
8.10	1 2-3/8" Buttress pup
4.11	1 2-3/8" Buttress pup
0.87	1 hanger nipple w/ 2-3/8" butt x 8rd box
7496.85	Total

McCracken Production string

13.00	KB to tubing hanger
2.27	2 2" Baker Seal nipples
0.50	1 Baker location sub
0.50	1 2-7/8" x 2-3/8" hydrill x 8rd pin
496.45	16 jts 2-7/8" 6.5# J-55 cs hy tbg
0.47	1 2-7/8" cs hy pin & 2-7/8" NU 10 rd
0.40	1 2-7/8" nu 10rd pin x 2-3/8" 8rd box
8.40	1 Baker 7" snap set Model K pkr
2.00	1 2-3/8" 8 rd otis type A sliding door nipple in closed position
6.00	1 2-7/8" cs hydril sub
306.31	10 jts 2-7/8" cs hydril 6.5" J-55
0.72	1 2-7/8" x 2-1/4" id sn w/2-7/8" box & pin
7317.33	236 jts 2-7/8" cs hydril a6.5#
9.65	1 2-7/8" cs hy pup
9.60	1 2-7/8" cs hy pup
29.01	1 2-7/8" cs hy 6.5# J-55 jt
0.87	1 hanger nipple 2-7/8" cs hyx
8203.48	Total

Mississippian Perfs

7" 26 & 23 #/ft @ 8440
Cmt w/2000 sx



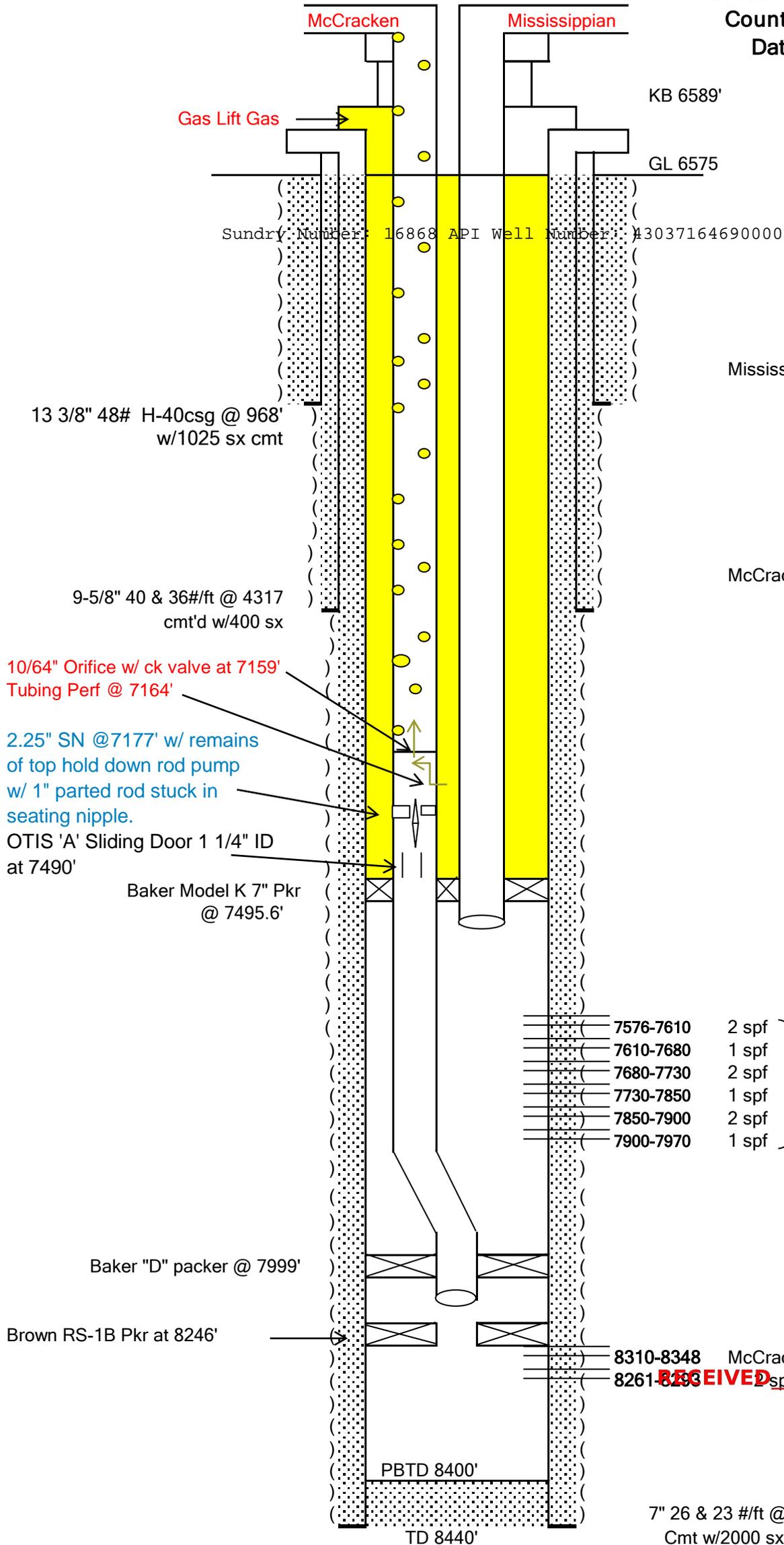
STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-014903
SUNDRY NOTICES AND REPORTS ON WELLS		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		7. UNIT or CA AGREEMENT NAME: LISBON (MCCRACKEN)
1. TYPE OF WELL Oil Well		8. WELL NAME and NUMBER: LISBON U B-610
2. NAME OF OPERATOR: PATARA OIL & GAS, LLC		9. API NUMBER: 43037164690000
3. ADDRESS OF OPERATOR: 600 17th Street Ste 1900S , Denver, CO, 80202	PHONE NUMBER: 303 825-0685 Ext	9. FIELD and POOL or WILDCAT: LISBON
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0563 FNL 2050 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 10 Township: 30.0S Range: 24.0E Meridian: S		COUNTY: SAN JUAN
		STATE: UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 6/2/2011 <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input checked="" type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input type="text" value="Install gas lift on McCra"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
Patara Oil & Gas LLC has converted the McCracken formation to gas lift. Gas from the Lisbon Gas Plant is being used to lift McCracken oil. Mississippian gas will continue to be processed separately at the Lisbon Gas Plant. See attached wellbore diagram. While onsite, the existing tank battery was replaced, per our previously submitted Notice of Intent. The well was returned to production on June, 2, 2011. Gas lift gas 240 mcf/d, gas out 500 mcf/d. Well producing 1 BOPD and 260 mcf/d. Please send copies of all correspondence to either David Banko or Danielle Gavito at, 385 Inverness Parkway, Suite 420, Englewood, CO 80112 or to david@banko1.com or danielle@banko1.com, respectively.		
NAME (PLEASE PRINT) Kimberly J. Rodell	PHONE NUMBER 303 820-4480	TITLE Permit Agent
SIGNATURE N/A		DATE 7/20/2011

