R R E
R & R Energies Inc.

1115 NORTH ASH DRIVE
EAST LAYTON, UTAH 84041
PHONE: (801) 376-9966

December 29, 1980

Mr. William Dolan, Manager
AMAX Exploration Geothermal Branch
7100 West 44th Avenue
Wheat Ridge, Colorado 80033

DEC 31

Subject:

Dear Sir,

Enclosed is the well data from R&R Energies test completed in June 1980 on Well #42-7, Sulphurdale, Utah. The data enclosed includes all written information on the test; however, if questions arise not addressed by this information, please feel free to contact R&R Energies and we will either answer the questions directly or provide contact with our consultants who should be able to answer specific questions pertaining to Well #42-7.

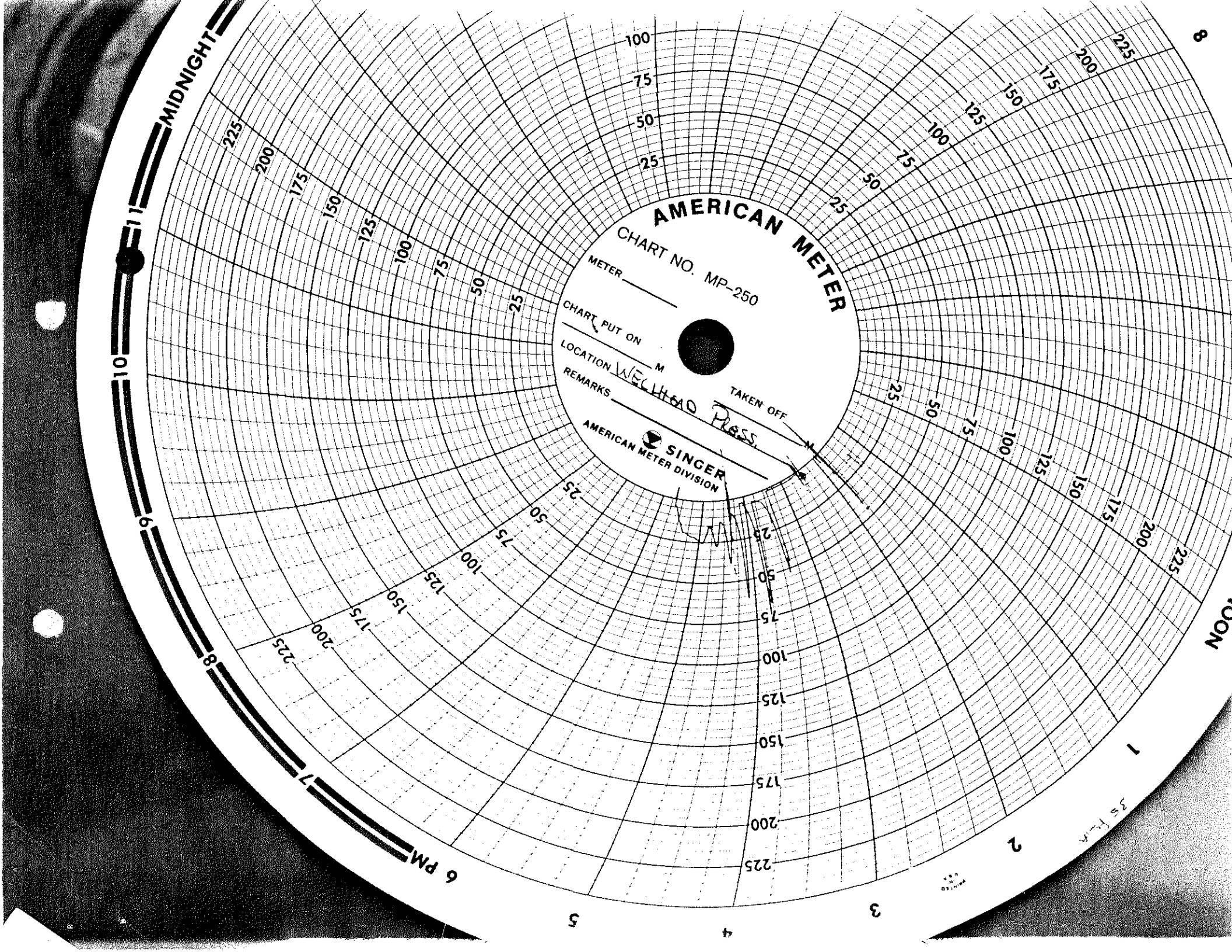
Please consider this as an invoice for $5,000 per your instruction during the telecon on 12-22-80 for the complete purchase price of the enclosed well data.

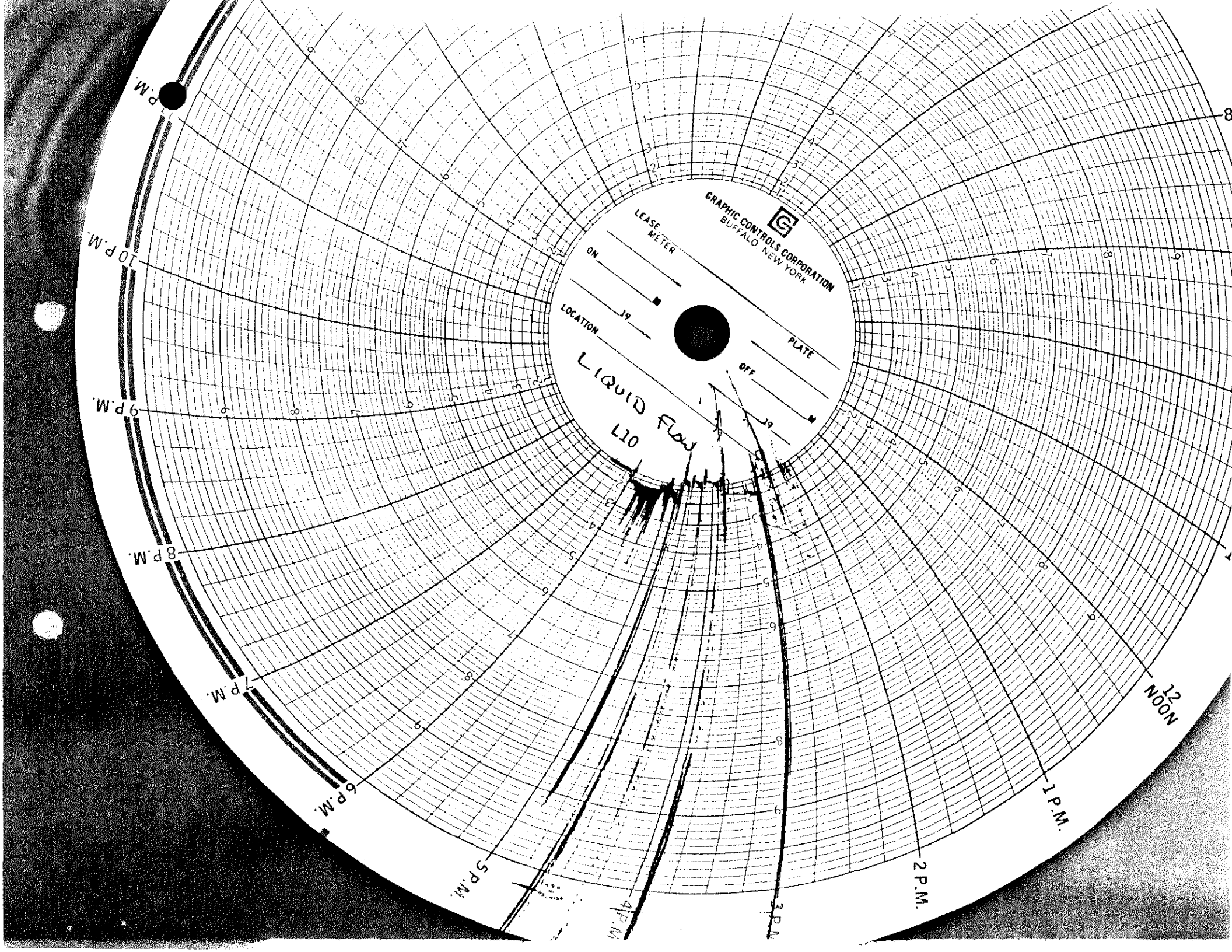
R&R Energies appreciates your consideration in this transaction and is looking forward to a long and beneficial relationship between the two companies.

