

CASE 3854: Application of SINCLAIR
OIL & GAS CO. FOR SALT WATER
DISPOSAL, LEA COUNTY, N. MEX.

Case Number

3854

Application
Transcripts.

Small Exhibits

ETC.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 2088
SANTA FE

September 12, 1968

Mr. Charles White
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 3854
Order No. R-3498
Applicant:
Sinclair Oil & Gas Co.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other Mr. Harold Berends - Bureau of Land Management
and State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3854
Order No. R-3498

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 4, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 12th day of September, 1968, the Commission,
a quorum being present, having considered the testimony, the record
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Sinclair Oil & Gas Company, is the
owner and operator of the Ballard DE Federal Well No. 6, located
in Unit L of Section 22, Township 20 South, Range 34 East, NMPM,
Lynch Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Yates formation, with
injection into the perforated interval from approximately 3636
feet to 3700 feet.

(4) That the injection should be accomplished through
2 3/8-inch plastic-lined tubing installed in a packer set at
approximately 3600 feet; that the casing-tubing annulus should
be filled with an inert fluid; and that a pressure gauge

-2-

CASE No. 3854
Order No. R-3498

should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

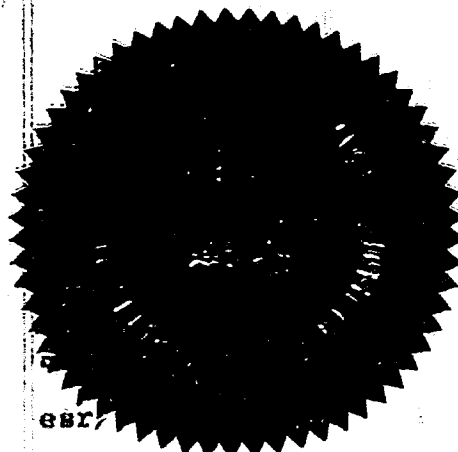
(1) That the applicant, Sinclair Oil & Gas Company, is hereby authorized to utilize its Ballard DE Federal Well No. 6, located in Unit L of Section 22, Township 20 South, Range 34 East, NMPM, Lynch Field, Lea County, New Mexico, to dispose of produced salt water into the Yates formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3600 feet, with injection into the perforated interval from approximately 3636 feet to 3700 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

David F. Cargo
DAVID F. CARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

Case 3854
Record 9-4-68
Rec. 9-6-68

Grant Sudan permission to convert
their Ballard DE Fed. #6, ~~root~~
1650/5, 990/W(L) 22-205-34E. to a SWD
well in the Middle Lynch-Yates
zone of this Pool. ^{internally plastic}
direction shall be thru tubing
& under a packer to be set at approx
3600'

Therrell



SINCLAIR OIL & GAS COMPANY
P. O. Box 1470
MIDLAND, TEXAS 79701

August 5, 1968

WEST TEXAS REGION

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.
Secretary-Director

Gentlemen:

Sinclair Oil & Gas Company hereby makes application for a hearing to permit the disposal of produced salt water into its Ballard DE Federal Well No. 6, located in Section 22, T-20S, R-34E, Lynch Pool, Lea County, New Mexico.

Attached please find: Plat of Area; Electrical Log; Diagrammatic Sketch of Well and form C-108.

Yours very truly

R. M. Anderson
R. M. Anderson
Region Regulatory Engineer

Attachments (4)

