8/21/03 9/4/03 WVS LSK PMX PLR0323341828

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ___√___ Pressure Maintenance ____ Disposal ____ Storage
Application qualifies for administrative approval? ___√___ Yes ____ No

II. OPERATOR: CBS Operating Corporation

ADDRESS: P.O. Box 2236 , Midland, Texas 79702

CONTACT PARTY: M. A. Sirgo, III PHONE: *432-685-0878*

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ___√___ Yes ____ No R-11435-A 5/30/02
If yes, give the Division order number authorizing the project: R-1110 (Dated ~~1/15/58~~ as amended)

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: M. A. Sirgo, III TITLE: ENGINEER

SIGNATURE: M. A. Sirgo III DATE: 8-19-03

E-MAIL ADDRESS: Mastres@Aol.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: ____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Injection Well Data Sheet

New Mexico Oil Conservati[illegible]ivision C-108 Application

[illegible]ugust-03

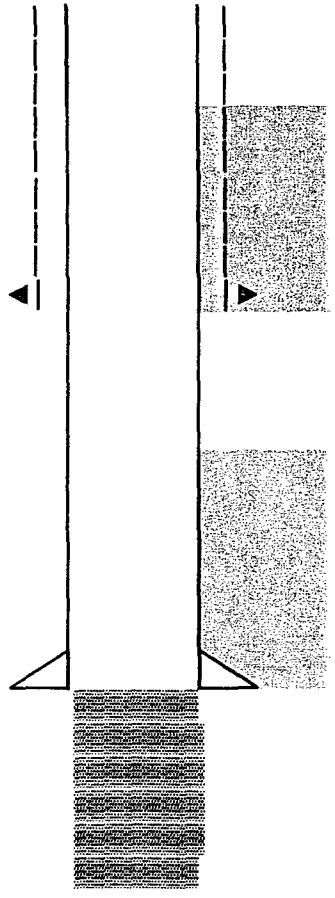
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 41 API # 30-015-04907

Well Location:	*1980' FNL &1980'FWL*	*F*	*29*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Active Producer*



Surface Cement Top:	411	*ft.*
Red Bed Base:	465	*ft.*
Surface Pipe TD :	616	*ft.*
Salt Top :	595	*ft.*
Salt Base:	1580	*ft.*
Production Cement Top :	2447	*ft.*
Production Casing TD :	3056	*ft.*
Top Open Hole :	3056	*ft.*
Bottom Open Hole :	3445	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size:				Casing Size:	8 1/4"
Cemented with:	50	sx. *or*		cu.ft.	
Top of Cement:	*411'*			Method Determined:	*calc*

Intermediate Casing

Hole Size:				Casing Size:	
Cemented with:		sx. *or*		cu.ft.	
Top of Cement:				Method Determined:	

Production Casing

Hole Size:				Casing Size:	5 1/2"
Cemented with:	100	sx. *or*		cu.ft.	
Top of Cement:	2447			Method Determined:	*calc*

Liner

Hole Size:				Casing Size:	
Cemented with:		sx. *or*		cu.ft.	
Top of Cement:				Method Determined:	
Top of Liner :				TD of Liner :	

Injection Interval

Perforations :	Top		Bottom	
Open Hole :	Top	3056'	Bottom	3445'

Injection Well Data Sheet

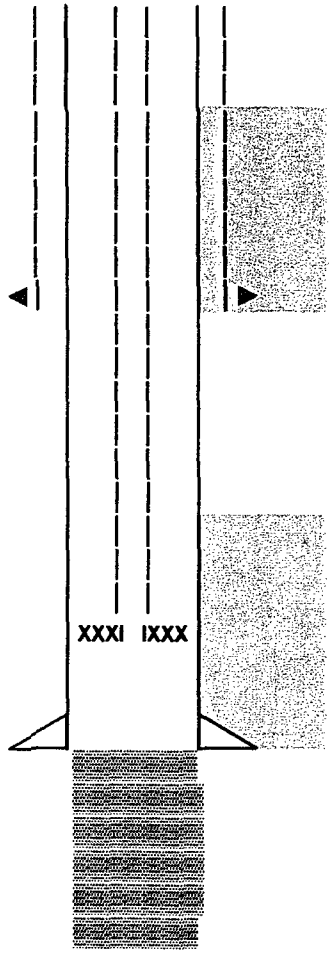
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 41

API # 30-015-04907

Proposed Wellbore Schematic

Type Well : Active Injector



Surface Cement Top:	411	ft.
Red Bed Base:	465'	ft.
Surface Pipe TD :	616	ft.
Salt Top :	595	ft.
Salt Base:	1580	ft.
Production Casing Cement Top :	2447	ft.
Packer Setting Depth:	2950	ft.
Production Casing TD :	3056	ft.
Top Open Hole :	3056	ft.
Bottom Open Hole :	3445	ft.

Tubing Data

Tubing Size : 2 3/8" Lining: plastic coated

Type of Packer: AD-1

Packer Setting Depth: 2950'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? original D&C 4/1944 as producer

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

____ Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: _____

Cumulative barrels of water injected in this well in the proposed injection interval: _____ bbls.

NMOCD Authorization: Order No. _____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

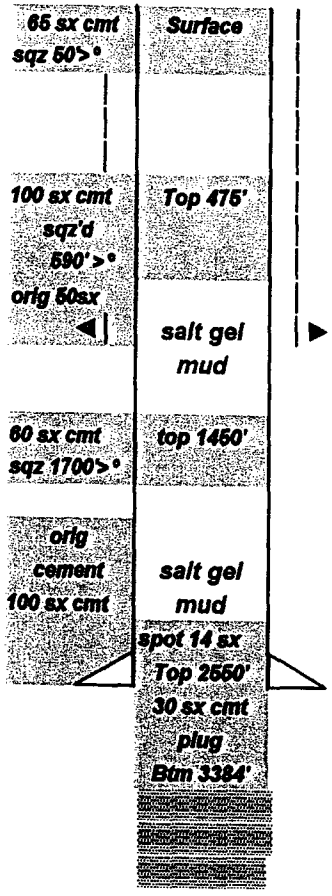
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 42 API # 30-015-04908

Well Location:	*1980' FNL & 1980' FEL*	*C*	*29*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Plugged & Abandoned Injection Well*



Red Bed Base:	474	*ft.*
Surface Cement Top:	444	*ft.*
Salt Top :	637	*ft.*
Surface Pipe TD :	648	*ft.*
Salt Base:	1595	*ft.*
Production Casing Cement Top :	2589	*ft.*
Production Casing TD :	3195	*ft.*
Top Open Hole :	3195	*ft.*
Bottom Open Hole :	3482	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size: ____ Casing Size: 8 5/8"
Cemented with: 50 sx. *or* ____ cu.ft.
Top of Cement: 444 Method Determined: *calc*

Intermediate Casing

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____

Production Casing

Hole Size: ____ Casing Size: 5 1/2"
Cemented with: 100 sx. *or* ____ cu.ft.
Top of Cement: 2589' Method Determined: *calc*

Liner

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____
Top of Liner : ____ TD of Liner : ____

Injection Interval

Perforations : Top ____ Bottom ____
Open Hole : Top 3195' Bottom 3482'

Injection Well Data Sheet

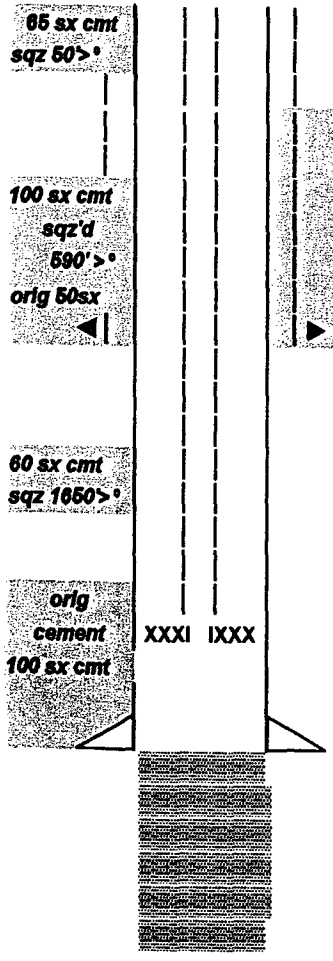
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 42

API # 30-015-04908

Proposed Wellbore Schematic

Type Well : *Active Injector*



Surface Cement Top:	444	*ft.*
Red Bed Base:	474	*ft.*
Salt Top :	637	*ft.*
Surface Pipe TD :	648	*ft.*
Salt Base:	1595	*ft.*
Production Casing Cement Top :	2589	*ft.*
Packer Setting Depth:	3095	*ft.*
Production Casing TD :	3195	*ft.*
Top Open Hole :	3195	*ft.*
Bottom Open Hole :	3482	*ft.*

Tubing Data

Tubing Size : 2 3/8" Lining: *plastic coated*

Type of Packer: AD-1

Packer Setting Depth: 3256'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? *original D&C 7/1944 as producer ,convert to injector 3/1963 Plugged 2/1987*

2.) Name of Injection Interval ? *Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington*

3.) Name of Pool ? *Square Lake*

4.) Has this well ever been perforated in any other zones ?

X Yes ____ No

If yes,following is perforating and plugging detail : Sqz perfs @ top & base of salt: 590' and 1650'

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: Mar-63

Cumulative barrels of water injected in this well in the proposed injection interval: 793,000 bbls.

NMOCD Authorization: Order No. unknown

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

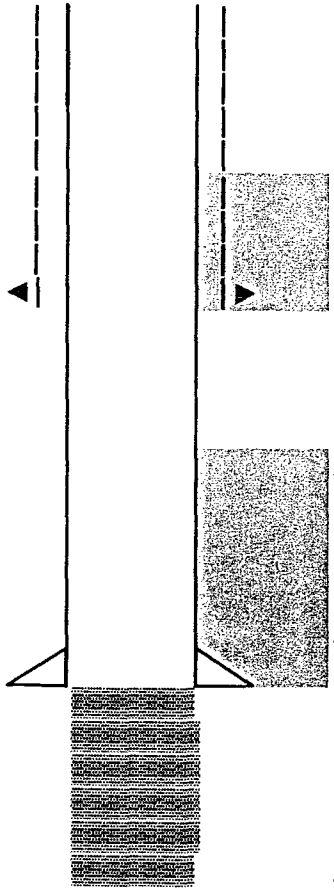
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 43 API # 30-015-04909

Well Location:	*1980' FNL &660'FEL*	*H*	*29*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Active Producer*



Red Bed Base:	455	*ft.*
Surface Cement Top:	511	*ft.*
Surface Pipe TD :	685	*ft.*
Salt Top :	685	*ft.*
Salt Base:	1640	*ft.*
Production Casing Cement Top :	2652	*ft.*
Production Casing TD :	3252	*ft.*
Top Open Hole :	3252	*ft.*
Bottom Open Hole :	3562	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size: ____ Casing Size: 8 "
Cemented with: 50 sx. *or* ____ cu.ft.
Top of Cement: *511'* Method Determined: *calc*

Intermediate Casing

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____

Production Casing

Hole Size: ____ Casing Size: 5 1/2"
Cemented with: 100 sx. *or* ____ cu.ft.
Top of Cement: 2652' Method Determined: *calc*

Liner

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____
Top of Liner : ____ TD of Liner : ____

Injection Interval

Perforations : Top ____ Bottom ____
Open Hole : Top 3252' Bottom 3562'

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

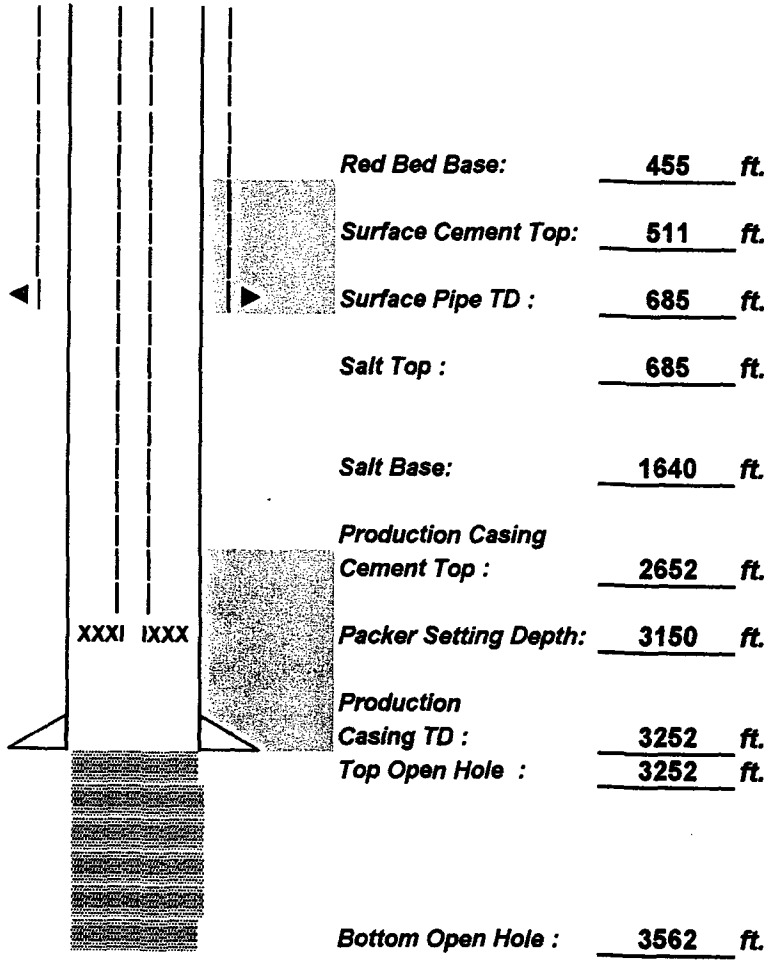
August-03

Well Name & Number: North Square Lake Unit # 43

API # 30-015-04909

Proposed Wellbore Schematic

Type Well : Active Injector



Red Bed Base:	455	ft.
Surface Cement Top:	511	ft.
Surface Pipe TD :	685	ft.
Salt Top :	685	ft.
Salt Base:	1640	ft.
Production Casing Cement Top :	2652	ft.
Packer Setting Depth:	3150	ft.
Production Casing TD :	3252	ft.
Top Open Hole :	3252	ft.
Bottom Open Hole :	3562	ft.

Tubing Data

Tubing Size : 2 3/8" Lining: plastic coated

Type of Packer: AD-1

Packer Setting Depth: 3150'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? original D&C 10/1944 as producer

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

____ Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: ____

Cumulative barrels of water injected in this well in the proposed injection interval: ____ bbls.

NMOCD Authorization: Order No. ____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

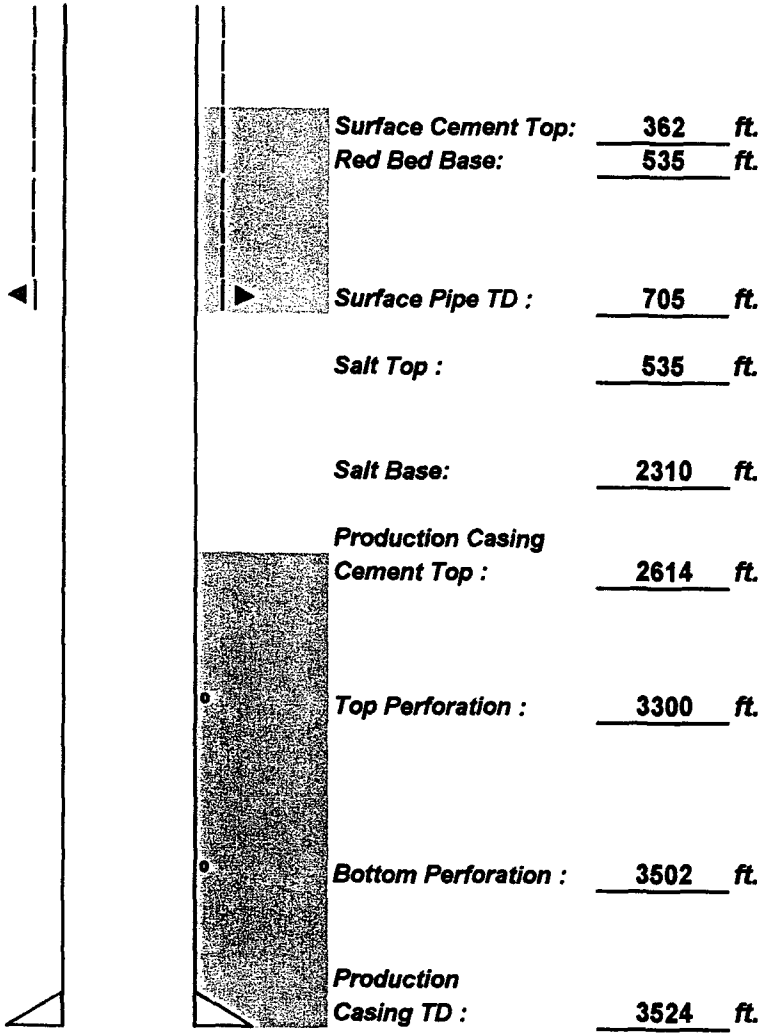
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 60 API # 30-015-04914

Well Location:	*1980' FSL & 1880'FEL*	*J*	~~*26*~~ *29*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : Active Producer



Surface Cement Top:	362	*ft.*
Red Bed Base:	535	*ft.*
Surface Pipe TD :	705	*ft.*
Salt Top :	535	*ft.*
Salt Base:	2310	*ft.*
Production Casing Cement Top :	2614	*ft.*
Top Perforation :	3300	*ft.*
Bottom Perforation :	3502	*ft.*
Production Casing TD :	3524	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size: ____ Casing Size: 7"
Cemented with: 100 sx. *or* ____ cu.ft.
Top of Cement: 362 Method Determined: calc

Intermediate Casing

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____

Production Casing

Hole Size: ____ Casing Size: 4 1/2"
Cemented with: 200 sx. *or* ____ cu.ft.
Top of Cement: 2614' Method Determined: calc

Liner

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____
Top of Liner : ____ TD of Liner : ____

Injection Interval

Perforations : Top 3300' Bottom 3502'
Open Hole : Top ____ Bottom ____

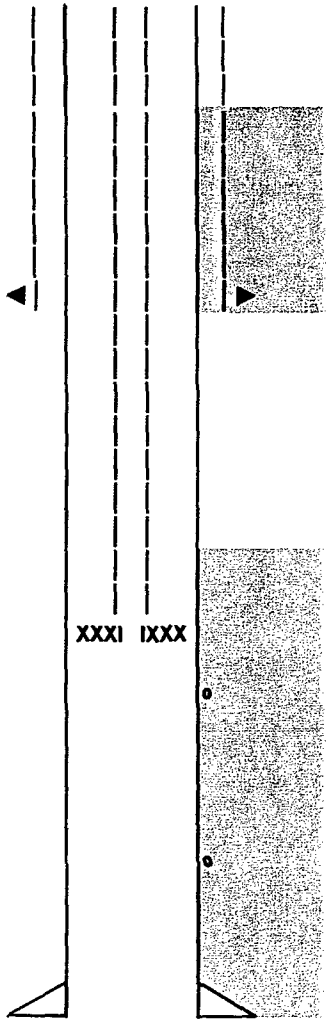
Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 60 **API #** 30-015-04914

Proposed Wellbore Schematic

Type Well : Active Injector



Surface Cement Top:	362	*ft.*
Red Bed Base:	535	*ft.*
Surface Pipe TD :	705	*ft.*
Salt Top :	535	*ft.*
Salt Base:	2310	*ft.*
Production Casing Cement Top :	2614	*ft.*
Packer Setting Depth:	3200	*ft.*
Top Perforation :	3300	*ft.*
Bottom Perforation :	3502	*ft.*
Production Casing TD :	3524	*ft.*

Tubing Data

Tubing Size : 2 3/8 " **Lining:** *plastic coating*
Type of Packer: AD-1
Packer Setting Depth: 3200'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? *original D & C 7/1961 as producer*

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?
____Yes X No
If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:
None

6.) If this well was previously an injection well in same proposed interval the following data is provided:
Date injection occurred: Start: _____

Cumulative barrels of water injected in this well in the proposed injection interval: _____ bbls.

