

1R - 164

# REPORTS

DATE:

---

1-11-1980

GROUND WATER STUDY  
INEXCO UNLINED PIT APPLICATION  
CASE NO. 6782

January 11, 1980  
Oil Conservation Division  
John W. Runyan

GROUND WATER STUDY  
18-19-33 Area

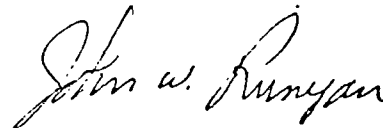
A field trip was made January 10, 1980, to determine status of water wells and surface geology in the area around the Inexco Federal Lease located in Unit H of Section 7, T19S, R33E, for the purpose of determining if Inexco should be given an exception to the No-Pit Order.

The field study found four water wells were located within  $1\frac{1}{2}$  miles of the Inexco well location. Water well located in Unit D of Section 17, T19S, R33E, and the well in Unit O of Section 1, T19S, R32E have both been abandoned for some time. No mills on location. The water well located in Unit E of Section 18, T19S, R33E, is used for watering stock and has a chloride content of 156 ppm chlorides, and there is a windmill located in Unit C of Section 5, T19S, R33E, which is currently being used for stock water.

The area all around Inexco's well apparently does have underground water of useable quality, and is well under the 10,000 ppm recognized as useable by W.C.C. Chlorides range from 2560 to 156 ppm chlorides in the general area, and depth of water wells range from 117 feet to 300 feet. Refer to map.

GEOLOGY: There are low dunes covering triassic redbeds in the area in question and the triassic (on surface) is composed of sand lightly cemented with red clay and is very soft. Any water put into pits would easily go down into the water aquifer.

I do not recommend that Inexco be allowed exception to the No-pit Order.

  
John W. Runyan



ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBS, NEW MEXICO

WATER ANALYSIS

Well Ownership: Unknown Well No. #1

Land Status: State        Federal X Fee       

Well Location: Unit Letter E, Section 18, T 19 S, R 33 E

Water well has small pump jack - electric

Type Well: water well Depth ?? feet.

Well Use: stock

Sample Number: #1

Date Taken: 1-10-80

Taken By: John W. Runyan

Specific Conductance:            m/Λ

Total dissolved Solids:            PPM.

Chlorides: 156.2 PPM.

Sulfates:            PPM.

Ortho-phosphates: ☐ V.Low ☐ Low ☐ Medium ☐ High

Sulfides: ☐ None ☐ Low ☐ Medium ☐ High

Date Analyzed: 1-11-80

By: John W. Runyan  
Oil Conservation Division

REMARKS: This water well is 300 feet west of battery which has open  
pit disposal -- sample static taken from stock tank

25 ml sample = 142.0 factor x 1.1 titration = 156.2

ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBS, NEW MEXICO

WATER ANALYSIS

Well Ownership: Collier & Collier Well No. Battery pit

Land Status: State \_\_\_\_\_ Federal X Fee \_\_\_\_\_

Well Location: Unit Letter E, Section 18, T. 19 S, R 33 E

Federal 18 Lease -- West Tonto - Yates

Type ~~Well~~: Battery pits Depth \_\_\_\_\_ feet.

~~Well~~ Use: water disposal

Sample Number: #1

Date Taken: 1-10-80

Taken By: \_\_\_\_\_

Specific Conductance: \_\_\_\_\_ m/cm

Total dissolved Solids: 12,425 PPM.

Chlorides: \_\_\_\_\_ PPM.

Sulfates: \_\_\_\_\_ PPM.

