PLAINS MARKETING, L.P.

RECEIVED

2009 MAR 24 AM 10 12

March 23, 2009

Mr. Jim Griswold, Hydrologist; Groundwater Remediation
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Notice of Intention to Plug and Abandon Brine Well (Form C-103)
Saline No. 1
API No. 30-025-12803
Section 36, Township 18 South, Range 37 East, NMPM
Lea County, New Mexico

Mr. Griswold:

Pursuant to NMAC Title 19, Chapter 15, Part 4, and the Oil Conservation Division (OCD) approval of the subject Plug and Abandonment, Plains Marketing, L. P. (Plains) hereby submits the completed copy of the Form C-103 and attachments describing the Plug and Abandon work on Saline No. 1.

If you have any questions, please feel free to contact me at the numbers below or by email at weroberts@paalp.com.

On behalf of Plains, I wish to thank you and the OCD staff for your cooperation during this review of our work over and efforts to safely test, plug, and abandon this well.

Sincerely,

Wayne E. Roberts
Director, Environmental & Regulatory Compliance
S & SW Divisions - Plains All American
3705 E. Hwy. 158
Midland, TX 79706
432.686.1767 office
432.413.2574 cell
432.686.1770 fax

Attachments

Cc: OCD District I Office, Hobbs

Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

June 19, 2008

WELL API NO. **30-025-12803**

5. Indicate Type of Lease STATE ☒ FEE ☐

6. State Oil & Gas Lease No. **SALT M-13894**

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" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: **SALINE**

1. Type of Well: Oil Well ☐ Gas Well ☒ Other (BRINE)

8. Well Number **ONE (1)**

2. Name of Operator: **Plains Marketing, L. P.**

9. OGRID Number

3. Address of Operator: **P. O. Box 4648, Houston, TX 77210-4648**

10. Pool name or Wildcat

4. Well Location
Unit Letter: **M**: **577.5** feet from the **SOUTH** line and **907.5** feet from the **WEST** line
Section **36** Township **18S** Range **37E** NMPM County **Lea**

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* **3650.4 GR**

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☒	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☒
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
DOWNHOLE COMMINGLE	☐						
OTHER:	☐			OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance with NMAC Title 19, Chapter 15, and Part 4, Plains basic plugging plan is as follows:

1. Pull the tubing
2. Scrape the casing
3. Set a plug near the casing shoe.
4. Pressure up on the plug (~500 psig for 30 minutes; pressure drop < 10% over duration of test).
5. Fill the casing with Class "C" Cement from plug to surface.
6. Set an abandonment marker and submit a final C-103 Form with final construction details similar to the above within 30 days of completion of work.
7. Review the discharge permit to fulfill any closure and general permit requirements.

Spud Date: **March 17, 2009** Rig Release Date: MARCH 19, 2009

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Wayne E. Roberts TITLE: Director, Environmental/Regulatory Comp. DATE 03-17-2009

Type or print name Wayne E. Roberts E-mail address: weroberts@paalp.com PHONE: (432) 686-1767; (432) 413-2574 cell

For State Use Only

APPROVED BY: TITLE EPC DATE 03/17/2009

Conditions of Approval (if any):

BW-12 Saline No. 1. Brine Well
Well History; Documentation of Sonar Test Attempt and Request to P&A

General Information and History of BW-12 Saline No. 1. Brine Well

Operator Name:	Plains Marketing, L. P. P. O. Box 4648 Houston, TX 77210-4648
Well Name:	Saline No.1 Brine Well
API Number:	30-025-12803
Brine Well Permit #:	BW-012
Date Permit Expires:	July 18, 2009
Location:	SW/4, SW/4, of Section 36, Township 18 South, Range 37 East, NMPM, Lea County, New Mexico
GPS of well:	Lat: 32.69694440; Long: 103.20972220

Republic Factors, Inc. of Midland, Texas originally placed saline No. 1 in service as a brine extraction well in May 1963. The well was drilled and completed by Cactus Drilling Company in May 1963. The original well was set with 8⅝"-24 # casing set at 1,720'. The top of the anhydrite was shown at 1,620'. The casing was installed in the 8⅝' to 11" hole and cemented with 217 Lone Star, 217 Pasmix "S", 18% Gel, 3% Salt, 2% Calcium Chloride for the last 50' circulated to surface. The 8⅝ " casing was tested to 1,000 PSIG for 30 minutes.

