STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Yates Petroleum Corporation
Case No. 7874
5/25/83 Examiner Hearing
Exhibit No. 1

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☒ no

II. Operator: Yates Petroleum Corporation

Address: 207 S. 4th Street; Artesia, N.M. 88210

Contact party: Nelson Muncy Phone: (505) 746-3558

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Nelson Muncy Title Engineer

Signature: Nelson Muncy Date: 4/22/83

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Subject well logs are on file with NMOCD in Hobbs.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office

FORM C-108 Supplement

LDM Amoco "GX" State #1

I. Purpose:

To re-enter the D/A LDM Amoco "GX" State #1 and convert to a salt water disposal status.

II. The Operator is: Yates Petroleum Corporation
207 South Fourth Street
Artesia, New Mexico 88210

Attn: Nelson Muncy

III. Well Data:

See attached well data sheet.

V. Ownership map attached (Midland Map Co.) with a scale of: 1" = 2,000'.
Well and lease information posted through 4-15-83. Map has a two-mile radius circle and a one-half mile radius circle.

VI. There are no wells except for the proposed disposal well within the area of review, as indicated by the attached map. This well was D/A on 4-18-77 (Schematic attached) see attached C-105 and/or C-103, completion information.

VII. Data on proposed operations:

(1). The proposed average daily rate of injection is 2,000 bbls per day and the estimated ultimate maximum daily rate is 4,000 bbls per day. The estimated total volume of fluids to be injected is 2.19×10^7 bbls.

(2). The system will be closed with an oil seal.

(3). The average injection pressure is 0 to 2,077 PSIG.

(4). The source of the injection fluid will be produced water from the following Yates Petroleum Corporation wells that are producing from the Permo-Upper Penn zone in the general area of the subject well, identified as follows:

a. Woodpecker "SY" St. #1
660' FNL & 660' FEL
Sec. 21-T14S-R33E
See attached analysis.

b. Woodpecker "SY" St. #2
1980' FNL & 660' FEL
Sec. 21-T14S-R33E
See attached analysis.

c. Woodpecker "SY" St. #3
660' FNL & 1800' FEL
Sec. 21-T14S-R33E
See attached analysis.

d. Woodpecker "SY" St. #4
660' FNL & 1980' FWL
Sec. 21-T14S-R33E
See attached analysis.

e. Woodpecker "SY" St. #5
1980' FNL & 1980' FEL
Sec. 21-T14S-R33E
No analysis available at this time. Any analysis should be consistant with those of other wells in this area.

f. Swan "VB" St. #1
1980' FSL & 660' FEL
Sec. 21-T14S-R33E
See attached analysis.

g. Dove "VK" St. #1
1980' FSL & 660' FEL
Sec. 3-T14S-R33E
See attached analysis.

h. Hanladdie "WR" St. #1
1980' FSL & 1980' FWL
Sec. 9-T14S-R33E
See attached analysis.

The water produced from subsequently drilled wells in this area will also utilize the disposal well covered by this application.

The injection compatibility appears acceptable because the clorides in the above wells range from 10,879-38,991 MG/L (average 17,907 MG/L) and the chlorides are 18,000 MG/L from the attached DST #5 in the proposed injection zone. The proposed injection zone is included within the vertical limits of the Saunders Permo-Upper Penn pool, as correlative with the Adobe Gray 35-1 in unit N by Sec. 35-T14S-R33E, the type well for the field rules. However, the proposed injection zone is stratigraphically lower than the oil productive zone in this field.

There are no producing wells in this area of review.

(5). The subject well was D/A and there is no way to obtain a current water analysis.
DST #5 (10,410 to 450') reported chlorides at 18,000 MG/L.

VIII. Geological Data:

Injection zone: Canyon (Permo-Upper Penn) 10,384-585' Dolomite, wht creamy, xln, vuggy good porosity, decreasing porosity with depth.

The underground source of drinking water in this area is Ogollala formation of Tertiary age, the base of which is estimated at 250' at the location of the proposed disposal well. The Chinlee formation is also a fresh water aquifer which immediately underlies the Ogollala formation. Both of these aquifers are behind the surface pipe of the well covered by this application.

IX. The proposed stimulation program is to break down the perforations from 10,384-585' with 5,000 gallons of 15% acid.

If necessary, an acid fracture will be performed.