Ortho-phosphates: ☐ V.Low ☐ Low ☐ Medium ☐ High

Sulfides: ☐ None ☐ Low ☐ Medium ☐ High

Date Analyzed: 1-11-80

By: John W. Rinehart  
Oil Conservation Division

REMARKS: Sample taken from pit -- static

Three large pits interconnected 3--4' water in pits (no oil on water H<sub>2</sub>S odor)

1 ml sample = 3550 factor x 3.5 titration = 12,425 ppm

WEST TONTO YATES

NO PIT ORDER EXCEPTION

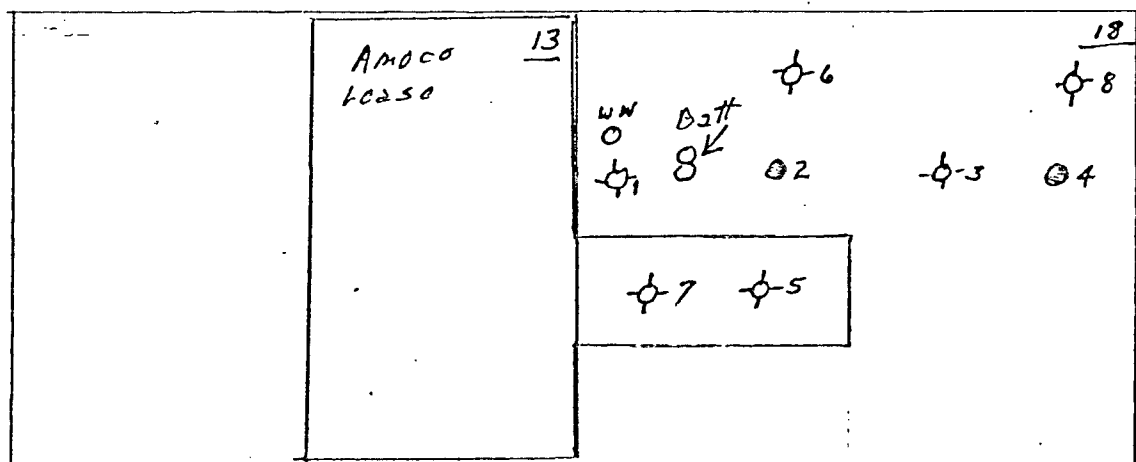
The Collier and Collier Federal 18 Lease in 18-19-33 (formerly JHC Prod. and Originally Hudson & Hudson) West Tonto-Yates Pool is being produced into pits at battery in Unit E of 18-19-33, from two wells #2 in Unit F and #4 in Unit H both in 18-19-33. Both of these wells are outside the exempt from No-pit order R-3554. The original wells in exempt area of Collier and Collier which went into battery in Unit E are P&A. Amoco has some wells in E/2 of Section 13-19-32 which are exempt.

There is a water well located in the W/2 of Unit E which supplies stock water and is 156 ppm chlorides (Jan. 10, 1980) There are three large pits at the Collier battery (Unit E) which are interconnected and have much water in them. Chlorides 12,425 ppm.

— AREA EXEMPT UNDER R-3552 -- WEST TONTO-YATES POOL

19-32

19-33



*John W. Runyan*  
John W. Runyan  
Hobbs - OCD  
January 11, 1980

[illegible]



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. 3892  
Order No. R-3554

APPLICATION OF WILLIAM A. AND  
EDWARD R. HUDSON FOR AN EXCEPTION  
TO ORDER NO. R-3221, AS AMENDED  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 16, 1968,  
at Santa Fe, New Mexico, before the Oil Conservation Commission  
of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 18th day of November, 1968, the Commission, a  
quorum being present, having considered the testimony presented  
and the exhibits received at said hearing, 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 applicants, William A. and Edward R. Hudson,  
are the operators of certain oil wells producing from the West  
Tonto Yates-Seven Rivers Pool, Lea County, New Mexico.

(3) That the West Tonto Yates-Seven Rivers Pool as presently  
designated comprises the following-described acreage:

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM  
Section 13: E/2

TOWNSHIP 19 SOUTH, RANGE 33 EAST, NMPM  
Section 18: N/2 and SW/4

(4) That effective January 1, 1969, Order (3) of Commission Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, stream-bed, or arroyo, or in any watercourse, or in any other place or in any manner which will constitute a hazard to any fresh water supplies and said disposal has not previously been prohibited.

(5) That the aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(6) That the State Engineer has designated, pursuant to Section 65-3-11 (15), N.M.S.A., 1953 Compilation, all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(7) That the applicants seek an exception to the provisions of the aforesaid Order (3) to permit the continued disposal of salt water, produced by all of the wells in the West Tonto Yates-Seven Rivers Pool in unlined surface pits located within the horizontal limits of said pool.