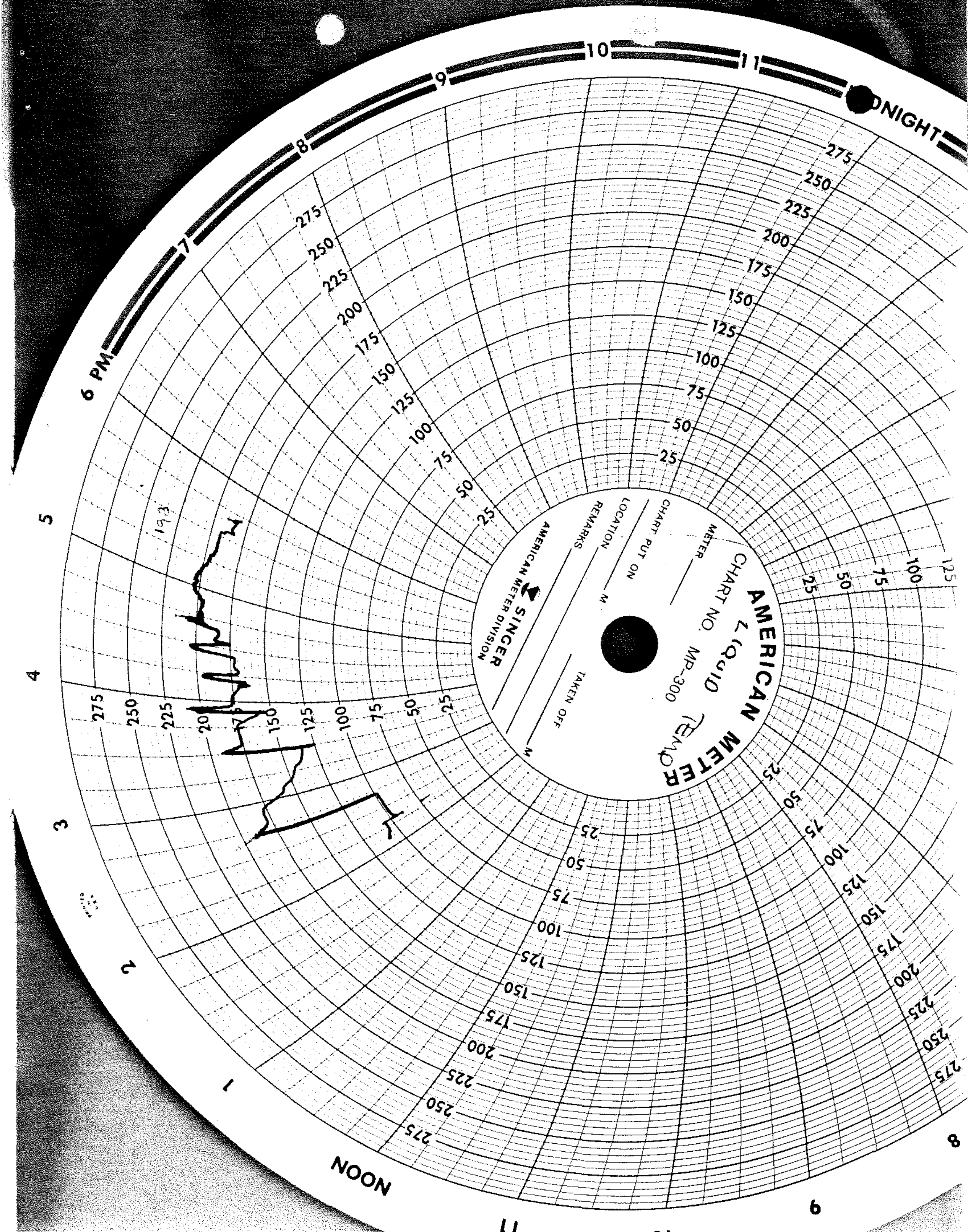
Sincerely,

Robert A. Helber
President

RAH:jap


AMERICAN METER
CHART NO. MP-250
METER
CHART PUT ON
M
LOCATION WELLHEAD Press.
TAKEN OFF
M
REMARKS
SINGER
AMERICAN METER DIVISION
MIDNIGHT
6 PM
NOON
100
75
50
25
225
200
175
150
125


GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
LEASE
METER
ON
J9
LOCATION
PLATE
OFF
J9
Liquid Flow
L10
12 NOON
1 P.M.
2 P.M.
3 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.