X. CNL, FDC, DLL, and FXO logs have been submitted to the NMOCD in Hobbs. DST test data attached.

XI. No fresh water wells exist within the one-mile radius of the injection well. The nearest fresh water well is about 660' FSL & 660' FEL of Sec. 18-T14S-R33E. Total chlorides from this fresh water well are reported as 40-80 MG/L.

XII. Available geological and enineering data have been examined and no evidence of open faults or any other hydrologic connections between the disposal zone and any underground fresh water aquifers have been found.

XIII. The off-set operators listed below have been furnished a copy of this application by certified mail.

Yates Petroleum Corporation
207 S. 4th Street
Artesia, NM 88210

Santa Fe Exploration
P.O. Box 1136
Roswell, NM 88201

Texaco, Inc.
P.O. Box 88107
Dallas, Tx 75388

Gulf Oil Corporation
P.O. Box 1150
Midland, Tx 79701

Superior Oil Company
P.O. Box 1900
Midland, Tx 79702

The surface owners listed below have been furnished a copy of this application by certified mail.

Geraldine Tulk
Box 666
Lovington, NM 88260

Jerry & Bob Dean
Box 845
Lovington, NM 88260

Mr. B. F. Good
% Goods, Inc.
Box 333
Caprock "NM 88213

N.M. State Land Office
P.O. Box 1148
Santa Fe, NM 87501

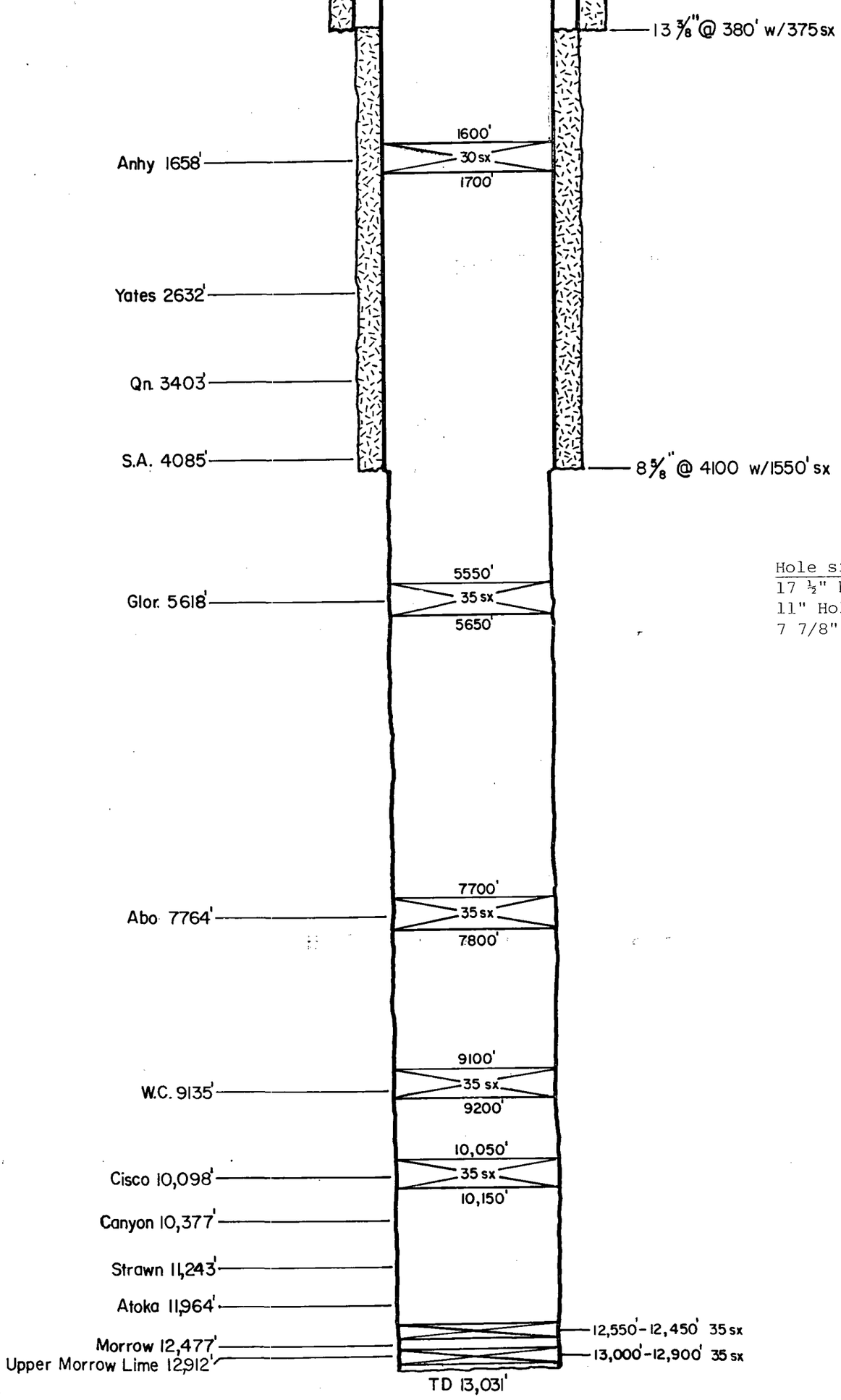
Additional data submitted:

Petroleum information (P.I) cards submitted on all wells within a two-mile radius circle.

YATES PETROLEUM CORPORATION

LDM Amoco "GX" State No. 1
660' FSL - 1926' FWL
Sec. 19, T-14-S, R-33-E
Lease #L-45

CURRENT WELL DIAGRAM



Hole sizes:
17 ½" hole to 380'
11" Hole to 4100'
7 7/8" Hole to 13,031' (TD)

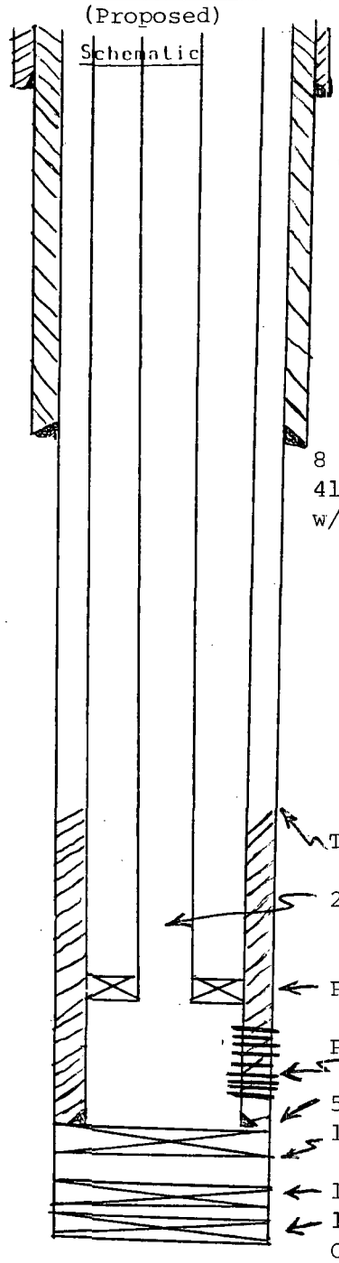
D/A: 4-18-77

INJECTION WELL DATA SHEET

Yates Petroleum Corporation	LDM Amoco "GX" St. #1	(State Lease # L-45)
OPERATOR	LEASE	

#1	660 FSL & 1926 FWL	19	14S	33E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

(Proposed)
Schematic



Tabular Data

Surface Casing

Size 13 3/8" Cemented with 375 sx.

TOC Surface feet determined by calculation

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8" Cemented with 1550 sx.

TOC circulated feet determined by calculation

Hole size 11"

Long string

Size 5 1/2" Cemented with approx. 1000 sx.

TOC approx 7000 feet to be determined by Bond log

Hole size 7 7/8"

Total depth 10,650' (OTD 13,031')

Injection interval

10,384 feet to 10,585 feet
(perforated or open-hole, indicate which)

Tubing size 2 7/8" lined with Plastic (material) set in a

Baker Model-R (Platic coated) (brand and model) packer at 10,300 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Canyon

2. Name of Field or Pool (if applicable) Undesignated

3. Is this a new well drilled for injection? /_/ Yes /X/ No

If no, for what purpose was the well originally drilled? Oil and/or gas test

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No, production casing was not run. The well was plugged as shown in the attached schematic.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None in the section. Approximately one mile east is the Saunders Permo Upper-Penn pool. Corresponding depth of pay in this well is from 10,050 feet to 10,384 feet.

