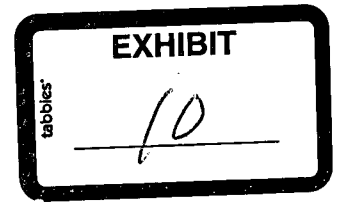


Gandy Corporation
Proposed SWD Well - Julia Culp #2



Geological

The objective disposal zone is the Devonian formation at 13,856'. The Devonian produces in several prolific fields to the south (Shoebar) and to the east (Caudill, Dean and Denton). All of these fields lie on structural anticlines. The Devonian at this location rests in a trough structurally low to these two producing areas. The proposed disposal site was only drilled into the upper section of the Devonian and was drill stem tested and recovered 3500 feet of saltwater in the drill pipe.

The Devonian formation is typically very thick. Normally, if oil production is found, it resides in the upper level and overlies an extensive waterleg. Typically the Devonian lithology is dolomitic rock enhanced with extensive natural vertical fracturing.

Hydrology

The Ogallala formation is the principal source of groundwater in the vicinity of this proposed SWD site. There are no useable quality drinking water zones below the Devonian formation.

Information from the NM WAIDS website shows a number of samples from Section 34, T15S, R35E. The Ogallala is 35 to 150 deep in this area. Samples taken between 1929 and 1995 show chloride concentrations in the range of 27 to 45 mg/l. Two freshwater wells within 1-mile of the proposed SWD site (D. Fields #1 and #2) were sampled and found chloride concentrations of 36 and 60 mg/l respectively. There is no apparent contamination of the freshwater in the area.

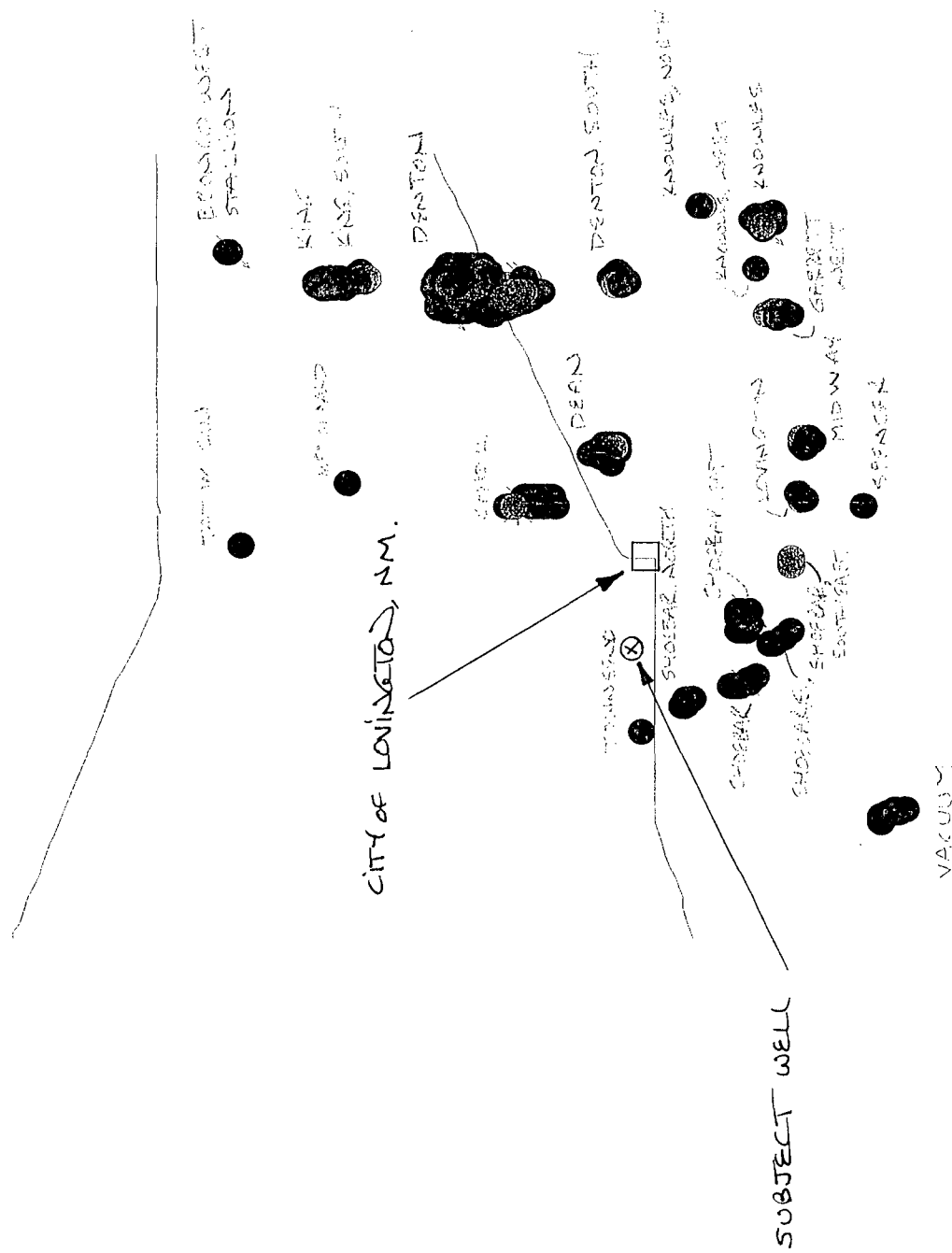
A water analysis of Devonian formation water taken from the Fasken-Denton field in Section 11, T15S, R37E is attached. Total dissolved solids (TDS) is 77,882 mg/l. It would be reasonable to assume that the Devonian water below the Julia Culp #2 location would have a similar makeup.

