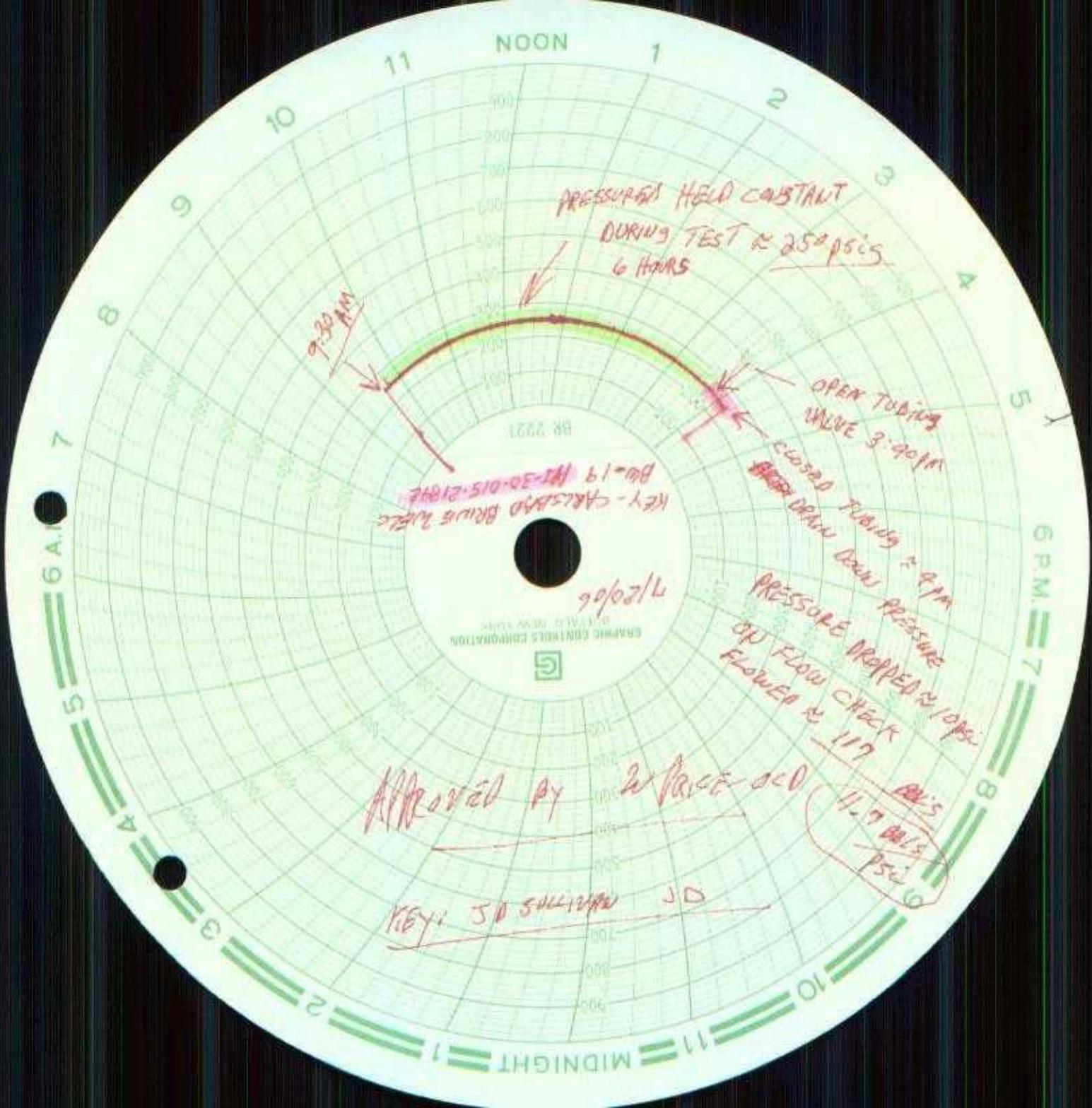


**BW - 19**

**MECHANICAL  
INTEGRITY TEST  
(MITs)**

**DATE: \_\_\_\_\_**



PRESSURE HELD CONSTANT  
DURING TEST @ 250 psis  
6 HOURS

7:30 AM

OPEN TUBING  
VALVE 3:40 PM

CLOSED TUBING @ 4 PM  
DRAIN DOWN PRESSURE

PRESSURE DROPPED @ 10 psig  
ON FLOW CHECK  
FLOWED @ 117

11.7 psig  
11.7 psig  
11.7 psig

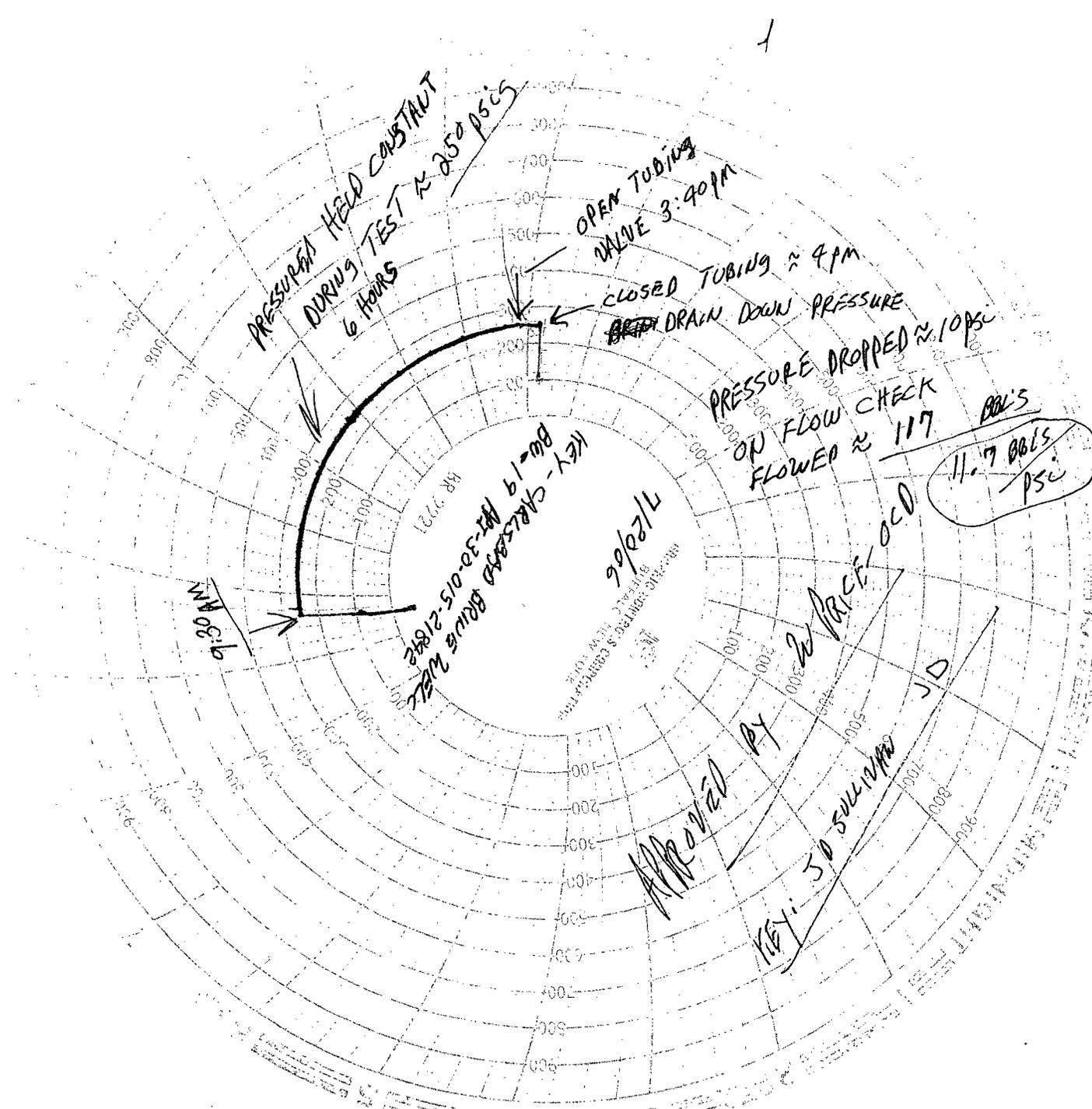
KEY - CARLSON BRIDE WELT  
BU-19 (11-30-015-21897)

7/20/06

GRAPHIC CONTROLS CORPORATION  
SERIAL 1000000000

Approved by 2 Vance dco

KEY: SD SULLIVAN JD



Key Carlsbad Brine station up-grade BW-19

Date: July 20, 2006

OCD Inspector: Wayne Price



Key Carlsbad Brine station up-grade BW-19

Date: July 20, 2006

OCD Inspector: Wayne Price



Key Carlsbad Brine station up-grade BW-19

Date: July 20, 2006

OCD Inspector: Wayne Price





WITNESS - OCD w PRICE SP

Yale E. Key Inc. *John Hutchison*

Test Cavern

Media: Water

Carlsbad #1

~~30-015-23493-00-00~~

UL H-Sec. 13-TS 23S-RG 27E

11/18/02 Time Start 11:AM

Time Finished 3 PM

11/18/02

?? 21842

BL-19

GRAPHIC CONTROLS CORPORATION  
BUFFALO, NEW YORK

LBS.  
PER  
SQ. IN.

12 Hour CLOCK

BR 4644

MIDNIGHT

NOON

11 PM

10

9

8

7

PRINTED  
U.S.A.