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

Form C-105
Revised 1-1-65

RECEIVED MAY 2 1977

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-45

1a. TYPE OF WELL

b. TYPE OF COMPLETION: OIL WELL [ ] GAS WELL [ ] DRY [X] OTHER

NEW WELL [ ] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: LDM-AMOCO GX State

2. Name of Operator: Yates Petroleum Corporation

9. Well No.: 1

3. Address of Operator: 207 South 4th Street - Artesia, NM 88210

10. Field and Pool, or Wildcat: Wildcat

4. Location of Well

UNIT LETTER N LOCATED 660 FEET FROM THE South LINE AND 1926 FEET FROM THE West LINE OF SEC. 19 TWP. 14S RGE. 33E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
1-6-77	4-9-77	Dry	4262' GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
13031			→	0-13031	

24. Producing Interval(s), of this completion — Top, Bottom, Name: Dry

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: CNL/FDC-DLL/Rxo

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	380'	17½"	375 sacks	
8-5/8"	32#	4100'	11"	1550 sacks	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

31. Perforation Record (Interval, size and number)

Sent to Hobbs 6-7-77

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments: DST's

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Christine Gonzales TITLE Geol. Secty DATE 4-18-77

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than [illegible] days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Rustler Anhy	1658	T. Canyon	10377	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	11243	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	11964	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	2632	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen	3403	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4085	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	5618	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	7764	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp	9135	T. Morrow	12477	T. Chinle		T.	
T. Penn.		T. Upr Miss. Ls	12912	T. Permian		T.	
T. Cisco (Bough C)	10098	T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	190	1677	Red bed	12255	12360	105	Lime & shale
1677	2680	1003	Anhy & salt	12360	12717	357	Lime, shale & sand
2680	3521	841	Anhy	12717	13031	314	Lime & shale
3521	3682	161	Anhy & sand				
3682	4054	372	Anhy				
4054	7644	3590	Lime				
7644	9710	2066	Lime and shale				
9710	10386	676	Lime, shale & chert				
10386	10500	114	Lime & shale				
10500	10538	38	Lime, shale & chert				
10538	11606	1068	Shale & lime				
11606	11836	230	Lime, shale & sand				
11836	11877	41	Lime, shale & chert				
11877	12207	330	Shale & lime				
12207	12255	48	Shale, sand &lime				

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: L-45

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL [ ] GAS WELL [ ] OTHER- P & A

7. Unit Agreement Name:

Name of Operator: Yates Petroleum Corporation

8. Farm or Lease Name: LDM-AMOCO GX State

Address of Operator: 207 South 4th Street - Artesia, NM . 88210

9. Well No.: 1

Location of Well: UNIT LETTER N , 660 FEET FROM THE South LINE AND 1926 FEET FROM THE West LINE, SECTION 19 TOWNSHIP 14S RANGE 33E NMPM.

10. Field and Pool, or Wildcat: Wildcat

15. Elevation (*Show whether DF, RT, GR, etc.*): 4262' GR

12. County: Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [X]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER [ ]	

Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

TD 13031' . This well was plugged as follows:

13000-12900'	35 sacks
12550-12450'	35 sacks
10150-10050'	35 sacks
9200-9100'	35 sacks
7800-7700'	35 sacks
5650-5550'	35 sacks
1700-1600'	30 sacks

5 sacks 10' surface and dry hole marker installed

Heavy mud was placed between each plug.

The location will be cleaned, pits levelled and filled and your office will be notified when ready for inspection.

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

SIGNED C. T. Loudermilk TITLE Geol. Secty DATE 4-15-77

APPROVED BY [signature] TITLE OIL & GAS INSPECTOR DATE JUN 20 1977

CONDITIONS OF APPROVAL, IF ANY:

DRILL STEM TESTS

Yates Petroleum Corporation
LDM-AMOCO GX State No. 1 (L-45 Lease #)
Section 19-T14S-R33E
Lea County, New Mexico

DST No. 1 - 10052-10168' TO 30", SI 60", OP 60", SI 120". TO w/blow, Reop w/blow and died. Recovered: - 700' DM 3100' SW - no gas. Sampler: 1800 cc salt water. Pressures: HP 4828-4786'; IFP 518-1549; ISIP 1679; FFP 1549-1634; FSIP 1677. BHT 146 deg.

DST #2 - 10190-10321' - TO 30", SI 90", OP 120", SI 240". Op w/fair blow, GTS in 18" increased to 50# on 1/4" choke. Reop w/weak blow, 2# on 1/4" choke, decreased to 1/2#. Recovered: 4 BOCM, 12 BO&GCM, 5 BGC sulphur water. Sampler: 1400 cc O & G cut water. Pressures: HP 4845-4803; IFP 345-432; ISIP 3655; FFP 432-1079; FSIP 3312.

