Case No.

1053

Large Exhibits

W.N.H.C.F. MICROGRAPHICS

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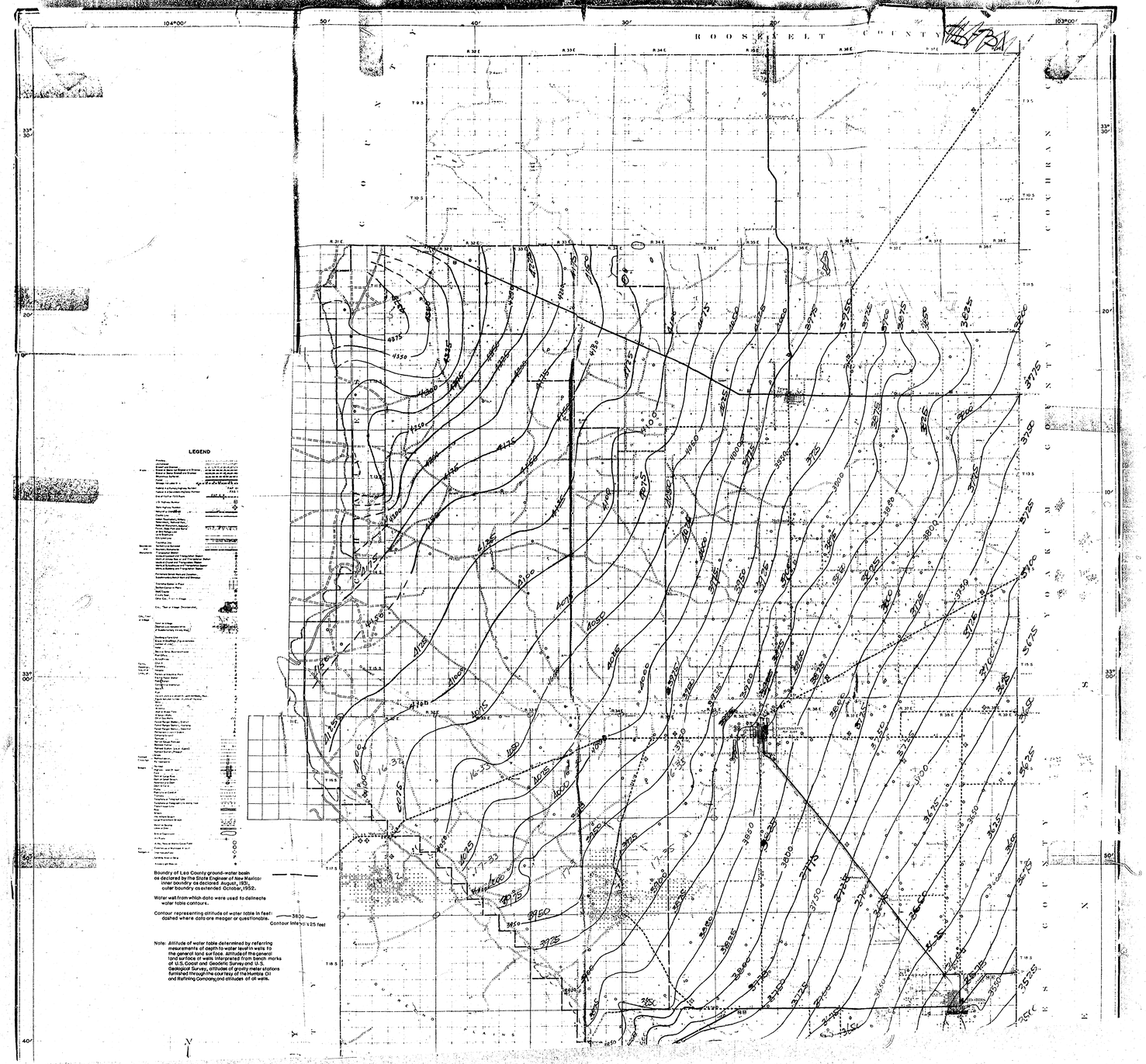
Salt Water Disposal
CHECK LIST

Case 1053 - RA 1224
Rehearing of Sept 11, 1958.

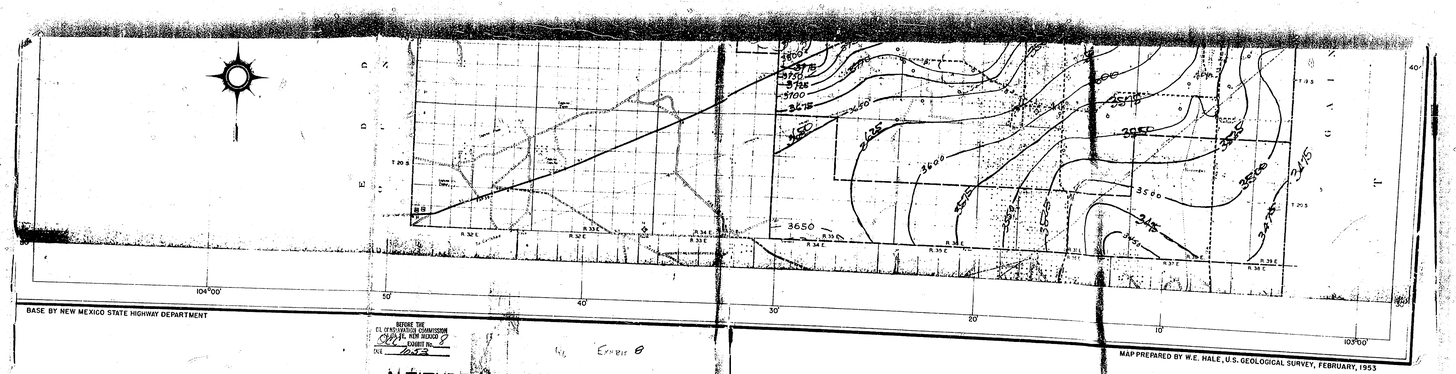
Operator	Hobbs	Denton WC	Denton DEV	Eunice-Monument Area EU-MON	Eunice-Monument Area EUMONT	Eunice-Monument Area MON-BLINE	Tubb Co. MOORE-DEV	Jalmat Gas CAPROCK Bot DEVON	Jalmat Gas BAGLEY Sup DEV	Jalmat Gas BAGLEY Sup DEV & PENN.	Jalmat Gas SAUNDERS	Jalmat Gas CROSSROADS	Jalmat Gas BOREN	Jalmat Gas EUNICE-DEV
Ambassador	✓			✓	✓	✓	✓	✓	✓	✓				
Anderson-Prich				✓		✓								
Anhweil, Morris R.	✓				✓									
Atlantic Ref. Co.	✓	✓	✓	✓	✓						✓			
Aztec Oil & Gas Co.					✓									
Byram, W. R.	✓			✓										
Cockrell Drlg Co					✓									
Charm Oil Co.					✓									
Cities Service Oil	✓			✓	✓	✓					✓			
Cortez & Foster					✓									
Continental Oil Co.	✓			✓	✓	✓	✓							
Colorado Oil & Gas											✓			
Doughlass & Chaver					✓									
Drilling & Exploration Co.					✓									
Eisner, John J.					✓									
Elliott, Inc.					✓									
Fields, Boet				✓										
First Chicago Oil Corp.				✓ Unit Prod. see Western Drlg. Co. - Southland										
Fish, Northcutt Const.											✓			
Gackle, Albert	✓													
General Crude Oil				✓										
Getty Oil Co.	✓			✓										
Great Western Drlg Co.				✓										
Grove, McCurdy & Knox					✓									
Gulf Oil Corporation	✓	✓	✓	✓	✓	✓				✓	✓	✓		
Gulf Oil Corp (Byram)	✓													
Harris & Miles					✓									
Hodge, T.F.					✓									
Honeyman, R.B.				✓										
Hudson & Hudson Inc.				✓										
Hunt, Stasi Trustee				✓	✓									
Humble Oil & Ref. Co.	✓			✓	✓									
~~Hunting Drlg Co.~~		✓												
Kelly, John M.				✓	✓									
KOCH Oil Corp.				✓ Unit Prod.										
Lane, J.F.				✓ Unit Prod.										
Lone Star Prod. Co.												✓		
McAlester Fuel Co.		✓			✓									
McPherson, R.G.				✓										
Magnolia Pet. Co.	✓	✓	✓		✓						✓	✓	✓	
Mapenco Oil Corp	✓													
Moran Oil Mgt & Drlg Co.	✓													
Moran, R.M.	✓													
Moss, H.S.				✓										
Murray, J.H. et al				✓										

Operator	Hobbs	Denton WC	Denton DEV	Eunice-Monument Area EUNICE-MON	Eunice-Monument Area EUMONT	Eunice-Monument Area MON-BLINE	Moore-Dev	Caprock E. Devon	Bagley Sup Dev & Penn	Saunders	Crossroads	Boren	Eunice-Dev
Nolan & Byron			✓	✓									
Nolan & Lane				✓									
Ohio Oil Co.	✓	✓	✓	✓	✓	✓							
Oil Development Co. of Texas											✓		
Oil Well Drlg Co.				✓									
Pan-American Pet. Corp.	✓	✓	✓	✓	✓								
Penrose, N.G. Inc.					✓								
Phillips Pet. Co.		✓	✓	✓	✓								
Pollard, C.C.					✓								
Reacho Corporation					✓								
Reacho Corp. & B. Hayes					✓								
Reder & Sheldon					✓								
Rodman, E.G.					✓	✓ (Texas)							
Rodman-Noel Oil Co.													
Schuck, Neil E.					✓								
Schuck, McGrath & Smith					✓								
Snowdon Oil Corp.	✓						✓						
Schermerhorn Oil Co.					✓								
Sharp, J.R. Inc.											✓		
Shell Oil Co.	✓	✓	✓	✓	✓			✓		✓		✓	
Shelton, Bill A.					✓								
Signal Oil & Gas Co. Shegrued, R.H.		✓	X (Gas)										
Signal & Sohio of Tex.			X (Gas)										
Sinclair Oil & Gas	✓	✓	✓	✓	✓	✓							✓
Skelly Oil Co.	✓	✓	✓	✓	✓	✓		✓					
Southern Pet. Exp. Co.	✓			✓	✓								
Standard of Texas	✓				✓								
Sun Oil Co.	✓			✓									
Sunray Mid-Continent	✓			✓		✓					✓		
Superior Oil Co.				✓	✓								
Sweet, C.H.	✓												
Texaco Co.	✓			✓	✓	✓	✓	✓		✓	✓	✓	
Texas Pacific Coal & Oil	✓							✓	✓	✓			
Tennessee Gas Trans.					✓								
Tidewater Oil Co.	✓			✓	✓	✓ (Gas)							
Tres Oil Co.				✓									
Tujo States Oil Co.				✓ Unit Eunice	✓ Unit Eumont								
Turner, Fred Jr.													
Ulrod Oil of Calif.								✓					
Vem Oil Co.				✓ Unit Eunice									
Walker Oil Co.	✓												
Wilson Oil Co.					✓								
Yates, John A.	✓												
Zachary, Guy R.					✓								

LAND DEPARTMENT
U.S. GOVERNMENT PRINTING OFFICE



U.S.G.S. - ROSWELL, N.M.
SALT ANALYSIS COST



BASE BY NEW MEXICO STATE HIGHWAY DEPARTMENT

MAP PREPARED BY W.E. HALE, U.S. GEOLOGICAL SURVEY, FEBRUARY, 1953

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 8
CASE No. 1053

Exhibit 8

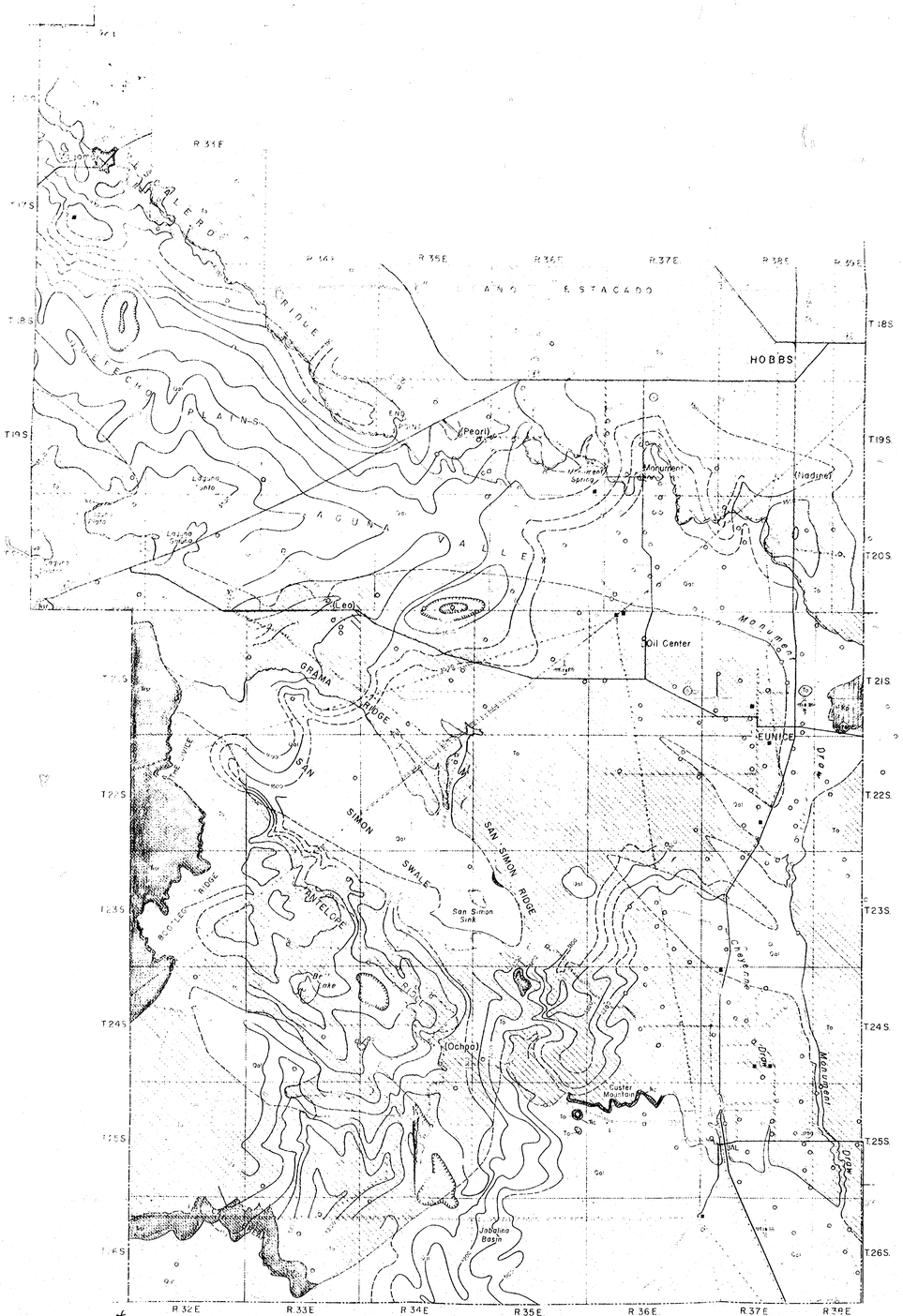
ALTITUDE OF WATER TABLE IN PART OF LEA COUNTY, NEW MEXICO, 1952

NOVEMBER 1952 + GW SURV 1178

PREPARED BY THE U.S. GEOLOGICAL SURVEY IN COOPERATION WITH THE STATE ENGINEER OF NEW MEXICO

PRELIMINARY MAP, SUBJECT TO REVISION

U.N.M.C.F. MICROGRAPHICS
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This is not an exhibit in Case 1053

Explanation

Section and town (Mountain R.) boundaries

Cities

Settlements

Lakes

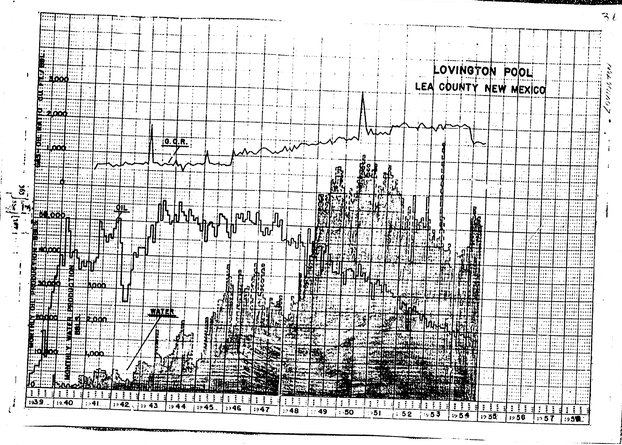
Playas

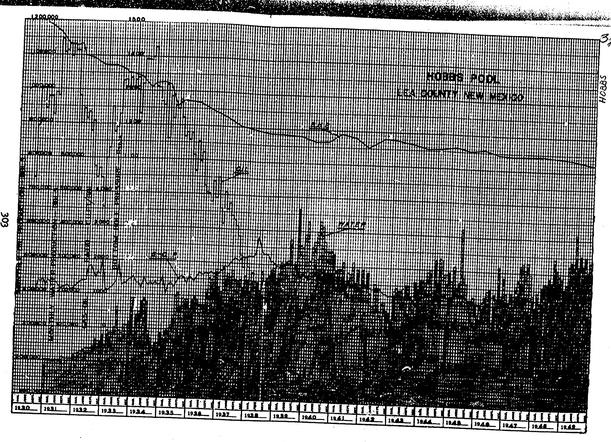
Faults, ball and bar on downthrown side

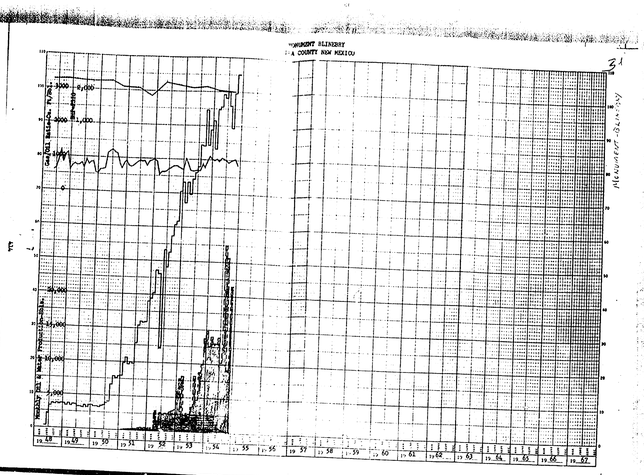
Escarpments

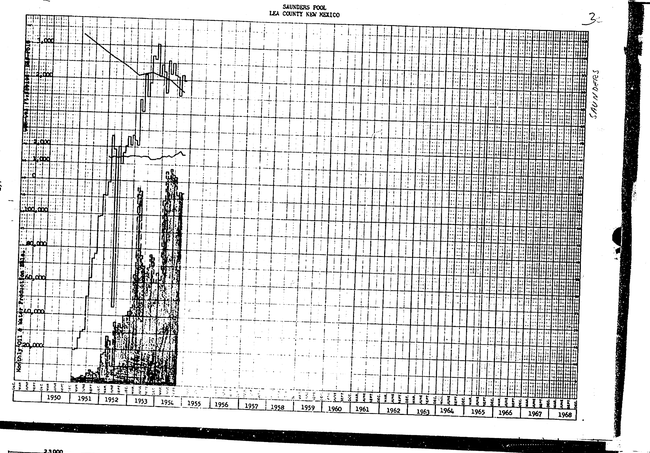
Contour interval 100 feet. Datum is mean sea level

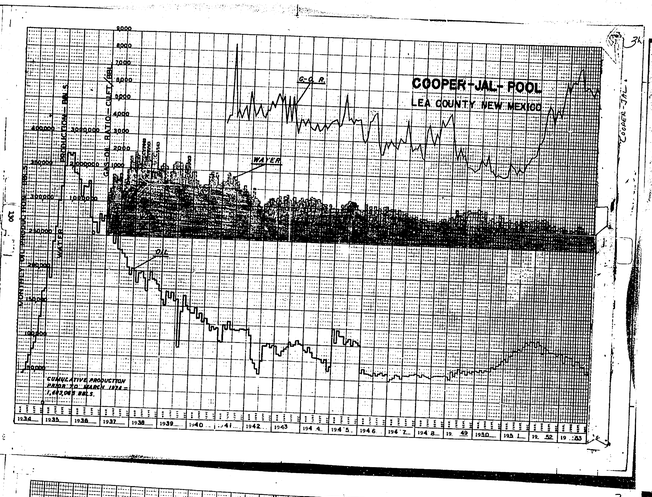
Base from U.S. Bureau of Reclamation











Q7 EXHIBIT 11

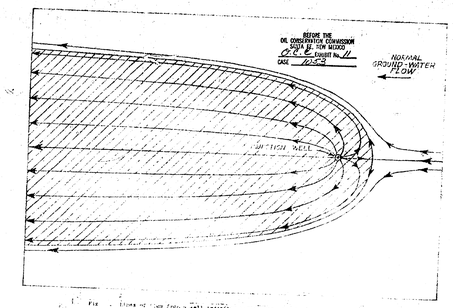
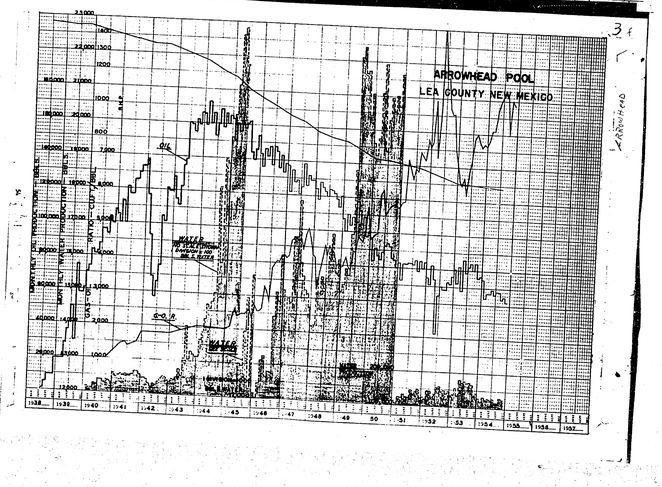
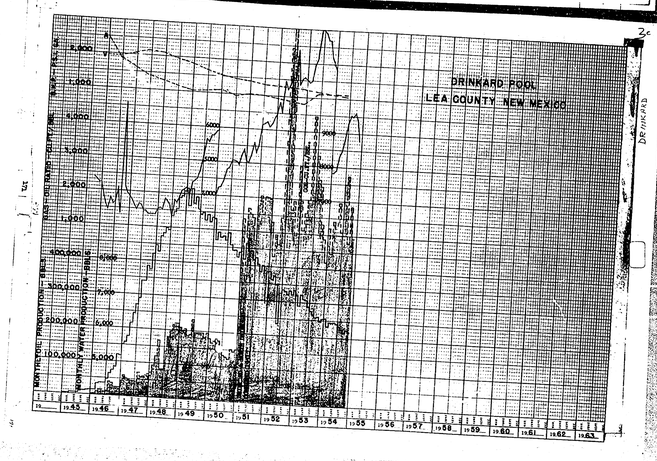


Fig. — Flow of water from a well injecting water into an artesian aquifer and its
disposal upstream. Modified from Theis, C. V., 1938, Equation for flow of water
vertically up through overlying aquifers, U. S. Geol. Survey Open-File Report, Ground-
Water Note No. 3, Fig. 1.





