CASE 4547: Application of HANSON OIL CORP. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

Case Number 4547

Application

Trascripts

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 16, 1971

EXAMINER HEARING

IN THE MATTER OF:

Application of Hanson Oil Corporation for salt water disposal, Lea County, New Mexico. Case No. 4547

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order, please. The first case this afternoon is Case No. 4547.

MR. HATCH: Case 4547. Application of Hanson Oil Corporation for salt water disposal, Lea County, New Mexico.

MR. KELLAHIN: If the examiner please, Jason Kellahin, Kellahin & Fox, Santa Fe, appearing for the applicants. We have one witness that I would like to have sworn.

(Witness sworn)

GERALD E. HARRINGTON

having been first duly sworn, testified upon his oath as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Gerald E. Harrington.

Q By whom are you employed and in what position, Mr. Harrington?

A I am employed by Hanson Oil Corporation in Roswell, New Mexico, as a geologist.

Q Have you testified before the Oil Conservation Commission and made your qualifications as a geologist a matter of record?

A I have.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

Q (Mr. Kellahin continuing) Mr. Harrington, are you familiar with the application of Hanson Oil Corporation in Case 4547?

A I am.

Q Briefly, what is proposed by the applicants in this case?

A We are proposing to convert a formal producing oil well to a water disposal well.

Q And what oil pool are you in?

A We are located in the Pearl-Seven Rivers Field and the Pearl-Queen Field.

Q Now, referring to what has been marked as the Applicant's Exhibit Number 1, would you identify that exhibit?

A Exhibit Number 1 is a plat showing the area surrounding the area of the location of the proposed disposal well.

Q Does that show the location of other wells within the two-mile radius?

A It does.

Q What producing formations are those wells producing from?

A The Pearl-Queen Field produces from the Queen formation, and the Pearl-Seven Rivers from the Seven Rivers formation.

Q Is there any Seven-Rivers production in the immediate vicinity of your proposed disposal well?

A There is one well located in the southeast quarter of section thirty-five, our well Number 9.

Q Is that a Hanson operated well?
A It is.
Q Operated by the applicants in this case?
A It is.
Q Now, referring to what has been marked as Exhibit Number 2, would you identify that exhibit?
A Exhibit Number 2 is a perforating formation color log of the well proposed to convert to a disposal well.
Q Have you marked any tops of formations or other information on that exhibit?
A The top of the Seven-Rivers formation has been identified, and the perforations of the formally producing zone in the Seven-Rivers have been marked on the log.
Q Now, are you going to inject through those same perforations or the same interval?
A It is our intention to do so.
Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?
A Exhibit Number 3 is a diagramatic sketch of the existing facilities and the proposed hook-up on the water disposal property.
Q Now, is the top of the cement that calculated top?
A The top of the cement is calculated inasmuch as there was cement left inside the pipe when the well was originally drilled, and calculating the volume comprising

would be that amount of cement left inside it.

I arrived at the conclusion that the top of the cement outside the casing would be at an estimated depth of 3550 feet.

Q Now, that would be well above your Packard perforated interval, would it not?

A Yes.

Q Now, do you propose to inject under a Packard and through tubing?

A We do. We intend to set the Packard at approximate depth of 2970 feet, and run our internal coat of plastic-coated tubing to the Packard and inject water through perforated intervals from 4000 to 9 feet, 4024 feet.

Q Will you use an internal equipment tubing?

A Yes.

Q Will you fill the casing tubing annulus with inert fluid?

A Yes, we will.

Q And will you install a pressure gauge at the surface?

A Yes.

Q Is this the same type of installation you used in another injection well in this area?

A It was exactly the same type of installation as is currently being used on our Number 11 well located in the southwest quarter of section thirty-five.

Q Now, what will be the source of water that you will inject

in this well, Mr. Harrington?

A The source of water is produced water from the Mescalero Ridge Unit, thirty-five Pearl-Queen Reservoir, as well as water from our single well in the Pearl-Seven Rivers.

Q Do you have an analysis of the Queen water?

A An analysis is included with this application.

Q Is that also marked as Exhibit Number 4 in the exhibit for the Commission?

A It is.

MR. NUTTER: Mr. Kellahin, I am having a little hard time following these exhibit numbers. I think this set may be numbered a little differently. This is Exhibit 1?

MR. KELLAHIN: Yes, sir. Exhibit 2 is the log.

MR. NUTTER: Well, that would be this?

MR. KELLAHIN: Yes. Yes, sir.

MR. NUTTER: Well it is three here, so I had better change that. That is 2, and --

MR. KELLAHIN: Exhibit 3 is the diagramatic sketch.

MR. NUTTER: That was 4 here. All right.

MR. KELLAHIN: And the water analysis is Number 4.

MR. NUTTER: And the plat here is. That would be this big thing here?

MR. KELLAHIN: Right.

MR. NUTTER: That's where it got off, because it is marked 2. That's fine. Okay.

Q (Mr. Kellahin continuing) Now, Exhibit Number 4 is the Queen water analysis, is it not?
A That's correct.
Q Now, referring to what has been marked Exhibit Number 5, would you discuss the information that is shown on that exhibit?
A Exhibit Number 5 is a map showing the existing water disposal facilities, the existing water disposal well, and the location of the proposed water disposal well, as well as all the producing wells in this six section block.
Q Now, in that six section block, are those all Queen wells with the exception of your Seven-River well?
A Yes.
Q And all of the water that you are disposing of will be from Queen production with the exception of some water from the Seven-Rivers?
A That's correct.
Q And what volume of water, roughly, will be disposed of?
A We are anticipating a volume, initially, of approximately 950 barrels per day.
Q And do you anticipate that you will encounter pressure in there, or will it take it on a vacuum?
A We are anticipating that we will encounter pressure, and that thing will be in the vicinity of approximately 2450 pounds.

Q And what has your experience in your other disposal wells been?

A At the present time we are approaching the maximum on pressure as far as injecting salt water.

Q Now, you are disposing in the Queen formation, are you not?

A That's correct.

Q But your new application is for the Seven-Rivers?

A That's correct.

Q And what pressure do you have on the Queen formation?

A Our Queen injection well is operating currently at a pressure of approximately 2375 pounds. It ranges from 2375 to 2420.

Q Now, in the event the Commission approves this application, will you transfer some of the water presently going to that disposal well to the new one?