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

WELLBORE DIAGRAM

Wellbore Diagram Install Gas Lift Orifice for McCracken

Company: Patara Oil & Gas, LLC
Lease Name: Lisbon B-610
Lease Number: _____
Location: NE NW Section 10-30S-24E
County: San Juan County, Utah
Date: 07/19/2011 D. Gavito



WELL HISTORY

Spud Date: 8/14/1959
Completion: 1/4/1960

Tubing Detail

Mississippian Injection

13.00	KB to tubing hangar
0.40	1 2-3/8" cs hydxbuttress box
7470.37	239 jts 2-3/8" 4.7# J-55 Butt tbg
8.10	1 2-3/8" Buttress pup
4.11	1 2-3/8" Buttress pup
0.87	1 hangar nipple w/ 2-3/8" butt x 8rd box
7496.85	Total

McCracken Production string

13.00	KB to tubing hangar
2.27	2 2" Baker Seal nipples
0.50	1 Baker location sub
0.50	1 2-7/8" x 2-3/8" hydrill x 8rd pin
496.45	16 jts 2-7/8" 6.5# J-55 cs hy tbg
0.47	1 2-7/8" cs hy pin & 2-7/8" NU 10 rd
0.40	1 2-7/8" nu 10rd pin x 2-3/8" 8rd box
8.40	1 Baker 7" snap set Model K pkr
2.00	1 2-3/8" 8 rd otis type A sliding door nipple in closed position
6.00	1 2-7/8" cs hydril sub
306.31	10 jts 2-7/8" cs hydril 6.5" J-55
0.72	1 2-7/8" x 2-1/4" id sn w/2-7/8" box & pin
7317.33	236 jts 2-7/8" cs hydril a6.5#
9.65	1 2-7/8" cs hy pup
9.60	1 2-7/8" cs hy pup
29.01	1 2-7/8" cs hy 6.5# J-55 jt
0.87	1 hangar nipple 2-7/8" cs hyx
8203.48	Total

FIELD TICKET

BILL TO:

COMPANY
PATARA OIL & GAS

AFE#

AP#

ADDRESS

ADDRESS

CITY, STATE, ZIP CODE
MONTICELLO UTAH

Sundry Number: 16868 API Well Number: 43037164690000
PRO WIRELINE
EVANSTON, WY.