NMOCD Authorization: Order No. _____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

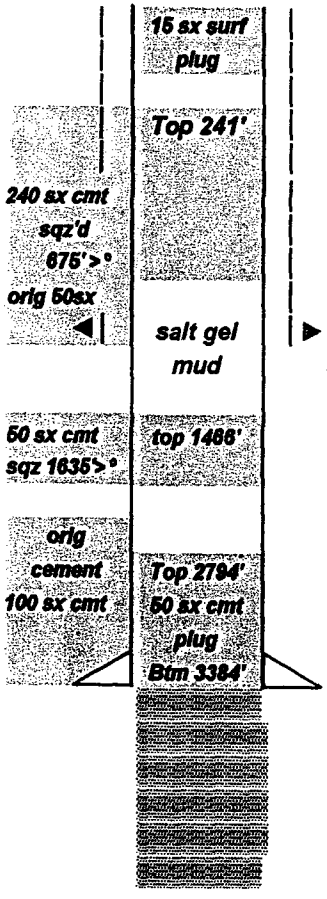
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 61 API # 30-015-04903

Well Location:	1980' FSL & 660' FEL	I	29	16-South	31-East	Eddy
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Plugged & Abandoned Injection Well*



Red Bed Base:	505	ft.
Surface Cement Top:	427	ft.
Salt Top :	675	ft.
Surface Pipe TD :	682	ft.
Salt Base:	1635	ft.
Production Casing Cement Top :	2656	ft.
Production Casing TD :	3265	ft.
Top Open Hole :	3265	ft.
Bottom Open Hole :	3433	ft.

Wellbore Construction Data

Surface Casing

Hole Size: Casing Size: 8 5/8"
Cemented with: 50 sx. *or* cu.ft.
Top of Cement: 427' Method Determined: *calculated*

Intermediate Casing

Hole Size: Casing Size:
Cemented with: sx. *or* cu.ft.
Top of Cement: Method Determined:

Production Casing

Hole Size: Casing Size: 5 1/2"
Cemented with: 100 sx. *or* cu.ft.
Top of Cement: 2656' Method Determined: *calculated*

Liner

Hole Size: Casing Size:
Cemented with: sx. *or* cu.ft.
Top of Cement: Method Determined:
Top of Liner : TD of Liner :

Injection Interval

Perforations : Top Bottom
Open Hole : Top 3265 Bottom 3433

Injection Well Data Sheet

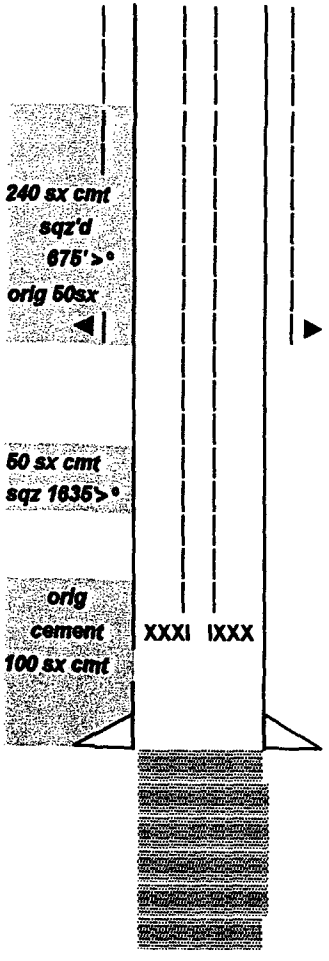
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 61

API # 30-015-04903

Proposed Wellbore Schematic

Type Well : *Active Injector*



Red Bed Base:	505	*ft.*
Surface Cement Top:	427	*ft.*
Salt Top :	675	*ft.*
Surface Pipe TD :	682	*ft.*
Salt Base:	1635	*ft.*
Production Casing Cement Top :	2656	*ft.*
Packer Setting Depth:	3165'	*ft.*
Production Casing TD :	3265	*ft.*
Top Open Hole :	3265	*ft.*
Bottom Open Hole :	3433	*ft.*

Tubing Data

Tubing Size : 2 3/8" Lining: *plastic coated*

Type of Packer: AD-1

Packer Setting Depth: 3165'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? *original D&C 8/1944 as producer ,convert to injector 8/1961 Plugged 1/1983*

2.) Name of Injection Interval ? *Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington*

3.) Name of Pool ? *Square Lake*

4.) Has this well ever been perforated in any other zones ?

X Yes ____ No

If yes,following is perforating and plugging detail : Sqz holes in top & base of salt @ 675' & 1635 '

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: Aug-61

Cumulative barrels of water injected in this well in the proposed injection interval: 777,000 bbls.

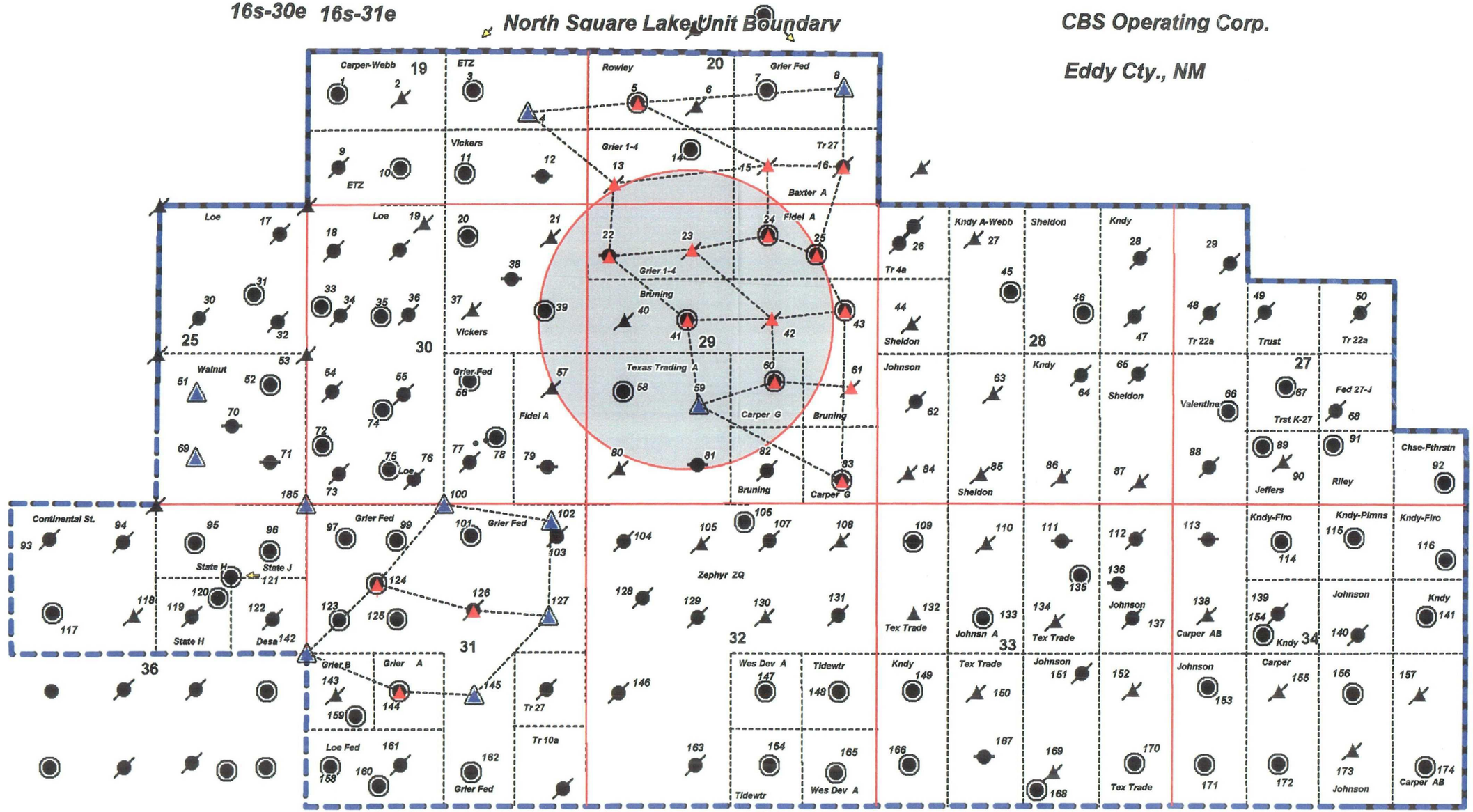
NMOCD Authorization: Order No. unknown Issue Date: ____