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LEGEND

ROOSEVELT COUNTY

CHAVES COUNTY

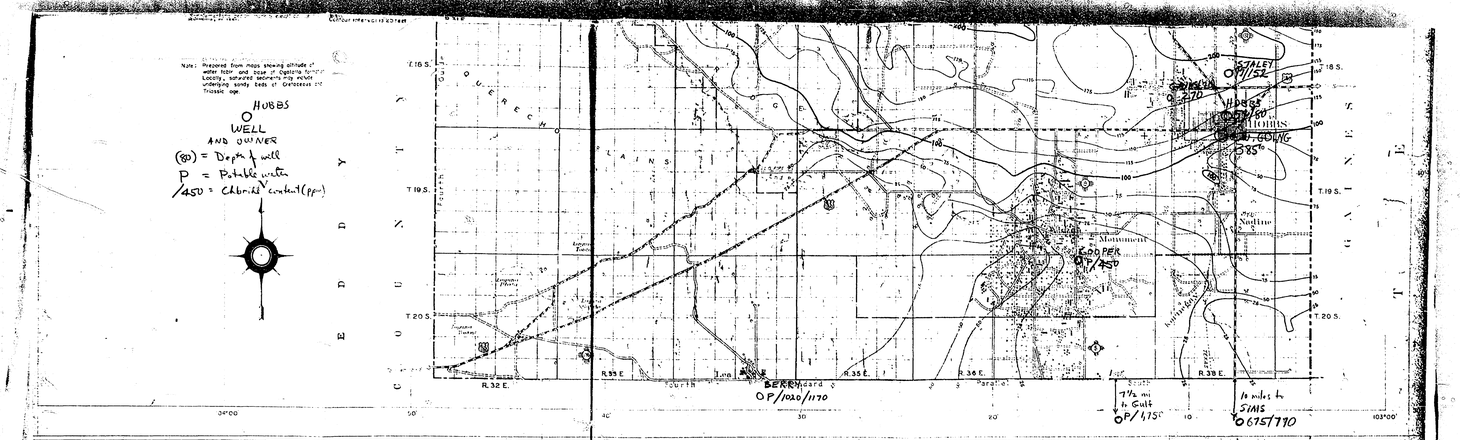
LINCOLN COUNTY

Boundary of Lea County ground-water basin as declared by the State Engineer of New Mexico: inner boundary as declared August, 1931; outer boundary as extended October, 1952

Contour representing thickness of saturated material, feet

U.S.G.S. MICROGRAPHICS

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Note: Prepared from maps showing altitude of water table and base of saturation formation. Locally, saturated sediments may include underlying sandy beds of Cretaceous and Triassic age.
HOBBS
WELL
AND OWNER
(80) = Depth of well
P = Potable water
/450 = Chloride content (ppm)
T.18 S.
T.19 S.
T.20 S.
R.32 E.
R.33 E.
R.34 E.
R.35 E.
R.36 E.
R.37 E.
R.38 E.
R.39 E.
34°00'
30'
40
30
20
10
103°00'
HOBBS
OP/1020/1170
EUNICE
OP/1750
7½ mi to Gulf
OP/475
10 miles to SIMS
O 6757770
SKELLY
O 270
HOBBS
O 360
Humble
O 385
GOING
STALEY
OP/1552
COOPER
OP/450
Monument
Eunice
Hobbs
Maljamar
Grayburg
Jct.
Junction
Caprock
Escarpment
Pearl
Lovington
Berry
Junction
Arkansas
Junction
Monument
Draw
Eunice
Draw
Hobbs
Draw
Maljamar
Draw
Grayburg
Draw
Lovington
Draw
Pearl
Draw
Berry
Draw
Arkansas
Draw

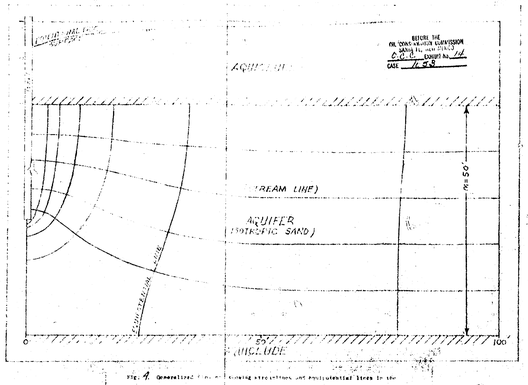


Fig. 4. Generalized flow net showing stream lines and equipotential lines in the vicinity of a discharge well in a well-defined artesian aquifer. (After [illegible], 1940, Appendix 25, p. [illegible].)

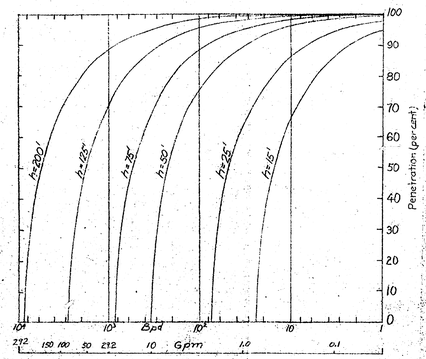


Fig. 6. The calculated maximal rates of steady-state horizontal fluid flow without water-cone breakthrough, as functions of the well penetration, for various oil-zone thicknesses h. Well radius = 1/4 ft; external-boundary radius = 500 ft; water-oil density contrast = 0.2 gm/cc; k_h/k_v assumed = 1; k = permeability; μ = viscosity; β = formation-volume factor. (After Muskat and Wyckoff, 1935; AIME, Trans., and Muskat, 1949, p. 233.)

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 16
CASE 1588

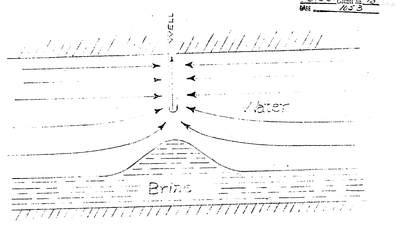
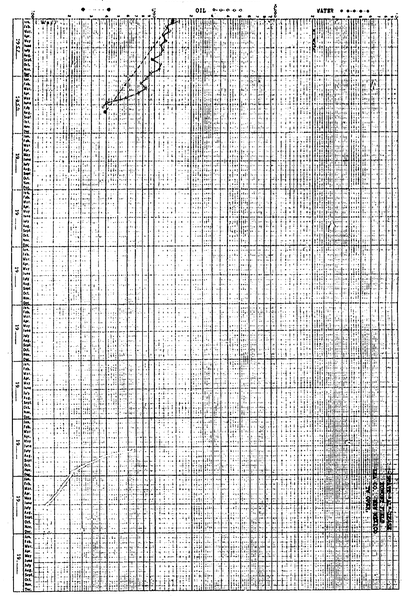
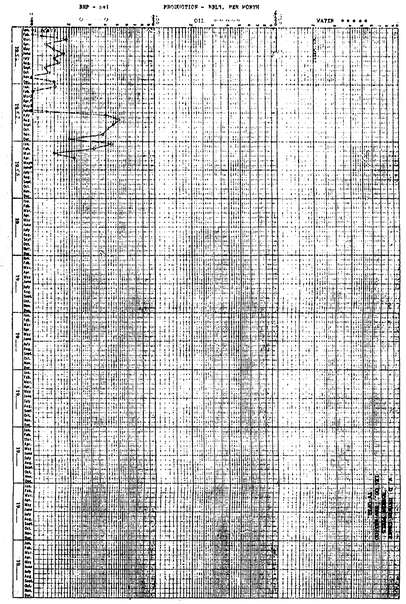
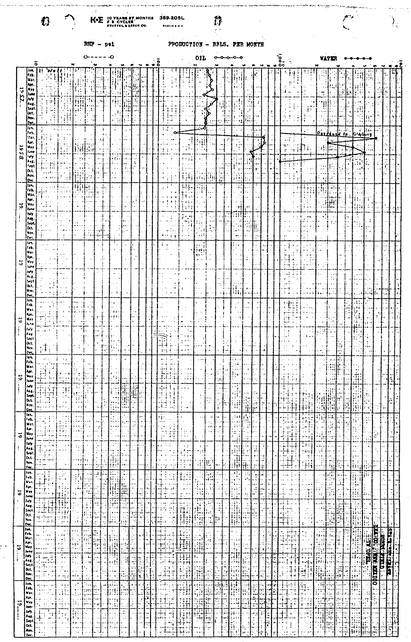


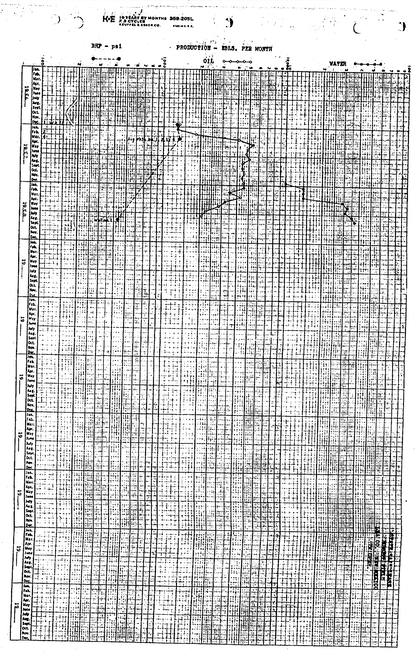
Fig. 5. Diagrammatic representation of the coning of brine toward a well partially penetrating a fresh-water aquifer. (Modified from Muskat, 1949, p. 226.)

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 15
CASE 1588

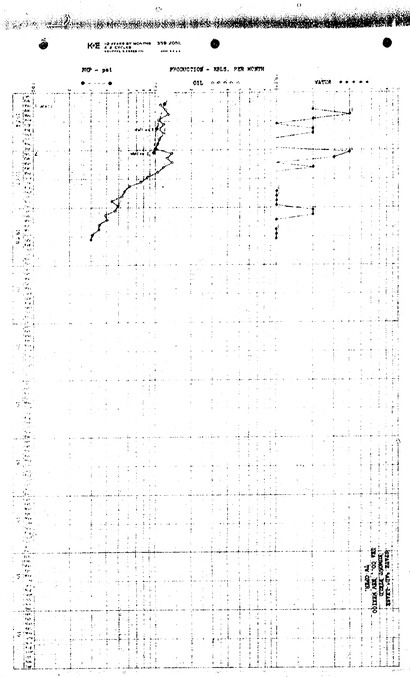


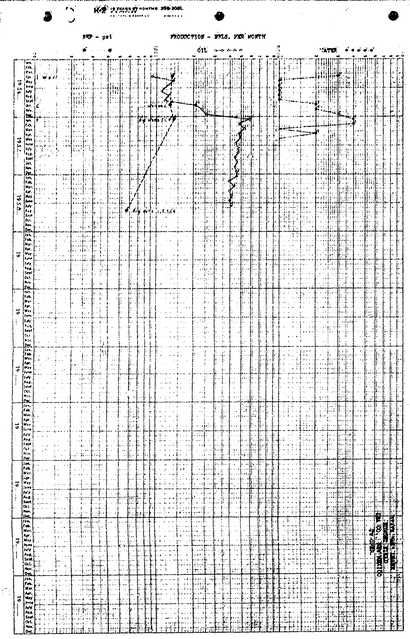


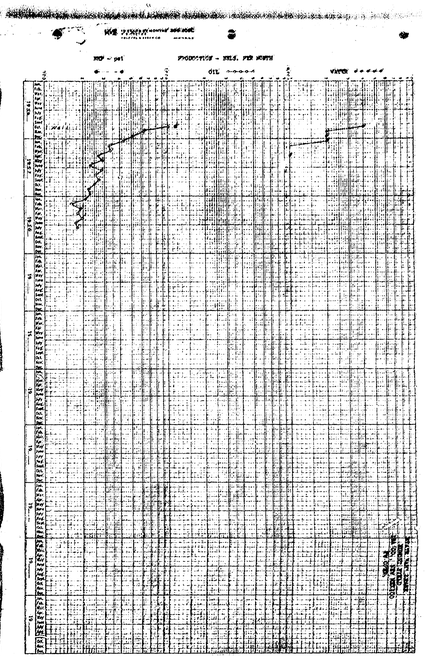


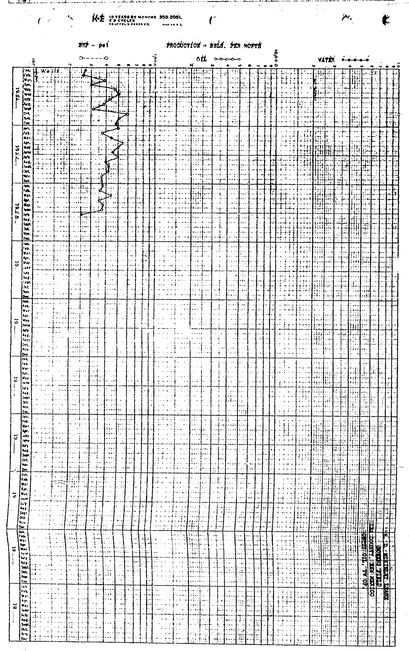


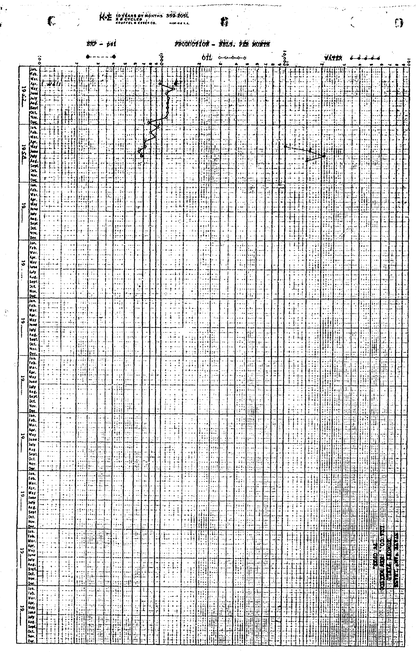
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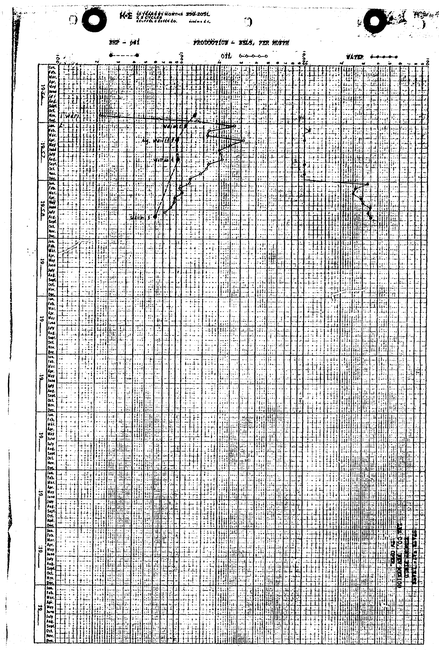