A This is our intention, to relieve the pressure on the existing water disposal well.

Q Do you feel that it is your intent that this be done right away?

A Extremely urgent inasmuch as we are at a capacity or approaching capacity of the existing disposal well.

Q Are you handling water from any other operators in addition to Hanson Oil Corporation?

A We are.

Q What companies?

A The companies involved are J. P. Driscoll, an individual, Minerals Incorporated. There is one other company which I have listed on our application, Union Oil Company of California.

Q And you will continue to dispose water for those companies?

A That's correct.

Q In your opinion, will the injection of water into the Seven-Rivers cause any damage to the producing formation?

A No.

Q And do you feel that it will take the water that you propose to put in there without any difficulties?

A Based on a court analysis which we have available on the proposed disposal well, there would be no difficulty in injecting water in the Seven-River formation.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A They were.

MR. KELLAHIN: At this time, I would like to offer in evidence Exhibits 1 through 5, inclusive.

MR. NUTTER: Applicant's Exhibits 1 through 5 will be admitted in evidence.

MR. KELLAHIN: That's all I have, Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Harrington, which is the one well that is producing from the Seven-Rivers at this time?

A The well is our Number 9, which is located in the northeast of the southeast of section thirty-five.

Q So that would be a diagonal offset to the proposed injection well?

A That's correct.

Q What about the structural position with the relation between these two wells?

A The structural position on the Seven-Rivers would indicate that the proposed disposal well would be at a structurally lower position.

Q Do you have the structural positions there?

A I do not have them with me.

Q How much lower is the Number 17?

A It would be approximately twenty feet structurally lower.

Q And what is Number 9 making at the present time?

A Approximately ten barrels of oil per day, and the same amount of water.

Q And the Number 17 at the present time?

A The Number 17 is not produced. It produced for a period of approximately twenty-four hours, and since that time, remedial operations have been attempted, and unsuccessfully,

and there has been no additional production.

Q So it has really never been a producer?

A No, sir. However, it was completed as an oil well, based on that first twenty-four hour gauge, and since that time, it has not produced.

It was attempted, but no commercial production was -- the attempt was not successful.

Q How long has the Number 9 been completed?

A I will have to look here.

Q Well, rather than being specific, has it been completed as a Seven-Rivers for some little while?

A Yes, sir, it has.

Q Has it made much oil?

A The cumulative figures are somewhere among my souvenirs. Through 1970 it produced a cumulative total of -- I beg your pardon. In 1970 it produced a total of 5556 barrels of oil, 13,500 MCF, and 2995 barrels of water.

The well was completed April 1, 1965.

Q Now, do you have a cumulative production on that?

A Number 9 well has produced cumulative totals through 1970 of 42,541 barrels of oil.

Q I see. Well, you don't feel that the injection of water into the Number 17 will be detrimental to the Number 9 because of its structural position?

A That's correct.

Q And, in fact, injection of water might enhance the production?
A It is possible. However, it is difficult to --
Q Is the Seven-Rivers normally a water drive in this area?
A No. I think it is solution gas drive, primarily.

MR. NUTTER: Are there any further questions of Mr. Harrington? He may be excused.

(Witness excused)

MR. NUTTER: Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: That's all, Mr. Nutter, that I --

MR. NUTTER: Does anyone have anything to offer in Case Number 4547? Take the case under advisement.

I N D E X

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, LINDA MALONE, Court Reporter, 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.

Linda Malone
Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4547, heard by me on 6/16, 1971.

....., Examiner
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

June 21, 1971

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 4547
Order No. R-4156
Applicant:
Hanson Oil Corporation

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.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other 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. 4547
Order No. R-4156

APPLICATION OF HANSON OIL
CORPORATION FOR SALT WATER
DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 10:30 a.m. on June 16, 1971, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 21st day of June, 1971, 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, Hanson Oil Corporation, seeks authority to utilize its Mescalero Ridge Unit "35" Well No. 17, located in Unit G of Section 35, Township 19 South, Range 34 East, NMPM, Pearl-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation in the perforated interval from 4009 feet to 4024 feet.

(3) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 3970 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(4) 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, Hanson Oil Corporation, is hereby authorized to utilize its Mescalero Ridge Unit "35" Well No. 17, located in Unit G of Section 35, Township 19 South, Range 34 East, NMPM, Pearl-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3970 feet, with injection into the perforated interval from approximately 4009 feet to 4024 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 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

BRUCE KING, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

Docket No. 12-71

DOCKET: REGULAR HEARING - WEDNESDAY - JUNE 16, 1971

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

ALLOWABLE: (1) Consideration of the oil allowable for July and August, 1971;

(2) Consideration of the allowable production of gas for July, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for July, 1971; also presentation of purchaser's nominations for the six-month period beginning August 1, 1971, for that area.

CASE 4487: (De Novo) This case will be continued to the August 18, 1971, Regular Hearing.

Application of Pennzoil United, Inc., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn formation underlying the W/2 of Section 6, Township 23 South, Range 27 East, South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, said acreage to be dedicated to the Morris R. Antweil Joell Well No. 1 located 660 feet from the North line and 1980 feet from the West line of said Section 6. Also to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

Upon application of Pennzoil United, Inc., this case will be heard De Novo under the provisions of Rule 1220.

CASE 4503: (De Novo)
In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Penroc Oil Corporation and all other interested persons to appear and show cause why the intentional deviation of Penroc Oil Corporation State Well No. 2, having a surface location 360 feet from the South line and 330 feet from the East line of Section 28, Township 17 South, Range 28 East, Empire-Abo Pool, Eddy County, New Mexico, to a bottom hole-location 123 feet from the South line and 149 feet from the East line of said Section 28 should be approved and why the allowable assigned to said well should not be reduced to offset any advantage gained by said bottom hole location over other producers.

Upon application of Amoco Production Company, this case will be heard De Novo under the provisions of Rule 1220.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF THE LAND OFFICE BUILDING AT 10:30 a.m.:

CASE 4547: Application of Hanson Oil Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers formation in the perforated interval from 4009 feet to 4036 feet in its Mescalero Ridge Unit "35" Well No. 17 located in Unit G of Section 35, Township 19 South, Range 34 East, Pearl-Seven Rivers Pool, Lea County, New Mexico.