* DST #3 - 10332-10386' - TO 30", SI 90", TO 30", SI 60". Op w/good blow, 2# on 1/4" choke decreasing. Reop w/weak blow, dead in 15". Recovered: 300' of black mud and water, 8250' of salty sulphur water, no oil or gas. Sampler: 160#, 1900 cc sulphur water, no oil or gas. Pressures: HP 4972-4930' IFP 1036-3655; ISIP 3826; FFP 3655-3826; FSIP 3826.

DST #4 - 12656-830' - TO 30", SI 90", OP 120", SI 180". Op w/weak blow. Reop w/weak blow. No GTS. Recoveree: 1500' WC, 289' GCM. Sampler: No fluid. 540 psi 1.4 cfg. Pressures: HP 6205-6205; IFP no reading. ISIP 909; FFP 909-974; FSIP 1509.

* DST #5 - 10410-450 (Straddle) - TO 30", SI 60", TO 60", SI 90". TO w/strong blow. Reop w/strong blow, 5# on 1/8" choke after 45", decreased to weak blow. Recovered: 1000' WB, sli GC slphur wtr at 7646'. Sampler: 2800 cc sulphur water, 18000 ppm cl. Pressures: HP 5204-5204, IFP 1388-3393, ISIP 3850, FFP 3419-3850, FSIP 3850.

* Proposed injection zone

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O BOX1499

HOBBS, NEW MEXICO 88240

COMPANY : YATES PETROLEUM
DATE : 11-22-82
FIELD,LEASE&WELL : WOODPECKER #1
SAMPLING POINT: WELLHEAD
DATE SAMPLED : 11-19-82

SPECIFIC GRAVITY = 1.026
TOTAL DISSOLVED SOLIDS = 38398
PH = 7.59

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	80	1603.
MAGNESIUM	(MG)+2	180	2188.
SODIUM	(NA).CALC.	408	9383.
ANIONS			
BICARBONATE	(HCO3)-1	17.4	1061.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	86.7	4166.
CHLORIDES	(CL)-1	564	19995
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	.45	19.9
HYDROGEN SULFIDE	(H2S)	14	238
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		3.5
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
CARBONATE INDEX	1.19
CALCIUM CARBONATE SCALING	LIKELY
SULFATE INDEX	3.74
CALCIUM SULFATE SCALING	LIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

COMPANY : YATES PETROLEUM
DATE : 11-22-82
FIELD,LEASE&WELL : WOODPECKER #2
SAMPLING POINT: WELLHEAD
DATE SAMPLED : 11-19-82

SPECIFIC GRAVITY = 1.044
TOTAL DISSOLVED SOLIDS = 65676
PH = 6.92

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	106.	2137.
MAGNESIUM	(MG)+2	183	2228.
SODIUM	(NA),CALC.	859	19765
ANIONS			
BICARBONATE	(HCO3)-1	11.8	719.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	38.1	1833.
CHLORIDES	(CL)-1	1099.	38991.
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	.45	19.9
HYDROGEN SULFIDE	(H2S)	30	511
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		17.6
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	.406
CALCIUM CARBONATE SCALING	LIKELY
SULFATE INDEX	-2.7
CALCIUM SULFATE SCALING	UNLIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O BOX1499

HOBBS, NEW MEXICO 88240

MPANY : YATES PETROLEUM
TE : 11-22-82
ELD,LEASE&WELL : WOODPECKER #3
MPLING POINT: WELLHEAD
TE SAMPLED : 11-19-82

PECIFIC GRAVITY = 1.018
OTAL DISSOLVED SOLIDS = 27850
= 7.56

		ME/L	MG/L
CATIONS			
ICIUM	(CA)+2	48.6	975.
GNESIUM	(MG)+2	39.3	478.
DIUM	(NA),CALC.	370.	8513.
ANIONS			
CARBONATE	(HCO3)-1	23.4	1427.
RBONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
PATE	(SO4)-2	82.4	3958.
ORIDES	(CL)-1	352.	12497.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	22	9.9
ROGEN SULFIDE	(H2S)	18	306
YGEN	(O2)	NOT RUN	
ON(TOTAL)	(FE)		3.9
RIUM	(BA)+2	NOT RUN	
NGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C
	86F
RBONATE INDEX	1.19
ICIUM CARBONATE SCALING	LIKELY
PATE INDEX	-2.9
ICIUM SULFATE SCALING	UNLIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