AMERICAN METER
CHART NO. MP-300
METER
CHART PUT ON
LOCATION
REMARKS
TAKEN OFF
SINGER
AMERICAN METER DIVISION
6 PM
7
8
9
10
11
MIDNIGHT
5
4
3
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NOON
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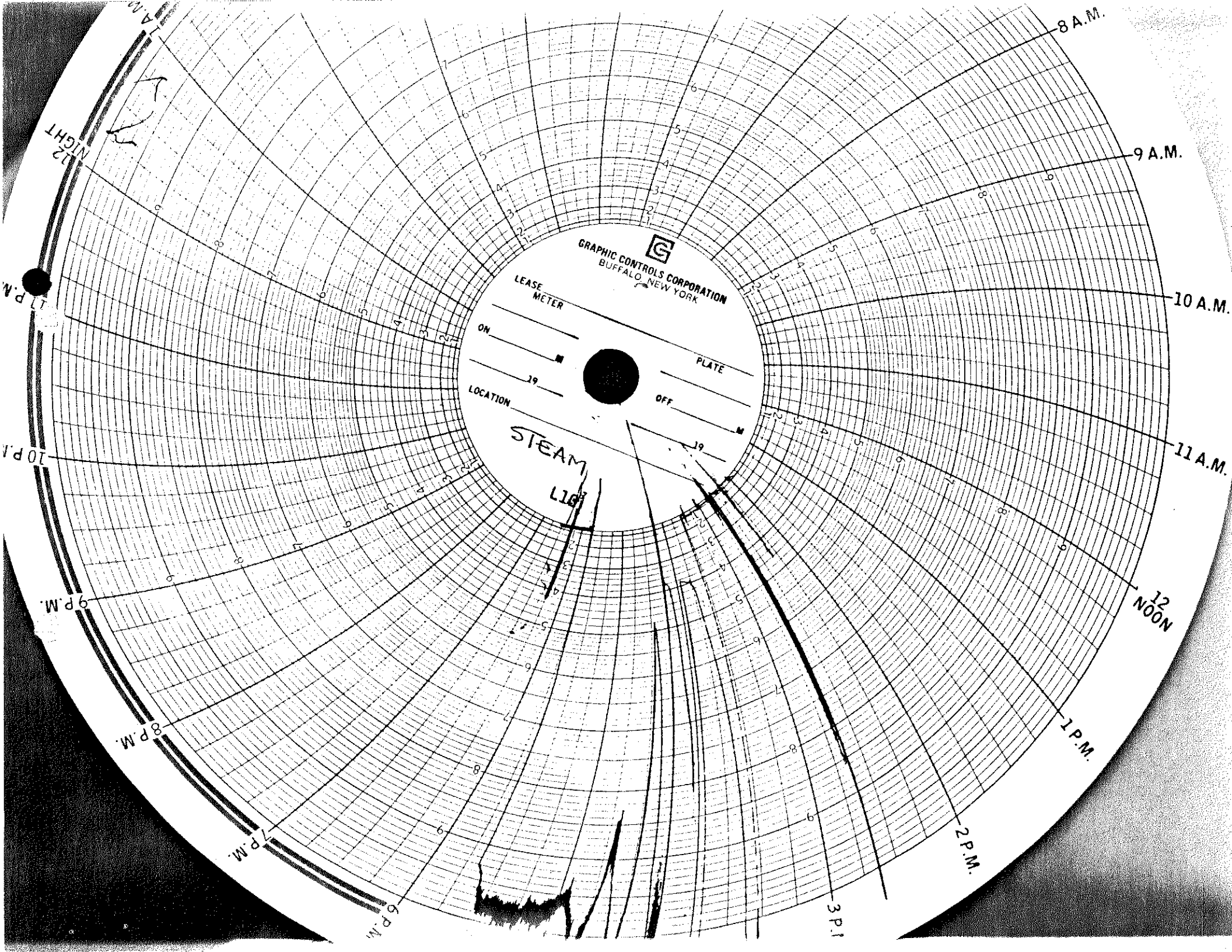
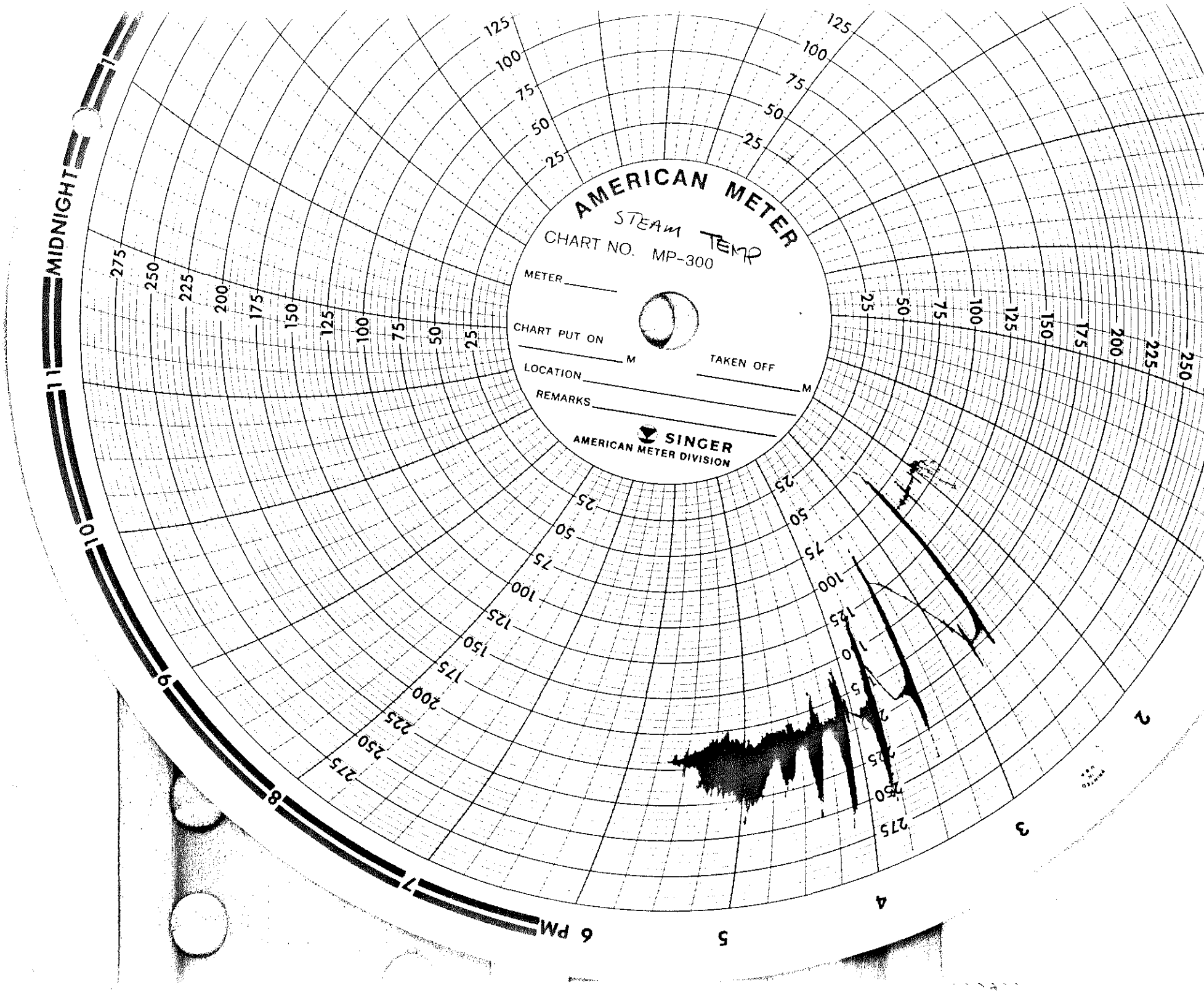

GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
LEASE
METER
ON
M
19
LOCATION
PLATE
OFF
M
19
STEAM
L10
8 A.M.
9 A.M.
10 A.M.
11 A.M.
12 NOON
1 P.M.
2 P.M.
3 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT


AMERICAN METER
STEAM TEMP
CHART NO. MP-300
METER
CHART PUT ON
M
TAKEN OFF
M
LOCATION
REMARKS
SINGER
AMERICAN METER DIVISION
MIDNIGHT
1
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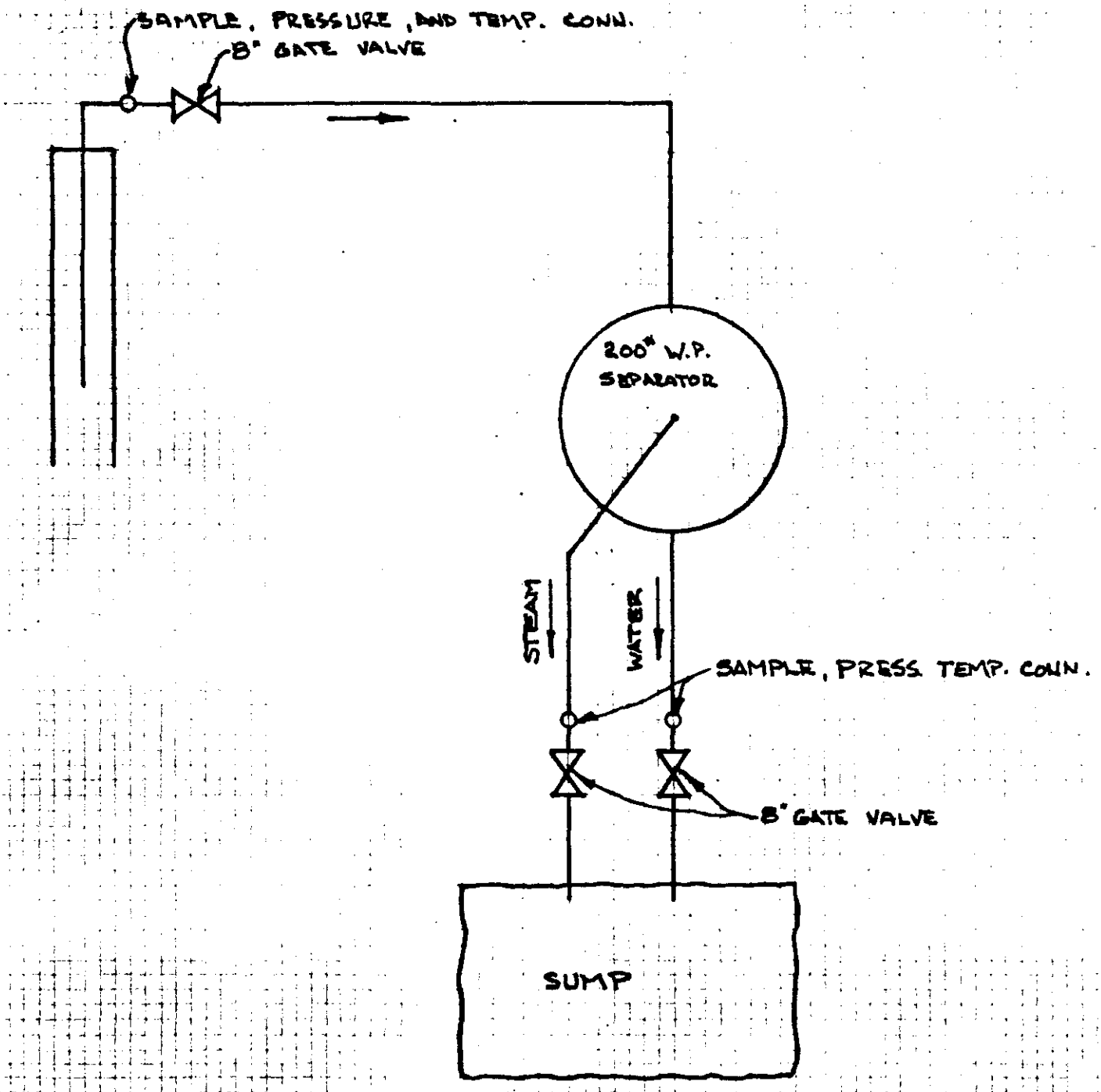
50
75
100
125
150
175
200
225
250
275

MEASUREMENT AND CONTROL ENGINEERING

Date: 6/26/80
Company: R & R Energy
Location: Sulpherdale
Well No.: 42-7
Test Interval:
MCE Technician:

SURFACE EQUIPMENT LAYOUT



MEASUREMENT AND CONTROL ENGINEERING

Date: 6/26/80
Company: R & R ENERGY
Location: Sulpherdale
Well No.: 42-7
Test Interval:
MCE Technician:

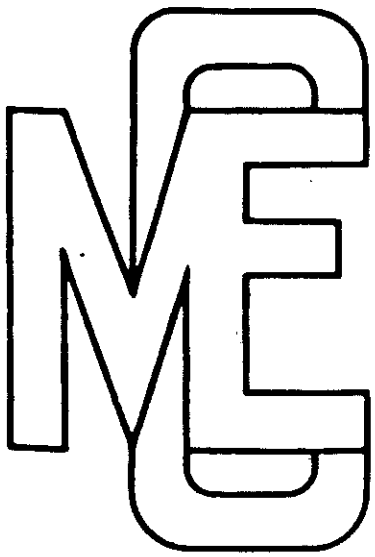
OPERATIONS LOG

Page 1 of 1

DATE & TIME	OPERATIONS LOG
1425	Halliburton start pump H_2 at 1000 SCFM thru 2 7/8 TBG at 3100 ft
1441	Fluid to surface stop pump N_2
1508	Start pump N_2 at 600 SCFM
1527	Fluid to surface
1725	Halliburton stop pumping
	SUMMAEY
	Well Stabilized at 40,009 1b/m/hr steam and 356 GPM
	water rate calculated over stable period from 1655 to 1725

Form 101-4-2

MCE TEST REPORT



COMPANY: R & R ENERGY

LOCATION: Sulpherdale

WELL NO.: 42-7

DATE: 6/26/80

MEASUREMENT AND CONTROL ENGINEERING

P.O. Box 987 Ventura, California 93001

Phone: (805) 648-7282

Long Beach, Calif. (213) 426-9794 Bakersfield, Calif. (805) 327-2394

R. A. "BUTCH" WISENER
GENERAL MANAGER
Mobile 353-4740
Office 722-5116

BYRON TOMLINSON
FIELD SUPERINTENDENT
Mobile 353-4723

GAMACHE WELL SERVICING, INC.

P.O. Box Drawer 490
Roosevelt, Utah 84066

6-26-80 Latched onto B. P. released same
Trip out of hole - Ran temp. & pressure recorder
Trip in hole with 2 7/8" 8rd to 3000'
Hooked up Halliburton pumped Nitrogen down
tubing 4 hrs to get flow reading

6-27-80 Trip out of hole and laid down tubing
Removed B.O.P's and installed Wellhead
Installed flagpole - Rig down unit - Loaded
rig up - Drove rig to Roosevelt Ut.
Cost 2960.50 17½ hrs.

Sulphurdale 42-7

R. A. "BUTCH" WISENER
GENERAL MANAGER
Mobile 353-4740
Office 722-5116

BYRON TOMLINSON
FIELD SUPERINTENDENT
Mobile 353-4723

GAMACHE WELL SERVICING, INC.

P.O. Box Drawer 490
Roosevelt, Utah 84066

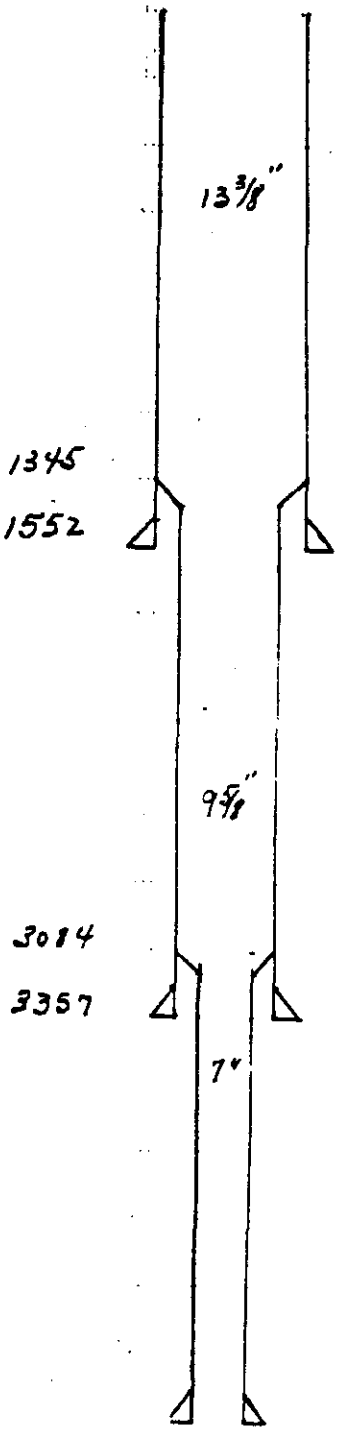
6-22-80 Drove to location north of Beaver Ut.
Looked over job to see what was needed
cost 370.00

