BW - 5

MECHANICAL INTEGRITY TEST (MITs)

DATE: _____

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, November 10, 2008 1:50 PM
To: 'Prather, Steve'
Cc: Price, Wayne, EMNRD; Hill, Larry, EMNRD
Subject: FW: BW-2 (Eunice No. 1) & BW-25 (Salado Brine Well No. 2) Upcoming MIT & Sonar Testing

Steve:

Hi. BWs-2 and 25 will required the EPA 5-Yr. 30 minute test (pull tubing, set packer near casing shoe (<20 ft. from casing shoe) and pressure up from 300 to 500 psig +/- 10% to pass.

As indicated below, a sonar test is required at BWs-2 and 25, which will facilitate the EPA 5-Yr. MIT before reinstalling the tubing.

Please contact me with your preferred date and time for the MITs and sonar. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 21, 2008 2:38 PM
To: 'Prather, Steve'
Cc: Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD
Subject: BW-2 (Eunice No. 1) & BW-25 (Salado Brine Well No. 2) Upcoming MIT & Sonar Testing

Steve:

Re: OCD August 1, 2008 Letter w/ Brine Well Information Request (BWIR)

Good afternoon. The Oil Conservation Division (OCD) has reviewed Basic Energy Services, LLC responses to the BWIRs for the above subject OCD permitted brine wells. Based on the operational life and volume of brine produced from the above brine wells, sonar testing is required along with your MIT on or before July 31, 2009. According to OCD records, no sonar testing has been conducted on the above subject brine wells to date.

Please contact me within 8 working days to arrange the type, date and time for the MITs and corresponding date for sonar testing. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

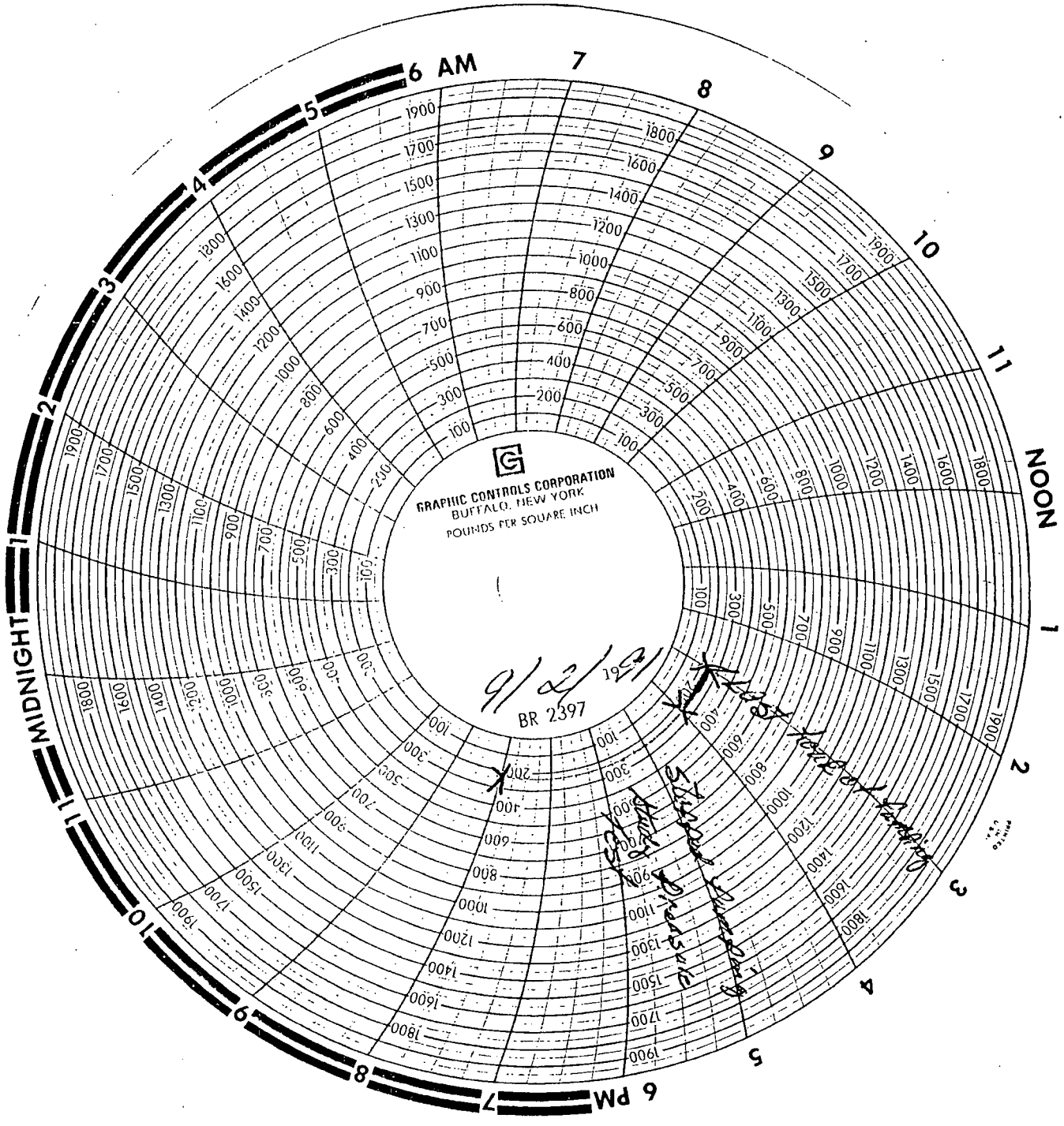
Loco Hills Brine Station.

Started test on Sept. 1, 1991 at 9:30 A.M. Started injection with fresh water pumping at 2½ BBLS P/M at 100 PSI. Continued rate & tubing pressure until 8 P/M on same date - at which time rate was increased to 3½-4 BBLS P/M at 100 PSI injection - by which time downhole pressure had increased to 80 PSI. Pumping rate & injection pressure Continued throughout night. By 10:30 P.M. downhole pressure had increased to 150 PSI - By 2:00 PM Sept. 2, 250 PSI. Pressure continued to hold with same rate & injection pressure at 350 PSI Continued pumping until 3:00 P/M on Sept 2nd & stopped pumping studied chart 4 hr - pressure held at 250 PSI - rigged down.

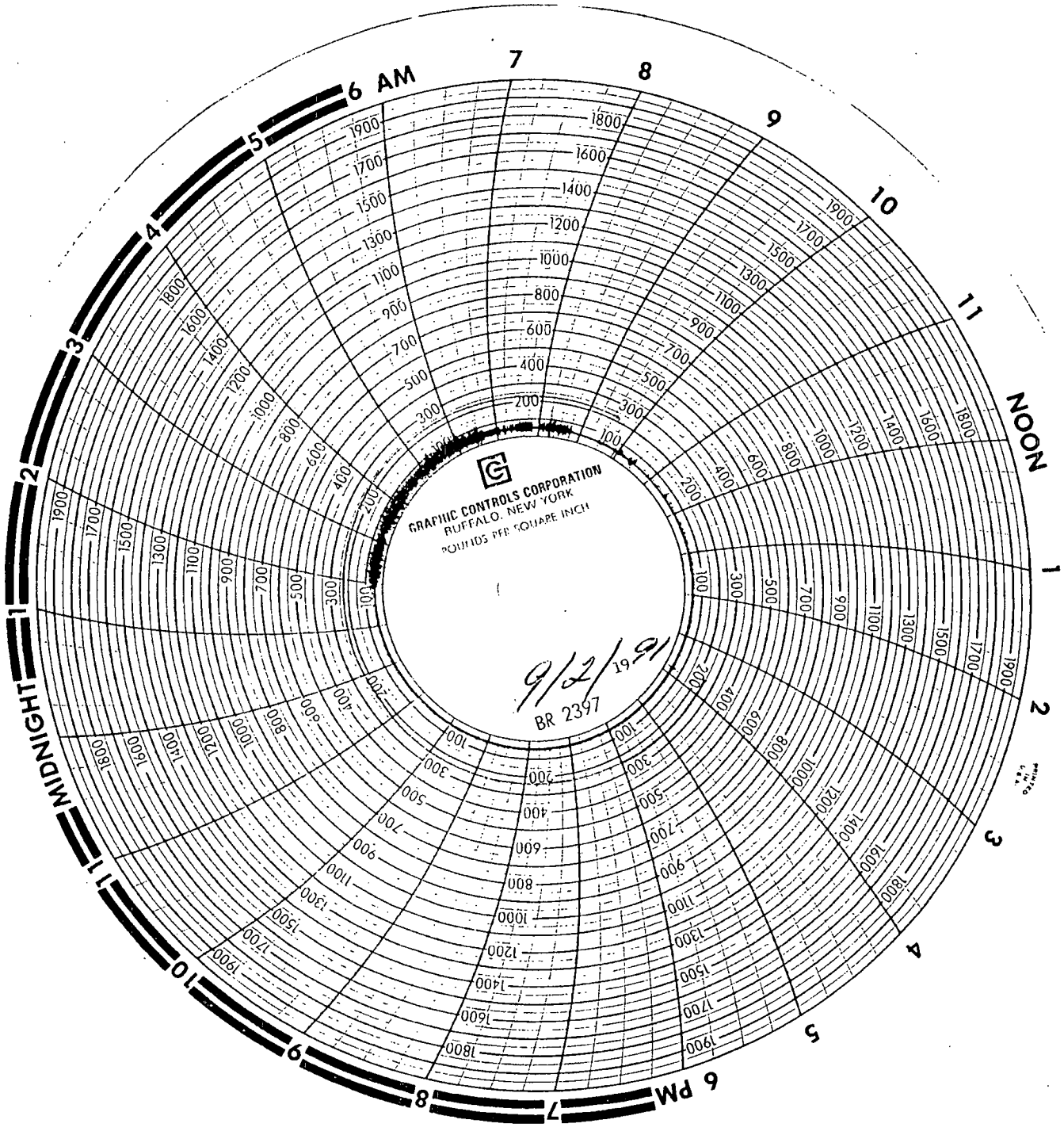
Total water pumped downhole - 1954 BBLS

Kill truck operator -

Jody Wright



B&E Lacottille Brine Station


6 AM
NOON
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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
POUNDS PER SQUARE INCH
9/2/19
BR 2397

Equipment & Supplies
Fresh Water
Brine Supply Wells
Salt Water Disposal

B & E, INC.

South Y
P. O. Box 756
Carlsbad, N.M. 88220
Phone (505) 885-6663

Vacuum Trucks
Truck
Kill Truck
Frac Tanks

July 18, 1991

Oil Conservation Division
State Land Bldg.
P.O. Box 2088
Santa Fe, NM 87504

ATT: Kathy Brown, Environmental Geologist

RE: Eugenie Brine - Annual Pressure Test
Loco Hills Brine - discharge plan
Carlsbad Yard - Construction
Sonar Log

I haven't heard from your office about the Eugenie Brine open-hole annual pressure test. I was just wondering if everything was satisfactory.

Also, I haven't heard as to the status of the discharge plan on the Loco Hills Brine and if you might need more information or if it was near approval.

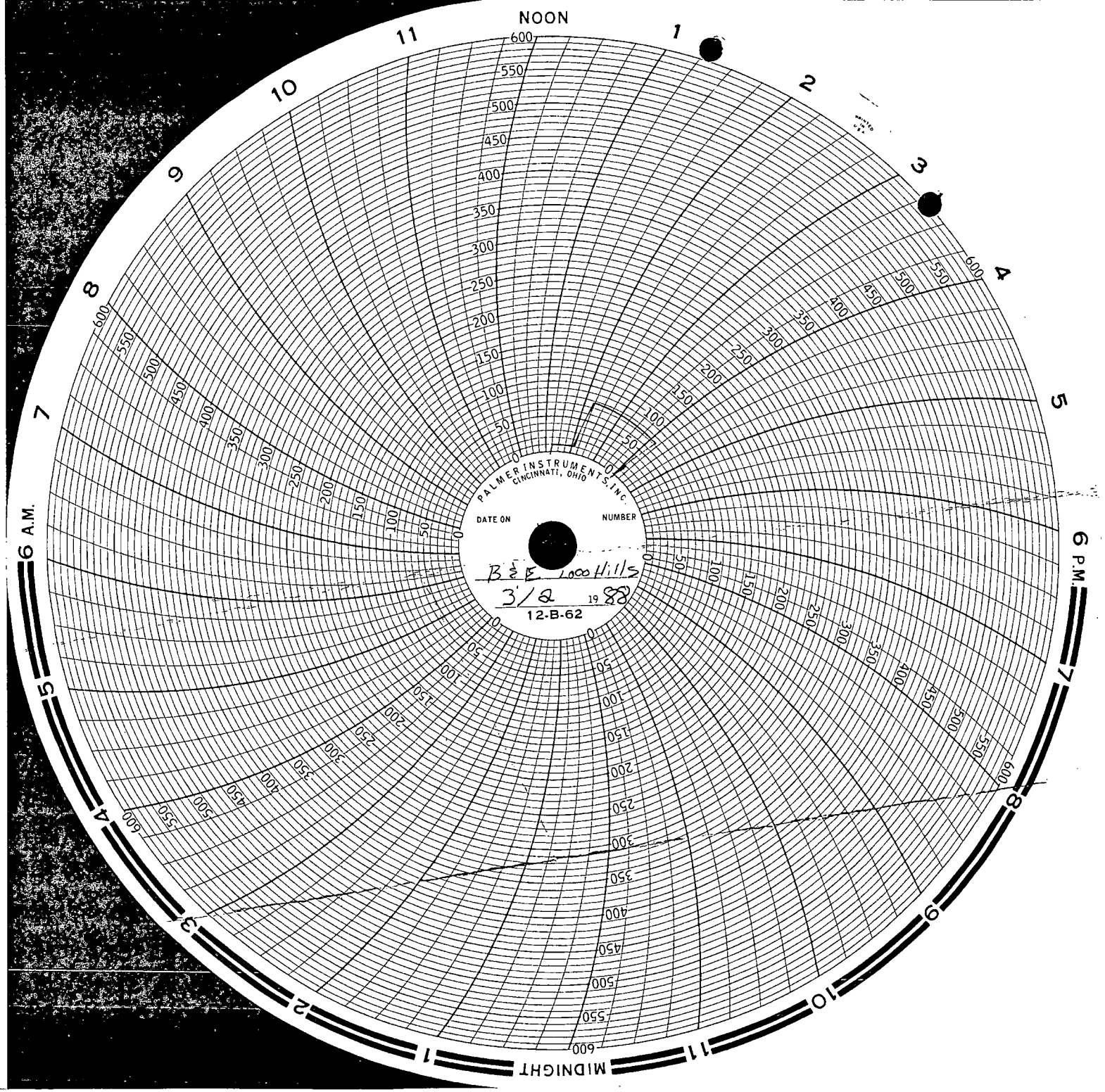
The yard construction that is to take place here on our property has been at a standstill because the architect hasn't completed the blueprints so the contractor can get started. I just wanted to let you know what the progress was or wasn't.

I called about some information on the sonar log and received it in the mail last week. From my conversation with Bill Schnitger with Sonar & Well Testing Services, Inc. it was decided that when we did our 5-year mechanical integrity testing that would be the ideal time to run the sonar log also. Just wanted to thank you for the contacts and let you know the status on that.

Thank you again for all your help, cooperation and information. It is truly appreciated.