RMA/rd

cc: White, Guilbert, Koch & Kelly
P.O. Box 787
Santa Fe, New Mexico 87501

Horace Burton

58 AUG 6 AM 8 35

DOCKET MAILED

Date

8/22/68

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR		ADDRESS	
Sinclair Oil & Gas Company		P.O. Box 1470, Midland, Texas 79701	
LEASE NAME	WELL NO.	FIELD	COUNTY
Ballard DE Federal	6	Lynch	Lea
LOCATION			
UNIT LETTER <u>L</u> ; WELL IS LOCATED <u>1650</u> FEET FROM THE <u>South</u> LINE AND <u>990</u> FEET FROM THE			
West	LINE, SECTION <u>22</u>	TOWNSHIP <u>20S</u>	RANGE <u>34E</u> NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	8-5/8"OD	1565'	475	Surface	circulated
INTERMEDIATE					
LONG STRING	4-1/2"OD	1438-3748'	550	1440	Temp. Survey
TUBING	2-3/8"OD	3600'	NAME, MODEL AND DEPTH OF TUBING PACKER Permanent Production Type @3600'		
NAME OF PROPOSED INJECTION FORMATION Yates			TOP OF FORMATION 3483'		BOTTOM OF FORMATION 3700'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION		
Tubing		Perforations	3636-3700'		
IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?		
No	Oil		No		
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					
None					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
No major Fresh water zone		None		None	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	1650	2650	Closed	Pressure	1800
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -			WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
			Yes	Yes	No
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)					
United States Dept. of Interior - USGS, Drawer "U", Artesia, New Mexico - Attn: Mr. James A. Kn					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
		No		No	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA		ELECTRICAL LOG	
		Yes		Yes	
				THE NEW MEXICO STATE ENGINEER	
				No	
				DIAGRAMMATIC SKETCH OF WELL	
				Yes	

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

I hereby certify that the info

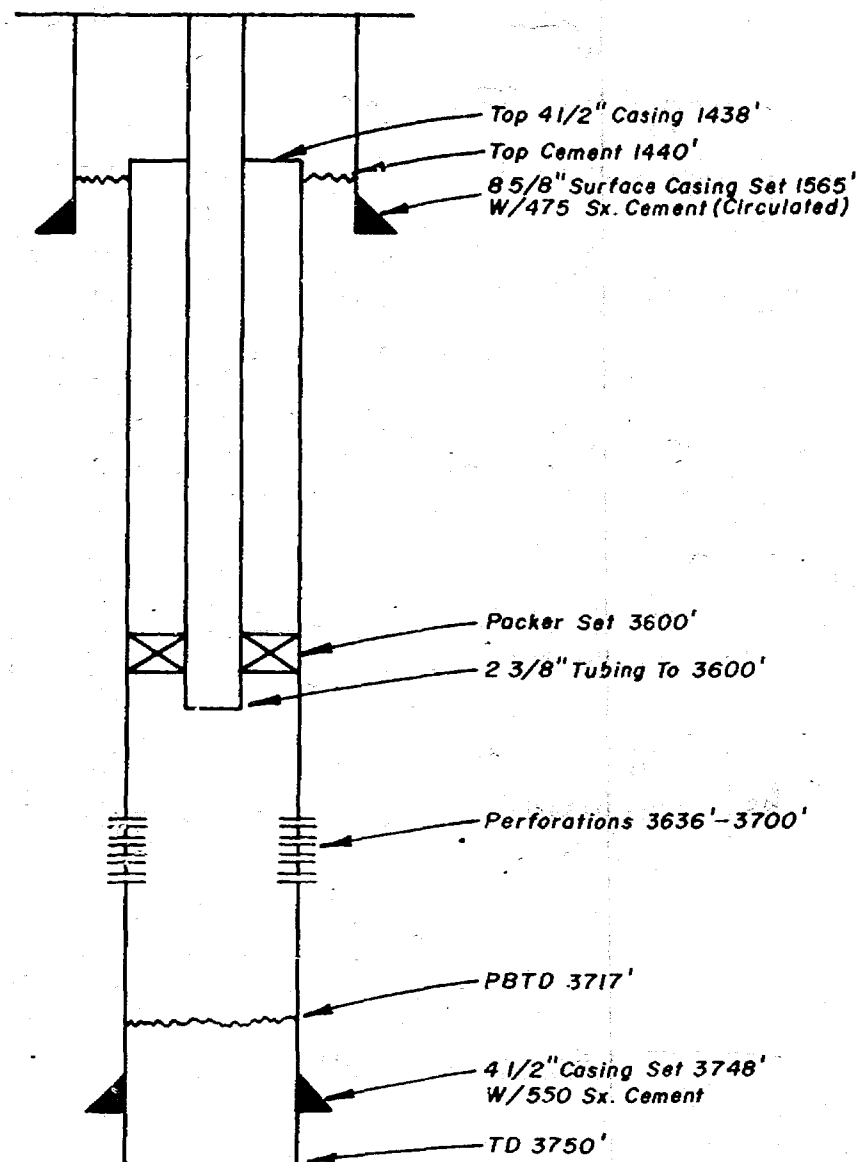
J. M. Anderson
(Signature)