CASE 4548: Application of Hanagan Petroleum Corporation for creation of a new gas pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow gas pool for its Catclaw Draw Unit Well No. 1-Y located in Unit F of Section 26, Township 21 South, Range 25 East, Eddy County, New Mexico. Applicant further seeks the promulgation of special rules therefor, including a provision for 640-acre spacing units.

CASE 4549: Application of Tom L. Ingram for unorthodox gas well location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for his Light Well No. 1 located 1980 feet from the South line and 660 feet from the East line of Section 15, Township 8 South, Range 37 East, Bluitt-San Andres Associated Pool, Roosevelt County, New Mexico, the S/2 of said Section 15 to be dedicated to the well.

CASE 4550: Application of Roger C. Hanks for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation at approximately 10,500 feet in a well located 660 feet from the North and West lines of Section 5, Township 20 South, Range 25 East, Eddy County, New Mexico.

CASE 4551: Application of Roger C. Hanks for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 of the Commission Rules and Regulations to drill a well at an unorthodox gas well location 1900 feet from the South line

(Case 4551 continued)

and 850 feet from the West line of Section 35, Township 20 South, Range 24 East, undesignated Pennyslvanian gas pool, Eddy County, New Mexico, the S/2 of said Section 35 to be dedicated to the well.

CASE 4552: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the amendment of Rule 506 of the Commission Rules and Regulations by deleting therefrom the provision that all gas produced with the current oil allowable determined in accordance with Rule 506 shall be deemed to have been lawfully produced.

CASE 4554: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Henry S. Birdseye and all other interested persons to appear and show cause why the following-described wells in the Chaco Wash-Mesaverde Pool in Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Santa Fe Railroad Wells Nos. 1, 2, 3, and 4 and in Unit P of Section 21; Well No. 6 in Unit M of Section 22; and Wells Nos. 5, 7, 8, 9, 11, and 12 in Units D, D, C, F, D, and F, respectively, of Section 27.

CASE 4555: Application of BTA Oil Producers for expansion of a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its BTA Vada Bond Pressure Maintenence Project, Vada Pennsylvanian Pool, by the conversion to water injection of its Bond Wells Nos. 2 and 3 located, respectively, in Units L and A of Section 5 and its Bond Well No. 4 located in Unit J of Section 4, all in Township 9 South, Range 36 East, Lea County, New Mexico. Applicant proposes to complete the above-described wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone in each of the wells.

CASE 4553: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Chaves Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Aid-Morrow Gas Pool. The discovery well is Pennzoil United,

(Case 4553 continued)

Inc., Aid State No. 1 located in Unit A of Section 24, Township 17 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM
SECTION 24: N/2

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Blinebry production and designated as the East Terry-Blinebry Pool. The discovery well is Mark Production Company, Conoco Federal No. 2 located in Unit J of Section 30, Township 20 South, Range 39 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 39 EAST, NMPM
SECTION 30: SE/4

(c) Extend the Arrowhead-Grayburg Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 20: NW/4

(d) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 5: SE/4

(e) Extend the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 10: S/2

(f) Extend the Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 30: W/2 W/2

Docket No. 12-71

(g) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
SECTION 23: SE/4 SE/4

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: NW/4 NE/4

(h) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 25: SW/4

(i) Extend the South McCormack-Silurian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 22: NW/4

(j) Extend the Power Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM
SECTION 32: SW/4 SW/4

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
SECTION 6: NW/4 NW/4

(k) Extend the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM
SECTION 21: SE/4

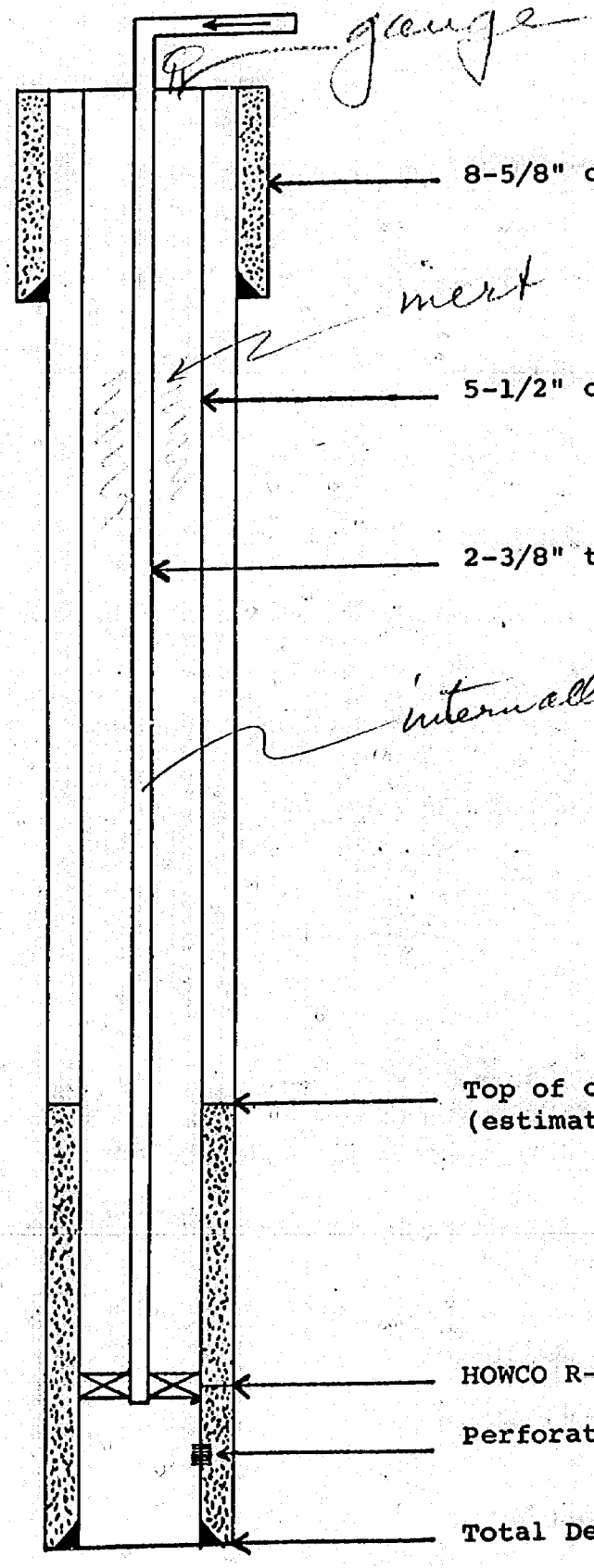
(l) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 13: NE/4
SECTION 15: S/2 SW/4
SECTION 23: W/2