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

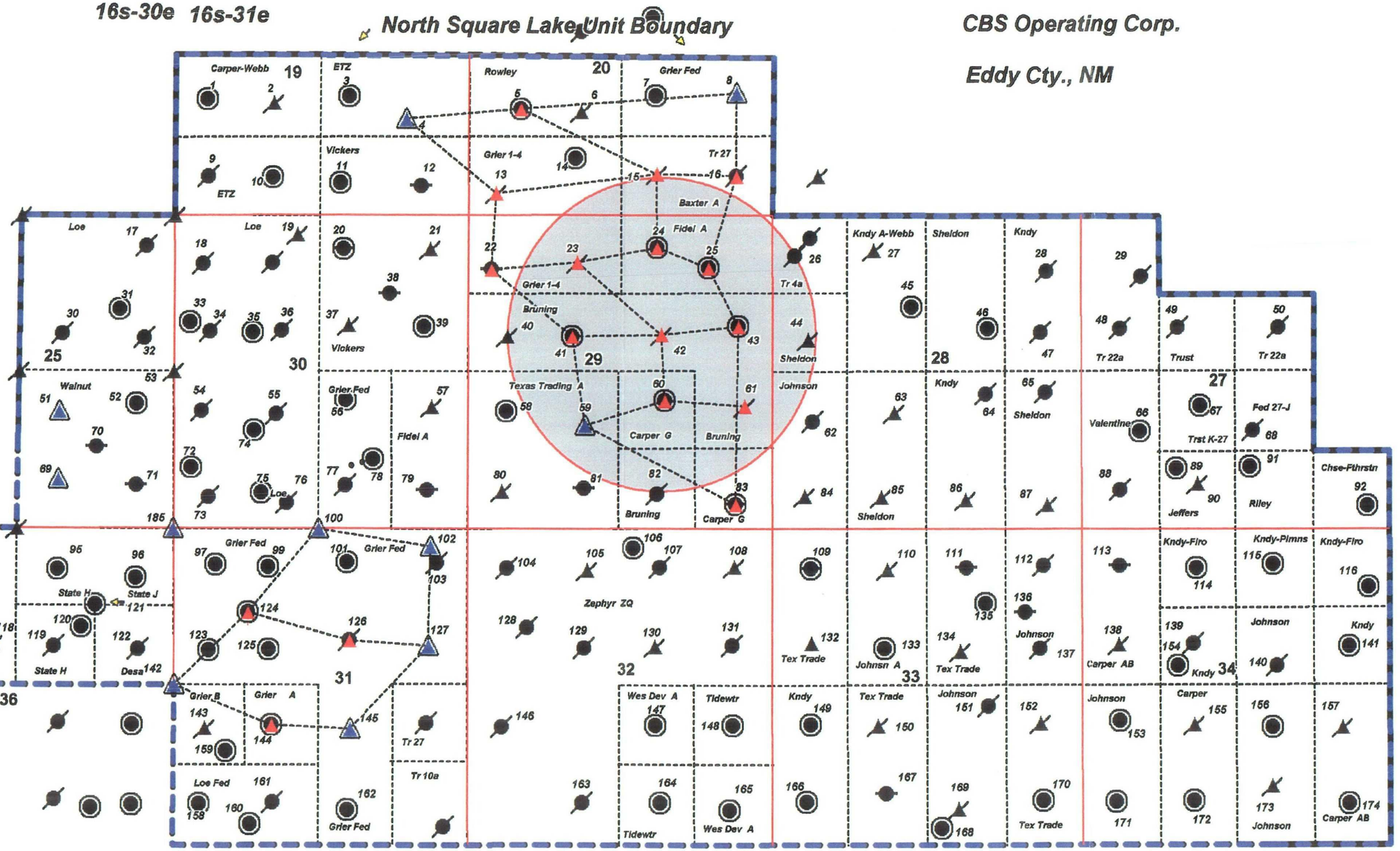
1,000 ft

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



August 2003

Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

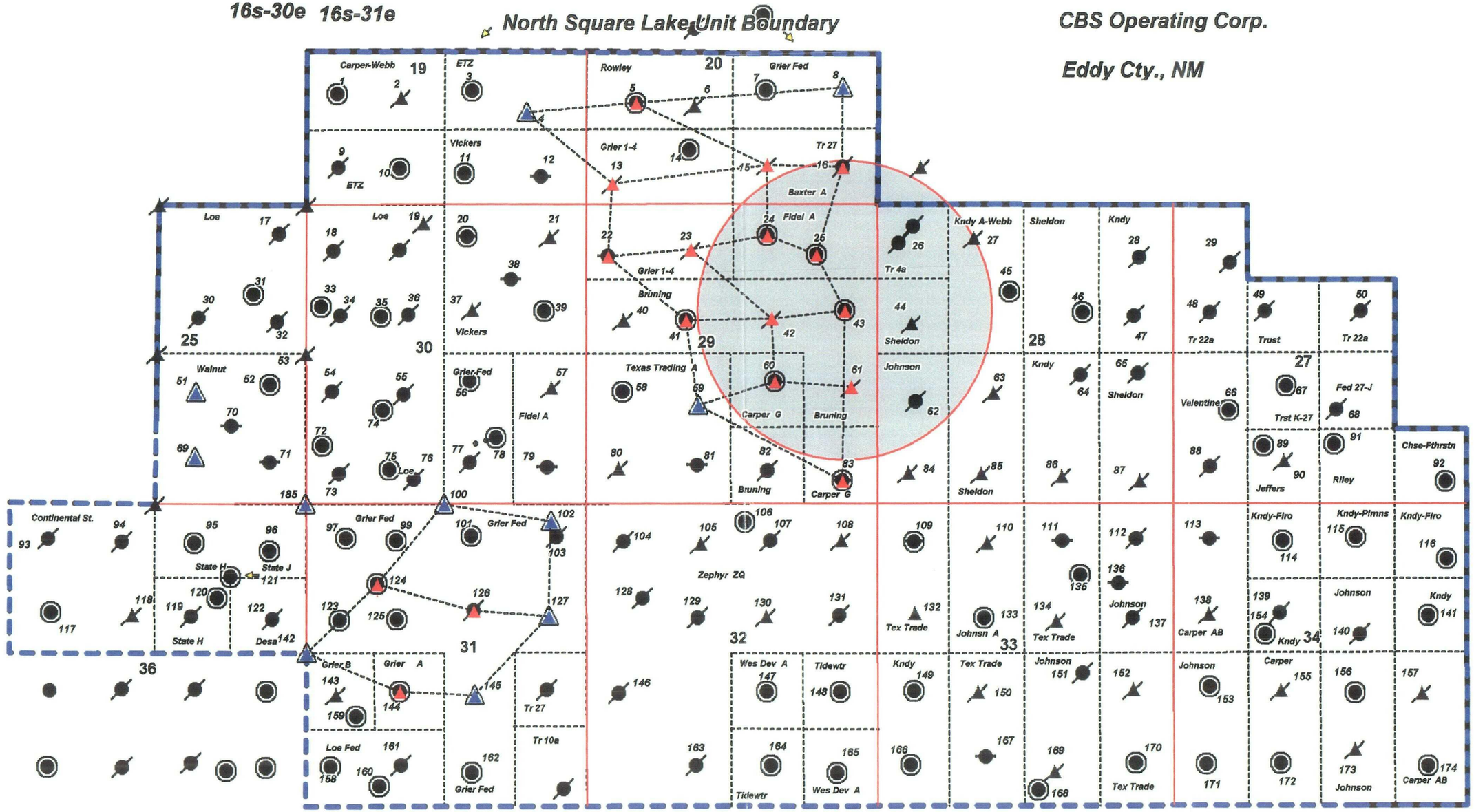
1,000 ft

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



August 2003

Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

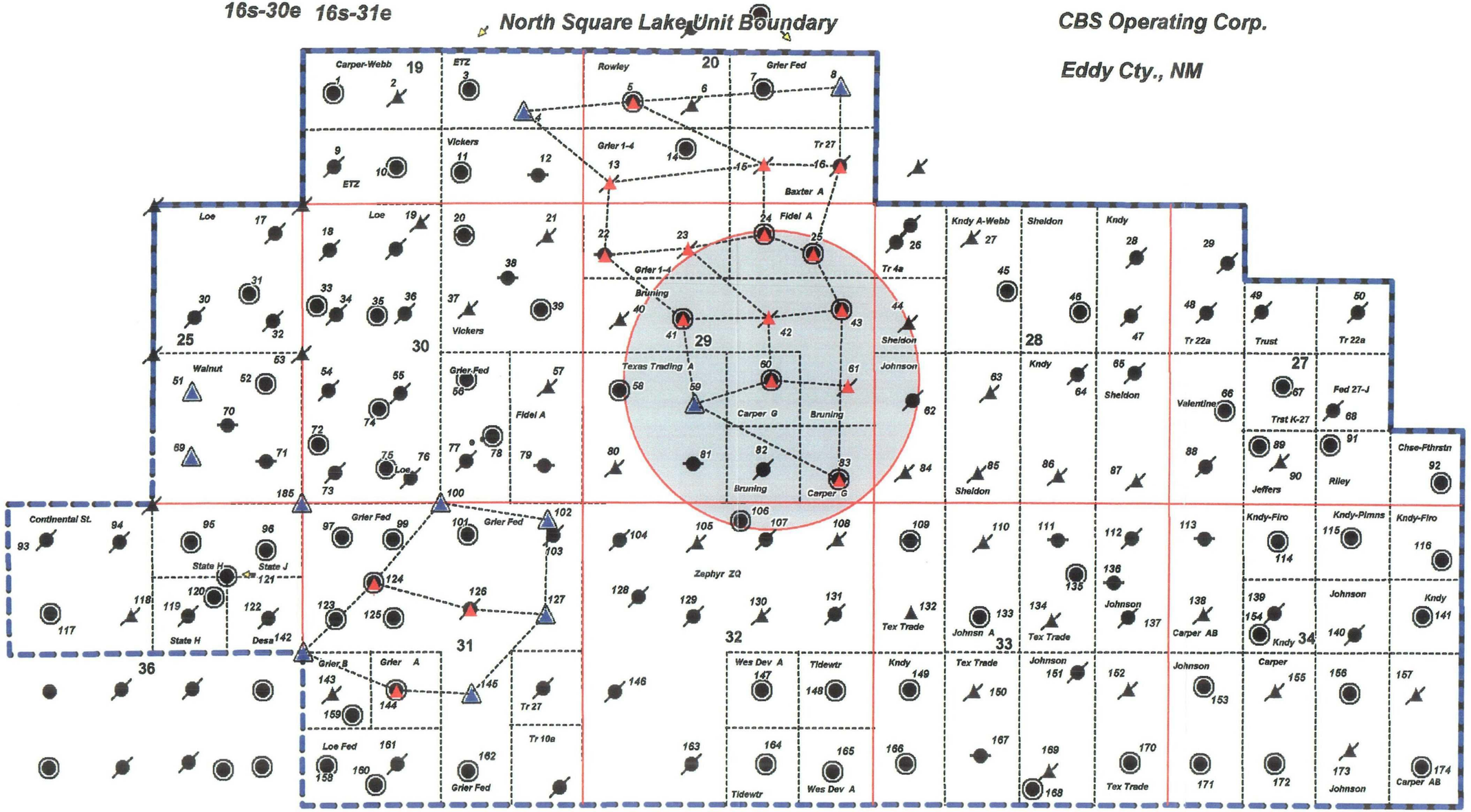
1,000 ft

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

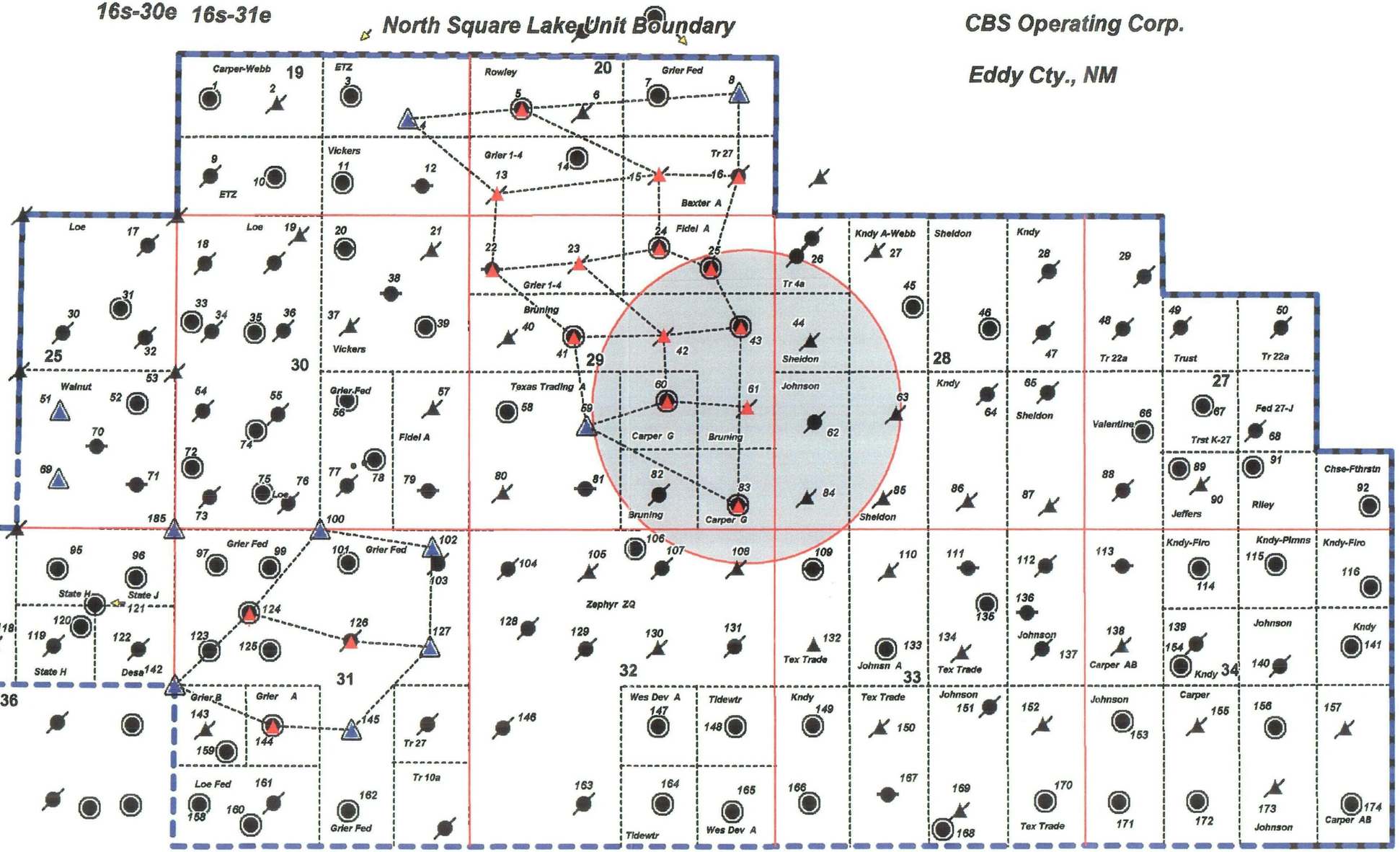
1,000 ft

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



August 2003

Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

1,000 ft

0 Panhandle
3,252' – 3,562'

NSLU #43 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Baxter "A"	2	16	04860	**20P-16-31**	660' FSL 660' FEL	P&A	5/6/1961	6/30/1961	3582'/ 3582'	8 5/8" Csg set @ 349' w/ 275 sxs 5 1/2" Csg set @ 3582' w/ 175 sxs	Circ. 2516'	GB-SA	3354-3562	30 M gal & 54 M#	55 BOPD
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Sheldon	3 (6)	Twin to 26	04901	**28D-16-31**	660' FNL 330' FWL	P&A	10/18/1961	3/20/1962	3625'/ 3530'	8 5/8" Csg set @ 490' w/200 sxs 5 1/2" Csg set @ 3625' w/200 sxs	Circ. 2407'	GB-SA	3407-3580	Frac w/20 M gal & 26 M#	43 BOPD
Kennedy	3	27	10549	**28C-16-31**	660' FNL 1650' FWL	P&A	8/17/1965	10/6/1965	3670'/ 3663'	13 3/8" Csg set @ 30' w/25 sxs 4 1/2" Csg set @ 3670' w/150 sxs	Circ. 2986'	GB-SA	3419-622	Frac w/60 M gal	37 BOPD
Bruning	3	42	04908	**29G-16-31**	1980' FNL 1980' FEL	P& A WIW	5/17/1944	7/23/1944	3376'	8 5/8" Csg set @ 648' w/ 50 sxs 5 1/2" Csg set @ 3195' w/ 100 sxs	444' 2586'	GB-SA	3195-3376	NA	125 BOPD
Sheldon	3	44	04896	**28E-16-31**	1980' FNL 660' FWL	P&A	11/22/1944	1/15/1945	3475'/ 3475'	8 1/4" Csg set @ 734' w/50 sxs 5 1/2" Csg set @ 3286' w/100 sxs	560' 2677'	GB-SA	3286-3475	180 qts. Nitro	75 BOPD
Carper "G"	3	60	04914	**29J-16-31**	1980' FSL 1880' FEL	Active Producer	6/2/1961	7/10/1961	3526'/ 3526'	7" Csg set @ 705' w/50 sxs 4 1/2" Csg set @ 3526' w/ 200 sxs	362' 2614'	GB-SA	3478-3502'	34 MGAL & 49 M#	67 BOPD
Bruning	5	61	04903	**29I-16-31**	1980' FSL 660' FEL	P&A	6/13/1944	8/15/1944	3433'/ 3433'	8 5/8" Csg set @ 632' w/ 50 sxs 5 1/2" Csg set @ 3265' w/ 100 sxs	427' 2656'	GB-SA	3265-3433	NA	100 BOPD
Johnson	4	62	04892	**28L-16-31**	1980' FSL 660' FWL	P&A	10/10/1944	11/30/1944	3469'	8 5/8" Csg set @ 715' w/ 50 sx 5 1/2" Csg set @ 3337' w/ 100 sxs	Circ. 2728'	GB-SA	3337-469 (OH)	250 qts. Nitro	150 BOPD
Sheldon		26	4897	**28D-16-31**	660' FNL 660' FWL	P&A	4/1/1945		3475	8 5/8" Csg set @ 764' w/50 sxs 5 1/2" Csg set @ 3329' w/100 sxs	579 2720	GB-SA	3329 - 3475(OH)		

Open Hole 3,056' - 3,445'

NSLU #41 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Grier	1	22	04905	**29D-16-31**	760' FNL 560' FWL	Inactive Producer	11/29/1943	1/15/1944	3230'	8 5/8" Csg set @ 570' w/ 50 sx 5 1/2" Csg set @ 3055' w/ 100 sxs	396' 2451'	GB-SA	3055-3230 (OH)	120 qts. Nitro	90 BOPD
Grier	2	23	04906	**29C-16-31**	810' FNL 1980' FWL	P& A WIW	8/4/1944	9/29/1944	3296'	8 5/8" Csg set @ 595' w/50 sxs 5 1/2" Csg set @ 3150' w/100 sxs	390' 2541'	GB-SA	3150-3296 (OH)	50 qts. Nitro	100 BOPD
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Vickers	1	39	04933	**30H-16-31**	1980' FNL 660' FEL	Active Producer	11/7/1943	1/21/1944	3326'/ 3326'	8 5/8" Csg set @ 550' w/ 50 sxs 5 1/2" Csg set @ 3100' w/ 100 sxs	346' 2491'	GB-SA	3100-3326 (OH) In 4/71 add 3108-3309	NA 15 MGAL & 15 M#	86 BOPD
Bruning	1	40	04911	**29E-16-31**	1980' FNL 660' FWL	P& A WIW	10/28/1943	1/15/1944	3279'	8 5/8" Csg set @ 565' w/50 sxs 7" Csg 2590-2490' w/50 sxs 5 1/2" Csg set @ 3119' w/100 sxs	360' All 2510'	GB-SA	3119-3279 (OH)	NA	150 BOPD
Bruning	3	42	04908	**29G-16-31**	1980' FNL 1980' FEL	P& A WIW	5/17/1944	7/23/1944	3376'	8 5/8" Csg set @ 648' w/ 50 sxs 5 1/2" Csg set @ 3195' w/ 100 sxs	444' 2586'	GB-SA	3195-3376	NA	125 BOPD
Texas Trading "A"	3	58	04918	**29L-16-31**	1980' FSL 660' FWL	Active Producer	1/6/1944	2/5/1944	3426'/ 3426'	8 5/8" Csg set @ 585' w/ 50 sxs 5 1/2" Csg set @ 3193' w/ 100 sxs	411' 2584'	GB-SA	3193-3426 (OH)	165 qts. Nitro 80 M gal & 16 M#	200 BOPD
Texas Trading "A"	4	59	04919	**29K-16-31**	1880' FSL 1980' FWL	Active Injector	3/7/1944	5/27/1944	3348'	8 1/4" Csg set @ 638' w/ 150 sxs 5 1/2" Csg set @ 3235' w/ 150 sxs 4 1/2" Lnr 3129-470 W/300 sxs Lnr ran 5/65	118' 2322'	GB-SA	3370-3490 (OH) 3218-451	150 QTS. NITRO 72.2 MGAL & 20 M#	WIW
Carper "G"	3	60	04914	**29J-16-31**	1980' FSL 1880' FEL	Active Producer	6/2/1961	7/10/1961	3526'/ 3526'	7" Csg set @ 705' w/50 sxs 4 1/2" Csg set @ 3526' w/ 200 sxs	362' 2614'	GB-SA	3478-3502'	34 MGAL & 49 M#	67 BOPD
Texas Trading "A"	2	81	04917	**29N-16-31**	660 FSL 1980' FWL	Inactive Producer	2/23/1943	5/8/1943	3354'/ 3258'	8 5/8" Csg set @ 645' w/50 sxs 5 1/2" Csg set @ 3198' w/100 sxs	440' 2589'	GB-SA	3198-3354 (OH)	70 qts. Nitro	250 BOPD

3195'—3,482'

NSLU #42 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Baxter "A"	1	15	04859	**20O-16-31**	660' FSL 1980' FEL	P&A	12/19/1960	1/14/1961	3517'/ 3505'	8 5/8" Csg set @ 262' w/ 200 sxs 5 1/2" Csg set @ 3517' w/ 175 sxs	Circ. 2451'	GB-SA	3356-3500	35 M gal & 48 M#	64 BOPD
Grier	2	23	04906	**29C-16-31**	810' FNL 1980' FWL	P& A WIW	8/4/1944	9/29/1944	3296'	8 5/8" Csg set @ 595' w/50 sxs 5 1/2" Csg set @ 3150' w/100 sxs	390' 2541'	GB-SA	3150-3296 (OH)	50 qts. Nitro	100 BOPD
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Sheldon	3 (6)	Twin to 26	04901	**28D-16-31**	660' FNL 330' FWL	P&A	10/18/1961	3/20/1962	3625'/ 3530'	8 5/8" Csg set @ 490' w/200 sxs 5 1/2" Csg set @ 3625' w/200 sxs	Circ. 2407'	GB-SA	3407-3580	Frac w/20 M gal & 26 M#	43 BOPD
Bruning	1	40	04911	**29E-16-31**	1980' FNL 660' FWL	P& A WIW	10/28/1943	1/15/1944	3279'	8 5/8" Csg set @ 565' w/50 sxs 7" Csg 2590-2490' w/50 sxs 5 1/2" Csg set @ 3119' w/100 sxs	360' All 2510'	GB-SA	3119-3279 (OH)	NA	150 BOPD
Bruning	2	41	04907	**29F-16-31**	1980' FNL 1980' FWL	Active Producer	1/23/1944	4/28/1944	3276'	8 1/4" Csg set @ 616' w/ 50 sx 5 1/2" Csg set @ 3056' w/ 100 sxs	411' 2447'	GB-SA	3056-3287 (OH)	80 qts. Nitro	250 BOPD
Bruning	4	43	04909	**29H-16-31**	1980' FNL 660' FEL	Active Producer	8/20/1944	10/10/1944	3415'	8" Csg set @ 685' w/50 sxs 5" Csg set @ 3252' w/100 sxs	511' 2652'	GB-SA	3252-3415 (OH)	160 qts. Nitro	50 BOPD
Sheldon	3	44	04896	**28E-16-31**	1980' FNL 660' FWL	P&A	11/22/1944	1/15/1945	3475'/ 3475'	8 1/4" Csg set @ 734' w/50 sxs 5 1/2" Csg set @ 3286' w/100 sxs	560' 2677'	GB-SA	3286-3475	180 qts. Nitro	75 BOPD
Texas Trading "A"	4	59	04919	**29K-16-31**	1880' FSL 1980' FWL	Active Injector	3/7/1944	5/27/1944	3348'	8 1/4" Csg set @ 638' w/ 150 sxs 5 1/2" Csg set @ 3235' w/ 150 sxs 4 1/2" Lnr 3129-470 W/300 sxs Lnr ran 5/65	118' 2322'	GB-SA	3370-3490 (OH) 3218-451	150 QTS. NITRO 72.2 MGAL & 20 M#	WIW
Carper "G"	3	60	04914	**29J-16-31**	1980' FSL 1880' FEL	Active Producer	6/2/1961	7/10/1961	3526'/ 3526'	7" Csg set @ 705' w/50 sxs 4 1/2" Csg set @ 3526' w/ 200 sxs	362' 2614'	GB-SA	3478-3502'	34 MGAL & 49 M#	67 BOPD
Bruning	5	61	04903	**29I-16-31**	1980' FSL 660' FEL	P&A	6/13/1944	8/15/1944	3433'/ 3433'	8 5/8" Csg set @ 632' w/ 50 sxs 5 1/2" Csg set @ 3265' w/ 100 sxs	427' 2656'	GB-SA	3265-3433	NA	100 BOPD

CBS Operating Corp.
Aug-03

Plugged & Abandoned Wells Located Within Area of Review

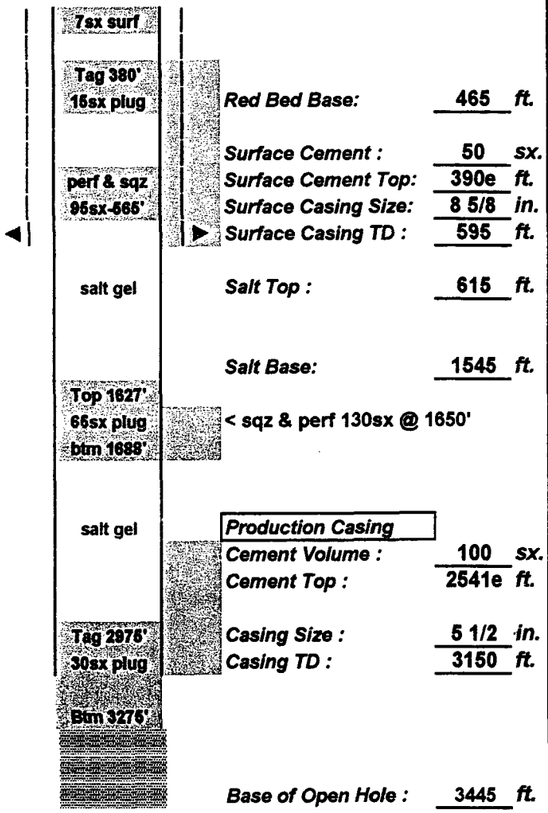
North Square Lake Unit , Eddy Cty., New Mexico
C-108 Application Well : NSLU # 41

C-108 Application Well

Well No.: NSLU # 23
API No.: 30-015-04906

Location : 810' FNL & 1980' FWL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	465	ft.
Surface Cement :	50	sx.
Surface Cement Top:	390e	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	595	ft.
Salt Top :	615	ft.
Salt Base:	1545	ft.