2

3

4

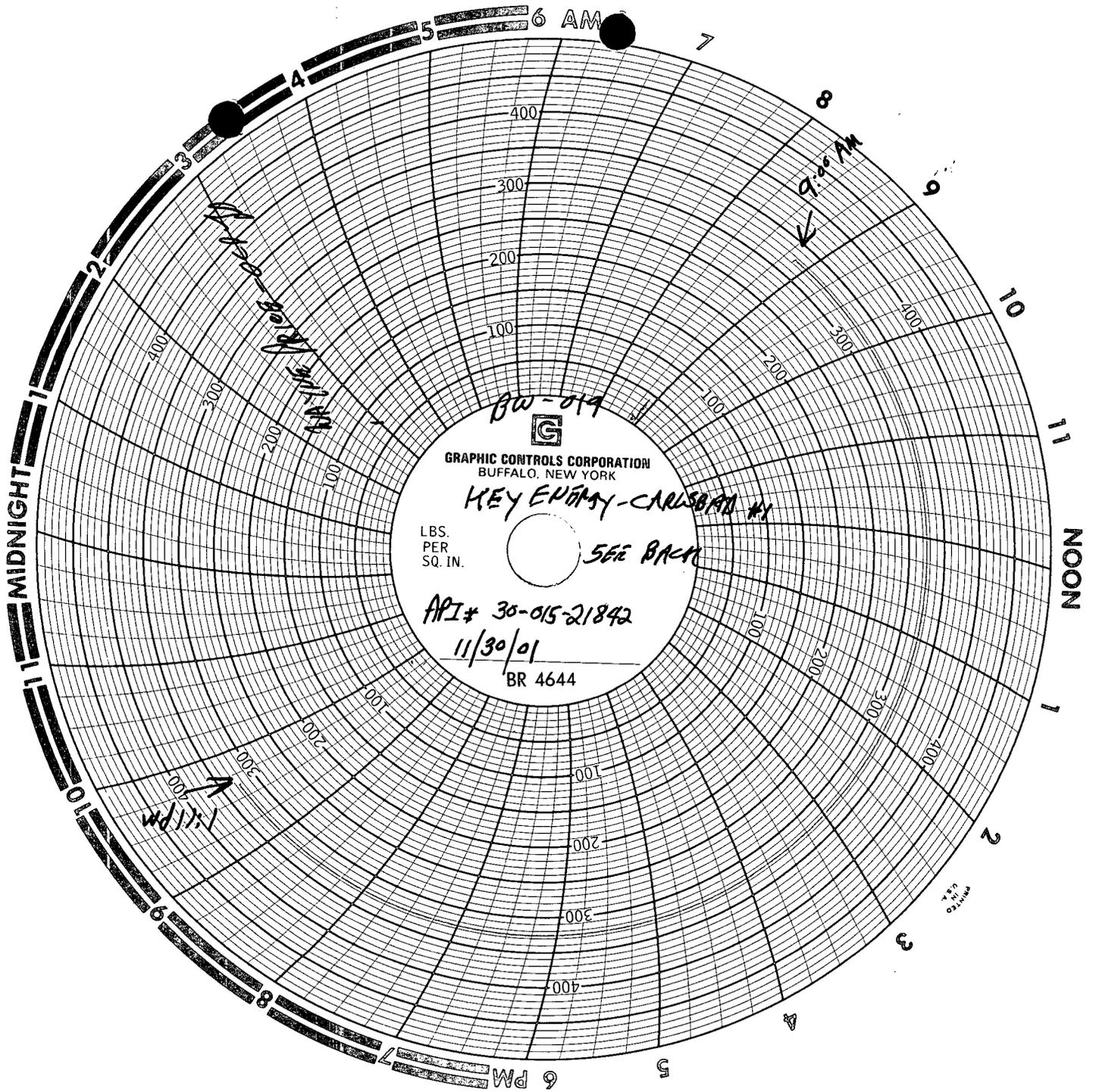
5

6 PM

*550*

*↑*

*↑*



LBS.  
PER  
SQ. IN.

API# 30-015-21842

11/30/01

BR 4644

GRAPHIC CONTROLS CORPORATION  
BUFFALO, NEW YORK

KEY ENERGY - CARLSBAD, NJ

SEE BACK

BW-019



11:15 PM

9:00 AM

100 lbs per sq in



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

October 20, 2001

KEY ENERGY  
BW-9A, 18, 19 & 28

CERTIFIED MAIL  
RETURN RECEIPT NO. 5357 7546

## Attention: Brine Well Operators

Re: Mechanical Integrity Testing of Brine Supply Wells

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring there are no leaks in the tubing, casing, or packer, and injected/produced fluids are confined within the piping and injection zones.

The Oil Conservation Division (OCD) requires operators of brine supply wells to perform the following mechanical integrity test:

1. At least once every five years isolate the cavern formation from the casing/tubing annuals and hydrostatic fluid pressure test the casing at 300 psig for 30 minutes. New brine wells and wells being worked over will have to be tested in this manner before operations begin.
2. Annually perform an open hole cavern formation pressure test by pressuring up the formation with fluids to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. However, no operator may exceed surface injection or test pressures that may cause formation fracturing or system failures. Systems requiring test pressures less than 300 psig or methods that use testing media other than fluids, i.e. gas, must be approved by OCD prior to testing. Brine supply wells operating with isolation packers will have to pressure test both the cavern formation and casing/tubing annuals.

Please find enclosed an "OCD Brine Well Test Schedule November 2001" and "Brine Well Test Procedure Guidance Document" for this November 26 through November 30, 2001. Please have your well ready for testing on the date and time you are scheduled. Please refer to the Well Test Schedule attached for the Type of Test you are scheduled to perform. You must receive prior OCD approval to alter the scheduled time or type of test.

**What's New!! Please note that operators are required to have their pressure recording devices calibrated to 500 psig and 8-hour clock. See Guidance Document attached.**



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

October 20, 2001

KEY ENERGY  
BW-9A, 18, 19 & 28

CERTIFIED MAIL  
RETURN RECEIPT NO. 5357 7546

## Attention: Brine Well Operators

Re: Mechanical Integrity Testing of Brine Supply Wells

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring there are no leaks in the tubing, casing, or packer, and injected/produced fluids are confined within the piping and injection zones.

The Oil Conservation Division (OCD) requires operators of brine supply wells to perform the following mechanical integrity test:

1. At least once every five years isolate the cavern formation from the casing/tubing annuals and hydrostatic fluid pressure test the casing at 300 psig for 30 minutes. New brine wells and wells being worked over will have to be tested in this manner before operations begin.
2. Annually perform an open hole cavern formation pressure test by pressuring up the formation with fluids to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. However, no operator may exceed surface injection or test pressures that may cause formation fracturing or system failures. Systems requiring test pressures less than 300 psig or methods that use testing media other than fluids, i.e. gas, must be approved by OCD prior to testing. Brine supply wells operating with isolation packers will have to pressure test both the cavern formation and casing/tubing annuals.

Please find enclosed an "OCD Brine Well Test Schedule November 2001" and "Brine Well Test Procedure Guidance Document" for this November 26 through November 30, 2001. Please have your well ready for testing on the date and time you are scheduled. Please refer to the Well Test Schedule attached for the **Type of Test** you are scheduled to perform. You must receive prior OCD approval to alter the scheduled time or type of test.

**What's New!! Please note that operators are required to have their pressure recording devices calibrated to 500 psig and 8-hour clock. See Guidance Document attached.**

Brine Well Operators  
Oct 20, 2001  
Page 2

**What's New!! All operators will provide to the OCD the maximum test pressure that will not cause formation fracturing or system failures.**

Operators will be responsible for providing equipment and shall bear all costs incurred. All tests must be witnessed by the New Mexico Oil Conservation Division. Operators failing to abide by the procedures, type of test, and time schedules listed herein may be required to shut-in their systems until OCD has an opportunity to approve and witness testing.

If you require any further information or assistance please do not hesitate to write or call me at 505-476-3487 or E-mail [WPRICE@state.nm.us](mailto:WPRICE@state.nm.us).

