

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division



Date 5/22/17

API # 30-0 15-43892

Dear Operator:

I have this date performed a Mechanical Integrity Test on the GRAVITAS 2 STATE SWD # 2

☒ If this test was successful the original chart has been retained by the NMOCD and will be scanned into the well's file in 7 to 10 days, pending receipt of the Form C-103 indicating the reason for this test. The well files are located at www.emnrd.state.nm.us/ocd/OCDOOnline.htm

☐ If this test was unsuccessful the original chart has been returned to the operator pending repair and retest of the well, which must be accomplished within 90 days. If this is a test of a repaired well, previously in non-compliance, all dates and requirements of the original non-compliance are still in effect. No expectation of extension should be construed as a result of this test.

☐ If this test was for Temporary Abandonment include in your detailed description, on Form C-103, the location of the CIBP and any other tubular goods in the well, as well as your request for TA status. Include how long you are requesting the TA status for.

☐ If this is a successful test of a repaired well you must submit a form C-103 to NMOCD within 30 days. This C-103 must include a **detailed** description of the repair to the well. Only after receipt of the C-103 will the non-compliance be closed.

☒ If this is a successful Initial Test of an injection well you must submit a form C-103 to NMOCD within 30 days. This C-103 must include a **detailed** description of the work done on this well **including the position of the packer, tubing information, the date of first injection, the tubing pressure and injection volume. Contact Karen Sharp at 575-748-1283 x109 to verify all required paperwork has been received before you can begin injection.**

If I can be of additional service contact me at (575) 748-1283 ext 107.

Thank You,

A handwritten signature in black ink that reads "Richard Inge".

Richard Inge
Compliance Officer
District II - Artesia



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease	Field Name Devonian-Silurian	Business Unit Mid-Continent
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016		Mud Line Elevation (ft)
				Water Depth (ft)

Report Start Date: 4/28/2017

Com

PU BHA #1, Bit, Scraper, Float Sub, 4-1/4" Dc's, 3-1/2" HWDP

Rig Service. Lubricate Top Drive and CO saver sub

Chevron/Patterson IHE LOTO verified by Petro Safety Gage Burford

TIH F/930 T/13,923'

Hole taking proper fill.

Pull up to 13,872', recording PU: 350k SO: 290k.

Rot torque 7.5K w/pumps on & off

Begin pumping at 176 gpm, rotating at 30 rpm.

Work casing scraper F/13,872' T/13,950' and through Landing Collar and Float Collar five times.

No noticeable tight spots.

Circulate bottns up. Perform flow check.

Spot 100 bbl of 10# brine cap outside of bit.

Report Start Date: 4/29/2017

Com

Complete spotting 100 bbl of 10# brine cap outside of bit.

TOH F/13950' T/930

Hole taking proper fill.

L/D BHA: L/D 3-1/2" HWDP, 4-1/4" DCs.

Break bit, L/D scraper.

Rig Service. Grease top drive, crown, blocks, and drawworks.

Wait on SLB wireline truck.

Rig up Halliburton iron for upcoming acid job.

Halliburton mixed and cut acid to 15%.

Unloaded 4-1/2" and 5-1/2" P110-S TSH Blue casing. Tenaris rep on site. Visually inspected threads. Did not drift.

Rig up SLB wireline unit and lubricator in MPD system.

RIH with CBL logging tool from surface T/10,000'

Ground sheave on v-door position shifted with added weight of 10,000' of line. This caused the wire to rub on a pin on the sheave. Stopped the job. Decision made to use a clamp to support string and slack off to safely remove pin. SLB did not have a clamp on location, had one delivered from Midland.

RIH with CBL logging tool F/10,000' T/13,950'.

Log F/13,950' T/13,000'. Corelate to Apolo CBL

Report Start Date: 4/30/2017

Com

POOH with CBL wireline tool

Rig down SLB wireline and lubricator from MPD system

P/U Acid work string: 5-1/2" tricone bit, bit sub, BHI memory gauge carrier, XO, 3-1/2" DP, XO

P/U 42 3-1/2" DP singles

TIH on 5" DP T/9,311'

Pump 115bbl of 10# brine to balance well

TIH F/9,311' T/13,972'

Circulate and condition well. Ensure 8.5 ppg in and out.

Fill frac tanks with fresh water.

Rig up Halliburton acid equipment.

Complete rigging up Halliburton acid equipment. Rig up soft restraints on all hard lines.

Hold PRJSM with CVX, Patterson, Halliburton acid, flowback, and mud, SLB wireline

Finalize rig up on Halliburton acid equipment.