< sqz & perf 130sx @ 1650'

Production Casing

Cement Volume :	100	sx.
Cement Top :	2541e	ft.
Casing Size :	5 1/2	in.
Casing TD :	3150	ft.
Base of Open Hole :	3445	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

Date Well Drilled : 9 / 1944
Original Well Type : Producer

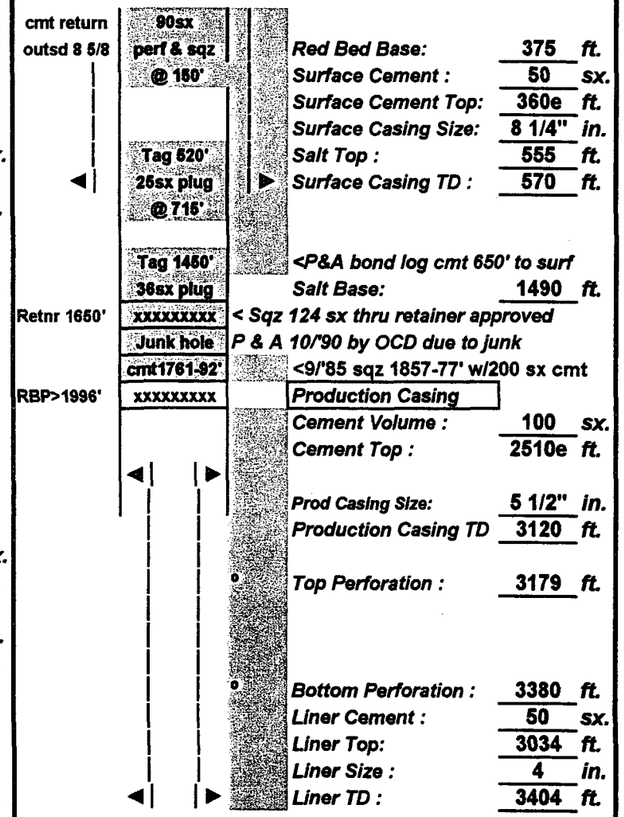
Cum Water Injected in this Well : 821000 BBL

C-108 Application Well

Well No.: NSLU # 40
API No.: 30-015-04911

Location : 1980' FNL & 660' FWL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	375	ft.
Surface Cement :	50	sx.
Surface Cement Top:	360e	ft.
Surface Casing Size:	8 1/4"	in.
Salt Top :	555	ft.
Surface Casing TD :	570	ft.

<P&A bond log cmt 650' to surf

Salt Base:	1490	ft.

< Sqz 124 sx thru retainer approved
P & A 10/'90 by OCD due to junk
<9/'85 sqz 1857-77' w/200 sx cmt

Production Casing

Cement Volume :	100	sx.
Cement Top :	2510e	ft.
Prod Casing Size:	5 1/2"	in.
Production Casing TD	3120	ft.
Top Perforation :	3179	ft.
Bottom Perforation :	3380	ft.
Liner Cement :	50	sx.
Liner Top:	3034	ft.
Liner Size :	4	in.
Liner TD :	3404	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 10 / 1990
Operator that Plugged Well : Yates Petr. Corp.

Date Well Drilled : 1/1944
Original Well Type : Producer

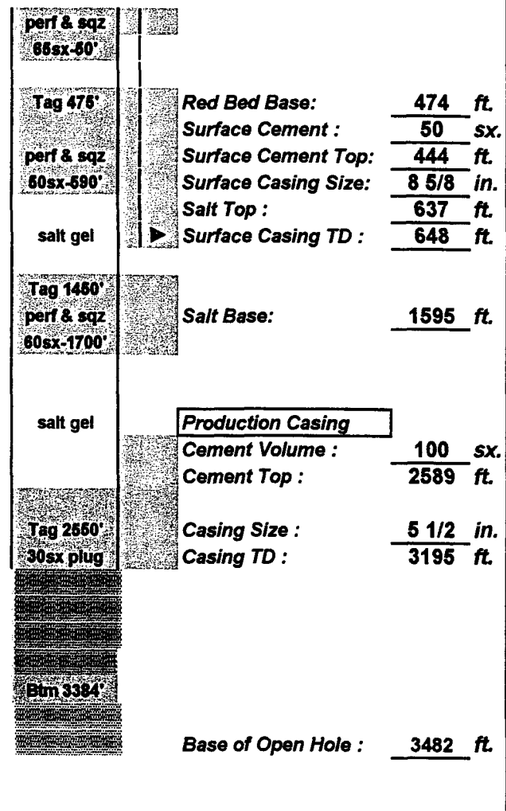
Cum Water Injected in this Well : 1623780 BBL
thru 5 / 1975

C-108 Application Well

Well No.: NSLU # 42
API No.: 30-015-04908

Location : 1980' FNL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	474	ft.
Surface Cement :	50	sx.
Surface Cement Top:	444	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	637	ft.
Surface Casing TD :	648	ft.
Salt Base:	1595	ft.

Production Casing

Cement Volume :	100	sx.
Cement Top :	2589	ft.
Casing Size :	5 1/2	in.
Casing TD :	3195	ft.
Base of Open Hole :	3482	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

Date Well Drilled : 7 / 1944
Original Well Type : Producer

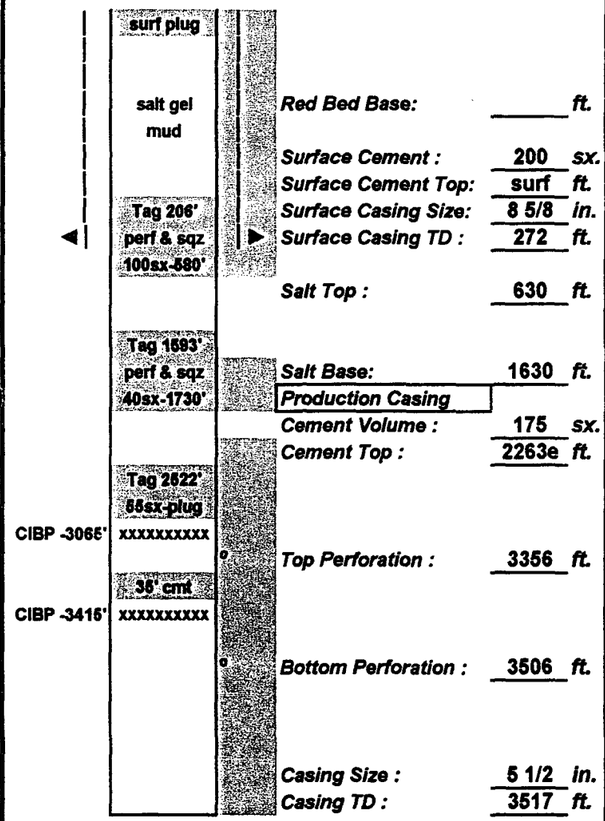
Cum Water Injected in this Well : 793000 BBL

C-108 Application Well

Well No.: NSLU # 15
API No.: 30-015-04859

Location : 1980' FEL & 660' FSL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:		ft.
Surface Cement :	200	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	272	ft.
Salt Top :	630	ft.
Salt Base:	1630	ft.
Production Casing		
Cement Volume :	175	sx.
Cement Top :	2263e	ft.
Top Perforation :	3356	ft.
Bottom Perforation :	3506	ft.
Casing Size :	5 1/2	in.
Casing TD :	3517	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1995
Operator that Plugged Well : Anadarko Petr.

Date Well Drilled : 1 / 1961
Original Well Type : Producer

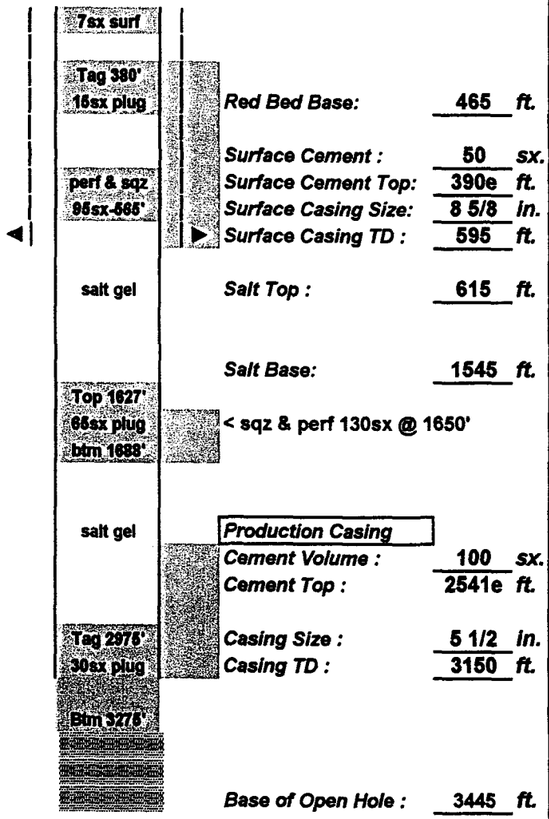
Cum Water Injected in this Well : 508436 BBL

C-108 Application Well

Well No.: NSLU # 23
API No.: 30-015-04906

Location : 810' FNL & 1980' FWL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	465	ft.
Surface Cement :	50	sx.
Surface Cement Top:	390e	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	595	ft.
Salt Top :	615	ft.
Salt Base:	1545	ft.
< sqz & perf 130sx @ 1650'		
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2541e	ft.
Casing Size :	5 1/2	in.
Casing TD :	3150	ft.
Base of Open Hole :	3445	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

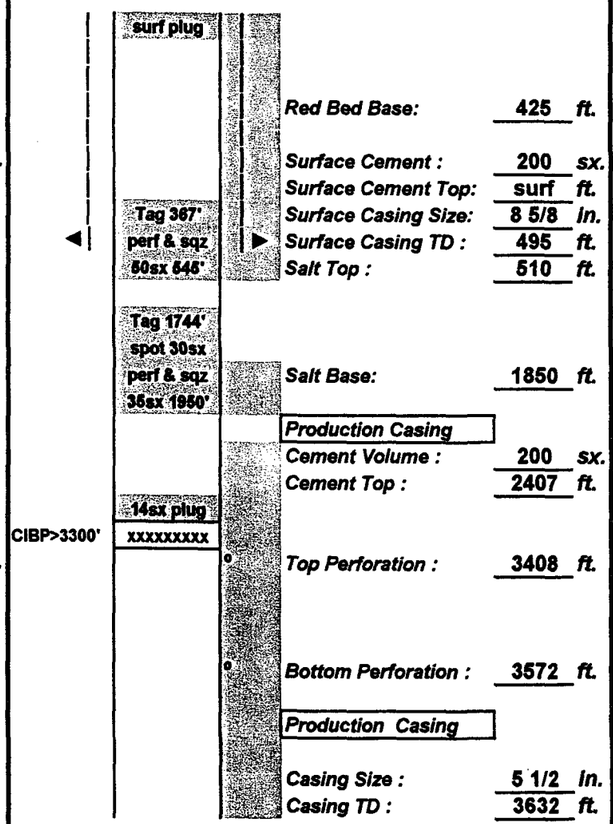
Date Well Drilled : 9 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 821000 BBL

Well No.: Sheldon #6 (offset NSLU#26)
API No.: 30-015-04901

Location : 660' FNL & 330' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	425	ft.
Surface Cement :	200	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	495	ft.
Salt Top :	510	ft.
Salt Base:	1850	ft.
Production Casing		
Cement Volume :	200	sx.
Cement Top :	2407	ft.
Top Perforation :	3408	ft.
Bottom Perforation :	3572	ft.
Production Casing		
Casing Size :	5 1/2	in.
Casing TD :	3632	ft.

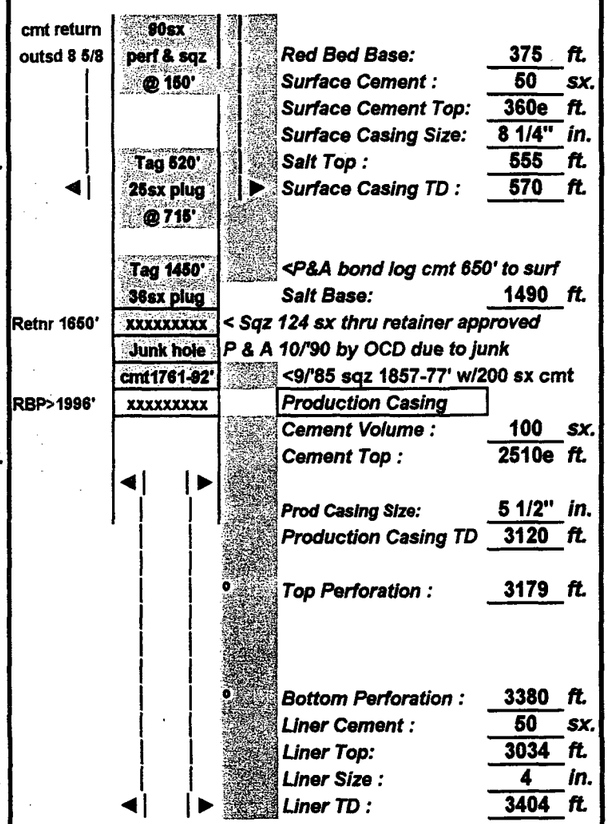
Type Well @ Abandonment : Producer
Date Well Abandoned : 6 / 1995
Operator that Plugged Well : Mack Energy

Date Well Drilled : 11 / 1961
Original Well Type : Producer

Well No.: NSLU # 40
API No.: 30-015-04911

Location : 1980' FNL & 660' FWL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



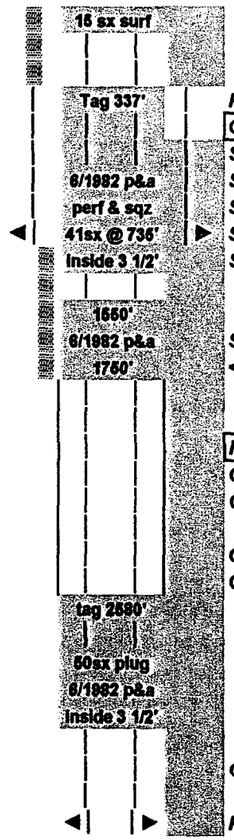
Red Bed Base:	375	ft.
Surface Cement :	50	sx.
Surface Cement Top:	360e	ft.
Surface Casing Size:	8 1/4"	in.
Salt Top :	555	ft.
Surface Casing TD :	570	ft.
<P&A bond log cmt 650' to surf		
Salt Base:	1490	ft.
< Sqz 124 sx thru retainer approved		
P & A 10/'90 by OCD due to junk		
<9/'85 sqz 1857-77' w/200 sx cmt		
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2510e	ft.
Prod Casing Size:	5 1/2"	in.
Production Casing TD	3120	ft.
Top Perforation :	3179	ft.
Bottom Perforation :	3380	ft.
Liner Cement :	50	sx.
Liner Top:	3034	ft.
Liner Size :	4	in.
Liner TD :	3404	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 10 / 1990
Operator that Plugged Well : Yates Petr. Corp.

Date Well Drilled : 1/1944
Original Well Type : Producer

Cum Water Injected in this Well : 1623780 BBL thru 5 / 1975

Well No.:	NSLU # 44
API No.:	30-015-04896
Location :	2080' FNL & 560' FWL
Sec-Twn-Rng :	Sec. 28, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



< Cut & Pulled 8 5/8" @ 230'
during 1st P & A in 12 / 1951

Red Bed Base:		ft.
Orig Drill & Complete Data		
Surface Cement :	unknw	sx.
Surface Cement Top:	230e	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	700e	ft.
Salt Top :	735	ft.
Salt Base:	1650	ft.

< '82 PA perf salt could not pump
< Cut & Pulled 5 1/2" @ 2360'
during 1st P & A in 12 / 1951

Production Casing		
Cement Volume :	orig ?	sx.
Cement Top :(orig)	2360e	ft.
Casing Size :(orig)	5 1/2	in.
Casing TD :(orig)	2500e	ft.