Region Regulatory Engineer

August 3, 1968

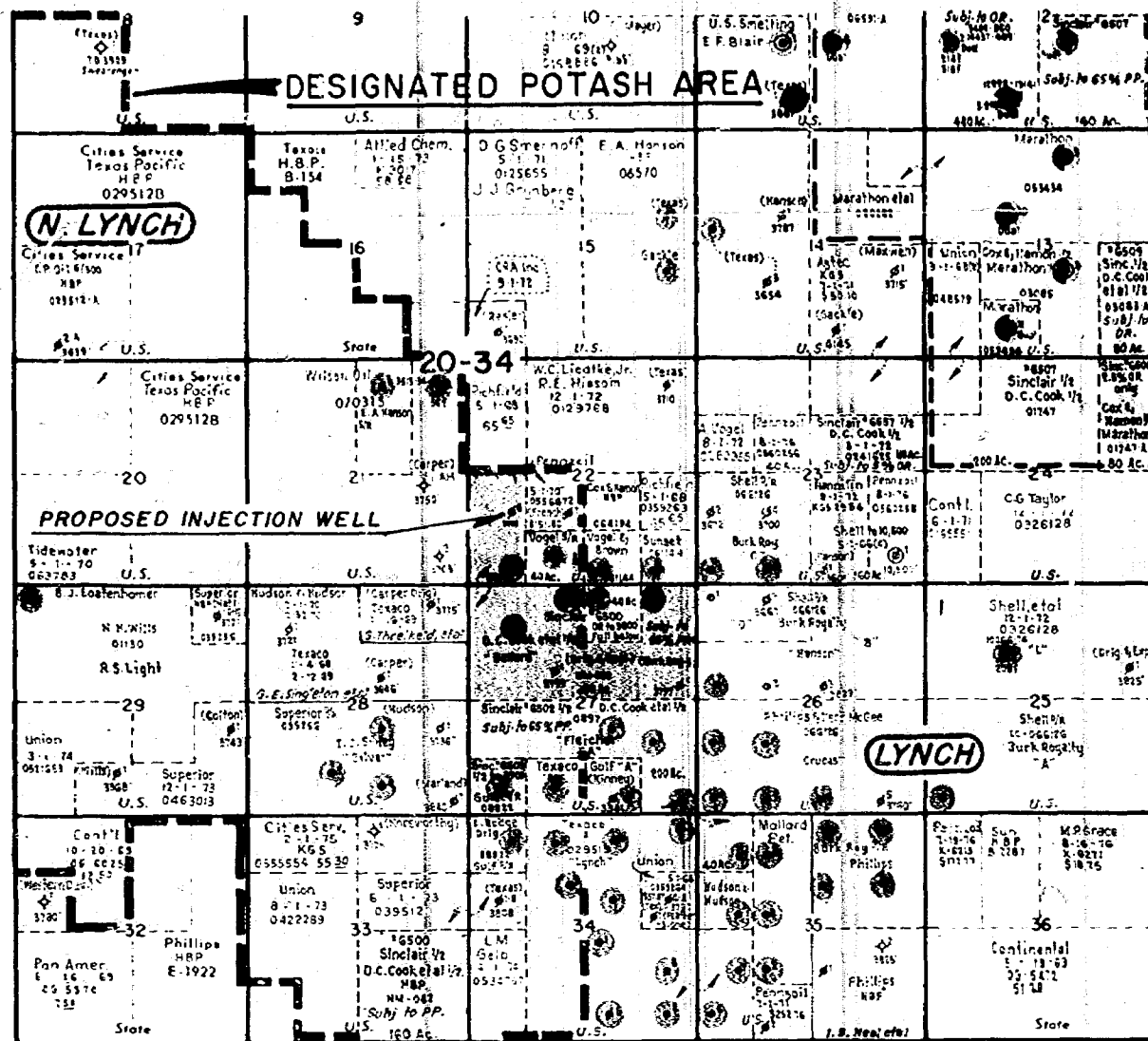
NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

DIAGRAMMATIC SKETCH OF
PROPOSED INSTALLATION



SINCLAIR OIL & GAS COMPANY
BALLARD DE FEDERAL NO.6
LYNCH POOL
1650' FSL & 990' FWL SEC.22, T-20-S, R-34-E
LEA COUNTY, NEW MEXICO

Case
3854



LEGEND

- Yates - 7 Rivers
- Bone Spring
- Pennsylvanian
- Devonian

SINCLAIR OIL & GAS CO.
MIDLAND, TEXAS

PART OF
LEA COUNTY, NEW MEXICO

DRAWN BY _____ CHECKED BY _____ DATE _____
SCALE - 1" = 4000' REVISED _____

Carl 3854

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 4, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Sinclair Oil & Gas
Company for salt water disposal,
Lea County, New Mexico.