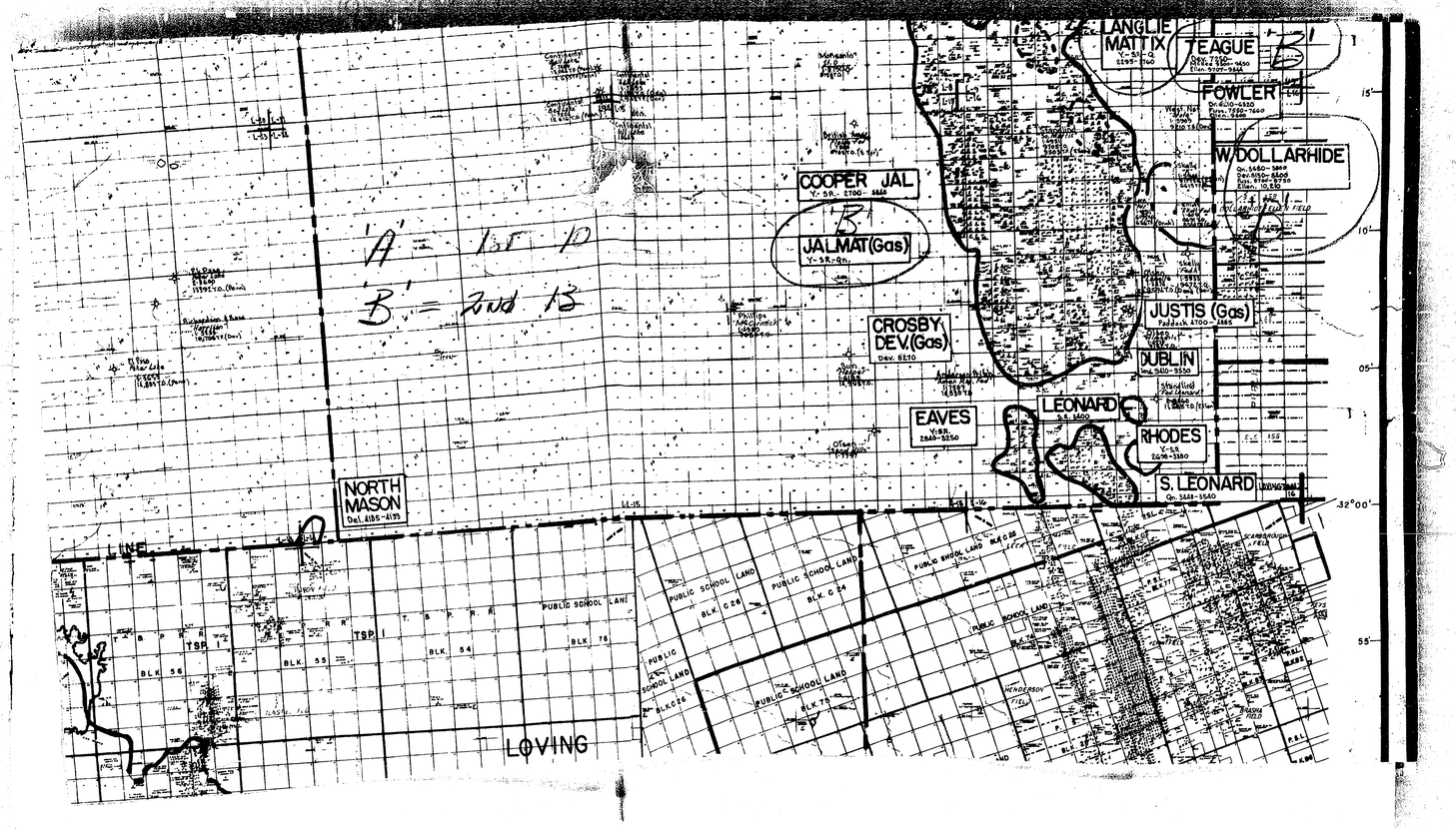






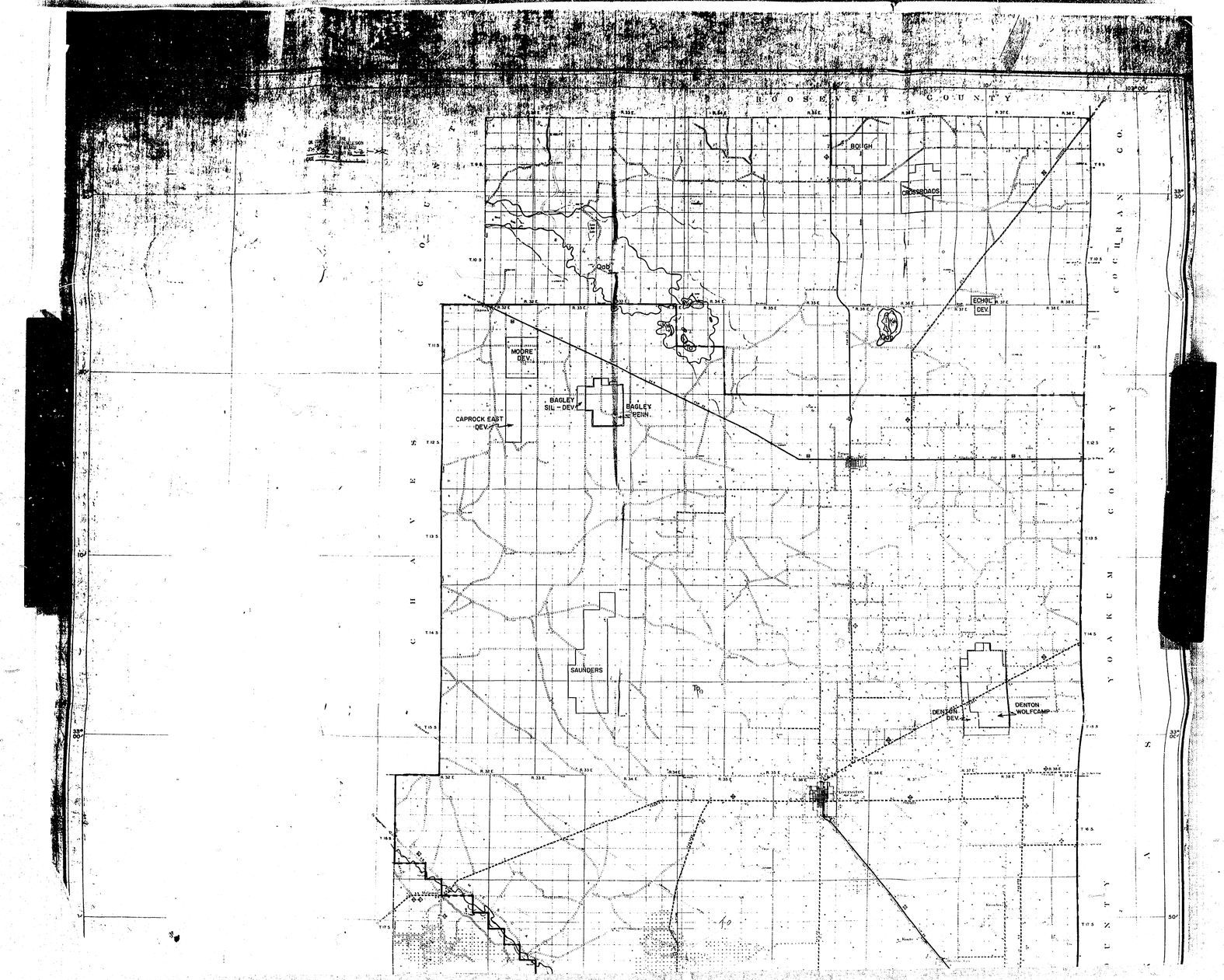
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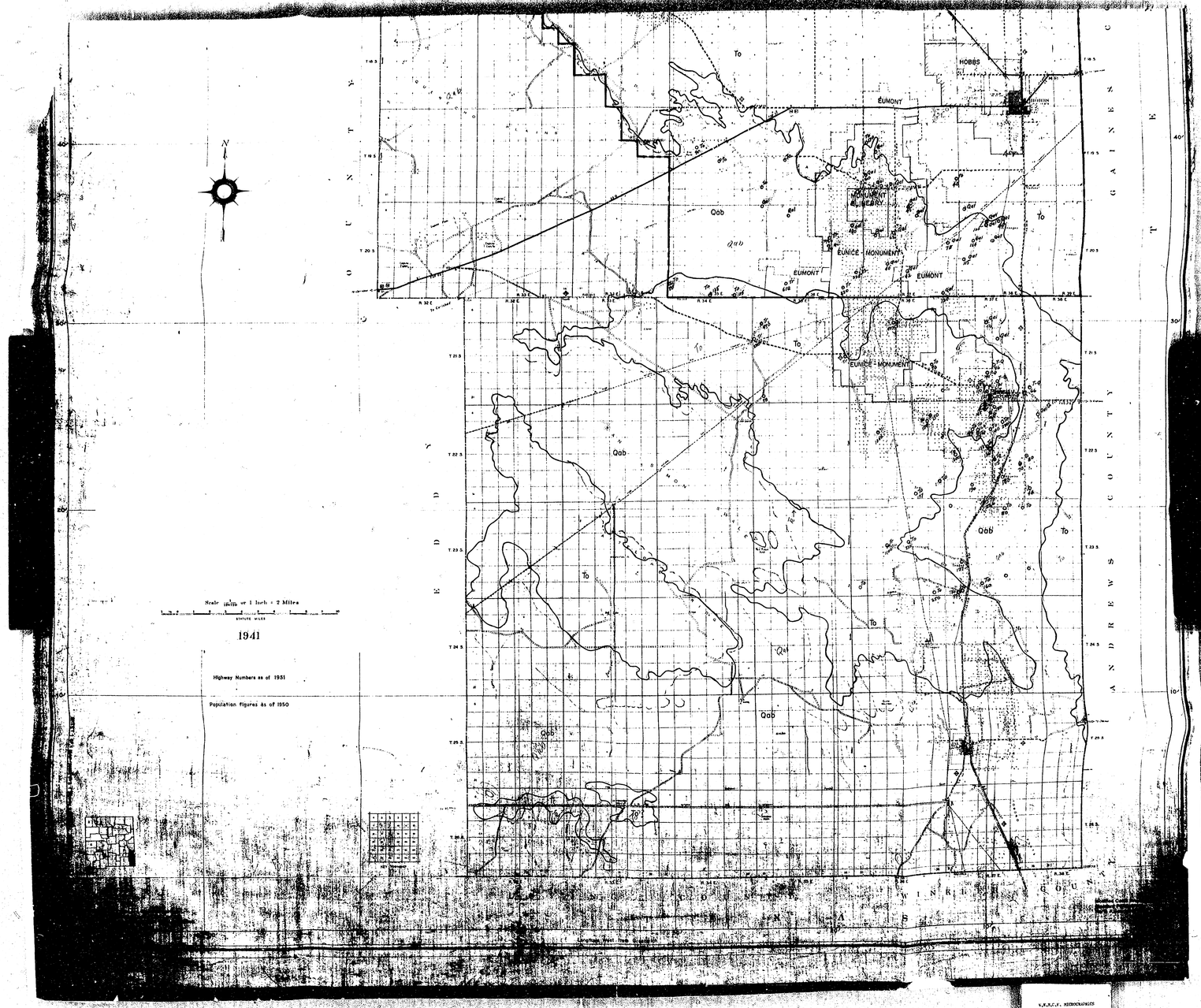
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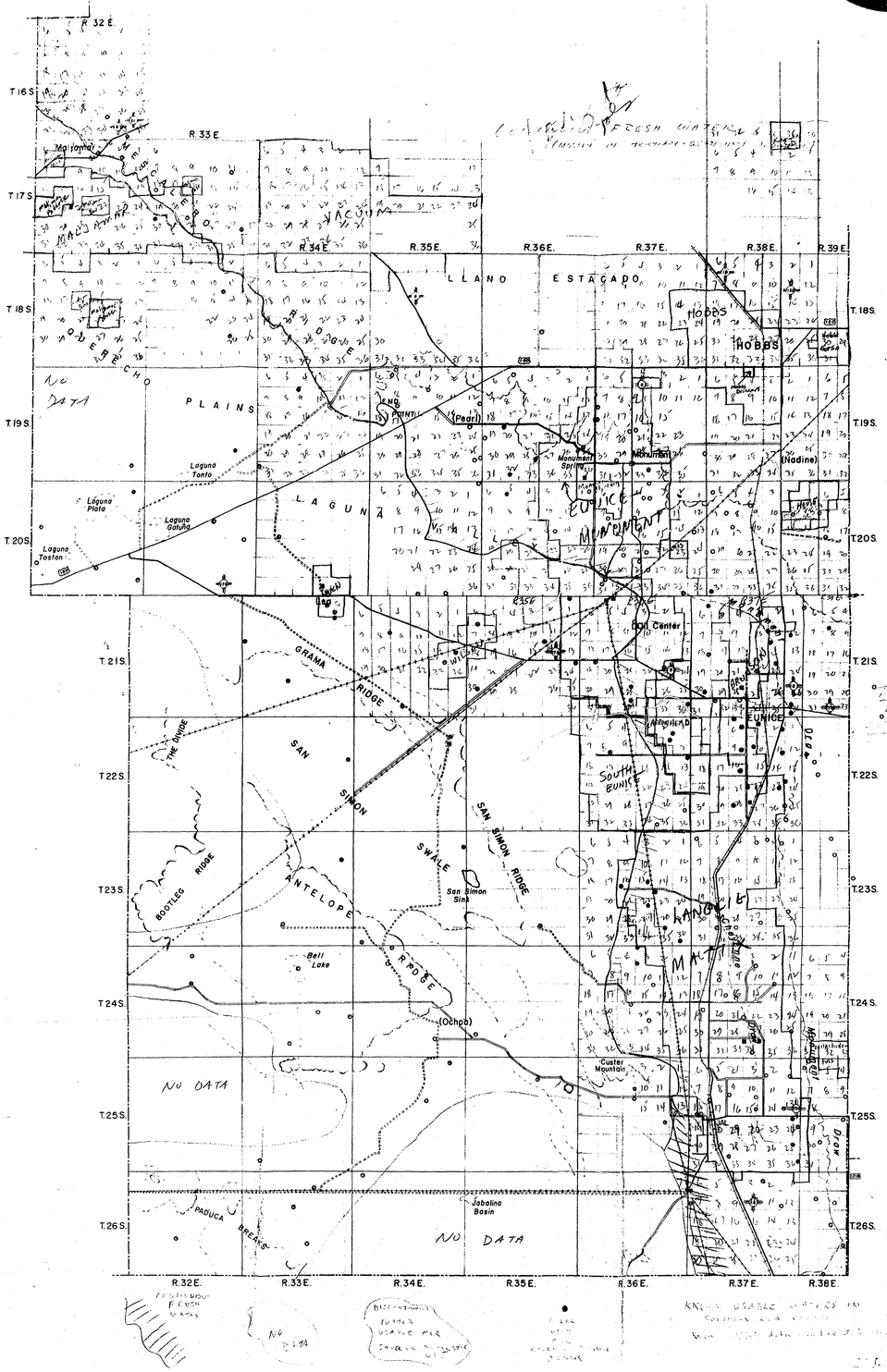
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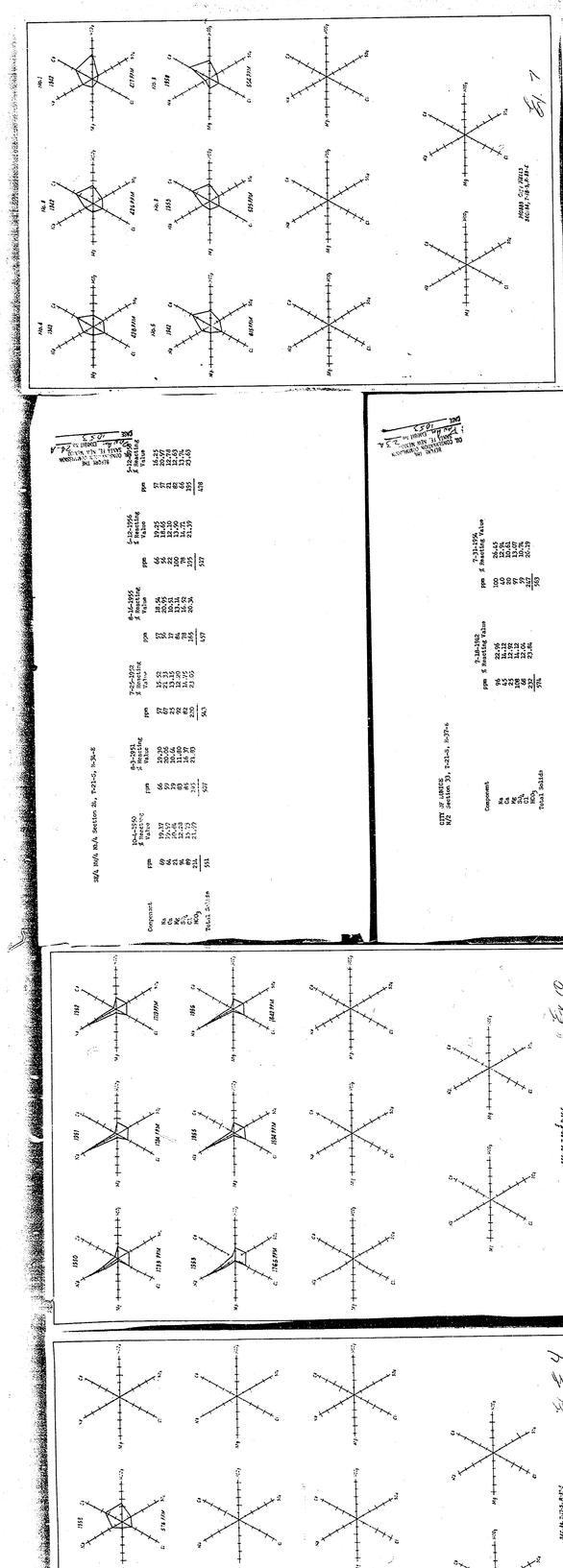

ROOSEVELT COUNTY
COCHRAN CO.
YOAKUM COUNTY
CHAVES COUNTY
BOUGH
CROSSROADS
ECHOL DEV.
MOORE DEV.
BAGLEY SIL - DEV.
BAGLEY PERM.
CAPROCK EAST DEV.
SAUNDERS
DENTON DEV.
DENTON WOLFCAMP
T10 S
T11 S
T12 S
T13 S
T14 S
T15 S
T16 S
R 32 E
R 33 E
R 34 E
R 35 E
R 36 E
R 37 E
R 38 E
33° 00'
50'

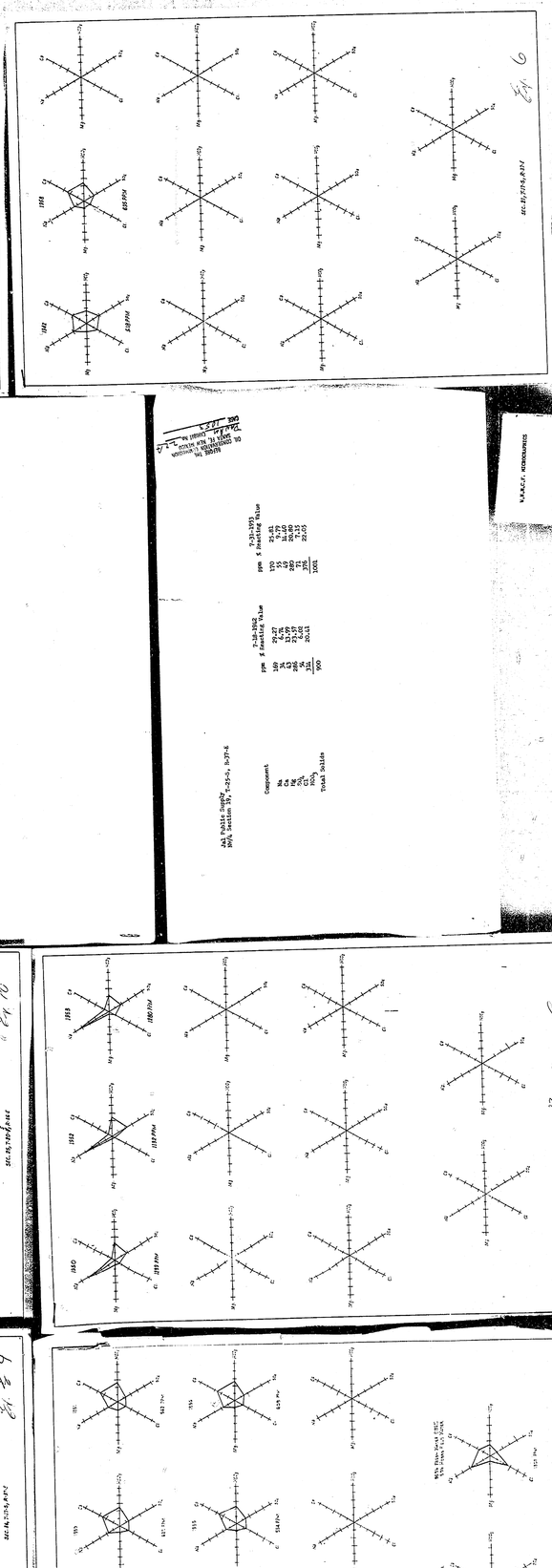


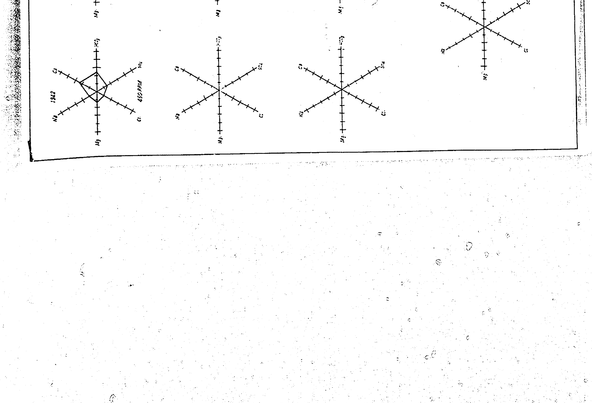
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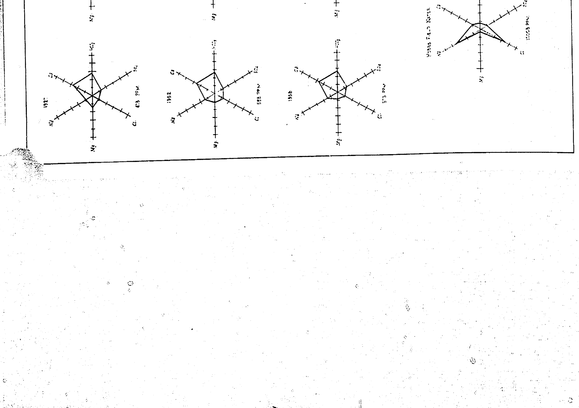
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R. 32 E.
R. 33 E.
R. 34 E.
R. 35 E.
R. 36 E.
R. 37 E.
R. 38 E.
R. 39 E.
T. 16 S.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
T. 22 S.
T. 23 S.
T. 24 S.
T. 25 S.
T. 26 S.
Marianna
MADERA MESA
LLANO ESTACADO
HOBBS
PLAINS
NO DATA
Laguna Tonta
Laguna Plata
Laguna Gatuña
Laguna Toston
LAGUNA
(Pearl)
Monument
Monument Spring
(Nadine)
EUNICE
Gas Center
Antelope
SOUTH EUNICE
GRAMA RIDGE
THE DUNES
SAN SIMON SWALE
SAN SIMON RIDGE
BOOTLEG RIDGE
ANTELOPE RIDGE
Bell Lake
(Ochoa)
San Simon Sink
Custer Mountain
Jabalina Basin
PADUCA BREAKS
LANGLIE MATTIX
MESCALERO RIDGE
MESCALERO
NO DATA









NORTH CITY HILLS

Component	ppm	No. 8 9-25-1971 # Reacting Value	ppm	No. 6 9-25-1993 # Reacting Value	ppm	No. 57 9-25-1993 # Reacting Value	ppm	Section 35, T-24-S, R-35-E 5-12-1992 # Reacting Value	ppm	Section 34, T-24-S, R-35-E 5-12-1992 # Reacting Value
Ca	92	11.76	88	14.08	65	10.61	82	27.66	55	11.66
Mg	22	3.26	22	4.26	14	2.63	20	6.71	13	2.66
Na	23	10.53	20	13.43	15	10.63	18	14.79	12	10.65
SO_4	74	15.52	65	21.10	51	21.86	30	22.39	20	21.03
Total Solids	211	41.71	195		145		150		100	
pH	N/A		N/A		N/A		N/A		N/A	

