





**MARATHON OIL COMPANY**  
**MID-CONTINENT REGION**  
**MIDLAND OPERATIONS NORTHWEST NEW MEXICO**

**FIELD: MONUMENT**  
**LEASE: HANSEN STATE**  
**COUNTY: LEA**

**COMPLETED 04/10/98**

**LOCATION: 2190' FNL & 460' FEL, SECTION 16, TOWNSHIP 20S, RANGE 37E, UNIT LETTER "H"**

**GL = 3544'**

**KB = 3557'**

**SPUD: 03/10/98 Reach TD 03/31/98**

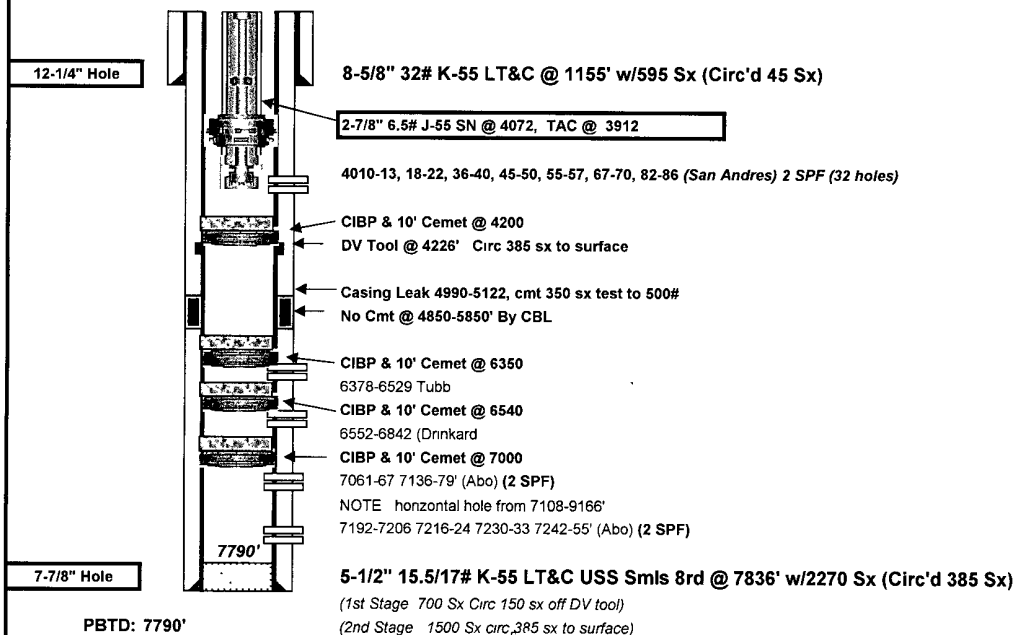
**API: 30-025-34286**

**DATE: 9/24/2008**

**BY: RS Bose**

**WELL: 9**

**STATE: NEW MEXICO**



**Formation Tops**

Yates	2495'
Queen	3354'
Grayburg	3595'
San Andres	3877'
Gloneta	5126'
Paddock	5203'
Blinberry	5677'
Tubb	6272'
Drnkard	6592'
Abo	6926'

**Well History**

- Apr '98 Perf'd (Abo) w/2 SPF @ 7192-7206, 16-24 30-33 & 42-55' Acdd same w/3800 Gal 15% Ferchek w/100 BS's AIR=5 25 BPM, AIP=5000#, ISIP=2305#, 5min=Vacuum, Pmax=6480# Perfs broke down @ 6400# Perf'd (Abo) w/2 SPF @ 7061-67 & 7136-39' Acdd same w/5500 Gal 15% Ferchek w/100 BS's AIR=7 6 BPM, AIP=500#, ISIP=Vacuum, Pmin=90#, Pmax=1185# Acdd all Abo perfs 7061-7255' w/9000 Gal 15% Gelled Ferchek SC w/250 BS's AIR=11 87 BPM, Pmax=928#, 2210# on flush, on vacuum at end of job Turned to production flowing thru 1/4" choke @ 10 BOPD & 7 BWPD
- May '98 Installed pumping equipment Turned to production pumping thru 2-7/8" tubing
- May '99 Set CIBP @ 7120' Sqzd Abo perfs 7061-67' w/400 sx & 1000 gal flochek DOC to 7120' Cut window for horizontal drilling @ 7108-20' Drd 4-3/4" horizontal hole @ 7120-9166' Acid washed lateral open hole 7380-9166' w/25,000 gal 15% Hcl & 160 mcf nitrogen Well fldw 25 bbls fluid in one hour, then died
- July '99 Pushed CIBP in vertical hole from 7120' to 7790' Perf'd (Abo) w/2 SPF - 17 holes @ 7060-68' Acdd same w/2000 gal 20% Hcl in 70% nitrogen Installed pumping equipment & returned to production pumping
- Sep '01 Locate casing leak at 4990-5112' Cement leak with 350 sx, rev out 112 sx Tst sqz to 500 psi
- Mar '08 Set CIBP @ 7000' Selectively perforate in acid the Tubb and Drnkard from 6378-6842 with 49 holes Acidize w/ diversion (perf ball sealers) using 80 bbls of 15% HCL Test Drnkard, no BHP Set CIBP @ 6540 with 10' cement and test Tubb No oil or gas Set CIBP @ 6350 w/ 10' cmt Set CIBP @ 4200 w/ 10' cement
- Sep '08 Perf San Andres in acid 4010-86 (32 holes) @ 2 SPF PWOP