(m) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 5: NE/4

DIAGRAMMATIC SKETCH
Salt Water Disposal Well



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Nanos EXHIBIT NO. 3
CASE NO. 4547

[redacted] TRETOLITE DIVISION
369 Marshall Avenue / Saint Louis 19, Missouri

JAN 27 1968

WATER ANALYSIS REPORT

COMPANY Hanson Oil Co. ADDRESS Roswell, N.M. DATE 1-26-68

SOURCE Mescalero Ridge Unit DATE SAMPLED 1-20-68 ANALYSIS NO. 2040

NOTED
JAN 28 1968
HANSON

	Analysis	Mg/l	*Meq/l		
1.	PH	7.7			
2.	H_2S (Qualitative)	Neg.			
3.	Specific Gravity	1.000			
4.	Dissolved Solids	2,950			
5.	Suspended Solids				
6.	Phenol Alkalinity ($CaCO_3$)				
7.	M. O. Alkalinity ($CaCO_3$)	180			
8.	Bicarbonate (HCO_3)	220	+61	4	HCO_3
9.	Chlorides (Cl)	747	+35.5	21	Cl
10.	Sulfates (SO_4)	954	+48	20	SO_4
11.	Calcium (Ca)	80	+20	4	Ca
12.	Magnesium (Mg)	24	+12.2	2	Mg
13.	Total Hardness ($CaCO_3$)	300			
14.	Total Iron (Fe)	1.3ppm			
15.	Barium (Qualitative)				
16.					

*Milli equivalents per liter

PROBABLE MINERAL COMPOSITION

4	Ca ←	HCO_3
2	Mg →	SO_4
39	Na ←	Cl

4	
20	
21	

Compound	Equiv. Wt.	X Meq/l	= Mg/l
$Ca(HCO_3)_2$	81.04	4	324
$CaSO_4$	68.07		
$CaCl_2$	55.50		
$Mg(HCO_3)_2$	73.17		
$MgSO_4$	60.19	2	120
$MgCl_2$	47.62		
$NaHCO_3$	84.00		
Na_2SO_4	71.03	18	1,280
NaCl	58.46	21	1,230

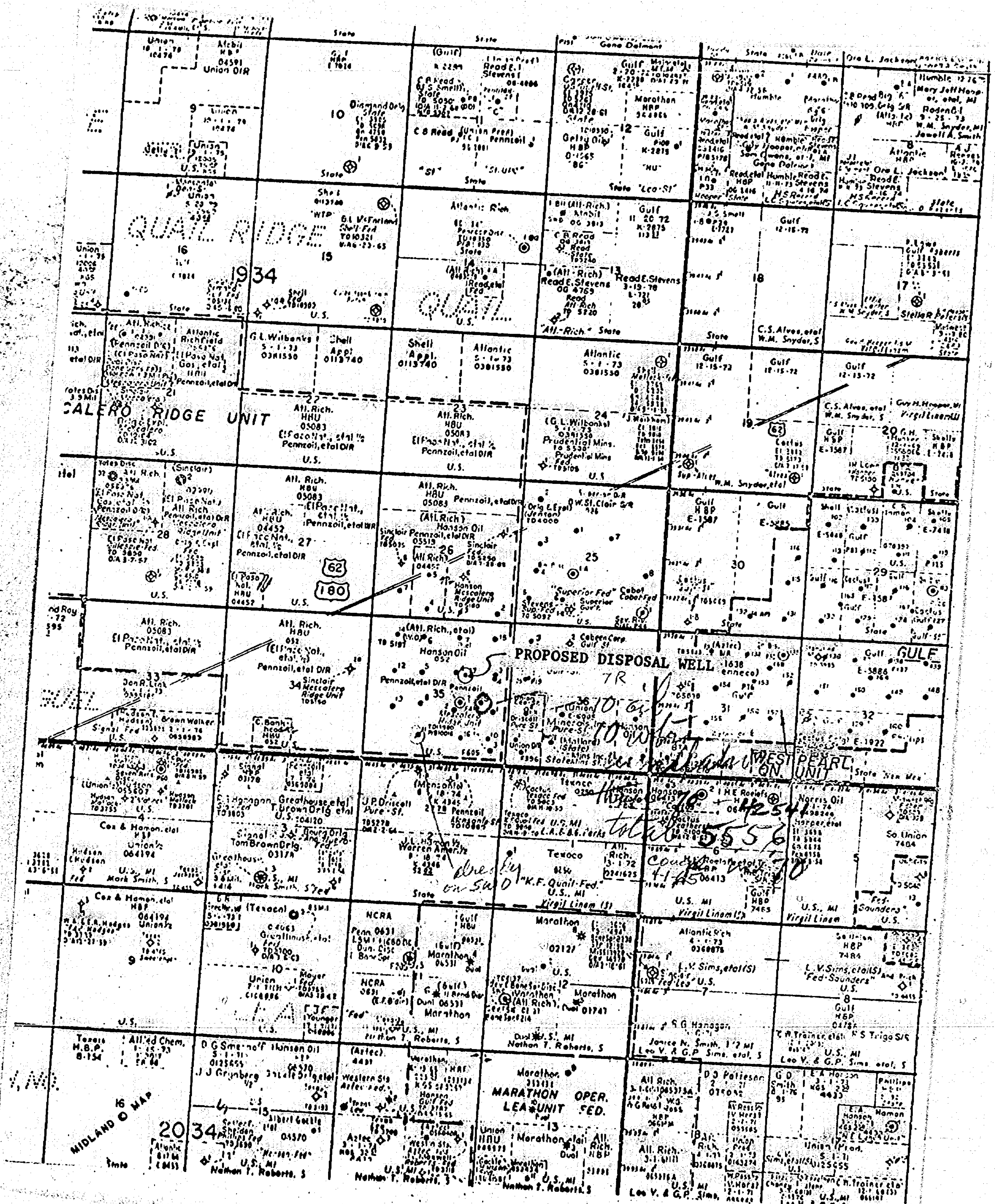
Saturation Values Distilled Water 20°C
$CaCO_3$ 13 Mg/l
$CaSO_4 \cdot 2H_2O$ 2,090 Mg/l
$MgCO_3$ 103 Mg/l

REMARKS Mr. Ernest A. Hanson, Box 1515 Roswell N.M.