Case 3854

BEFORE: Elvis A. Utz
Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3854.

MR. HATCH: Case 3854. Application of Sinclair Oil and Gas Company for salt water disposal, Lea County, New Mexico.

MR. WHITE: Charles White, White, Gilbert, Koch and Kelly, Santa Fe, New Mexico, appearing on behalf of the Applicant. I have one witness to be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Numbers 1 through 6 were marked for identification.)

MR. UTZ: Are there any other appearances in this case? You may proceed.

R. M. ANDERSON

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Will you state your full name for the record and state by whom you are employed and in what capacity.

A R. M. Anderson. I'm Region Regulatory Engineer of Sinclair Oil and Gas Company in their Midland, Texas office.

Q Have your professional qualifications been accepted by the Commission previous to this hearing?

A Yes, they have.

Q Will you state what Sinclair seeks by the subject application?

A Sinclair seeks permission to dispose of produced salt water from its Ballard DE Federal, its Fletcher A-DE Federal and its Gulf DE Federal Leases in the Lynch-Yates-Seven Rivers Pool, Lea County, New Mexico, by injecting said produced water into its Ballard DE Federal Well Number 6.

Q Will you explain Exhibit Number 1?

A Exhibit Number 1 is an area map in the vicinity of the Sinclair leases. The Yates-Seven Rivers producers have been colored in green. The Bone Springs producers which are located in the northeast part of the exhibit, and the Pennsylvanian and Devonian producers are colored in red, purple and yellow on said map. The deeper production is in the Lea Field.

Q And this shows the three leases of which you spoke?

A Well, the lease that is colored in red is our Ballard Lease which has the proposed disposal well circled in orange thereon and indicated as a dry hole. Immediately south of the area colored in red is Sinclair's Fletcher A-DE Federal Lease, and our Gulf DE Federal Lease is a 40-acre lease occupying the southwest quarter of the southwest quarter of Section 27. It's a one-well lease.

Q Will you now refer to Exhibit 2 and explain that

A Exhibit 2 is an area map of the same area and I have indicated with yellow ovals the current allowables of all producing wells within a mile of our proposed injection well.

For instance, the Well Number 5 immediately south of the proposed injection well has an August, 1968 allowable of 58 barrels.

Q This exhibit shows a state of depletion in the area, does it not?

A Yes. The other wells are marginal wells and are so indicated on the map.

Q Will you explain Exhibit 3?

A Exhibit 3 is Commission Form C-108 and contains all of the pertinent data requested by the Commission in applications of this nature.

Q Is it self-explanatory?

A I believe so.

Q What volume of water do you anticipate?

A We anticipate disposing about 1500 pounds per day.

Q Under what pressure?

A We're not sure of how much pressure it will take. We're asking for as much as 1800 pounds. Exhibit Number 4 is a diagrammatic sketch reflecting the data that is tabulated on Exhibit 3.

Q Will this be a retrievable packer, a standard brand?

A Yes, this will be a retrievable packer right on the end of the tubing. We will fill the annulus with corrosion inhibited fluid. We will equip the well with a pressure gauge on the annulus and we will use plastic lined tubing; two-inch tubing, plastic lined.

Q In your opinion, will this installation prevent the injected water from entering other zones?

A Yes. In my opinion, the injected water will not be able to enter any other zone but the zone opposite the perforations which is the producing zone in the Yates-Seven Rivers-Lynch Field .

Q Will you explain Exhibit 5?

A Exhibit 5 is a tabulation of all of the wells within a mile of the proposed disposal well. Those are the wells with the allowables shown on Exhibit 2, and this exhibit reflects that none of the wells are completed lower than the proposed disposal well and most of them are completed considerably higher than the proposed disposal well. The proposed disposal well was drilled in 1965 and completed as a dry hole.

It tested 100% water and was low, structurally, to the other producing wells in the field.

Q Will you explain Exhibit 6, please?