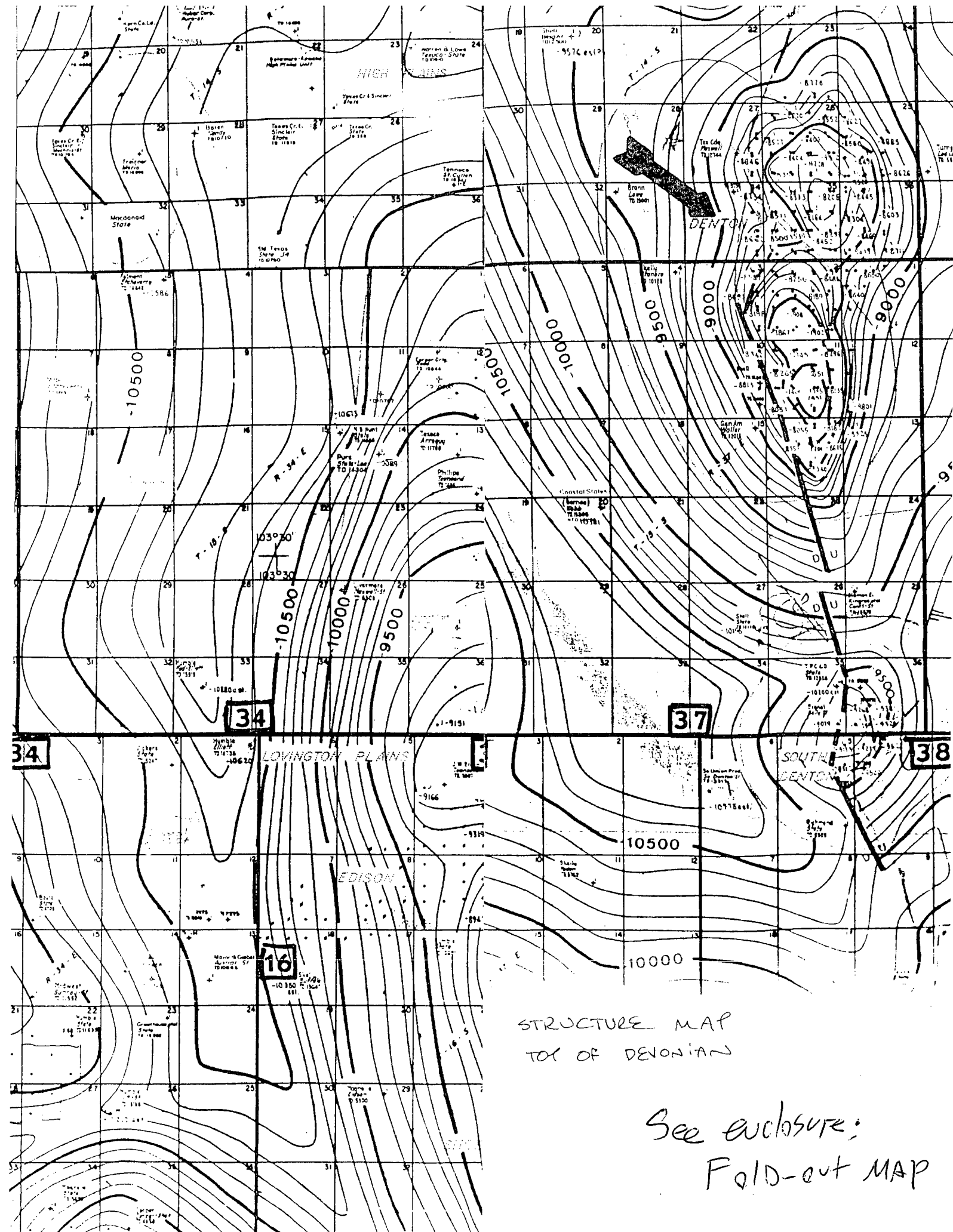
A water analysis of a sample taken from the Patterson Petroleum-TMBR 16 State #1 well located in Section 16, T14S, R34E producing from the Saunders, Permo Upper Penn, East field is also attached. This water is a good example of the type fluid that will be disposed of into the Julia Culp #2 SWD well.