6-23-80 Put in deadmen Drove rig from Roosevelt Ut.
cost 1969. 12½ Hrs

6-24-80 Rig up unit - Pulled wellhead - Installed
10" shaffer B.O.P's and spacer spool with 8" outlet
Picked up 104 jts 2⅞ N-80 6.5# 8rd tubing off
ground 3214'
Trip out of hole with same tubing
installed 7" Retrievable Bridge Plug 26# Halliburton
Trip in hole with same to 3214' and set
Pulled 4 stands - Close well in
Cost 2138. 14 hrs

6-25-80 Trip out of hole with 96 jts 2⅞
Rig up casing crew to pull casing
Picked up spear for 7" 26# casing - Unlanded
casing 130,000# to unland 89,000 string weight
Laid down casing 75 jts 3045'
Shot fluid - Ran temp. survey
Trip in hole with 2⅞ and retrieving head
to get B.P. - Close in well
cost 2148. 14 Hrs

Completion Program For Well # 42-7



1. Move in equipment and kill well
2. Install and test B.O.P.
3. Remove 7" Tie back liner
4. Run 9 5/8 retrievable bridge plug and set at 3050 + -
5. Flange up surface test head and wire line lubricator and perforate the following interval 2850 to 2750
6. Conduct test as per testing program of this interval
7. On completion of test kill well and make up retrieving tool and run in hole moving plug to 2700' + -
8. Remove retrieving tool from well and rig up surface head and wireline lubricator run in hole and perforate the following interval 2650 to 2550
9. On completion of test kill well and make up retrieving tool run in hole and move ret. plug to 2350 + - pull out of hole
10. Install surface head and lubricator and perforate the follwoing interval 2250 to 2150
11. After completion of flow test kill well and run retrieving tool in and retrieve R.B.P.
12. Install christmas tree and M.O.E.

PACIFIC Sales & Service Co. OILFIELD

P. O. Box 1632
Ventura, Ca. 93001
(805) 653-1569

July 21, 1980

R & R Energy
Mr. Bob Hulber
1115 N Ash St
E Layton, Utah 84041

Dear Bob:

In regards to the test conducted on your well number 42-7, located at Sulpherdale, Utah.

After removing the 7" Tie back from well. The 2 7/8 Eue 8rd tubing was run to a depth of 3000' and a pressure and temperature survey was run. Fluid level was found at 1370 feet. Halliburton's nitrogen pump truck was hooked up to tubing and nitrogen pumped down tubing at a rate of 300 to 500 cubic feet per minute.

A stabilized flow rate of 356 GPM and 40,009 lb/m/hr steam was observed for duration of flow test.

After the flow test, another temperature and pressure survey was run and the fluid lever was found to be at 975'. There was no indication of depletion present during the course of the test.

Before a stabilized flow rate occured the well was flowing at a rate in excess of 1000 GPM.

We found nothing to indicate the well would not produce at a larger flow rate.

Yours truly,

Hal Fry

Hal Fry
Pacific Oilfield Sales & Service Co

cjg

INSTRUMENT SERVICE

Gary Foster
2960 N. Ventura Ave.
Ventura, California 93001
Phone 805-649-2228
Bakersfield 805-324-2208

Att: Bob Helber
R&R Energies

Subject- Sulphurdale, Beaver Utah.

After completed work was gone over by myself and one other consultant, I have come to the following conclusions.

1- Taking bottom hole pressure and temperature information before and after flow period , I believe the wells probable maximum flow rate would be somewhere between twenty eight and thirty two barrels per minute.

2- Thermal incline (the ability of the well bore to heat up.) indicates that it might be posible to obtain above flow rates if artificial lift were used at a depth of 3500 feet.

One problem that could be encounterd is the posibility of steam flash. This could cut flow rates at this depth. If you will note the gradient, (pressure per square inch per foot of heighth) between 3000 feet to 4000 feet and 4000 feet to 4400 feet indicates that if bottom hole pressure is relieved to much from this area flash could occur.

One way to get away from this problem is to try artificial lift at a deeper depth.

3- There is some skin damage,(imediate well bore damage) but it is very slight, and should give very little if any problems.

4- No well life or reservoir information can be given because of lack of pressure history information.

In conclusion I believe that the Sulphur dale well will deliver the 1000 gallons per minute without any problems.

The above rates do not take into account friction, or insulation of surface equipment.

Gary D Foster

Gary D Foster

INSTRUMENT SERVICE

2960 N. Ventura Ave.
Ventura, California 93001
Phone 805-649-2228
Bakersfield 805-324-2208

SUBSURFACE SURVEY DATA

Company R & R Energies Field Beaver, Utah Date 6-25-80 / Run #1
Well Sulphurdale Tubing PSI 0 / Casing PSI 0 /
Purpose 25' per minute Bottom Hole Temperature Survey Status
Depth of Inst. Zero KB = 22' Pickup Temp. Max 340.6°
Casing Size 13 3/8 Depth Liner Size 9 5/8--7" Top 1326--Plug Bottom
Perforations
Tubing None

Depth	Temp	Depth	Temp	Depth	Temp	Depth	Temp
1800	286.5	2125	307.0	2450	310.8	2775	310.1
1825	290.3	2150	307.0	2475	311.1	2800	310.1
1850	291.3	2175	307.1	2500	310.3	2825	310.1
1875	292.7	2200	309.8	2525	311.1	2850	310.1
1900	295.1	2225	311.1	2550	310.3	2875	310.1
1925	296.8	2250	311.6	2575	311.0	2900	310.1
1950	298.5	2275	311.8	2600	310.1	2925	310.1
1975	300.3	2300	312.1	2625	310.5	2950	310.1
2000	302.3	2325	310.6	2650	310.5	2975	310.1
2025	304.0	2350	311.0	2675	310.1	3000	310.1
2050	304.6	2375	311.0	2700	310.1		
2075	305.8	2400	311.1	2725	310.1		
2100	306.6	2425	311.3	2750	310.1		