COMPANY : YATES PETROLEUM
DATE : 11-22-82
FLD,LEASE&WELL : SWAN #1
SAMPLING POINT: WELLHEAD
DATE SAMPLED : 11-19-82

SPECIFIC GRAVITY = 1.016
TOTAL DISSOLVED SOLIDS = 24376
PH = 7.49

CATIONS		ME/L	MG/L
CALCIUM	(CA)+2	46	921.
MAGNESIUM	(MG)+2	17	371.
SODIUM	(NA),CALC.	309.	7106
ANIONS			
BICARBONATE	(HCO3)-1	22.4	1366
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	72.8	3500
CHLORIDES	(CL)-1	307.	10897
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	0	
HYDROGEN SULFIDE	(H2S)	2i	0
OXYGEN	(O2)	NOT RUN	352
IRON(TOTAL)	(FE)	NOT RUN	2.1
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)		

SCALING INDEX	TEMP	
CALCIUM CARBONATE INDEX	30C	
	86F	
CALCIUM CARBONATE SCALING	1.11	
	LIKELY	
CALCIUM SULFATE INDEX	-5.1	
CALCIUM SULFATE SCALING	UNLIKELY	

Deviation 3002 3/4 degrees

1342-A

HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W83-195

To Yates Petroleum Corporation

Date 2-14-83

207 S. 4th Street

Artesia, New Mexico

ATTN: Mr. Eddie Mahfood

Submitted by _____ Date Rec. 2-14-83

Well No. Hanladdie "WR" St. #1 Depth 9,900' Formation _____

County Eddy Field Saunders Source _____

	2-11-83	2-12-83		
Resistivity	0.082 @ 74°F.	0.082 @ 74°F.		
Specific Gravity	1.104	1.104		
pH	5.7	5.8		
Calcium (Ca)	24,000	23,200		*MPL
Magnesium (Mg)	2,520	2,400		
Chlorides (Cl)	92,000	92,000		
Sulfates (SO_4)	1,150	1,200		
Bicarbonates (HCO_3)	1,030	1,050		
Soluble Iron (Fe)	110	100		
API Gr.	31.0 @ 60°F.	31.2 @ 60°F.		

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

By W L Brewer
CHEMIST

cc:

NOTICE

HALLIBURTON DIVISION LABORATO

HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W83-001

To Yates Petroleum Corporation

Date 1-1-83

207 S. 4th Street

Artesia, New Mexico

ATTN: Mr. Eddie Mahfood

Submitted by

Date Rec. 1-1-83

Well No. Dove #1 Depth Formation

County Field Source

Resistivity	0.063 @ 70°F.		
Specific Gravity	1.110		
pH	5.3		
Calcium (Ca)	11,250		*MPL
Magnesium (Mg)	6,000		
Chlorides (Cl)	89,500		
Sulfates (SO_4)	800		
Bicarbonates (HCO_3)	805		
Soluble Iron (Fe)	125		