Sincerely Yours,



Wayne Price- Senior Envr. Engr..  
Environnemental Bureau

cc: OCD District Offices

Attachments-   1.    OCD Brine Well Test Schedule November 2001  
                  2.    Brine Well Testing Procedure Guidance Document

## Brine Well Testing Procedure Guidance Document

- 1) The cavern and all piping must be filled, pressured up and stabilized for a period of at least 24 hours prior to testing. If this test requires a packer then casing/tubing annulus must be loaded with inert fluid 24 hours prior to testing.
- 2) Have manpower and equipment available for pressure test. Wellhead shall be prepared for test and all valves and gauges should be in good working order.
- 3) Pumps, tanks, external lines etc. must be isolated from the wellhead during test.
- 4) A continuous recording pressure device with an 8-hour clock (min) shall be installed on the casing/tubing annulus. The pressure range shall not be greater than 500 psig. The operator must provide proof that the pressure-recording device has been calibrated within the past 6 months. **Note: Wells with packer installed: If this test requires both the casing/tubing annulus and cavern to be tested then two recording devices must be supplied or one recording device with two pins.**
- 5) A minimum of one pressure gauge shall be installed on the casing/tubing annulus.
- 6) OCD must witness the beginning of test (putting chart on) and ending of test (removing chart). At the end of test operator may be required to bleed-off well pressure to demonstrate recorder and gauge response.
- 7) The Operator will supply the following information on the pressure chart:
  - A. Company Name, Well Name, API #, Legal Location.
  - B. Test Procedure (1) Casing + Formation (2) Casing Test Only (3) Both (4) Other
  - C. Testing Media: Water, Gas, Oil, Etc.
  - D. Date, time started and ending.
  - E. Name (printed) and signature of company representative and OCD Inspector
- 8) **TEST ACCEPTANCE:** The OCD will use the following criteria in determining if a well has passed the Mechanical Integrity Test:
  - A. **Passes** if Zero Bleed-Off during the test.
  - B. **Passes** if Final Test Pressure is within  $\pm 1\%$  of Starting Pressure, if approved by the OCD inspector.
  - C. **Fails** if any Final Test Pressure is greater than  $\pm 1\%$  of Starting Pressure. Operators must investigate for leaks and demonstrate that mechanical integrity of the well(s) by ensuring there are no leaks in the tubing, casing, or packer, and injected/produced fluids are confined within the piping and injection zones. Wells shall not resume operations until approved by OCD.

**Note:** OCD recognizes that different operations, well designs, formation characteristics and field conditions may cause variations in the above procedures. If operator wishes to make or anticipate changes please notify the OCD for approval. All operators are responsible to notify OCD of any procedure that may cause harm to the well system or formation. Please be advised that OCD approval does not relieve any operator of liability should operations result in pollution of surface water, groundwater, or the environment.

OCD BRINE WELL TESTING SCHEDULE 2001

OCD Contact Wayne Price cell 505-980-1067

Company	DP#	Facility Name	Date of Test	Start	Stop	Type of Test(s) Required	Contact Person	Telephone	FAX #/cell
Stearns Inc.	BW-013	Crossroads Area Crossroads	28-Nov-01	12 noon	4:00 PM	2 Pressure test cavern	L.A. Stearns	1-505-875-2398	1-505-875-2338
Manbob Brine Well Jims Water Ser.	BW-029 BW-005	Loco Hills Area M. Dodd "A" BW#1 SE of Artesia	27-Nov 27-Nov	9:00 AM 10:00 AM	1:00 PM 2:00 PM	2 Pressure test cavern * Pressure test cavern or casing * 1,2 or 3	Doyle Davis Sammy Stoneman	748-5975 cell 1-505-748-1352	1-505-748-2523 1-505-748-3227
Key Energy Scurlock-Permian Zia Transportation Marathon Brine St	BW-018 BW-012 BW-018 BW-015	Hobbs Area Truckers #2 (Hobbs) Hobbs Station Sally Dog-Ark Jct Marathon Road	28-Nov-01 28-Nov-01 28-Nov-01 28-Nov-01	8:00 AM 9:00 AM 10:00 AM 11:30 AM	12 noon 1:00 PM 2:00 PM 3:30 PM	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern 1 Pressure Test Casing	Royce Crowell Richard Lentz Piter Bergstein CW Trainer	(505) 393-9171 505-392-8212 808-741-1080	505-910-4185 392-8988
P&S Brine Key Simme-McCasland Yale E. Key (Old Goldstar)	BW-002 BW-009A BW-028	Eunice Area Eunice Brine Station Eunice Brine Station Eunice Brine Station	28-Nov-01 28-Nov-01 28-Nov-01	8:00 AM 9:00 AM 10:00 AM	12 noon 1:00 PM 2:00 PM	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern	Dink Prahrer Royce Crowell Royce Crowell	505-394-2545 (505) 393-9171 1-505-394-2504	394-2428 505-910-4185 1-505-394-2580
I & W Key Energy-Carlsbad Scurlock/Permian	BW-08 BW-019 BW-027 & 27A	Carlsbad Area Carlsbad -Eugline Rowland Truckers Carlsbad Brine St.	30-Nov-01 30-Nov-01 30-Nov-01	8:00 AM 9:00 AM 10:00 AM	12 noon 1:00 PM 2:00 PM	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern	George Parchman John Huitheson Richard Lentz	505-885-8863 1-505-885-2053 505-392-8212	885-8477 cell 390-1833 392-8988
Gandy Gandy Ray Westall	BW-04 BW-22 BW-21	Wells Already Tested In 2001 Wasserschund-Edison Tatum Brine St. Loco Hills Brine St.							
Chaparral SWD	BW-25	Wells Being Repaired- Salado Brine #2- Jal							
Notes:									
Type of Pressure Test:	1 Casing Test					isolate cavern formation from the casing/tubing annulars and hydrostatic fluid pressure test the casing at 300 psig for 30 minutes.			
	2 Open Hole Cavern Pressure Test					Open hole cavern formation pressure test by pressuring up the formation with fluid to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. Operators shall not exceed surface pressures that may cause formation fracturing or system failures. OCD prior to test shall approve test pressures below 300 psig and methods that use media other than fluids. Brine supply wells operating with packers will have to pressure both the cavern formation and casing/tubing annulars.			
	3 Others					Nitrogen-Brine Interface Test, Nitrogen Test, Etc.			

100 PRINTED IN U.S.A. 10

DAY

NIGHT

TEJAS  
INSTRUMENT ENGINEERS  
KEY ENERGY BRINE HI  
CITY CARLAD

BR-4638  
RD 100-B

0-1000 PSI  
8 HR

H-36-225-26E  
OPEN HOLE TEST  
BW-019

1000

2000

BY OPERATOR *James W. Pank*  
BUSINESS - OGD  
API # 30-015-21842





# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

October 20, 2000

**CERTIFIED MAIL**

**RETURN RECEIPT NO.**

5051 4423

KEY

BW-019

**Attention: Brine Well Operators**

Re: Mechanical Integrity Testing of Brine Supply Wells

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring there are no leaks in the tubing, casing, or packer, and injected/produced fluids are confined within the piping and injection zones.