< 3 / 1963 re-entered well drilled deeper & ran 3 1/2" tubing from surface to new TD - 3640 '
cmt 325 sx + 25 sx at surface.

Original TD Reached :3	3475e	ft.
	Date ?	
Re-enter TD Reached:	3640	ft.
	3/1963	

Type Well @ Abandonment :	Injector
Date Well Abandoned :	12/1951 & 6/1982
Operator that Plugged Well :	Newmont-1982
Date Well Drilled :	Orig?re-enter3/63
Original Well Type :	Producer
Cum Water Injected in this Well :	7800 BBL

C-108 Application Well

Well No.:	NSLU # 61
API No.:	30-015-04903
Location :	1980' FSL & 660' FEL
Sec-Twn-Rng :	Sec. 29, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres

Red Bed Base:	505	ft.
Surface Cement :	50	sx.
Surface Cement Top:	427	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	675	ft.
Surface Casing TD :	682	ft.
Salt Base:	1635	ft.

Production Casing		
Cement Volume :	100	sx.
Cement Top :	2656e	ft.
Casing Size :	5 1/2	in.
Casing TD :	3265	ft.
Base of Open Hole :	3433	ft.

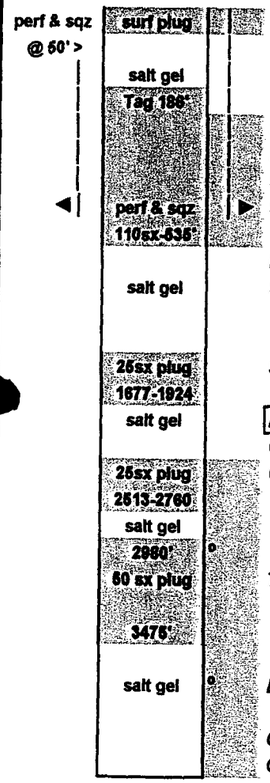
Type Well @ Abandonment :	Injector
Date Well Abandoned :	9 / 1982
Operator that Plugged Well :	Newmont Oil
Date Well Drilled :	8 / 1944
Original Well Type :	Producer
Cum Water Injected in this Well :	777000 BBL

C-108 Application Well

Well No.: NSLU # 16
API No.: 30-015-04860

Location : 660' FSL & 660' FEL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Cement :	275	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	351	ft.
Red Bed Base:	560	ft.
Salt Top :	685	ft.
Salt Base:	1680	ft.
Production Casing		
Cement Volume :	175	sx.
Cement Top :	2516e	ft.
Top Perforation :	3354	ft.
Bottom Perforation :	3562	ft.
Casing Size :	5 1/2	in.
Casing TD :	3582	ft.

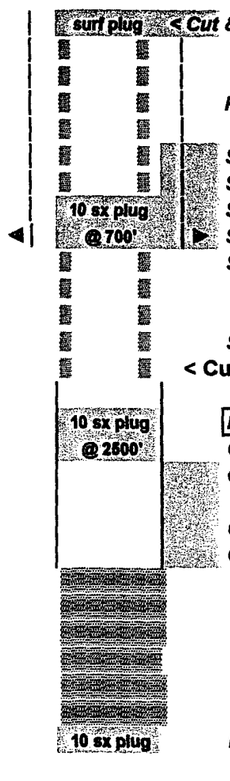
Type Well @ Abandonment : Producer
Date Well Abandoned : 2 / 1995
Operator that Plugged Well : Anadarko Petr.

Date Well Drilled : 5 / 1961
Original Well Type : Producer

Well No.: NSLU # 26
API No.: 30-015-04897

Location : 660' FNL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



< Cut & Pulled 8 5/8" casing @ 65'

Red Bed Base:		ft.
Surface Cement :	50	sx.
Surface Cement Top:	579	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	764	ft.
Salt Top :	764	ft.
Salt Base:	1685	ft.
< Cut & Pulled 5 1/2" @	1730'	
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2720	ft.
Casing Size :	5 1/2	in.
Casing TD :	3329	ft.
Base of Open Hole :	3475	ft.

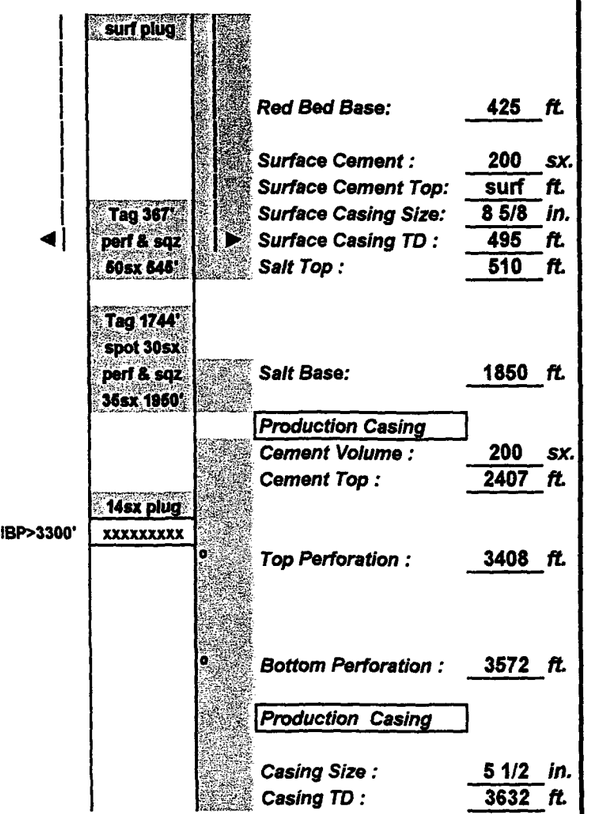
Type Well @ Abandonment : Producer
Date Well Abandoned : 12/1951
Operator that Plugged Well : D. D. Thomas

Date Well Drilled : 4 / 1945
Original Well Type : Producer

Well No.: Sheldon #6 (offset NSLU#26)
API No.: 30-015-04901

Location : 660' FNL & 330' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	425	ft.
Surface Cement :	200	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	495	ft.
Salt Top :	510	ft.
Salt Base:	1850	ft.
Production Casing		
Cement Volume :	200	sx.
Cement Top :	2407	ft.
Top Perforation :	3408	ft.
Bottom Perforation :	3572	ft.
Production Casing		
Casing Size :	5 1/2	in.
Casing TD :	3632	ft.

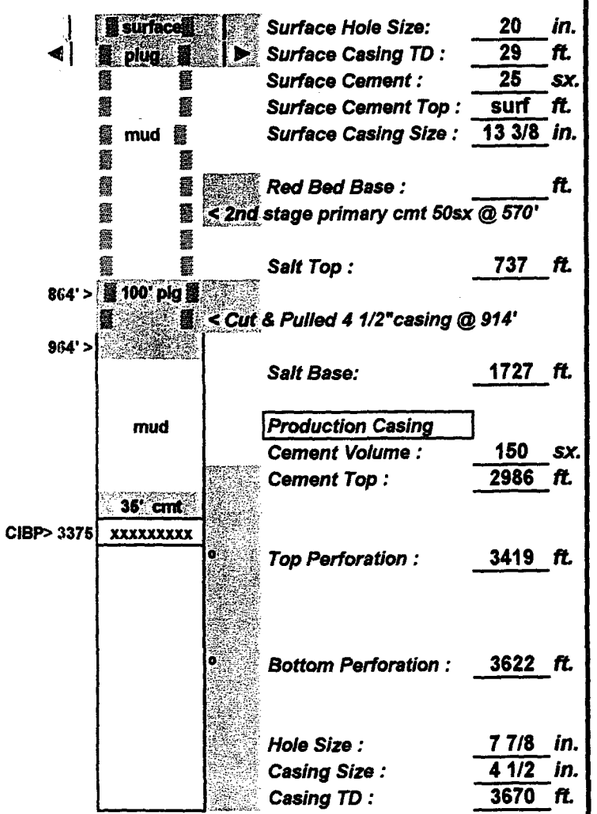
Type Well @ Abandonment : Producer
Date Well Abandoned : 6 / 1995
Operator that Plugged Well : Mack Energy

Date Well Drilled : 11 / 1961
Original Well Type : Producer

Well No.: NSLU # 27
API No.: 30-015-10549

Location : 660' FNL & 1650' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Hole Size:	20	in.
Surface Casing TD :	29	ft.
Surface Cement :	25	sx.
Surface Cement Top :	surf	ft.
Surface Casing Size :	13 3/8	in.
Red Bed Base :		ft.
< 2nd stage primary cmt 50sx @ 570'		
Salt Top :	737	ft.
< Cut & Pulled 4 1/2"casing @ 914'		
Salt Base:	1727	ft.
Production Casing		
Cement Volume :	150	sx.
Cement Top :	2986	ft.
Top Perforation :	3419	ft.
Bottom Perforation :	3622	ft.
Hole Size :	7 7/8	in.
Casing Size :	4 1/2	in.
Casing TD :	3670	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 7 / 1975
Operator that Plugged Well : Kennedy Oil Co.

Date Well Drilled : 9 / 1965
Original Well Type : Producer

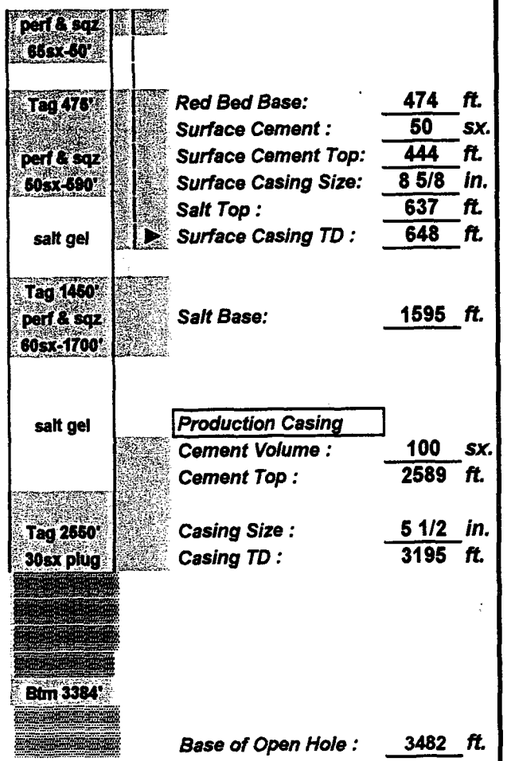
Cum Water Injected in this Well : 72410 BBL thru 12/69

C-108 Application Well

Well No.: NSLU # 42
API No.: 30-015-04908

Location : 1980' FNL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 474 ft.
Surface Cement : 50 sx.
Surface Cement Top: 444 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 637 ft.
Surface Casing TD : 648 ft.

Salt Base: 1595 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2589 ft.
Casing Size : 5 1/2 in.
Casing TD : 3195 ft.

Base of Open Hole : 3482 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

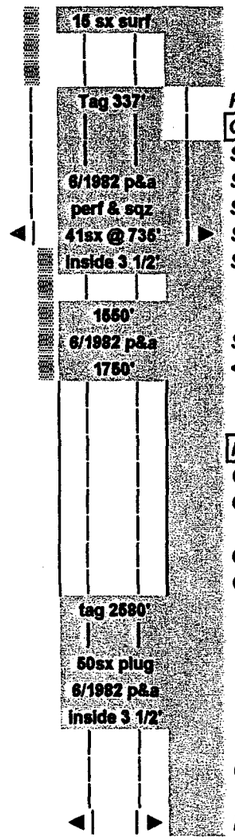
Date Well Drilled : 7 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 793000 BBL

Well No.: NSLU # 44
API No.: 30-015-04896

Location : 2080' FNL & 560' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



< Cut & Pulled 8 5/8" @ 230'
during 1st P & A in 12 / 1951

Red Bed Base: ft.

Orig Drill & Complete Data
Surface Cement : unknw sx.
Surface Cement Top: 230e ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 700e ft.
Salt Top : 735 ft.

Salt Base: 1650 ft.

< '82 PA perf salt could not pump
< Cut & Pulled 5 1/2" @ 2360'
during 1st P & A in 12 / 1951

Production Casing
Cement Volume : orig ? sx.
Cement Top :(orig) 2360e ft.

Casing Size :(orig) 5 1/2 in.
Casing TD :(orig) 2500e ft.

< 3 / 1963 re-entered well drilled deeper & ran 3 1/2" tubing from surface to new TD - 3640 ' cmt 325 sx + 25 sx at surface.

Original TD Reached : 3475e ft.
Date ?
Re-enter TD Reached: 3640 ft.
3/1963

Type Well @ Abandonment : Injector
Date Well Abandoned : 12/1951 & 6/1982
Operator that Plugged Well : Newmont-1982

Date Well Drilled : Orig?re-enter3/63
Original Well Type : Producer

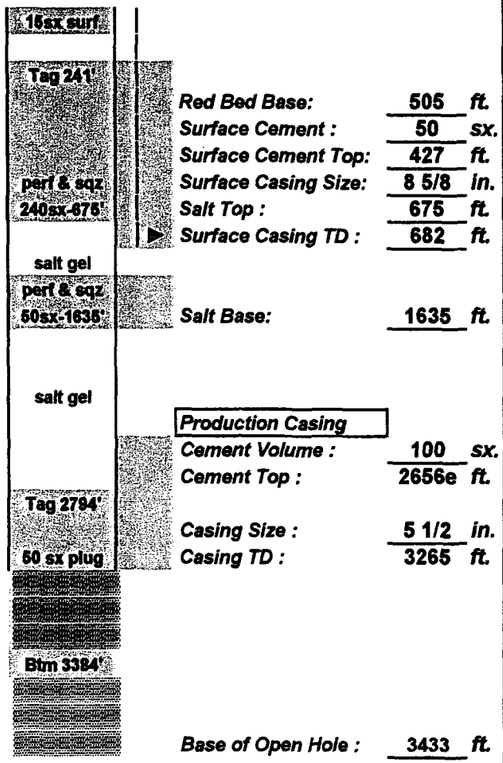
Cum Water Injected in this Well : 7800 BBL

C-108 Application Well

Well No.: NSLU # 61
API No.: 30-015-04903

Location : 1980' FSL & 660' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 505 ft.
Surface Cement : 50 sx.
Surface Cement Top: 427 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 675 ft.
Surface Casing TD : 682 ft.

Salt Base: 1635 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2656e ft.
Casing Size : 5 1/2 in.
Casing TD : 3265 ft.

Base of Open Hole : 3433 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 9 / 1982
Operator that Plugged Well : Newmont Oil

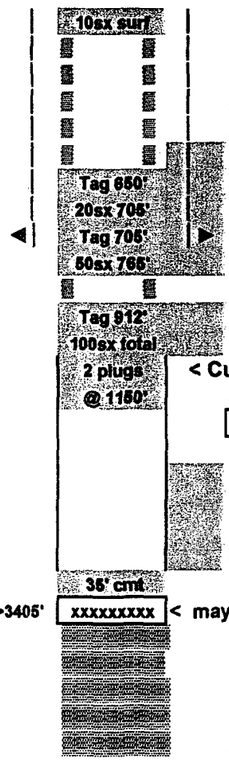
Date Well Drilled : 8 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 777000 BBL

Well No.: NSLU # 62
API No.: 30-015-04892

Location : 1980' FSL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 530 ft.
Surface Cement : 50 sx.
Surface Cement Top: 530e ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 700 ft.
Surface Casing TD : 715 ft.

< Cut & Pulled 5 1/2" @ 1100'
Salt Base: 1750 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2728e ft.
Casing Size : 5 1/2 in.
Casing TD : 3337 ft.
^

< may be typo on P & A report 3305'?

Base of Open Hole : 3598 ft.