The top of the salt was found to be at 1,810'; total depth of the well was 2,700'. Cactus used 4½" API FH drill pipe run to 2, 598.61' and circulated with the rig pump for 8 hours. The original well completion program consisted of two strings of casing cemented to surface. The 4½" drill pipe was used as the secondary casing and inserted with 2-1/16" tubing to 2,650' for the brine recovery.

Total barrel of brine sold from May 1963 to January 1965 was 99,963 barrels. Storage calculations based on factors and formulae developed in the early 1950's when salt sections of West Texas and New Mexico were first being developed for high vapor pressure hydrocarbon storage show 99,963 divided by 6.1 multiplied by 42 = 688,254 gallons. [Please see Attachment A for documentation from Republic]

The Permian corporation acquired title to the well in November 1968 and maintained continuous operation until December 1986, when the well was shut in due to a hole in the 2-1/16" tubing. The well remained shut in until 1994, when the Scurlock Permian Corporation, as the new facility owner, requested re-permitting the well. In May 1994, the Scurlock Permian Corporation, through its parent company Ashland Pipeline Company, requested re-permitting the well by replacing the 2-1/16" tubing after proper testing. [Please see Attachments B and C for this documentation letter and engineering drawings]

Although no records exist as to what actually precipitated the down hole problems associated with Scurlock Permian's attempt to replace the 2-1/16" tubing, the results are

documented on Attachments D & E. In June 1994, Scurlock Permian found the well condition to be as shown on Attachment D, with approximately 900' of the 4½ " drill pipe lost in the hole, with the top of the fish 34' below the bottom of the 8⅝" casing.

A modified completion plan was submitted [Please see attachment E] and subsequently implemented, in which new 5½'casing was run in beside the 900' fish and completed inside the original 8⅝" casing. The new 5½" casing was installed to 1,660' with 64 joints of 2⅞" tubing to 2,007' open ended with perforations a t 1,980-1,984' in July 1994.

Plains Marketing, L. P. (Plains) assumed ownership in 1995 and continued limited operation of the well in the configuration shown in Attachment E, page 2. In February 2007, Plains lost 800' of 2⅞" tubing down hole while attempting to investigate a perceived down hole plugging problem. The tubing fish was lost at approximately 1,700'and in order to complete the MIT, 62 joints of new 2⅞" tubing was installed in February 2007. Cavern slumping was suspected as the cause of the tubing loss.

In October 2008, Plains decided to cease brine sales and to properly plug and abandon BW-12 Saline No 1. The New Mexico Energy, Minerals & Natural Resources Dept., Oil Conservation Division, Environmental Bureau was notified of the decision on October 21, 2008, noting that due to the age, condition and status of the well bore, Plains feels that it is in the best interests of public safety and environmental justice to plug and abandon the well. On November 11, 2008, NMED/OCD informed Plains that a sonar test is needed before plugging and abandonment of the well. "In order to assess public safety, the OCD requires sonar to evaluate the size and configuration of the existing brine cavern."

Operational Attempts to perform the Sonar Testing

Operational summary for BW-12 Brine Well Saline No. 1

Operations commenced on March 11, 2009. A CCL was run in the 2 7/8" tubing but an obstruction was encountered at 62 ft. and assume to be a salt bridge. Fresh water was flushed down the tubing to clean out any salt solids in the tubing. A second CCL was run to find the end of tubing but an obstruction was encountered at 1848 ft. The end of the tubing was estimated to be 2007 feet. (During an earlier work over operation in Feb. 2007, at least 800 feet of tubing was estimated to be lost in hole. In addition, 900 feet of the initial brine string of drill pipe was left in hole when tubing was run to replace the drill string when leak developed.)

The initial attempt to extract the tubing met with difficulty. One stand was pulled with an over pull of 6,000 pounds. Further recovery of the string was unsuccessful with over pull of up to 18,000 pounds. The annulus was flushed with fresh water to remove possible salt bridges but the tubing still did not move with 20,000 pounds over pull. An impression block was run and markings indicated severely bent tubing at about 1862 feet.

All remaining 62 joints of 2 7/8" tubing (approximately 2000 feet) were recovered using up to 70,000 pound over pull. The last joint of tubing was so severely damaged that the bottom 10 feet of the joint had been severed and remained in hole. The 8 joints immediately above the last joint were very severely bent and dented. Overall, the bottom 18 joints were discarded, due to damage of varying degrees.