Valerie Pierce
Ofc/Per/Mgr.
B & Inc.

xc: file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PALMER INSTRUMENTS, INC.
CINCINNATI, OHIO
DATE ON
NUMBER
B & E 1000 Hills
3/2 1988
12-B-62

B & E, Inc. Loco Hills Brine Station
Sec 24 T 18S R 28E

1986 ANNUAL TEST REPORT

10-7-86 Took kill truck to location and hooked up pump, closed discharge line from casing and started pumping down tubing into well. Pumped on well for approximately 12 hours, 10 loads of brine. Trying to build pressure to 300 PSI. Was unable to get pressure above 210 PSI after 1430 bbls. Shut well in at 10:00 p.m. (copy of charts attached). Installed pressure recorder and left on well. Pressure dropped from 200 PSI to 140 PSI in approximately 10 hours. We determined that we would have to consult with an expert as to what was happening.

10-8-86 Called Odessa Permian Brine Sales (332-0531) and talked with Russ Hickerson, who seemed very knowledgeable on brine wells. We asked him how to go about determining the mechanical integrity of our well. He said that on our total brine production; we should have approximately 400,000 bbl cavity and pointed out the fact that 1430 bbls was a very small amount. He recommended a procedure that should help reduce the amount needed to pump for final test: Produce brine for at least 8 hours, then close discharge line and charge with normal line pressure (to dissolve solids) every two days; recharge (to insure packing). We should be able to charge and pressure up in about a week. Pressure should only be 1.5 x normal working pressure.

Phone conversation with Kevin Lambert, EID, Santa Fe told him what we were in the process of doing and current status report. Suggested - we proceed.

10-9-86 Produced brine and refilled storage pit.

10-12-86 Closed discharge line on well and left line pressure on tubing (124 PSI).

10-12-86 thru 11-15-86 Continuously charged well; monitored daily and recorded pressures and volumes. It was determined that we were unable to get the well to quit taking fluid (appox. 4,000 bbls). After consulting with Mr. Hickerson of Permian Brine and also discussing with Mr. Lambert with EID; we should run a tracer survey to prove the mechanical integrity of the well. Because the salt formation was so large that we were continuely dissolving salt and possibly small fractures.

11-17-86 Reversed injection line to inject down casing and discharge tubing. Produced brine to pit in preparing well for tracer survey.

11-20-86 Took kill truck and Bell Petroleum Surveys to well. Rigged up and bled charge from well. Run Bradenhead tracer (injected radioactive material between tubing and casing. Pumped at 1½ bbls per minute - approximately 90 PSI.

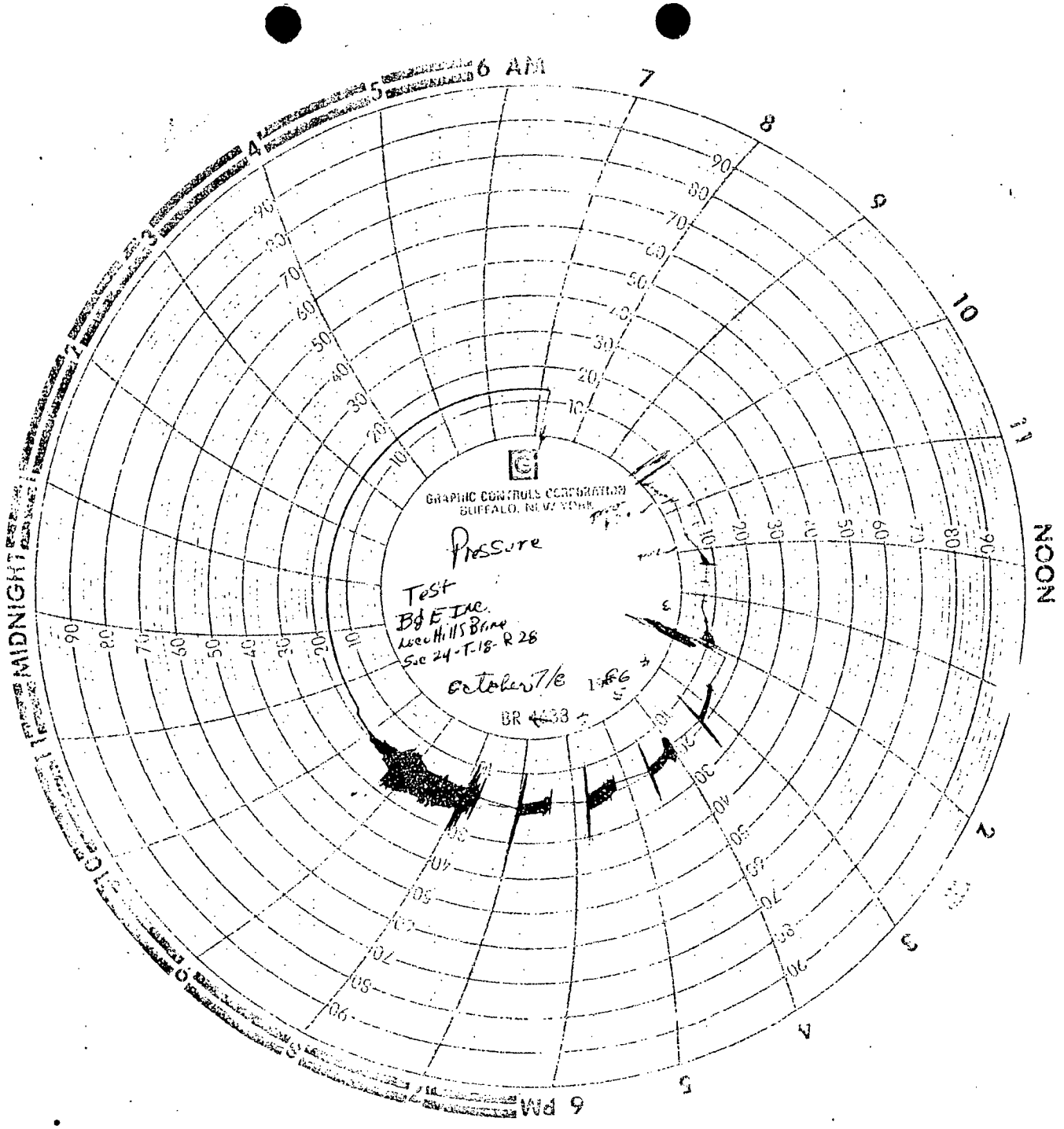
Tracer survey indicated that the entire amount was proceeding through the annules, thus proving the mechanical integrity of the well. (no leaks) All water zones above shoe isolated. See attached log.

11-22-86 thru 11-27-86 All supply lines and discharge lines inspected and repaired, and well returned to normal operation.

12-1-86 Results reported to Mr. Lambert with EID, Santa Fe, NM.

Mickey Monk
Manager
B & E, Inc.

MM/val


6 AM
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MIDNIGHT
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
Pressure
Test
B & E Inc.
Lee Hills Brine
Sec 24-T.18-R 28
October 7/8 1966
BR 4433

THE REPRODUCTION OF

THE

FOLLOWING

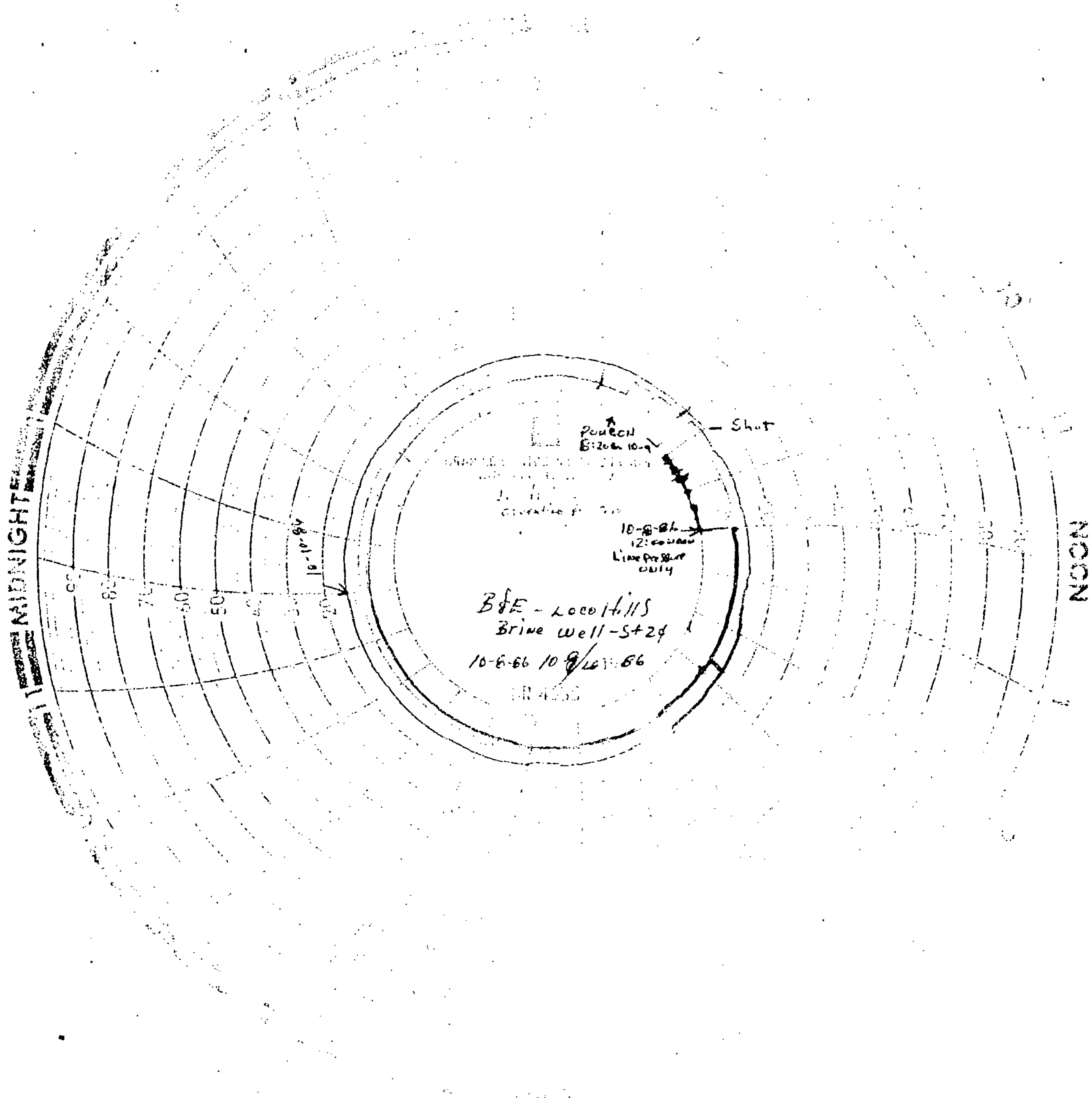
DOCUMENT (S)

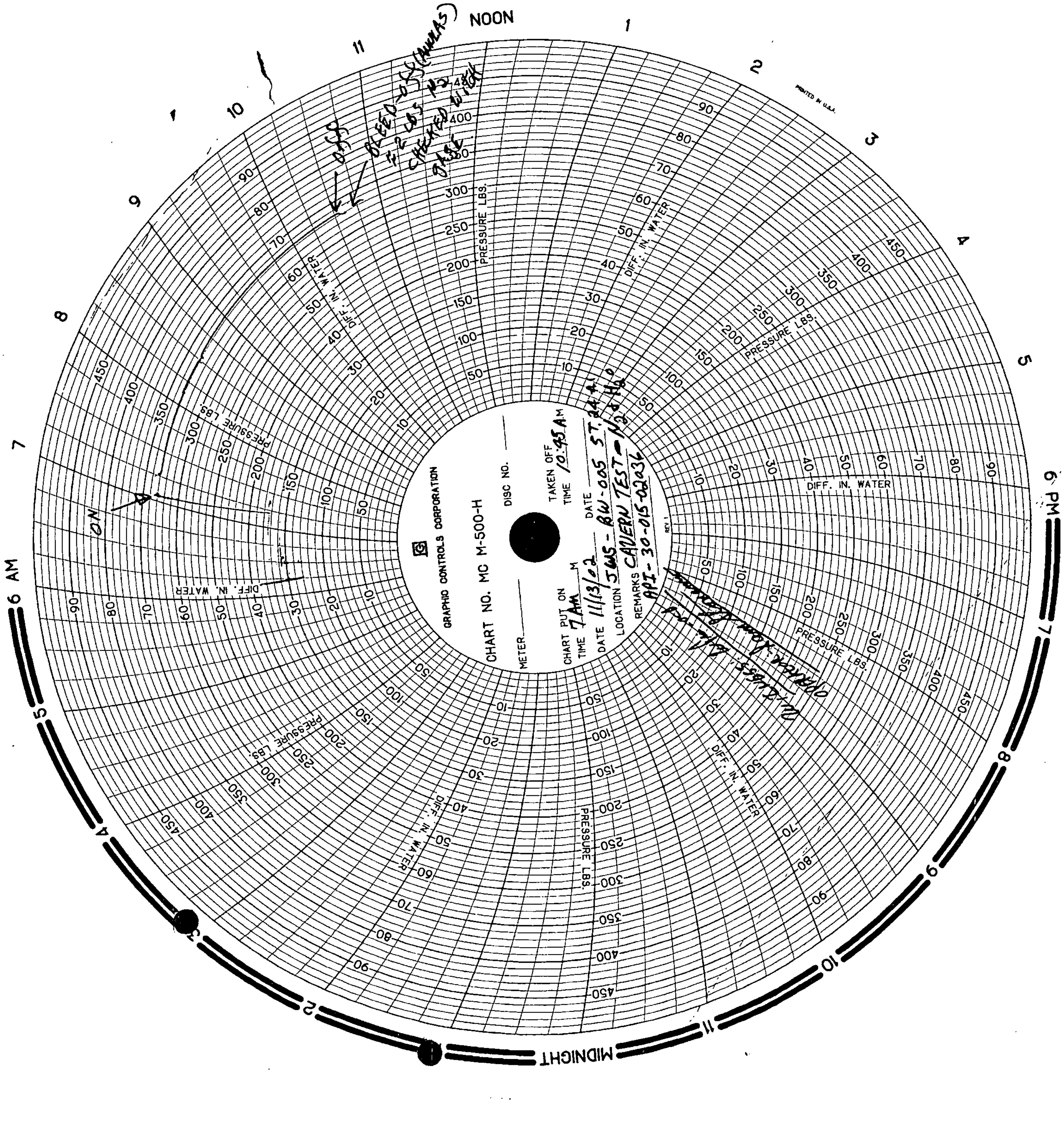
CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL


MIDNIGHT
NOON
Shut
10-8-86
Line Pressure only
B&E - Loco Hills
Brine Well - S+2



NOON
MIDNIGHT
6 AM
6 PM
PRESSURE LBS.
DIFF. IN. WATER
GRAPHIC CONTROLS CORPORATION
CHART NO. MC M-500-H
DISC NO.
METER
CHART PUT ON TIME 7AM
DATE 11/13/02
TAKEN OFF TIME 10:45 AM
DATE
LOCATION
REMARKS
PRINTED IN U.S.A.
ON

BW - 5

Wildcat Measurement

Calibration Certificate

Pressure Recorder

Serial Number: SER# 265-13819

Pressure Range 500# **p.s.i. accuracy +/-** 0.2 **% Full Scale** _____ **p.s.i.** _____

Increasing Pressure			Decreasing Pressure		
Applied Pressure	*Indicated Pressure*	*Difference*	*Applied Pressure*	*Indicated Pressure*	*Difference*
0.0#	0.0#	0.0	400#	400#	0.0
50#	50#	0.0	300#	300#	0.0
150#	150#	0.0	200#	200#	0.0
250#	250#	0.0	100#	100#	0.0
350#	350#	0.0	0.0#	0.0#	0.0
500#	500#	0.0			

Calibrated By: Crystal **Gauge** **Deadweight** _____

This Is To Certify That This Recorder Has Been Inspected And Tested.