(8) That there is an abandoned shallow water well, the water from which has been reported as impotable, approximately 4 1/2 miles from the subject pits.

(9) That the evidence presented indicates that the nearest existing shallow water well is more than five miles from the subject pits.

(10) That there appears to be no water in the vicinity of the subject unlined surface pits for which a present or reasonably foreseeable beneficial use is or will be made that would be impaired by contamination.

(11) That approval of the subject application will not cause waste nor violate correlative rights.

-3-

CASE No. 3892

Order No. R-3554

IT IS THEREFORE ORDERED:

(1) That the operators of oil and/or gas wells, both existing and prospective, producing from the West Tonto Yates-Seven Rivers Pool and located in the E/2 of Section 13, Township 19 South, Range 32 East, and the N/2 and SW/4 of Section 18, Township 19 South, Range 33 East, NMPM, Lea County, New Mexico, are hereby granted an exception to Order (3) of Commission Order No. R-3221, as amended, to continue to dispose of water produced in conjunction with the production of oil or gas, or both, by said wells in unlined surface pits located within the boundaries of the West Tonto Yates-Seven Rivers Pool as presently designated.

(2) That the Commission may by administrative order rescind such authority whenever it reasonably appears to the Commission that such rescission would serve to protect fresh water supplies from contamination.

(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, Chairman

GUYTON B. HAYS, Member

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

S E A L

esr/

ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBS, NEW MEXICO

WATER ANALYSIS

Well Ownership: Unknown Well No. #1

Land Status: State        Federal X Fee       

Well Location: Unit Letter E, Section 18, T 19 S, R 33 E

Water well has small pump jack - electric

Type Well: water well Depth ?? feet.

Well Use: stock

Sample Number: #1

Date Taken: 1-10-80

Taken By: John W. Runyan

Specific Conductance:                      m/Ω

Total dissolved Solids:                      PPM.

Chlorides: 156.2 PPM.

Sulfates:                      PPM.

Ortho-phosphates: ☐ V.Low ☐ Low ☐ Medium ☐ High

Sulfides: ☐ None ☐ Low ☐ Medium ☐ High

Date Analyzed: 1-11-80

By: John W. Runyan  
Oil Conservation Division

REMARKS: This water well is 300 feet west of battery which has open  
pit disposal -- sample static taken from stock tank

25 ml sample = 142.0 factor x 1.1 titration = 156.2

ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBS, NEW MEXICO

WATER ANALYSIS

Well Ownership: Collier & Collier Well No. Battery pit

Land Status: State        Federal X Fee       

Well Location: Unit Letter E, Section 18, T 19 S, R 33 E

Federal 18 Lease -- West Tonto - Yates

Type ~~Well~~: Battery pits Depth        feet.

~~Well~~ Use: water disposal

Sample Number: #1

Date Taken: 1-10-80

Taken By:       

Specific Conductance:        m/∞

Total dissolved Solids: 12,425 PPM.

Chlorides:        PPM.

Sulfates:        PPM.

Ortho-phosphates: ☐ V.Low ☐ Low ☐ Medium ☐ High

Sulfides: ☐ None ☐ Low ☐ Medium ☐ High

       :       

Date Analyzed: 1-11-80

By: John W. Kinison  
Oil Conservation Division

REMARKS: Sample taken from pit -- static

Three large pits interconnected 3--4' water in pits (no oil on water H<sub>2</sub>S odor)

1 ml sample = 3550 factor x 3.5 titration = 12,425 ppm

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 6782  
Order No. R-7345

APPLICATION OF INEXCO OIL COMPANY  
FOR AN EXCEPTION TO ORDER NO. R-3221,  
AS AMENDED, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 3, 1980, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 6th day of September, 1983, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Inexco Oil Company, is the owner and operator of certain wells located in Section 7, Township 19 South, Range 33 East, NMPM, Lea County, New Mexico.

(3) That Order (3) of Division Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which would constitute a hazard to any fresh water supplies and said disposal has not previously been prohibited.