A casing scraper was run through the 5 ½" casing to 1700 feet (passed the end of the 5 ½" shoe at 1660 feet). Damage to the scraper blades indicated that the casing walls and shoe had sustained some damage due to the recovery of the tubing.

A work string of 3 ½", 9.3#, N-80 was run in hole with a 4 ¾" bit to 1810 feet, where an obstruction was encountered. (Note: The top of the 900 feet of drill pipe left in hole was estimated to be at 1794 feet.) Started rotating the string and bit and the string was able to trip to 1860 feet when a much more resistant obstruction was encountered. Rotating on the obstruction for several minutes resulted in no progress. Tripped out of hole with work string and BHA. Bit had slight wear and cones and teeth were full of red clay-like material and salt chips.

Ran in hole with the work string and a mule shoe guide to enable running an impression block and attempt to identify the obstruction. The mule shoe could be run no deeper than 1862 feet. An impression block was run but when recovered, there were no distinguishing marks on it.

Pulled out of hole and made up a new 4 ¾" bit and ran in hole to attempt to drill out the obstruction using 9.8 ppg brine based mud. Encountered obstruction at 1862 feet and proceeded to drill. Drilled to 1885 feet in 3.5 hours (ROP was 5 to 10 feet/hr). The rate of penetration for the last eight feet was very low. The actual inclination of the work string was also unknown and deviation a possibility. Fishing operations, if required could be very difficult due to the lack of clearance between the work string and the 5 ½" casing. A total of 400 bbls of mud was pumped during drilling but returns were brine and not mud. No cuttings were observed in the returns. Due to the lack of cuttings it could not be determined what was being drilled. Total brine returns were about 100 bbls. At end of day, Mar. 14, operations were suspended to determine future action on the well. (Note: All depths are referenced to ground level)

At the present time, due to the age, condition and status of the well bore, and the existing conditions found in the initial attempts to provide a clear gauge run for the sonar tool, all service providers for sonar testing are reluctant to continue further operations to enable the test, and/or to continue efforts to reach the salt cavern though the existing well bore and the barrier materials it contains.

A formal request to waiver the sonar testing was sent by email Sunday, March 15, 2009 7:41 PM to the NMOCD Environmental Bureau, specifically Mr. Wayne Price, Bureau Chief, and Mr. Carl Chavez. A follow up phone call was placed Monday morning, 03-16-09 to Mr. Chavez to reiterate our request to waiver the sonar test of our brine well. Mr. Chavez was out of the office.

Jim Griswold, Hydrologist; Groundwater Remediation, called around 1030 Monday, 03-16-09 to inform us that he would be assigned the brine well oversight and that he would consult with Price and Chavez on our waiver request. Jim called Tuesday morning at 1000 with the following instructions:

"In light of the efforts taken to date, and the difficult history associated with this brine well, the OCD wishes for Plains to undertake the following: Use a sonar tool to ascertain the dimensions of the cavern in its uppermost extent. Once this has been completed, or at least reasonably attempted, then fill the cavern with brine. Have a bridge plug set within the bottom of the casing (1720 ft bgs). Place a limited volume of cement on top of the plug (perhaps 50 sacks) then pressure the casing up to a minimum of 300 psig, preferably 500 psi, for 30 minutes to establish if the plug is seated. This pressure test needs to be completed using a chart recorder. If it passes (<10% drop in pressure), backfill the balance of the casing with circulated cement and place it under pressure to squeeze cement through any perforations in the casing that may have developed over the years."

At Noon MST 03-17-09 Plains conducted one more attempt to get the gauge ring to the depth needed to sonar the cavern roof and/or as much of the cavern as possible. We consistently hit an obstruction at 1810'-tagging it ten times repeatedly. This is the recorded depth of the top of the 4-1/2" fish; we can rotate off this blockage and go down to 1862', then by drilling, get to 1875'. Our on-site engineer and his Engineering Manager in Houston and myself agree that we are drilling new hole and deviating in an uncontrolled direction. Based on the best records on hand, this attempt would render a sonar view of the well bore only, and the sonar log company and all concerned advise not to risk the sonar tool damage potential. Mr. Griswold was notified by telephone and email that Plains was commencing plugging at or about 0900 MST on 03-18-09.
The preliminary C-103 Form (Notice of intent to Plug & Abandon) was faxed to Mr. Griswold and we received his signed approval by return fax granting us permission to plug and abandon.

03-18-209:

0700 MST: Run wireline set bridge plug and setting tool in hole with Casing Collar Locator (CCL) to find casing shoe and set bridge plug. Verified location of Casing Shoe at 1662'; pulled up and set bridge plug at 1645' at 0745 MST.