The Oil Conservation Division (OCD) requires operators of brine supply wells to perform the following mechanical integrity tests:

1. At least once every five years isolate the cavern formation from the casing/tubing annuals and hydrostatic fluid pressure test the casing at 300 psig for 30 minutes. New brine wells and wells being worked over will have to be tested in this manner before operations begin.
2. Annually perform an open hole cavern formation pressure test by pressuring up the formation with fluid to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. Operators shall not exceed surface pressures that may cause formation fracturing or system failures. OCD prior to test shall approve test pressures below 300 psig and methods that use media other than fluids. Brine supply wells operating with packers will have to pressure both the cavern formation and casing/tubing annuals.

Please find enclosed an "OCD Brine Well Test Schedule December 2000" and "Brine Well Test Procedure Guidance Document" for this December 8<sup>th</sup> through 18<sup>th</sup> 2000. Please have your well ready for testing on the date and time you are scheduled. Please refer to the Well Test Schedule attached for the type of test you are scheduled to perform. You must receive prior OCD approval to alter the scheduled time or type of test.

OCD BRINE WELL TEST SCHEDULE December of 2000

Company	DP#	Facility Name	Date of Test	Start	Stop	Type of Test(s) Required	Contact Person	Telephone	FAX #
Marbob Brine Well	BW-029	M. Dodd "A" BW#1	December 08, 2000	1:00 PM	5:00 PM	2 Pressure test cavern	Doyle Davis Raye Miller	748-5975 cell 1-505-746-2523 748-3303	
P&S Brine Simms-McCasland Sally Dog, Inc.	BW-002 BW-009A BW-008	Eunice Eunice Water ST. Eunice Brine Station Arkansas-Jct	December 11, 2000 December 11, 2000 December 11, 2000	8 am 9:30 am 11 am	12 noon 1:30 pm 3 pm	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern	Paul Prather Bob Patterson Mr. Plier Bergstein Walter Brisco	1-505-394-2545 1-505-394-2581 1-806-741-1080	1-505-394-2426 1-505-394-2584 1-505-393-9023
Stearns Inc. Gandy Corp. Key Energy	BW-013 BW-022 BW-018	Crossroads Tatum Water St. Truckers #2 (Hobbs)	December 12, 2000 December 12, 2000 December 12, 2000	8:00 AM 9:00 AM 10:30 AM	12 noon 1:00 PM 2:30 PM	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern	L.A. Stearns Larry Gandy Pete Turner	1-505-675-2356 1-505-398-4960 1-505-397-4994	1-505-675-2339 cell 369-5721 1-505-393-9023
I&W Trucking Loco Hills Brine	BW-006 & 6A BW-021	Carlsbad Yard Loco Hills	December 13, 2000 December 13, 2000	8:00 AM 1:30 PM	12 noon 5:30 PM	2 Pressure test cavern 2 Pressure test cavern	George Parchman D. Maloney or R. Harris	1-505-885-6663 1-505-677-2370	1-505-885-8477 1-505-677-2361
Goldstar Quality Oil (Salado Brine Sales)	BW-028 BW-025	Eunice Brine Station Salado Brine St. #2	December 14, 2000 December 14, 2000	9:30 am 11am	1:30 pm 3 pm	2 Pressure test cavern 2 Pressure test cavern	Royce Crowell see P&S	1-505-394-2504	1-505-394-2560
Key Energy-Carlsbad Scurlock/Permian Jims Water Ser.	BW-019 BW-027 & 27A BW-005	Rowland Truckers Carlsbad Brine St. SE of Artesia	December 15, 2000 December 15, 2000 December 15, 2000	8:00 AM 9:00 AM 10:30 AM	12 noon 1:00 PM 2:30 PM	2 Pressure test cavern 2 Pressure test cavern 2 Pressure test cavern	John Hutcheson Jim Ephraim Sammy Stoneman	1-505-887-3011 1-713-672-8092 1-505-748-1352	1-505-672-7609 1-505-746-3227
Scurlock-Permian Gandy- WasserHaun	BW-012 BW-004	Hobbs Station Buckeye St.	December 18, 2000 December 18, 2000	8:00 AM 9:00 AM	12 noon 1:00 PM	2 Pressure test cavern 2 Pressure test cavern	Richard Lentz Larry Gandy	1-505-392-8212 1-505-398-4960	1-505-392-6988 cell 369-5721

Notes:

**Type of Pressure Test:** 1 Casing Test isolate cavern formation from the casing/tubing annulars and hydrostatic fluid pressure test the casing at 300 psig for 30 minutes.

2 Open Hole Cavern Pressure Test Open hole cavern formation pressure test by pressuring up the formation with fluid to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. Operators shall not exceed surface pressures that may cause formation fracturing or system failures. OCD prior to test shall approve test pressures below 300 psig and methods that use media other than fluids. Brine supply wells operating with packers will have to pressure both the cavern formation and casing/tubing annulars.

3 Others Nitrogen-Brine Interface Test, Nitrogen Test, Etc.

## Brine Well Testing Procedure Guidance Document

- 1) The cavern and all piping must be filled, pressured up and stabilized for a period of at least 24 hours prior to testing. If this test requires or utilizes a packer then the casing/tubing annulus must be loaded with inert fluid 24 hours prior to testing.
- 2) Have manpower and equipment available for pressure test. Well head shall be prepared for test and all valves and gauges should be in good working order.
- 3) Pressure devices i.e pumps, truck pumps, etc. must be isolated from the well head during test.
- 4) A continuous recording pressure chart with an 8 hour clock shall be installed on the casing/tubing annulus, as directed by the OCD, with a pressure range of not greater than 500 psig. The operator must provide proof that pressure recording device has a range of 0-500 psig and has been calibrated within the past 6 months. Wells, with isolation packers installed, which requires both the casing/tubing annulus and cavern to be tested will require two recording devices or one recording device with two pins. Operators may utilize other types of pressure recording devices, such as electronic data loggers, etc., if approved by OCD.
- 5) A minimum of one pressure gage shall be installed in the system as directed by OCD.
- 6) OCD must witness the beginning of test (putting chart on) and ending of test (removing chart). At the end of test operator may be required to bleed-off pressure to demonstrate recorder response.
- 7) **The Operator will supply the following information on the pressure chart before starting test:**
  1. Company name, discharge plan #, well name and number, legal location UL, section, township, range and county.
  2. Type of Test: Open Hole, Casing Test, or Both.
  3. Date, time test started, time stop.
  4. Chart and Recorder information. (can be attached)
  5. Normal operating surface and formation fracture pressure. (can be attached)
  6. **After Test Completed:**  
Name (printed) and signature of company representative and OCD inspector.