N/A N/A N/A Section 25, T-23-S, R-34-E

Component	ppm	10-2-1990 # Reacting Value	ppm	9-3-1991 # Reacting Value	ppm	7-25-1992 # Reacting Value	ppm	9-1-1993 # Reacting Value	ppm	8-16-1995 # Reacting Value	ppm	6-12-1996 # Reacting Value
Ca	330	41.08	305	41.97	277	44.05	111	44.30	48	45.15	455	41.54
Mg	33	3.97	34	4.73	28	3.93	13	3.60	3	3.28	77	3.48
Na	64	2.87	58	2.58	48	2.63	20	1.65	8	1.29	21	1.58
SO_4	284	16.46	248	15.43	194	14.48	100	13.50	38	13.44	384	17.15
CO_3	50	1.66	50	3.16	45	3.70	20	1.51	8	1.34	62	1.35
Total Solids	1721	66.04	1396		1173		1769		1196		1569	

W.S.U.C.T. DOCUMENTS



BEST AVAILABLE COPY

N/A N/A N/A Section 4, T-24-S, R-34-E

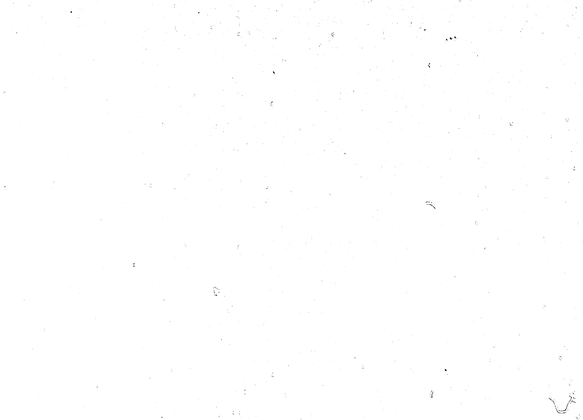
Component	ppm	9-20-1951 # Reacting Value	ppm	9-25-1956 # Reacting Value
Ca	92	11.76	72	17.91
Mg	22	3.26	22	3.61
Na	23	10.53	18	13.91
SO_4	74	15.52	38	22.79
Total Solids	211	41.71	150	

N/A N/A Section 21, T-23-S, R-35-E

Component	ppm	7-15-1953 # Reacting Value	ppm	7-27-1956 # Reacting Value
Ca	330	41.46	279	40.70
Mg	33	3.43	32	4.69
Na	64	2.87	21	2.48
SO_4	284	16.47	215	21.98
Total Solids	1721	72.10	1135	25.89

NORTH CITY HILLS
All in N1/2, N1/2, Section 34, T-24-S, R-35E

Component	ppm	No. 1 7-15-1992 # Reacting Value	ppm	No. 2 7-15-1992 # Reacting Value	ppm	No. 3 9-24-1993 # Reacting Value	ppm	No. 7 9-24-1993 # Reacting Value
Ca	330	41.08	305	37.77	330	41.08	330	41.08
Mg	33	3.97	34	4.73	33	3.97	33	3.97
Na	64	2.87	58	2.58	64	2.87	64	2.87
SO_4	284	16.46	248	15.43	284	16.46	284	16.46
CO_3	50	1.66	50	3.16	50	1.66	50	1.66
Total Solids	1721		1396		1721		1721	





N/A N/A N/A Section 4, T-24-S, R-34-E

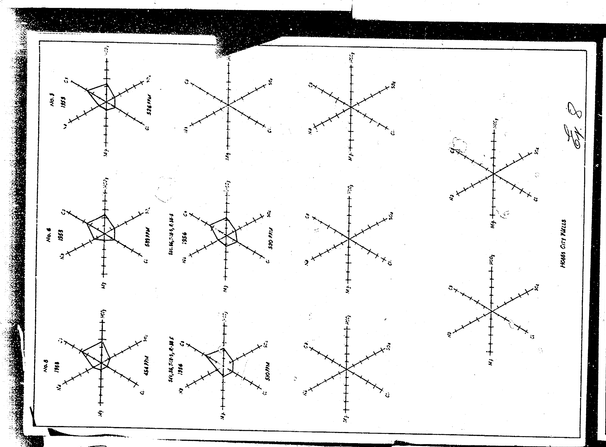
Component	ppm	9-20-1951 # Reacting Value	ppm	9-25-1956 # Reacting Value
Ca	92	11.76	72	17.91
Mg	22	3.26	22	3.61
Na	23	10.53	18	13.91
SO_4	74	15.52	38	22.79
Total Solids	211	41.71	150	

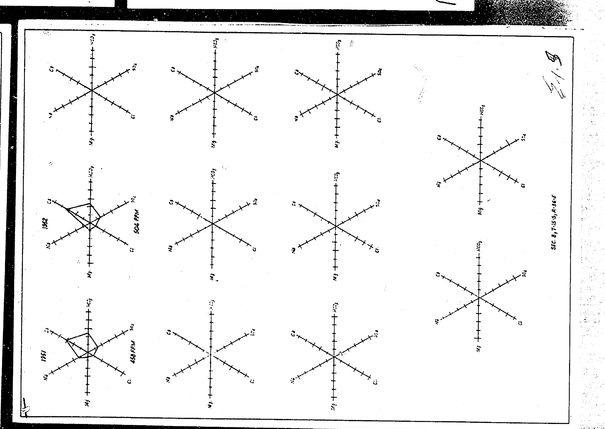
N/A N/A Section 21, T-23-S, R-35-E

Component	ppm	7-15-1953 # Reacting Value	ppm	7-27-1956 # Reacting Value
Ca	330	41.46	279	40.70
Mg	33	3.43	32	4.69
Na	64	2.87	21	2.48
SO_4	284	16.47	215	21.98
Total Solids	1721	72.10	1135	25.89

NORTH CITY HILLS
All in N1/2, N1/2, Section 34, T-24-S, R-35E

Component	ppm	No. 1 7-15-1992 # Reacting Value	ppm	No. 2 7-15-1992 # Reacting Value	ppm	No. 3 9-24-1993 # Reacting Value	ppm	No. 7 9-24-1993 # Reacting Value
Ca	330	41.08	305	37.77	330	41.08	330	41.08
Mg	33	3.97	34	4.73	33	3.97	33	3.97
Na	64	2.87	58	2.58	64	2.87	64	2.87
SO_4	284	16.46	248	15.43	284	16.46	284	16.46
CO_3	50	1.66	50	3.16	50	1.66	50	1.66
Total Solids	1721		1396		1721		1721	



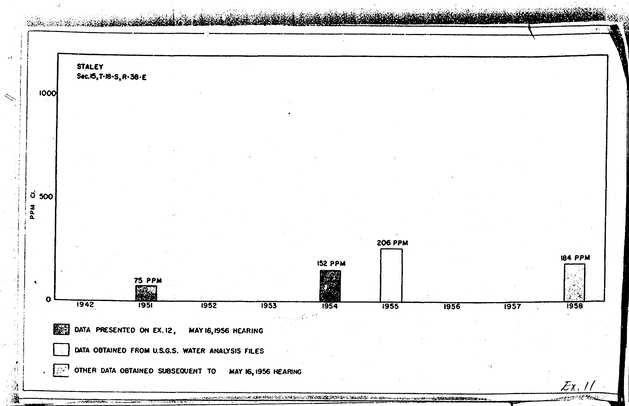


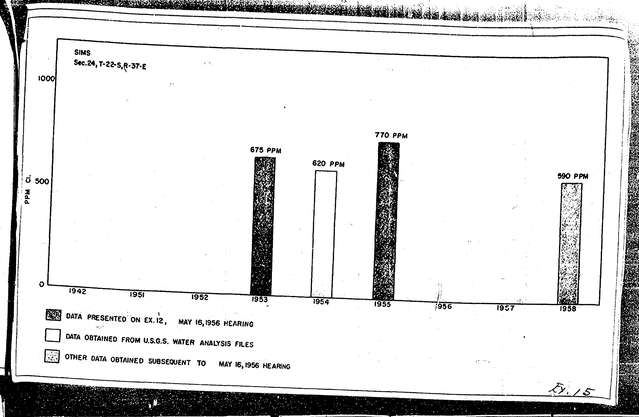
N/A N/A N/A Section 35, T-24-S, R-35-E

Component	ppm	7-15-1992 # Reacting Value	ppm	7-15-1992 # Reacting Value
Ca	92	11.43	61	11.43
Mg	22	3.26	17	3.26
Na	23	10.53	14	10.67
SO_4	74	15.52	36	26.41
CO_3	50	1.66	50	1.66
Total Solids	211		178	

N/A N/A Section 34, T-23-S, R-35-E

Component	ppm	7-15-1992 # Reacting Value	ppm	7-15-1992 # Reacting Value
Ca	61	11.43	61	11.43
Mg	17	3.26	17	3.26
Na	14	10.67	14	10.67
SO_4	36	26.41	36	26.41
CO_3	50	1.66	50	1.66
Total Solids	178		178	





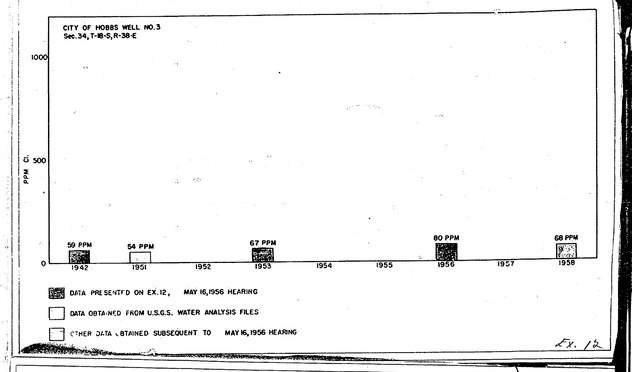
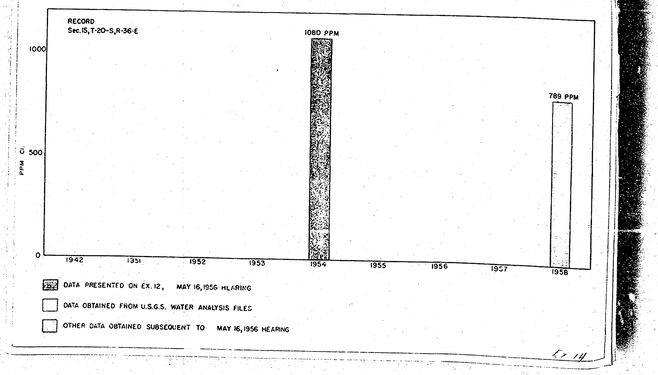


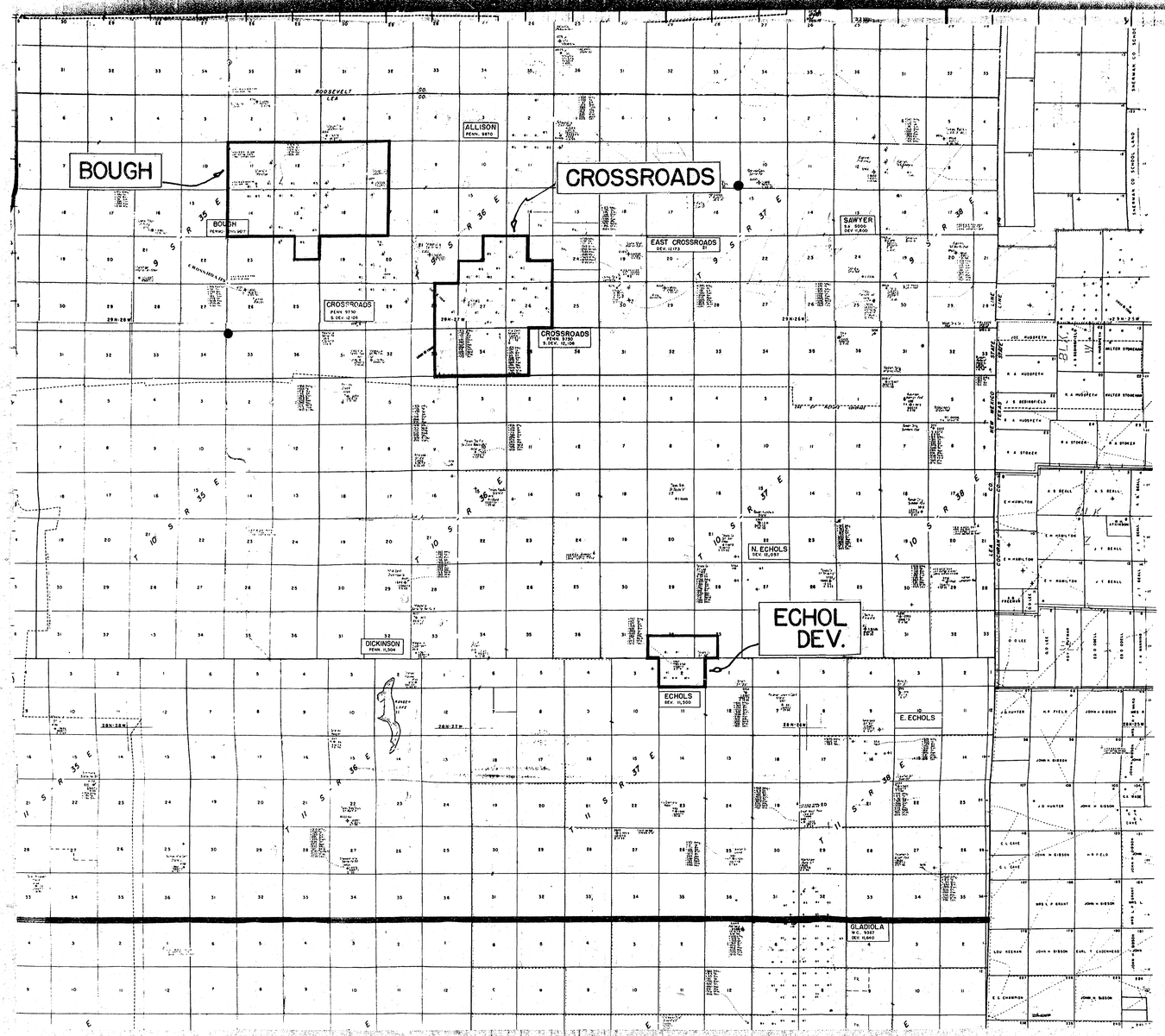


Figure 17. GROUND-WATER AREAS IN THE U. S.

TAKEN FROM:
THE WATER SITUATION IN THE UNITED STATES
WITH SPECIAL REFERENCE TO GROUND WATER BY C.L. McGUINNESS
GEOLOGICAL SURVEY CIRCULAR 114
JUNE 1951
ADAPTED FROM A REPORT PREPARED FOR THE
PRESIDENT'S WATER RESOURCES POLICY COMMISSION

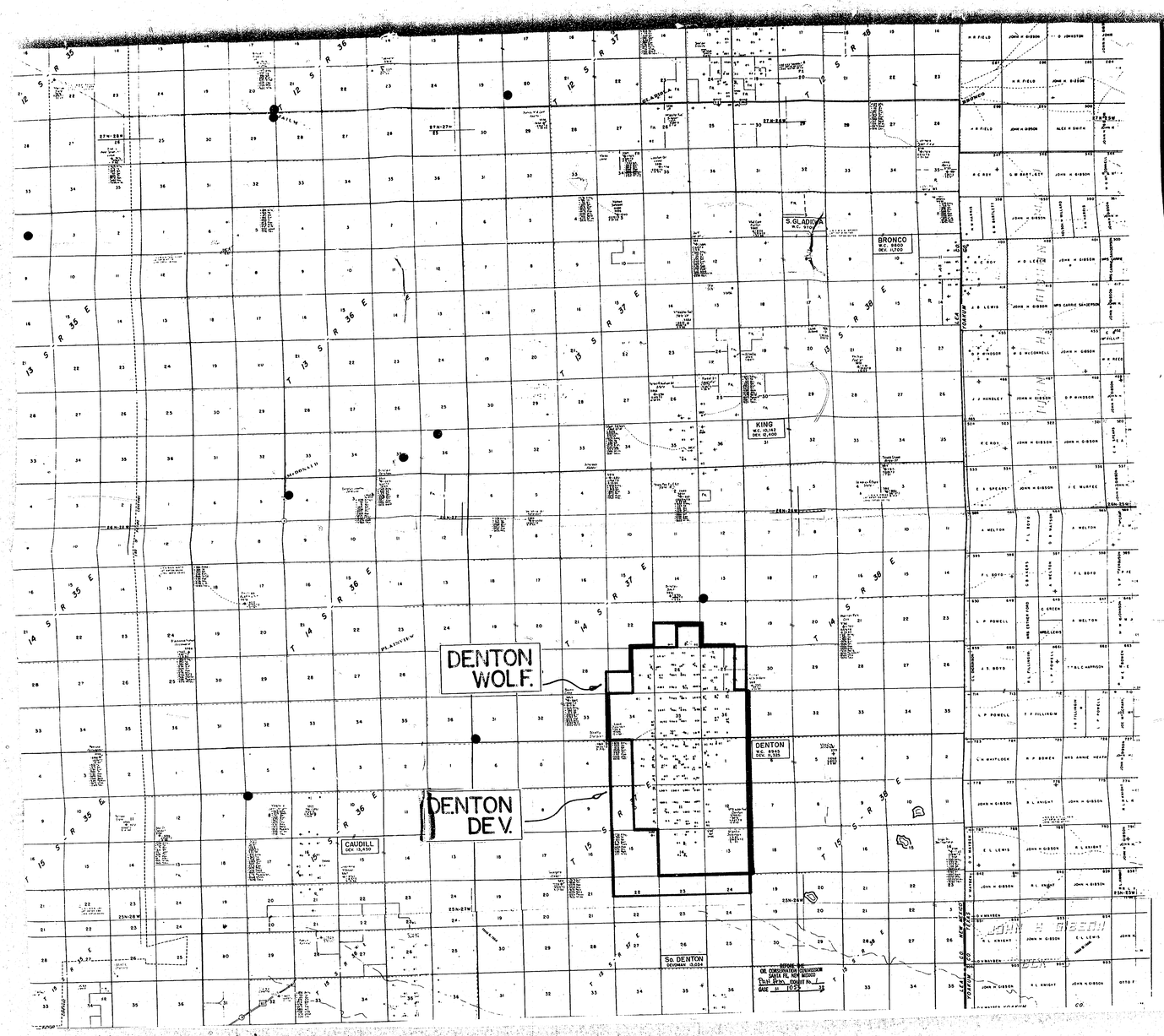


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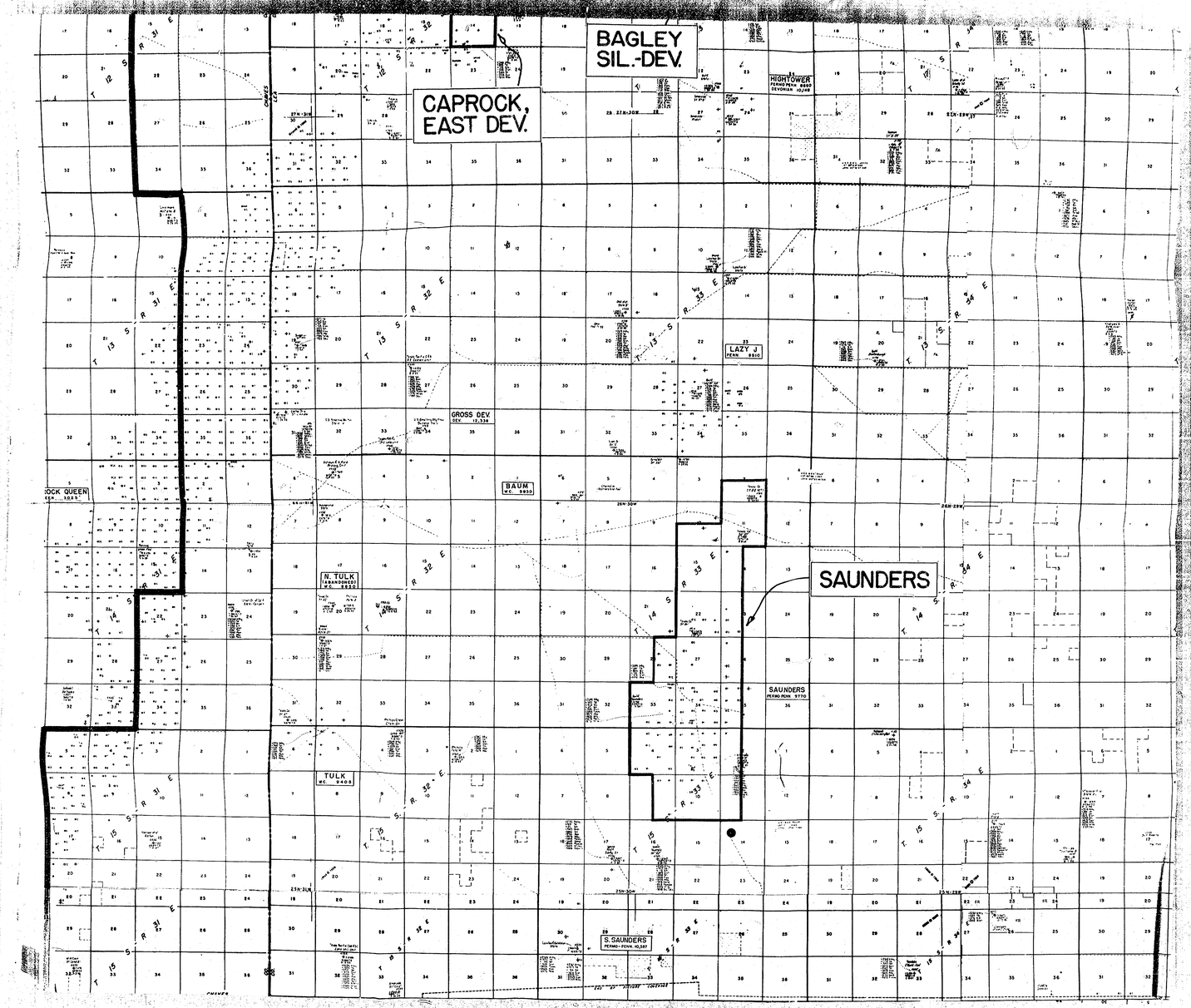