(4) That the aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through

disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(5) That the State Engineer has designated, pursuant to Section 65-3-11 (15), N.M.S.A., 1953 Compilation, all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(6) That the applicant seeks as an exception to the provisions of the aforesaid Order (3) to permit the disposal of salt water produced by applicant's above-described wells into an unlined surface pit located in Unit H of said Section 7.

(7) That it now appears that the wells for which the exception was sought have been plugged and abandoned and this case should therefore be dismissed.

IT IS THEREFORE ORDERED:

(1) That Case No. 6782 is hereby dismissed.

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

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

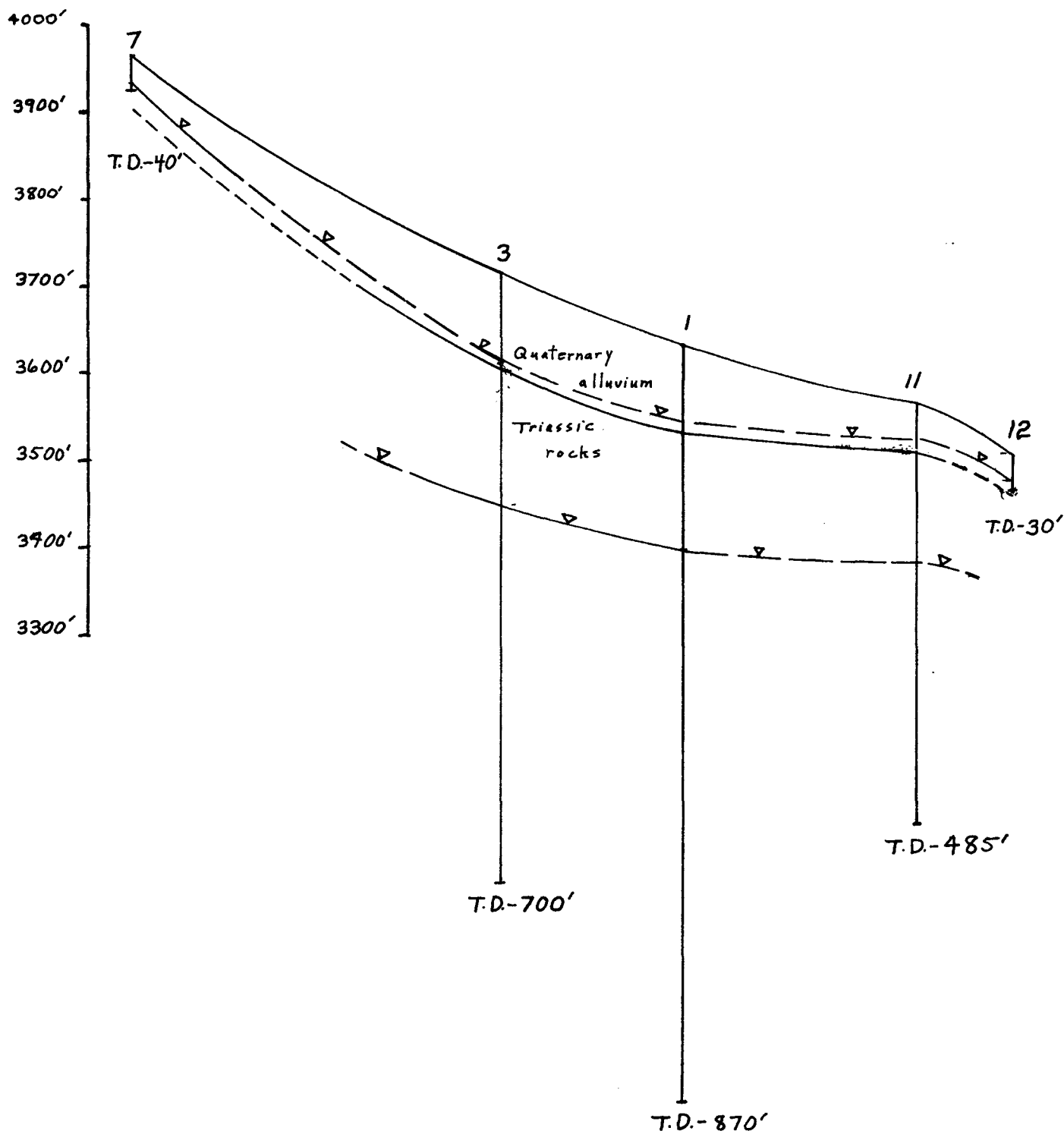
STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY,  
Director