**Note: NMOCD recognizes that different operations, well constructions, well designs and field conditions may cause variations in the above procedures. Operator is responsible to notify OCD of any procedure that may cause harm to the well or formation. If operator wishes to make or anticipate changes you must notify the OCD for approval.**

PRINTED IN U.S.A.

3277512

11

12

DAY

2

3

4

5

NIGHT

5

3

2

112

113

110

119



**TEJAS**  
INSTRUMENT ENGINEERS  
PRESSURE TEST CAMERA  
BW-019

METER NUMBER

TIME PUT ON  
9:30 P.M.  
DATE PUT ON  
11-2-99

TUBE & ORIF. SIZE

TIME TAKEN OFF  
11:30 P.M.  
DATE TAKEN OFF  
11-2-99

(OPEN HOLE TEST)

80-100-B

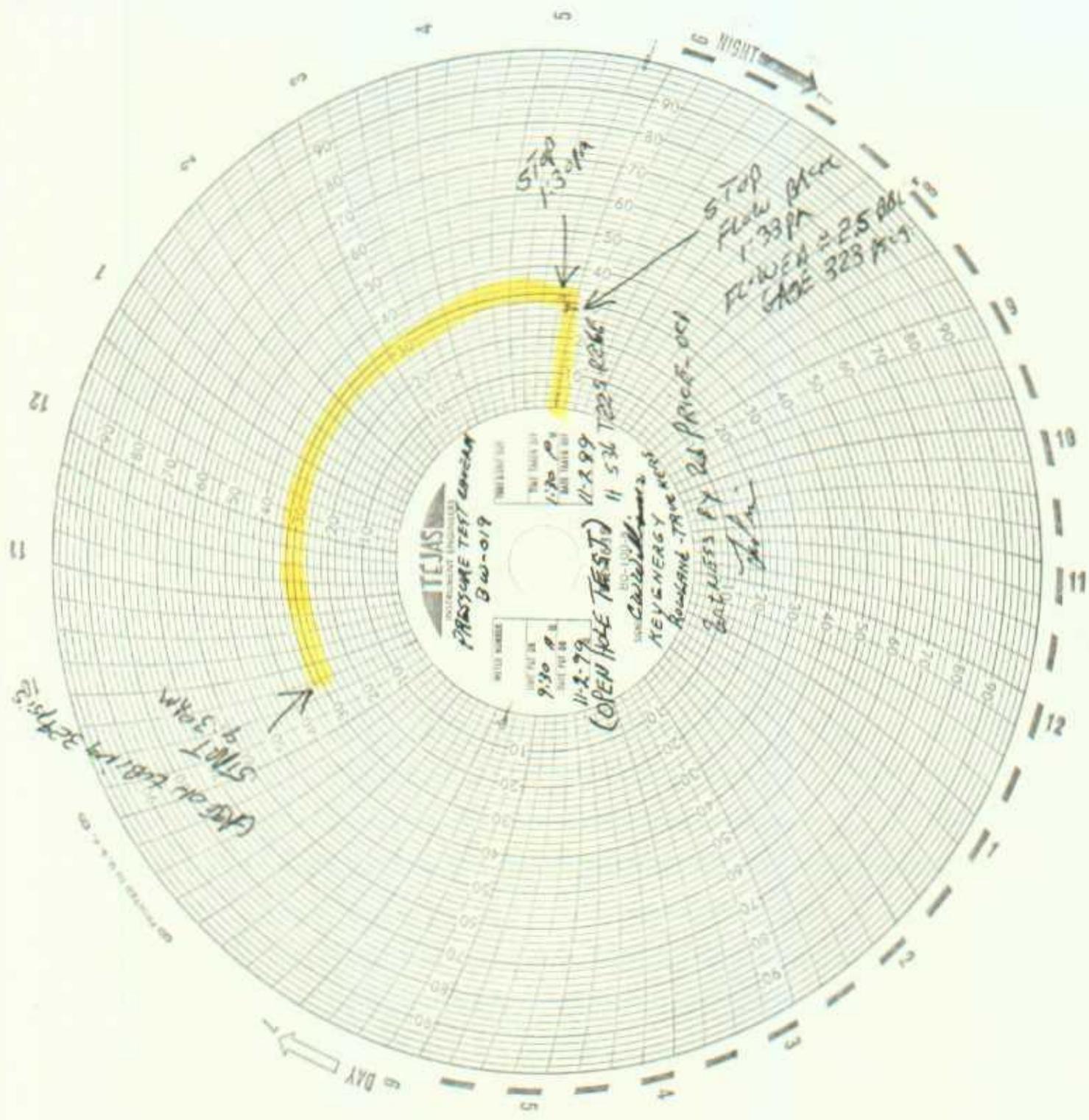
H 536 T225-100-B

SIGNED *Carroll Jones*  
KEVENERGY  
HOWLAND - TRUE HERE

TESTED BY *Carl Price, OCA*

*11/2/99*

*11-2-99*  
*11:30 P.M.*  
*11-2-99*



TEJAS  
PRESSURE TEST LOG  
Bw-019

WELL NUMBER  
DATE TESTED  
TIME TEST BEG  
TIME TEST END  
TEST TYPE  
ANALYST

11-2-79  
9:30 AM  
1:30 PM

(OPEN HOLE TEST)