A Exhibit 6 is the sonic gamma-ray log on the disposal well and I have indicated the current perforations which will be

used for disposal purposes and which are the same perforations as listed on Exhibit 3 and Exhibit 4.

Q Were these exhibits prepared by you or under your direction?

A Yes, they were.

MR. WHITE: At this time, we offer Exhibits 1 through 6 and that completes our direct.

MR. UTZ: Without objection, Exhibits 1 through 6 will be entered into the record in this case.

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were entered in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Referring to Exhibit 2, all these allowables shown here are Lynch-Yates allowables?

A Except for the two wells, the northernmost two wells which are Lynch-Yates-Seven Rivers middle pool. These wells are completed a little higher in the section than our disposal well, maybe 100 to 150 feet higher in the section, about 100 feet higher in the section. These Lynch-Yates-Seven Rivers middle pool wells are the first two wells listed on my Exhibit 5 immediately after the proposed disposal well.

Q You don't anticipate injection of water into the Yates Zone will be harmful to production in the area?

A No, sir. It might prove helpful. The Yates-Seven Rivers Zones have flooded successfully and, if anything, it could prove helpful. It certainly will tend to offset the natural pressure declines that are occurring as a result of production. So I would anticipate, if anything, that the injection will be helpful. It's apparently into a zone below the oil-water contact and insofar as results in a natural water encroachment, it will be helpful towards increasing the ultimate recovery of oil from this field.

Q How much water do you anticipate that you will inject here?

A Well, we're going to start off with about 1600 barrels of water per day, and we have been experimenting with Reeder Pumps in this area. We anticipate most wells make appreciable amounts of water in this northern part of the field where Sinclair properties are located and we anticipate that we will have more water than this 1600 barrels of water a day, fairly soon, when we get our Reeder Pumps going and if they work out all right, if it's successful.

MR. UTZ: Are there any questions of the witness?
He may be excused. Any statements? The case will be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
R. M. ANDERSON	
Direct Examination by Mr. White	2
Cross Examination by Mr. Utz	6

E X H I B I T S

<u>Number</u>	<u>Marked for Identification</u>	<u>Received in Evidence</u>
Applicant's Exhibits 1 through 6	2	6

STATE OF NEW MEXICO)
) ss.
 COUNTY OF BERNALILLO)

I, CHARLOTTE MACIAS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

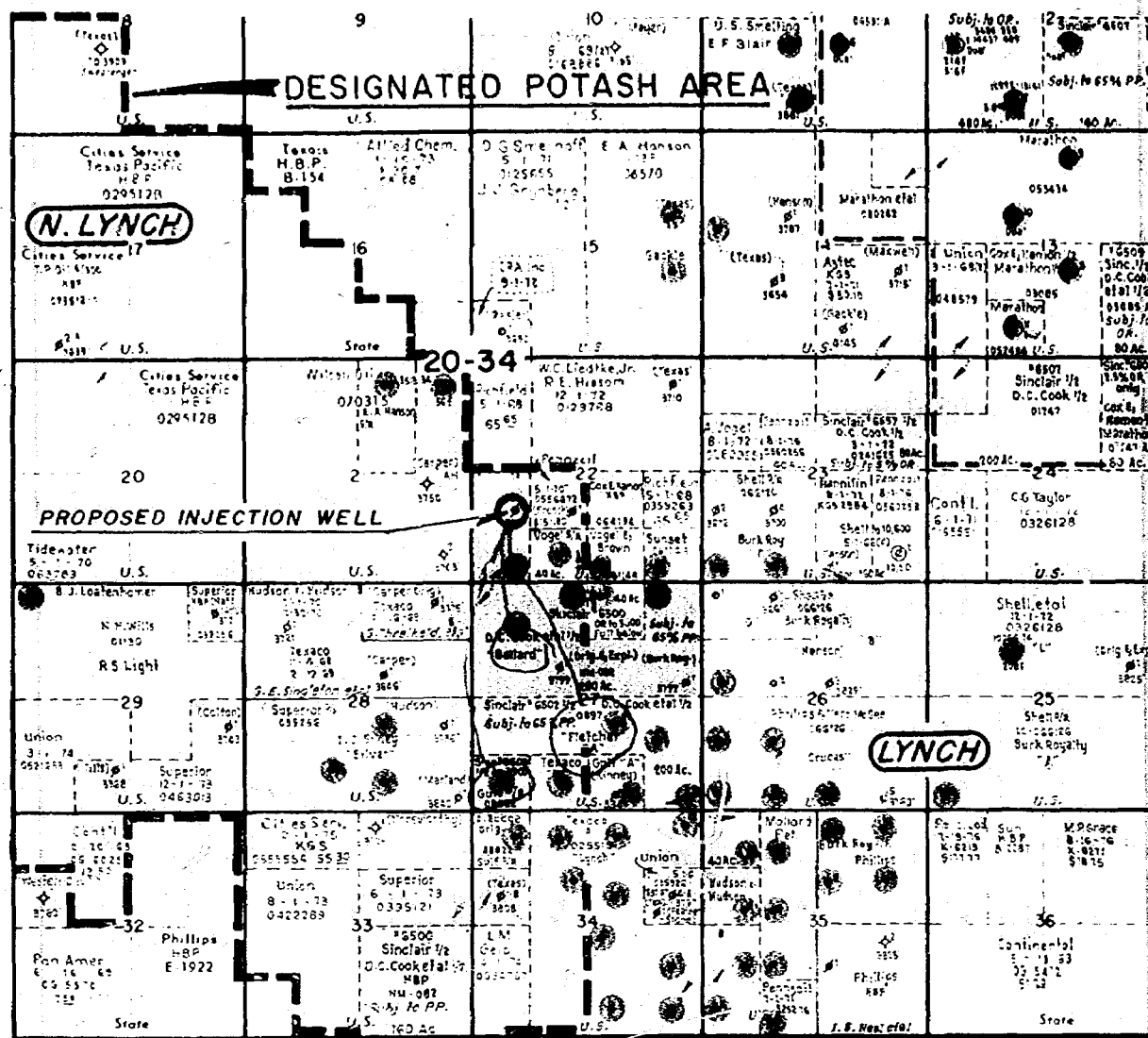
Witness my Hand and Seal this 7th day of October, 1968.