S E A L







# Hydrologic Cross Section N-S

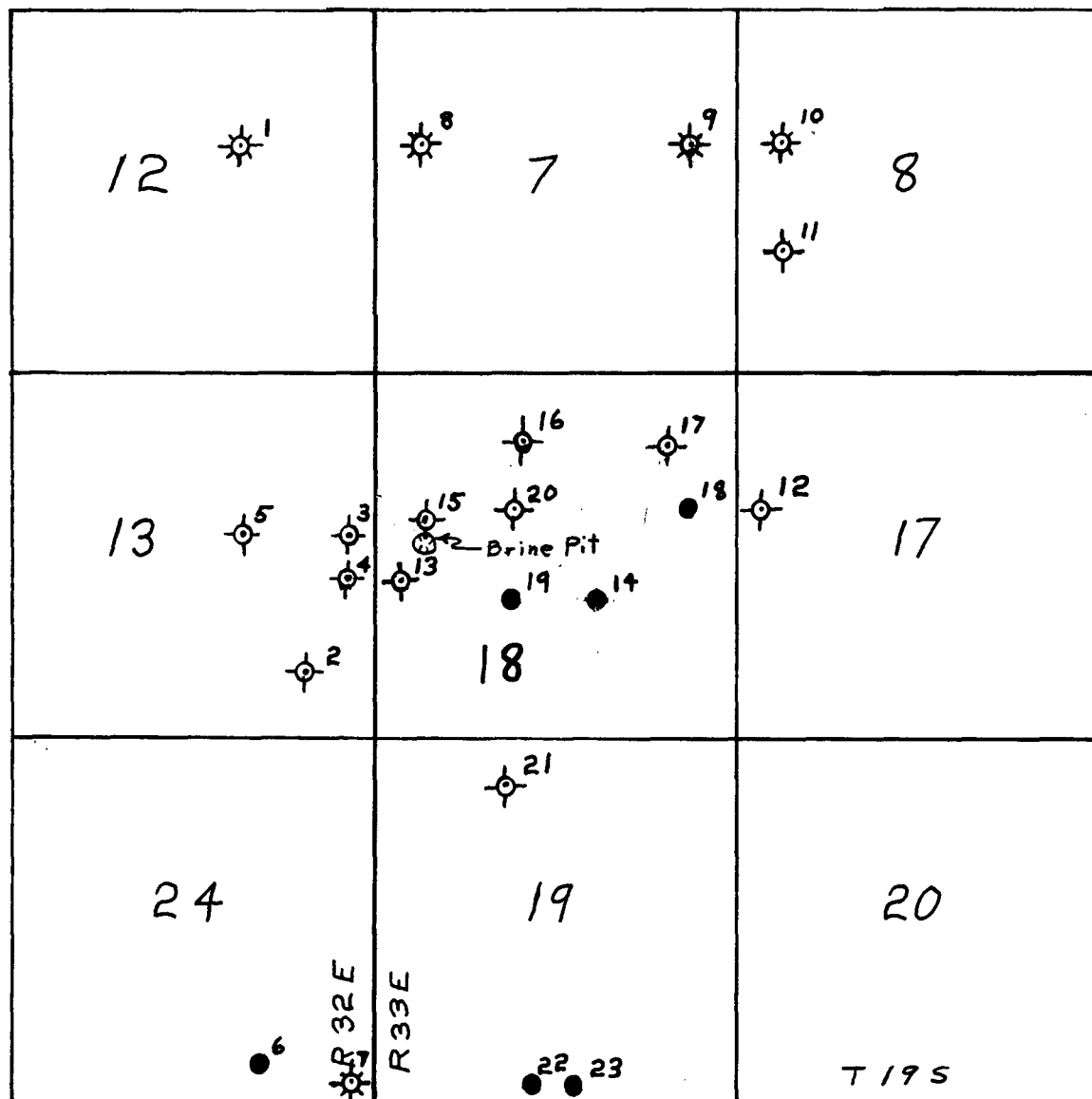
-----  
Contact  
dashed  
where uncertain

