STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

FW Jerry Sexton NMOCD Hobbs

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 South 4th Street, Artesia, New Mexico 88210

Contact party: Eddie Mahfood Phone: (505) 748-1331

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: Eddie Mahfood Title Petroleum Engineer

Signature: Eddie M Mahfood Date: January 2, 1986

* 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. SEPT. 1975 ORIGINAL WELL COMPLETION.

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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

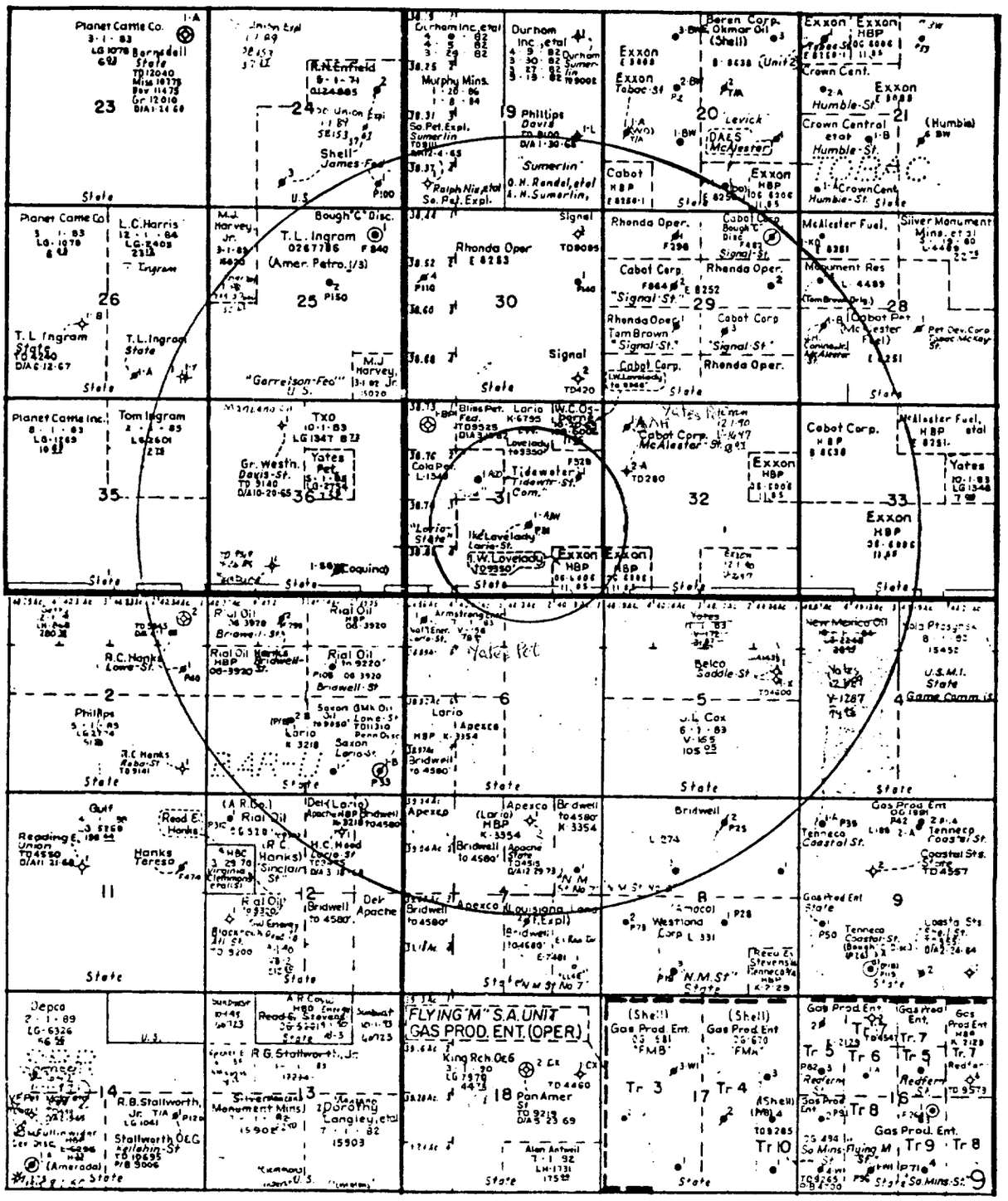
(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