0800 MST: Rig up Halliburton for pressure cementing

0900 MST: Conduct Safety Meeting with all hands on location.

0915 MST: Tag bridge plug with tubing; apply 5,000 pounds tubing string weight to verify plug landing.

0930 MST: Begin Halliburton connection test and cement pumping. Pump 41 sacks cement to attain a 350 feet cement cap. Cement (14.8 ppg, Class 'C' cement) was pumped at 2 bbls/min and approximately 50 psig.

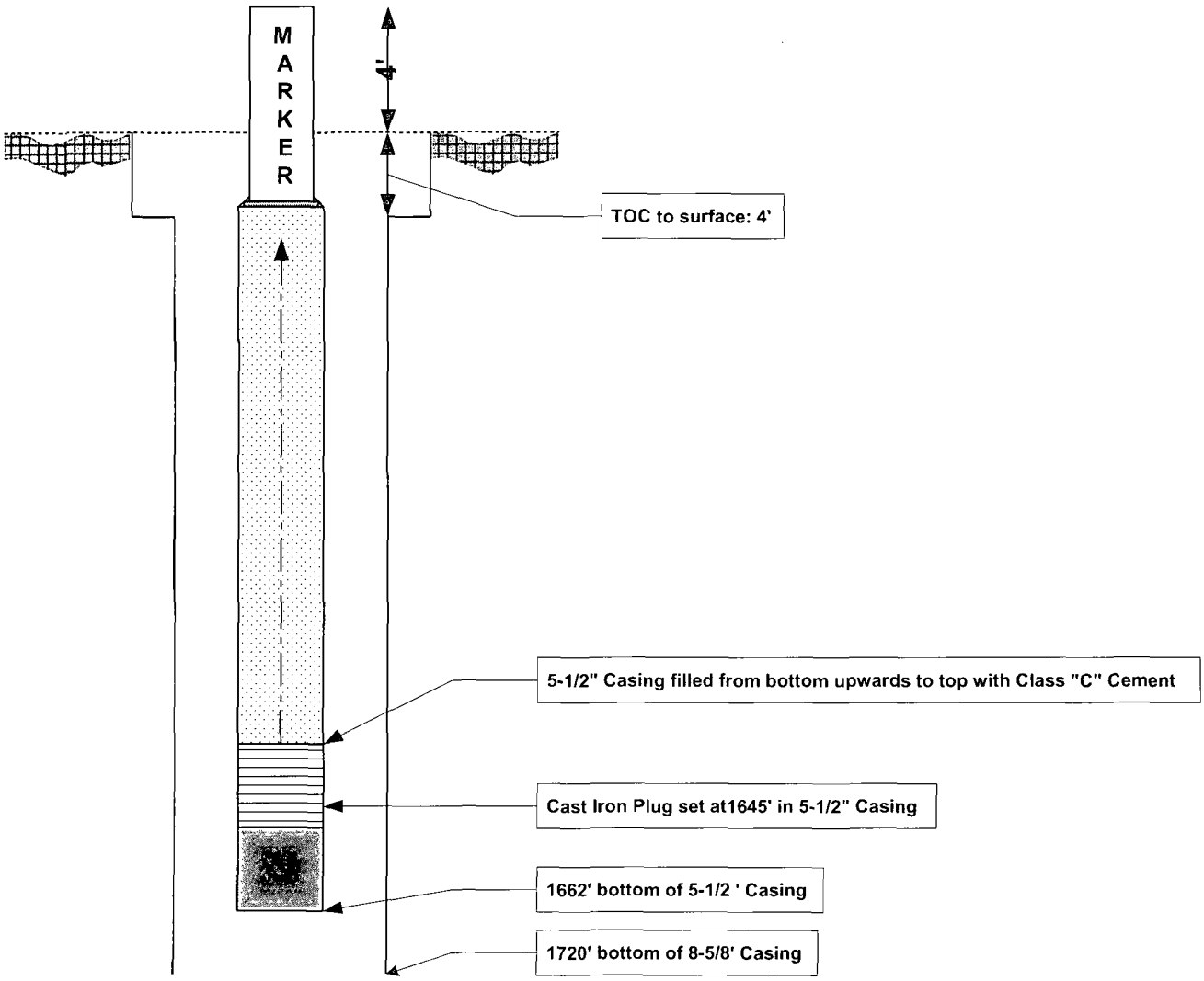
1030 MST: Complete pump over of 41 sacks of cement cap on bridge plug. Wait on cement for 24 hours

.