Remarks _____

Date Of Calibration 12/13/2006 **Inspector** Craig Sutherland

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

BLOW-OUT PREVENTERS
FLUID CONTAINMENT SYSTEMS

I & W

Saturday, August 18, 2001

Certification of Pressure Recorder Test:

Model: PMC 1000# 8" SER. # 12137
This Pressure Recorder was tested at midrange for accuracy and verified within +-5% and –5% for 1,000 # Pressure Element.

Arenivas

Jesse Arenivas, Technician

Price, Wayne

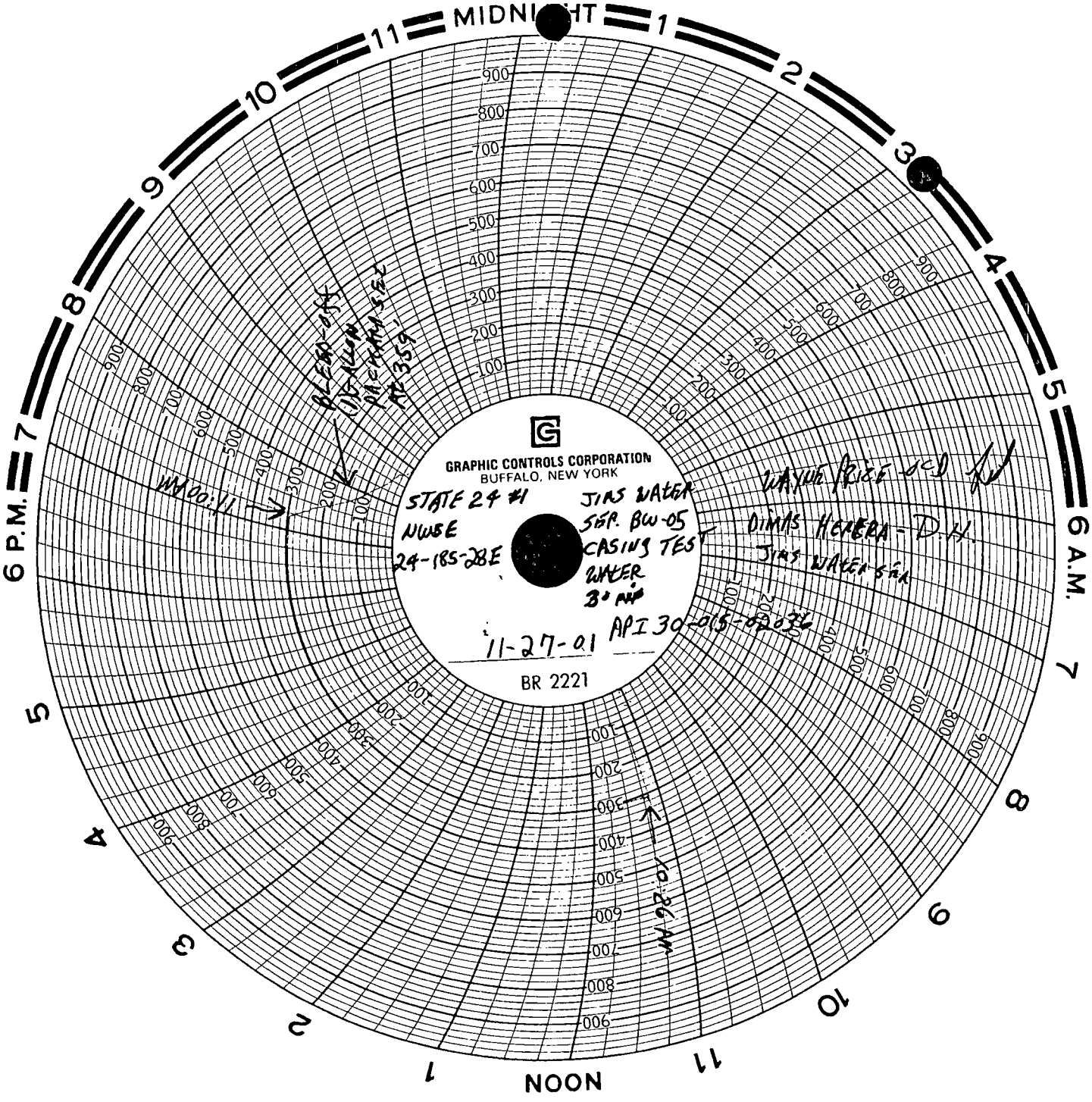
From: Price, Wayne
Sent: Thursday, November 04, 2004 2:41 PM
To: 'sstoneman@pvtnetworks.net'
Cc: Gum, Tim
Subject: Brine well Test and Fees

Contacts: Sammy Stoneman

Dear Sammy: OCD never received a copy of the pressure test chart and our records show you owe OCD $340 annual fee payment.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us


MIDNIGHT
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6 P.M.
6 A.M.
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
STATE 24 #1
NWSE
24-18S-28E
JIMS WATER
SEP. BW-05
CASING TEST
WATER
3" ANN
11-27-01
API 30-015-62036
BR 2221
WAYNE PRICE - DCP
DIMAS HERRERA - D.H.
JIMS WATER SEP.

JIMS

Wildcat Measurement

Calibration Certificate

Pressure Recorder

Serial Number: MFG-1438

Pressure Range 0-1000# / 0-10000# **p.s.i. accuracy +/-** 0.20% **% Full Scale** _____ **p.s.i.** _____

	Increasing Pressure			Decreasing Pressure		
	Applied Pressure	*Indicated Pressure*	*Difference*	*Applied Pressure*	*Indicated Pressure*	*Difference*
0-1000# SIDE	100	100	0.0	800	800	0.0
	300	300	0.0	600	600	0.0
	500	500	0.0	400	400	0.0
	700	700	0.0	200	200	0.0
	1000	1000	0.0			
0-10,000# SIDE	1000	1000	0.0	8000	8000	0.0
	3000	3000	0.0	6000	8000	0.0
	5000	5000	0.0	4000	4000	0.0
	7000	7000	0.0	2000	2000	0.0
	10,000	10,000	0.0			

Calibrated By: DCT **Gauge** **Deadweight** Chandler

This Is To Certify That This Recorder Has Been Inspected And Tested.

Remarks _____

Date Of Calibration 10-12-2001 **Inspector** _____

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

JIMS WATER SER.
BW-005

MR. SAM STONEMAN
P.O. BOX 1387
ARTESIA, NM 88211-1387

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7553

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

JIMS WATER SER,
BW-005

CERTIFIED MAIL
RETURN RECEIPT NO. 5357 7553

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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.

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.

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 ± 1% of Starting Pressure, if approved by the OCD inspector.
   C. **Fails** if any Final Test Pressure is greater than ± 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 505-660-1067

Company	DP#	Facility Name		Date of Test	Start	Stop		Type of Test(s) Required	Contact Person	Telephone	FAX #/cell
		Crossroads Area									
Steams Inc.	BW-013	Crossroads	Mon	26-Nov-01	12 noon	4:00 PM	2	Pressure test cavern	L.A. Steams	1-505-675-2356	1-505-675-2339
		Loco Hills Area									
Marbob Brine Well	BW-029	M. Dodd "A" BW#1	Tue	27-Nov	9:00 AM	1:00 PM	2	Pressure test cavern	Doyle Davis	748-5975 cell	1-505-746-2523
Jims Water Ser.	BW-005	SE of Artesia	Tue	27-Nov	10:00 AM	2:00 PM	*	Pressure test cavern or casing	Sammy Stoneman	1-505-748-1352	1-505-748-3227
							*	1,2 or 3			
		Hobbs Area									
Key Energy	BW-018	Truckers #2 (Hobbs)	Wen	28-Nov-01	8:00 AM	12 noon	2	Pressure test cavern	Royce Crowell	(505) 393-9171	505-910-4185
Scurlock-Permian	BW-012	Hobbs Station	Wen	28-Nov-01	9:00 AM	1:00 PM	2	Pressure test cavern	Richard Lentz	505-392-8212	392-6988
Zia Transportation	BW-018	Salty Dog-Ark Jct	Wen	28-Nov-01	10:00 AM	2:00 PM	2	Pressure test cavern	Piter Bergstein	806-741-1080	
Marathon Brine St	BW-015	Marathon Road	Wen	28-Nov-01	11:30 AM	3:30 PM	1	Pressure Test Casing	CW Trainer		
		Eunice Area									
P&S Brine	BW-002	Eunice Brine Station	Thur	29-Nov-01	8:00 AM	12 noon	2	Pressure test cavern	Dink Prather	505-394-2545	394-2426
Key Simms-McCasland	BW-009A	Eunice Brine Station	Thur	29-Nov-01	9:00 AM	1:00 PM	2	Pressure test cavern	Royce Crowell	(505) 393-9171	505-910-4185
Yale E. Key (Old Goldstar)	BW-028	Eunice Brine Station	Thur	29-Nov-01	10:00 AM	2:00 PM	2	Pressure test cavern	Royce Crowell	1-505-394-2504	1-505-394-2560
		Carlsbad Area									
I & W	BW-06	Carlsbad -Euginie	Fri	30-Nov-01	8:00 AM	12 noon	2	Pressure test cavern	George Parchman	505-885-8683	885-8477
Key Energy-Carlsbad	BW-019	Rowland Truckers	Fri	30-Nov-01	9:00 AM	1:00 PM	2	Pressure test cavern	John Hutcheson	1-505-885-2053	cell 390-1833
Scurlock/Permian	BW-027 &27A	Carlsbad Brine St.	Fri	30-Nov-01	10:00 AM	2:00 PM	2	Pressure test cavern	Richard Lentz	505-392-8212	392-6988
		Wells Already Tested In 2001									
Gandy	BW-04	Wasserhund-Edison									
Gandy	BW-22	Tatum Brine St.									
Ray Westall	BW-21	Loco Hills Brine St.									
		Wells Being Repaired-									
Chaparral SWD	BW-25	Salado Brine #2- Jal									

Notes:

Type of Pressure Test:

1. Casing Test — Isolate cavern formation from the casing/tubing annuals 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 annuals.
3. Others — Nitrogen-Brine Interface Test, Nitrogen Test, Etc.

Price, Wayne

From: Price, Wayne
Sent: Wednesday, January 31, 2001 3:37 PM
To: Stubblefield, Mike
Cc: Gum, Tim
Subject: Jim's Water Service Brine Well MIT BW-005

Dear Mike:

I have reviewed the faxed copy of the pressure chart and Halliburton Job Log.
I noticed that Halliburton time was approximately one hour off from the chart. I understand now that since this unit was out of Texas they were operating on CST. The following is the Data supplied:

14,800 SCF of Nitrogen (N2) was injected at 70 F with a final press of 300psig. This equates to approximately 123.33 BBL's of compressed N2. The Brine well reservoir temperature was measured at 60.6 F.

The pressure chart started at 9:15 am @ 300 psig and no measurable change was noted for 2.5 hours. The next 1.5 hours showed a slight deviation from the 300 psig chart line and went from 300 to (297-298) psig.

Calculations were made to determine variations that temperature might have on this test. The nitrogen was injected at approximately 70 F. I averaged the nitrogen temperature with the reservoir temperature of 60.6 F and used an average value of 65.25 F. This gave a possible 2.69 psig drop in nitrogen pressure. Since the heat transfer rate is not know I used the average of the temperatures for the time period measured. Compensating for the pressure drop due to temperature change I used a final pressure of 297+2.69 = 299.69 for inputting into the Nitrogen loss calculations utilized by Solution Mining Research Institute's guidelines and an industry standard of 1000 BBl's/year or less for a pass-fail criteria which equates to .11 bbl's/hr of nitrogen leak-off. It should be pointed out that nitrogen is ten times more sensitivity than water. Other words nitrogen has the ability to escape faster than water. Using the pass-fail criteria above it is assumed under most circumstances this would satisfy the requirement of absence of any significant fluid movement into a USDW. Also the fact that there is very little usable groundwater in the area of the brine well. Under these conditions it is normally assumed that water probably will not migrate.

Please note I ran the data supplied and I calculated a value of .031 bbl's/hr which is less than the .11 bbl's/hr. Therefore this would pass the criteria.

Therefore I hereby approve the MIT and pass the test for the Jims Water Service Brine Station. When you inform Jims Water Service please make sure we get all of the MIT results and include this disclaimer below:

Please be advised that NMOCD approval of this test does not relieve Jims Water Service Co. of responsibility should their activities fail to properly demonstrate mechanical integrity of the brine well system, and/or pose a future threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Jims Water Service Co. of responsibility for compliance with any other federal, state, or local laws and/or regulations

Attached: Copy of Calculations:

N2.xls

Nitrogen Brine Well Test	For Jims Water Servi	BW-005	Jan 31,2001
Loss allowed in BBL's/year	1000		
Loss allowed in BBL's/day	2.74		
Loss allowed in BBL's/hour	0.11		
Input start pressure (psig)	300		
Input stop pressure (psig)	299.69		
Input volume in BBL's ***	123.33	*** N_2 SCF divided by compressibility number form engineering charts	
Length of test in hours	4	*** Example: 20,000 scf / 111 = 180 bbls of N_2 300 ps	see page 11-2 BJ engr. book
Ans : Loss in BBL's/hour	0.0318603	<V1 - V1*(Pf/Ps)>/time	

Ideal Gas Law for N2	PV=nRT	(P1*V1)/T1 = (P2*V2)/T2	P in PSIG V in Ft^3 T in degress Rankin

Temp $R^0 = 459.69 + F^0$
P = pressure psig
V = Volume FT^3
n = number of moles
R = 55.15 constant for N2
MW of N2 is 28..016

Input T1 Deg F	70
Input T2 Deg F	65.25
Set V1=V2	----------
Input P1 PSIG	300
Solve P2 PSIG	297.30975