V.P.R.C.V. MICROGRAPHICS

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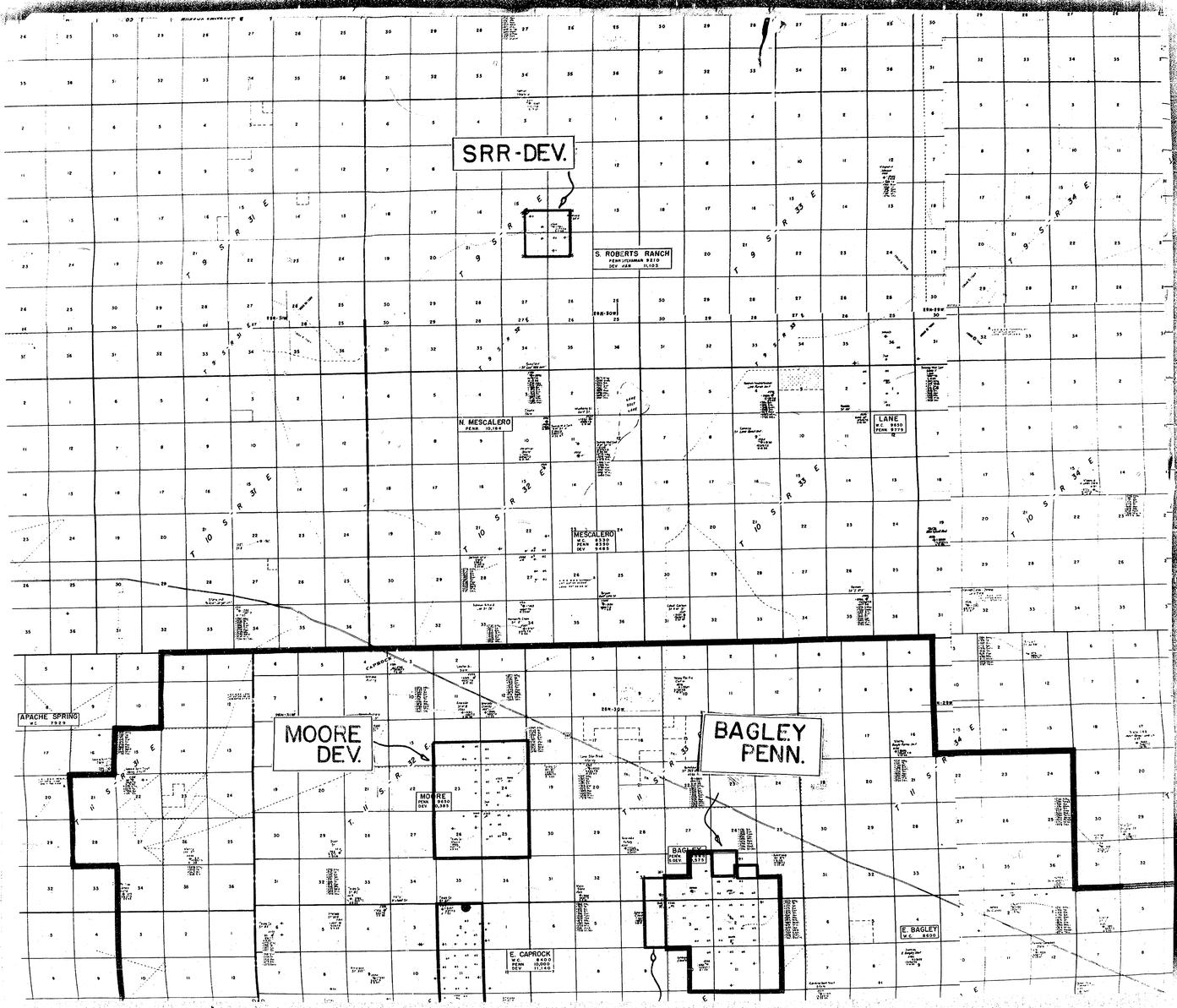


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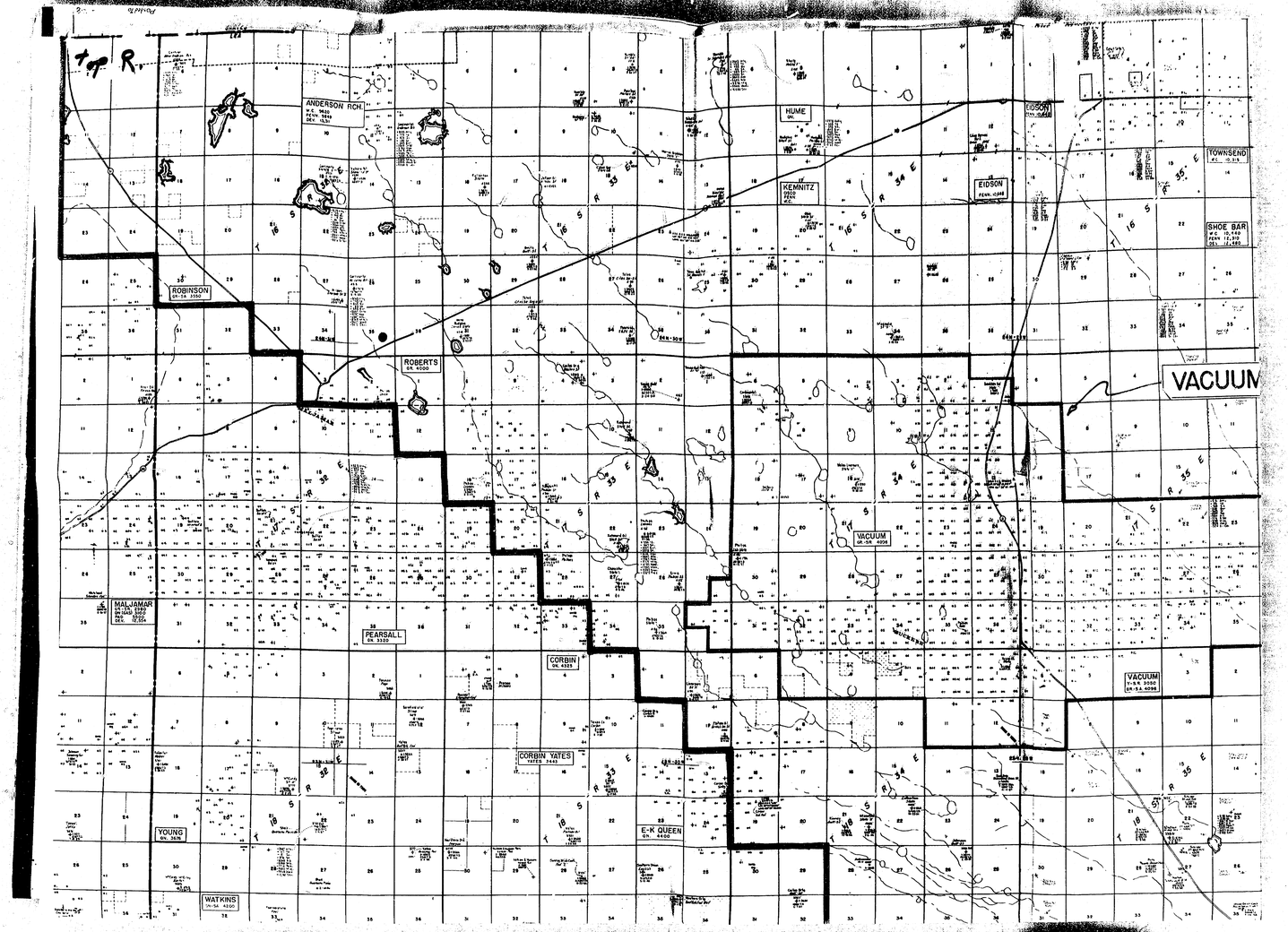


V.A.M.C.F. MICROGRAPHICS

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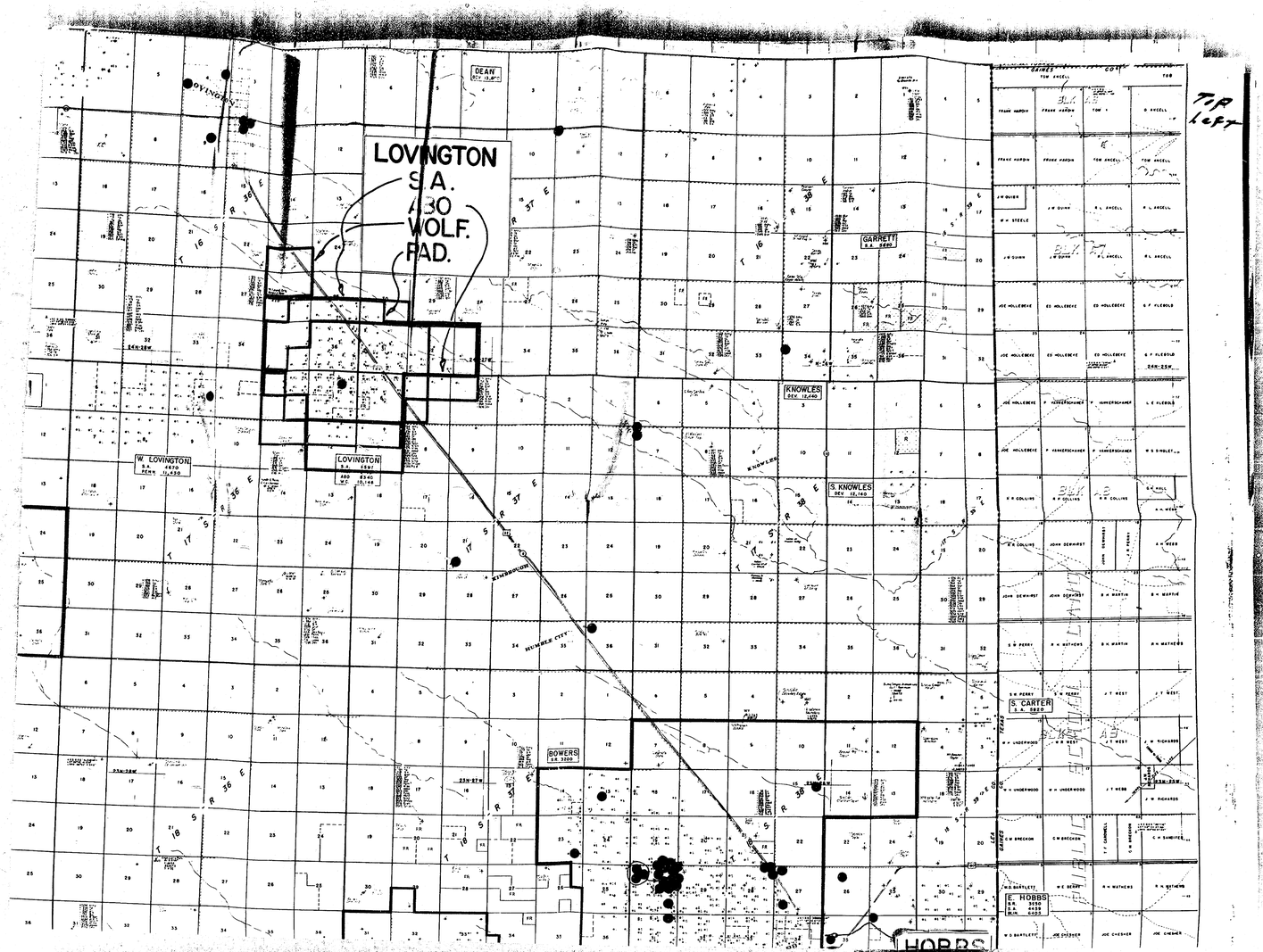


U.M.I. MICROGRAPHICS
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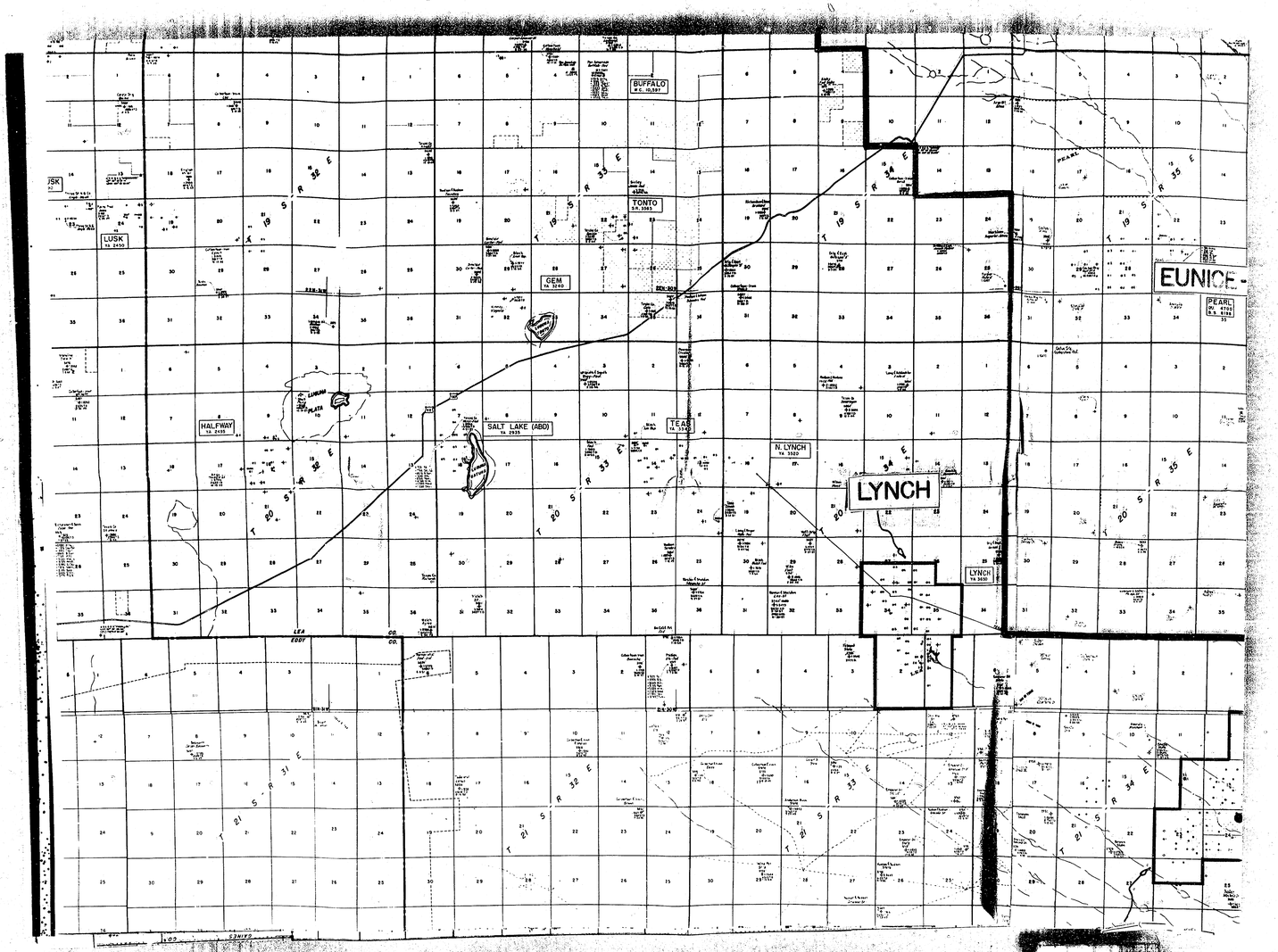
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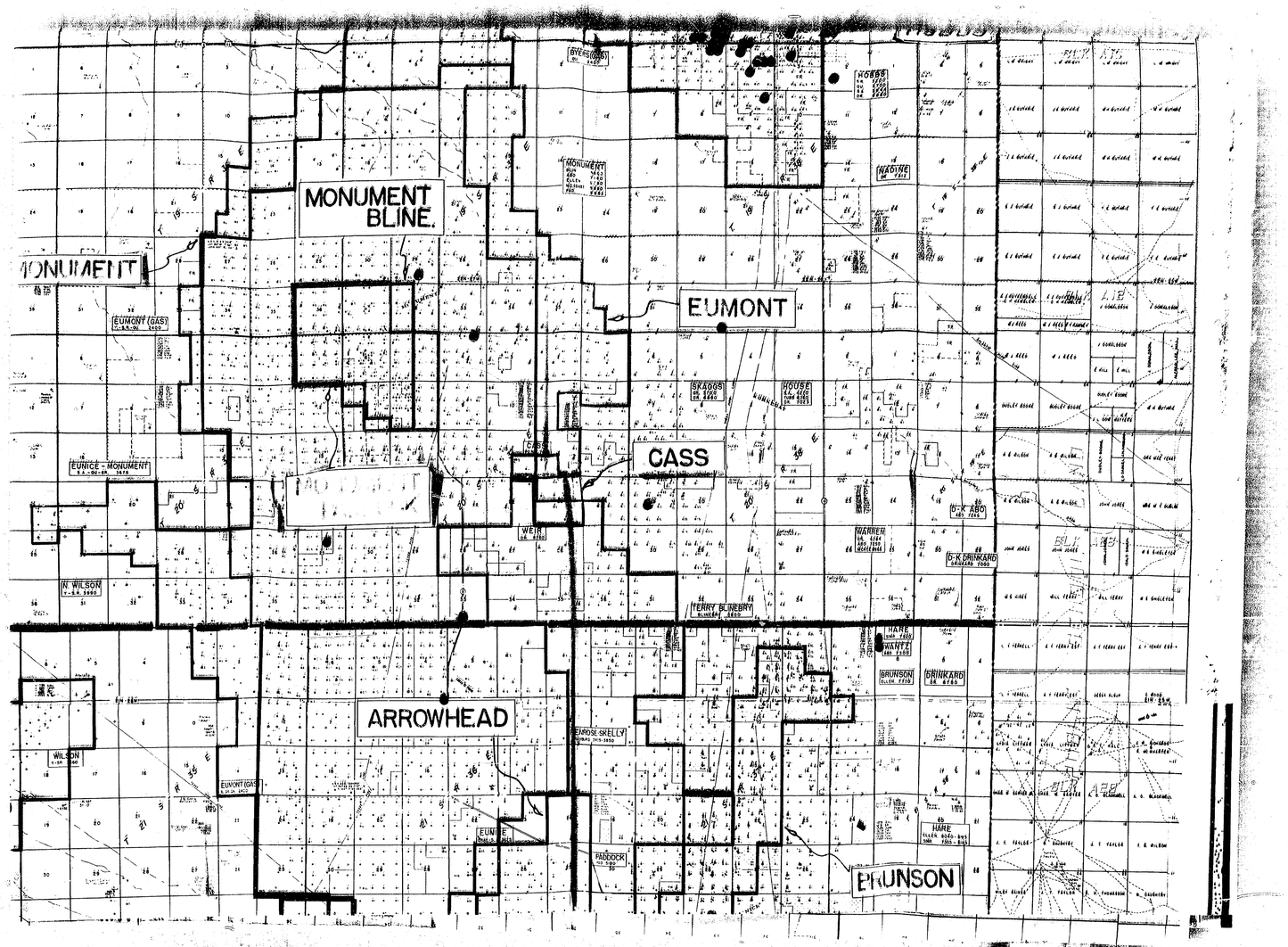
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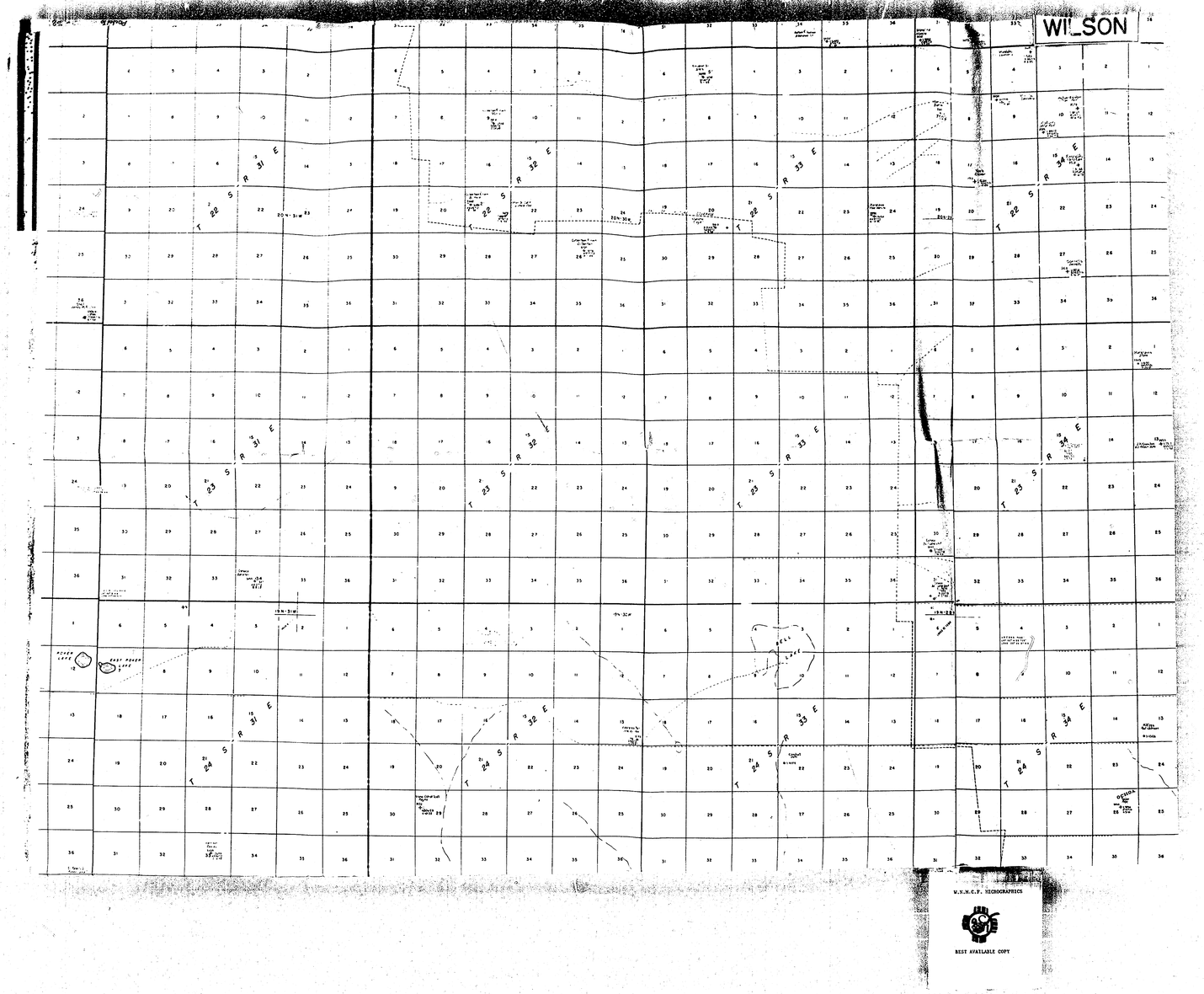
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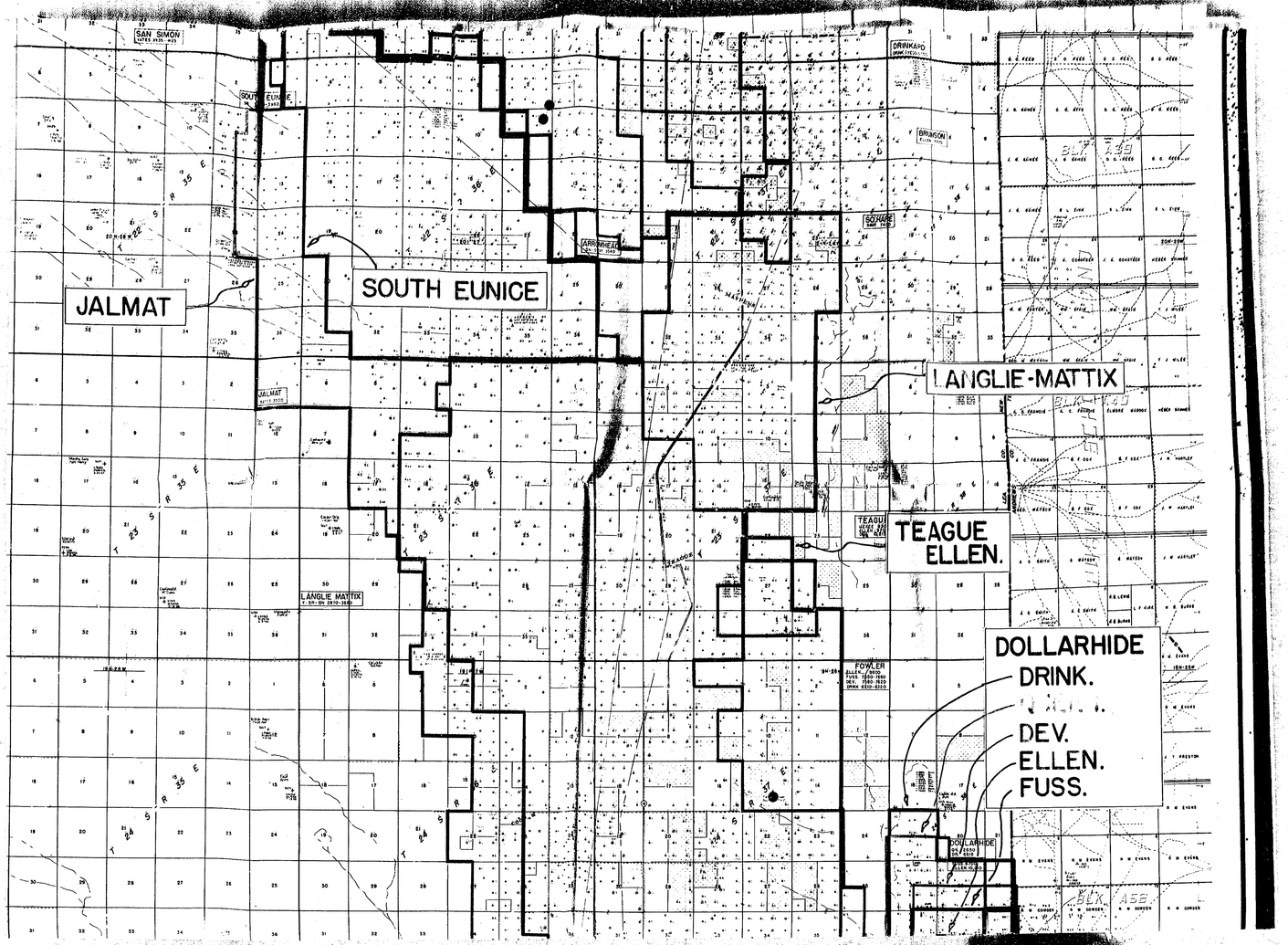
U.S.G.S. PHOTOGRAPHICS