YATES PETROLEUM CORPORATION

APPLICATION FOR SALT WATER DISPOSAL

LOVELADY ADN ST. #1

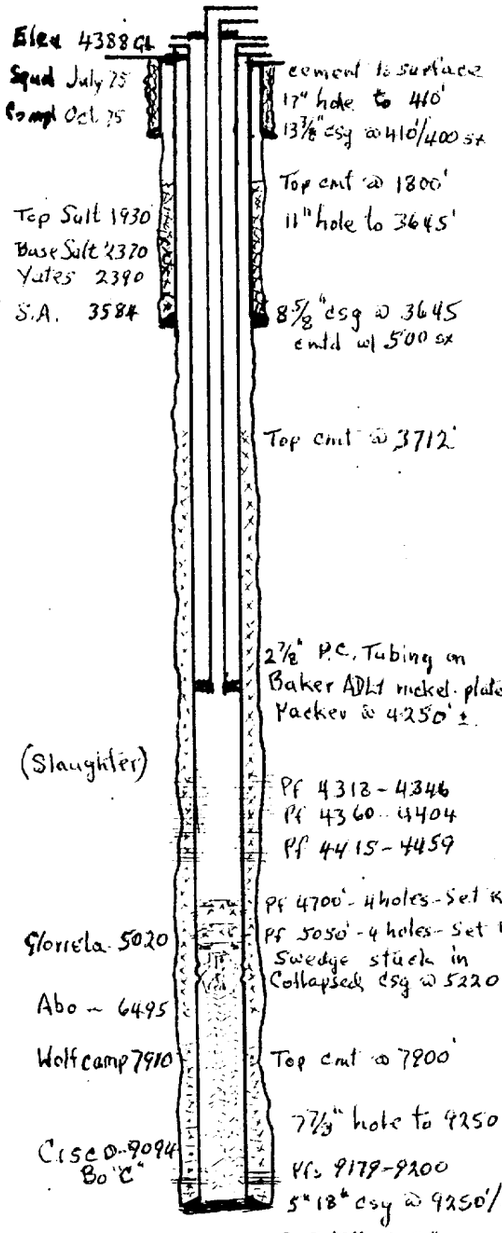
SAN ANDRES WILDCAT
CHAVES COUNTY

SCALE : 1" : 4000'

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
YATES PETROLEUM CORPORATION	LOVELADY "ADN" STATE			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1	1980 FSL, 1980 FEL	31	8-S	33-E

Schematic



Tabular Data

Surface Casing

Size 10-3/4" Cemented with 400 sx.

TOC Surface feet determined by circulated

Hole size 17"

Intermediate Casing

Size 8-5/8" Cemented with 500 sx.

TOC 1800 feet determined by temperature survey

Hole size 11"

Long string

Size 5" Cemented with 750 sx.

TOC 3712 feet determined by CBL

Hole size 7-7/8"

Total depth 4667' PBTD

Injection interval perforations

4318 feet to 4460 feet
(perforated or open-hole, indicate which)

Tubing size 2-7/8" 6.5# lined with Plastic coating (material) set in a

Baker Model ADL-1 (nickel plated) (brand and model) packer at approx. 4250 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres (Slaughter)

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

3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? Originally a Bough C completion in Bar U Penn, temp. abandoned in 1981 after casing collapsed at 5220', plug back in Dec. 1985.

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) Bough C perfs 9179-84, 9194-9200. Retainer at 5080', pumped 150 sx Class C w/3% $CaCl_2$ down casing. Perforate 4 sq holes @5050, retainer @5025, pmpd 150 sx Cl C w/2% CaCl2, top of cmt @4960'. Perf 4 sq holes @4700, retainer @4675, pmpd 350 sx Cl C w/3% CaCl2, top of cement @3712.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Bough C perfs 9179-9200 = oil & gas

   San Andres perfs 4318-4419 = salt water w/trace of oil.