Buford Parmer, Worsham, file

Respectfully submitted
TRETOLITE COMPANY
Ray Shaffner

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Nomen EXHIBIT NO. 4
CASE NO. 45-47



QUAIL RIDGE
QUAIL
CALERO RIDGE UNIT
PROPOSED DISPOSAL WELL
MARATHON OPER.
LEA UNIT FED.
MIDLAND MAP

Hanson Oil Corporation
PETROLEUM BUILDING
P. O. BOX 1515
ROSWELL, NEW MEXICO 88201
505 622-7330

May 17, 1971

Case 4547

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Application for Salt Water Disposal
Pearl-Seven Rivers Field
Lea County, New Mexico

Gentlemen:

Hanson Oil Corporation, owner and operator of the Mescalero Ridge Unit "35" Well No. 17, located in Unit G of Section 35, Township 18 South, Range 34 East, NMPM, Pearl - Seven Rivers Field, Lea County, New Mexico, does hereby make application to convert said well for use as a salt water disposal well. Reference is made to the New Mexico Oil Conservation Commission Order No. R-3449 which was issued July 3, 1968, to Ernest A. Hanson authorizing the utilization of another well on this lease for this purpose.

Hanson Oil Corporation proposes to inject produced salt water into the Seven Rivers Formation through 2-3/8" internally plastic coated tubing installed in a HOWCO R-3 packer set at approximately 3970 feet, with injection into the perforated interval from 4020 feet to 4036 feet. The casing-tubing annulus will be filled with a non-corrosive inhibited water, and a pressure gauge will be installed at the surface as a check on any leakage.

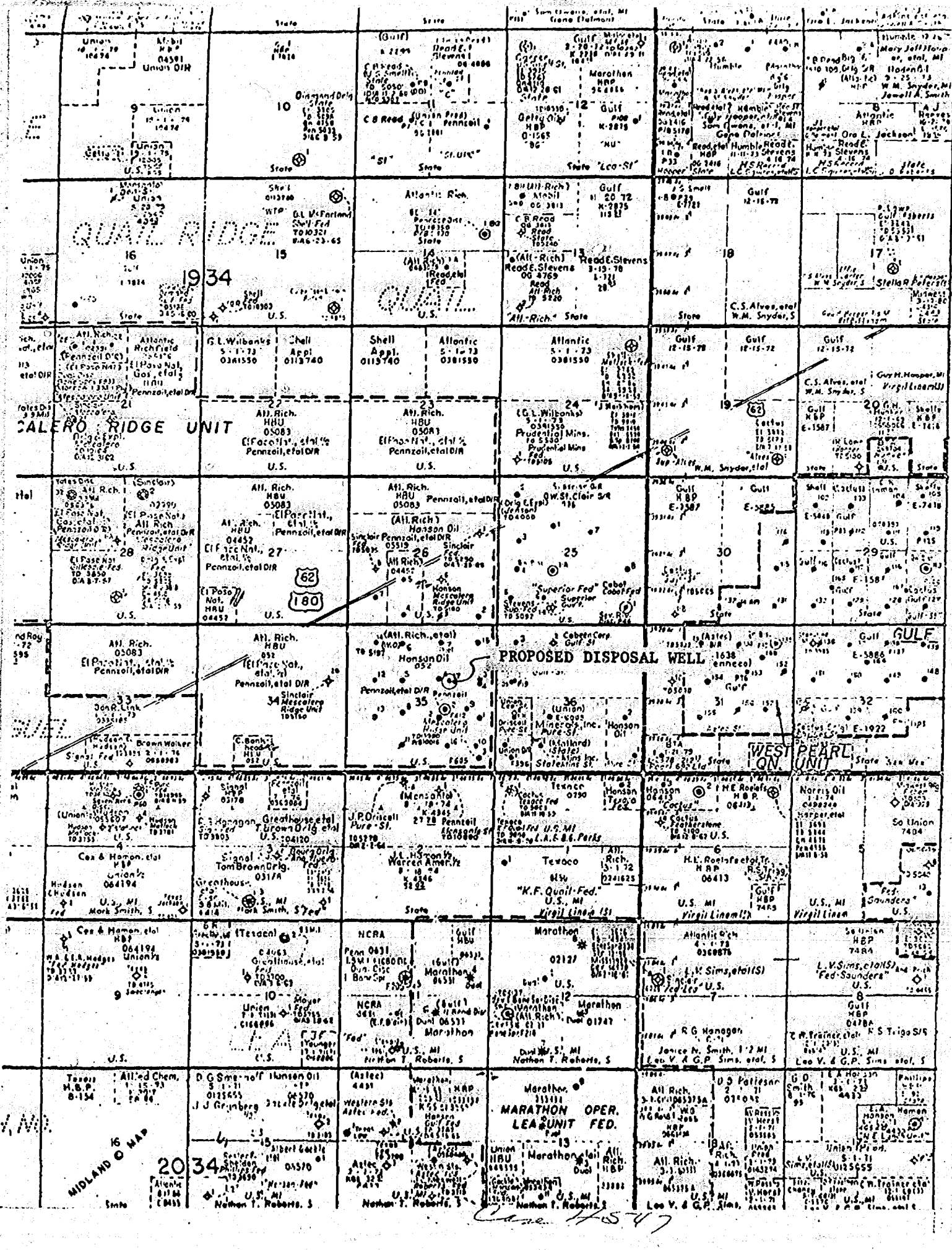
It is respectfully requested that this application be placed on the docket of the New Mexico Oil Conservation Commission hearing scheduled for June 16, 1971.

Yours very truly,

Gerald E. Harrington

Gerald E. Harrington
Geologist

GEH:ef
Enclosures: Plat
Gamma Ray-Densilog
Diagrammatic Sketch
Water Analysis
Form C-108


QUAIL RIDGE
1934
QUAIL
CALERO RIDGE UNIT
PROPOSED DISPOSAL WELL
WEST PEARL QN UNIT
GULF
MARATHON OPER. LEA UNIT FED.
MIDLAND MAP
Case 4547

LANE WELLS COMPANY
A DIVISION OF DRESSER INDUSTRIES, INC.