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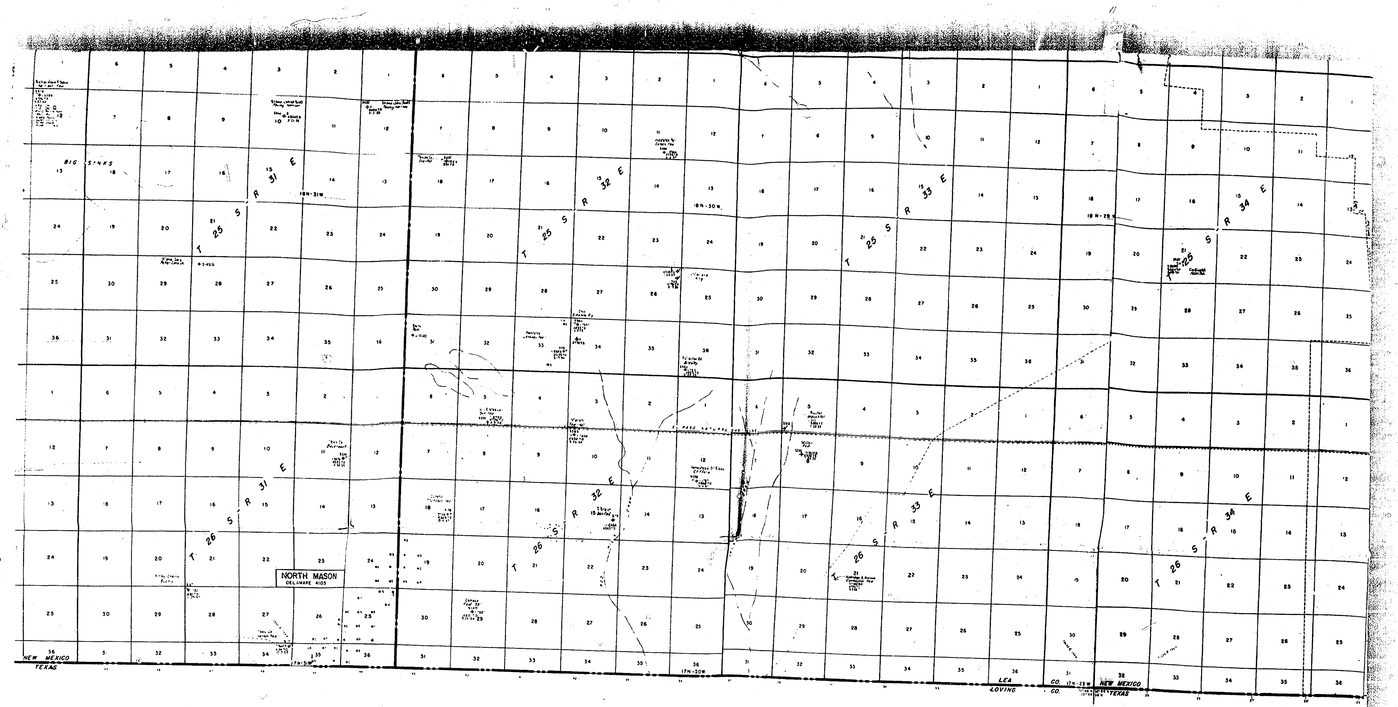


W.N.H.C.P. MICROGRAPHICS

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M.N.M.C.F. MICROGRAPHICS
BEST AVAILABLE COPY



Bottom Right

32°00' to 32°30'N - 103°30' to 104°00'W

NEW MEXICO

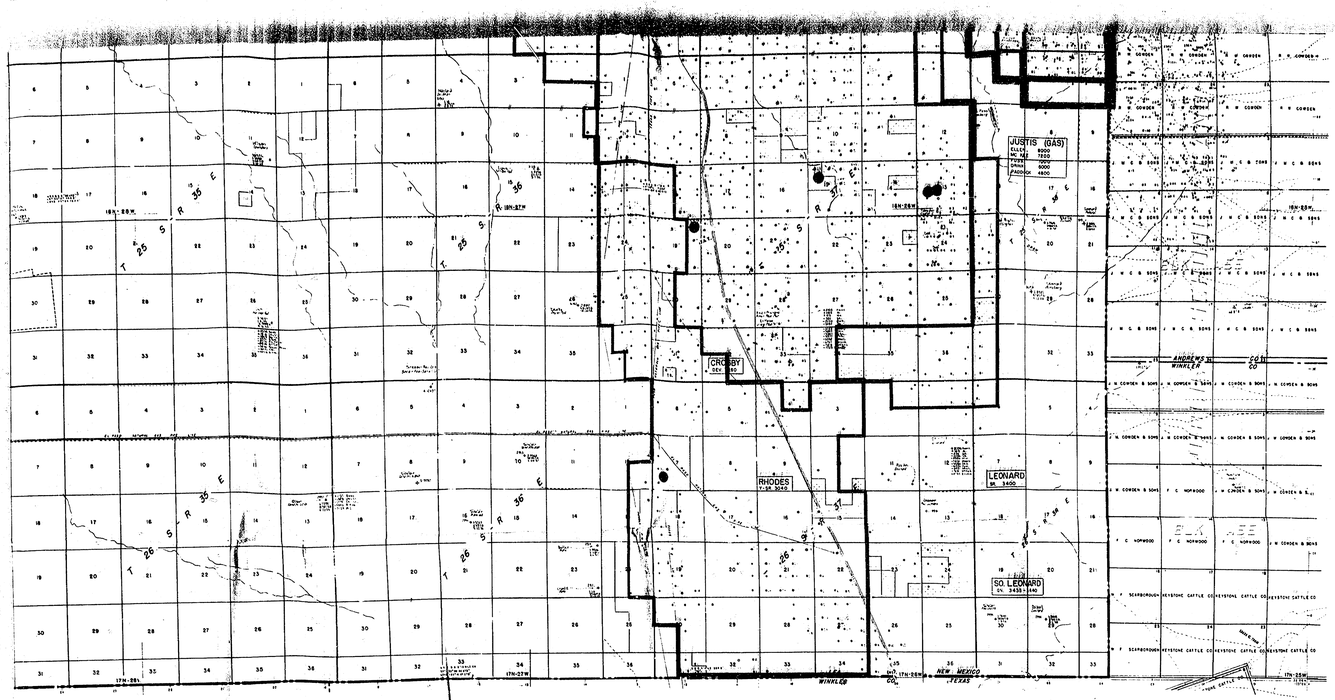
S-22 SW

ROSWELL DISTRICT

1" = 4000'

W.N.M.C.U. MICROGRAPHICS

BEST AVAILABLE COPY



32°00' to 32°30'N - 103°00' to 103°30'W

NEW MEXICO

S-22 SE

ROSWELL DISTRICT

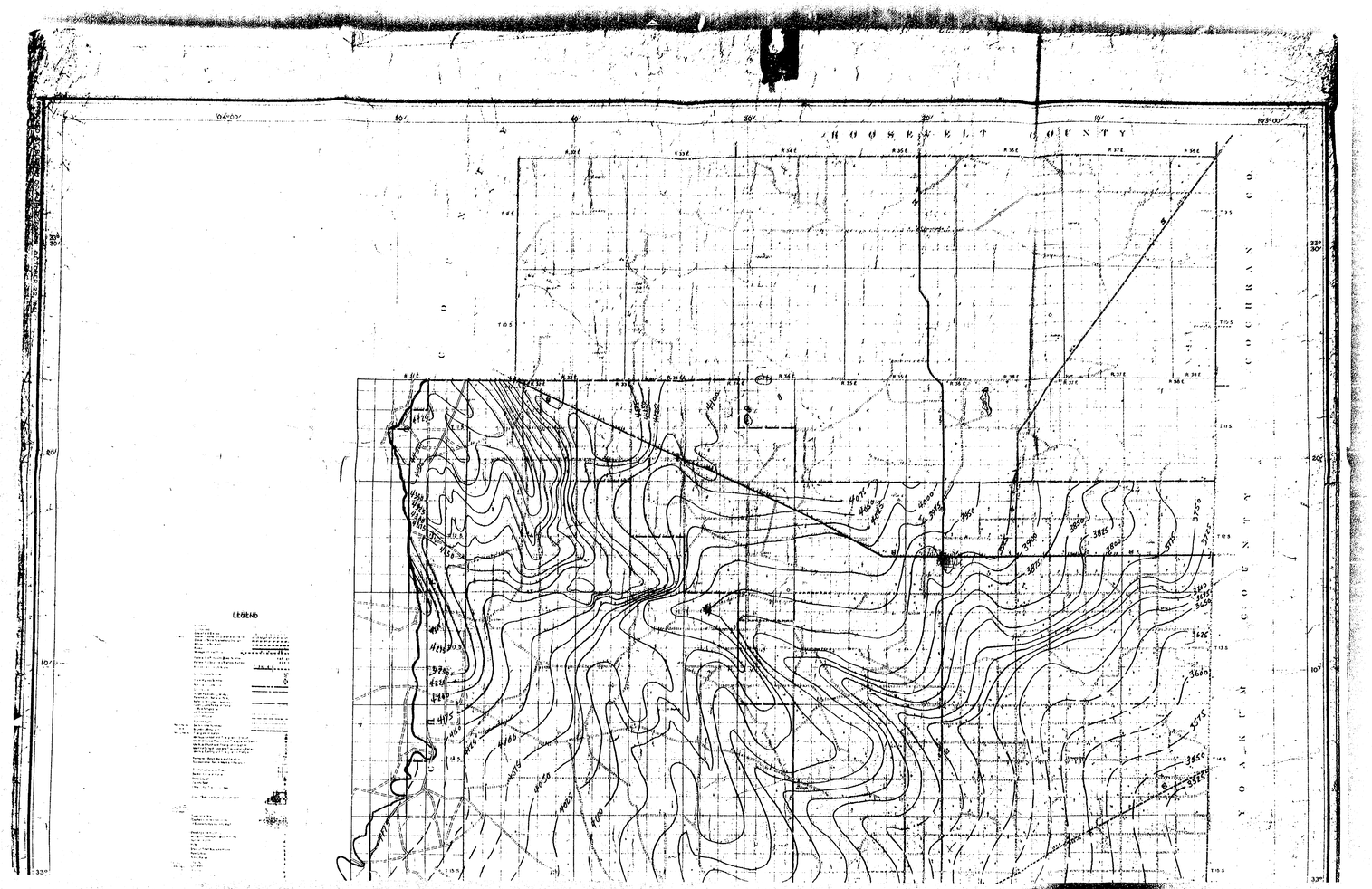
1" = 4000'

BEFORE THE OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO Exhibit No. 12 CASE 10254

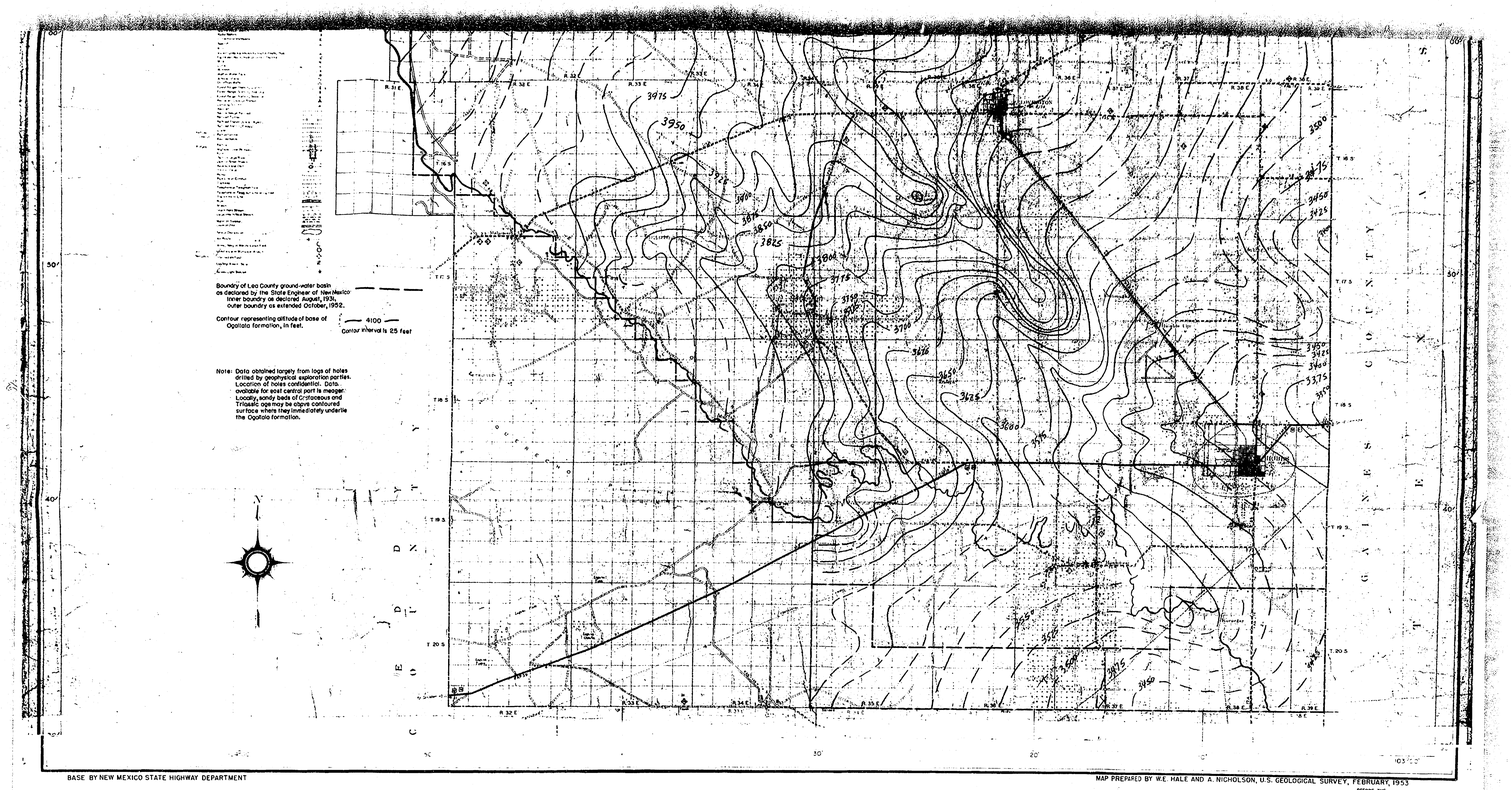
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N.M.O.C.C. MICROGRAPHICS