Charlotte Macias
 Notary Public

My Commission Expires:

February 10, 1971.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3854 heard by me on Sept 4, 1968.
Michael J. [Signature] Examiner
 New Mexico Oil Conservation Commission



Sinclair Oil & Gas Co.
3054
Exhibit No. 1

LEGEND

- ① Yates - 7 Rivers
- ② Bone Spring
- ③ Pennsylvanian
- ④ Devonian

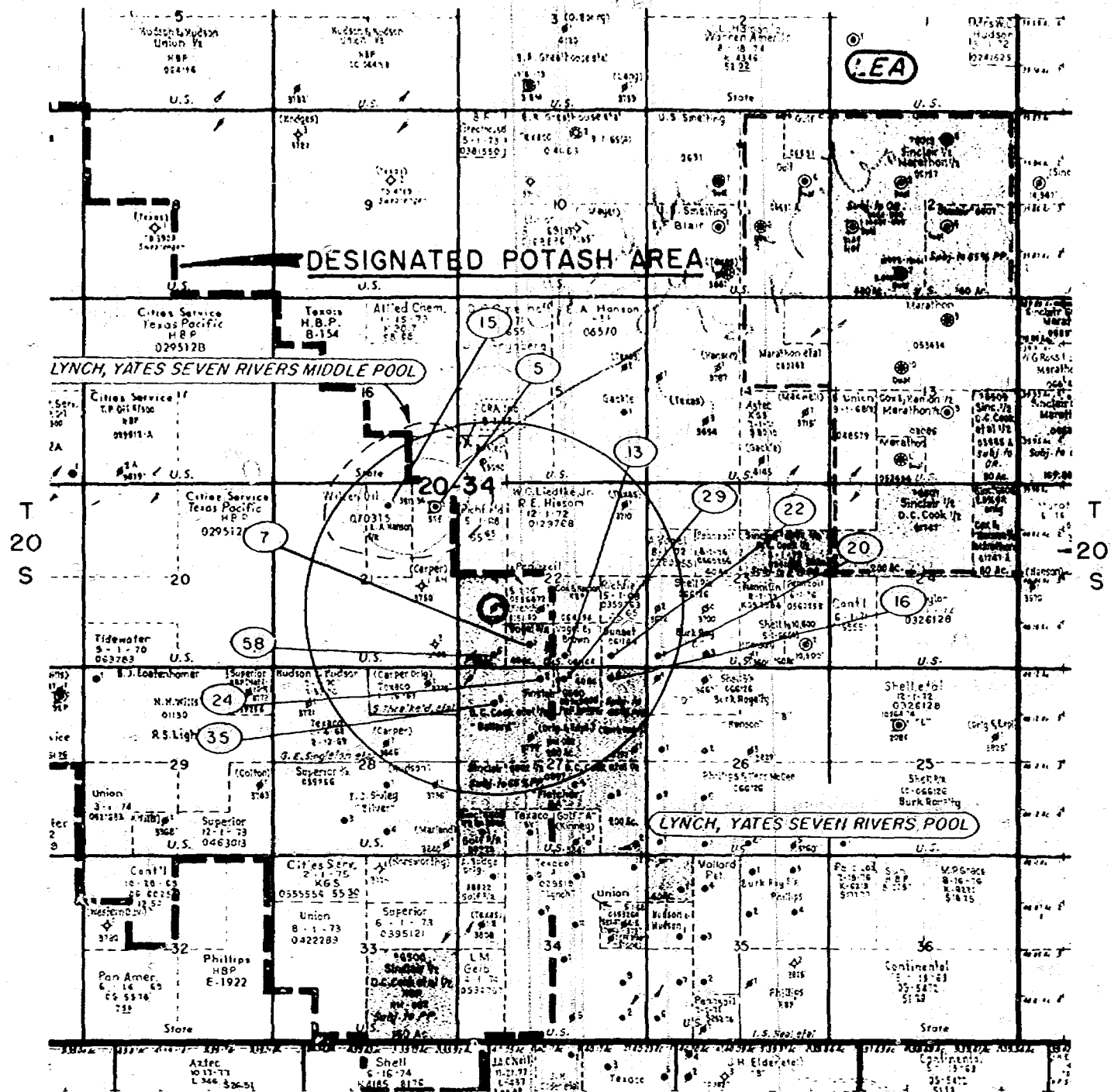
BEFORE EXAMINER UTZ.
OIL CONSERVATION COMMISSION
SINCLAIR EXHIBIT NO. 1
CASE NO. 3854

SINCLAIR OIL & GAS CO.
MIDLAND, TEXAS

PART OF
LEA COUNTY, NEW MEXICO

DRAWN BY _____ CHECKED BY _____ DATE _____
SCALE - 1" = 4000' REVISED _____

R-34-E



Sinclair Oil & Gas Co.
3854
Exhibit No. 2

AUGUST 1968 ALLOWABLE
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
SINCLAIR EXHIBIT NO. 2
CASE NO. 3854

SINCLAIR OIL & GAS CO.
MIDLAND, TEXAS

PART OF
LEA COUNTY, NEW MEXICO

DRAWN BY W.P.H. CHECKED BY J.W.H. DATE 8-23-68
SCALE - 1" = 4000' REVISED

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, be obtained, this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15 day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the applicant has the right to appear for hearing, if the applicant so requests. SEE RULE 701.