Break circulation through acid lines. Pressure test lines to 500 psi low / 5,000 psi high for 5 minutes

Report Start Date: 5/1/2017



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease	Field Name Devonian-Silurian	Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016		Mud Line Elevation (ft)	Water Depth (ft)

Com

Perform injection test with Halliburton equipment:

Annulus pressure before pumping: 110 psi

2 bpm

Annulus Pressure: 210 psi

Drill Pipe Pressure: 558

4 bpm

Annulus Pressure: 380 psi

Drill Pipe Pressure: 1,150 psi

8 bpm

Annulus Pressure: 1,300 psi

Drill Pipe Pressure: 2,100 psi

10 bpm

Annulus Pressure: 1,484 psi

Drill Pipe Pressure: 2,400 psi

15 bpm

Annulus Pressure: 1,554 psi

Drill Pipe Pressure: 3,440 psi

Shut down pumps. After 5 minutes annulus pressure dropped to 86 psi.

Rig down Halliburton iron from drill pipe. Make up top drive.

Pump 24 bbl of 10# brine, chase with 30 bbl of fresh water

TIH F/13,972 T/14,950 at 30 ft/min with MPD

Make up Halliburton iron to drill pipe.

Pressure test lines to 500 psi low / 5,000 psi high for 5 minutes.

Spot 20 bbl acid pill down drill string in open hole with Halliburton.

Pump Rate: 10 bpm

Annulus Pressure: 1,500 psi

Drill Pipe Pressure: 2,300 psi

Rig down Halliburton iron from drill pipe. Make up TD.

Pump 30 bbl of 10# brine, chase with 20 bbl of fresh water

TOH F/14,950 T/13,972 at 30 ft/min with MPD

Rig up SLB wireline sheaves and stage lubricator with tool on floor in preparation to run PBMS tool down string after acid job.



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease	Field Name Devonian-Silurian	Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/28/2016		Mud Line Elevation (ft)	Water Depth (ft)

Com

Make up Halliburton iron to drill pipe. Pressure test lines to 500 psi low / 5,000 psi high for 5 minutes.

Perform Halliburton acid job:

Load well with 6 bbl of treated water at 5 bpm

Block 1

134 bbl of 15% HCL Acid at 15 bpm

74 bbl of 15% HCL Acid - Gelled at 15 bpm

89 bbl of 15% HCL Acid at 15 bpm

30 bbl of treated water at 15 bpm

5 bbl of 100# Diverter at 5 bpm

Block 2

30 bbl of treated water at 15 bpm

134 bbl of 15% HCL Acid at 15 bpm

74 bbl of 15% HCL Acid - Gelled at 15 bpm

89 bbl of 15% HCL Acid at 15 bpm

30 bbl of treated water at 15 bpm

5 bbl of 200# Diverter at 5 bpm

(increase to 200 lbs due to no pressure increase from previous diverter)

One acid frac tank not supplying fully to keep up with acid job. Pump out tank into second acid tank. Resume acid job.

Block 3

30 bbl of treated water at 15 bpm

134 bbl of 15% HCL Acid at 15 bpm

74 bbl of 15% HCL Acid - Gelled at 15 bpm

89 bbl of 15% HCL Acid at 15 bpm

30 bbl of treated water at 15 bpm

5 bbl of 300# Diverter at 5 bpm

(increase to 300 lbs due to no pressure increase from previous diverter)

Block 4

30 bbl of treated water at 20 bpm

134 bbl of 15% HCL Acid at 20 bpm

74 bbl of 15% HCL Acid - Gelled at 20 bpm

89 bbl of 15% HCL Acid at 20 bpm

30 bbl of treated water at 20 bpm

Flush with 745 bbl of fresh water at 20 bpm

Rig up SLB lubricator to drill pipe. Tie Halliburton iron onto side entry.

Pressure test lines to 500 psi low / 5,000 psi high for 5 minutes.

Unable to run SLB PBMS tool into hole due to pressure and lack of tool weight. Decision made to leave tool in lubricator and record pressures.

Rig up Halliburton acid iron to kill line to allow for faster pump rates during step rate tests.

Observed transducer on annulus reading incorrect numbers - troubleshoot. Change out transducer.

Primary Halliburton computer froze. Rig up secondary computer.



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease		Field Name Devonian-Silurian		Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016			Mud Line Elevation (ft)	Water Depth (ft)	

Com

Pressure test lines to 500 psi low / 5,000 psi high for 5 minutes.