Type Well @ Abandonment : Producer
Date Well Abandoned : 1 / 1997
Operator that Plugged Well : Xeric Oil & Gas

Date Well Drilled : 11/1/1944
Original Well Type : Producer

NSLU #60 WELLS IN THE AREA OF REVIEW 3300' – 3,502'

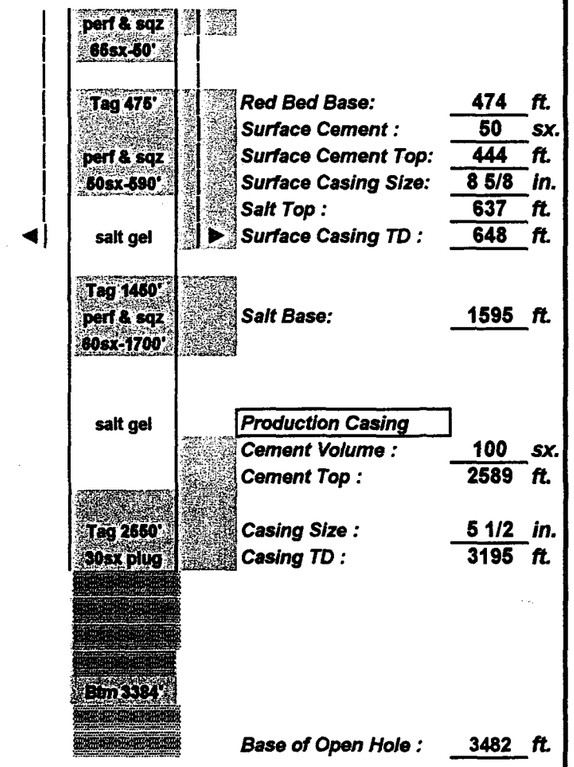
LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Bruning	2	41	04907	**29F-16-31**	1980' FNL 1980' FWL	Active Producer	1/23/1944	4/28/1944	3276'	8 1/4" Csg set @ 616' w/ 50 sx 5 1/2" Csg set @ 3056' w/ 100 sxs	411' 2447'	GB-SA	3056-3287 (OH)	80 qts. Nitro	250 BOPD
Bruning	3	42	04908	**29G-16-31**	1980' FNL 1980' FEL	P& A WIW	5/17/1944	7/23/1944	3376'	8 5/8" Csg set @ 648' w/ 50 sxs 5 1/2" Csg set @ 3195' w/ 100 sxs	444' 2586'	GB-SA	3195-3376	NA	125 BOPD
Bruning	4	43	04909	**29H-16-31**	1980' FNL 660' FEL	Active Producer	8/20/1944	10/10/1944	3415'	8" Csg set @ 685' w/50 sxs 5" Csg set @ 3252' w/100 sxs	511' 2652'	GB-SA	3252-3415 (OH)	160 qts. Nitro	50 BOPD
Sheldon	3	44	04896	**28E-16-31**	1980' FNL 660' FWL	P&A	11/22/1944	1/15/1945	3475'/ 3475'	8 1/4" Csg set @ 734' w/50 sxs 5 1/2" Csg set @ 3286' w/100 sxs	560' 2677'	GB-SA	3286-3475	180 qts. Nitro	75 BOPD
Texas Trading "A"	4	59	04919	**29K-16-31**	1880' FSL 1980' FWL	Active Injector	3/7/1944	5/27/1944	3348'	8 1/4" Csg set @ 638' w/ 150 sxs 5 1/2" Csg set @ 3235' w/ 150 sxs 4 1/2" Lnr 3129-470 W/300 sxs Lnr ran 5/65	118' 2322'	GB-SA	3370-3490 (OH) 3218-451	150 QTS. NITRO 72.2 MGAL & 20 M#	WIW
Bruning	5	61	04903	**29I-16-31**	1980' FSL 660' FEL	P&A	6/13/1944	8/15/1944	3433'/ 3433'	8 5/8" Csg set @ 632' w/ 50 sxs 5 1/2" Csg set @ 3265' w/ 100 sxs	427' 2656'	GB-SA	3265-3433	NA	100 BOPD
Johnson	4	62	04892	**28L-16-31**	1980' FSL 660' FWL	P&A	10/10/1944	11/30/1944	3469'	8 5/8" Csg set @ 715' w/ 50 sx 5 1/2" Csg set @ 3337' w/ 100 sxs	Circ. 2728'	GB-SA	3337-469 (OH)	250 qts. Nitro	150 BOPD
Texas Trading "A"	2	81	04917	**29N-16-31**	660 FSL 1980' FWL	Inactive Producer	2/23/1943	5/8/1943	3354'/ 3258'	8 5/8" Csg set @ 645' w/50 sxs 5 1/2" Csg set @ 3198' w/100 sxs	440' 2589'	GB-SA	3198-3354 (OH)	70 qts. Nitro	250 BOPD
Bruning	6	82	04910	**29O-16-31**	660' FSL 1980' FEL	P&A	7/10/1943	10/8/1943	3397'	8 5/8" Csg set @ 623' w/50 sxs 5 1/2" Csg @ 3156' w/100 sxs	418' 2547'	GB-SA	3156-3398	NA	200 BOPD
Carper "G"	4	83	04915	**29P-16-31**	550 FSL 550' FEL	Active Producer	5/8/1962	7/2/1962	3580'/ 3580'	8 5/8" Csg set @ 690' w/ 75 sxs 5 1/2" Csg set @ 3580' w/ 110 sxs	383' 2910'	GB-SA	3343-3550	20 M gal & 46 M#	114 BOPD
Zephyr ZQ	1	106	25029	**32B-16-31**	330' FNL 2310' FEL	Active Producer	10/3/1984	12/11/1984	5700'/ 5385'	13 3/8" Csg set @ 448' w/ 375 sxs 5 1/2" Csg set @ 5620' w/ 1000 sxs	Circ. Circ.		3351-3504	35 MGAL & 32.5 M#	50 BOPD

C-108 Application Well

Well No.: NSLU # 42
API No.: 30-015-04908

Location : 1980' FNL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 474 ft.
Surface Cement : 50 sx.
Surface Cement Top: 444 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 637 ft.
Surface Casing TD : 648 ft.

Salt Base: 1595 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2589 ft.
Casing Size : 5 1/2 in.
Casing TD : 3195 ft.

Base of Open Hole : 3482 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

Date Well Drilled : 7 / 1944
Original Well Type : Producer

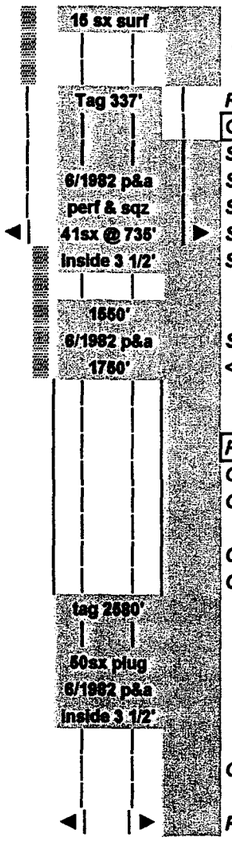
Cum Water Injected in this Well : 793000 BBL

C-108 Application Well

Well No.: NSLU # 44
API No.: 30-015-04896

Location : 2080' FNL & 560' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



< Cut & Pulled 8 5/8" @ 230'
during 1st P & A in 12 / 1951

Red Bed Base: ft.

Orig Drill & Complete Data
Surface Cement : unknw sx.
Surface Cement Top: 230e ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 700e ft.
Salt Top : 735 ft.

Salt Base: 1650 ft.

< '82 PA perf salt could not pump
< Cut & Pulled 5 1/2" @ 2360'
during 1st P & A in 12 / 1951

Production Casing
Cement Volume : orig ? sx.
Cement Top :(orig) 2360e ft.

Casing Size :(orig) 5 1/2 in.
Casing TD :(orig) 2500e ft.

< 3 / 1963 re-entered well drilled deeper & ran 3 1/2" tubing from surface to new TD - 3640 '
cmt 325 sx + 25 sx at surface.

Original TD Reached :3 3475e ft.
Date ?
Re-enter TD Reached: 3640 ft.
3/1963

Type Well @ Abandonment : Injector
Date Well Abandoned : 12/1951 & 6/1982
Operator that Plugged Well : Newmont-1982

Date Well Drilled : Orig?re-enter3/63
Original Well Type : Producer

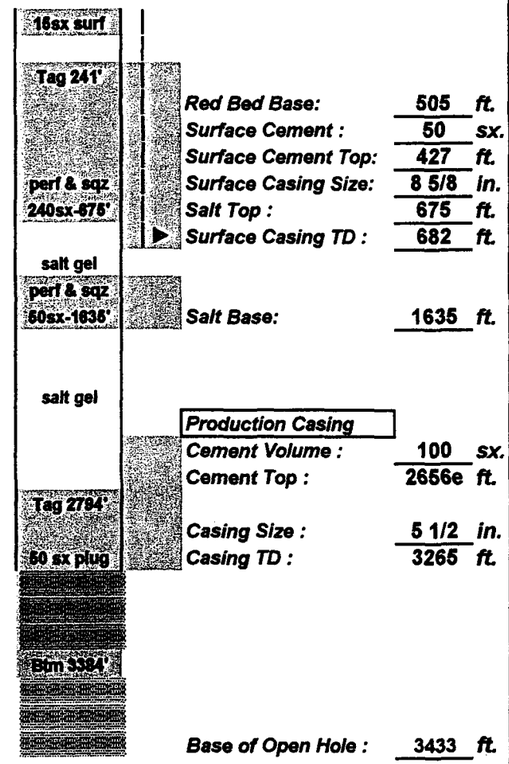
Cum Water Injected in this Well : 7800 BBL

C-108 Application Well

Well No.: NSLU # 61
API No.: 30-015-04903

Location : 1980' FSL & 660' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 505 ft.
Surface Cement : 50 sx.
Surface Cement Top: 427 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 675 ft.
Surface Casing TD : 682 ft.

Salt Base: 1635 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2656e ft.
Casing Size : 5 1/2 in.
Casing TD : 3265 ft.

Base of Open Hole : 3433 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 9 / 1982
Operator that Plugged Well : Newmont Oil

Date Well Drilled : 8 / 1944
Original Well Type : Producer

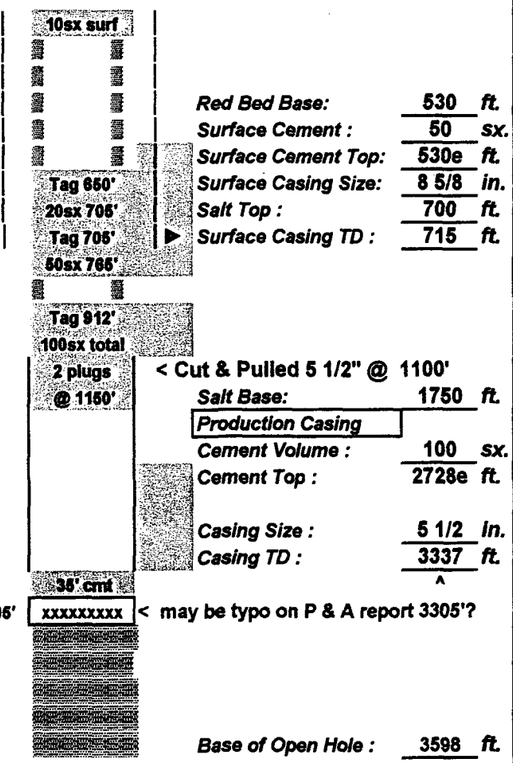
Cum Water Injected in this Well : 777000 BBL

C-108 Application Well

Well No.: NSLU # 62
API No.: 30-015-04892

Location : 1980' FSL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 530 ft.
Surface Cement : 50 sx.
Surface Cement Top: 530e ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 700 ft.
Surface Casing TD : 715 ft.

< Cut & Pulled 5 1/2" @ 1100'
Salt Base: 1750 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2728e ft.
Casing Size : 5 1/2 in.
Casing TD : 3337 ft.

< may be typo on P & A report 3305'?

Base of Open Hole : 3598 ft.

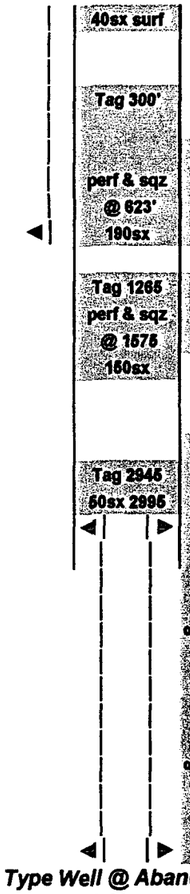
Type Well @ Abandonment : Producer
Date Well Abandoned : 1 / 1997
Operator that Plugged Well : Xeric Oil & Gas

Date Well Drilled : 11/1/1944
Original Well Type : Producer

Well No.: NSLU # 82
API No.: 30-015-04910

Location : 660' FSL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	444	ft.
Surface Cement :	50	sx.
Surface Cement Top:	418	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	623	ft.
Salt Top :	623	ft.
Salt Base:	1575	ft.
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2547e	ft.
Casing Size :	5 1/2	in.
Liner Top:	3095	ft.
Casing TD :	3156	ft.
Top Perforation :	3346	ft.
Base of orig Open Hole :	3397	ft.
Bottom Perforation :	3502	ft.
Liner Cement Volume:	100	sx.
Liner Size :	4	in.
Liner TD :	3515	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 8 / 1982
Operator that Plugged Well : Newmont Oil Co.

Date Well Drilled : 9 / 1943
Original Well Type : Producer

Cum Water Injected in this Well : 1405000 BBL

open hole 3,265 – 3,433

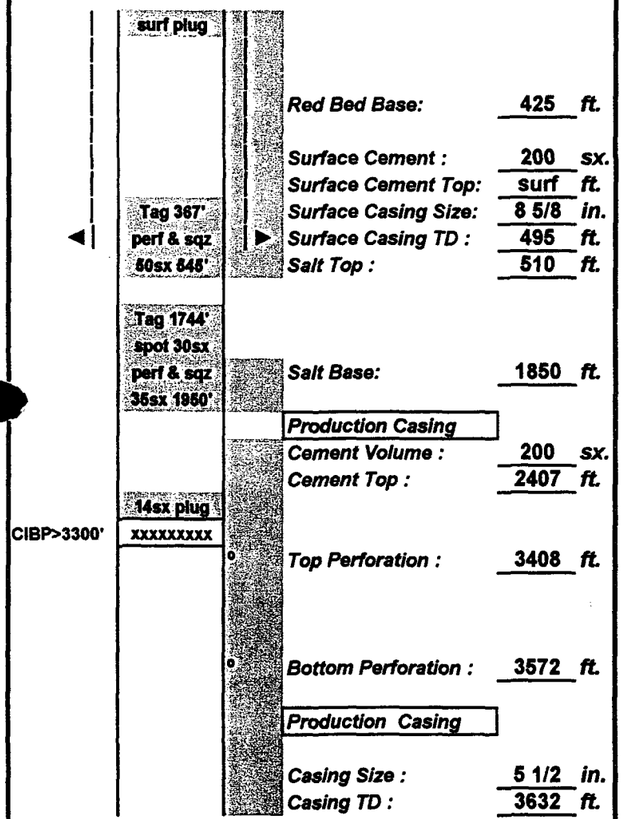
NSLU #61 WELLS IN THE AREA OF REVIEW

LEASE NAME (original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Sheldon	3 (6)	Twin to 26	04901	**28D-16-31**	660' FNL 330' FWL	P & A	10/18/1961	3/20/1962	3625'/ 3530'	8 5/8" Csg set @ 490' w/200 sxs 5 1/2" Csg set @ 3625' w/200 sxs	Circ. 2407'	GB-SA	3407-3580	Frac w/20 M gal & 26 M#	43 BOPD
Bruning	3	42	04908	**29G-16-31**	1980' FNL 1980' FEL	P& A WIW	5/17/1944	7/23/1944	3376'	8 5/8" Csg set @ 648' w/ 50 sxs 5 1/2" Csg set @ 3195' w/ 100 sxs	444' 2586'	GB-SA	3195-3376	NA	125 BOPD
Bruning	4	43	04909	**29H-16-31**	1980' FNL 660' FEL	Active Producer	8/20/1944	10/10/1944	3415'	8" Csg set @ 685' w/50 sxs 5" Csg set @ 3252' w/100 sxs	511' 2652'	GB-SA	3252-3415 (OH)	160 qts. Nitro	50 BOPD
Sheldon	3	44	04896	**28E-16-31**	1980' FNL 660' FWL	P&A	11/22/1944	1/15/1945	3475'/ 3475'	8 1/4" Csg set @ 734' w/50 sxs 5 1/2" Csg set @ 3286' w/100 sxs	560' 2677'	GB-SA	3286-3475	180 qts. Nitro	75 BOPD
Carper "G"	3	60	04914	**29J-16-31**	1980' FSL 1880' FEL	Active Producer	6/2/1961	7/10/1961	3526'/ 3526'	7" Csg set @ 705' w/50 sxs 4 1/2" Csg set @ 3526' w/ 200 sxs	362' 2614'	GB-SA	3478-3502'	34 MGAL & 49 M#	67 BOPD
Johnson	4	62	04892	**28L-16-31**	1980' FSL 660' FWL	P&A	10/10/1944	11/30/1944	3469'	8 5/8" Csg set @ 715' w/ 50 sx 5 1/2" Csg set @ 3337' w/ 100 sxs	Circ. 2728'	GB-SA	3337-469 (OH)	250 qts. Nitro	150 BOPD
Sheldon	1	63	04894	**28K-16-31**	1980' FSL 1980' FWL	P&A	4/6/1958	5/21/1958	4302'/ 3599'	4 1/2" Csg set @ 3599' w/200 sxs	2687'	GB-SA	3439-49	Frac w/15 M gal & 15 M#	P&A
Bruning	6	82	04910	**29O-16-31**	660' FSL 1980' FEL	P&A	7/10/1943	10/8/1943	3397'	8 5/8" Csg set @ 623' w/50 sxs 5 1/2" Csg @ 3156' w/100 sxs	418' 2547'	GB-SA	3156-3398	NA	200 BOPD
Carper "G"	4	83	04915	**29P-16-31**	550 FSL 550' FEL	Active Producer	5/8/1962	7/2/1962	3580'/ 3580'	8 5/8" Csg set @ 690' w/ 75 sxs 5 1/2" Csg set @ 3580' w/ 110 sxs	383' 2910'	GB-SA	3343-3550	20 M gal & 46 M#	114 BOPD
Johnson	2	84	04891	**28M-16-31**	660' FSL 660' FWL	P&A	8/14/1944	10/6/1944	3392'	8 5/8" Csg set @ 725' w/ 50 sx 5 1/2" Csg set @ 3344' w/ 100 sxs	520' 2735'	GB-SA	3344-3392 (OH)	NA	135 BOPD

Well No.: Sheldon #6 (offset NSLU#26)
API No.: 30-015-04901

Location : 660' FNL & 330' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 425 ft.
Surface Cement : 200 sx.
Surface Cement Top: surf ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 495 ft.
Salt Top : 510 ft.
Salt Base: 1850 ft.

Production Casing
Cement Volume : 200 sx.
Cement Top : 2407 ft.
Top Perforation : 3408 ft.
Bottom Perforation : 3572 ft.

Production Casing
Casing Size : 5 1/2 in.
Casing TD : 3632 ft.