Based on the available geologic and engineering data we find no evidence of open faults or any other hydrologic connection between the intended disposal zone and any underground sources of drinking water.

PI/Dwights PLUS on CD Map Report

DEVONIAN FIELDS - NEAR LONINGTON





ANY L.P.

LLIBURTON
NG SERVICES, INC.

2310FN 660FE

BRIDGE OIL CO L P

JULIA CULP # 2

H-34-T15S-R35E



30-025-30879

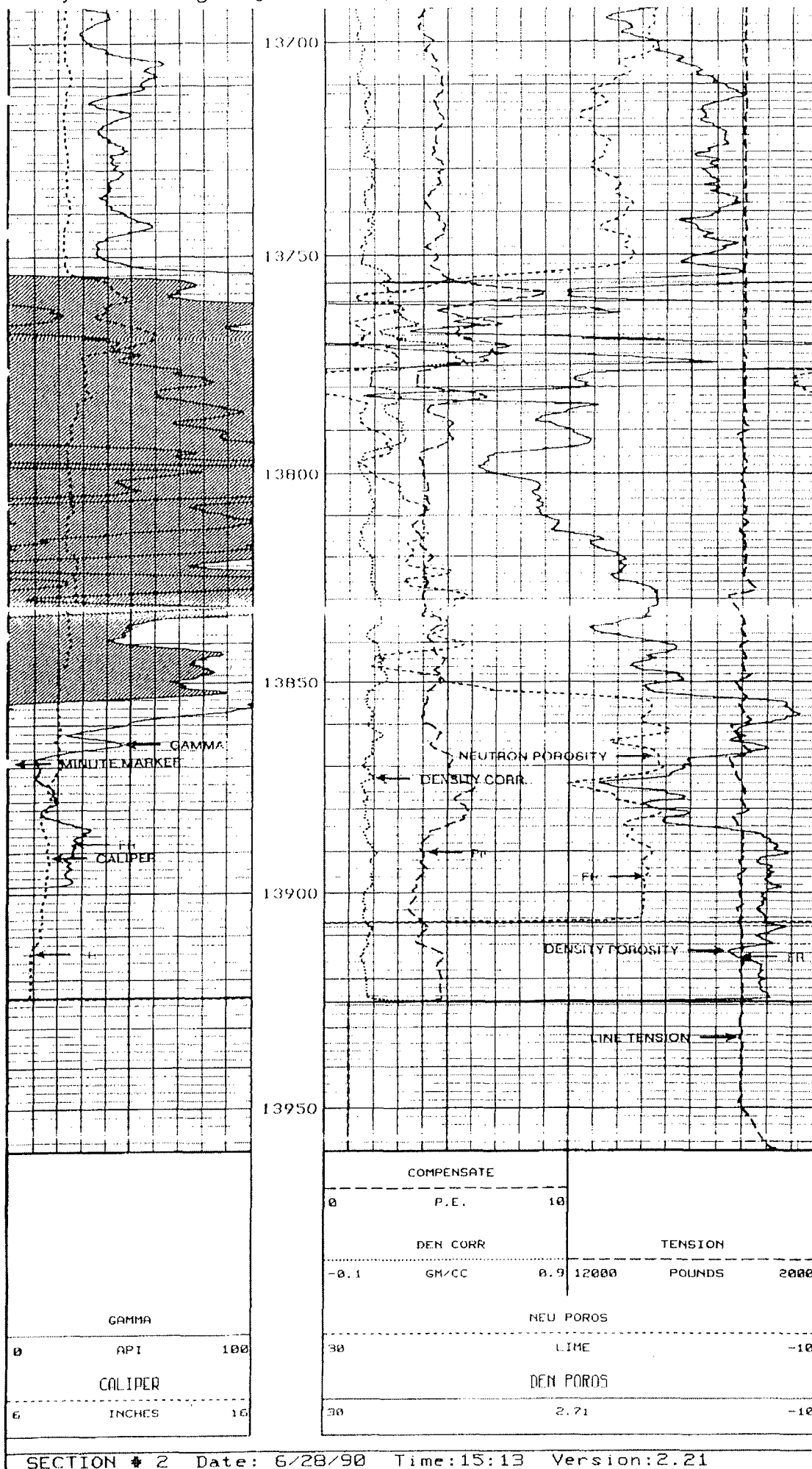
SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

DATE	6-23-80			
TIME	ONE			
DEPTH - DRILLER	13950			
DEPTH - LOGGER	13950			
BTM LOG INTER.	13915			
TOP LOG INTER.	SURFACE			
CASING - DRILLER	8 625 4792	*	*	*
CASING - LOGGER	4772			
BIT SIZE	7.875			
TYPE FLUID IN HOLE	SALT MUD			
DENS. : VISC	9.7 : 47.0			
PH : FLUID LOSS	9.3 : 9.7			
SOURCE OF SAMPLE	PIT			
RM * MEAS. TEMP.	0.64 * 88	*	*	*
RMF * MEAS. TEMP.	0.62 * 88	*	*	*
RMC * MEAS. TEMP.	NA * NA	*	*	*
SOURCE RMF : RMC	MEAS : MEAS			
RM * BHT	0.30 * 188			
TIME SINCE CIRC.	8 HOURS			
TIME ON BOTTOM	2:52 PM			
MAX. REC. TEMP.	188 * B.H.			
EQUIP. : LOCATION	4551 : HOBBS			
RECORDED BY	BREZA			
WITNESSED BY	TAYLOR			

ENERGY, INC. - OIL & GAS
RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
P.O. BOX 1985
HOBBS, N.M. 88241-1985

BEST COPY
available

Density Neutron Log: Bridge Oil - Julia Culp #2



Devonian Top 13856'

DST: 13865-900'

Initial Flow Press 1732 psi

Final Flow Press 3296 psi

Flow Time 310 min

Final Shut-in Press 5216 psi

Recovery:

3500' WB, 270' WCM,

3500' saltwater



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GANDY CORPORATION
ATTN: BOB PENNELL
WEST STAR ROUTE
LOVINGTON, NM 88260
FAX TO: (505) 396-6887