Perforating Formation Collar CHART

COMPANY E. A. Hanson
WELL Mescalero Ridge Unit 35 No. 17
FIELD Pearl (Seven Rivers)
LOCATION 1980 FNL & 1650 FEL Sec. 35 T-19-S, R-34-E
COUNTY Lea STATE New Mexico

ZERO POINT Ground Level +12'
TOTAL DEPTH (CUST.) 4040
TOTAL DEPTH (LANE WELLS) 4048
PERM. DATUM Ground Level

CASING RECORD

Casing Size	Wt. (Lb./Ft.)	Depth
5½"		T.D.

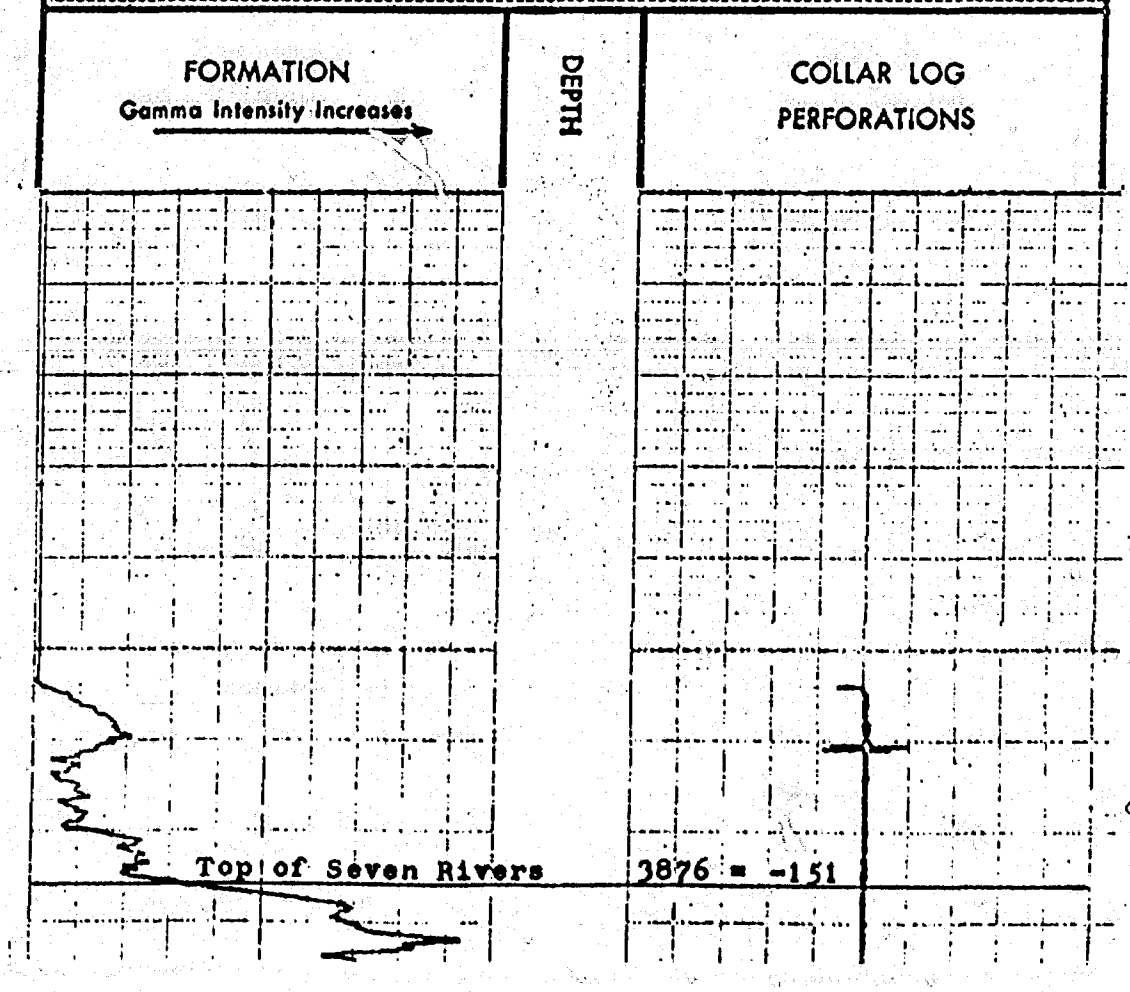
PERFORATED ZONES

	DEPTH		SHOTS
FROM	C	TO 4036	1
FROM	C	TO 4033	1
FROM	C	TO 4031	1
FROM	C	TO 4029	1
FROM	C	TO 4027	1
FROM	C	TO 4023.5	1
FROM	C	TO 4020.5	1
FROM		TO	
FROM		TO	