C. Williams  
REV. ENERGY  
ROSLAND - TRAC WELLS

STOP  
1:30 PM

STOP  
Flow Back  
1:33 PM  
FLOWBACK = 225 GAL  
STAGE 323 PSI

STOP 9:30 AM  
START 3:30 PM

NIGHT

DAY

# American Valve & Meter Service

Ble-019

1113 W. BROADWAY, HOBBS, N.M. 88240  
P.O. BOX 1667, PHONE 505-393-578

TO Key Energy

DATE: 10-26-89

**THIS IS TO CERTIFY THAT:**

I, Jesse Young METER TECHNICIAN FOR AMERICAN VALVE, INC., HAS  
CHECKED THE CALIBRATION ON THE FOLLOWING INSTRUMENT. 0-1000#

Pressure recorder SERIAL NUMBER 316 SS

**AT THESE POINTS:**

TEMPERATURE

P.S.I. 0-1000#

TEST	AS FOUND	AS LEFT

TEST	AS FOUND	AS LEFT
<u>0</u>	<u>0</u>	<u>0</u>
<u>500</u>	<u>520</u>	<u>500</u>
<u>1000</u>	<u>1000#</u>	<u>1000</u>
<u>700</u>	<u>720</u>	<u>700</u>
<u>300</u>	<u>320</u>	<u>300</u>
<u>0</u>	<u>0</u>	<u>0</u>

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SIGNED:

Jesse Young



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

September 11, 1999

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. Z 357 870 148**

**Mr. Pete Turner**  
**Key Energy/Rowland Trucking Company**  
**418 South Grimes**  
**Hobbs, New Mexico 88240**

Re: Mechanical Integrity Testing of Brine Supply Wells

Dear Mr. Pete Turner:

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring there are no leaks in the tubing, casing, or packer, and injected/produced fluids are confined within the piping and injection zones.

The Oil Conservation Division (OCD) requires operators of brine supply wells to perform the following mechanical integrity test:

1. At least once every five years isolate the cavern formation from the casing/tubing annuals and pressure test the casing at 300 psig for 30 minutes. New brine wells and wells being worked over will have to be tested in this manner before operations begin.
2. Annually perform an open hole cavern formation pressure test by pressuring up the formation one and one-half times the normal operating pressure (not to exceed formation fracture pressure) or 300 psig whichever is greater for four hours. Brine supply wells operating with packers will have to pressure both the cavern formation and casing/tubing annuals.

**Please find enclosed an OCD Brine Well Test Schedule and Test Procedure for this Fall October 25, 1999 through November 2, 1999. Please have your well ready for testing on the date and time you are schedule.** Operators will be responsible for providing equipment and shall bear all costs incurred. All test must be witnessed by the New Mexico Oil Conservation Division.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Pet. Engr. Spec.  
Environmental Bureau

cc: OCD District Offices  
attachments- OCD Brine Well Test Schedule & Brine Well Testing Procedure Guidance Document

Company	DP#	Facility Name	Date of Test	Start	Stop	Type of Test(s) Required
P&S Brine	** BW-002	Eunice Eunice Water St.	October 25 1999	8 am	12 noon	Isolate cavern & pressure test casing + Cavern survey***
Simms-McCasland	** BW-009A	Eunice Brine Station	October 25 1999	9:30 am	1:30 pm	Isolate cavern & pressure test casing + Cavern survey***
Goldstar	BW-028	Eunice Brine Station	October 25 1999	11 am	3 pm	Pressure test cavern
Key Energy	** BW-018	Rowland Truckers #2	October 26 1999	8 am	12 noon	Pressure test cavern + Cavern survey***
Scurlock-Permian	** BW-012	Hobbs Station	October 26 1999	9:30 am	1:30 pm	Isolate cavern & pressure test casing + Cavern survey***
Sally Dog, Inc.	** BW-008	Arkansas-Jcd	October 26 1999	11 am	3 pm	Pressure test cavern + Cavern survey***
Quality Oil (Salado Brine Sales)	** BW-025	Salado Brine St. #2	October 27 1999	8 am	12 noon	Isolate cavern & pressure test casing + Cavern survey***
Conoco	** BW-001	Warren -Mckee #3	October 27 1999	1:30 pm	5:30 pm	Isolate cavern & pressure test casing
Conoco	** BW-001	Warren -Mckee #4	October 27 1999	1:30 pm	5:30 pm	Isolate cavern & pressure test casing
Quality Brine	BW-022	Tatum Water St.	October 28 1999	9 am	1 pm	Pressure test cavern
Kenneth Tank Service	BW-013	Crossroads	October 28 1999	11 am	3 pm	Pressure test cavern
WasserHau	BW-004	Buckeye	October 29 1999	9 am	1 pm	Pressure test cavern
Marathon Brine St.	BW-015	Marathon Road	October 29 1999	11 am	3 pm	Pressure test cavern
Loco Hills Brine	BW-021	Loco Hills	November 1 1999	9 am	1 pm	Pressure test cavern
Jim's Water Ser.	BW-005	SE of Artesia	November 1 1999	11 am	3 pm	Pressure test cavern
&W Trucking	BW-006 &6A	Carlsbad Yard	November 2 1999	8 am	12 noon	Pressure test cavern
Key Energy-Carlsbad	BW-019	Rowland Truckers	November 2 1999	9:30 am	1:30 pm	Pressure test cavern
Scurlock/Permian	** BW-027 &27A	Carlsbad Brine St.	November 2 1999	11 am	3 pm	Isolate cavern & pressure test casing + Cavern survey***

Notes:

\*\* Discharge Plan up for renewal

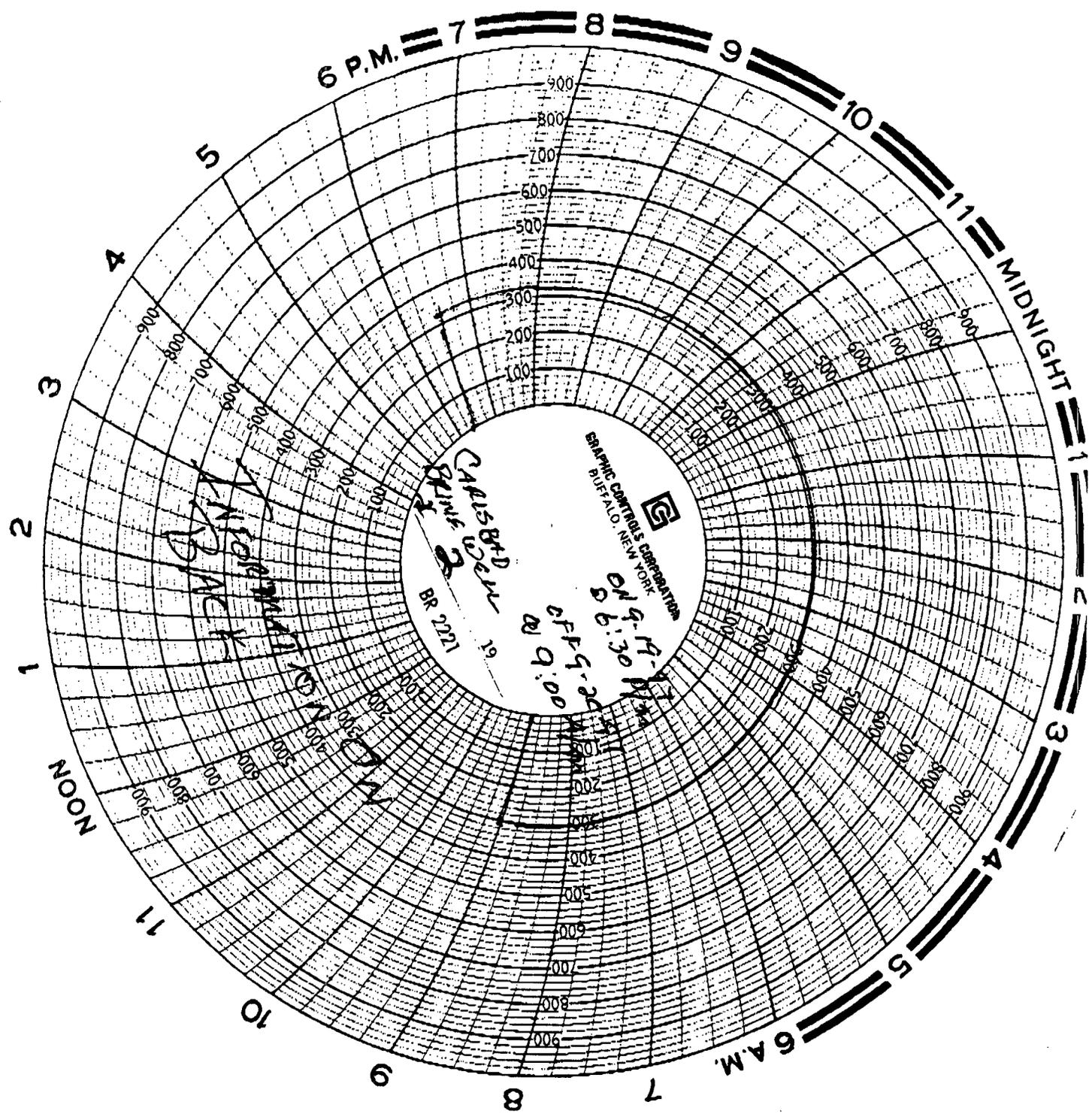
\*\*\* Cavern Surveys are Discharge Plan Requirements Companies have the option to perform now are at a later date approved by OCD.



## Brine Well Testing Procedure Guidance Document

- 1) The cavern and all piping must be filled, pressured up and stabilized for a period of at least 24 hours prior to testing. If this test requires a packer then casing/tubing annulus must be loaded with inert fluid 24 hours prior to testing.
- 2) Have manpower and equipment available for pressure test. Well head shall be prepared for test and all valves and gauges should be in good working order.
- 3) Pressure devices i.e pumps, truck pumps, etc. must be isolated from the well head before and during test.
- 4) A continuous recording pressure chart with an 8 hour clock shall be installed on the casing/tubing annulus. The pressure range shall not be greater than 1,000 psig. The operator must provide proof that the recording device has been calibrated within the past 6 months. **Note: Wells with packer installed: If this test requires both the casing/tubing annulus and cavern to be tested then two recording devices must be supplied or one recording device with two pins.**
- 5) A minimum of one pressure gage shall be installed in the system.
- 6) OCD must witness the beginning of test (putting chart on) and ending of test (removing chart). At the end of test operator shall bleed-off pressure by 10% to demonstrate recorder response.
- 7) The following information shall be place on the chart:
  1. Date, time test started, time stop.
  2. Company name, Discharge Plan #, well name and number, legal location UL, section, township, range and county.
  3. Type of Test; Open hole, Casing Test, or Both.
  4. Printed name and signature of company representative and OCD representative.

**Note: NMOCD recognizes that different operations, well constructions and field conditions may cause variations in the above procedures. If operator wishes to make or anticipate changes please notify the OCD for approval.**



CARLSBAD BRINE Well

# 2 TESTED ON 9-17-97 @ 6:30 P/M

TEST OFF 9-20-97 @ 9 A/M  
TEST FLUID FRESHWATER TREATED  
WITH PACKER FLUID

TESTER BY  
SCHROCK / PERZMAN  
RICHARD DAINIS

WITNESSED BY  
EUNICE WELL SERVICE  
Raymond L. [Signature] (17)



CARLSBAD BRINE Well

# 2 TESTED ON 9-17-97 @ 6:30 P/M

TEST OFF 9-20-97 @ 9 A/M  
TEST FLUID FRESHWATER TREATED  
WITH PACKER FLUID

TESTER BY  
SCHROCK/PERMIAN  
RICHARD DAVIS

WITNESSED BY  
EUNICE WALL SERVICE  
Raymond L. Durrant (11)





Rawland  
City of Carlsbad  
Brine Well #1  
36-22-26

GRAPHIC CONTROLS CORPORATION  
BUFFALO, N.Y. U.S.A.

CHART NO. MC MP-1000

METER  
CHART PUT ON  
TAKEN OFF

LOCATION  
REMARKS 9/16/96