THE REPRODUCTION OF

THE

FOLLOWING

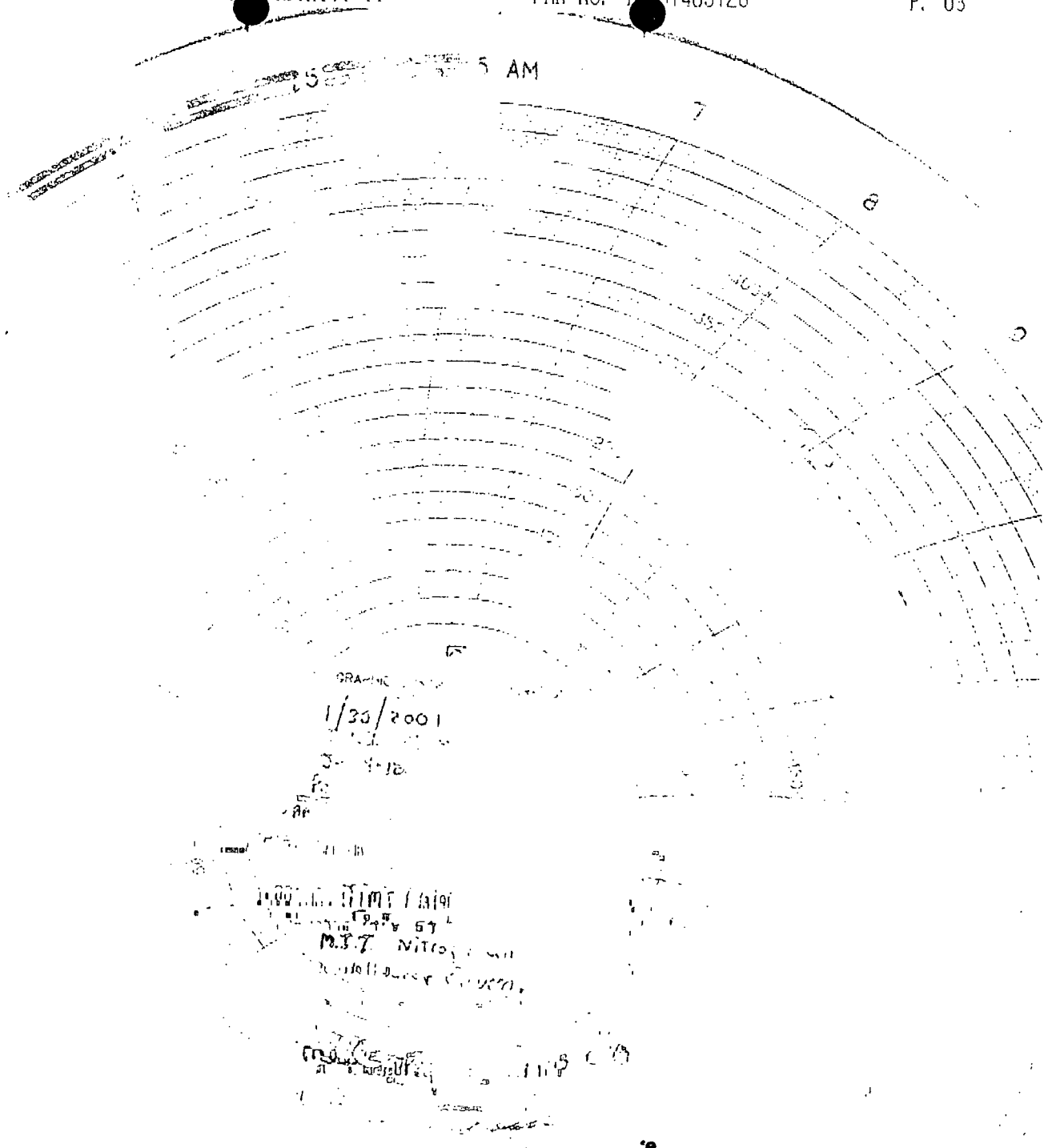
DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL



BRINE RESERVOIR
TEMP = 60.6°F

HALLIBURTON

JOB LOG ORDER NO. 70008

REGION: North America	NWA/COUNTRY: Carlsbad Basin / USA	TICKET #: 102594	TICKET DATE: 1-30-01
BU ID / EMP #: 382207 / 103	EMPLOYEE NAME: [illegible]	BDA / STATE: NM	COUNTY: EDDY
LOCATION: Artesia	COMPANY: [illegible] WATER SEA OF NM	PSL DEPARTMENT: 1025	
TICKET AMOUNT: 2,000	WELL TYPE: [illegible]	CUSTOMER REP / PHONE:	
WELL LOCATION: [illegible]	DEPARTMENT: [illegible]	API / UWI #:	
LEASE / WELL #: [illegible]	SEC / TWP / RNG: [illegible]	JOB PURPOSE CODE: 08	

HES EMP NAME/EMP #/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP #/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP #/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP #/(EXPOSURE HOURS)	HRS
J. D. 5462	3						

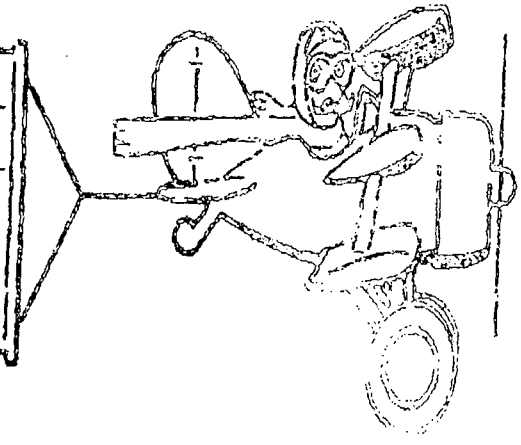
CHART	VOLUME BBL/GAL	PUMPS T	PUMPS C	PRESS (psi) Tbg	PRESS (psi) Csg	JOB DESCRIPTION / REMARKS
						ON LOC
						SET UP
						SAFETY MEET
						START RUNNING
	3820				3400	START DOWN
						START PUMPING
					3200	START DOWN
						[illegible]
						[illegible]
						[illegible]
						[illegible]
						[illegible]

1120 = 123.33 BBL'S

PER HALIBURTON

COMING!

1/30/2001



TENTION: Wayne Price

FROM: mike Stubblefield

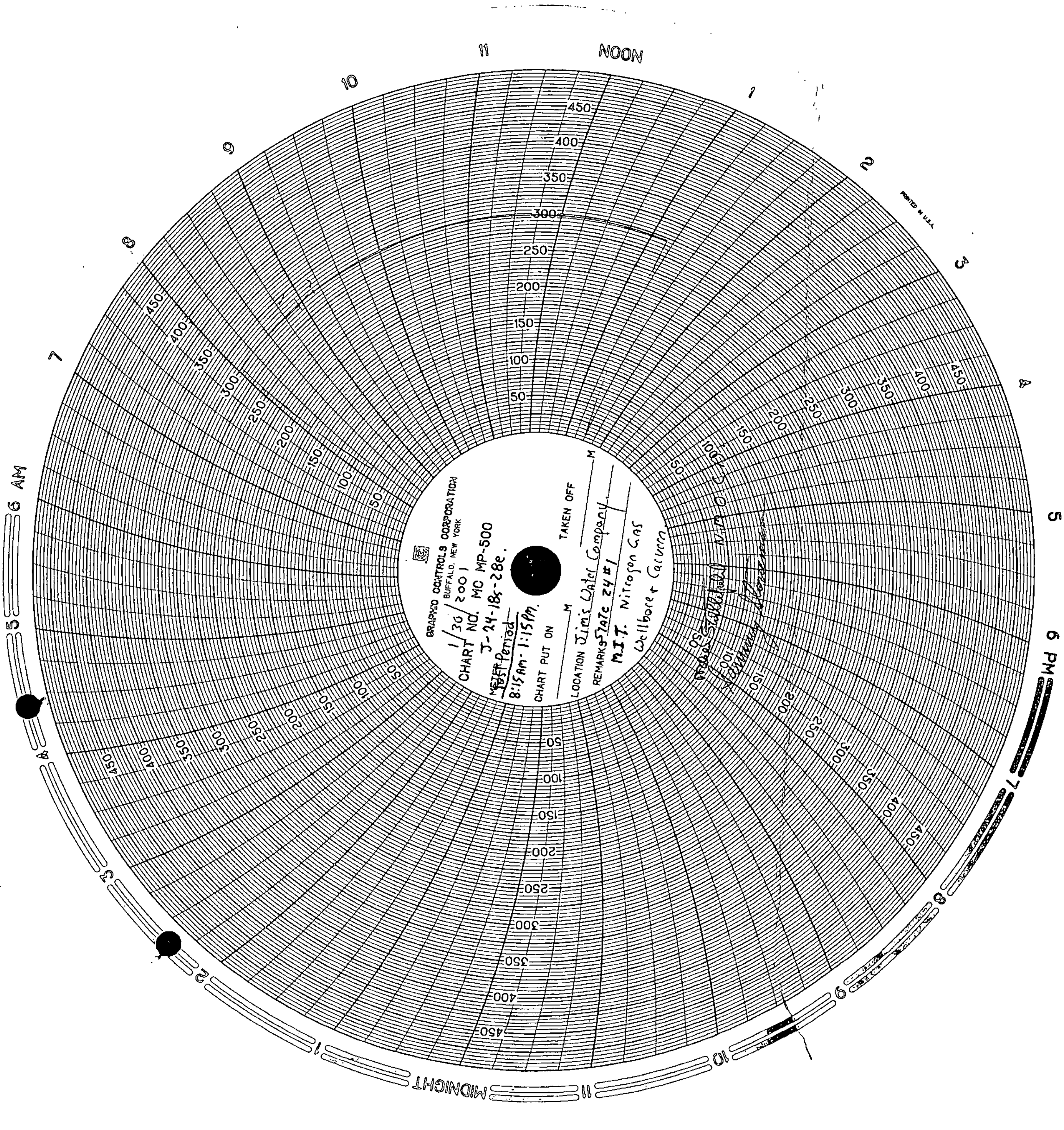
NUMBER OF PAGES INCLUDING COVER SHEET:

III

VISION DIVISION

Y PROBLEMS WITH THIS TRANSMISSION OR NOT
ES. PLEASE CALL 505 748-1283.
505) 748-9720

this morning


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. 1/30/2001 MC MP-500
J-24-18c-28e.
METER Test Period
8:15Am-1:15Pm.
CHART PUT ON M
TAKEN OFF M
LOCATION Jim's Water Company.
REMARKS State 24 #1
M.I.T. Nitrogen Gas
Wellbore + Carvern
NOON
6 AM
6 PM
MIDNIGHT
PRINTED IN U.S.A.

HALLIBURTON

JOB LOG

ORDER NO. 70006

REGION	NWA/COUNTRY	BDA / STATE	COUNTY
North America			
MBU ID / EMP #	**EMPLOYEE NAME**	**PSL DEPARTMENT**	
LOCATION	**COMPANY**	**CUSTOMER REP / PHONE**	
TICKET AMOUNT	**WELL TYPE**	**API / UWI #**	
WELL LOCATION	**DEPARTMENT**	**JOB PURPOSE CODE**	
LEASE / WELL #	**SEC / TWP / RNG**		

HES EMP NAME/EMP#/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS)	HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS)	HRS

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)(GAL)	PUMPS T	PUMPS C	PRESS. (psi) Tbg	PRESS. (psi) Csg	JOB DESCRIPTION / REMARKS
	0955							START PUMPING

700 - M.S.

Wildcat Measurement Service
MEASURING STATION REPORT

Company Keltic Services, Inc.
Lease Name 2 Pen Pressure recorder
Station Number _____ Field _____
MEASURING: FROM _____ TO _____
DATE 9-13-2000
TIME _____

RECORDING DEVICE

MAKE
- ☐ Barton
- ☐ Daniels
- ☐ Clif Mock
- ☐ Total Flow
- ☒ Other Mercoid
- ☐ American

S/N N/A

TYPE
- ☐ Bellows
- ☐ 2 Pen
- ☐ Mercury
- ☐ 3 Pen
- ☐ Electronic

DIFFERENTIAL RANGE
- ☐ 0-50"
- ☐ 0-150"
- ☐ 0-100"
- ☐ 0-200"
- ☐ Other_____
- ☐ 0-250"

PRESSURE RANGE
- ☐ 0-50#
- ☒ 0-500#
- ☐ 0-100#
- ☐ 0-1000#
- ☐ 0-250#
- ☒ 0-1500#
- ☐ Other _____

CHART ROTATION
- ☐ 24 Hours
- ☐ 8 Day
- ☐ 7 Day
- ☐ 16 Day
- ☐ Other_____
- ☐ 31 Day

CHART TYPE
- ☐ Square Root
- ☐ Linear

TEMP RANGE
- ☐ 0-120°
- ☐ 0-200°
- ☐ 0-150°
- ☐ 10-130°
- ☐ Other _____

METER TEST

Diff. Found _____ Diff. Left _____
Zero @ WP _____ Zero @ AP _____

WP Zero Reset	☐ Yes	☐ No
Pen Arc	☐ OK	☐ Reset
Time Lag	☐ OK	☐ Reset
Leaks Found	☐ Yes	☐ No
Leaks Repaired	☐ Yes	☐ No*

DIFFERENTIAL TEST

Found in Calibration	☐ Yes	☐ No
Left in Calibration	☐ Yes	☐ No*

Cal							
Mtr							
Cal							
Mtr							

STATIC TEST

Static Calibration: ☒ Psig ☐ Psia
Test Gauge Pressure _____
Static Pressure Found _____
Static Pressure Left _____

	~~FOUND~~ Left		LEFT	
	DW	Meter	DW	Meter
Static Pressure Left	0	0	0	0
TEMPERATURE TEST				
Thermometer	450	450	200	200
Recorder Found	750	750	250	250
Recorder Left	1500	1500	500	500

GRAVITY/DENSITY

- ☐ Renarex
- ☐ Analysis

_____ • _____

SAMPLE

☐ Yes ☐ No
Cylinder No. _____

ANALYSIS DATA

H2S_____ % CO2_____ %
Dew Point _____ #mmcF
Other _____

COEFF MCF

1 Hour _____
24 Hours _____

ATMOSPHERE PRESS

On Chart	☐ Yes	☒ No
On Meter	☐ Yes	☐ No

BLM INFORMATION

Fed. Lease# _____
_____
Township & Range

TUBE AND ORIFICE DATA

_____ X _____
Line Size Orifice Size

Type of Connection
Flange Tap ☐
Pipe Tap ☐

Orifice Plate Change
In _____ X _____
Out _____ X _____

Chart Changed
☐ Yes ☐ No

ORIFICE PLATE INSPECTION

Plate Inspected	☐ Yes	☐ No
Plate Found Damaged	☐ Yes	☐ No
Plate Found Clean	☐ Yes	☐ No
Condition Of Seal	☐ OK	☐ Bad
Changed Orifice Plate	☐ Yes	☐ No*

ORIFICE FITTING

Type: ☐ Senior ☐ Junior ☐ Simplex ☐ Flange
Condition: ☐ OK ☐ Needs Attention

* REMARKS Pressure recorder is on left

WITNESS _____ TESTER _____

Price, Wayne

From: Mellc@aol.com[SMTP:Mellc@aol.com]
Sent: Friday, January 26, 2001 3:05 PM
To: WPRICE@state.nm.us
Subject: State 24 #1 Brine Well Test Alternatives

NM OCD E-Mail.doc

Wayne,
Attached is letter request regarding pressure requirements and alternative of integrity testing casing, although Sammy says rigs are almost impossible to get, so will most likely do the nitrogen displacement procedure.

Thanks,

Jack

McCartney Engineering, LLC
Consulting Petroleum Engineers
1888 Sherman Street, Suite 760 Denver, CO 80203-1160 (303) 830-7208 Fax(303) 830-7004

January 26, 2001

VIA E-Mail: WPRICE@state.nm.us

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Alternative Pressure Test of JWS State 24 #1 Brine Well, Artesia, New Mexico

Dear Mr. Price:

As you are aware, JWS has, on two occasions within the past two weeks, attempted to pressure test their State 24 #1 brine well located near Artesia, NM to meet the requirements of the Division. It is my information that the top of the salt in this well is at 397 ft with casing set at 416 ft.

The first test involved the pressuring of the salt cavern with fresh water injected down the casing-tubing annulus. In this test, conducted on Friday, January 12th, JWS injected 15,000 BBLS fresh water. The surface pressure reportedly increased to 165 psig during this injection phase. I have no direct evidence of the volume of water injected prior to reaching the 165 psig surface pressure. However, continued water injection would not increase the pressure beyond 165 psig indicating that a fracture, or parting of the formation(s) exposed to the salt cavern had occurred.

On Friday, January 19th, Halliburton pumped approximately 175,000 SCF nitrogen into the salt cavern in an attempt to reach a stabilized 300 psig surface pressure. The casing pressure at the beginning of this test was reported to be about 45 psig. During the injection phase of this test, the pressure appeared to level off for about 30 minutes at 250 psig and then continued to build to a maximum of approximately 270 psig. The well was then shut-in for a four hour period during which the pressure at the surface appeared to decreased about 6 to 10 psi. The pressure test was resumed on Saturday, January 20th showing the pressure had continued to decrease to about 160 psig by noon Saturday.