INVOICE NUMBER
5578

DATE
5/12/2011

WELL NUMBER
LISBON B-610

COUNTY/PARISH
SAN JAUN

LEASE NAME
LISBON B-610

COMPANY REP.
REX THOMPSON

FIELD
LISBON

Reference	Description	Qty	U/M	Disc	Unit Price	Amount
	MILEAGE PICKUP MOTEL TO LOC TO MOTEL	100.0	MI	10.0	2.75	247.50
	W/L TRUCK W/CREW 5-12	8.0	HR	10.0	150.00	1,080.00
	INJECTION SUB	1.0	DA	10.0	325.00	292.50
	PUMP IN SUB	1.0	DA	10.0	145.00	130.50
	HYDRAULIC JAR USE	1.0	DA	10.0	415.00	373.50
	KINLEY PERFORATOR	1.0	DA	10.0	2,500.00	2,250.00
	KINLEY CHECK VALVE 10/64	1.0	DA	10.0	800.00	720.00
	FOOD AND LODGING 2 MEN 5-10	1.0	DA	10.0	400.00	360.00
	SPECIAL H2S WIRE	1.0	DA	10.0	700.00	630.00
	JUMBO PISTON	1.0	DA	10.0	245.00	220.50
	KINLEY POWER CHARGE 110	1.0	EA		75.00	75.00
Invoice Instruc					Page Total	6,379.50
Do Not Pay From This Copy - You Will Be Invoiced						
Pro Wireline Operator / Engineer		Company Representative Signature		Continuation Sheet(s) Total		
					Sub Total	6,379.50
					Taxes	
					TOTAL	6,379.50

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Jul. 20, 2011

Sundry Number: 16868 API Well Number: 43037164690000

PRO WIRELINE JOB LOG

FIELD LISBON		INVOICE NUMBER 5578	DATE 5/12/2011
WELL LOCATION LISBON B-610		COMPANY PATARA OIL & GAS	CUSTOMER REP / PHONE REX THOMPSON -
LEASE / WELL # LISBON B-610		COUNTY SAN JAUN	CITY, STATE MONTICELLO UTAH
		AFE# 0	

PRO WIRELINE EMP.	TOTAL HRS	PRO WIRELINE EMP.	TOTAL HRS	TOTAL HRS
T. TROY		K. HOWARD		

Date MM-DD-YY	Time		Press. (PSI)		Job Description / Remarks
	FROM	TO	TBG	CSG	
05-12-11	8:00		0		ARRIVE ON LOC. HELD SAFETY MEETING W/CREW STAND BY WHILE CREW FILLS TBG WITH DIESEL RIG UP TEST LUB TO 500 PSI
	9:50				RIH. WITH KINLEY PERFORATOR
	10:50				ARRIVE AT 7100' PRESSURE TBG TO 1500 PSI SAT DOWN AT 7160' W/L JAR DOWN 5 TIMES POOH SET 10/64 CHECK VALVE AT 7159' W/L
	12:00				RIG DOWN
					TICKET TOTAL
					\$6,379.50