Line up down annulus and perform step rate test:

5 bpm for 30 minutes

Drill Pipe Pressure: 178 psi

Annulus Pressure: 235 psi

10 bpm for 30 minutes

Drill Pipe Pressure: 164 psi

Annulus Pressure: 558 psi

15 bpm for 30 minutes

Drill Pipe Pressure: 165 psi

Annulus Pressure: 914 psi

20 bpm for 30 minutes

Drill Pipe Pressure: 183 psi

Annulus Pressure: 1511 psi

15 bpm for 10 minutes

Drill Pipe Pressure: 168 psi

Annulus Pressure: 930 psi

10 bpm for 10 minutes

Drill Pipe Pressure: 153 psi

Annulus Pressure: 921 psi

5 bpm for 10 minutes

Drill Pipe Pressure: 140 psi

Annulus Pressure: 470 psi

Shut down pumps and monitor pressures for 2 hours recording drill pipe pressure every 10 minutes:

10 min: 132 psi

20 min: 129 psi

30 min: 131 psi

40 min: 135 psi

50 min: 136 psi

60 min: 138 psi

70 min: 139 psi

80 min: 137 psi

90 min: 140 psi

100 min: 139 psi

110 min: 141 psi

120 min: 142 psi

R/D SLB wireline lubricator and sheaves on rig floor.

Begin R/D of Halliburton iron.

Slip and cut drill line: 13 wraps / 130 feet.

Continue rigging down Halliburton.

Report Start Date: 5/2/2017

Com

Complete slip and cut drill line: 13 wraps / 130 feet.

Continue rigging down Halliburton.

Finish rigging down Halliburton iron off rig floor and stand pipes off V-door.

Pump 120 bbl 9.8 ppg brine cap to balance well. Cap did not take. Circulate and condition.

Pump second 120 bbl 9.8 ppg brine cap to balance well. Cap good.

TOH F/13,972 T/13,192 laying down singles

Monitor well on trip tank.

Build and pump 9.8 ppg brine cap to balance well

TOH F/13,192 T/10,879 laying down singles

Monitor well on trip tank.

Rig service, change ST-80 hydraulic hose.

Repair different leaking hydraulic hose on ST-80.



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease		Field Name Devonian-Silurian		Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016			Mud Line Elevation (ft)	Water Depth (ft)	

Com

TOH F/10,879 T/3,496 laying down singles

Monitor well on trip tank.

Pump brine cap to balance well.

TOH F/3,496' T/1,922 laying down singles.

Monitor well on trip tank.

TIH 10 stands out of derrick F/1,922 T/2,869 to lay out singles

TOH F/2,869' T/1,922 laying down singles.

Monitor well on trip tank.

Report Start Date: 5/3/2017

Com

Pull MPD rotating head, change elevators for 3-1/2" DP - fill out log book

TOH F/1,922 to surface. L/D Baker Hughes memory gauge, bit sub, and tricone bit.

Monitor well on trip tank.

Rig up SLB wireline and lubricator.

Pump brine cap to balance well

Run 5.50" gauge ring on wireline (max OD on packer 5.468"). Could not get tool past 6-5/8" liner top at 13,196'. Discuss with office. Decision made to POOH.

Monitor well on trip tank.

P/U and RIH with Baker Hughes packer assembly. Set down 3 times and was able to pass through liner hanger. Tie into marker joint in liner with CCL.

Set packer at 13,913'.

22 seconds until setting tool fired.

Observed 400 pounds of weight loss.

Components left in hole:

- Baker 80DA40/32 Model DA Packer
- 6' 3-1/2" YS 125 Inconel pup jt
- 3.5" x 2.813" X Nipple
- 6' 3-1/2" YS 125 Inconel pup jt
- 3.5" x 2.813" XN Nipple
- 6' 3-1/2" YS 125 Inconel pup jt
- 3.5" Wireline entry guide with pump out plug

Monitor well on trip tank.

R/D SLB wireline and lubricator

Pull wear bushing.

Clear rig floor. L/D 3.5" rental equipment.

Perform static test.

Monitor well on trip tank. Test good.

Completion engineer on site and approved test.

Continue to clear rig floor and prepare to run casing.

Rig up casing running equipment.

Hold PJSM with Patterson, Franks, Tenaris, and Duoline.

P/U seal assembly and RIH with Baker Hughes tech. P/U #1 4-1/2" 12.6# Tenaris Blue P110S joint and run in mouse hole. Perform dump test with casing tongs - test good.

Report Start Date: 5/4/2017

Com

Run 19 jts of 4-1/2" 12.6# Tenaris BLUE P110S casing F/44' T/818'

Duoline installing seals and drifting every connection.

Tenaris rep inspecting pipe and make ups.

Monitor well on trip tank - well static.

P/U 4-1/2" csg x 5-1/2" csg XO and make up.

Change out to 5-1/2" casing slips and elevators. Fill out log book.