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Thompson

HALLIBURTON COMPANY

By W. L. Brunel
CHEMIST

cc: Harvey Apple, GeoVann, Inc.
Box 38
Artesia, New Mexico

Schlumberger

COMPENSATED NEUTRON-FORMATION DENSITY

COUNTY LEA
FIELD SAUNDERS
LOCATION LDM AMOCO GX STATE
WELL #1
COMPANY YATES PETROLEUM CORP

COMPANY YATES PETROLEUM CORPORATION

WELL LDM AMOCO GX STATE #1

FIELD SAUNDERS

COUNTY LEA STATE NEW MEXICO

LOCATION 660' FSL & 1926' FWL

API SERIAL NO.	SEC.	TWP.	RANGE
	19	14-S	33-E

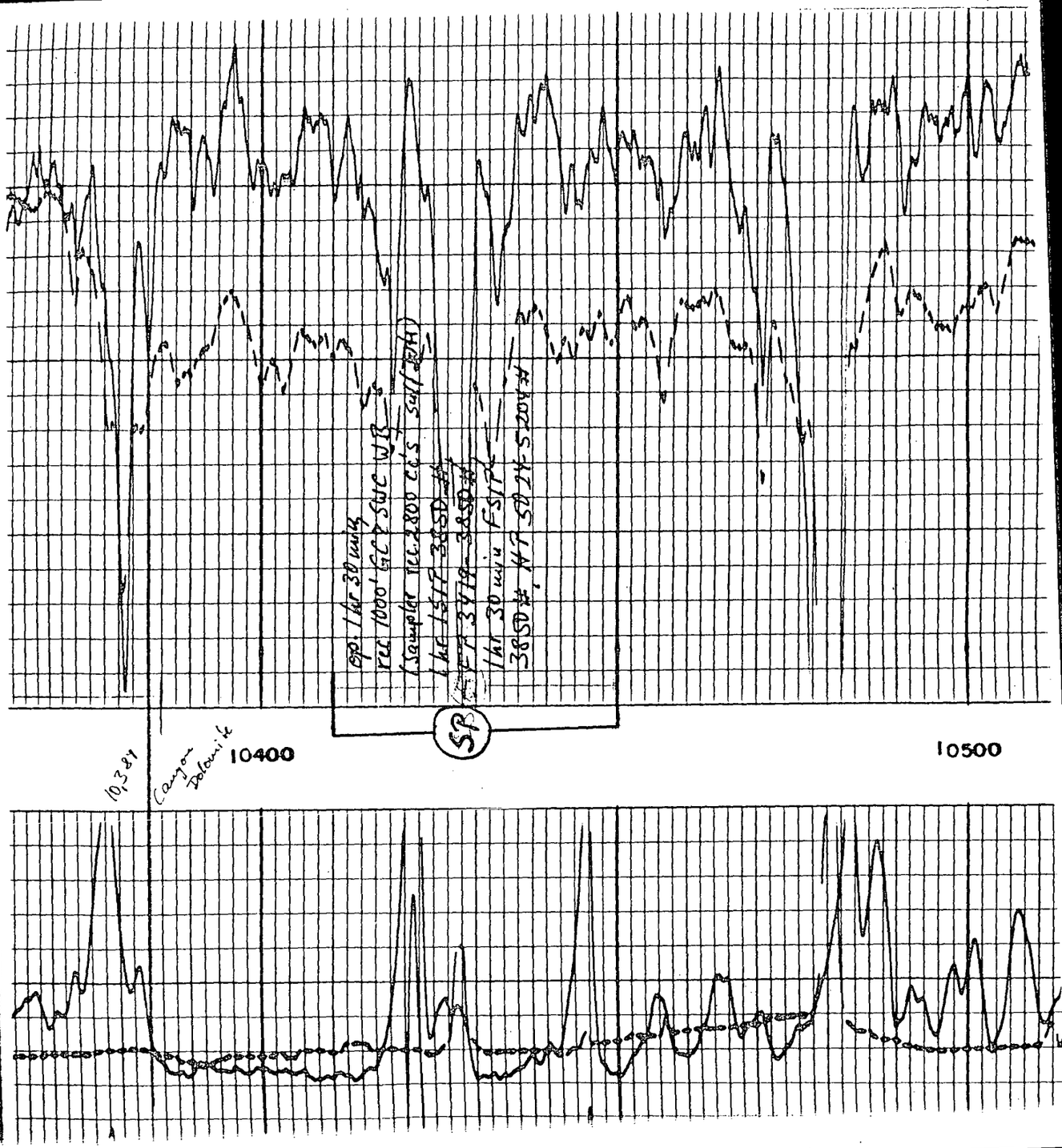
Other Services:
DLL

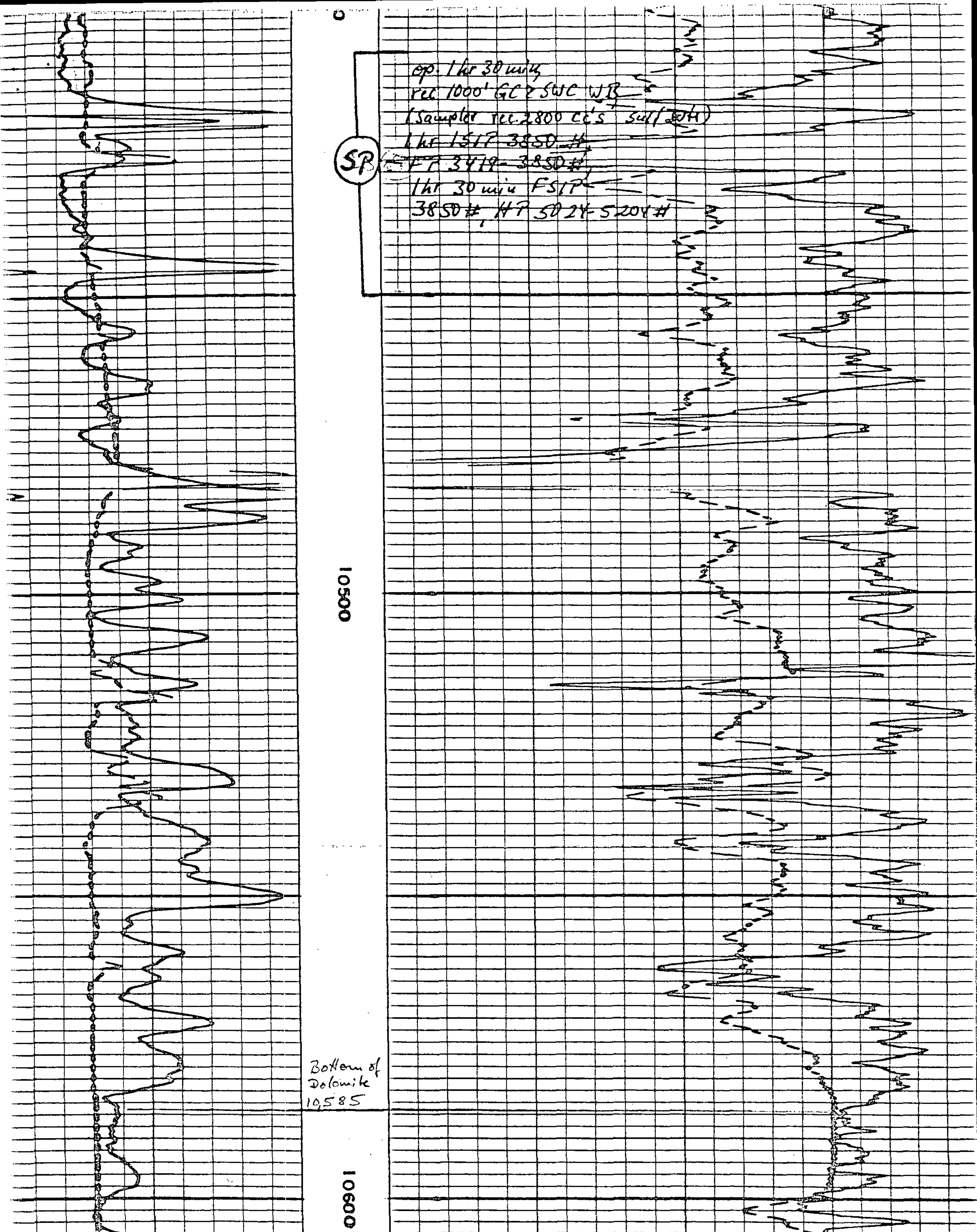
Permanent Datum: G.L. ; Elev.: 4262
Log Measured From K.B., 16 Ft. Above Perm. Datum
Drilling Measured From K.B.

Elev.: K.B. 4278
D.F.
G.L. 4262

Date	4-2-77			
Run No.	ONE			
Depth—Driller	12717			
Depth—Logger	12711			
Btm. Log Interval	12710			
Top Log Interval	0			
Casing—Driller	8 5/8@4114	@	@	@
Casing—Logger	4118			
Bit Size	7 7/8			
Type Fluid in Hole	ASBESTOS-DRISPAC-CKL-SW GEL			
Dens. / Visc.	9.3 / 42			
pH / Fluid Loss	10.7 / 8.3 ml	ml	ml	ml
Source of Sample	CIRC.			
Rm @ Meas. Temp.	.11 @70 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	.09 @73 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	.16 @70 °F	@ °F	@ °F	@ °F
Source: Rmf / Rmc	M / C			
Rm @ BHT	.05 @165 °F	@ °F	@ °F	@ °F
Circulation Stopped	2000			
Logger on Bottom	0200			
Max. Rec. Temp.	165 °F	°F	°F	°F
Equip. Location	5641 / HOBBS			

DO NOT
GEOLOGY USE





op. 1 hr 30 min
rec 1000' GC & SWC WB
(sampler rec. 2800 cc's sulf. wtr)
1 hr ISIP 3850 #
FP 3419-3850 #,
1 hr 30 min FSIP
3850 #, HP 5024-5204 #
10500
Bottom of
Dolomite
10,585
10600