RECEIVED _____

Jul. 20, 2011

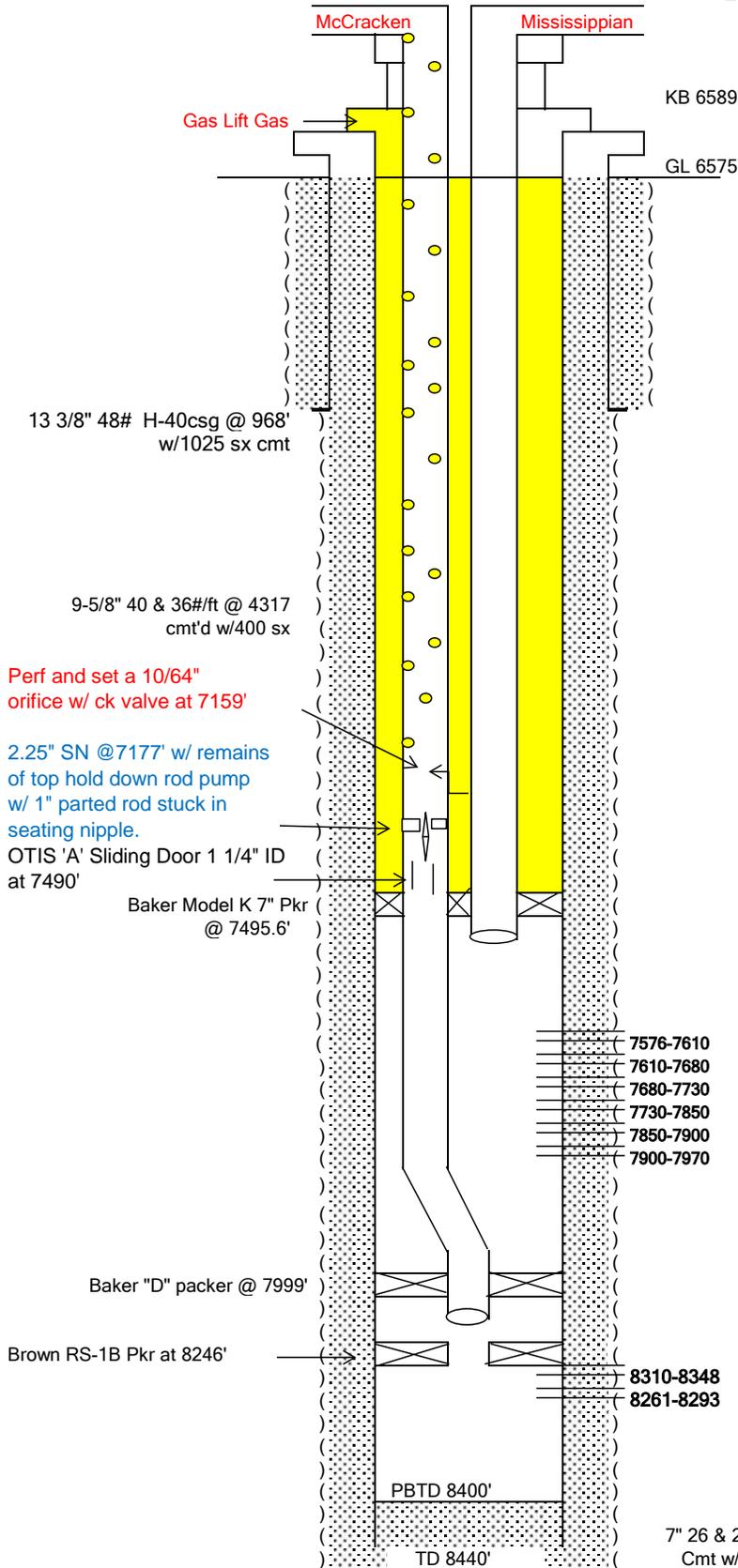
STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
		5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-014903
SUNDRY NOTICES AND REPORTS ON WELLS		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		7. UNIT or CA AGREEMENT NAME: LISBON (MCCRACKEN)
1. TYPE OF WELL Oil Well		8. WELL NAME and NUMBER: LISBON U B-610
2. NAME OF OPERATOR: PATARA OIL & GAS, LLC		9. API NUMBER: 43037164690000
3. ADDRESS OF OPERATOR: 600 17th Street Ste 1900S , Denver, CO, 80202	PHONE NUMBER: 303 825-0685 Ext	9. FIELD and POOL or WILDCAT: LISBON
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0563 FNL 2050 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 10 Township: 30.0S Range: 24.0E Meridian: S		COUNTY: SAN JUAN
		STATE: UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 11/17/2011 <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input checked="" type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>Patara Oil & Gas LLC has completed testing operations on the subject well, and the well has returned to sales. Patara performed a 48 hour flare test, beginning on November 8, 2011 at 11:00AM, and commencing on November 10, 2011. Patara also performed two pressure tests on this well; the first on November 16, 2011 beginning at 11:00AM. The second test took place on November 17, 2011. Estimated volume of gas flared during test period 1.5 - 2 MMCF per day. Please see attached WBD for current wellbore configuration. This well dually from the McCracken and Mississippian formations. Please contact Christopher Noonan with any questions or concerns. Thank you.</p>		
NAME (PLEASE PRINT) Christopher Noonan	PHONE NUMBER 303 563-5377	TITLE Production Technician
SIGNATURE N/A		DATE 11/28/2011

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

WELLBORE DIAGRAM

**Wellbore Diagram
Install Gas Lift Orifice for
McCracken**

Company: Patara Oil & Gas, LLC
Lease Name: Lisbon B-610
Lease Number:
Location: NE NW Section 10-30S-24E
County: San Juan County, Utah
Date: 11/22/2011 B. Noonan



WELL HISTORY

Spud Date: 8/14/1959
 Completion: 1/4/1960

Tubing Detail

Mississippian Injection

13.00	KB to tubing hangar
0.40	1 2-3/8" cs hydxbuttress box
7470.37	239 jts 2-3/8" 4.7# J-55 Butt tbg
8.10	1 2-3/8" Buttress pup
4.11	1 2-3/8" Buttress pup
0.87	1 hangar nipple w/ 2-3/8" butt x 8rd box
7496.85	Total

McCracken Production string

13.00	KB to tubing hangar
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0.50	1 Baker location sub
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496.45	16 jts 2-7/8" 6.5# J-55 cs hy tbg
0.47	1 2-7/8" cs hy pin & 2-7/8" NU 10 rd
0.40	1 2-7/8" nu 10rd pin x 2-3/8" 8rd box
8.40	1 Baker 7" snap set Model K pkr
2.00	1 2-3/8" 8 rd otis type A sliding door nipple in closed position
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306.31	10 jts 2-7/8" cs hydril 6.5" J-55
0.72	1 2-7/8" x 2-1/4" id sn w/2-7/8" box & pin
7317.33	236 jts 2-7/8" cs hydril a6.5#
9.65	1 2-7/8" cs hy pup
9.60	1 2-7/8" cs hy pup
29.01	1 2-7/8" cs hy 6.5# J-55 jt
0.87	1 hangar nipple 2-7/8" cs hyx
8203.48	Total

Mississippian Perfs

7576-7610	2 spf
7610-7680	1 spf
7680-7730	2 spf
7730-7850	1 spf
7850-7900	2 spf
7900-7970	1 spf