03-19-2009: (All times MST)
0809-0845: Pressured up on casing/bridge plug/cement for seal-off integrity; held 540 psig for 30+ minutes.
0900: Filled casing to surface pumping cement in phases to balance and insure casing fill.
1100: Set monument/abandonment marker and began rigging down.

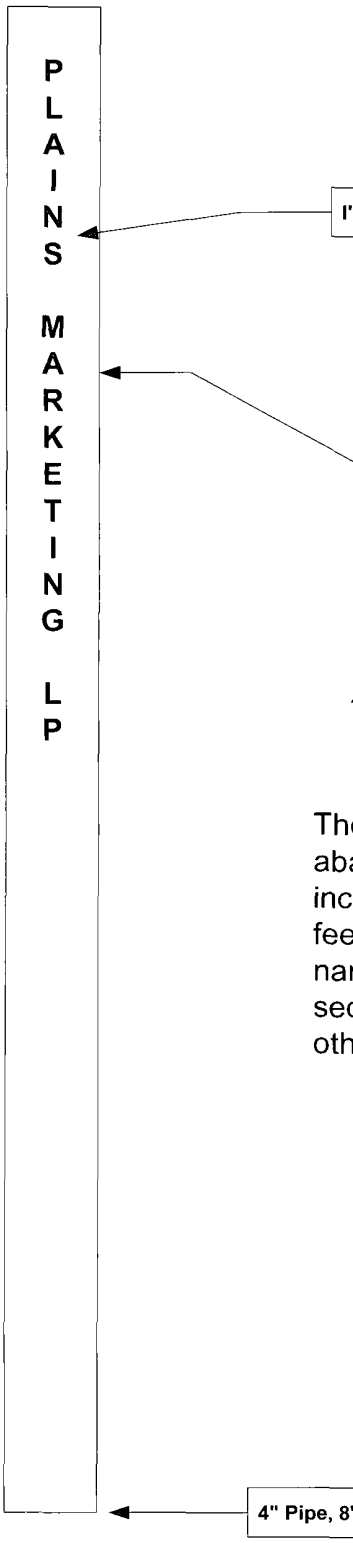
As soon as practical, but no later than one year after the completion of plugging operations, we are required to:
(1) Level the location;
(2) Remove deadmen and other junk; and
(3) Take other measures necessary or required by the division to restore the location to a safe and clean condition.

Upon completion clean up restoration operations as required, Plains will contact the appropriate division district office (Hobbs) to arrange for an inspection of the well and location.



WELL API NO. **30-025-12803**
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No. **SALT M-13894**
7. Lease Name or Unit Agreement Name **SALINE**
8. Well Number **ONE (1)**
NO SCALE

Well Bore Diagram
Plug & Abandon
Attachment to C-103
Plains Marketing, L. P.
03-19-2009