Type Well @ Abandonment : Producer
Date Well Abandoned : 6 / 1995
Operator that Plugged Well : Mack Energy

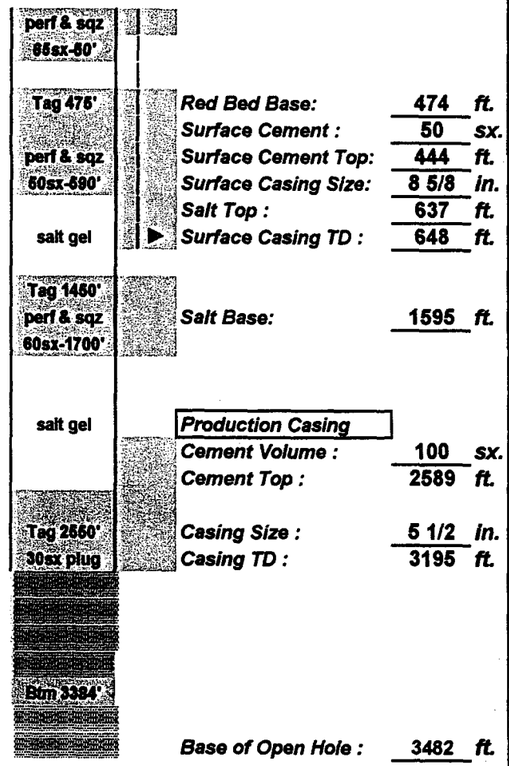
Date Well Drilled : 11 / 1961
Original Well Type : Producer

C-108 Application Well

Well No.: NSLU # 42
API No.: 30-015-04908

Location : 1980' FNL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 474 ft.
Surface Cement : 50 sx.
Surface Cement Top: 444 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 637 ft.
Surface Casing TD : 648 ft.
Salt Base: 1595 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2589 ft.
Casing Size : 5 1/2 in.
Casing TD : 3195 ft.
Base of Open Hole : 3482 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

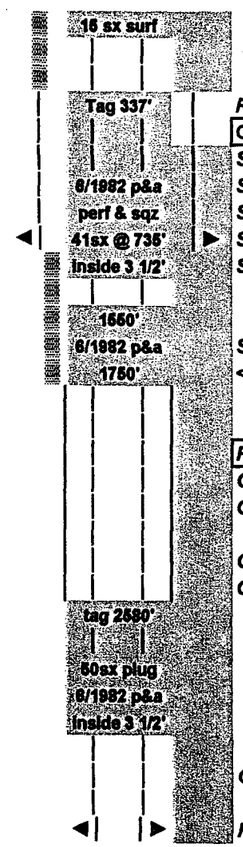
Date Well Drilled : 7 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 793000 BBL

Well No.: NSLU # 44
API No.: 30-015-04896

Location : 2080' FNL & 560' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



< Cut & Pulled 8 5/8" @ 230'
during 1st P & A in 12 / 1951
Red Bed Base: ft.
Orig Drill & Complete Data
Surface Cement : unknw sx.
Surface Cement Top: 230e ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 700e ft.
Salt Top : 735 ft.
Salt Base: 1650 ft.
< '82 PA perf salt could not pump
< Cut & Pulled 5 1/2" @ 2360'
during 1st P & A in 12 / 1951

Production Casing
Cement Volume : orig ? sx.
Cement Top :(orig) 2360e ft.
Casing Size :(orig) 5 1/2 in.
Casing TD :(orig) 2500e ft.

< 3 / 1963 re-entered well drilled deeper & ran 3 1/2" tubing from surface to new TD - 3640 '
cmt 325 sx + 25 sx at surface.

Original TD Reached : 3475e ft.
Date ?
Re-enter TD Reached: 3640 ft.
3/1963

Type Well @ Abandonment : Injector
Date Well Abandoned : 12/1951 & 6/1982
Operator that Plugged Well : Newmont-1982

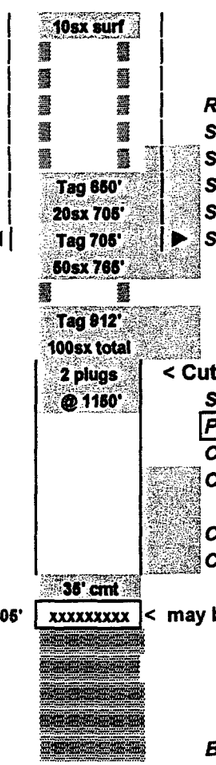
Date Well Drilled : Orig?re-enter3/63
Original Well Type : Producer

Cum Water Injected in this Well : 7800 BBL

Well No.: NSLU # 62
API No.: 30-015-04892

Location : 1980' FSL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 530 ft.
Surface Cement : 50 sx.
Surface Cement Top: 530e ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 700 ft.
Surface Casing TD : 715 ft.

< Cut & Pulled 5 1/2" @ 1100'
Salt Base: 1750 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2728e ft.
Casing Size : 5 1/2 in.
Casing TD : 3337 ft.
^

< may be typo on P & A report 3305'?

Base of Open Hole : 3598 ft.

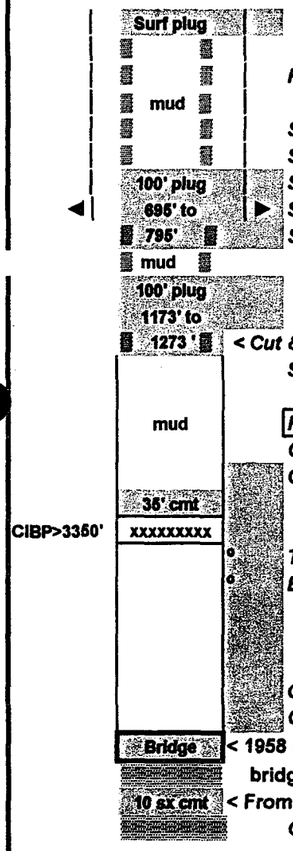
Type Well @ Abandonment : Producer
Date Well Abandoned : 1 / 1997
Operator that Plugged Well : Xeric Oil & Gas

Date Well Drilled : 11/1/1944
Original Well Type : Producer

Well No.: NSLU # 63
API No.: 30-015-04894

Location : 1980' FSL & 1980' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: ____ ft.
Surface Cement : 35 sx.
Surface Cement Top: 624e ft.
Surface Casing Size: 8 1/4 in.
Surface Casing TD : 745 ft.
Salt Top : 745 ft.

< Cut & Pulled 4 1/2" casing @ 1223'

Salt Base: 1695 ft.

Production Casing
Cement Volume : 200 sx.
Cement Top : 2687 ft.

Top Perforation : 3439 ft.
Bottom Perforation : 3478 ft.

Casing Size : 4 1/2 in.
Casing TD / PBTD : 3599 ft.

< 1958 Re-entry dump river rock on bridge + 1 sx Cal-Seal plug
< From 3 /1944 P & A

Original TD Reached : 4302 ft.
9/1943

Type Well @ Abandonment : Injector
Date Well Abandoned : 11 / 1975
Operator that Plugged Well : Kennedy Oil Co.

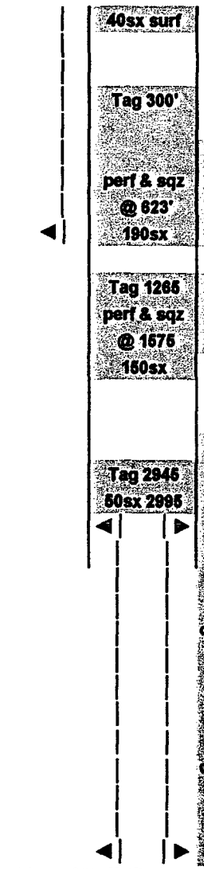
Date Well Drilled : 9/43-re-enter 5/58
Original Well Type : Producer

Cum Water Injected in this Well : 168217 BBL thru 12/'69

Well No.: NSLU # 82
API No.: 30-015-04910

Location : 660' FSL & 1980' FEL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 444 ft.
Surface Cement : 50 sx.
Surface Cement Top: 418 ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 623 ft.
Salt Top : 623 ft.

Salt Base: 1575 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2547e ft.

Casing Size : 5 1/2 in.
Liner Top: 3095 ft.
Casing TD : 3156 ft.

Top Perforation : 3346 ft.

Base of orig Open Hole : 3397 ft.

Bottom Perforation : 3502 ft.
Liner Cement Volume: 100 sx.
Liner Size : 4 in.
Liner TD : 3515 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 8 / 1982
Operator that Plugged Well : Newmont Oil Co.

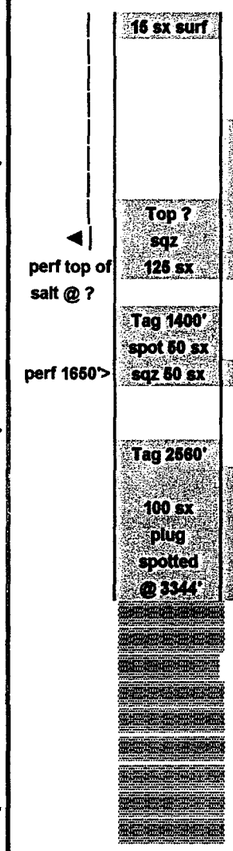
Date Well Drilled : 9 / 1943
Original Well Type : Producer

Cum Water Injected in this Well : 1405000 BBL

Well No.: NSLU # 84
API No.: 30-015-04891

Location : 660' FSL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 520 ft.
Surface Cement : 50 sx.
Surface Cement Top: 520 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 690 ft.
Surface Casing TD : 705 ft.

Salt Base: 1640 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2735 ft.

Casing Size : 5 1/2 in.
Casing TD : 3344 ft.

Base of Open Hole : 3587 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 7 / 1982
Operator that Plugged Well : Yates Petr. Corp.

Date Well Drilled : 10 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 1521000 BBL

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
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VII. Data on proposed operation.

1. Proposed average injection rate: 150 BWPD per well
   Proposed maximum injection rate: 300 BWPD per well

2. The system will be a closed system.

3. Proposed average injection pressure: 500 psi
   Proposed maximum injection pressure: 600 psi (In no instance will the pressure exceed a .2 psi/ft gradient to the upper perf or top of the open hole interval).

4. The proposed injection fluid at this time is to be limited to produced water.

5. A chemical analysis of the formation water in the proposed injection horizon is attached.

Enviro-Chem, Inc.
WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : Grier
Well No. : Water Tank
Lab No. : 101698.881

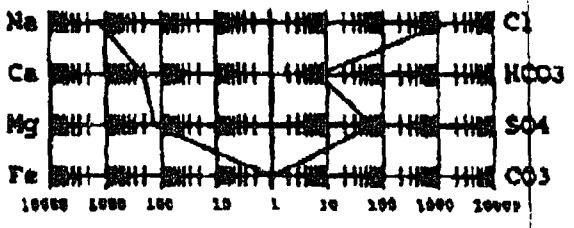
Sample Loc. :
Date Analyzed: 16-October-1998
Date Sampled : 09-October-1998

ANALYSIS

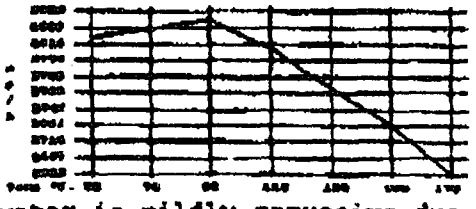
1.	pH		7.030	
2.	Specific Gravity 60/60 F.		1.068	
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.609	
		@ 140 F.	+1.525	

	Dissolved Gasses		MG/L	EQ. WT.	*MEQ/L
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	4,168	/ 20.1 =	207.36
8.	Magnesium	(Mg^{++})	1,580	/ 12.2 =	129.51
9.	Sodium	(Na^{+}) (Calculated)	29,433	/ 23.0 =	1,279.85
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	(CO_3^{--})	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	415	/ 61.1 =	6.79
14.	Sulfate	(SO_4^{--})	2,850	/ 48.8 =	59.43
15.	Chloride	(Cl^{-})	54,988	/ 35.5 =	1,548.96
16.	Total Dissolved Solids		93,483		
17.	Total Iron (Fe)		2	/ 18.2 =	0.08
18.	Total Hardness As $CaCO_3$		16,915		
19.	Resistivity @ 75 F. (Calculated)		0.101 ohm/cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	6.79	550
$CaSO_4$	68.07	59.43	4,045
$CaCl_2$	55.50	141.14	7,834
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	129.51	6,167
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	1,278.30	74,730

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

VIII. The injection interval is located in the Grayburg-San Andres formation. This Permian age horizon is nearly 1200' thick in this area. The top of the Grayburg formation is a depth of approximately 2800' with the base of the San Andres at a depth of about 4000'.

There are three known Quanternary age fresh water wells within one mile of the proposed unit. The pertinent information on these wells are:

Location	Depth	Chlorides
Section 24 T16S, R30E	45'	156 ppm
Section 33 T16S, R30E	385'	3780 ppm
Section 24 T16S, R30E	167'	66 ppm

There are no fresh water zones underlying the proposed injection zone.

OWNERSHIP	DEPTH	WSF	DATECLTD	CLTR	USE	LOCATION	LEELEV	PT_CLTN	CHLORIDES	CONDUCT	TDS	TEMF	ADD_DATA	CARD_DATE	SOURCE	DFN	METER
	0	PSA	78/07/19	SED	IRR	16S.26E.35.123411	0.00	YT	1130	5540	0	0		0186			0
	0	PSA	85/08/27	SED	IRR	16S.26E.35.123411	0.00	DP	304	2691	0	71		1185			0
	0	PAT	88/10/21	SED	STK	16S.27E.03.14121	0.00	DP	623	4685	0	69		0289			0
	0	PAT	57/05/01	USG	STK	16S.27E.03.141212	3499.00	DP	695	4940	0	66	X	0685	U	15-05184	0
	0	PAT	85/06/03	SED	STK	16S.27E.03.141212	3499.00	DP	740	4946	0	73		0685		15-05184	0
	0	PAT	88/10/21	SED	STK	16S.27E.03.141212	3499.00	DP	623	4685	0	69		0689		15-05184	0
	131	PAT	40/10/03	USG	STK	16S.27E.06.444424	3439.00	DP	435	4100	0	0	X	0685	U	15-05185	0
	131	PAT	57/05/01	USG	STK	16S.27E.06.444424	3439.00	DP	455	4220	0	66	X	0685	U	15-05185	0
	131	PAT	85/06/03	SED	STK	16S.27E.06.444424	3439.00	DP	448	4143	0	72		0685		15-05185	0
	131	PAT	88/10/25	SED	STK	16S.27E.06.444424	3439.00	DP	514	4333	0	70		1188		15-05185	0
	0	PSA	60/05/11	ONR	DIL	16S.27E.23.14000	0.00	BL2900	*******	0	0	0	X	0586	P		0
	0	PAT	60/04/26	DLR	DIL	16S.27E.26.43200	0.00	BLR155	6880	21630	0	0		0382			0
	60	PAT	57/05/01	USG	STK	16S.27E.36.212114	3454.00	DP	2540	11300	0	65	X	0685	U	15-05186	0
	60	PAT	85/10/08	SED	STK	16S.27E.36.212114	3454.00	DP	1240	7221	0	64		0186		15-05186	0
	60	PAT	88/10/27	SED	STK	16S.27E.36.212114	3454.00	DP	1564	8339	0	64		1188		15-05186	0
	54	PAT	86/06/12	SED	STK	16S.28E.12.22132	3580.00	DP	362	3764	0	68		0287			0
TURKEY TRACK RANCH	54		90/09/14	SED	STK	16S.28E.12.22132	3580.00	DP	790	4620	0	66		0191			0
TURKEY TRACK RANCH	0	PAT	93/12/13	SED	STK	16S.28E.12.22132A	3580.00	DP	714	3780	0	66		0694			0
	0	QAL	86/06/12	SED	STK	16S.28E.24.22423A	3568.00	DP	28	2413	0	70		0287		15-05188	0
TURKEY TRACK RANCH	0	PAT	93/12/13	SED	STK	16S.28E.24.22423A	3580.00	DP	136	2560	0	60		0694			0
TURKEY TRACK RANCH	85		90/09/18	SED	STK	16S.28E.25.33243	3577.00		214	3200	0	66		0191		15-05189	0
TURKEY TRACK RANCH	45	QAL	93/12/13	SED	STK	16S.28E.25.33243	3577.00	DP	0	4470	0	0		0694		15-05189	0
	0	TRS	80/12/30	CEC		16S.30E.24.12233	0.00		101	0	0	0	X	1084	F		0
	0	TRS	85/03/12	SED	STK	16S.30E.24.12233	0.00	DP	140	899	0	0		0483			0
	45		86/07/18	SED	STK	16S.30E.25.33243	3577.00	DP	156	3081	0	68		0187		15-05189	0
	385	TRS	86/04/25	SED	NOT	16S.30E.33.42443	3729.00	TS8383	4330	14578	0	0		0586		15-05133	0
NEWMONT OIL CO	385	TRS	90/09/18	SED	NOT	16S.30E.33.42443	0.00	TS8383	3780	13570	0	0		0191		15-05133	0
	433	TRS	58/11/26	ONR	SRG	16S.30E.33.44233	3727.00	DP	6730	0	0	0	X	0586	F	15-05134	0
	433	TRS	86/04/25	SED	NOT	16S.30E.33.44233	3727.00	TS8430	51000	92130	0	0		0586		15-05134	0
BOGLE FARMS INC	320	TOS	48/12/09	USG	STK	16S.31E.02.12124	4416.00	DP	82	618	0	0	X	1276	U	15-71000	0
BOGLE FARMS INC	320	TOS	76/12/21	SED	STK	16S.31E.02.12124	4416.00	DP	82	758	0	58				15-71000	0
BOGLE FARMS INC	320	TOS	79/10/26	SED	STK	16S.31E.02.12124	4416.00	DP	74	682	0	66				15-71000	0
BOGLE FARMS INC	320	TOS	84/12/04	SED	STK	16S.31E.02.12124	4416.00	DP	95	819	0	0		0185		15-71000	0
BOGLE FARMS	320	TOS	90/07/16	SED	DOM	16S.31E.02.12124	4416.00	DP	115	833	0	0		1190		15-71000	0
BOYLE FARMS INC	0	TOS	95/09/25	SED	DOM	16S.31E.02.12124	4416.00	DP	95	720	0	0		0196		15-71000	0
BOGLE FARMS	0	TOS	48/12/96	USG	STK	16S.31E.12.42300	4365.00	DP	14	612	0	0	X		U	15-12567	0
BOGLE FARMS	0	TOS	76/12/21	SED	STK	16S.31E.14.24444	4396.00	DP	19	458	0	69				15-71001	0
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BOGLE FARMS	0	TOS	93/10/18	SED	STK	16S.31E.14.24444	4396.00		27	516	0	0		0796		15-71001	0
HOLMAN E B	167	TOS	81/09/29	SED	STK	16S.31E.23.444321	4250.00	DP	72	678	0	69		0282		15-71002	0
HOLMAN E B	167	TOS	81/09/29	SED	STK	16S.31E.23.444321	4250.00	TANK	76	685	0	0		0282		15-71002	0
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ANDERSON W A	0	TOS	79/11/13	SED	STK	16S.32E.03.344324	4315.00	DP	14	775	0	66				25-11050	0
ANDERSON W A	0	TOS	84/10/11	SED	STK	16S.32E.03.344324	4315.00	SBLR	32	960	0	0		1184		25-11050	0
ANDERSON W A	0	TOS	79/11/13	SED	STK	16S.32E.11.34140	4295.00	DP	56	410	0	65				25-11053	0

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August 7, 2003

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: C 108 Applications – CBS Operating Company – North Square Lake Unit – Lea County, New Mexico

I. Introduction

CBS Operating Company engaged the services of Ritter Environmental and Geotechnical Services, Inc. (Ritter) to study and evaluate the potential for groundwater impacts related to injection of produced water in the North Square Lake Unit (NSLU). Ritter has engaged the Hicks Consulting Firm, R. T. Hicks Consultants Ltd., to assist in certain aspects of the study and evaluation. Mr. Randal Hicks, his assistant Mr. Parker and I have reviewed and researched published information on the geology and hydrology of the region and local area. We obtained available research from the New Mexico State Engineer's Office as well as unpublished information for the Sandia National Lab and Roswell BLM Offices. A second report under Hick's letterhead accompanies these C 108 applications. The information contained herein will uniformly apply to all C 108 applications inside the North Square Lake Unit (NSLU).

