

**IX**

**Proposed  
Stimulation  
Program**

**WORKOVER PROCEDURE**  
**VG 132 WIW**

Date: May 23, 2004

**I- General Information**

Well: VGSAU #132  
API #: 30-025-36682  
Field: Vacuum  
Location: 2630' FSL & 660' FWL  
Section 2, Unit Letter "I", T18S & R34E, Lea County, New  
Mexico  
Formation: Grayburg San Andres  
Drilled: 5/16/2004  
Elevation: GL: 4002'  
KB: 4008'

**II- Current Wellbore**

See Attached Diagram.

**III- Formation Tops**

Grayburg Marker:  
Grayburg Dolomite Top: 4350'  
Grayburg Dolomite Base: 4400'  
Grayburg San Andres: 4410'  
Lovington Sand: 4630'  
LSA: 4672'  
O/W Contact: 4710'

**IV- Objective Workover**

Complete new vertical injector.

V- **Procedure**

- 1- MIRU. ND well head & NU BOP.
- 2- **Drill Out to TD**: P/U 4 3/4" bit and 2 7/8" working string. TIH to clean out wellbore to FC @ 4550'. Drill to 4590' (10' above the shoe). TOH with bit.
- 3- **Logging**: R/U Baker Atlas and run CBL-CCL-GR Log from TD to surface.
- 4- **Perforating**: R/U BAKER ATLAS tools and guns. **Safety Meeting** about perforating operations. TIH with 3 1/8" XPS Expendable Guns. Correlate and perforate w/ 2 jspf intervals in the Grayburg Dolomite and Upper San Andres: 4370'-4383' (13'), 4426'-4484' (58'), 4488'-4526' (38'), 4530'-4548' (18'), 4558'-4563' (5'), 4567'-4572' (5'), with 4 jspf density. TOH with guns and check if charges fired as planned. Rat hole Available: 18'.
- 5- **Stimulation**: P/U 5 1/2" Retrievable BP and packer and 2 7/8" treating tubing. TIH w/ tubing, packer (Check CCL for packer).

Perform acid job to intervals as follows:

Intervals: 137'  
Volume: 8,000 gls acid 15% HCl. 2000 gls acid per stage w/ 55 ball sealers per stage.  
Rate: 8-10 bpm  
Initial Pad: As recommended by Schlumberger  
Stages: 4  
Diversions: 3000 # Rock Salt. 500, 1000 and 1500 # in between stages.  
Ball Sealers: 220 – 1.3 sg. ball sealers  
Flush: To top of perforation

**Note: See Schlumberger Program for details and changes.**

- 6- **Swabbing**: Swab Load back. Record volumes.
- 7- **Clean Out Debris and Rock Salt**: Release Packer and RBP. TOH w/ working string and packer. L/D packer. P/U bit again and TIH with 2 7/8" working tubing. C/O to PBTB @ 4590'. TOH and L/D tubing and bit.
- 8- **Run Injection Equipment**: P/U 2 3/8" Plastic lined tubing and 5 1/2" packer. TIH with injection equipment. Set packer **within 150' of top of perforations**.
- 9- Evaluate Surface Pressure for Injection. If surface pressure higher than 2/10 of psi per foot to the top of the perforations then proceed w/ step 10. Otherwise RWTL.
- 10- Perform Step Rates w/ Gray Wireline. Phone: 1-806-893 3790.

Prepared by  
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