INJECTION WELL DATA

III. Lovelady ADN State No. 1, Sec. 31, T8S, R33E, 1980 FSL and FEL.
17" hole, 13-3/8" casing set at 410', w/400 sx, cement circulated.
11" hole, 8-5/8" casing set at 3645', w/500 sx, cement top @1800' by temperature survey.
7-7/8" hole, 5" casing set @9241', w/275 sx, cement top at 7900' by temperature survey.
Well produced 4 years from Bough C perfs 9179-9200'. Casing collapsed at 5220', stuck casing swedge at 5220'. Plugged well back with cement retainer at 5080', cement down casing w/150 sx Class C w/3% $CaCl_2$. Perforated 5" casing at 5050', set retainer at 5025', cement annulus w/150 sx Class C, top of cement at 4970'. Perforated 5" casing at 4700', cement retainer at 4675', cement production casing w/350 sx Class C, top of ement at 3712'.
PBTD 4667', perforated 4378-4419', treat 1500 gals NEFE, swab 14 BWPD, no oil or gas. Retainer at 4370'. Squeeze perfs w/100 sx Class C to 3000 psi. WOC.
PBTD 4368', perforated 4318-4366', treat w/1500 gals NEFE acid, swab 7 BWPD w/trace oil.
Propose to drill retainer at 4370', clean out to 4460', reperforate 4378-4460' and re-acidize all perfs 4318-4460' for injection.
Tubing will be 2-7/8" 6.5# J-55 plastic-coated, a Baker Tension packer (model ADL-1) nickel coated or plastic-coated will be used, to be set at approximately 4250'.

V. Attached map identifies all wells and leases within a two-mile radius of the proposed SWD well. The 1/2-mile radius circle shows the area of review with 1 producer and 1 plugged well.

VI. a. The producer is YPC Cola ADO State #1, 1980 FNL and FWL of Section 31, formerly the Cola Petroleum Lario State #1.
Spudded November 1979, completed December 1979, has 12-3/4" casing set at 450', cemented w/400 sx.
8-5/8" casing set at 3680', cemented w/580 sx; 4-1/2" casing set at 9220', cemented w/800 sx.
Well is producing from original Bough perforations 9069-9163'.
Yates Petroleum Corporation will perforate and cement the production casing across the San Andres formation.

b. The plugged well is the Cabot Corporation Tidewater State #1, 1980 FNL and 660 FEL of Sec. 31, spudded April 1964. Completed June 1964 in Bough C perfs 9200-08'; has 13-3/8" casing set at 423', cemented w/400 sx; 8-5/8" casing set at 3657', cemented w/350 sx; 4-1/2" casing set at 9268', cemented w/200 sx. Well was plugged in March 1969 w/25 sx cement plug in casing over perfs; casing was cut off at 4195' and 25 sx plug placed across the stub. A 25 sx plug was placed across the 8-5/8" shoe at 3657', and the 8-5/8" casing was cut and pulled from 793'; a 25 sx cement plug was set across the 13-3/8" shoe at 423'; and a 10 sx plug was set at the surface. The space between plugs was filled with 10# drilling mud.

VII. 1. The proposed fluid to be injected is produced water and will average 200-300 BWPD with a maximum of 900-1000 BWPD
2. The system will be closed.
3. Proposed average pressure will be 800 psi, maximum 1200 psi.
4. Analysis of produced water from Cola ADO State #1 and San Andres water from Lovelady ADN State #1 are attached.

VIII. The injection zone is the Slaughter interval in the San Andres formation, a porous dolomite, approximately 300' gross with anhydrite cap at 4286-4312'. The local fresh water zone would be the Ogallala Sands at 365-390' which are behind 13-3/8" and 8-5/8" casing.

continued - INJECTION WELL DATA

X. A Sidewall Neutron and guard log was run in August 1975 and was submitted to NMOCD in Hobbs.

XI. There are no known fresh water source wells within 1 mile of this well.

XII. Applicant has examined every available geologic and engineering data available for this area and find no evidence of open faults or any other hydrologic connection between the proposed disposal zone and the Ogallala water sands.

XIII. A copy of this application has been furnished by Certified Mail to the surface owner, State of New Mexico, and to I. W. Lovelady, the only leasehold operator other than Yates Petroleum in the review area. Postal Service verification is attached, also proof of publication in the Roswell Daily Record, Chaves County.