Receiving Date: 01/09/07
Reporting Date: 01/12/07
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: NOT GIVEN
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: HM

LAB NO.	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:		01/11/07	01/11/07	01/11/07	01/11/07	01/11/07	01/11/07
H11998-3	FASKIN DENTON	25074	3094	585	610	102800	264
	DEVONIAN → SEC 11, T15S, R37E						
H11998-4	PATTERSON TMBR. ST 16	18936	1730	202	143	80500	508
Quality Control	→ SEC 16, T14S, R34E	NR	49.2	50.8	2.02	10110	NR
True Value QC		NR	50.0	50.0	2.00	10132	NR
% Recovery		NR	98	102	101	100	NR
Relative Percent Difference		NR	2.3	4.4	1.5	0.3	NR

METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1
----------	-------------	-----------	------	-------	-------

	Cl ⁻ (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	01/10/07	01/11/07	01/11/07	01/11/07	01/11/07	01/11/07
H11998-3	FASKIN DENTON	45186	1465	0	322	7.10
	DEVONIAN					
H11998-4	PATTERSON TMBR. ST 16	32590	90.6	0	620	7.46
Quality Control		490	9.07	NR	988	6.94
True Value QC		500	10.0	NR	1000	7.00
% Recovery		98	91	NR	99	99
Relative Percent Difference		2.6	20.4	NR	4.0	0.1

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1
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[Signature]
Chemist

01-12-07
Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GANDY CORPORATION
ATTN: BOB PENNELL
WEST STAR ROUTE
LOVINGTON, NM 88260
FAX TO: (505) 396-6887

Receiving Date: 01/09/07
Reporting Date: 01/12/07
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: NOT GIVEN
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (μ S/cm)	T-Alkalinity (mgCaCO ₃ /L)
------------	-----------	--------------	--------------	--------------	-------------	-------------------------------	--

ANALYSIS DATE:	01/11/07	01/11/07	01/11/07	01/11/07	01/11/07	01/11/07
H11998-1 D-FIELDS #1 → SEC 34, T155, R3E	33	83.8	12.9	2.06	648	200
H11998-2 D-FIELDS #2 → " " " "	39	113	16.1	2.97	879	220
Quality Control	NR	49.2	50.8	2.02	10110	NR
True Value QC	NR	50.0	50.0	2.00	10132	NR
% Recovery	NR	98	102	101	100	NR
Relative Percent Difference	NR	2.3	4.4	1.5	0.3	NR

METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1
----------	-------------	-----------	------	-------	-------

	Cl ⁻ (mg/L)	SO ₄ (mg/L)	CO ₃ (mg/L)	HCO ₃ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	01/10/07	01/11/07	01/11/07	01/11/07	01/11/07	01/11/07
H11998-1 D-FIELDS #1	36	82.4	0	244	7.62	421
H11998-2 D-FIELDS #2	60	128.6	0	268	7.49	606
Quality Control	490	9.07	NR	988	6.94	NR
True Value QC	500	10.0	NR	1000	7.00	NR
% Recovery	98	91	NR	99	99	NR
Relative Percent Difference	2.6	20.4	NR	4.0	0.1	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1
----------	-------------	-------	-------	-------	-------	-------

Chemist

01-12-07

Date

PLEASE NOTE: **Liability and Damages.** Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

NM WAIDS

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Water Samples for Sect 34 Township 15 South Range 35 East

Instructions:

The number represents the number of water samples of certain well. Click the number if you want to download the data.

6 records are available.