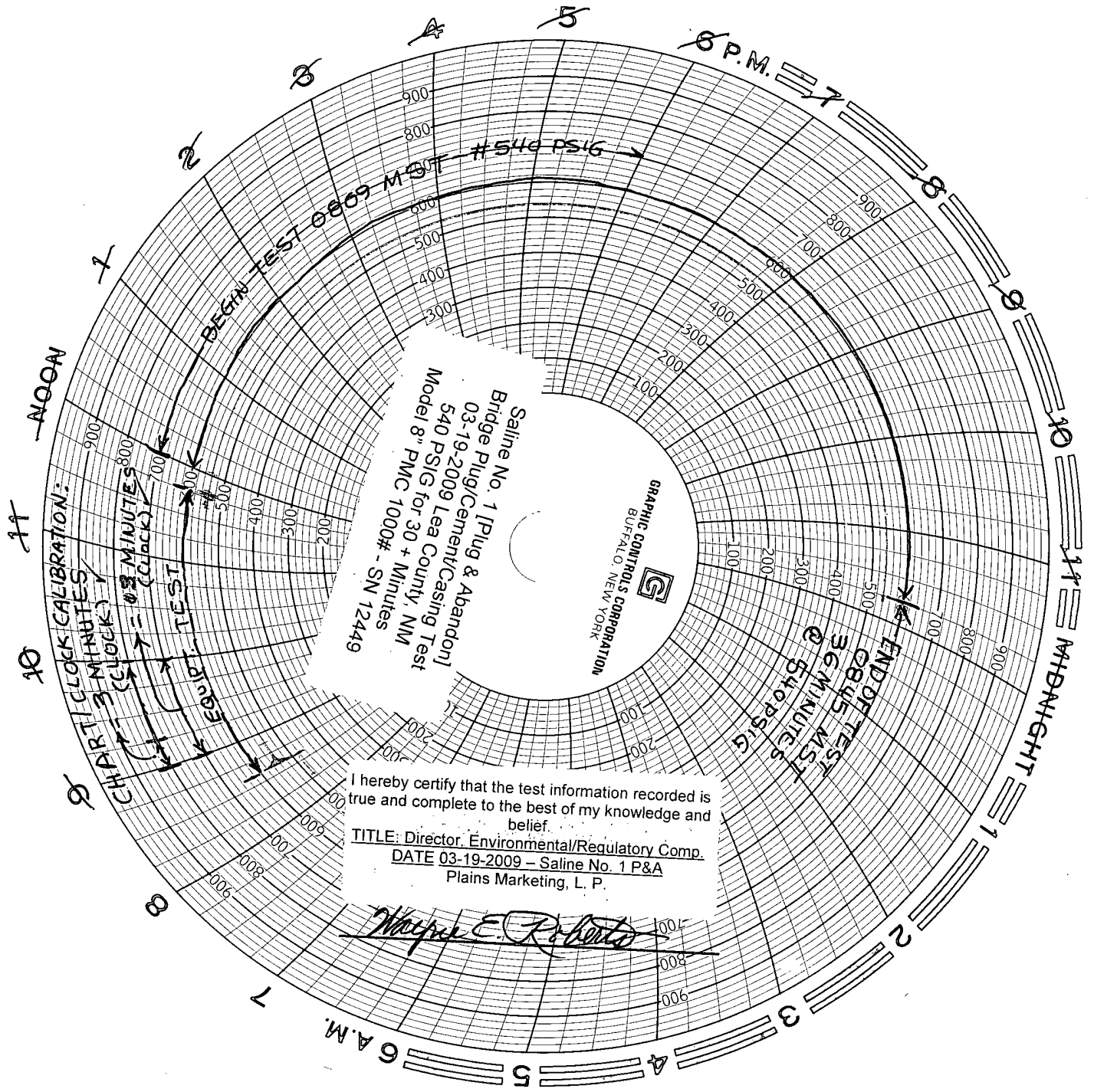


Above lettering "welded" onto 4" pipe with arc welding rod

The operator shall mark the exact location of plugged and abandoned wells with a steel marker not less than four inches in diameter set in cement and extending at least four feet above mean ground level. The operator name, lease name and well number and location, including unit letter, section, township and range, shall be welded, stamped or otherwise permanently engraved into the marker's metal.

ABANDONMENT MARKER (Monument)

WELL API NO. **30-025-12803**
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No. **SALT M-13894**
7. Lease Name or Unit Agreement Name **SALINE**
8. Well Number **ONE (1)**


GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
Saline No. 1 [Plug & Abandon]
03-19-2009 Lea County, NM
540 PSIG for 30 + Minutes
Model 8" PMC 1000# - SN 12449
BEGIN TEST 0809 MST #540 PSIG
END TEST 0839 MST @ 540 PSIG
30 MINUTES
CHART CLOCK CALIBRATION:
3 MINUTES (CLOCK)
= 30 MINUTES (CLOCK) TEST
EQUIPMENT
I hereby certify that the test information recorded is true and complete to the best of my knowledge and belief.
TITLE: Director, Environmental/Regulatory Comp.
DATE 03-19-2009 – Saline No. 1 P&A
Plains Marketing, L. P.
Wayne E. Roberts
NOON
6 P.M.
MIDNIGHT
6 A.M.

D & L Meters & Instrument Service, Inc.
P.O. Box 1621
Lovington, NM 88260
(505) 396-3715 FAX (505) 396-5812

Tuesday, February 10, 2009
Certification of Pressure Recorder Test:

MODEL 8" PMC 1000 # SN # 12449
This Pressure Recorder was tested at midrange for accuracy and verified within +5% and –5% for a dual pen recorder with a 1000# pressure element.

Jesse Arenivas

Technician

Saline No. 1 [Plug & Abandon]
Bridge Plug/Cement/Casing Test
03-19-2009 Lea County, NM
540 PSIG for 30 + Minutes
Model 8" PMC 1000# - SN 12449