YATES PETROLEUM CORPORATION

207 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1331

January 2, 1986

Commissioner of Public Lands
ATTN: Mr. Ray Graham
P. O. Box 1148
Santa Fe, New Mexico 87501

Mr. I. W. Lovelady — Petromark Resources
Drawer 2666
Midland, Texas 79702

Re: Application for Salt Water Disposal

Dear Sir:

Yates Petroleum Corporation is the applicant for Salt Water Disposal in its Lovelady ADN State No. 1 well located 1980 FSL and 1980 FEL of Section 31, T8S, R33E, Chaves County, NMOCD Rule 701B requires that the owner of the surface of the land on which the disposal well is to be located, and each leasehold operator within one-half mile of the well, be notified of this intent with a copy of the application.

If you have any objection to this Application for Salt Water Disposal, the regulations allow you 15 days from receipt of this notice to file a written objection with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501.

Thank you.

Yours truly,

YATES PETROLEUM CORPORATION

Eddie M. Mahfood
Senior Engineer

EMM:jg

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:

Commissioner of Public Lands
ATT: Ray Graham
Box 1148
Santa Fe, NM 87501

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 498 190 334

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X Horacio Mascarenas

6. Signature — Agent
X

7. Date of Delivery
JAN 6 1986

8. Addressee's Address (ONLY if requested and fee paid)

Re: Lovelady ADN St. #1 - SWD

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:

Mr. I. W. Lovelady
Drawer 2666
Midland, TX 79702

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 498 190 335

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery
1-8-86

8. Addressee's Address (ONLY if requested and fee paid)

Re: Lovelady ADN St. #1 - SWD

DOMESTIC RETURN RECEIPT

AFFIDAVIT OF PUBLICATION

County of Chaves
State of New Mexico, }

I, R.N. Higginbotham,

manager

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period

of one

day weeks

beginning with the issue dated

January 6, 1986

and ending with the issue dated

January 6, 1986

R.N. Higginbotham
Manager

Sworn and subscribed to before me

this 6th day of

January, 1986

Mary Bee Lotte
Notary Public

My commission expires

October 21, 1987
(Seal)

Publish January 6, 1986

LEGAL NOTICE

Pursuant to the New Mexico Oil Conservation Division regulations governing the injection of fluids into a formation, NOTICE is hereby given that Yates Petroleum Corporation, 207 South 4th Street, Artesia, New Mexico 88210 (505) 746-1331, Eddie Mahfood, contact party, proposes to utilize its Lovelady ADN State No. 1 well for the disposal of produced waters into the Slaughter zones of the San Andres formations thru perforations 4318-4460'. Subject well is located 1980 FSL and 1980 FEL of Section 31, T8S, R33E, in Chaves County, New Mexico. The proposed maximum injection rate is 1000 BPD and the proposed maximum injection pressure is 1200 psig.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Published in the Roswell Daily Record, Roswell, New Mexico, the Chaves County publication, January 6, 1986.

LOCATION	YOUR EXT. NO.
ARTESIA, N.M.	746-3140

THE WESTERN COMPANY

WATER ANALYSIS

ANALYSIS NO.

GENERAL INFORMATION

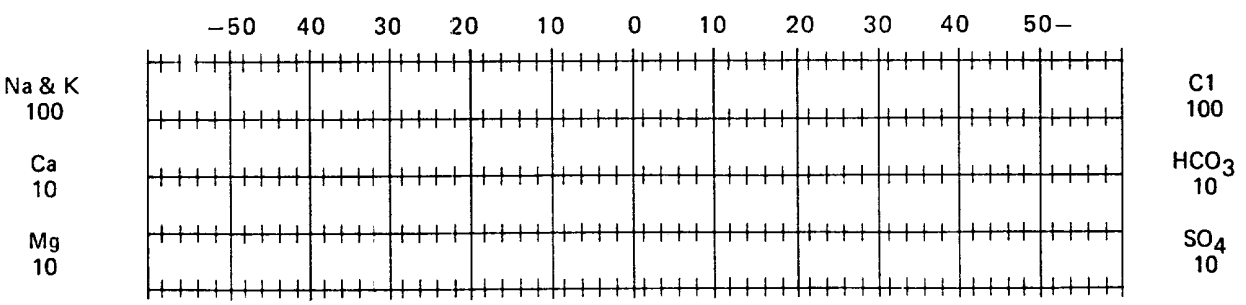
OPERATOR Yates Pet	DATE SAMPLED 12-16-85
WELL Loveless ADN State No.	DATE RECEIVED 12-16-85
FIELD Wildcat	SUBMITTED BY
FORMATION San Andres	WORKED BY Pat McClure
COUNTY Chaves	SAMPLE DESCRIPTION: Swab Test
STATE N.M.	
DEPTH Ft 4318-4419	