-----  
Water table  
dashed  
where uncertain

1 Inch = 2 Miles Horizontal Scale

by Thomas A. Parkhill  
Hydrogeologist  
July 7, 1980

# OIL & GAS WELL STATUS MAP



## Legend

- ☀ oil well (left) and gas
- ⊕ Well drilled for oil or gas, dry
- ☹ Brine pit
- 1 Well No. - see list for name & location

2" = 1 MILE



by Thomas A. Parkhill  
Hydrogeologist  
June 30, 1980

Contamination of Fresh Ground-  
Water Supplies in Southeastern New  
Mexico by J. I. Wright  
Engineer

New Mexico State Engineer Office  
Roswell, N. Mex.  
April 1979

Mike Holland may have copy  
of this. if not have J. R.  
gell copy from Reynolds.  
Refers to reference listed above  
Bob Barton has this information

Work back from cont well -  
drill up dip - do Cl. out in  
field to plan where next well will  
be drilled, bring rest of sample back  
to lab for further Anal.  
<sup>rust inhib</sup> <sup>cooling towers</sup>  
Chromates used in the plants (refining)

Gas Monitor → might be a practical piece  
of equipment to have.

<sup>there did not know what type of gas coming  
out of well here</sup>  
Might test for Nitrates for ~~less~~ pool  
breakage

(3)

Radium  $^{226}$  decays to radon  $^{222}$   
Half-life - less than 4 days  
is soluble in water to some extent  
some spring and underground water have  
rather large amounts present

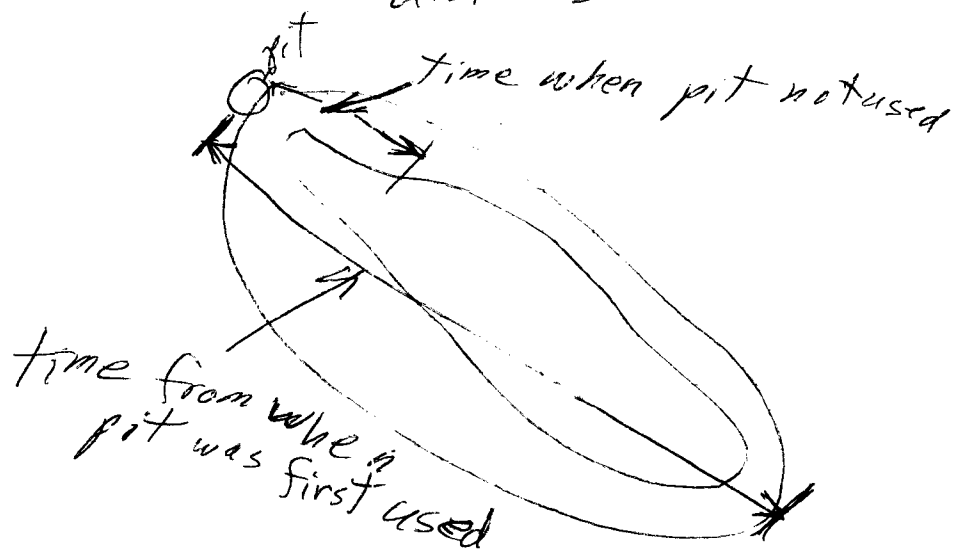
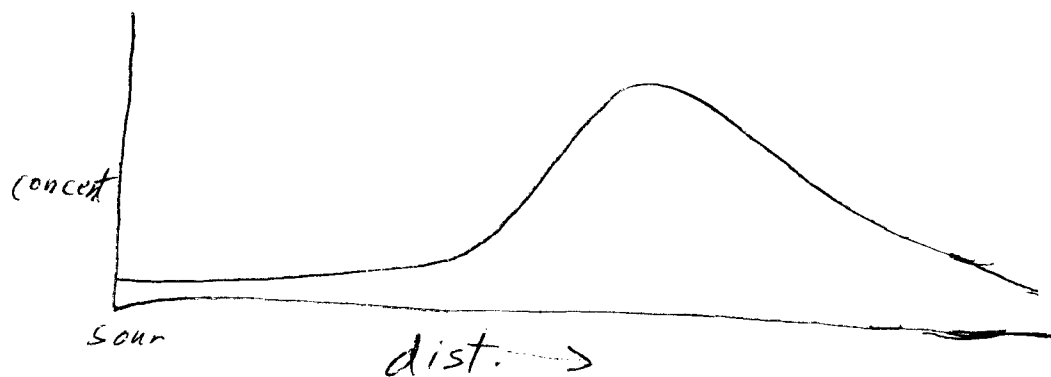
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, N. Mex 87501