McCracken Perfs

8310-8348	McCracken Perfs
8261-8293	2 spf

7" 26 & 23 #/ft @ 8440
 Cmt w/2000 sx

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET (for state use only)

ROUTING
 CDW

X - Change of Operator (Well Sold)

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

11/1/2012

FROM: (Old Operator):
 N3670- Patara Oil & Gas, LLC
 600 17th Street, Suite 1900S
 Denver, CO 80202

 Phone: 1 (303) 825-0685

TO: (New Operator):
 N3645- CCI Paradox Upstream, LLC
 600 17th Street, Suite 1900S
 Denver, CO 80202

 Phone: 1 (303) 825-0685

CA No. _____ **Unit:** Lisbon (McCreacken)

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
See Attached List								

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 1/23/2013
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 2/7/2013
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 2/12/2013
- Is the new operator registered in the State of Utah: _____ Business Number: 8523441-0161
- (R649-9-2) Waste Management Plan has been received on: Not Yet
- Inspections of LA PA state/fee well sites complete on: N/A
- Reports current for Production/Disposition & Sundries on: 2/12/2013
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM Not Yet BIA N/A
- Federal and Indian Units:**
 The BLM or BIA has approved the successor of unit operator for wells listed on: Not Yet
- Federal and Indian Communization Agreements ("CA"):**
 The BLM or BIA has approved the operator for all wells listed within a CA on: N/A
- Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

- Changes entered in the **Oil and Gas Database** on: 2/12/2013
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 2/12/2013
- Bond information entered in RBDMS on: 2/7/2013
- Fee/State wells attached to bond in RBDMS on: 2/12/2013
- Injection Projects to new operator in RBDMS on: N/A
- Receipt of Acceptance of Drilling Procedures for APD/New on: 2/4/2013

BOND VERIFICATION:

- Federal well(s) covered by Bond Number: 105865919
- Indian well(s) covered by Bond Number: N/A
- (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number 105865922
- The **FORMER** operator has requested a release of liability from their bond on: N/A

LEASE INTEREST OWNER NOTIFICATION:

- (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Patara Oil Gas, LLC (N3670) to CCI Paradox Upstream, LLC (N3945)

Effective 11/1/2012

Lisbon (McCracken) Unit

Well Name	Section	TWN	RNG	API Number	Entity	Lease Type	Well Type	Well Status
Lisbon 14-11MC	14	300S	240E	4303750013		Federal	OW	APD
Lisbon 10-44MC	14	300S	240E	4303750014		Federal	OW	APD
Lisbon 3-32MC	04	300S	240E	4303750015		Federal	OW	APD
Lisbon 11-33MC	14	300S	240E	4303750016		Federal	OW	APD
Lisbon 11-21MC	10	300S	240E	4303750017		Federal	GW	APD
Lisbon 3-43MC	03	300S	240E	4303750018		Federal	OW	APD
LISBON U B-610	10	300S	240E	4303716469	8123/9740	Federal	OW	P
Lisbon 10-33MC	10	300S	240E	4303750019	9740	Federal	OW	P
LISBON U D-610	10	300S	240E	4303730694	8123	Federal	GW	S

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JAN 23 2013

FORM 9

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

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.

1. TYPE OF WELL: OIL WELL, GAS WELL, OTHER Multiple Well Transfer
2. NAME OF OPERATOR: Patara Oil & Gas LLC
3. ADDRESS OF OPERATOR: 600 17th St. Ste. 1900S Denver CO 80202
4. LOCATION OF WELL: FOOTAGES AT SURFACE: n/a
COUNTY: San Juan, UT
STATE: UTAH

5. LEASE DESIGNATION AND SERIAL NUMBER: n/a
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a
7. UNIT or CA AGREEMENT NAME: n/a
8. WELL NAME and NUMBER: Multiple
9. API NUMBER: n/a
10. FIELD AND POOL, OR WILDCAT: n/a

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

Table with columns: TYPE OF SUBMISSION, TYPE OF ACTION. Includes checkboxes for NOTICE OF INTENT, SUBSEQUENT REPORT, and various actions like ACIDIZE, ALTER CASING, OPERATOR CHANGE, etc.

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

Patara Oil & Gas LLC (Patara) hereby requests the transfer of operating rights and responsibilities for the subject wells, listed herein, to the new owner/operator of the assets, being effective November 1, 2012; CCI Paradox Upstream LLC (CCI).

Please see Exhibit I for a detailed list of upstream assets considered for transfer. Patara midstream assets will be transferred via a separate letter, enclosed.