	# of samples	S	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	8/24/1995	27	15S.35E.34.424343
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	11/6/1929	28	15S.35E.34.4431124
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	10/4/1984	33	15S.35E.34.4431124
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	2/3/1977	35	15S.35E.34.4431124
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	12/15/1977	35	15S.35E.34.4431124
<input type="checkbox"/>	1 sample	34	15S	35E	OGALLALA	7/10/1990	45	15S.35E.34.424343

☐ SELECT/DESELECT ALL



SID: 3874
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 134 Elevation: 3957
Temperature: 0
Date Collected: Thu Aug 24 00:00:00 MDT 1995 Collector: SEO Point of Collection: DP
Use: Irrigation Water
Conductivity: 430
Chlorides(mg/L): 27

SID: 3675
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 55 Elevation: 3983
Temperature: 0
Date Collected: Wed Nov 6 00:00:00 MST 1929 Collector: USG Point of Collection: DP
Use: Stock
Conductivity: 0
Chlorides(mg/L): 28

SID: 5186
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 55 Elevation: 3983
Temperature: 58
Date Collected: Thu Oct 4 00:00:00 MDT 1984 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 620
Chlorides(mg/L): 33

SID: 7134
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 55 Elevation: 3983
Temperature: 65
Date Collected: Thu Feb 3 00:00:00 MST 1977 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 618
Chlorides(mg/L): 35

SID: 6458
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E

WBF: TOG Formation: OGALLALA
Depth: 55 Elevation: 3983
Temperature: 65
Date Collected: Thu Dec 15 00:00:00 MST 1977 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 630
Chlorides(mg/L): 35

SID: 4562
Latitude: 32.9738 Longitude: -103.3945
Section: 34 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 134 Elevation: 3957
Temperature: 65
Date Collected: Tue Jul 10 00:00:00 MDT 1990 Collector: SEO Point of Collection: DP
Use: Irrigation Water
Conductivity: 543
Chlorides(mg/L): 45

NM WAIDS

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Water Samples for Sect 35 Township 15 South Range 35 East

Instructions:

The number represents the number of water samples of certain well. Click the number if you want to download the data.

No Record Is Found!

# of samples	S	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)
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☐ SELECT/DESELECT ALL



NM WAIDS

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Water Samples for Sect 26 Township 15 South Range 35 East

Instructions:

The number represents the number of water samples of certain well. Click the number if you want to download the data.

6 records are available.

	# of samples	S	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)
<input type="checkbox"/>	1 sample	26	15S	35E	OGALLALA	10/4/1984	45	15S.35E.26.212330
<input type="checkbox"/>	1 sample	26	15S	35E	OGALLALA	8/24/1995	47	15S.35E.26.21233
<input type="checkbox"/>	1 sample	26	15S	35E	OGALLALA	7/10/1990	55	15S.35E.26.212330
<input type="checkbox"/>	1 sample	26	15S	35E	OGALLALA	11/8/1979	62	15S.35E.26.212330

☐ SELECT/DESELECT ALL



SID: 5433
Latitude: 32.9883 Longitude: -103.3773
Section: 26 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 0 Elevation: 3954
Temperature: 58
Date Collected: Thu Oct 4 00:00:00 MDT 1984 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 700
Chlorides(mg/L): 45

SID: 3820
Latitude: 32.9883 Longitude: -103.3773
Section: 26 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 0 Elevation: 3954
Temperature: 0
Date Collected: Thu Aug 24 00:00:00 MDT 1995 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 510
Chlorides(mg/L): 47

SID: 4505
Latitude: 32.9883 Longitude: -103.3773
Section: 26 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 0 Elevation: 3954
Temperature: 64
Date Collected: Tue Jul 10 00:00:00 MDT 1990 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 654
Chlorides(mg/L): 55

SID: 6075
Latitude: 32.9883 Longitude: -103.3773
Section: 26 Township: 15S Range: 35E
WBF: TOG Formation: OGALLALA
Depth: 0 Elevation: 3945
Temperature: 0
Date Collected: Thu Nov 8 00:00:00 MST 1979 Collector: SEO Point of Collection: DP
Use: Stock
Conductivity: 716
Chlorides(mg/L): 62

NM WAIDS

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Water Samples for Sect 27 Township 15 South Range 35 East

Instructions:

