

C

9

17 S

37 E

UNIT LETTER

SECTION

TOWNSHIP

## RANGE

### WELL CONSTRUCTION DATA

## Surface Casing

Hole Size: 17-1/2"

Casing Size: 13-3/8"

Cemented with: 350 sx.

*or*  $\text{ft}^3$

Top of Cement: SURFACE

Method Determined: 39 SX EXCESS  
CIRCULATED

### Intermediate Casing

Hole Size: 12-1/4"

Casing Size: 8-5/8"

Cemented with: 1,650 sx.

**or** **ft<sup>3</sup>**

Top of Cement: SURFACE

Method Determined:  $\frac{147 \text{ SX EXCESS}}{\text{CIRCULATED}}$

## Production Casing

Hole Size: 7-7/8"

Casing Size: 5-1/2"

Cemented with: 1,535 sx.

**or** **ft<sup>3</sup>**

Top of Cement: 4,600'

Method Determined: per note  
in OCD file

Total Depth: 11,300'

### Injection Interval

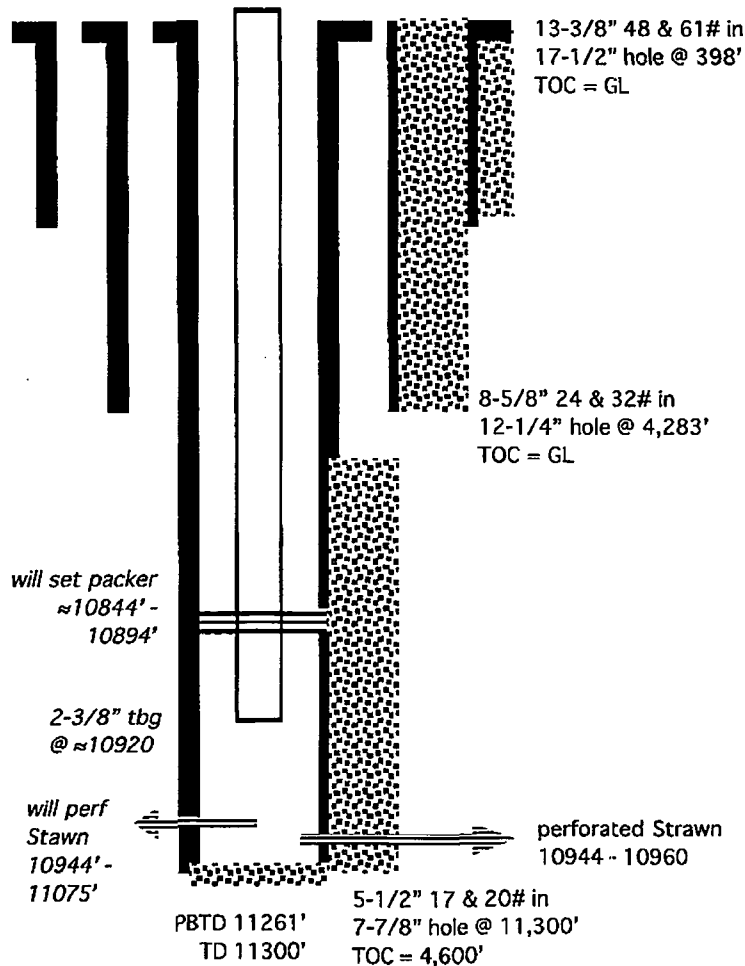
10,944

feet to

11,075'

(Perforated or Open Hole; indicate which)

**■■■■■**



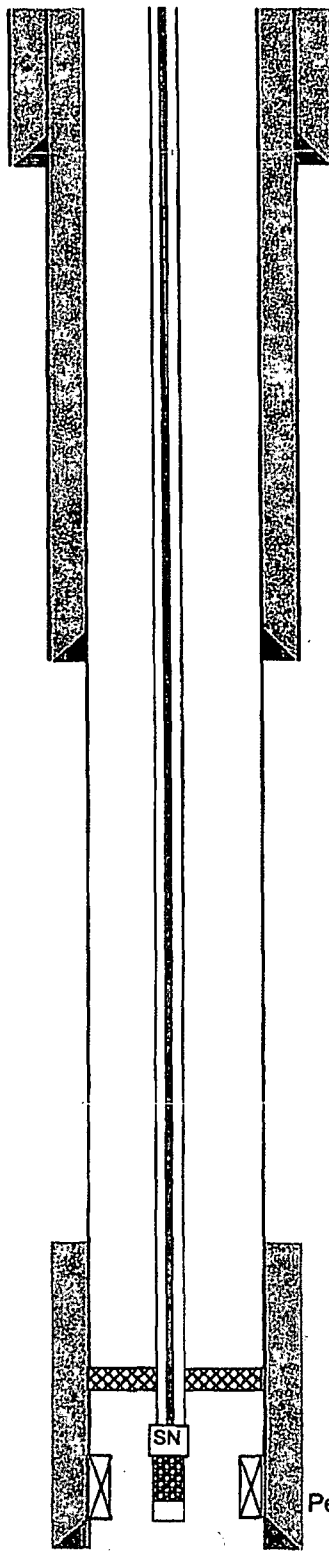
(not to scale)