Several factors might explain this behavior, however, most likely the nitrogen was slowly bleeding off through the fracture created with the water test, or through a very low permeability strata exposed during the prior brine production operations. Because of the shallow depth of the salt deposit, it is entirely possible that a fracture was created during the first test and had insufficient time to heal prior to the second test.
Because of the relatively shallow depth of the salt in this well, it is not possible to achieve a surface pressure of 300 psig with a fresh water column in the casing without fracturing the exposed strata. However, we may be able to achieve a cavern, or bottomhole pressure near 300 psig without fracturing the well. This could be accomplished by injecting water to achieve a surface pressure of about 135 psig, assuming a hydrostatic gradient of .433 to the top of salt at 397 ft (.433psi/ft * 397 ft = 171.9 psi).

I respectfully request the Division to allow testing procedures for the State 24 #1 well as follows:

- Pressure test the well by injecting water down the casing-tubing annulus until the surface shut-in pressure reaches 135 psig. Record the casing pressure on a chart recorder for a minimum of four hours to verify cavern pressure integrity.

- Then, depending on equipment availability, do one of the following:

    1. Displace the fresh water in the casing with nitrogen plus 10 % excess (about 2,100 SCF) to achieve a surface pressure of approximately 300 psig, and hold for four hours.

    2. Perform a casing integrity test whereby the tubing is pulled and rerun with a packer set at approximately 400 ft and the casing tested to 300 psig.

The first procedure is, I believe, in accordance with current accepted procedures. The second procedure, however, will not involve exposing the cavern to significant nitrogen and may be less susceptible to the pressure loss experienced in the test of last Friday.

Field personnel are in the process of bleeding off the wellhead pressure in order to replace the tubing head pack off elements. There was concern that the pack off rubber may have derogated somewhat when exposed to the nitrogen thorough a small leak during the second test. Water injection will commence once the tubing head is repaired.

Thank you for your assistance in this matter. We are confident that the integrity of this well can be verified to the satisfaction of the Division.

Yours truly,
McCartney Engineering, LLC

Jack A. McCartney
Manager, and Consultant to JWS

cc: K. P. Kauffman, K.P. Kauffman Company, Inc., Denver, Colorado
Sam Stoneman, JWS, Artesia, New Mexico

BW-005

Price, Wayne

[redacted]

From: Price, Wayne

Sent: Friday, January 26, 2001 4:15 PM

To: 'Mellc@aol.com'

Cc: Gum, Tim; Stubblefield, Mike

Subject: RE: State 24 #1 Brine Well Test Alternatives

Dear Mr. McCartney:

The attached brine well testing procedure is hereby approved.

Please be advised that NMOCD approval of this plan does not relieve Jims Water Service of responsibility should their activities fail to properly demonstrate mechanical integrity of the brine well system, and/or pose a future threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Jims Water Service of responsibility for compliance with any other federal, state, or local laws and/or regulations

---

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Sent: Friday, January 26, 2001 3:05 PM

To: WPRICE@state.nm.us

Subject: State 24 #1 Brine Well Test Alternatives

<<File: NM OCD E-Mail.doc>>

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Price, Wayne

From: Price, Wayne

Sent: Friday, January 26, 2001 4:04 PM

To: Gum, Tim; Stubblefield, Mike

Subject: FW: State 24 #1 Brine Well Test Alternatives

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Consulting Petroleum Engineers
1888 Sherman Street, Suite 760 Denver, CO 80203-1160 (303) 830-7208 Fax(303) 830-7004

1/26/01
OK & APPROVED
BY ROGER ANDERSON.

January 26, 2001

VIA E-Mail: WPRICE@state.nm.us

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

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Jack A. McCartney
Manager, and Consultant to JWS

cc: K. P. Kauffman, K.P. Kauffman Company, Inc., Denver, Colorado
Sam Stoneman, JWS, Artesia, New Mexico

IN COMING!

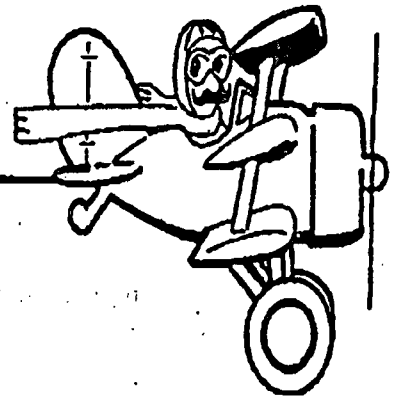
DATE: 1/20/2001

FAX 476-3462

ATTENTION: ROGER ANDERSON

FROM: MIKE STUBBLEFIELD

NUMBER OF PAGES INCLUDING COVER SHEET: 6



OIL CONSERVATION DIVISION
DISTRICT II
ARTESIA, NM 88210

IF YOU HAVE ANY PROBLEMS WITH THIS TRANSMISSION OR IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL 505-748-1283.
FAX NUMBER: (505) 748-9720

HAVE A GREAT DAY!

Daily Field Trip Report

Inspector: Mike Stubblefield **Depart:** 11:00:00 AM **Beginning Miles:** 35,890 **Vehicle Number:**

Trip Date: 01/20/2001 **Return:** 1:00:00 PM **Ending Miles:** 35,946

Total Field Time: 02:00 **Total Miles:** 56

Additional Activities: 1 FACILITY J-24-18s-28e JIM WATER SERVICE CO. BRINE WELL STATE 24 #1
MIT TEST WELLBORE AND BRINE CARVERN. TEST PERIOD 8:00AM-12:00AM.
PRESURE AT START OF TEST 170# PSI. PRESSURE AT END TEST 160#.
NITROGEN GAS WAS FOUND LEAKING FROM PACKOFF ON B.H.
IT WAS APPARENT THAT SALT CRYSTALS WERE BLOWN OFF PACKOFF
ON B.H. AND NITROGEN GAS WAS LEAKING TO ATMOSPHERE ON B.H.

Time Performed	Elapsed Time	API Well No	Well Name and Number	*Operator*		*ULSTR*			
				Inspection Type	Violation	Purpose	Well Type	Status	UIC?
	00:00:00 (hrs)				No				

Summary for Trip Date: 01/20/2001 (1 Inspection record)

Total Hours: 00:00:00 **Total Non-UIC Hours:** 00:00:00 **Total UIC Hours:** 00:00:00

Daily Field Trip Report

Inspector: Mike Stubblefield
Trip Date: 01/19/2001

Depart: 9:30:00 AM
Return: 9:00:00 PM
Total Field Time: 11:30

Beginning Miles: 35,797
Ending Miles: 35,889
Total Miles: 92

Vehicle Number:

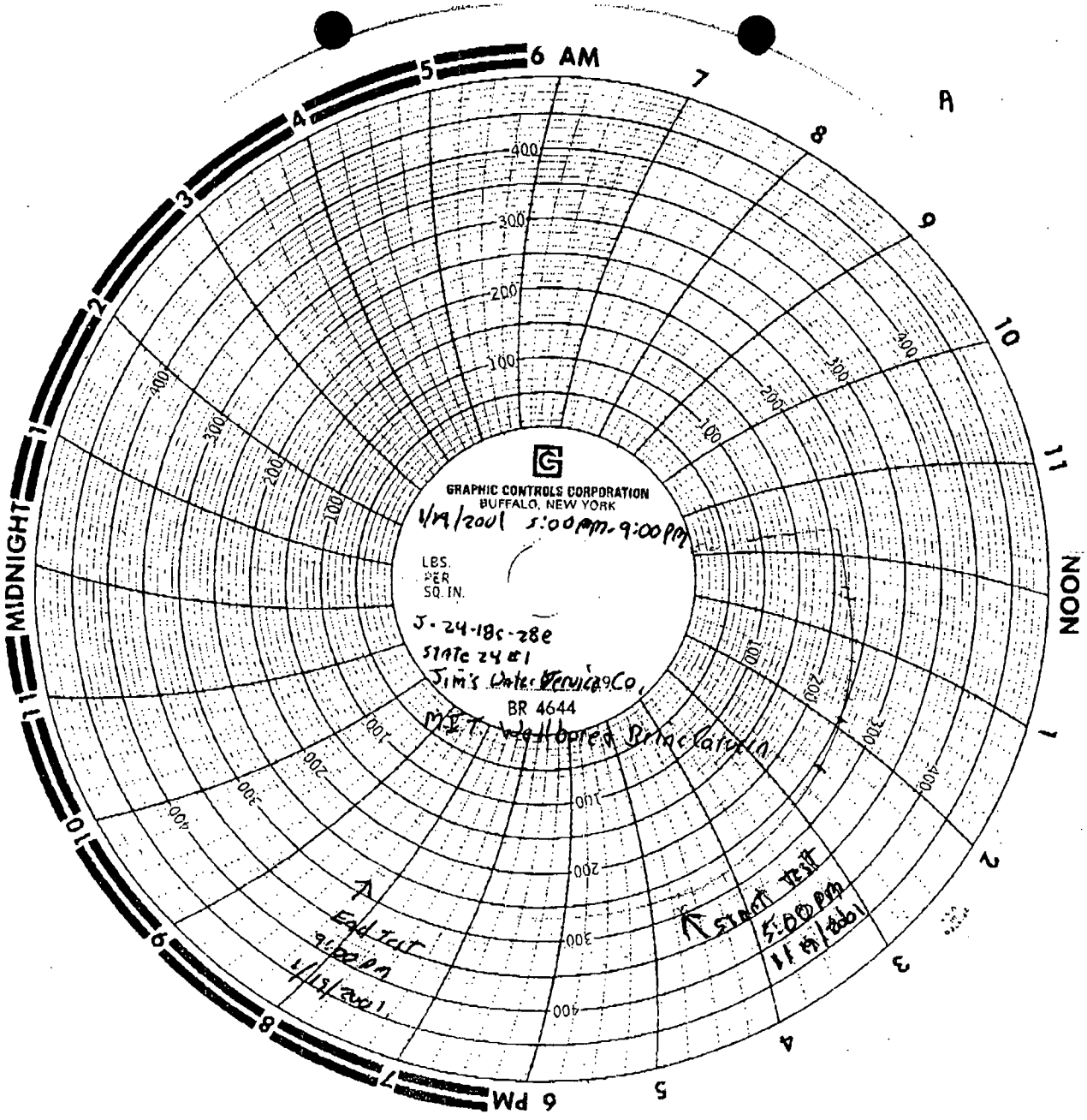
Additional Activities: I FACILITY JIMS WATER SERVICE BRINE SUPPLY WELL

WITNESS MIT TEST ON BRINE CARVERN AND WELLBORE.
COMPANY REP. PRESENT AT TEST SAMMY STONEMAN.
PRESURED UP WELLBORE WITH NITROGEN GAS.
START TEST 5:00PM.9:00PM RECHECHED CHART PEN
NOT MARKING. WILL RESTART MIT TEST IN AM.

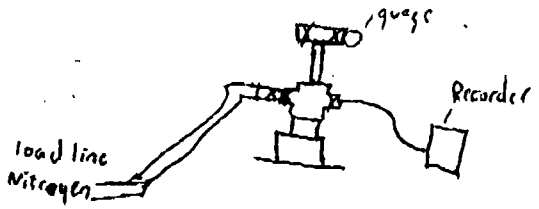
Time Performed	Elapsed Time	API Well No	Well Name and Number	*Operator*			*ULSTR*			
				Inspection Type	Violation	Purpose		Well Type	Status	UIC?
	00:00:00 (hrs)				No					

Summary for Trip Date: 01/19/2001 (1 Inspection record)

Total Hours: 00:00:00 **Total Non-UIC Hours:** 00:00:00 **Total UIC Hours:** 00:00:00

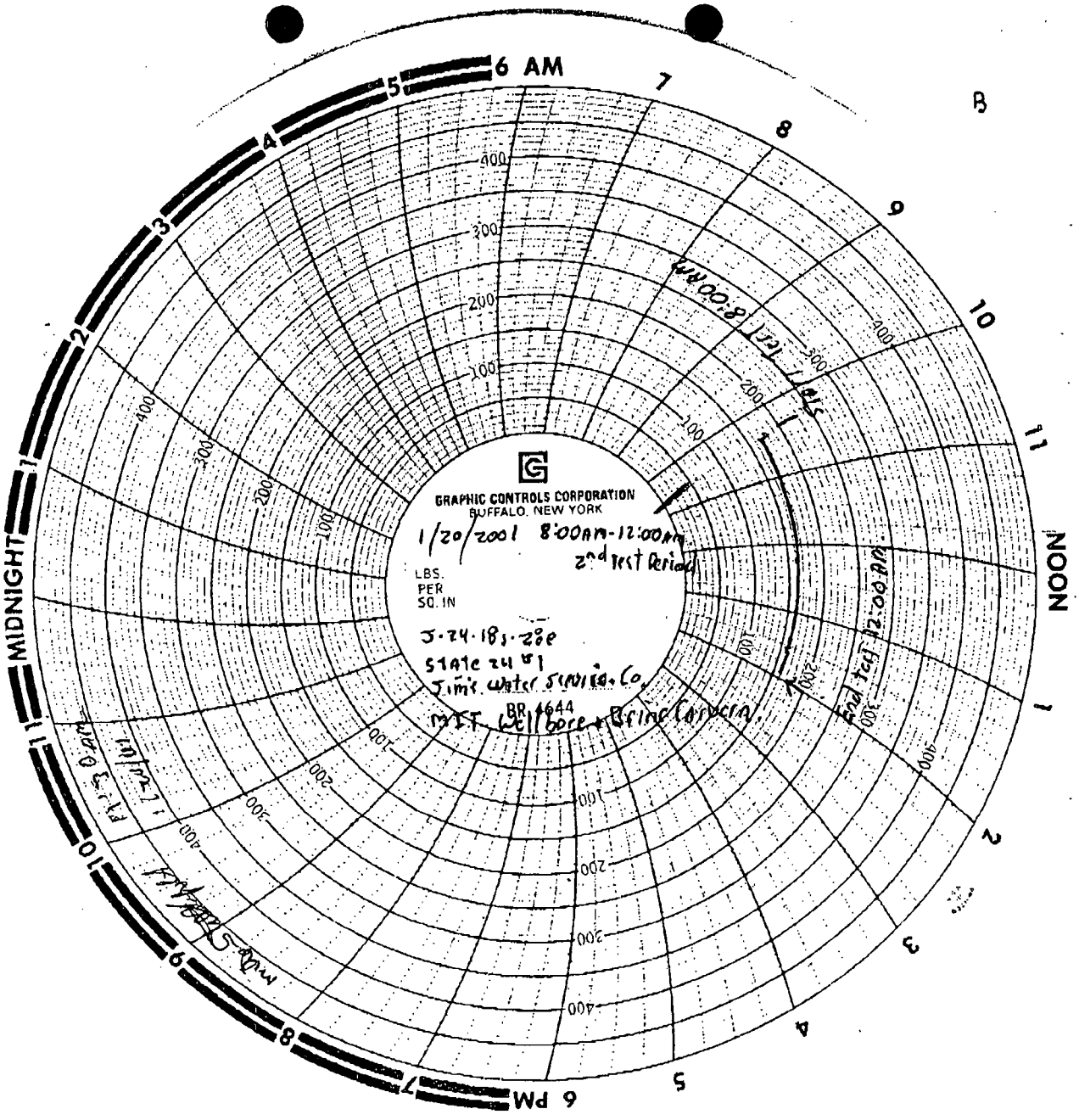

6 AM
NOON
MIDNIGHT
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
1/19/2001 5:00pm-9:00pm
LBS. PER SQ. IN.
J-24-18c-28e
State 24 #1
Jim's Water Service Co.
BR 4644
M.I.T. Wellbored Disclaimer
Start Test 5:00 PM 1/19/2001
End Test 9:00 PM 1/19/2001