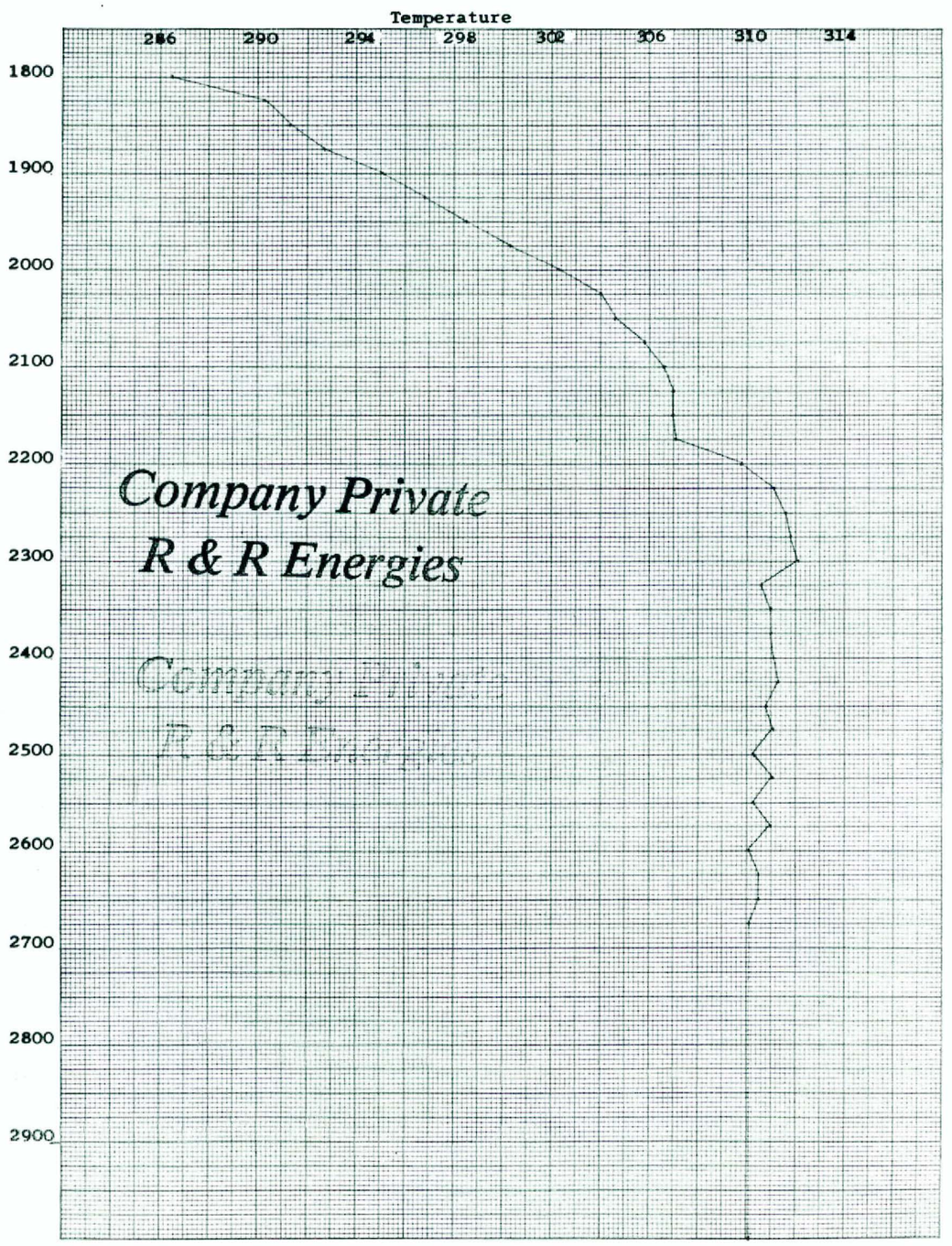


Fig 2

INSTRUMENT SERVICE

2960 N. Ventura Ave.
Ventura, California 93001
Phone 805-649-2228
Bakersfield 805-324-2208

SUBSURFACE SURVEY DATA

			Run #2	Run #3
Company	R & R Energies	Field Beaver, Utah	Date 6-26-80	6-26-80
Well	Sulphurdale	Tubing PSI 0	Casing PSI 0	
Purpose	Bottom Hole Pressure Gradient Survey		Status	
Depth of Inst.		Zero KB = 22' Pickup	Temp. Max 340.6°	
Casing Size	13 3/8 Depth	Liner Size 9 5/8--7"	Top 1326--3148	Bottom
Perforations				
Tubing	Hung to 3048 2 7/8"			

Run #2			Run #3		
Depth	PSI	Grad	Depth	PSI	Grad
0	0		0	0	
---	---	---	1000	18	.018
2000	321	.161	2000	337	.319
3000	724	.403	3000	753	.416
4000	1140	.416	4000	1150	.397
4400	1297	.393	4400	1297	.368
5000	1520	.372	5000	1535	.397
6000	1924	.404	6000	1939	.404

Fluid Level Tests			
Date	Time	Fluid	Level
6-25	0930		1271
6-26	0710		1302
6-27	0905		975

Tests indicate good perm.
No production index available because of increase in bottom hole pressure.
This could indicate minor skin or well bore damage.