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# EXISTING WELL BORE

**Consolidated State #3**  
**660 FNL & 2128 FWL**  
**Sec. 9 - T17S-R37E**  
**Lea County, New Mexico**

Drilled 4/86



13 3/8" csg set @ 673'  
 1' guide shoe  
 41.8' 61# / H-40 csg  
 1 float insert  
 363.78' 48#/ft. H-40 csg  
 Cmt: 250 sx lite w/ 2% CaCl + 100sx class "C"  
 circ'd 39 sx excess cement

398'

8 5/8" csg set @ 4285'  
 1' guide shoe  
 38.88' 32# K-55  
 1.5' float collar  
 1856.22' 32# K-55  
 2395.42' 24# K-55  
 Cmt: 1450 lite + 200 sx class "C"  
 circ'd 147 sx.

11/87: Put well on pump  
 24' 2x1 1/16x24' RHBC pump w/ 1x10 GA  
 2' 1 7/8x2' Norris 78 Pony rod  
 500' 20 7/8x25' Norris 78 rods  
 7375' 295 3/4x25' Norris 78 rods  
 3050' 122 7/8x25' Norris 78 rods  
 26' 1 1/4x26' pol. Rod w/ 1.5"x16' liner

2/90: Acidized w/5000 gal.  
 Dowell SXE 15% oil invert acid

5/94: Pump stuck  
 RIH w/ same rod configuration  
 Polish rod 7/8"x25' Norris 90

10/95: Pulled all rod and pump out of hole  
 and laid down.

Perf: 10944-960 w/ 4 jsf (66 total holes)  
 Acidized w/ 1000 gal. 15% NeFe

5 1/2" csg set @ 11,300'  
 1.6' float shoe  
 42.29' 20#/ft. LT&C (plain)  
 1.50' float collar  
 177.92 20#/ft. LT&C (plain)  
 276.76' 20#/ft. LT&C (ruff coat)  
 10,792' : 8.12' 20#/ft. LT&C - marker joint

Perfs: 10,944'-960' w/ 4 JSPF

TD @ 11,300

PBTD @ 11,261

INJECTION WELL DATA SHEETTubing Size: 2-3/8" N-80 9.3# Lining Material: INTERNAL PLASTIC COATEDType of Packer: ARROW AS-1XPacker Setting Depth: 10,844' - 10,894'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? (DISPOSAL) \_\_\_\_\_ Yes XXX No

If no, for what purpose was the well originally drilled? \_\_\_\_\_

ORIGINALLY DRILLED AS A SHIPP; STRAWN OIL WELL.

2. Name of the Injection Formation: STRAWN

3. Name of Field or Pool (if applicable): SWD; STRAWN (POOL CODE 96188)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. ONLY PERFORATED IN THE STRAWN

EXISTING STRAWN PERFS: 10,944' - 10,960'

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

OVER: WOLFCAMP (8,733'), ABO (8,504'), TUBB (7,710'),SAN ANDRES (4,875'), & YATES (3,172')UNDER: ATOKA (11,080')

COBALT OPERATING, LLC  
CONSOLIDATED STATE 3  
660' FNL & 2128' FWL SEC. 9, T. 17 S., R. 37 E.  
LEA COUNTY, NEW MEXICO

PAGE 1

30-025-29711

I. Purpose is to convert an existing 11,300' deep Strawn oil well to a salt water disposal well. Disposal will be in the Strawn (10,944' - 11,075'). This is the SWD; Strawn Pool (NMOCD pool code 96188).

II. Operator: Cobalt Operating, LLC (OGRID #286255)  
Operator phone number: (432) 682-8686  
Operator address: 3001 North Big Spring, Suite 207  
Midland, TX 79705  
Contact for Application: Brian Wood (Permits West, Inc.)  
Phone: (505) 466-8120

III. A. (1) Lease: New Mexico State Land Office lease E0-8563-0004  
Lease Size: 480 acres (see Exhibit A for C-102 and map)  
Closest Lease Line: 512'  
Lease: N2NE4 & N2SW4 Section 8 and W2 Section 9, T 17 S, R 37 E  
Surface Owner: New Mexico State Land Office

A. (2) Surface casing (13-3/8", 48# & 61#) was set in 1986 at 398' in a 17-1/2" hole. Casing was cemented to the surface with 250 sacks Pacesetter® light with 2% CaCl<sub>2</sub> followed by 100 sacks Class C with 2% CaCl<sub>2</sub>. Circulated 39 sacks excess.