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W.R.H.C.F. MICROGRAPHICS
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BASE BY NEW MEXICO STATE HIGHWAY DEPARTMENT

MAP PREPARED BY W.E. HALE AND A. NICHOLSON, U.S. GEOLOGICAL SURVEY, FEBRUARY, 1953

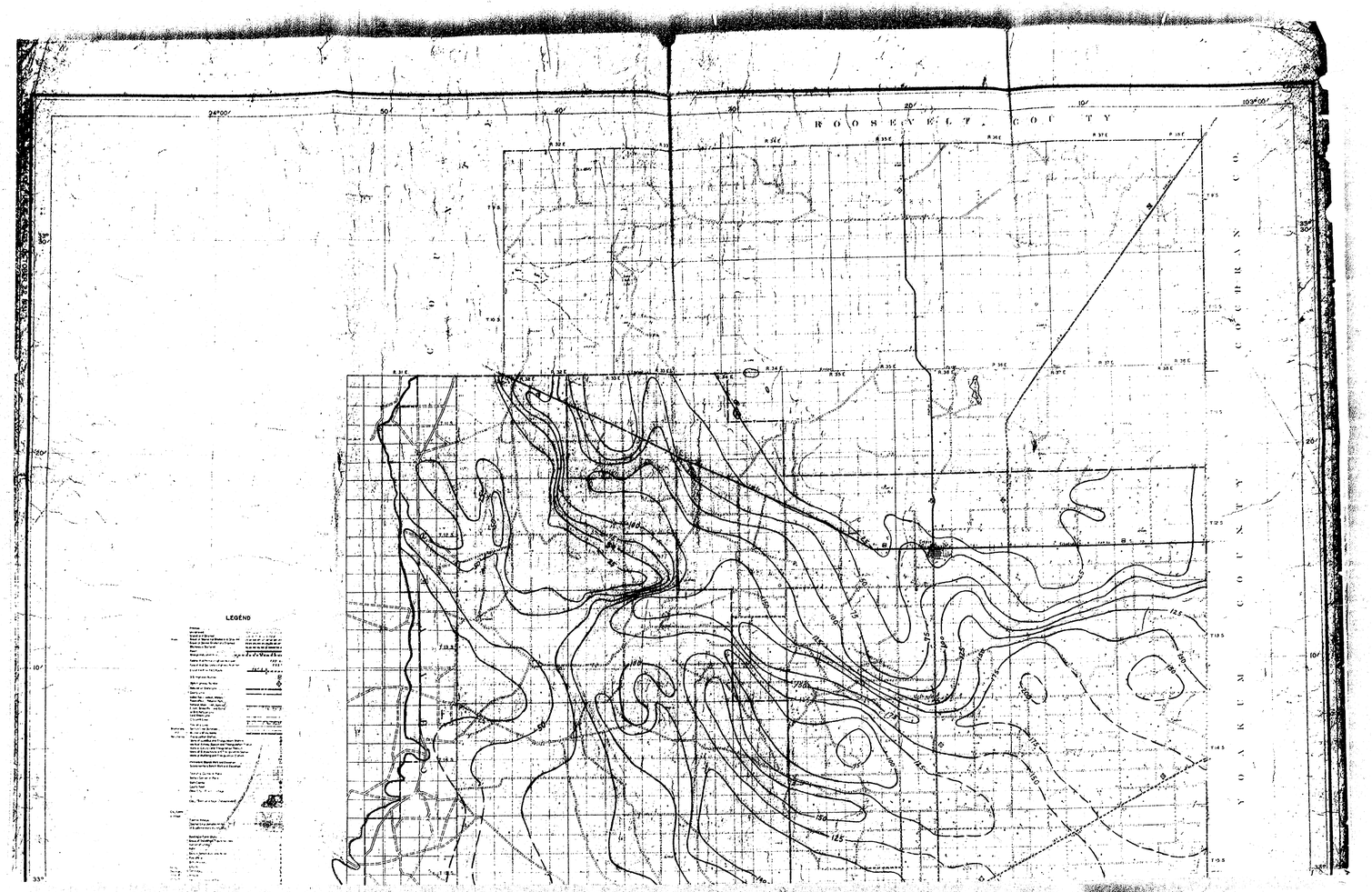
NOTICE TO
OIL CONS. DIV. Sec. 27 R. 32E. T. 20S.
SANTA FE, NEW MEXICO
Attached Map Should be
MAP 16 2-3

APPROXIMATE ALTITUDE AND CONFIGURATION OF THE BASE OF THE OGALLALA FORMATION IN PART OF LEA COUNTY, NEW MEXICO

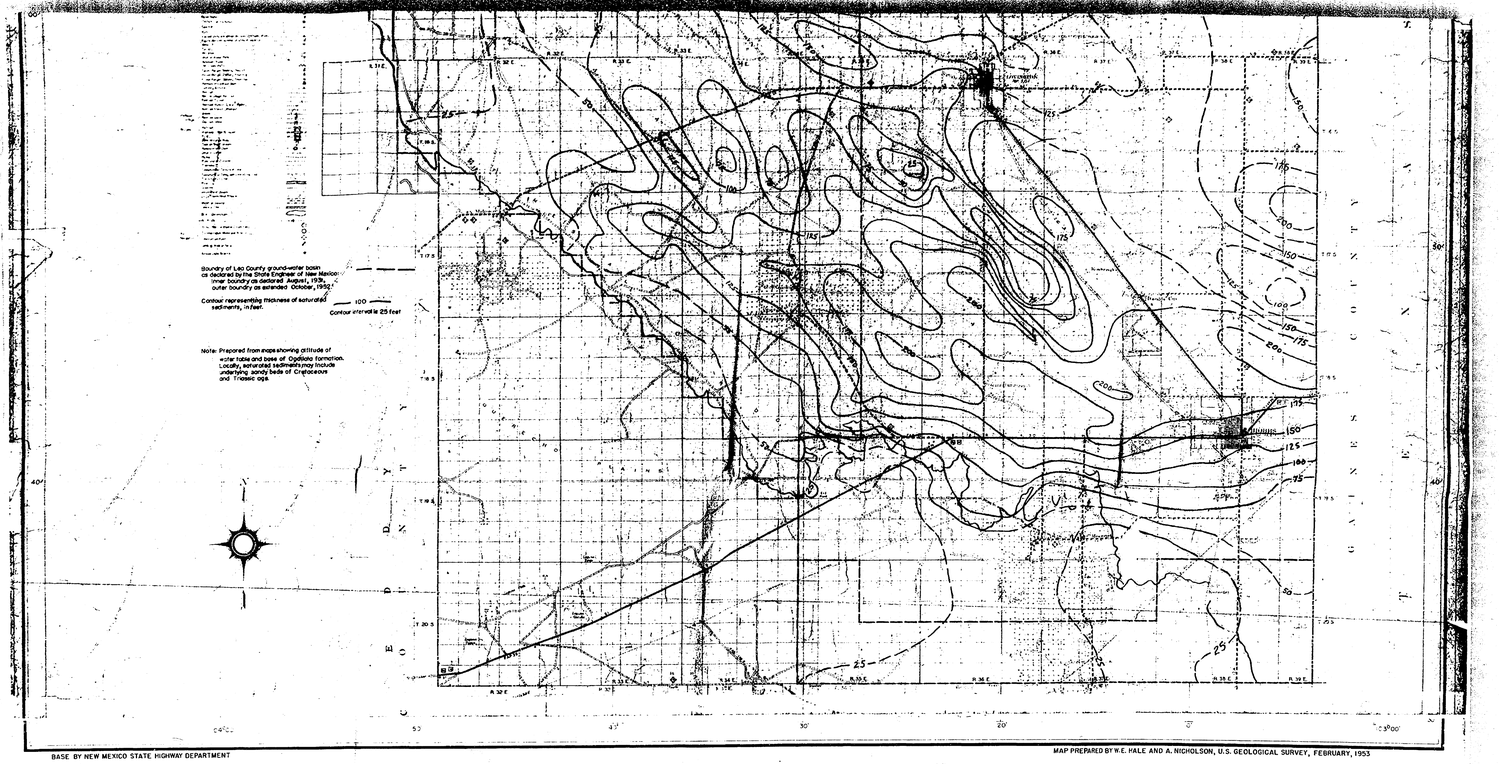
PREPARED BY THE U.S. GEOLOGICAL SURVEY IN COOPERATION WITH THE STATE ENGINEER OF NEW MEXICO

PRELIMINARY MAP, SUBJECT TO REVISION

W.N.M.C.F. MICROGRAPHICS
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U.S.N.M.C.F. MICROGRAPHICS
BEST AVAILABLE COPY



BASE BY NEW MEXICO STATE HIGHWAY DEPARTMENT

MAP PREPARED BY W.E. HALE AND A. NICHOLSON, U.S. GEOLOGICAL SURVEY, FEBRUARY, 1953

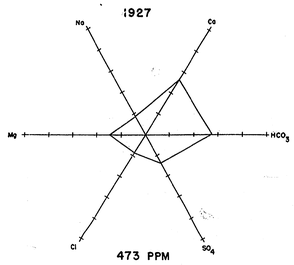
APPROXIMATE THICKNESS OF SATURATED SEDIMENTS IN THE OGALLALA FORMATION IN PART OF LEA COUNTY, NEW MEXICO

PREPARED BY THE U.S. GEOLOGICAL SURVEY IN COOPERATION WITH THE STATE ENGINEER OF NEW MEXICO

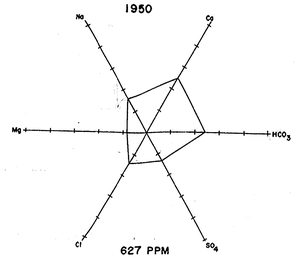
PRELIMINARY MAP SUBJECT TO REVISION

RELEASED TO OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO
DATE 10-5-78 EXHIBIT No. 29
CASE 10-5-78

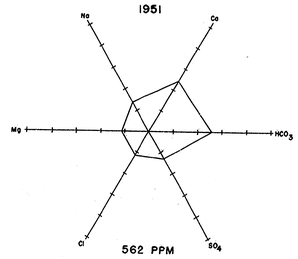
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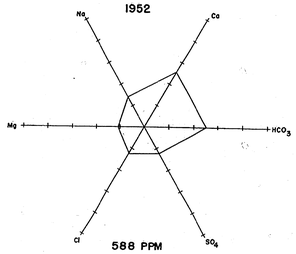
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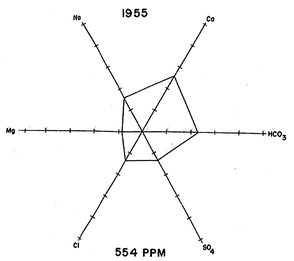
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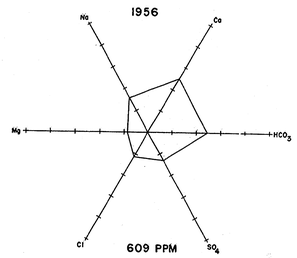
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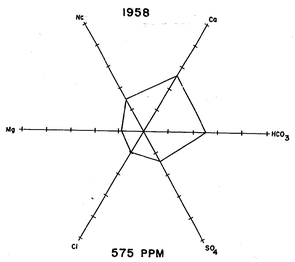
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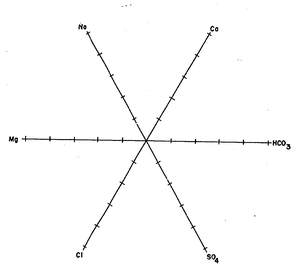
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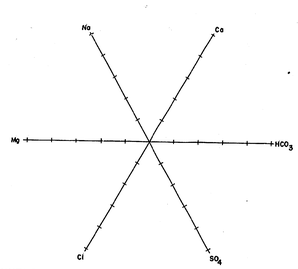


609 PPM

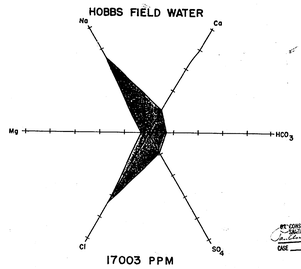


575 PPM



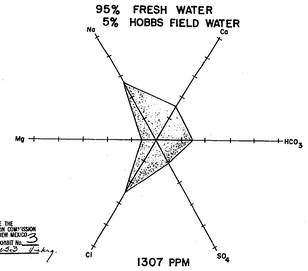


HOBBS FIELD WATER



17003 PPM

95% FRESH WATER
5% HOBBS FIELD WATER

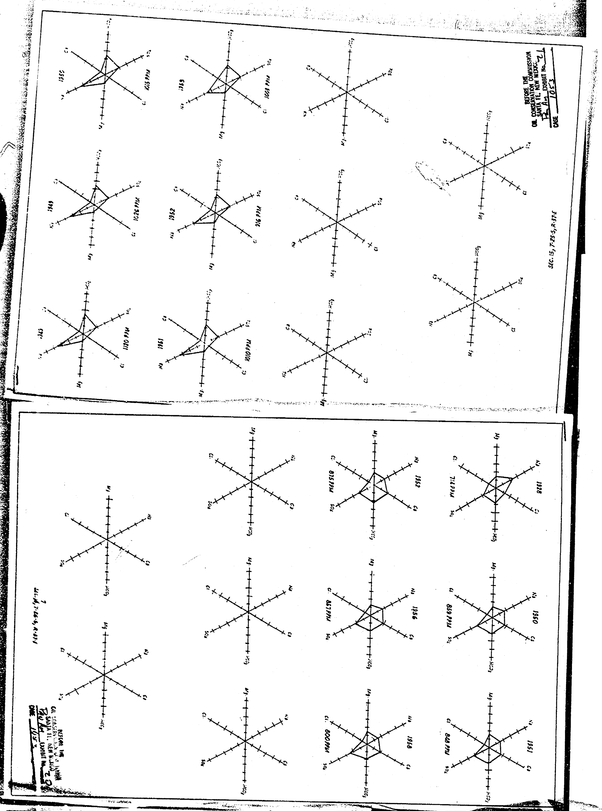


1307 PPM

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT NO. 3
CASE 1535

HOBBS AREA

W.N.M.C.F. MICROGRAPHICS
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Mid-Continent Area
Mid-Continent Area
Mid-Continent Area





U.S.M.C.F. MICROGRAPHICS

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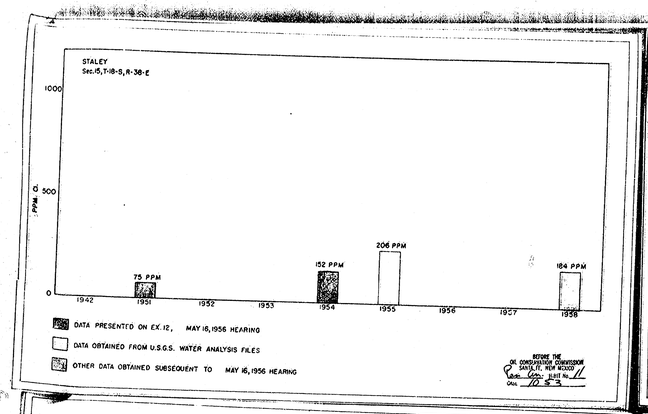
SW/4 Section 33, T-20-S, R-24-E

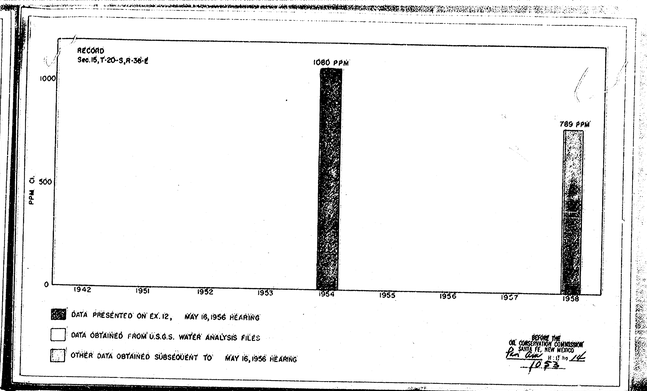
Constituent	ppm	5 Reacting Value	ppm	5 Reacting Value	ppm	5 Reacting Value
Ca	332	41.65	279	40.70	335	41.92
Mg	52	4.42	29	2.87	45	5.58
Na	74	5.43	16	1.32	5	1.58
K	92	7.33	21	1.68	133	9.17
HCO_3	520	35.87	317	22.13	320	19.26
SO_4	458	33.40	420	25.09	497	31.57
Total Solids	1259		1132		1380	

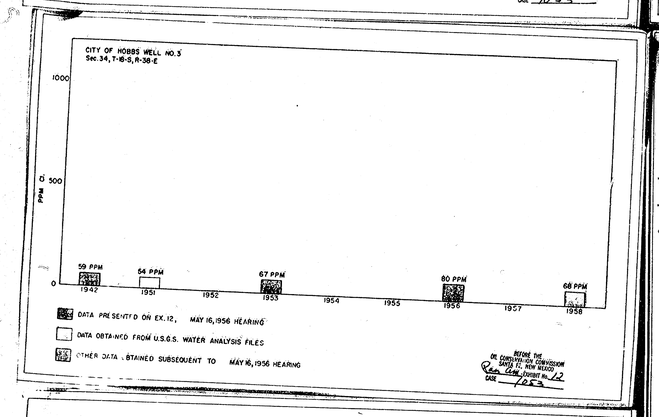


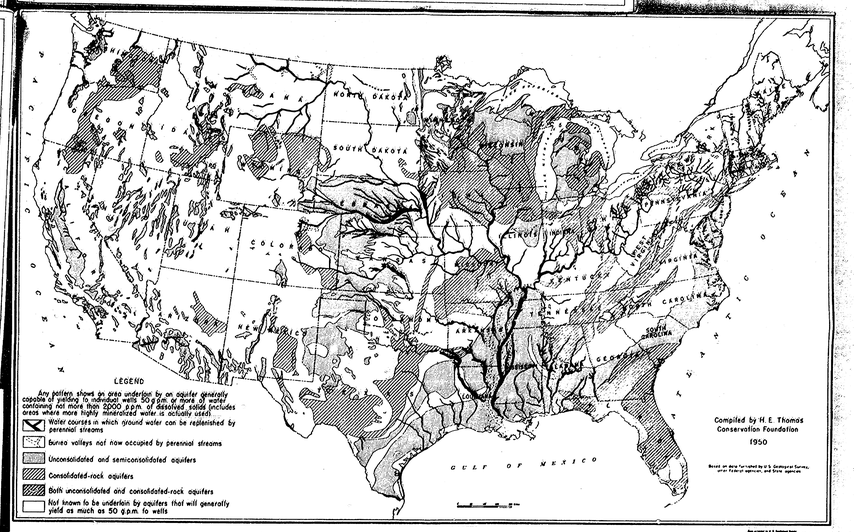


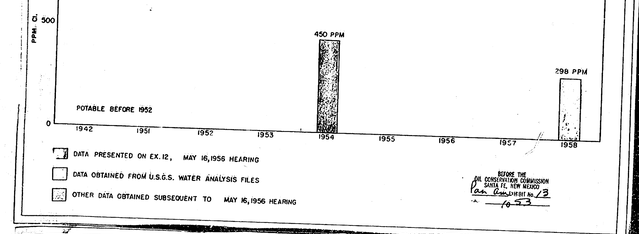












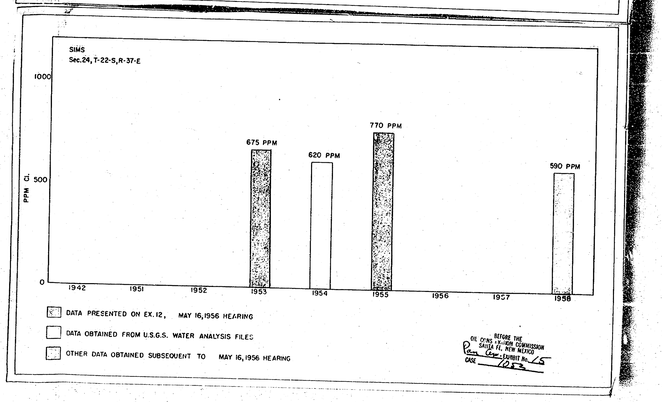


Figure 17. GROUND-WATER AREAS IN THE U. S.