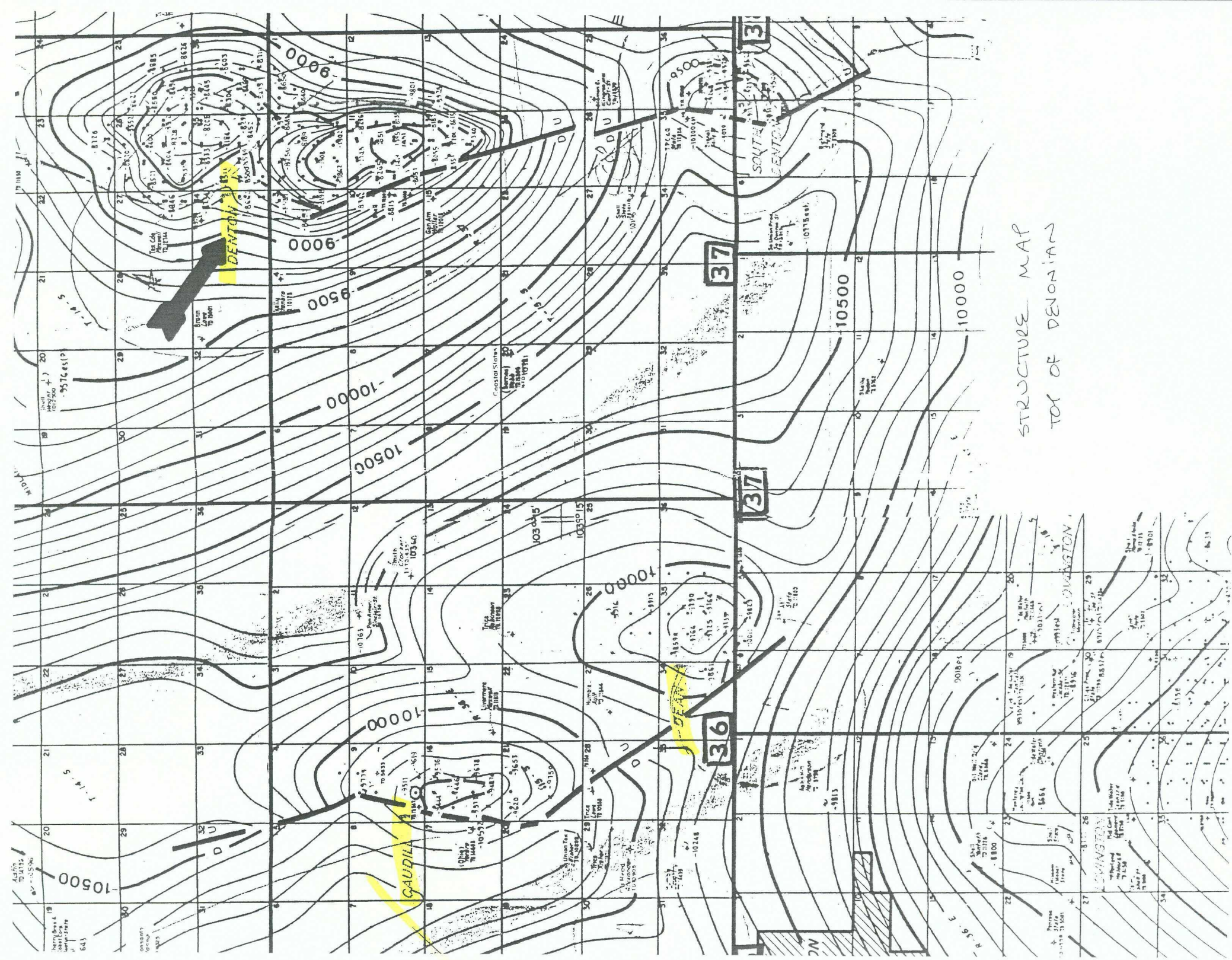
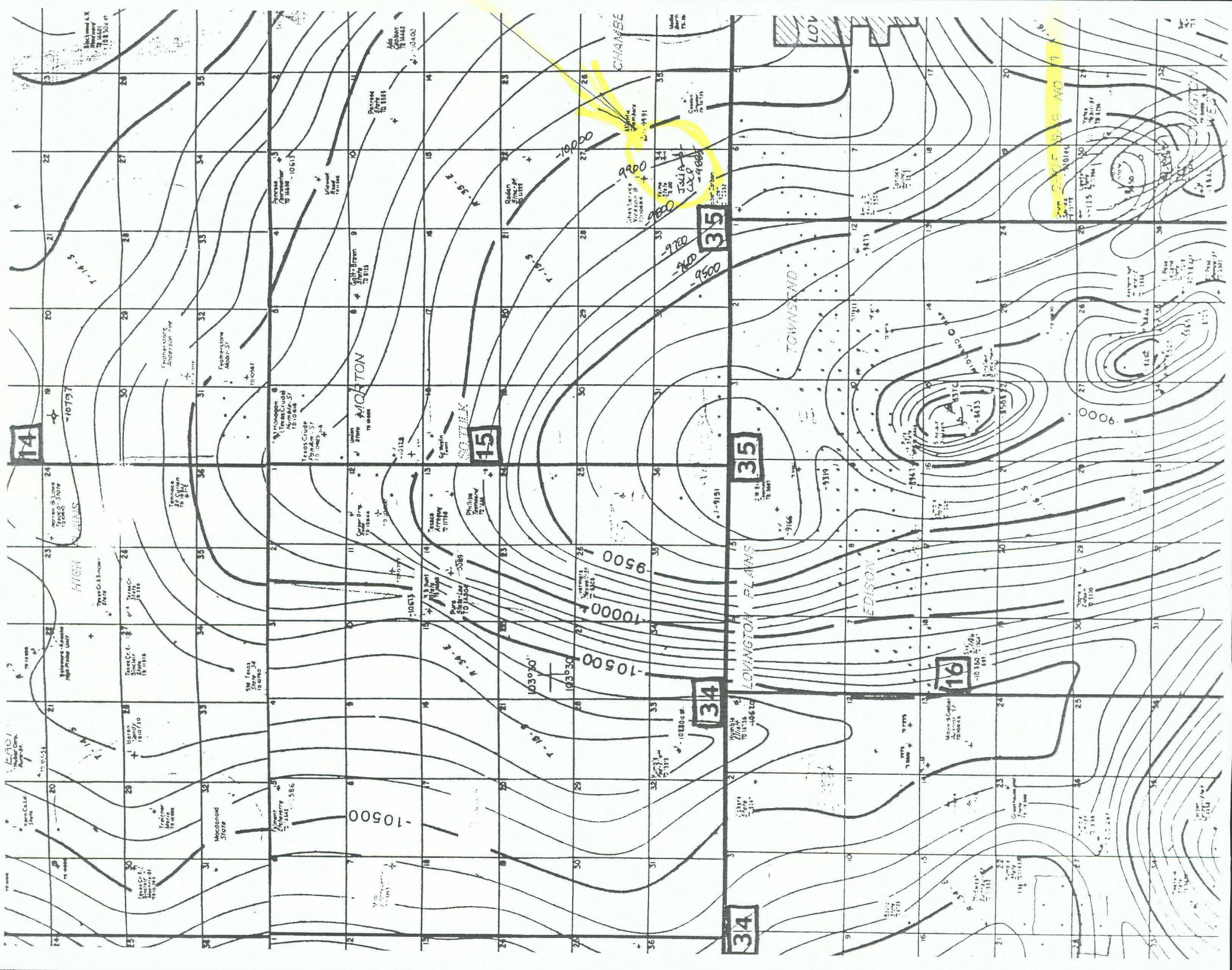
The number represents the number of water samples of certain well. Click the number if you want to download the data.

No Record Is Found!

# of samples	S	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)
-----------------	---	---	---	-----------	------	---------------------	-----------------------

☐ SELECT/DESELECT ALL





STRUCTURE MAP
TOY OF DENONIAN