NAME (PLEASE PRINT) Christopher A. Noonan
TITLE Regulations & Production Reporting Supervisor
SIGNATURE [Signature]
DATE 1/18/13

(This space for State use only)

APPROVED

FEB 12 2013

DIV. OF OIL, GAS & MINING

(See Instructions on Reverse Side)

BY: Rachel Medina

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.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Multiple Well Transfer</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: n/a
2. NAME OF OPERATOR: CCI Paradox Upstream LLC <u>N3945</u>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a
3. ADDRESS OF OPERATOR: 600 17th St. Ste. 1900S CITY <u>Denver</u> STATE <u>CO</u> ZIP <u>80202</u>		7. UNIT or CA AGREEMENT NAME: n/a
4. LOCATION OF WELL FOOTAGES AT SURFACE: <u>n/a</u>		8. WELL NAME and NUMBER: <u>Multiple</u>
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		9. API NUMBER: n/a
		10. FIELD AND POOL, OR WILDCAT: n/a
		COUNTY: <u>San Juan, UT</u>
		STATE: <u>UTAH</u>

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

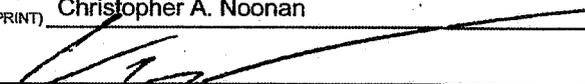
TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: <u>11/1/2012</u>	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

CCI Paradox Upstream LLC (CCI), hereby requests the transfer of operating rights and responsibilities for the subject wells, listed herein, to the new owner/operator of the assets, CCI, being effective November 1, 2012. The assets were previously operated by Patara Oil & Gas LLC (Patara) prior to sale.

Please see Exhibit I for a detailed list of upstream assets considered for transfer. Patara midstream assets will be transferred via a separate letter, enclosed.

Bond Number:
BLM: 105865919
State: 105865922

NAME (PLEASE PRINT) <u>Christopher A. Noonan</u>	TITLE <u>Regulations & Production Reporting Supervisor</u>
SIGNATURE 	DATE <u>2/6/2012</u>

(This space for State use only)

APPROVED

FEB 12 2013

DIV. OIL GAS & MINING

BY: Rachel Medina

RECEIVED

FEB 07 2013

Div. of Oil, Gas & Mining

Exhibit I

BLM Form 3160-5 Transfer of Operator

Utah Form 9 Transfer of Operator

State of Utah Upstream Assets

01/09/2013

API Well Number	Operator	Well Name	Well Status	Well Type	Field Name	County	Qtr/Qtr	Section	Township-Range)
✓ 43-037-15049-00-00	PATARA OIL & GAS LLC	LISBON D-616	Shut-In	Oil Well	LISBON	SAN JUAN	NENE	16	30S-24E 1
✓ 43-037-15123-00-00	PATARA OIL & GAS LLC	LISBON B-615	Producing	Oil Well	LISBON	SAN JUAN	NENW	15	30S-24E 2
✓ 43-037-15769-00-00	PATARA OIL & GAS LLC	LISBON B912	Shut-In	Oil Well	LISBON	SAN JUAN	SESW	12	30S-24E 3
✓ 43-037-16219-00-00	PATARA OIL & GAS LLC	BIG INDIAN UNIT 1	Shut-In	Oil Well	BIG INDIAN (MADISON)	SAN JUAN	SENE	33	29S-24E 4
✓ 43-037-16221-00-00	PATARA OIL & GAS LLC	BIG INDIAN 4	Shut-In	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SWSW	14	30S-25E 5
✓ 43-037-16237-00-00	PATARA OIL & GAS LLC	LISBON A-715	Inactive	Water Disposal Well	LISBON	SAN JUAN	SWNW	15	30S-24E 6
✓ 43-037-16240-00-00	PATARA OIL & GAS LLC	LISBON B-613	Shut-In	Oil Well	LISBON	SAN JUAN	NENW	13	30S-24E 7
✓ 43-037-16242-00-00	PATARA OIL & GAS LLC	LISBON B-616	Shut-In	Oil Well	LISBON	SAN JUAN	NESW	16	30S-24E 8
✓ 43-037-16244-00-00	PATARA OIL & GAS LLC	BELCO ST 4 (LISBON B-816)	Active	Water Disposal Well	LISBON	SAN JUAN	NESW	16	30S-24E 9
✓ 43-037-16245-00-00	PATARA OIL & GAS LLC	LISBON C-69	Shut-In	Oil Well	LISBON	SAN JUAN	NWNE	9	30S-24E 10