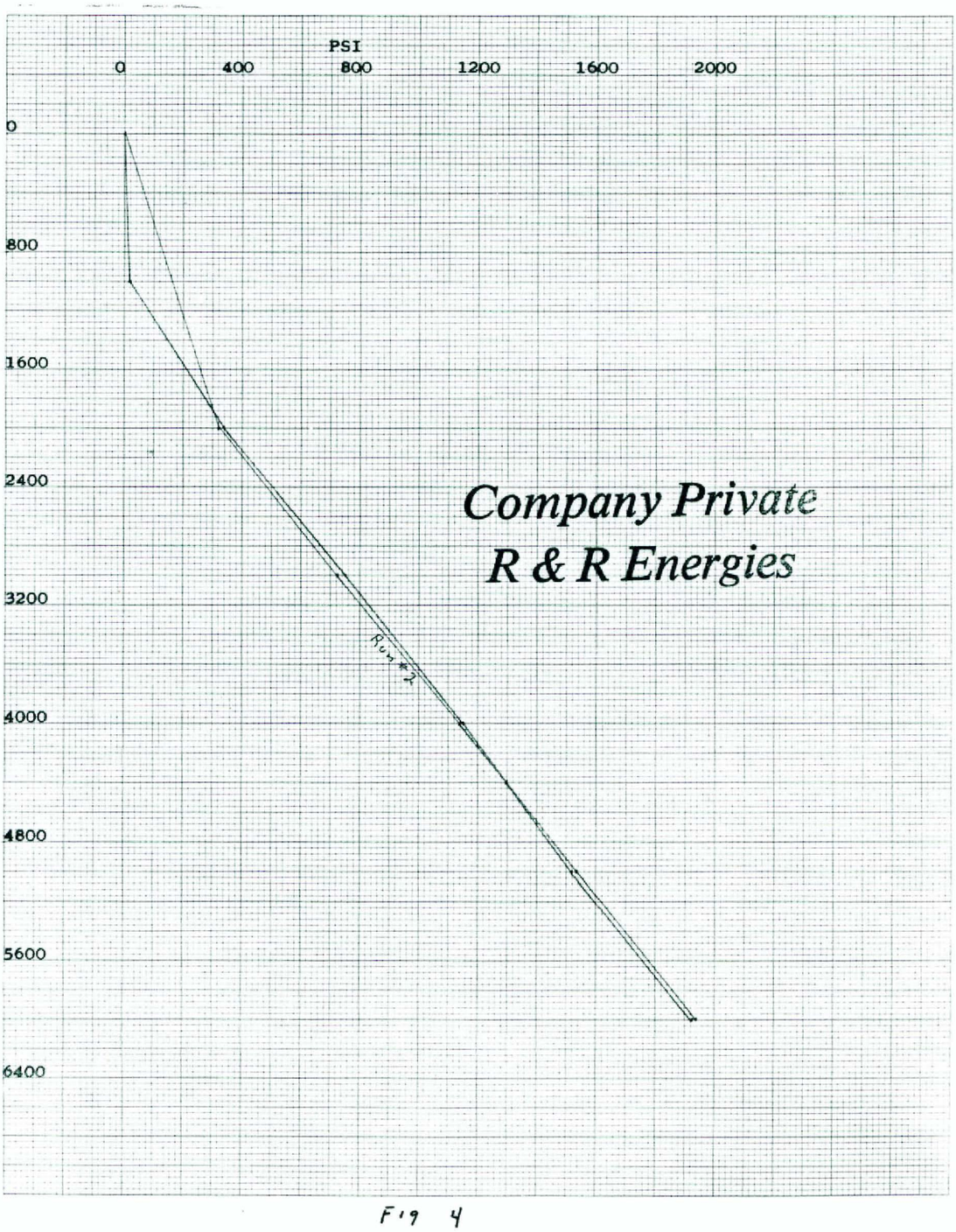


Fig 4

INSTRUMENT SERVICE
2960 N. Venture Ave.
Ventura, California 93001
Phone 805-649-2228
Bakersfield 805-324-2208

SUBSURFACE SURVEY DATA

Company R & R Energies Field Beaver, Utah Date Run #2 6-26-80 / Run #3 6-26-80
Well Sulphurdale Tubing PSI 0 / Casing PSI 0 /
Purpose Bottom Hole Temperature Survey Status
Depth of Inst. Zero KB = 22' Pickup Temp. Max 340.6°
Casing Size 13 3/8 Depth Liner Size 9 5/8--7" Top 1326--3148 Bottom
Perforations
Tubing 2 7/8" Hung to 3048

Run #2			Run #3		
Time	Depth	Temp	Time	Depth	Temp
0725	0	78.3	1803	0	83.4
---	---	---	1810	1000	181.0
0734	2000	306.6	1817	2000	317.3
0742	3000	315.5	1824	3000	330.9
0749	4000	337.8	1831	4000	337.1
0755	4400	340.6	1838	4400	340.6
0802	5000	337.9	1845	5000	337.3
0810	6000	336.6	1853	6000	336.8

Well was produced @ high rate between tests

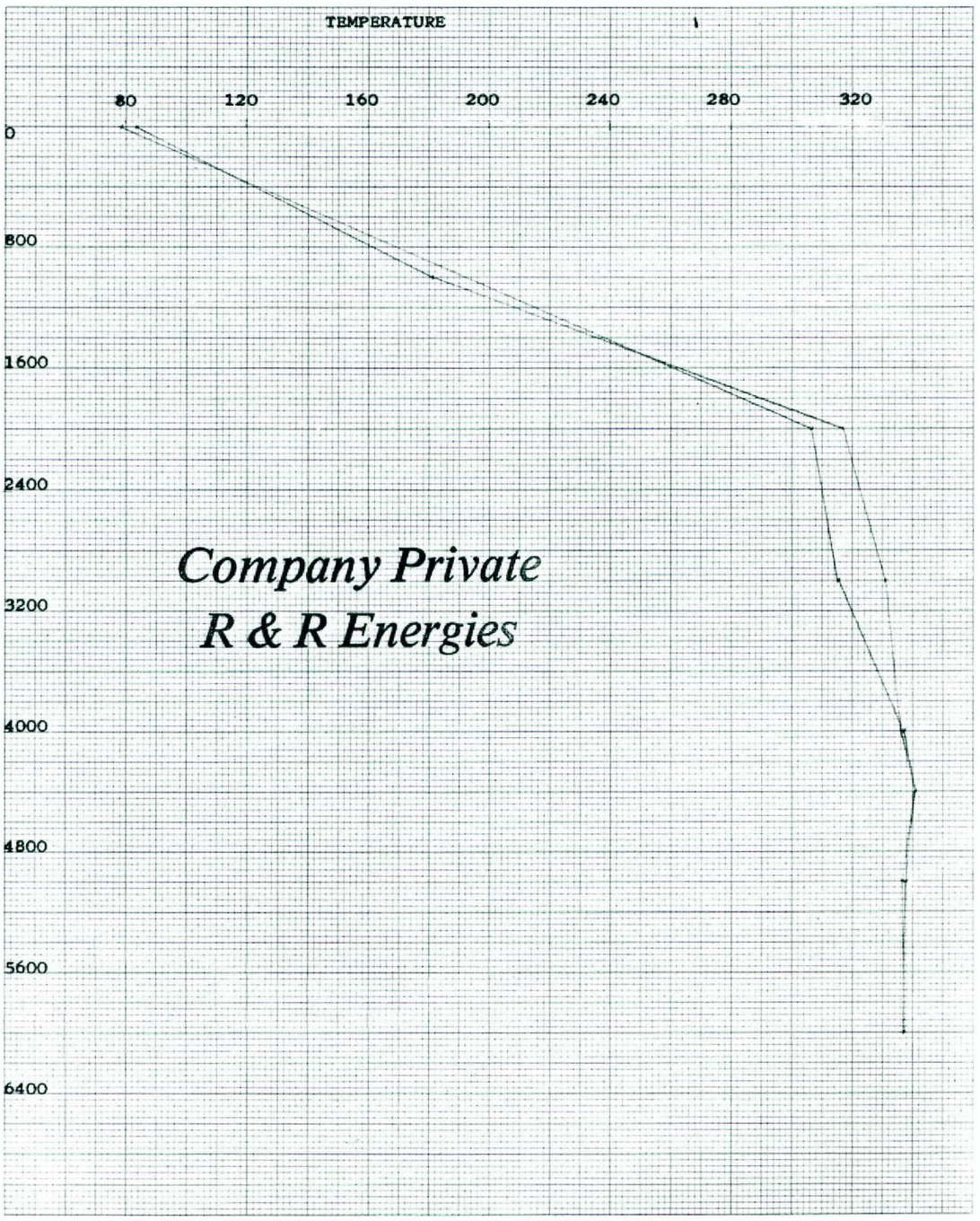


Fig 3

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CENTRAL LABORATORY DENVER, COLORADO

WATER QUALITY ANALYSIS
LAB-ID # 182601 RECORD-# 105395

1ST RETRIEVAL THROUGH "LABPRIM" 09/13/80

SAMPLE LOCATION: R&R ENERGIES WELL NO. 42-7
STATION ID: 383402112342201 LAT.LONG.SEQ.: 383402 1123422 01
DATE OF COLLECTION: BEGIN--800626 END-- TIME--2000
STATE CODE: 49 COUNTY CODE: 001 PROJECT IDENTIFICATION: 464990090
DATA TYPE: 2 SOURCE: GROUND WATER GEOLOGIC UNIT:
COMMENTS: UNIQUE-#:
SECTION 7, T26S, R6W SLM. KICKED OFF BY NA: 4300-4400 FEET, MET.
MARBLE OF PENNSYLVANIAN, AGE, FORMATION DEFINITELY QUIRRH: K
RERUNS: CA=478 NA=1100,K=190,CL=1800,SO4=600

MAIL TO UTAH
SCHEDULES USED: 1023 1038 0 0
TOTAL PARAMETERS: 29 HCODE = 16
COST OF ANALYSIS $ 52.40 BILLING CODE: 49
SUBMIT CORRECTIONS TO THE DENVER CENLAB LAB
WITHIN 15 DAYS FROM 09/17/80. INDICATE THE
CENTRAL LAB ID # AND RECORD # WITH RESPONSE.
WRD-QW FILE STORAGE WAS REQUESTED AND THE
STATION HEADING INFORMATION IN THE WRD STATION
HEADER FILE WAS SUBSTITUTED HERE.PLEASE CHECK.