A



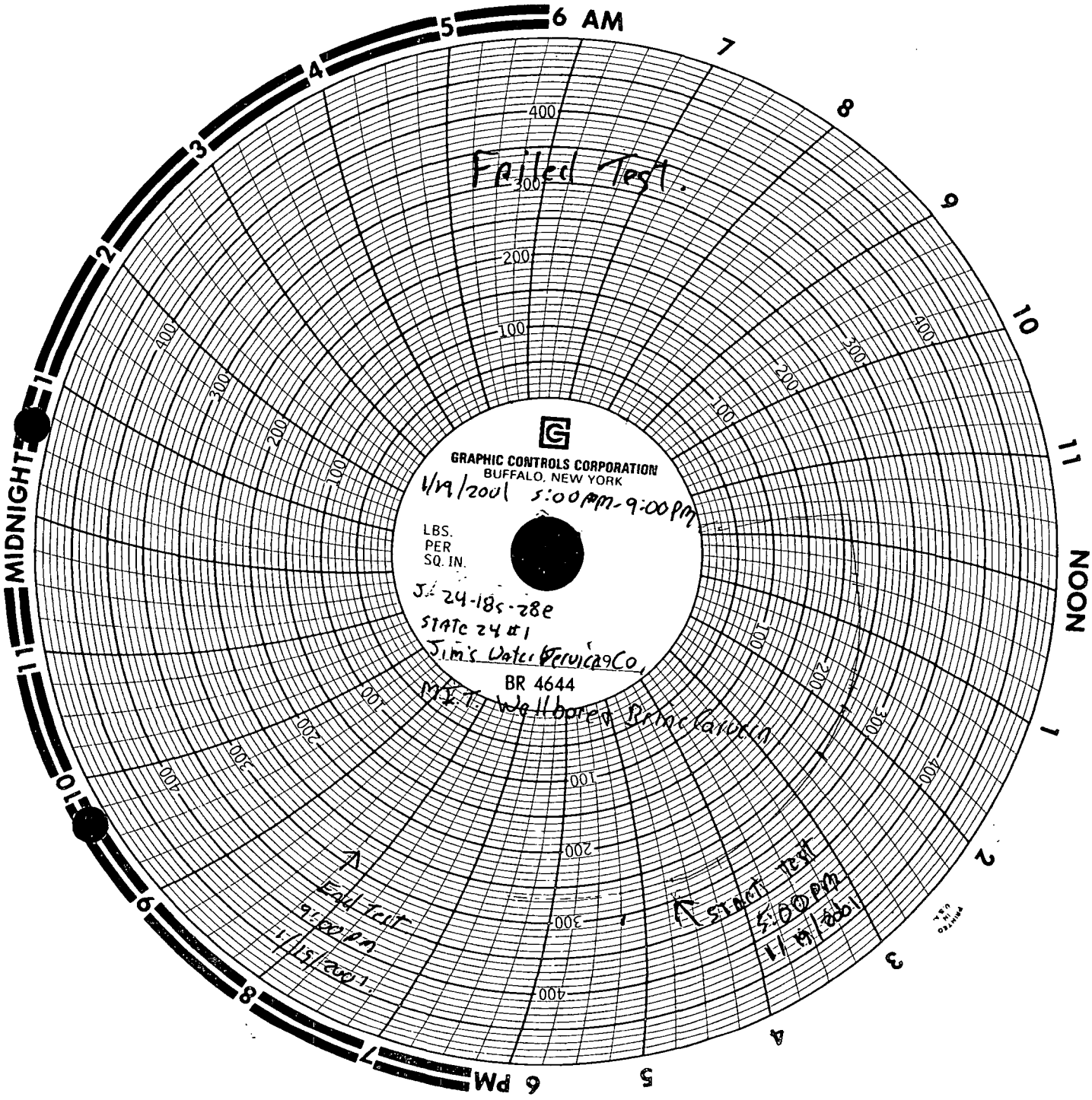
Note: 2nd Test Period
Requested after Chart Recorder
Pen quit marking during
test Period 5:00 pm - 9:00 pm.

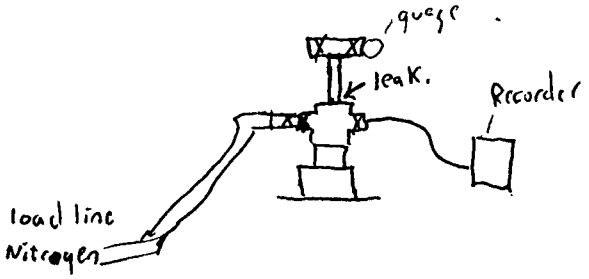
Brine Well.
1/19/2001 Friday
5-24-18s-28e State 2
Jim's Water Service Co.
M.I.T. Wellbore - Brine Caverns.
Test Period 5:00 pm - 9:00 pm.
500# Chart Recorder.
when Chart was Pulled found 2nd test Period 8:00 AM - 12:00 AM,
Nitrogen Bar leaking from B.H.
Mike Stubblefield O.C.D.
Dimas Herrera Field Supervisor


6 AM
NOON
MIDNIGHT
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
1/20/2001 8:00AM-12:00AM
2nd test Period
LBS.
PER
SQ. IN
J-24-18J-28e
State 24 #1
Jimi. water service Co.
BR 1644
MIT Wellbore + String Capacity.
End Test 12:00 AM
B

B.

500# Chart Recorder.
1/20/2001 Saturday.
J-24-18S-28E
State 24 #1
Jims Water Service Co.
M.I.T. Wellbore & Brine Caverns.
2nd test Period.
8:00 AM - 12:00 AM.
When this chart was Pulled
it was appaiant. salt crystals
were blown away on Packoff
on B.H. Nitrogen was leaking
from B.H.
Mike Stubblefield O.C.D.
Dimas Herrera Field Supervisor


6 AM
NOON
MIDNIGHT
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
LBS.
PER
SQ. IN.
Failed Test.
1/19/2001 5:00PM-9:00PM
J-24-18S-28E
State 24 #1
Jim's Water Service Co,
BR 4644
Mt. Wellbored Reinstatement
Start Test
5:00 PM
1/19/2001
End Test
9:00 PM
1/19/2001



Note: 2nd Test Period
Requested after chart Recorder
Pen quit marking during
test Period 5:00 pm - 9:00 pm.

Brine Well.

1/19/2001 Friday
S-24-18s-28e State 2
Jim's Water Service Co.

M.I.T. Wellbore + Brine Caruern.

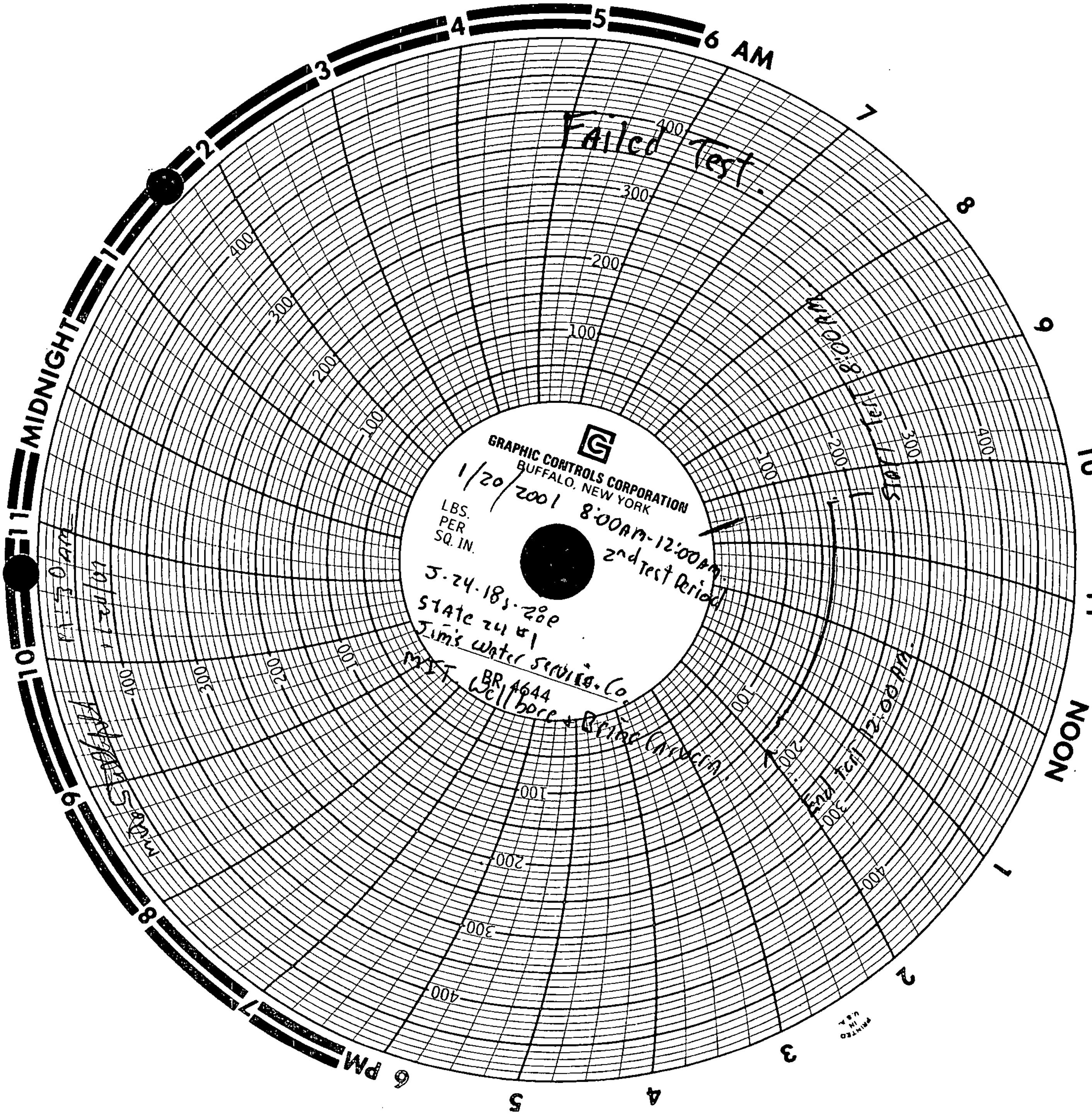
Test Period 5:00 pm - 9:00 pm.

500# Chart Recorder.

When chart was Pulled found ——— 2nd test Period
8:00 AM - 12:00 AM.
Nitrogen Gas leaking from B. H.

Mike Stubblefield O.C.D.

Dimas Herrera Field Supervisor



GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
LBS. PER SQ. IN.
BR 4644
PRINTED IN U.S.A.
MIDNIGHT
6 AM
NOON
6 PM
Failed Test.
1/20/2001 8:00AM-12:00AM
2nd Test Period
J-24-18S-28E
State 24 #1
Jim's Water Service Co.
MIT Wellbore + Brine Cavern
Start Test 8:00AM
End Test 12:00PM

500# Chart Recorder.
1/20/2001 Saturday.
J-24-18s-28e
State 24 #1
Jim's Water Service Co.
M.I.T. Wellbore + Brine Carvern.
2nd test Period.
8:00 AM - 12:00 PM.
When this chart was Pulled
it was apparant. Salt crystals
were blown away on Packoff
on B.H. Nitrogen Was leaking.
from. B.H.

Mike Stubblefield O.C.D.
Dimas Herrera Field Supervisor

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 4430 BW-005 JIM'S WATER

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 8th through 18th 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.

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 (505-827-7155).

Sincerely Yours,

Wayne Price

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

cc: OCD District Offices

Attachments- 1. OCD Brine Well Test Schedule December 2000.
2. Brine Well Testing Procedure Guidance Document.

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

CELL MAIL

4515

4485 4454 4478

4508

4447

4423

5051 4409 4461

4492

4454

4413

5051 4416 4490

5051 4416 - 4447

Notes:

Type of Pressure Test:

1 Casing Test — Isolate cavern formation from the casing/tubing annuals 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 annuals.

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.

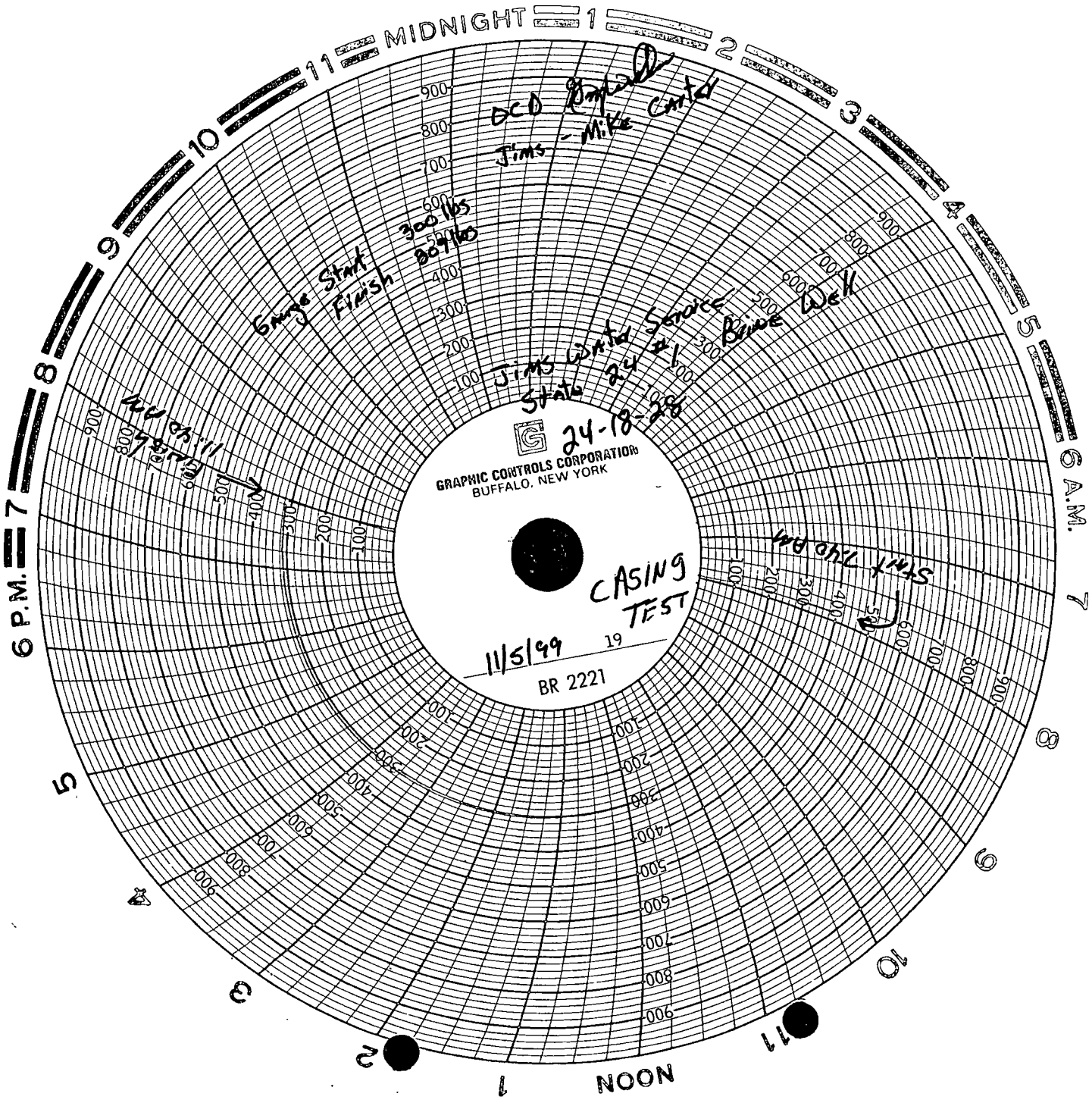
5) A minimum of one pressure gage shall be installed in the system as directed by OCD.