✓ 43-037-16247-00-00	PATARA OIL & GAS LLC	LISBON C-94	Shut-In	Oil Well	LISBON	SAN JUAN	SWSE	4	30S-24E 11
✓ 43-037-16250-00-00	PATARA OIL & GAS LLC	LISBON UNIT D-84	Shut-In	Oil Well	LISBON	SAN JUAN	NESE	4	30S-24E 12
✓ 43-037-16251-00-00	PATARA OIL & GAS LLC	LISBON D-89	Shut-In	Oil Well	LISBON	SAN JUAN	NESE	9	30S-24E 13
43-037-16469-00-00	PATARA OIL & GAS LLC	LISBON U B-610	Producing	Oil Well	LISBON	SAN JUAN	NENW	10	30S-24E 14
43-037-16471-00-00	PATARA OIL & GAS LLC	NW LISBON USA A-2 (D-810)	Producing	Gas Well	LISBON	SAN JUAN	NESE	10	30S-24E 15
43-037-30054-00-00	PATARA OIL & GAS LLC	LISBON B-84	Shut-In	Oil Well	LISBON	SAN JUAN	NESW	4	30S-24E 16
43-037-30082-00-00	PATARA OIL & GAS LLC	LISBON B-814	Active	Water Disposal Well	LISBON	SAN JUAN	NESW	14	30S-24E 17
43-037-30317-00-00	PATARA OIL & GAS LLC	FEDERAL 15-25	Shut-In	Gas Well	WILSON CANYON	SAN JUAN	SWSE	25	29S-23E 18
43-037-30693-00-00	PATARA OIL & GAS LLC	LISBON C-99	Shut-In	Oil Well	LISBON	SAN JUAN	SWSE	9	30S-24E 19
43-037-30694-00-00	PATARA OIL & GAS LLC	LISBON U D-610	Shut-In	Gas Well	LISBON	SAN JUAN	NENE	10	30S-24E 20
43-037-30695-00-00	PATARA OIL & GAS LLC	LISBON B-94	Shut-In	Oil Well	LISBON	SAN JUAN	SESW	4	30S-24E 21
43-037-31014-00-00	PATARA OIL & GAS LLC	LISBON UNIT A-911	Producing	Gas Well	LISBON	SAN JUAN	SWSW	11	30S-24E 22
43-037-31034-00-00	PATARA OIL & GAS LLC	LISBON UNIT D-716	Shut-In	Oil Well	LISBON	SAN JUAN	SENE	16	30S-24E 23
43-037-31323-00-00	PATARA OIL & GAS LLC	LISBON C-910	Shut-In	Oil Well	LISBON	SAN JUAN	SWSE	10	30S-24E 24
43-037-31351-00-00	PATARA OIL & GAS LLC	LISBON B-614A	Shut-In	Oil Well	LISBON	SAN JUAN	NENW	14	30S-24E 25
43-037-31433-00-00	PATARA OIL & GAS LLC	LISBON B-810	Producing	Oil Well	LISBON	SAN JUAN	NESW	10	30S-24E 26

43-037-31829-00-00	PATARA OIL & GAS LLC	BIG INDIAN 35-24	Shut-In	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SENE	35	29S-24E 7
43-037-31831-00-00	PATARA OIL & GAS LLC	BULL HORN U 10-43	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SWSE	10	30S-25E 8
43-037-31838-00-00	PATARA OIL & GAS LLC	MIDDLE MESA ST 36-14-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NENE	36	29S-24E 9
43-037-31843-00-00	PATARA OIL & GAS LLC	BULL HORN FED 9-14-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NENE	9	30S-25E 30
43-037-31848-00-00	PATARA OIL & GAS LLC	BULL HORN FED 15-14-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NENE	15	30S-25E 1
43-037-31849-00-00	PATARA OIL & GAS LLC	BULL HORN FED 10-21-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NWSW	10	30S-25E 2
43-037-31850-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 14-21-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SWNW	14	30S-25E 3
43-037-31853-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 5-6-30-25	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	LOT6	5	30S-25E 4
43-037-31854-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 31-31-29-25	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NWSW	31	29S-25E 5
43-037-31855-00-00	PATARA OIL & GAS LLC	MIDDLE MESA ST 36-12-29-24	Shut-In	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NENW	36	29S-24E 6
43-037-31856-00-00	PATARA OIL & GAS LLC	MIDDLE MESA ST 36-24-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SENE	36	29S-24E 7
43-037-31859-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 15-24-30-25	Shut-In	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SWNW	14	30S-25E 8
43-037-31860-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 14-42-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SESW	14	30S-25E 9
43-037-31861-00-00	PATARA OIL & GAS LLC	BULL HORN FED 10-42-30-25	Shut-In	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SESW	10	30S-25E 40
43-037-31864-00-00	PATARA OIL & GAS LLC	BULL HORN FED 10-31-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NWSW	10	30S-25E 1
43-037-31877-00-00	PATARA OIL & GAS LLC	MIDDLE MESA ST 36-12B-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NENW	36	29S-24E 2

43-037-31878-00-00	PATARA OIL & GAS LLC	MIDDLE MESA ST 36-24B-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SENE	36	29S-24E 3
43-037-31883-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 15-24B-30-25	Shut-In	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	SWNW	14	30S-25E 4
43-037-31884-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 23-13B-30-25	Approved permit (APD); not yet spudded	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NWNE	23	30S-25E 5
43-037-31885-00-00	PATARA OIL & GAS LLC	BIG INDIAN FED 23-13-30-25	Approved permit (APD); not yet spudded	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NWNE	23	30S-25E 6
43-037-31891-00-00	PATARA OIL & GAS LLC	BULL HORN FED 15-13-30-25	Producing	Gas Well	BIG INDIAN (HERMOSA)	SAN JUAN	NENE	15	30S-25E 7
43-037-31893-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 30-41-29-25	Approved permit (APD); not yet spudded	Gas Well	UNDESIGNATED	SAN JUAN	SWSW	30	29S-25E 8
43-037-31897-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 5-10-30-25	Spudded (Drilling commenced: Not yet completed)	Gas Well	SOUTH PINE RIDGE	SAN JUAN	LT10	5	30S-25E 9
43-037-31901-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 25-43-29-24	Approved permit (APD); not yet spudded	Gas Well	UNDESIGNATED	SAN JUAN	SWSE	25	29S-24E 10
43-037-31902-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 25-41-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SWSW	25	29S-24E 1
43-037-31903-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 25-31-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NWSW	25	29S-24E 2
43-037-31904-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 26-34-29-24	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NESW	26	29S-24E 3