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease	Field Name Devonian-Silurian	Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016		Mud Line Elevation (ft)	Water Depth (ft)

Com

Run 369 jts of 5-1/2" 20# Tenaris BLUE P110S casing F/822' T/13,802'

Duoline installing seals every connection and drifting first 10 connections, then one every 20.
Tenaris rep inspecting pipe and make ups.

Monitor well on trip tank - well static.

Rig up Frank's CRT

Monitor well on trip tank - well static.

Run 345 jts of 5-1/2" 20# Tenaris BLUE P110S casing F/13,802' T/13,877'

P/U: 300k

S/O: 285k

Rot: 300k

Rot Tq: 3.6k ft/lbs

Duoline installing seals.
Tenaris rep inspecting pipe and make ups.

Monitor well on trip tank - well static.

Report Start Date: 5/5/2017

Com

Run 1 jts of 5-1/2" 20# Tenaris BLUE P110S casing F/13,877' and sting into packer at 13,916'

Set down 10k (275k HL) onto packer
Pull up 30k (330k HL) to ensure anchor latch engaged
Set down 100k (185K HL) to record record spaceout

Pressure test annulus to 500 psi for 5 minutes - test good.

Release from packer.

Monitor well on trip tank - well static.

Circulate 336 bbl of packer fluid in well at 2 bpm.

CRT began to leak, L/D tool. Rig up TIW valve onto casing and make up to top drive.

Continue circulating a total of 750 bbl of packer fluid in well at 2 bpm.

Lay out 2 joints of 5-1/2" 20# casing. P/U 1 x 4' pup jt, 1 x 8' pup jt, 1 x 20' pup jt, 20' pup jt with iconel DTP coupling, and hanger with landing joint.

Sting into packer and land tubing hanger in wellhead with 90k down. Confirm with CVX SME slack off weight acceptable.

Tenaris, Baker Hughes, and FMC on floor during landing

Pressure test FMC hanger body to 5,000 psi for 5 minutes - test failed. Troubleshoot. Notify town. All indications is that hanger is on load shoulder. visual mark through casing valve, mark on LJ at floor, and lock screws meet FMC specs (4-1/4")

Reseat hanger in wellhead. appears hanger maybe +/- 1/4" lower now. Lock screws now land out @3-7/8"

Pressure test hanger body to 5,000 psi for 5 minutes with FMC - test good.

Pressure test annulus to 500 psi low for 5 minutes and 2,780 psi high for 30 minutes - test good.

Lay down landing joint.

Install BPV with FMC.

PN: P126944-0000

TN: T10193

JN: 4593

Release with 7-3/4 turns counter clockwise.

Installed at 19:41.

Rig down casing running equipment and clear floor.

N/D MPD plumbing and valve system, orbit valves. N/D Choke and kill lines.

Report Start Date: 5/6/2017

Com

Complete N/D BOP

N/U night cap with FMC and test to 5,000 psi for 15 minutes - test good.

Rig down backyard and pits



Summary Report

Completion

Complete

Job Start Date: 4/28/2017

Job End Date: 5/22/2017

Well Name GRAVITAS 2 STATE SWD #002		Lease	Field Name Devonian-Silurian	Business Unit Mid-Continent	
Ground Elevation (ft) 3,219.00	Original RKB (ft) 3,247.00	Current RKB Elevation 3,247.00, 10/26/2016		Mud Line Elevation (ft)	Water Depth (ft)

Com

R/D for rig move

Clean pits with tank cleaners.

Pin top drive. Unspool drill line. Clear rig floor. Lower V-door.

Break down flare lines.

R/D for rig move

Pull cables cables on grasshopper.

Move V-door, catwalk, MI Swaco gas buster with crane.

Continue breaking down flare lines.

Rig released to HH SO 8 P2 14H at midnight.

Report Start Date: 5/17/2017

Com

WSI - Inactive

Perform safety meeting with business partners, sign permits, and talk through plan for operation.

N/U injection tree onto tubing head adapter.

Pull 5" BPV and install TWC.

Chart injection tree shell test to 750/2780 psi for 15/15 min. Tests good.

Pull TWC and SIW.

WSI - Inactive

Report Start Date: 5/22/2017

Com

WSI - Inactive

Perform safety meeting with Greene's and discuss procedure and JSAs.

Perform MIT on Tubing x Casing annulus to 500 psi for 30 min. via calibrated analog chart recorder with Richard Inge from NMOCD. Pass.

Tie into tubing and pump out plug @ 2200 psi.

Shut in Well.

Note: Injection well immediately went on vacuum.

Handover well to Art Carrasco with Facilities.

*****Final Report*****