ALK,TOT(CACO3)	MG/L	62	NITR TOT NO2+NO3 -N	MG/L	0.02
ANALYZING AGENCY		80020	NITR TOT NH4 AS N	DETR.	DELETED
BORON DISSOLVED	UG/L	11000	NITR. TOT NH4 AS NH4	MG/L	0.68
CALCIUM DISS	MG/L	49	PH LAB		8.6
CHLORIDE DISS	MG/L	1700	POTASSIUM DISS	MG/L	200
FLUORIDE DISS	MG/L	7.8	POTASSIUM 40,D.PCI/L		150
HARDNESS NONCARB	MG/L	66	RESIDUE DIS CALC SUM	MG/L	3810
HARDNESS TOTAL	MG/L	130	RESIDUE DIS TON/AFT		5.18
LITHIUM DISSOLVED	UG/L	5000	SAR		42
MAGNESIUM DISS	MG/L	1.4	SILICA DISSOLVED	MG/L	170
NITR DIS NO2+NO3 -N	MG/L	1.8	SODIUM DISS	MG/L	1100
NITR TOT NO2 AS N	MG/L	0.04	SODIUM PERCENT		86
NITR TOT NO3 AS N	MG/L	0.00	SP. CONDUCTANCE LAB		6213
			SULFATE DISS	MG/L	520

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM DISS	49	2.445	CHLORIDE DISS	1700	47.957
MAGNESIUM DISS	1.4	0.115	FLUORIDE DISS	7.8	0.411
POTASSIUM DISS	200	5.114	SULFATE DISS	520	10.826
SODIUM DISS	1100	47.850	ALK,TOT(CACO3)	62	1.239
			NITR DIS NO2+N	1.8	0.129
TOTAL		55.524	TOTAL		60.561

PERCENT DIFFERENCE = -4.34

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CENTRAL LABORATORY DENVER, COLORADO

WATER QUALITY ANALYSIS
LAB-ID # 184014 RECORD-# 106588

1ST RETRIEVAL THROUGH "LABPRIM" 09/13/80

SAMPLE LOCATION: R&R ENERGIES WELL NO. 42-7
STATION ID: 383402112342201 LAT.LONG.SEQ.: 383402 1123422 01
DATE OF COLLECTION: BEGIN--800626 END-- TIME--2100
STATE CODE: 49 COUNTY CODE: 001 PROJECT IDENTIFICATION: 464990090
DATA TYPE: 2 SOURCE: GROUND WATER GEOLOGIC UNIT:
COMMENTS: UNIQUE-#:
COLLECT NEAR END OF TEST; K. THOMPSON
RERUNS: CA = 13, MG = 1.7, NA = 170, K = 32, CL = 180, SO4 = 150

MAIL TO UTAH
SCHEDULES USED: 1023 1038 0 0
TOTAL PARAMETERS: 29 HCODE = 16
COST OF ANALYSIS $ 52.40 BILLING CODE: 49
SUBMIT CORRECTIONS TO THE DENVER CENLAB LAB WITHIN 15 DAYS FROM 09/17/80. INDICATE THE CENTRAL LAB ID # AND RECORD # WITH RESPONSE.
WRD-QW FILE STORAGE WAS REQUESTED AND THE STATION HEADING INFORMATION IN THE WRD STATION HEADER FILE WAS SUBSTITUTED HERE.PLEASE CHECK.

ALK,TOT(CACO3)	MG/L	180	NITR TOT NO2+NO3 -N	MG/L	0.01
ANALYZING AGENCY		80020	NITR TOT NH4 AS N	MG/L	27
BORON DISSOLVED	UG/L	1600	NITR. TOT NH4 AS NH4	MG/L	33
CALCIUM DISS	MG/L	15	PH LAB		7.5
CHLORIDE DISS	MG/L	170	POTASSIUM DISS	MG/L	32
FLUORIDE DISS	MG/L	6.8	POTASSIUM 40,D.PCI/L		24
HARDNESS NONCARB	MG/L	0	RESIDUE DIS CALC SUM	MG/L	675
HARDNESS TOTAL	MG/L	45	RESIDUE DIS TON/AFT		0.92
LITHIUM DISSOLVED	UG/L	610	SAR		11
MAGNESIUM DISS	MG/L	1.8	SILICA DISSOLVED	MG/L	29
NITR DIS NO2+NO3 -N	MG/L	0.02	SODIUM DISS	MG/L	170
NITR TOT NO2 AS N	MG/L	0.01	SODIUM PERCENT		81
NITR TOT NO3 AS N	MG/L	0.00	SP. CONDUCTANCE LAB		1250
			SULFATE DISS	MG/L	140

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM DISS	15	0.749	CHLORIDE DISS	170	4.796
MAGNESIUM DISS	1.8	0.148	FLUORIDE DISS	6.8	0.358
POTASSIUM DISS	32	0.818	SULFATE DISS	140	2.915
SODIUM DISS	170	7.395	ALK,TOT(CACO3)	180	3.596
			NITR DIS NO2+N	0.02	0.001
TOTAL		9.110	TOTAL		11.666

PERCENT DIFFERENCE = -12.30

QUALITY CONTROL INFORMATION FOR LAB ID # 184014 RECORD # 06588

VALUE HAS BEEN VERIFIED BY LAB FOR BORON DISSOLVED	VALUE =	1600.000
***THE FOLLOWING PARAMETER MAY CONTRIBUTE TO CATION SUM--LI DISS	VALUE =	610.000
**CATION/.01(CONDUCTANCE) RATIO IS EITHER BELOW 0.92 OR ABOVE 1.24---------RATIO	VALUE =	0.728
**CALCULATED SOLIDS/CONDUCTANCE RATIO IS EITHER BELOW 0.55 OR ABOVE 0.81---RATIO	VALUE =	0.539
**THE PERCENT DIFFERENCE COMPUTED FOR THE ANALYSIS DOES NOT AGREE WITH THE CURVE	VALUE =	2.025

QUALITY CONTROL INFORMATION FOR LAB ID # 182601 RECORD # 05395

CHECKED OK: NITR DIS NO2+NO3 -N IS > NITR TOT NO2+NO3 -N		
**LC 304,NO2 + NO3 AS N TOT IS LESS THAN LC 302,NITR. NO2 AS N TOTAL	VALUE =	0.020
VALUE HAS BEEN VERIFIED BY LAB FOR BORON DISSOLVED	VALUE =	11000.000
***THE FOLLOWING PARAMETER MAY CONTRIBUTE TO CATION SUM--LI DISS	VALUE =	5000.000
**CATION/.01(CONDUCTANCE) RATIO IS EITHER BELOW 0.92 OR ABOVE 1.24---------RATIO	VALUE =	0.893
**THE PERCENT DIFFERENCE COMPUTED FOR THE ANALYSIS DOES NOT AGREE WITH THE CURVE	VALUE =	1.995

NITR TOT NH4 AS N WAS DELETED BECAUSE: INSUFFICIENT AMOUNT OF WATER.