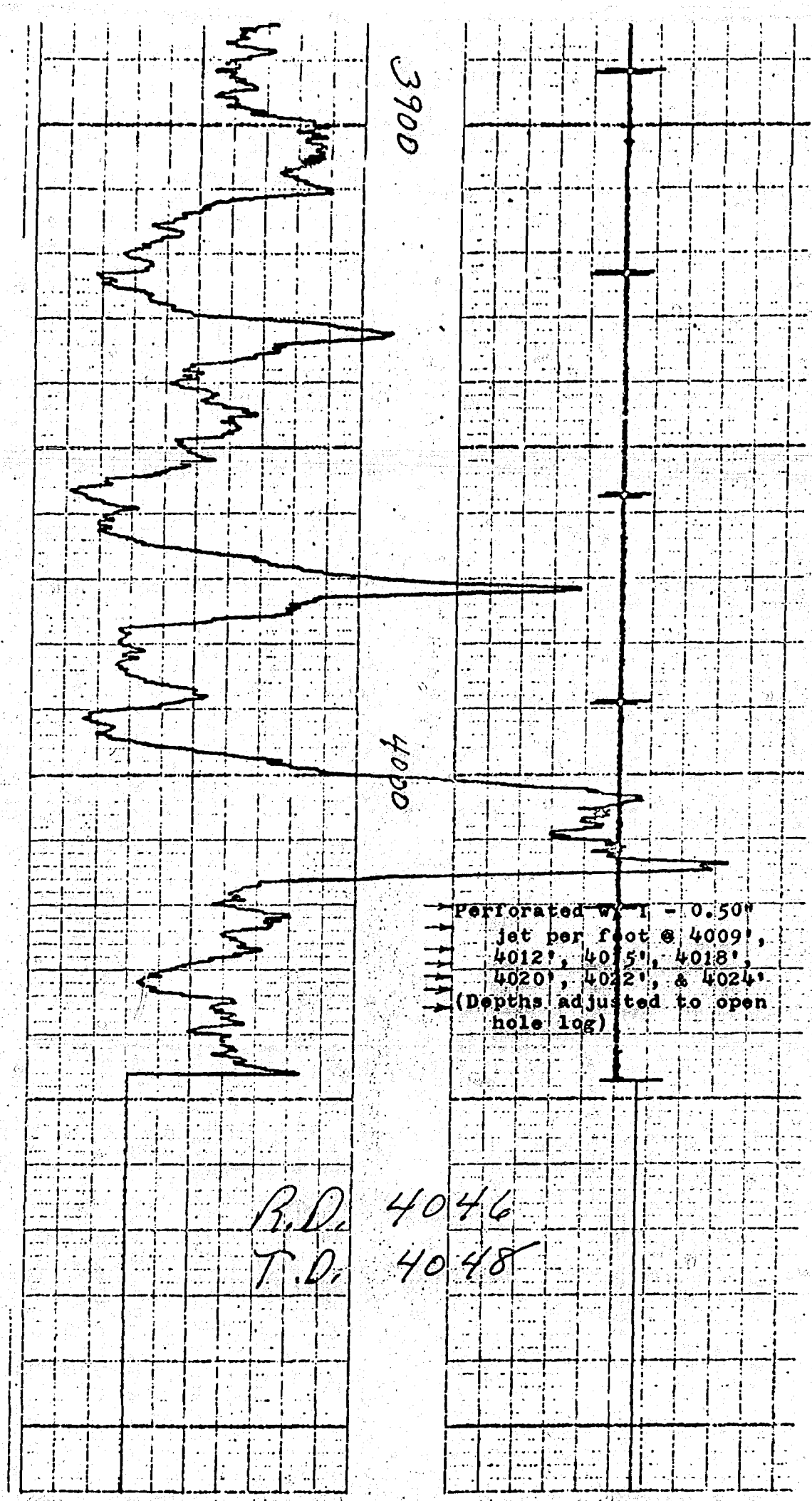
TYPE GUN Sedeckone SIZE 3½" LENGTH
TYPE GUN SIZE LENGTH
DATE 5-9-62 S.O. NO. 170154 SERVICE UNIT HP 1212
OPERATOR W. R. Hurst WITNESSED BY M. Schram

This Perforating-Formation-Collar Chart is offered to locate collars with respect to the formation and to correlate collars with open hole logs. Quality checks or calibrations are not made since the chart is not intended for formation evaluation. Only this field copy is made. No copies are retained in Lane-Wells files.

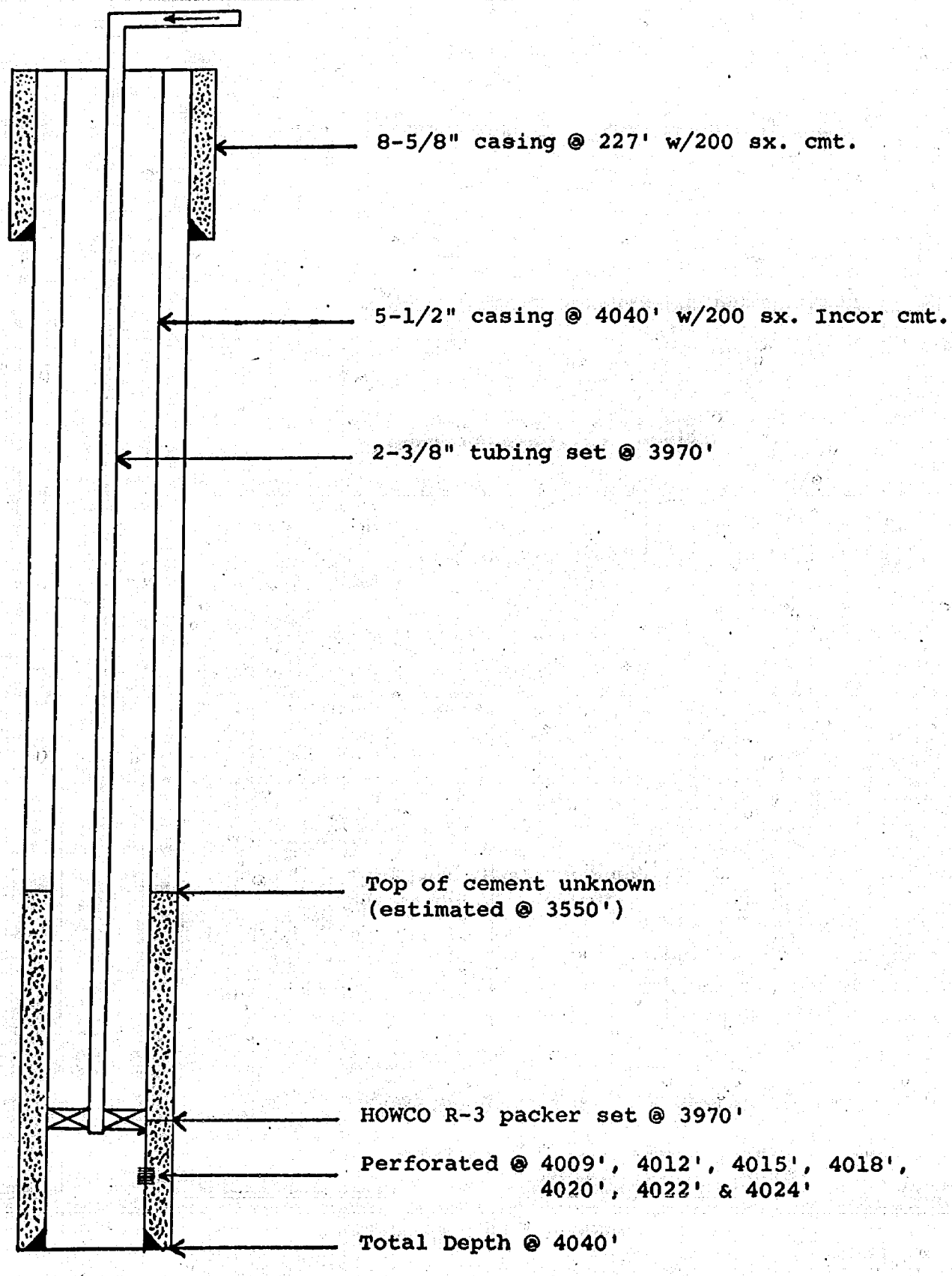
REMARKS OR OTHER DATA
React +8' to Open Hole Log