TAKEN FROM:
THE WATER SITUATION IN THE UNITED STATES
WITH SPECIAL REFERENCE TO GROUND WATER BY C.L. McGUINNESS
GEOLOGICAL SURVEY CIRCULAR 114
JUNE 1951
ADAPTED FROM A REPORT PREPARED FOR THE
PRESIDENT'S WATER RESOURCES POLICY COMMISSION

BEFORE THE OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO
EXHIBIT No. 16
CASE 1053

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Ex 22a

Ex 22b

Ex 22c

Ex 22d

Ex 23

Ex 24

Ex 24a

Ex 24b

Ex 24c

Ex 24d

Ex 24e

Ex 24f

Ex 24g

Ex 24h

Ex 24i

Ex 24j

Ex 24k

Ex 24l

Ex 24m

Ex 24n

Ex 24o

Ex 24p

Ex 24q

Ex 24r

Ex 24s

Ex 24t

Ex 24u

Ex 24v

Ex 24w

Ex 24x

Ex 24y

Ex 24z

Ex 24aa

Ex 24ab

Ex 24ac

Ex 24ad

Ex 24ae

Ex 24af

Ex 24ag

Ex 24ah

Ex 24ai

Ex 24aj

Ex 24ak

Ex 24al

Ex 24am

Ex 24an

Ex 24ao

Ex 24ap

Ex 24aq

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Ex 24cf

Ex 24cg

Ex 24ch

Ex 24ci

Ex 24cj

Ex 24ck

Ex 24cl

Ex 24cm

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Ex 24cp

Ex 24cq

Ex 24cr

Ex 24cs

Ex 24ct

Ex 24cu

Ex 24cv

Ex 24cw

Ex 24cx

Ex 24cy

Ex 24cz

Ex 24da

Ex 24db

Ex 24dc

Ex 24dd

Ex 24de

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Ex 24dg

Ex 24dh

Ex 24di

Ex 24dj

Ex 24dk

Ex 24dl

Ex 24dm

Ex 24dn

Ex 24do

Ex 24dp

Ex 24dq

Ex 24dr

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Ex 24dt

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Ex 24dv

Ex 24dw

Ex 24dx

Ex 24dy

Ex 24dz

Ex 24ea

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Ex 24ee

Ex 24ef

Ex 24eg

Ex 24eh

Ex 24ei

Ex 24ej

Ex 24ek

Ex 24el

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Ex 24ma

Ex 24mb

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Ex 24me

Ex 24mf

Ex 24mg

Ex 24mh

Ex 24mi

Ex 24mj

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Ex 24mm

Ex 24mn

Ex 24mo

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Ex 24mr

Ex 24ms

Ex 24mt

Ex 24mu

Ex 24mv

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Ex 24oe

Ex 24of

Ex 24og

Ex 24oh

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Ex 24pr

Ex 24ps

Ex 24pt

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Ex 24px

Ex 24py

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Ex 24rw

Ex 24rx

Ex 24ry

Ex 24rz

Ex 24sa

Ex 24sb

Ex 24sc

Ex 24sd

Ex 24se

Ex 24sf

Ex 24sg

Ex 24sh

Ex 24si

Ex 24sj

Ex 24sk

Ex 24sl

Ex 24sm

Ex 24sn

Ex 24so

Ex 24sp

Ex 24sq

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Ex 24ua

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Ex 24uu

Ex 24uv

Ex 24uw

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Ex 24uy

Ex 24uz

Ex 24va

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Ex 24vc

Ex 24vd

Ex 24ve

Ex 24vf

Ex 24vg

Ex 24vh

Ex 24vi

Ex 24vj

Ex 24vk

Ex 24vl

Ex 24vm

Ex 24vn

Ex 24vo

Ex 24vp

Ex 24vq

Ex 24vr

Ex 24vs

Ex 24vt

Ex 24vu

Ex 24vv

Ex 24vw

Ex 24vx

Ex 24vy

Ex 24vz

Ex 24wa

Ex 24wb

Ex 24wc

Ex 24wd

Ex 24we

Ex 24wf

Ex 24wg

Ex 24wh

Ex 24wi

Ex 24wj

Ex 24wk

Ex 24wl

Ex 24wm

Ex 24wn

Ex 24wo

Ex 24wp

Ex 24wq

Ex 24wr

Ex 24ws

Ex 24wt

Ex 24wu

Ex 24wv

Ex 24ww

Ex 24wx

Ex 24wy

Ex 24wz

Ex 24xa

Ex 24xb

Ex 24xc

Ex 24xd

Ex 24xe

Ex 24xf

Ex 24xg

Ex 24xh

Ex 24xi

Ex 24xj

Ex 24xk

Ex 24xl

Ex 24xm

Ex 24xn

Ex 24xo

Ex 24xp

Ex 24xq

Ex 24xr

Ex 24xs

Ex 24xt

Ex 24xu

Ex 24xv

Ex 24xw

Ex 24xx

Ex 24xy

Ex 24xz

Ex 24ya

Ex 24yb

Ex 24yc

Ex 24yd

Ex 24ye

Ex 24yf

Ex 24yg

Ex 24yh

Ex 24yi

Ex 24yj

Ex 24yk

Ex 24yl

Ex 24ym

Ex 24yn

Ex 24yo

Ex 24yp

Ex 24yq

Ex 24yr

Ex 24ys

Ex 24yt

Ex 24yu

Ex 24yv

Ex 24yw

Ex 24yx

Ex 24yy

Ex 24yz

Ex 24za

Ex 24zb

Ex 24zc

Ex 24zd

Ex 24ze

Ex 24zf

Ex 24zg

Ex 24zh

Ex 24zi

Ex 24zj

Ex 24zk

Ex 24zl

Ex 24zm

Ex 24zn

Ex 24zo

Ex 24zp

Ex 24zq

Ex 24zr

Ex 24zs

Ex 24zt

Ex 24zu

Ex 24zv

Ex 24zw

Ex 24zx

Ex 24zy

Ex 24zz

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Exhibit No. 3
Case No. 1287

Lusco Area

Fresh water

Component	ppm	1951 # reacting Value	ppm	1952 # reacting Value	ppm	1953 # reacting Value	ppm	1954 # reacting Value	ppm	1955 # reacting Value	ppm	1956 # reacting Value	ppm	1958 # reacting Value
Na	21	0.91	69	3.00	69	3.00	69	3.00	69	3.00	46	2.00	46	2.00
Ca	29	1.45	89	4.45	73	3.65	73	3.65	73	3.65	65	3.25	65	3.25
Mg	22	1.81	73	6.00	73	6.00	73	6.00	73	6.00	73	6.00	73	6.00
Cl	22	0.62	69	1.95	69	1.95	69	1.95	69	1.95	69	1.95	69	1.95
SO_4	42	0.87	146	3.04	146	3.04	146	3.04	146	3.04	146	3.04	146	3.04
Total Solids 675		5.66	627		560		560		560		553		553	

Lovington Field Water

Component	ppm	# reacting Value	ppm	1952 # reacting Value	Mixture	ppm	1953 # reacting Value	ppm	1954 # reacting Value	ppm	1955 # reacting Value	ppm	1956 # reacting Value	ppm	1958 # reacting Value
Na	6581	40.35													
Ca	320	0.71													
Mg	1707	4.14													
Cl	1485	4.18													
SO_4															
Total Solids	29915					1895									

Component	ppm	# reacting Value	ppm	1952 # reacting Value	Mixture	ppm	1953 # reacting Value	ppm	1954 # reacting Value	ppm	1955 # reacting Value	ppm	1956 # reacting Value	ppm	1958 # reacting Value
Na	210	9.12	209	9.10	209	9.10	209	9.10	209	9.10	209	9.10	209	9.10	
Ca	58	2.91	73	3.65	73	3.65	73	3.65	73	3.65	73	3.65	73	3.65	
Mg	73	6.00	97	8.00	97	8.00	97	8.00	97	8.00	97	8.00	97	8.00	
Cl	201	5.66	271	7.65	271	7.65	271	7.65	271	7.65	271	7.65	271	7.65	
SO_4	280	5.83	280	5.83	280	5.83	280	5.83	280	5.83	280	5.83	280	5.83	
Total Solids	1126	34.17	1205	34.26	1205	34.26	1205	34.26	1205	34.26	1205	34.26	1205	34.26	

Component	ppm	1-2-1952 # reacting Value	ppm	6-15-1950 # reacting Value	ppm	1951 # reacting Value	ppm	1952 # reacting Value	1-20-1950 # reacting Value	ppm	1953 # reacting Value	8-2-1951 # reacting Value	ppm	1954 # reacting Value	7-25-1952 # reacting Value	ppm	7-2-1953 # reacting Value
Na	395	17.20	395	17.20	395	17.20	395	17.20	31.37	211	9.18	31.05	211	9.18	31.79	197	8.58
Ca	80	4.01	80	4.01	80	4.01	80	4.01	30.66	80	4.00	30.43	80	4.00	4.00	80	4.00
Mg	97	8.00	97	8.00	97	8.00	97	8.00	7.80	97	8.00	23.39	97	8.00	31.79	97	8.00
Cl	395	11.15	395	11.15	395	11.15	395	11.15	34.19	395	11.15	23.39	395	11.15	27.74	395	11.15
SO_4															34.16		
Total Solids																	

Mixture 55% fresh water
45 West Lovington field water

Component	ppm	# reacting Value	ppm	1952 # reacting Value	ppm	1953 # reacting Value	ppm	1954 # reacting Value	ppm	1955 # reacting Value	ppm	1956 # reacting Value	ppm	1958 # reacting Value
Na	1249	54.39												
Ca	320	7.97												
Mg	243	2.00												
Cl	2284	64.41												
SO_4	2880	59.96												
Total Solids	16827													

West Lovington Field Water

Component	ppm	# reacting Value	ppm	1951 # reacting Value	ppm	1952 # reacting Value	1-20-1950 # reacting Value	ppm	1953 # reacting Value	8-2-1951 # reacting Value	ppm	1954 # reacting Value	7-25-1952 # reacting Value	ppm	7-2-1953 # reacting Value
Na	1249	54.39													
Ca	320	7.97													
Mg	243	2.00													
Cl	2284	64.41													
SO_4	2880	59.96													
Total Solids	16827														

Mixture 55% fresh water
45 West Lovington field water

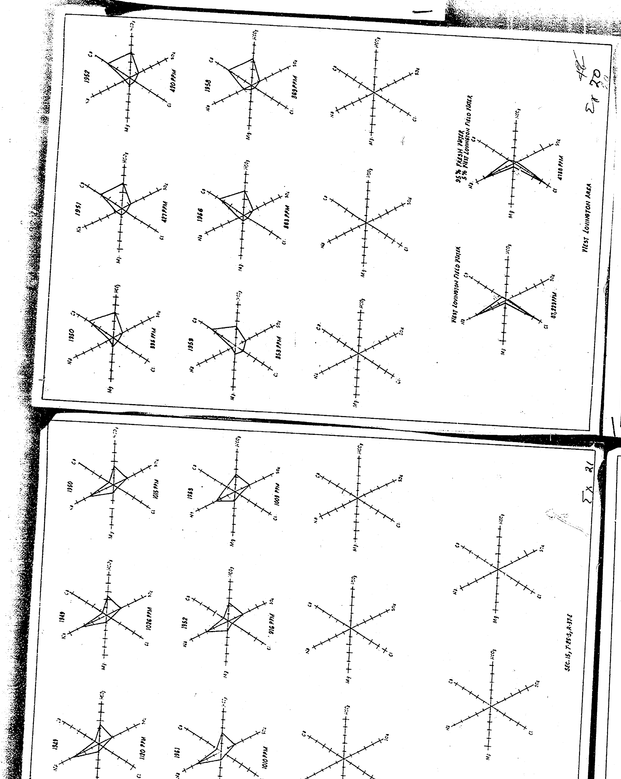
Component	ppm	# reacting Value	ppm	1951 # reacting Value	ppm	1952 # reacting Value	ppm	1953 # reacting Value	ppm	1954 # reacting Value	ppm	1955 # reacting Value	ppm	1956 # reacting Value	ppm	1958 # reacting Value
Na	1249	54.39														
Ca	320	7.97														
Mg	243	2.00														
Cl	2284	64.41														
SO_4	2880	59.96														
Total Solids	16827															

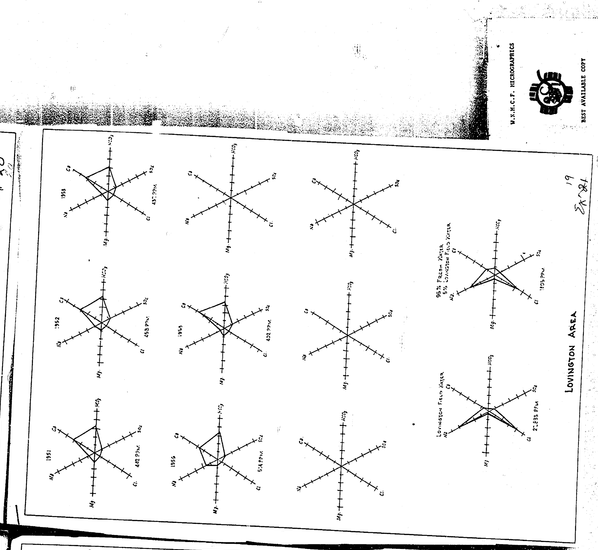
NE/4, Section 15, T-16-S, R-37-E

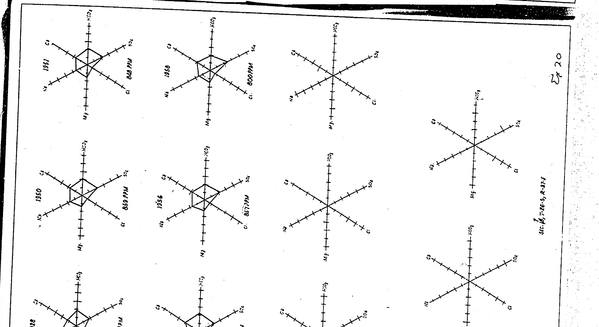
Component	ppm	10-26-1948 # reacting Value	ppm	1951 # reacting Value	ppm	1952 # reacting Value	1-20-1950 # reacting Value	ppm	1953 # reacting Value	8-2-1951 # reacting Value	ppm	1954 # reacting Value	7-25-1952 # reacting Value	ppm	7-2-1953 # reacting Value
Na	111	23.1													
Ca	57	14.1													
Mg	37	12.7	100	12.7	97	12.7	97	12.7	97	12.7	97	12.7	97	12.7	
Cl	77	31.7	93	38.24	93	38.24	93	38.24	93	38.24	93	38.24	93	38.24	
SO_4	72	30.7	154	31.92	154	31.92	154	31.92	154	31.92	154	31.92	154	31.92	
Total Solids	355		447	20.41	447	20.41	447	20.41	447	20.41	447	20.41	447	20.41	

NW/4, S/2, Section 7, T-16-S, R-37-E

Component	ppm	10-26-1948 # reacting Value	ppm	1951 # reacting Value	ppm	1952 # reacting Value	1-20-1950 # reacting Value	ppm	1953 # reacting Value	8-2-1951 # reacting Value	ppm	1954 # reacting Value	7-25-1952 # reacting Value	ppm	7-2-1953 # reacting Value
Na	111	23.1													
Ca	57	14.1													
Mg	37	12.7	100	12.7	97	12.7	97	12.7	97	12.7	97	12.7	97	12.7	
Cl	77	31.7	93	38.24	93	38.24	93	38.24	93	38.24	93	38.24	93	38.24	
SO_4	72	30.7	154	31.92	154	31.92	154	31.92	154	31.92	154	31.92	154	31.92	
Total Solids	355		447	20.41	447	20.41	447	20.41	447	20.41	447	20.41	447	20.41	

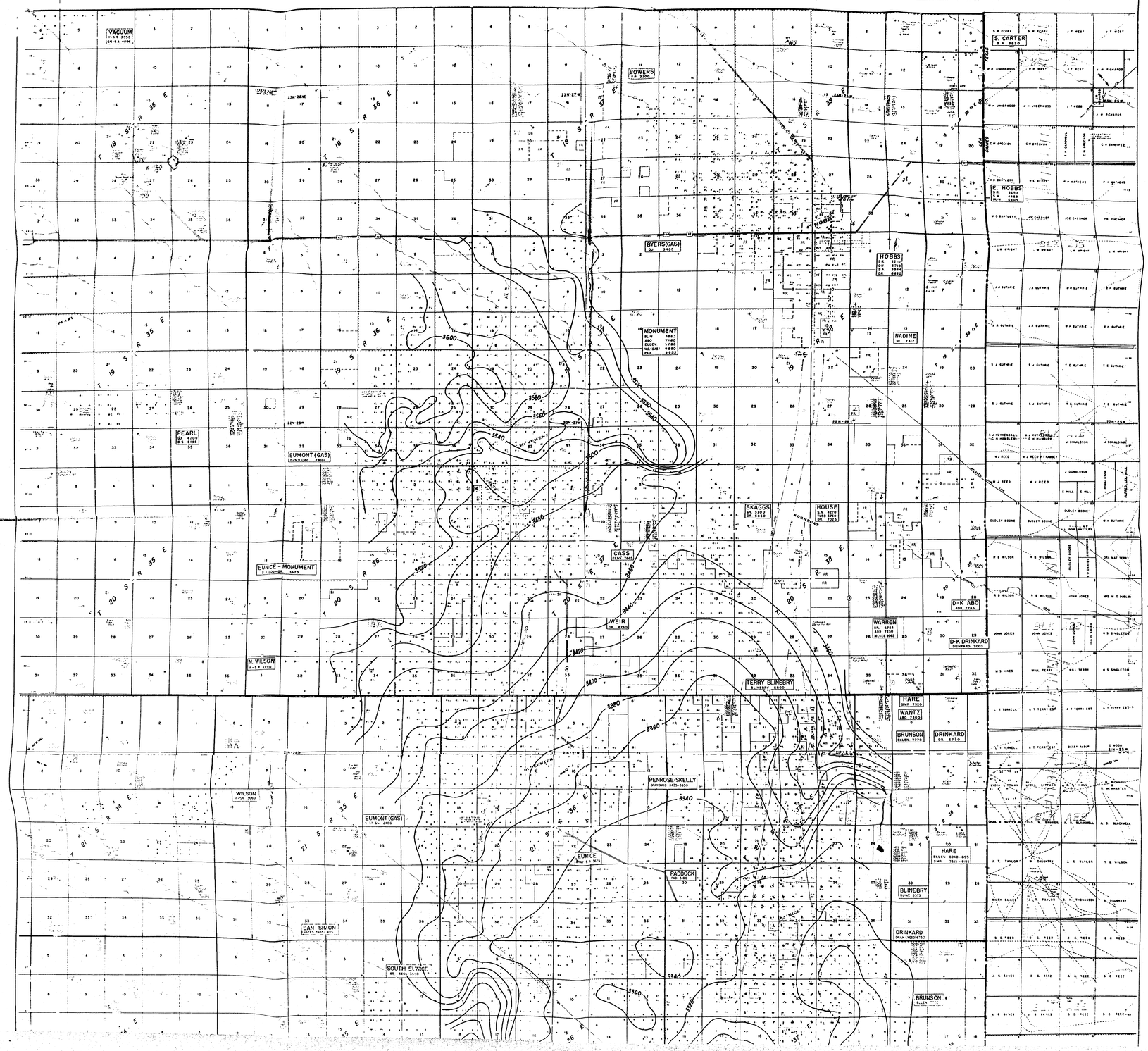






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BEST AVAILABLE COPY


VACUUM
BOWERS
BYERS(GAS)
MONUMENT
HOBBS
NADINE
S. CARTER
E. HOBBS
PEARL
EUMONT (GAS)
EUNICE - MONUMENT
CASS
SKAGGS
HOUSE
D-K ABO
WEIR
WARREN
D-K DRINKARD
N. WILSON
TERRY BLINEBRY
HARE
WANTZ
BRUNSON
DRINKARD
WILSON
PENROSE-SKELLY
EUMONT (GAS)
EUNICE
PADDOCK
BLINEBRY
SAN SIMON
SOUTH EUNICE
3600
3580
3560
3540
3520
3500
3480
3460
3440
3420
3400
3380
3360
3340

STRUCTURE MAP
TOP OF "RED BEDS"

C.I. = 20'

SCALE 1" = 4,000'

ARROWHEAD

JALMAT

LANGLIE MATTIX

TEAGUE

FOWLER

DOLLARHIDE

JUSTIS (GAS)

CROSBY

RHODES

LEONARD

SO. LEONARD

BLK. ASE

ANDREWS CO.

WINKLER CO.

LEA CO.

NEW MEXICO — TEXAS

W.R.C.I.C. MICROGRAPHICS

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OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT NO. 5
CASE NO. 1055