**Recompletion Procedure**  
**Hansen State Well No. 9**  
2190' FNL, 460' FEL  
Section 16, 20S-37E, UL "H"  
Lea County, New Mexico

**WBS NO:** RW.08.17851

**Date:** July 17, 2008

**Purpose:** Recomplete to San Andres

**Elevation:**   **KB:** 3557'                      **PBTD:** 4200'  
                  **GL:** 3544'                      **TD:** 7836'

**Estimated Cost:** \$60,000

**Estimated Rig Days:** 6

**WI:** 100%                      **NRI:** 87.5%

**Surface Casing:** 8-5/8", 32#, K-55 casing set at 1155'. Cemented w/ 595 sx. Circulated cement to surface (45 sx).

**Production Casing:** 5-1/2", 15.5/17#, K-55 LT&C casing to 7836'.  
Circulated 385 sx. TOC at surface'.  
(1<sup>st</sup> stage: 700 Sx Circ 150 Sx off DV tool)  
(2<sup>nd</sup> stage: 1500 Sx Circ 385 Sx to surface.)

**Production Tubing:** 2-7/8", 6.5#, J-55, EUE @4092, SN.

**Safety Issues:**            High Concentration Of H<sub>2</sub>S Gas

**Tubular Performance/Capacities:**

	ID (in.)	Drift (in.)	Burst (psi)	Collapse (psi)	Capacity (bbl/ft)
2-7/8" 6.5# J-55	2.441	2.347	5808	7680	.00579
5-1/2" 15.5# K-55	4.95	4.825	3848	4040	.0238
Tbg/Csg Annulus	-----	-----	-----	-----	.0158

**Procedure:**

1. MIRU WSU. Install and test BOPE. Load wellbore full w/freshwater and test to 500 psi. PU end of tubing to 4090' and circulate a balance 3-bbl slug of acid from 4090' to 3950' using 15% NEFEHCL inhibited for 48-hours at 100 deg F. POOH with tubing and tools.
2. RU Baker Atlas electric line. Install and test pack-off to 1000psi. RU CBL/CCL logging tools and run cement bond log in well from CIBP to 2400'. Hold 1000 psi on well while running CBL. POOH with logging tools. Install pack-off. RIH with 3-1/8" slick gun with 311T charges loaded 2 SPF, phasing is not critical. Perforate from top-down to maximize benefit of acid. For depth control use newly ran CBL and correlate new CBL to Schlumberger Compensated Neutron Three Detector Density/NGT log dated 03/29/1998.

4010'-4013' (3', 4 holes)  
4018'-4022' (4', 5 holes)  
4036'-4040' (4', 5 holes)  
4045'-4050' (5', 6 holes)  
4055'-4057' (2', 3 holes)  
4067'-4070' (3', 4 holes)  
4082'-4086' (4', 5 holes)

WORKOVER PROCEDURE  
Hansen State Well No. 9  
Lea County, New Mexico

San Andres 25 Net Feet – 32 Holes

After last gun has been shot, pump 5 bbls of fresh water down casing to flush excess acid.

3. RIH w/TBG and PKR. Set packer @ +/-3990' and establish injection into new perforations. Pump +/- 10 bbls of fresh water at maximum rate not to exceed 5000 psi using reverse unit or kill truck. Load and test backside to 500 psi. Swab test perforations for ½ day. If the perforations are not giving up fluid and not productive, plans will be to acidize as listed below. Otherwise, PWOP.
4. RU acid company. Need a minimum of 500 HHP on location. Pump +/- 35 bbls of 15% NEFEHCL inhibited for 4 hours at 100 deg F. Use a ball injector loaded with 50 (1.1 SG) ball sealers for acid diversion. Start off pumping 5 bbls of acid, then drop 1 ball for each 1/2-bbl of acid pumped. After last ball, pump remaining 5-bbls of acid. Pump at maximum rate (4-5 BPM is desired) not to exceed 5000 psi surface pressure. Displace acid with 30-bbls of fresh water.
5. Release packer and lower past bottom perforation to knock ball sealers off perforations. POOH.
6. RIH with production equipment, set pump intake +/- 10' off bottom, set tubing anchor above top perforation and PWOP.