Case 4547


3900
4000
Perforated w/ 1 - 0.50" jet per foot @ 4009', 4012', 4015', 4018', 4020', 4022', & 4024' (Depths adjusted to open hole log)
R.D. 4046
T.D. 4048

DIAGRAMMATIC SKETCH
Salt Water Disposal Well



Case 4547

TRETOLITE DIVIS V
369 Marshall Avenue / Saint Louis 19, Missou.,

JAN 27 1968

WATER ANALYSIS REPORT

COMPANY Hanson Oil Co. ADDRESS Roswell, N.M. DATE 1-26-68

SOURCE Mescalaro Ridge Unit DATE SAMPLED 1-20-68 ANALYSIS NO. 2040

Analysis		Mg/l	*Meq/l		
1. PH	7.7				
2. H_2S (Qualitative)	Neg.				
3. Specific Gravity	1.000				
4. Dissolved Solids		2,950			
5. Suspended Solids					
6. Phenol Alkalinity ($CaCO_3$)					
7. M. O. Alkalinity ($CaCO_3$)		180			
8. Bicarbonate (HCO_3)		220	÷61	4	HCO_3
9. Chlorides (Cl)		747	÷35.5	21	Cl
10. Sulfates (SO_4)		954	÷48	20	SO_4
11. Calcium (Ca)		80	÷20	4	Ca
12. Magnesium (Mg)		24	÷12.2	2	Mg
13. Total Hardness ($CaCO_3$)		300			
14. Total Iron (Fe)		1.3ppm			
15. Barium (Qualitative)					
16.					

*Milli equivalents per liter

NOTED
JAN 29 1968
HANSON

PROBABLE MINERAL COMPOSITION

4	Ca ← HCO_3	4
2	Mg → SO_4	20
39	Na → Cl	21

Saturation Values Distilled Water 20°C

$CaCO_3$	13 Mg/l
$CaSO_4 \cdot 2H_2O$	2,090 Mg/l
$MgCO_3$	103 Mg/l

Compound	Equiv. Wt.	X Meq/l	= Mg/l
$Ca(HCO_3)_2$	81.04	4	324
$CaSO_4$	68.07		
$CaCl_2$	55.50		
$Mg(HCO_3)_2$	73.17		
$MgSO_4$	60.19	2	120
$MgCl_2$	47.62		
$NaHCO_3$	84.00		
Na_2SO_4	71.03	18	1,280
NaCl	58.46	21	1,230

REMARKS Mr. Ernest A. Hanson, Box 1515 Roswell N.M.

Buford Parmer, Worsham, file

Respectfully submitted
TRETOLITE COMPANY
Ray Shaffner

R-25 M 1000 8-66 W

Case 145-47

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR		ADDRESS	
Hanson Oil Corporation		P. O. Box 1515 - Roswell, New Mexico 88201	
LEASE NAME	**WELL NO.**	**FIELD**	**COUNTY**
Mescalero Ridge Unit "35"	17	Pearl - Seven Rivers	Lea

LOCATION

UNIT LETTER G ; WELL IS LOCATED 1980 FEET FROM THE North LINE AND 1650 FEET FROM THE East LINE, SECTION 35 TOWNSHIP 19-S RANGE 34-E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	8-5/8"	227'	200	circulated	
INTERMEDIATE	"				
LONG STRING	5-1/2"	4040'	200	3550'	calculation
TUBING	2-3/8"	3970'	NAME, MODEL AND DEPTH OF TUBING PACKER: HOWCO R-3 @ 3970'		

NAME OF PROPOSED INJECTION FORMATION	TOP OF FORMATION	BOTTOM OF FORMATION
Seven Rivers	3876'	Unknown

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?	PERFORATIONS OR OPEN HOLE?	PROPOSED INTERVAL(S) OF INJECTION
Tubing	Perforations	4009-4024'

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	Producing Oil Well	No

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH

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
Unknown	3854'	4572'

ANTICIPATED DAILY INJECTION VOLUME (BBLS.) MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
750	2000	Open	Pressure	2000

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	Yes

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

W. M. Snyder Estate - Box 726 - Lovington, New Mexico 88260

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Minerals, Inc. - P. O. Box 1320 - Hobbs, New Mexico 88240

Union Oil Co. of California - Union Oil Bldg. - Midland, Texas 79701

J. P. Driscoll - 3108 Southland Center - Dallas, Texas 75210

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	**PLAT OF AREA**	**ELECTRICAL LOG**	**DIAGRAMMATIC SKETCH OF WELL**
	Yes	Yes	Yes

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

Gerald E. Harrington — Geologist — 5-17-71

(Signature) (Title) (Date)

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.

Case 4547

DRAFT

GMH/dr

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. 4547

Order No. R- 4156

APPLICATION OF HANSON OIL
CORPORATION FOR SALT WATER
DISPOSAL, LEA COUNTY, NEW MEXICO.

6-17-71

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 10:30 a.m. on June 16, 1971, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of June, 1971, 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, Hanson Oil Corporation, seeks authority to utilize its Mescalero Ridge Unit "35" Well No. 17, located in Unit G of Section 35, Township 19 South, Range 34 East, NMPM, Pearl-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation in the perforated interval from 4009 feet to ~~4036~~ 4024 feet.

(3) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 3970 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(4) 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, Hanson Oil Corporation, is hereby authorized to utilize its Mescalero Ridge Unit "35" Well No. 17, located in Unit G of Section 35, Township 19 South, Range 34 East, NMPM, Pearl-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3920 feet, with injection into the performated interval from approximately 4009 feet to 4024 ~~4036~~ 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 guage shall be attached to the annulus 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.