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.


MIDNIGHT
6 A.M.
NOON
6 P.M.
DCD Bartlett
Jims - Mike Carter
Gauge Start 300 lbs
Finish 30 lbs
Jims Water Service
State 24 #1
Beaver Well
24-18-36
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CASING TEST
11/5/99 19
BR 2221
Start 7:40 AM

NEW MEXICO OIL CONSERVATION COMMISSION
FIELD TRIP REPORT

Name GARY WILLIAMS Date 11/5/99 Miles 94 District II

Time of Departure 7:00 AM Time of Return 1:00 PM Car No. 4768

MILES OUT 50072 MILES IN 50166

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

INSPECTION	CLASSIFICATION	FACILITY	HOURS	QUARTER HOURS
T	O	O	6	

1- Well 24-18-28 Jims Water Service State 24
#1 Brine Well MIT Packer set 358 ft
Bottom T.D. of casing 367 ft Start time
7:40 AM chart 300 lbs
Gauge 300 lbs

11:40 AM chart 309 lbs / Temp. Build up from Sun
Gauge 309 lbs on hose + recorder

Buried Pipe line 8:45 AM Start 12 3/4 lbs
9:15 AM Stop 12 3/4 lbs

Calibration of Pressure Recorder 1000 lb 11/3/99
" " " Gauge 0-400 lb 11/3/99
not a calibratable gauge

working tubing pressure 60 lbs

Mail to Santa Fe Env. Dept Att: Wayne Price

Mileage	Per Diem	Hours
UIC	UIC	UIC
RFA	RFA	RFA
Other 94	Other	Other 6

TYPE INSPECTION PERFORMED
H = Housekeeping
P = Plugging
C = Plugging Cleanup
T = Well Test
R = Repair/Workover
F = Waterflow
M = Mishap or Spill
W = Water Contamination
O = Other

INSPECTION CLASSIFICATION
U = Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, Indry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
R = Inspections relating to Reclamation Fund Activity
O = Other - Inspections not related to injection or The Reclamation Fund
E = Indicates some form of enforcement action taken in the field (also immediately below the letter U, R or O)

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED
D = Drilling
P = Production
I = Injection
C = Combined prod. inj. operations
S = SWD
U = Underground Storage
G = General Operation
F = Facility or location
M = Meeting
O = Other

Wildcat Measurement

Calibration Certificate

Pressure Recorder

Serial Number: P/N 8990625

Pressure Range 400 **p.s.i. accuracy +/-** N/A **% Full Scale** _____ **p.s.i.** _____

Type of Instrument: Wika Instrument Pressure Gauge

Increasing Pressure			Decreasing Pressure		
Applied Pressure	*Indicated Pressure*	*Difference*	*Applied Pressure*	*Indicated Pressure*	*Difference*
50	50	0.0	300	297	-3.0
150	150	0.0	200	197	-3.0
250	247	-3.0	100	100	0.0
350	346	-4.0			
400	397	-3.0			

Calibrated By: DCT Electronic **Gauge** **Deadweight** _____

Certified on: 5/19/99

This Is To Certify That This Recorder Has Been Inspected And Tested.

Remarks This Instrument is not a calibratable gauge - Readings are as found.

Date Of Calibration November 03, 1999 **Inspector** Ray Kennemur

Ray Kennemur

Wildcat Measurement

Calibration Certificate

Pressure Recorder

Serial Number: MFG-1438

Pressure Range 0-1000 **p.s.i. accuracy +/-** N/A **% Full Scale** 1000# **p.s.i.**

Type of Instrument: Clif Mock 2 Pen Pressure Recorder

Increasing Pressure			Decreasing Pressure		
Applied Pressure	*Indicated Pressure*	*Difference*	*Applied Pressure*	*Indicated Pressure*	*Difference*
100	100	0.0	800	800	0.0
300	300	0.0	600	600	0.0
500	500	0.0	400	400	0.0
700	700	0.0	200	200	0.0
900	900	0.0	0	0	0.0
1000	1000	0.0			

Calibrated By: DCT Electronic **Gauge** **Deadweight**

Certified on: 05/19/99

This Is To Certify That This Recorder Has Been Inspected And Tested.

Remarks

Date Of Calibration November 03, 1999 **Inspector** Ray Kennemur

Ray Kennemur

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

Fax: 1-505-746-3227

October 19, 1999

Mr. Sammy Stoneman
Jim's Water Service
P.O. Box 848
Artesia, New Mexico 88210

Re: Mechanical Integrity Testing of Brine Supply Wells.

This is a reminder that New Mexico Oil Conservation Division (NMOCD) will be witnessing mechanical integrity test for all brine supply wells during the time period between October 25 through November 2, 1999. A schedule was sent to each operator on September 11, 1999.

Your recent telephone request to waive the cavern pressure test and pressure test the casing only because of the difficulty you had during the last inspection in maintaining pressure on the cavern is approved this time. NMOCD will evaluate this issue and notify you of future requirements.

Please have your well(s) ready for testing on the date and time you are scheduled. If there is some emergency which interferes with the scheduled date and time please call and notify NMOCD.

Failure to notify NMOCD may result in your operations being suspended until testing is complete.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155) or notify Mr. Roger Anderson at (505-827-7152).

Sincerely Yours,

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

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 357 870 149

Mr. Sammy Stoneman
Jim's Water Service
P.O. Box 848
Artesia, New Mexico 88210

Re: Mechanical Integrity Testing of Brine Supply Wells

Dear Mr. Sammy Stoneman:

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

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

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

OCD BRINE WELL TEST SCHEDULE FALL OF 1999

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***
Salty Dog, Inc.	**	BW-008	Arkansas-Jct	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
uality 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
WasserHaun		BW-004	Buckeye	October 29 1999	9 am	1 pm	Pressure test cavern
Marathon Brine St.		BW-015	Marthon 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
Jims Water Ser.		BW-005	SE of Artesia	November 1 1999	11 am	3 pm	Pressure test cavern
I&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 Requirments Companies have the option to perform now are at a later date approved by OCD.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

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.**

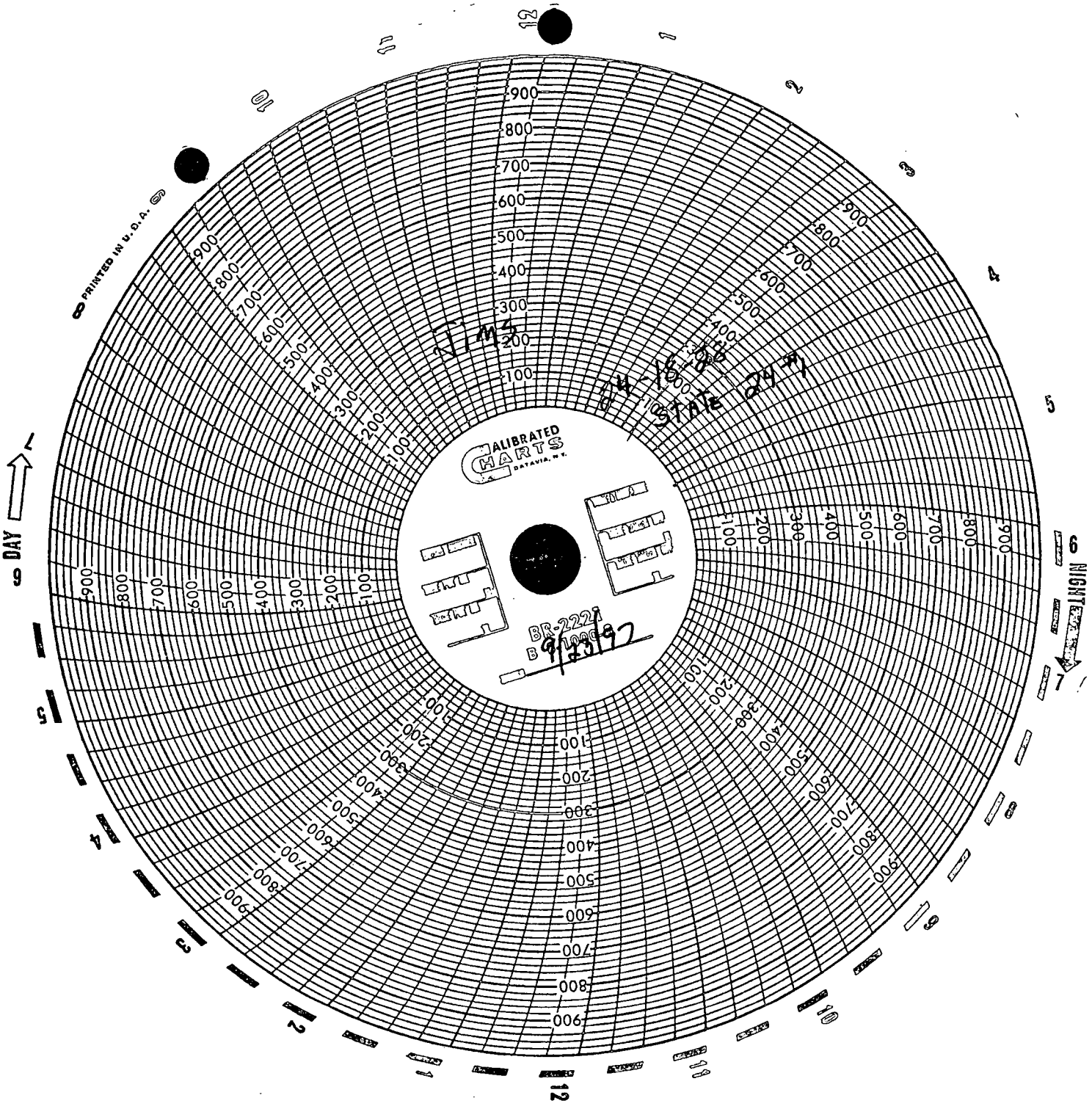
5) A minimum of one pressure gage shall be installed in the system.

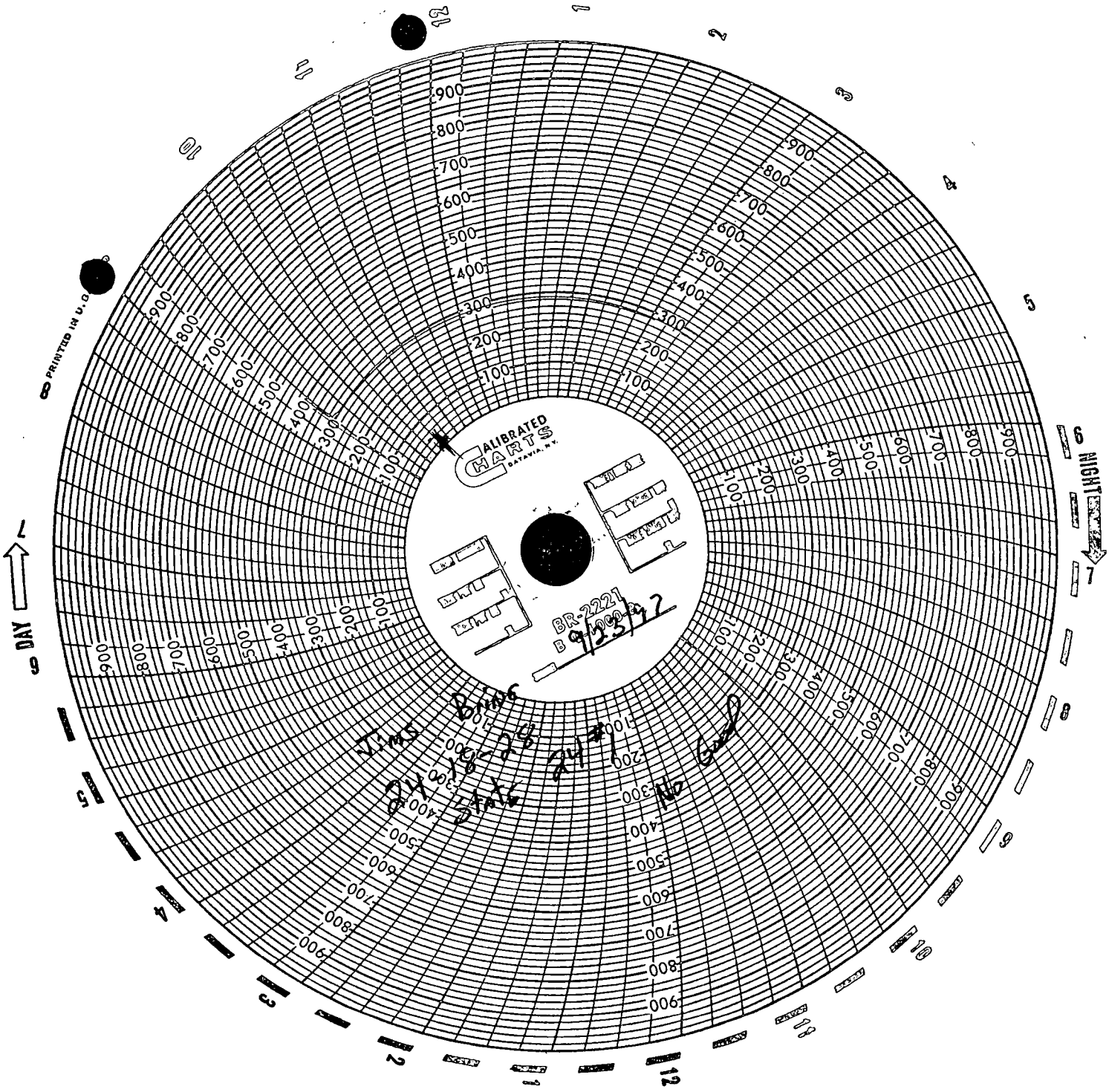
6) OCD must witness the beginning of test (putting chart on) and ending of test (removing chart). At the end of test operator shall bleed-off pressure by 10% to demonstrate recorder response.

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.