BEFORE EXAMINER UTZ

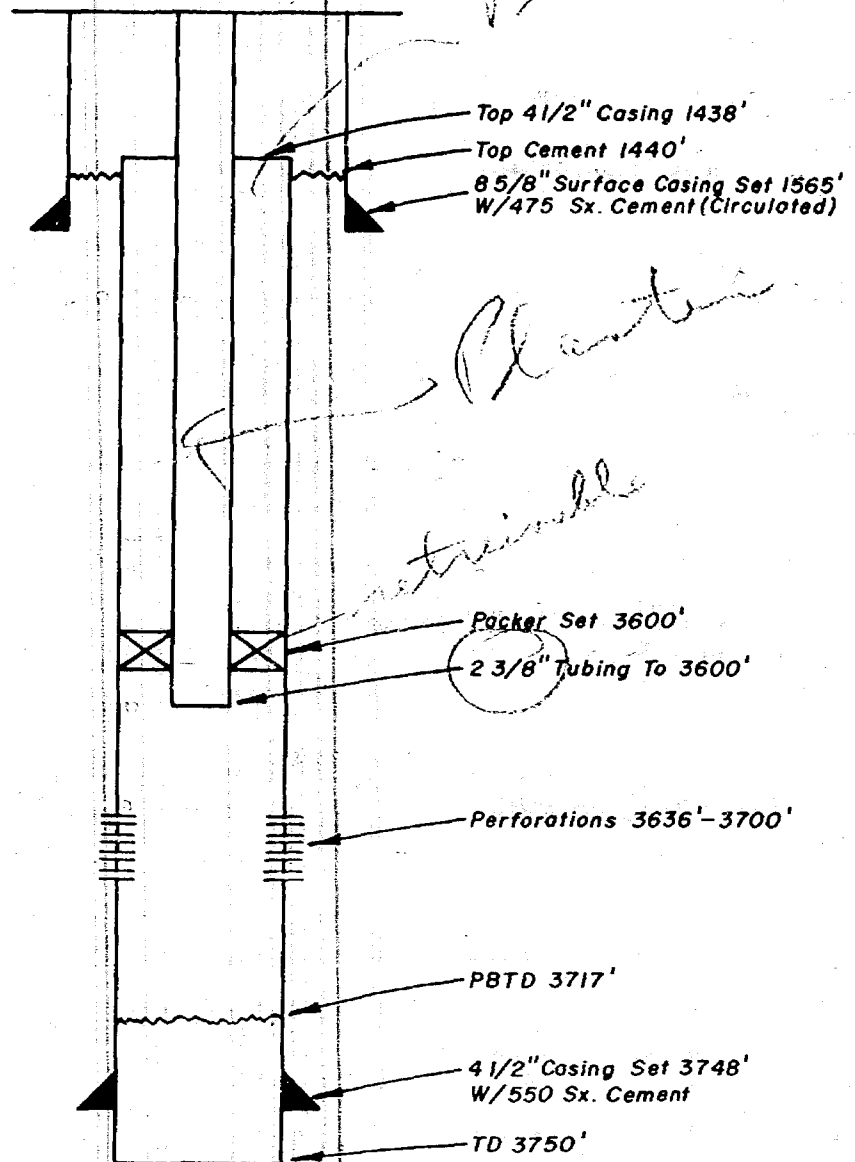
SINCLAIR OIL & GAS CO.

SINCLAIR EXHIBIT NO. 3

CASE NO. 3854

Exhibit No. 3

DIAGRAMMATIC SKETCH OF
PROPOSED INSTALLATION



SINCLAIR OIL & GAS COMPANY
BALLARD DE FEDERAL NO. 6
LYNCH POOL

BEFORE EXAMINER J. J. T. Z.
OIL CONSERVATION COMMISSION
1650 FSL & 990' FWL SEC. 22, T-20-S, R-34-E
LEA COUNTY, NEW MEXICO

SINCLAIR EXHIBIT NO. 4
CASE NO. 3854

Sinclair Oil & Gas Co.
3854
Exhibit No. 4

SINCLAIR OIL & GAS COMPANY
COMPLETION INTERVALS (GROSS) OF ALL
PRODUCING WELLS WITHIN ONE MILE OF
PROPOSED DISPOSAL WELL

<u>Operator, Lease & Well</u>	<u>Elevation</u>	<u>Gross Comp. Inter.</u>	<u>Subsea Interval</u>
Proposed SWD Well			
Sinclair, Fed. Ballard DE #6	3667	3636-3700	+31/-33
Berry, Muse #1	3648 DF	3513-3534	+135/+114
Hanson, Fed. RB #1	3649	3523-3560	+126/+89
Sinclair, Fed. Ballard DE #5	3685 DF	OH 3505-3637	+180/+48
Vogel, D & E Fed. #1	3676 DF	OH 3555-3690	+121/-14
Vogel, D & E Fed. #2	3696 DF	OH 3665-3701	+31/-5
Vogel, R&B Fed. #1	3679	OH 3642-3685	+37/-6
Sunset, Perry Fed. #1	3675 DF	3581-3765	+94/-90
Burke, Han. Fed. C #1	3686	3588-3596	+98/+90
Sinclair, Fed. Ballard DE #2	3687 DF	OH 3648-3685	+39/+2
Sinclair, Fed. Ballard DE #3	3692 DF	OH 3615-3669	+77/+23
Sinclair, Fed. Ballard DE #4	3687 DF	3566-3580	+121/+107

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
SINCLAIR EXHIBIT NO. 5
CASE NO. 3854

Sinclair Oil & Gas Co.
3854
Exhibit No. 5