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY	1.154 AT 74 °F	TOTAL DISSOLVED SOLIDS	PPM
pH	7	RESISTIVITY	PPM
IRON	STRONG / STRONG	SULFATE 1039	PPM
HYDROGEN SULFIDE	?	BICARBONATE 941	PPM
HARDNESS		CHLORIDE 130,849	PPM
CALCIUM	3813	SODIUM CHLORIDE 215,247	PPM
MAGNESIUM	1053 PPM	SODIUM	PPM
SODIUM & POTASSIUM	83,730 PPM	POTASSIUM	PPM
PHOSPHATE			

REMARKS:

for Stiff type plot (in meq./1.)



FORM 052-1025 (3/81)

ANALYST _____

THE WESTERN COMPANY

WATER ANALYSIS

YCOF EAT. NO.

ANALYSIS NO.

GENERAL INFORMATION

OPERATOR Yates Pet	DATE SAMPLED 1-7-86
WELL Cola Ado #1	DATE RECEIVED 1-7-86
FIELD Bar U Penn	SUBMITTED BY Ed Perry
FORMATION Bough C	WORKED BY DP
COUNTY Eddy	SAMPLE DESCRIPTION:
STATE N.M.	Wellhead sample from pumping
DEPTH Perfs 9069-9163	well with skim of oil on top of sample

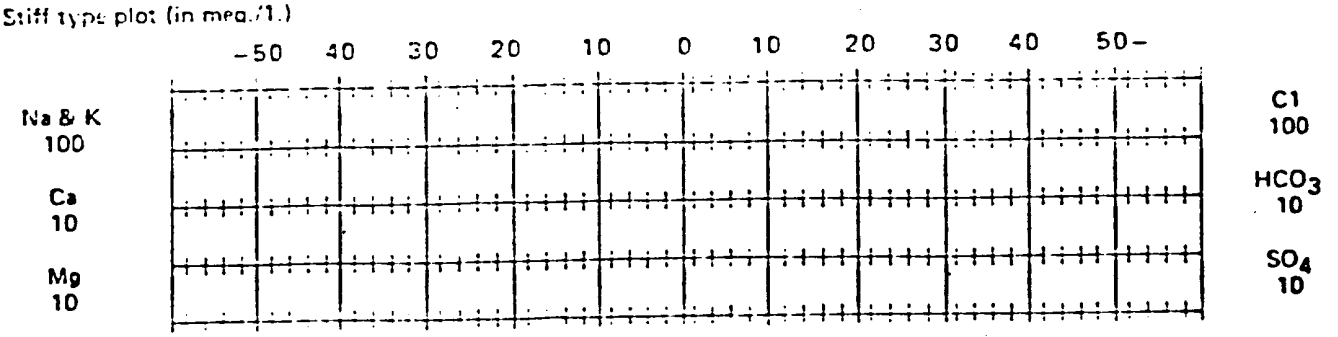
PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY	1.120 AT 56 °F	TOTAL DISSOLVED SOLIDS	— PPM
pH	6	RESISTIVITY	.08 @ 74 F ~~PPM~~
IRON	Ferrous Faint Good Strong	SULFATE (S)	80 PPM
HYDROGEN SULFIDE	Yes (No)	BICARBONATE (B)	549 PPM
HARDNESS	16.5 3300	CHLORIDE (C)	60,000 PPM
CALCIUM (CA)	10.2 816	SODIUM CHLORIDE	98,700 PPM
MAGNESIUM (M)	6.3 306 PPM	SODIUM	— PPM
SODIUM & POTASSIUM	37,990 PPM	POTASSIUM	— PPM
PHOSPHATE		KCL = 0 %	

REMARKS:

CA.	.0499	40.72	S.	.0208	16.64
M.	.0822	25.17	B.	.0164	9.00
		65.89	C.	.8282	1692.00
					1717.64

for Stiff type plot (in meq./l.)



ANALYST David Price

FORM 052-1025 (3/81)