PRINTED IN U.S.A.
DAY
NIGHT
CALIBRATED CHARTS
BATAVIA, N.Y.
BR-222J
9/15/92
24-16-85
STATE 24-1


CALIBRATED CHARTS
BATAVIA, N.Y.
PRINTED IN U.S.A.
DAY
NIGHT
BR-2221
9/23/97

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

November 24, 1997

Mr. Sammy Stoneman
Jim's Water Service
P.O. Box 848
Artesia, New Mexico 88210

RE: Mechanical Integrity Testing of Brine Supply Wells

Dear Mr. Sammy Stoneman:

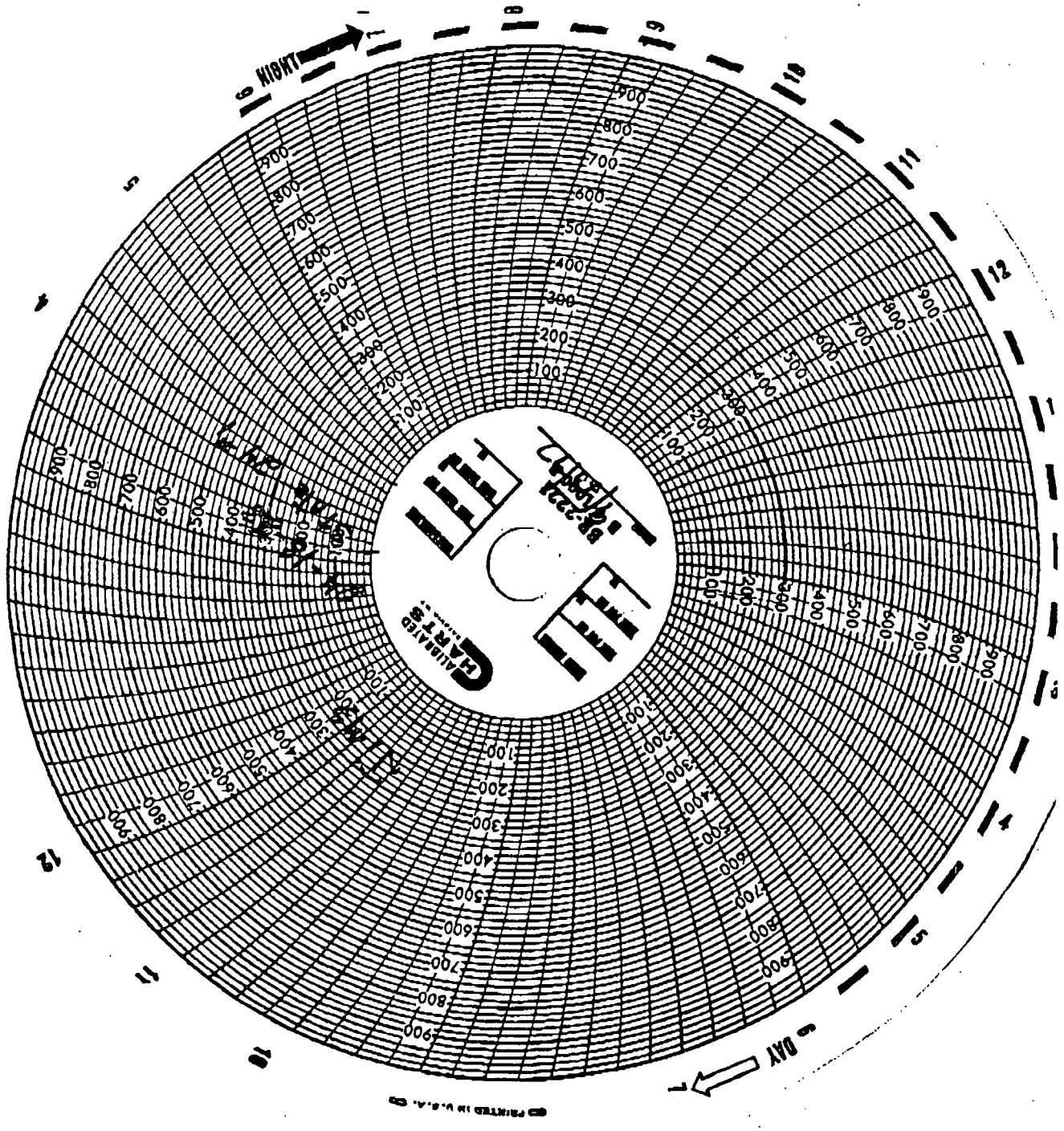
Enclosed is a copy of the mechanical integrity test conducted on your brine well. Please retain this copy for your records.

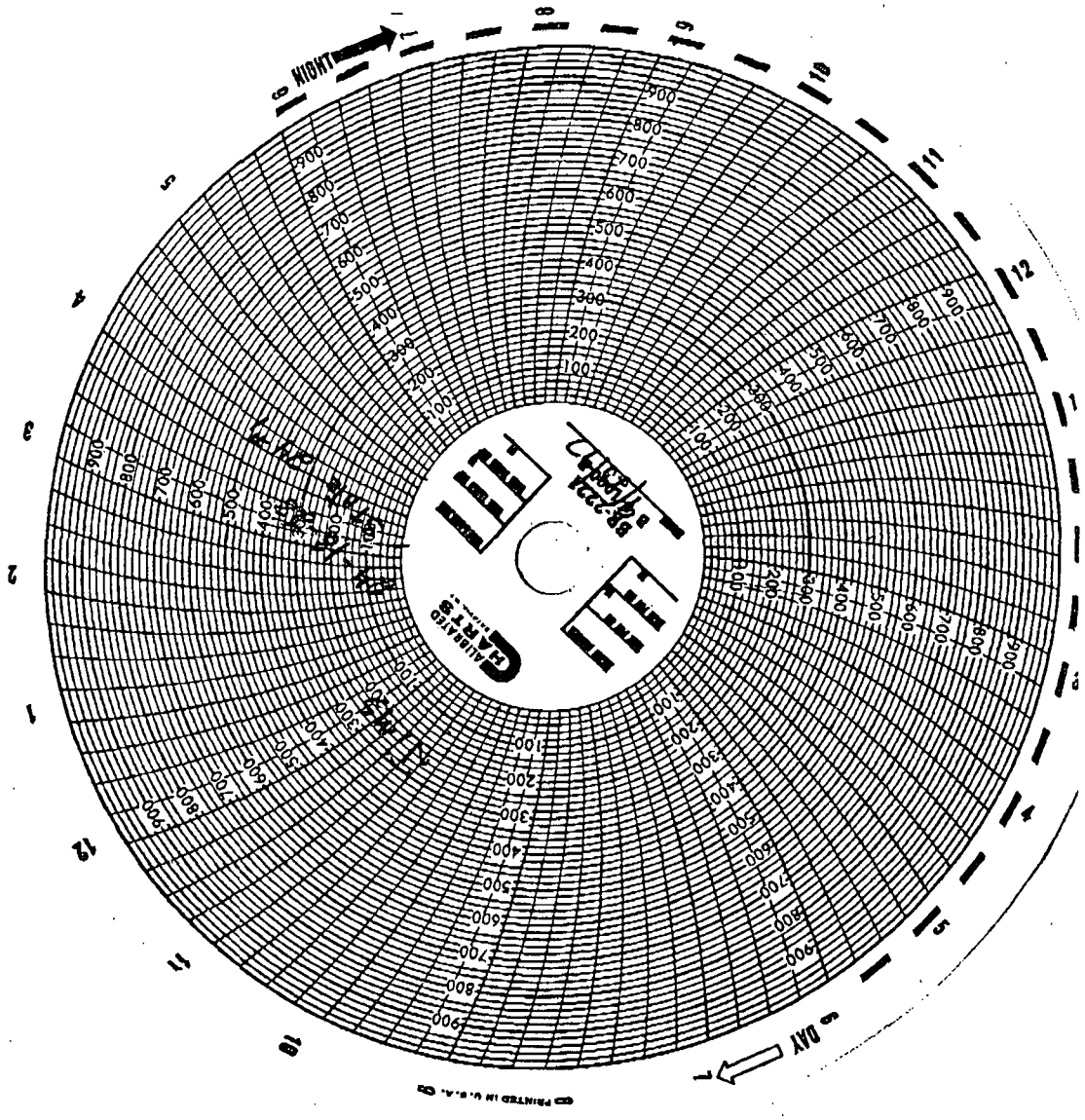
On behalf of the New Mexico Oil Conservation Division, I would like to thank you for your time and cooperation during the testing. If you have any questions, please contact me at (505) 827-7155.

Sincerely,

Mark Ashley
Geologist

Attachment


NIGHT
DAY
CALIBRATED
CHARTS
PRINTED IN U.S.A.


NIGHT
DAY
CALIBRATED CHARTS

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

August 12, 1997

Certified Mail
Return Receipt No. P-288-258-954

Mr. Sammy Stoneman
Jim's Water Service
P.O. Box 848
Artesia, New Mexico 88210

RE: Mechanical Integrity Testing of Brine Supply Wells
Annual Test
Loco Hills Brine Station BW-005
Eddy County, New Mexico

Dear Mr. Stoneman:

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring that there are no leaks in the tubing, casing, or packer, and that the injected fluid is confined within the injection zone through proper cementing.

All brine wells that operate without a packer will be required to have an annual open hole pressure test equal to 1.5 times the normal operating pressure or 300 psi, whichever is greater, for four hours with a maximum of 10 percent bleed-off allowed. Every five years or at the time of discharge plan renewals they will be required to have an open hole pressure test equal to 1.5 times the normal operating pressure or 300 psi, whichever is greater, for four hours with zero bleed-off.

All brine wells that operate with a packer will be required to have an annual casing/tubing annulus pressure test equal to 300 psi for 30 minutes.

Operators will be responsible for providing equipment and shall bear all costs incurred. The date and time of all tests will be scheduled and witnessed by the New Mexico Oil Conservation Division.

Please have your well ready for testing on September 19, 1997 at 9:00 AM as outlined below.

For brine wells operating without a packer:

1) The cavern must be pressured up and stabilized for a period of at least 24 hours prior to testing.

2) The system shall be tested to 1.5 times the normal operating pressure or 300 psi, whichever is greater, for a period of four hours. A maximum of 10 percent bleed-off will be allowed for annual tests. Testing conducted every five years or at the time of discharge plan renewal will have zero bleed-off.

3) 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 psi.

4) Have well head prepared for test. All valves should be in good working order.

5) All gauges shall be in good working order.

6) Have manpower and equipment available for pressure test.

For brine wells operating with a packer:

1) Have the casing/tubing annulus and tubing loaded with inert fluid prior to testing.

2) The casing/tubing annulus shall be tested to 300 psi for 30 minutes.

3) 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 psi.

4) Have well head prepared for test. All valves should be in good working order.

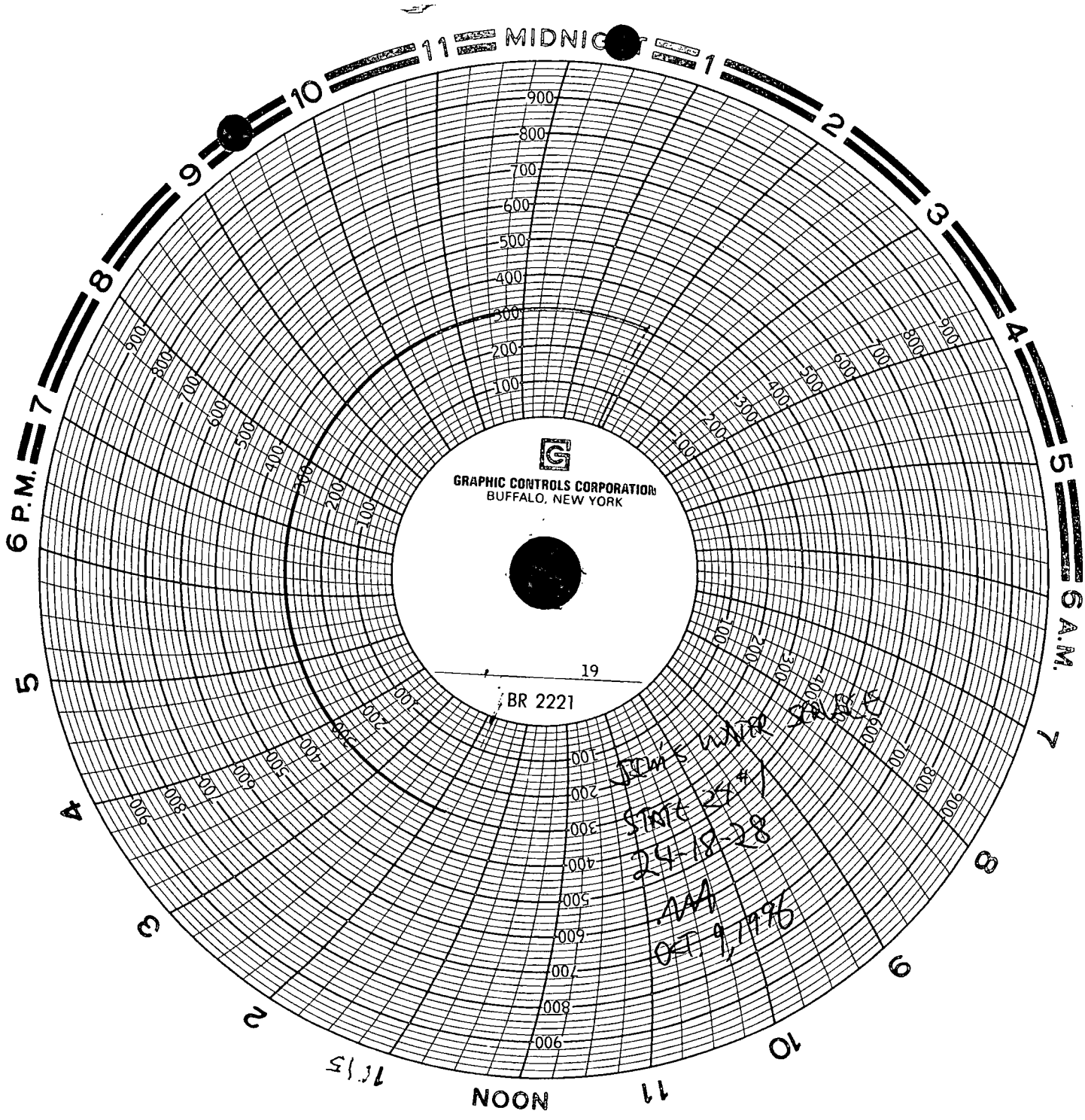
5) All gauges shall be in good working order.

6) Have manpower and equipment available for pressure test.

If you have any questions regarding this matter, please feel free to contact me at (505) 827-7155.

Sincerely,

Mark Ashley
Geologist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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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OCT 9, 1996

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

August 16, 1996

Certified Mail
Return Receipt No. P-288-258-822

Mr. Sammy Stoneman
Jim's Water Service
P.O. Box 848
Artesia, New Mexico 88210

RE: Mechanical Integrity Testing of Brine Supply Wells
Discharge Plan Renewal Test
Loco Hills Brine Station BW-005
Eddy County, New Mexico

Dear Mr. Stoneman:

The Underground Injection Control Program of the Federal Safe Drinking Water Act requires that operators demonstrate mechanical integrity of all injection wells by ensuring that there are no leaks in the tubing, casing, or packer, and that the injected fluid is confined within the injection zone through proper cementing.

All brine wells that operate without a packer will be required to have an annual open hole pressure test equal to 1.5 times the normal operating pressure or 300 psig, whichever is greater, for four hours with a maximum of 10 percent bleed-off allowed. Every five years or at the time of discharge plan renewals they will be required to have an open hole pressure test equal to 1.5 times the normal operating pressure or 300 psig, whichever is greater, for four hours with zero bleed-off.

All brine wells that operate with a packer will be required to have an annual casing/tubing annulus pressure test equal to 1.5 times the normal operating pressure or 300 psig, whichever is greater, for four hours.

Operators will be responsible for providing equipment and shall bear all costs incurred. The date and time of all tests will be scheduled and witnessed by the New Mexico Oil Conservation Division.

Please have your well ready for testing on September 16, 1996 at 1:30 PM as outlined below.

For brine wells operating without a packer:

1) The cavern must be pressured up and stabilized for a period of at least 24 hours prior to testing.

2) The system shall be tested to 1.5 times the normal operating pressure or 300 psig, whichever is greater, for a period of four hours. A maximum of 10 percent bleed-off will be allowed for annual tests. Testing conducted every five years or at the time of discharge plan renewal will have zero bleed-off.

3) A continuous recording pressure chart with an 8 hour clock shall be installed on both the casing/tubing annulus and tubing. The pressure range shall not be greater than 1,000 psig.

4) Have well head prepared for test. All valves should be in good working order. All casing/tubing annulus and tubing valves shall be open.

5) All gauges shall be in good working order.

6) Have manpower and equipment available for pressure test.

For brine wells operating with a packer:

1) Have the casing/tubing annulus and tubing loaded with inert fluid prior to testing.

2) The casing/tubing annulus shall be tested to 1.5 times the normal operating pressure or 300 psig, whichever is greater, for four hours.

3) 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.

4) Have well head prepared for test. All valves should be in good working order.

5) All gauges shall be in good working order.

6) Have manpower and equipment available for pressure test.

If you have any questions regarding this matter, please feel free to contact me at (505) 827-7155.

Sincerely,

Mark Ashley
Geologist