43-037-31905-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 26-23-29-24	Approved permit (APD); not yet spudded	Gas Well	UNDESIGNATED	SAN JUAN	SWNE	26	29S-24E 4
43-037-31906-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 31-44-29-25	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SESE	31	29S-25E 5
43-037-31907-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 31-33-29-25	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NWSE	31	29S-25E 4
43-037-31909-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 31-22-29-25	Approved permit (APD); not yet spudded	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SENW	31	29S-25E 7
43-037-31910-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 31-11-29-25	Approved permit (APD); not yet spudded	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NWNW	31	29S-25E 8
43-037-50008-00-00	PATARA OIL & GAS LLC	CISCO STATE 36-13	Temporarily-Abandoned	Gas Well	WILDCAT	SAN JUAN	NWNE	36	31S-24E 9
43-037-50010-00-00	PATARA OIL & GAS LLC	MIDDLE MESA FED 4-20-30-25	Producing	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SWNW	4	30S-25E 60
43-037-50012-00-00	PATARA OIL & GAS LLC	Lisbon 11-32MC	Returned APD (Unapproved)	Oil Well	UNDESIGNATED	SAN JUAN	SWNE	11	30S-24E 1
43-037-50013-00-00	PATARA OIL & GAS LLC	Lisbon 14-11MC	Approved permit (APD); not yet spudded	Oil Well	LISBON	SAN JUAN	NWNW	14	30S-24E 2
43-037-50014-00-00	PATARA OIL & GAS LLC	Lisbon 10-44MC	Approved permit (APD); not yet spudded	Oil Well	LISBON	SAN JUAN	NWNW	14	30S-24E 3

43-037-50015-00-00	PATARA OIL & GAS LLC	Lisbon 3-32MC	Approved permit (APD); not yet spudded	Oil Well	LISBON	SAN JUAN	NESE	4	30S-24E	4
43-037-50016-00-00	PATARA OIL & GAS LLC	Lisbon 11-33MC	Approved permit (APD); not yet spudded	Oil Well	LISBON	SAN JUAN	NENW	14	30S-24E	5
43-037-50017-00-00	PATARA OIL & GAS LLC	Lisbon 11-21MC	Approved permit (APD); not yet spudded	Gas Well	LISBON	SAN JUAN	NWSE	10	30S-24E	6
43-037-50018-00-00	PATARA OIL & GAS LLC	Lisbon 3-43MC	Approved permit (APD); not yet spudded	Oil Well	LISBON	SAN JUAN	SESE	3	30S-24E	7
43-037-50019-00-00	PATARA OIL & GAS LLC	Lisbon 10-33MC	Spudded (Drilling commenced: Not yet completed)	Oil Well	LISBON	SAN JUAN	NWSE	10	30S-24E	8
43-037-50021-00-00	PATARA OIL & GAS LLC	Middle Mesa Fed 31-42-29-25	Approved permit (APD); not yet spudded	Gas Well	SOUTH PINE RIDGE	SAN JUAN	SESW	31	29S-25E	9
43-037-50026-00-00	PATARA OIL & GAS LLC	Middle Mesa Federal 5-8-30-25	Approved permit (APD); not yet spudded	Gas Well	SOUTH PINE RIDGE	SAN JUAN	NENE	5	30S-25E	10

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9 5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-014903
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: LISBON (MCCRACKEN)
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: LISBON U B-610
2. NAME OF OPERATOR: CCI PARADOX UPSTREAM, LLC	9. API NUMBER: 43037164690000
3. ADDRESS OF OPERATOR: 811 Main Street, Suite 3500 , Houston, TX, 77002	PHONE NUMBER: 281 714-2949 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0563 FNL 2050 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 10 Township: 30.0S Range: 24.0E Meridian: S	9. FIELD and POOL or WILDCAT: LISBON COUNTY: SAN JUAN STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 9/12/2016 <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input checked="" type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input checked="" type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>

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

Due to current processing limitations at the San Juan Gas Plant in New Mexico, CCI Paradox Upstream LLC (CCI) proposes to perform a cement squeeze to plug off the Mississippian (perfs: 7576'-7970'). CCI also proposes to reconfigure tubing/components in order to convert to a rod pump to improve oil production.

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

Date: August 31, 2016
 By: *Derek Duff*

NAME (PLEASE PRINT) Chrissy Schaffner	PHONE NUMBER 281-714-2966	TITLE Regulatory Specialist
SIGNATURE N/A	DATE 8/23/2016	