Intermediate casing (8-5/8", 24# & 32#) was set at 4,283' in an 12-1/4" hole. Casing was cemented to the surface with 1,450 sacks Pacesetter® light with 15 pounds per sack salt and 1/4 pound per sack cello flake followed by 200 sacks Class C with 2% CaCl<sub>2</sub>. Circulated 147 sacks excess.

Production casing (5-1/2", N-80, L T & C, 17# & 20#) was set at 11,300' (TD) in a 7-7/8" hole and cemented to 4,600' with 1,535 sacks in 2 stages. Cement baskets were set at 10,352' and 10,359' and a DV tool was set at 8,423'.

First stage was cemented with 260 sacks Pacesetter® light Class H with 6% KCl + 0.6% CF-2 + 0.4% TF-4 + 1/4 pound per sack cello flake (= 12.7 pounds per gallon & 2.0 cubic feet per sack) and 375 sacks Class H with 3% KCl + 0.8% CF-2 + 0.4% TF-4 + 1/4 pound per sack cello flake (= 15.6 pounds per gallon & 1.18 cubic feet per sack).

Second stage was cemented with 800 sacks Pacesetter® light Class C with 6% KCl + 0.6% CF-2 + 0.4% TF-4 + 1/4 pound per sack cello flake (= 12.7 pounds per gallon & 2.0 cubic feet per sack) and 100 sacks Class C (= 14.8 pounds per gallon & 1.32 cubic feet per sack).

- A. (3) Tubing will be 2-3/8", N-80, 9.3#, and internally plastic coated. Setting depth will be ≈10,920'. (Disposal interval will be 10,944' - 11,075'.)
- A. (4) An Arrow AS-1X packer will be set between 10,844' and 10,894' (50' to 100' above the highest proposed perforation of 10,944').
- B. (1) Injection zone will be the Strawn limestone, which is part of the SWD; Strawn Pool (NMOCD pool code number 96188). Estimated fracture gradient is ≈0.7 psi per foot.
- B. (2) Injection interval will be 10,944' to 11,075'. All of the well bore is cased.
- B. (3) The well was spudded in 1986 and proposed for plugging and abandonment in 1999 and 2003. The well has produced 1,576 barrels of oil and 100,105 Mcf of gas from 10,944' - 10,960' in the Shipp; Strawn (#55695) oil pool. However, there has been no oil production after 1998, an average of just 76 Mcf of gas per month in 2011, and only 5 Mcf for all of January, 2012 (see Exhibit B).

B. (4) The well was perforated with 66 0.33" shots between 10,944' - 10,960. The well will additionally be perforated from 10,960' to 11,075' with 2 shots per foot. Shot diameter = 0.40".

B. (5) The next higher potential oil or gas zone is the Wolfcamp. Closest (1.5 miles southeast) Wolfcamp producer is in the Humble City; Wolfcamp Pool at the Bureaucrat AGV 1 (30-025-30767). Potential oil or gas zones above the Wolfcamp (from deep to shallow) include:

Bone Spring (4.1 miles SE at a now plugged wildcat in Section 25)

Abo (1 mile southwest in the Midway; Abo Pool in Section 17)

Tubb (1.5 miles north in the Lovington; Tubb Pool in 33-16s-37e)

Paddock (1 mile NW in the Lovington; Paddock Pool in Section 5)

San Andres (2.2 mi. west in Lovington; Grayburg-San Andres Pool in Sec. 7)

Yates (8 miles south in Eumont; Yates-& Rivers-Queen Pool in 28-18s-37e)

Closest (1,217' east) past Strawn producer is the New Mexico Ex State 2 (30-025-29440). It produced from the Strawn before being converted to a Strawn; SWD. Closest (1,764' northwest) current Strawn producer is Chesapeake's Bubba 4 State Com 1 (30-025-37420).

Lower potential oil or gas zones (from shallow to deep) are the Atoka (Shipp; Atoka Pool produced 5,504' northeast at the Simmons Estate 1 (30-025-30177) in Section 3) and Morrow (closest is 7 miles northwest in 17-16s-36e).

IV. This is not an expansion of an existing injection project. It is disposal only.

V. Exhibit C shows 9 wells (2 producing oil + 5 plugged & abandoned oil + 1 water disposal + 1 plugged water supply well) within a half mile radius. State Engineer records indicate the water supply well was 137' west of the Consolidated State 3 well head. No evidence of the water well was found during