600  
.  
-----  
\$600.0

\$600  
.  
-----  
.600

Water sampler holds about 1 pint  
of water

Color cut - when hear it hit water  
and then subtract difference. Take  
reading of depth.



Battery unit is listed on well logs - before 1967 they were large pits  
Most of wells <sup>in area</sup> might be drilled after 1967  
Salt water well might be one at fault for pollution

Note: Start making estimate on number of wells that need to be drilled on 3 projects. Need to be done by next week for bids

Might <sup>want</sup> ~~not~~ observation well near old pit (might not be too helpful) injection well. No information <sup>time factor for</sup> on clearing up of water. 3, or 6 months <sup>monitor</sup> basis depending on problem

Vette Penn - 54,000 ppm Cl.

See records of chem Anal. of brine H<sub>2</sub>O (5)

high water to start, after pumping reverses to high oil to water

Vada - not under flood <sup>high water</sup> production - have to put in disposal well or sell for U.I.

Lane - not under flood

Flying M - under flood <sup>used</sup> in U.I.C.

near cont. well

This information is for the  
Tapp water problem.

Notes - Hobbs - 2-25-80 (Mon.) J. Runyan.

Cl. cont

above 100 ppm - Ogallala 1 ft per day  
over 200 ppm -  $K_2CO_3$  (Tucumcari shale)

$3\frac{7}{8}$ " or  $3\frac{1}{2}$ " - can't blow water  
out of hole and they can be drilled  
quickly.

John Runyan does not recommend  
going in and cleaning out old  
windmills. It is less time and  
trouble to drill a new well  
near windmill.

1967 - last time pits used as  
evap. pits and was legal - not much can  
be done legally before this  
date

Spot pits for source of contamination. should  
find record of how much water drained into  
pits and if figure correct. Lots of  
research needed here.



three areas of future drilling:

(A) Sec 36 T15 R33 E

TAPP water problems

Need surface of beds. Topo map.

Water saturation and Top Tri red beds

(B) Phillip's - Lusk Supply Well

Vacuum Pool Buckeye, N. Mex.

Sec 19 T17S R35<sup>or 36</sup>E

red dot is well

state { need red bed Tri map  
Eng may have this } water level map

(C) S.W. Public service

Sec 34, 35 T18S R35E

S.W. Public service 26 well, 3 are  
conten. J.R. suggests that this  
area not be drilled because it is  
not highly polluted and it appears  
water quality is becoming better  
with time. ~~Why~~ It should be  
observed for 6 or 8 months with  
water samples. Cl. content very  
low at this time. O.C.D. does  
not know how much water put into  
pit from oil pool just north of  
polluted wells.

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. 4336  
Order No. R-3965

APPLICATION OF BYRON MCKNIGHT  
FOR AN EXCEPTION TO ORDER NO.  
R-3221, AS AMENDED, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 20th day of May, 1970, the Commission, a  
quorum being present, having considered the record and the recom-  
mendations of the Examiner, and being fully advised in the premises,

FINDS:

That the applicant's request for dismissal should be  
granted.

IT IS THEREFORE ORDERED:

That Case No. 4336 is hereby dismissed.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

esr/