II. Summary

The NSLU sets in the far northeast corner of Eddy County, north of the highway between Loco Hills and Maljamar, New Mexico. It is situated just west of the western limit of the Caprock of the high plains. It is located at the far east edge of the region where the topographic drainage is to the Pecos River.

Review of available groundwater information had determined that very little, if any, usable groundwater is present in the NSLU area. The nearest significant groundwater source to the

NSLU are water wells that are up on the Caprock, north and east of the unit. These wells produce from the Ogallala aquifer. The Ogallala is not present at the NSLU site.

The only potential sources of potable groundwater in the NSLU area are the near surface alluvium (generally less than 50 feet from the surface), the Dewey Lake and the lower Dockum (Santa Rosa) (from approximately 50 to 750 feet from the surface). The near surface alluvium consists primarily of un-compacted sands. The strata below the alluvium consists of interbedded sands, caliche (lime), anhydrites, red beds and shale. These comprise the Dewey Lake and Dockum Groups. These zones sit on top of the Rustler formation, which is an anhydrite setting on top of the Salado salt section. The Rustler formation is approximately 150 feet thick in the vicinity of the NSLU. The Salado salt section is impermeable and does not allow the recharge of any deeper zones with fresh water. The Salado in the vicinity of the NSLU is approximately 1000 feet thick.

No aquifer below the top of the Rustler in the NSLU is known to produce groundwater in sufficient quantity or quality to be usable for animal or human consumption or agricultural use.

Although the quality of groundwater in some windmills in the area is generally good, quantities of water have been insufficient for use except for sparse cattle watering. There are currently no fresh groundwater wells within the NSLU boundary. The nearest reported water wells were located in sections 24 and 25 T-16-S, R-30-E. One of these wells was reportedly completed at a depth of 45 feet and are now apparently abandoned.

Only two of the approximately 200 oil wells drilled inside the unit reported or tested any fresh water. One oil well, located on the far west side of the unit, NSLU #3, (Sec 25 T-16-S R-30-E) tested five bailers per hour at a depth of 450 feet which is in the red beds of the Dewey Lake. The only other well to test water was on the south central part of the unit NSLU #129 (Sec 32 T-16-S R-31-E). This well bailed one-half bailer per hour from a depth of 450 feet which is also in the Dewey Lade red beds.

In the 1960's, approximately 16 oil wells were drilled on the northeast and east side of the unit with permission from the OCD to drill to the top of the salt (or anhydrite) and test for fresh water. If no groundwater was found, a shallow surface casing was allowed to be set (less than 100 feet) and a cement plug was to be set at the top of the salt, behind the production string. Apparently, none of these wells encountered freshwater. Of the 16 wells that were allowed to set shallow surface casing less than 100 feet, those that were completed as oil wells were either two stage cemented with a DV tool from the top of the Rustler anhydrite or cement grouted behind the production string with a one-inch trim line from the top of the anhydrite. Those that were later plugged and abandoned were cemented with a plug to protect the fresh water zone above the Rustler. Thus, no well within the Area of Review for the NSLU is currently unprotected in the potential fresh water strata above the Rustler.

Geologic e-log cross-sections across the NSLU field fail to confirm the development of any continuous sandstone units capable of being significant sources of groundwater above the

Rustler. Approximately 11 wells were drilled in the township due south of the NSLU specifically looking for a water source. All of these test wells were dry.

Chemical analysis of wells in the area of the NSLU indicate that, where present, the water quality is generally good with Chloride levels ranging from approximately 100 to 150 mg/L and Conductivity ranging from approximately 300 to 3100 mg/L. Some of these water samples were taken from wells that are reportedly completed in the shallow alluvium and not in the Dewey Lake red beds.

Conclusions:

1. The R.T. Hicks Consulting, Ltd. hydrogeological study concluded that the only potential sources of protectable groundwater would be the Dewey Lake and Dockum Groups, that neither of these geological units are capable of providing appreciable amounts of groundwater and that surface pipe already in place is sufficient to protect any groundwater present in these units from the proposed injection in the NSLU.

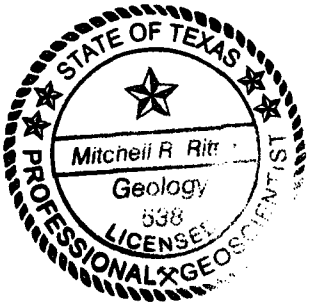
2. Evaluation of fresh water usage and sources in the vicinity of NSLU has identified only minimal use due to the lack of groundwater aquifers in this area. Only a relative few windmills exist or once existed in this area. Those wells were minimal at best and some are now abandoned. The nearest fresh water well is located one mile northwest. It is now abandoned. Stock tank windmills are located to the north but productivity is low. Wells drilled to test for fresh water to the south of the NSLU were all dry.

3. Generally, the oil wells drilled in the NSLU are surface cased through the top of the Rustler formation. Only two of two hundred wells encountered and tested fresh water. The amounts of fresh water tested in these two were between ½ and 5 bailers per hour. Sixteen wells on the northeast side of the unit were drilled with out surface casing below 100 feet; however, these wells were allowed by the OCD to cement behind the production string back to the surface from the Rustler. We have found no wells where the surface zones from the Rustler back to the top is not protected.

4. E Log review has not confirmed the existence of any major fresh water aquifers in the NSLU area. In fact, the cities of Loco Hills and Maljamar are dependant on an aqueduct that draws water from the Ogallala on the Caprock to the east for their municipal water supplies.

5. No usable fresh water exists below the top of the Rustler formation, which in this area is an anhydrite. The Rustler ranges from a depth of approximately 300 feet on the west end of the unit to approximately 700 feet on the east end of the unit. The top of the Rustler established the lower most protectable strata for the protection of potential fresh water zones in the NSLU.

6. The proposed pressure maintenance project by CBS Operating Company should not adversely impact any fresh water aquifer in the vicinity of the NSLU. All well bores are properly protected by pipe and cement plugs. CBS will carefully monitor wells for any abnormality that may relate to down hole issues that could potentially impact that fresh water zone.



Mitchell Ritter
Licensed Professional Geologist Number #538
Registered Environmental Manager (REM) Number #11402

MR/lr

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August 19, 2003

Mr. Richard Ezeanyim, P.E.
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: North Square Lake Unit (NSLU) Area-Salado Salt Discussion

Dear Mr. Ezeanyim,

Attached to this letter is an exerpt from a publication from the USGS, the New Mexico Bureau of Mines and the State Engineer's office. This publication is authored by G.E. Hendrickson and is titled "Geology and Groundwater Resources of Eddy County, New Mexico". This report addresses the specifics of the geology and groundwater in the vicinity of North Square Lake Unit area. In relation to groundwater and the salt section known as the Salado formation, the report states on page 73, "Occurrence of Groundwater-The Salt of the Salado is impermeable, primarily because the weight of the over burden is sufficient to cause plastic flow of the salt and hence prevent the development of cracks and crevices through which water might move." Based on this information, it is not feasible that the salt section of the Salado is leachable and therefore not an issue of concern for casing leaks that might encounter the salt section.

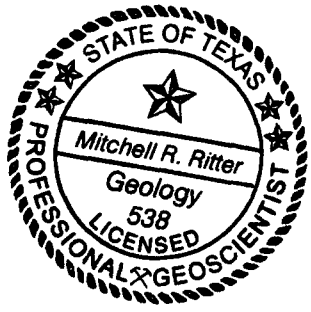
To date, over 48,000,000 barrels of produced water have been injected into this field. It is logical to assume that any casing leaks associated with the salt section would have manifested themselves by this time. Review of records of the existing wells in this field revealed no high pressure casing leaks in the salt section.

The most recent well drilled was Well #106, which was drilled in 1986. This well did not encounter water in the salt section or have any indication of a pressured salt section. This was long after the injection of the majority of water in this field.

The proposed project is designed as a pressure maintenance project, not a full flood with high pressures. The water being injected is produced water, which is expected to be chemically

compatible with the salt section. Even if it were in contact with the salt, leaching of the salt is not anticipated.

We therefore conclude that cement protection of the salt section in the vicinity of the North Square Lake Unit is not warranted. Retrofit of wells with cement over the salt section does not appear to be a prudent use of funds in this particular area.



Mitchell Ritter
Licensed Professional Geologist Number #538
Registered Environmental Manager (REM) Number #11402

MR/ts

GROUND-WATER REPORT 3

Geology and Ground-Water Resources of Eddy County, New Mexico

by G. E. HENDRICKSON, *Geologist*
and R. S. JONES, *Geologist*
UNITED STATES GEOLOGICAL SURVEY

Prepared cooperatively by
The United States Geological Survey,
New Mexico Bureau of Mines & Mineral Resources,
and the State Engineer of New Mexico

1952

STATE BUREAU OF MINES AND MINERAL RESOURCES
NEW MEXICO INSTITUTE OF MINING & TECHNOLOGY
CAMPUS STATION SOCORRO, NEW MEXICO

108 feet. The south well is reported to be 100 feet deep and to yield a small supply of soft water. The reported depth to water in this well is 75 feet.

In the outcrop area of the Chalk Bluff formation north of Lake McMillan water can also be obtained from wells at depths generally less than 200 feet, but the water is likely to be more highly mineralized than that in the area farther south. The limestone of the Chalk Bluff formation grades into gypsum and anhydrite to the north, and as a result the water in that area contains a comparatively high concentration of sulfate. Water from well 17.27.11.110 (see table 3), about 8 miles east of Artesia, contained 1,780 parts per million of sulfate but only 33 parts per million of chloride.

Water in the Chalk Bluff also becomes more highly mineralized to the east. East of the outcrop area of the Chalk Bluff formation the Whitehorse group, the subsurface equivalent of the Chalk Bluff formation, probably contains water of quality similar to that in the Rustler formation.

The Castile formation, overlying the Whitehorse group and overlain by the Salado formation in the Delaware basin in the southeastern part of Eddy County, is absent north and west of the buried reef front. The extent of the Delaware basin in Eddy County is shown in the sketch map (fig. 4). The Castile formation probably is not a source of ground water anywhere in the county east of the Pecos.

Salado and Rustler formations

Character, extent, and thickness.—The Salado formation, consisting chiefly of halite and small amounts of anhydrite, polyhalite, and red sandy shale, does not crop out in Eddy County, but it underlies most of the area east of the Pecos.

The top of the salt of the Salado is an irregular surface, owing chiefly to solution and removal of the salt by ground water moving in the basal beds of the Rustler. The local relief on top of the Salado is as much as 300 feet in 1 mile. Over much of Nash Draw and parts of Clayton Basin the surface depressions coincide with relatively low parts of the surface of the salt. Figure 5 is a map of the potash-mines area showing contours on top of the salt of the Salado formation. This map is based on records of potash core tests that were made available by R. H. Allport, Regional Engineer of the Conservation Branch, U. S. Geological Survey, at Carlsbad. The depth to the top of the salt in any given spot can be determined by subtracting the altitude of the top of the salt from that of the land surface.

The Rustler formation consists of anhydrite, gypsum, interbedded sandy clay and shale, and irregular beds of dolomite. It unconformably overlies the Salado formation in most of the area east of the Pecos River and ranges in thickness from about 200 feet in northern Eddy County

to about 500 feet southeast of Carlsbad. Indicated on plate 1 is the approximate area of outcrop of the Rustler formation, including places where the Rustler is mantled by the wind-laid so-called Mescalero sands.

Occurrence of ground water.—The salt of the Salado is impermeable, primarily because the weight of the overburden is sufficient to cause plastic flow of the salt and hence prevent the development of cracks and crevices through which water might move. The extensive potash mines in this formation, although several hundred feet below the water table, are entirely dry except where water enters the shafts through the overlying Rustler formation. The Salado formation is important, however, as the lower confining strata to the basal aquifer in the overlying Rustler formation.

The Rustler formation, throughout most of its outcrop area, is the only possible source of ground water. Water may be obtainable from the underlying Whitehorse group in a small area in the northeast part of the outcrop area. Where the Rustler is underlain by the Salado, drilling below the Rustler for potable water would be useless.

Several water-bearing zones in the Rustler have been penetrated in the numerous potash test holes drilled into the underlying Salado formation. The basal beds of the Rustler consist of porous gypsum in a large part of Nash Draw and southwest to Malaga Bend. These beds, which are in contact with the underlying salt of the Salado formation in some places and separated from it by a few feet of clay in others, contain a brine saturated with sodium chloride, as shown by a number of samples taken during drilling (Robinson and Lang, 1938, pp. 87, 88). The brine in this aquifer moves southwest in Nash Draw past Salt Lake (Laguna Grande de la Sal) to discharge into the Pecos River at Malaga Bend. Calculations based on the increase in chloride content of the Pecos River water in the vicinity of Malaga Bend show that the brine aquifer probably discharges about 340 tons of salt a day to the river (Theis, Sayre, and others, 1942, p. 69).

The most important aquifer above the basal brine aquifer in the Rustler is the 35-foot unit of dolomitic limestone at the top of the lower part of the Rustler as defined by Lang. This limestone unit yields water to most wells penetrating it in the potash mines area (Theis, Sayre, and others, 1942, p. 67). However, a test hole at the site of the No. 2 shaft of the International Minerals and Chemical Corp., 22.29.11, on Quahada Ridge found no water in the Rustler above the basal brine aquifer.

Water is generally confined in the limestone aquifer where it is overlain by the upper beds of the Rustler. Water in it is under water-table conditions where the limestone is near the surface, as in the lower part of Nash Draw and in the vicinity of Salt Lake. This limestone aquifer is the chief source of the water in the shafts of the potash mines.
(See p. 76.)

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW Suite 142 Albuquerque, New Mexico 87104 505.266.5004 Fax: 505.246.1818

August 10, 2003

Mr. Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, Texas 79705

RE: Hydrogeology of North Square Lake Unit Area

Dear Mr. Ritter:

My firm researched published documents, we examined the records of the New Mexico Office of the State Engineer (OSE), we obtained unpublished information from Sandia National Laboratories and the Roswell BLM office, and we visited the site. In addition, we examined site-specific data including several gamma and gamma/neutron logs of the shallow subsurface, driller's logs, and NMOCD on-line data. We believe we have evaluated all applicable information on the geology and ground water resources of the general area of the North Square Lake Unit (NSLU). Below, we list our conclusions. We list the facts that support our conclusions and provide the source for all of these facts.

If you have any questions concerning the attachment, please contact me.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

Hydrogeology of North Square Lake Unit, Eddy County, New Mexico

Conclusions:

1. Only the near-surface alluvium, Dewey Lake and Dockum Group redbeds could contain ground water with a total dissolved solids (TDS) concentration of less than 10,000 mg/L
2. The preponderance of evidence allows us to conclude that none of these units produce sufficient quantity of water to encourage their development as a water supply (stock, agriculture, or domestic).
3. Cemented oil well surface casing can effectively protect any undiscovered ground water in the redbeds from brine intrusion due to enhanced oil recovery operations in the NSLU.

Facts:

Geology

- Figure 1, which is a stratagraphic column of southeast New Mexico, shows the relative position of water-bearing and low permeability units (Sattler, 2003).
- Figure 2 is a geologic map of the area (Anderson and others, 1997). The sections that comprise the NSLU are outlined on this map. Erosion removed the Ogallala Aquifer in the area of the NSLU, but is present to the east of the NSLU. As the figure suggests, the surface geology is Quaternary eolian and pediment deposits (Qe/Qp), which is underlain by the redbeds of the Dockum Group and the Santa Rosa Sandstone. Kelley (1971) suggests that Late Permian/Early Triassic erosion removed the Dewey Lake Formation northwest of the NSLU and he maps the Santa Rosa Sandstone unconformably overlying the Rustler Formation. Figure 2, which used the mapping of Kelley as a source, shows this relationship north and west of the NSLU.
- The three large-scale cross-sections generated by the geologist for CBS Operating Company (attached) show that evaporates (anhydrite and salt) underlie the redbeds (Dewey Lake, Santa Rosa Sandstone, and Upper Dockum Group).
- Gamma logs that characterize the Dockum Group, Santa Rosa and Dewey Lake Redbeds are available for some oil and gas wells within the NSLU. Although Kelley mapped the Santa Rosa Sandstone unconformably overlying the Rustler Formation northwest of the NSLU, the gamma logs confirm the presence of about 200 feet of the Dewey Lake within the unit. Figure 3 presents the gamma log for NSLU 60 (API 3001504914), which is typical of many available logs for the area. We interpreted a low gamma

activity section between 218 and 270 feet below surface as the Santa Rosa Sandstone horizon. The lack of contrast of the gamma log suggests that this horizon may contain fine-grained clay in addition to sand/silt. Continuous coarser-grained units (low gamma activity) above or below the Santa Rosa Sandstone horizon are very difficult to trace between wells.

- Figure 4 from McGowen and others (1977) show the erosional/depositional edge of the Lower Dockum Group in the area of the NSLU. The thickness of the Lower Dockum Group is zero west of the NSLU and 600-800 feet at the Eddy/Lea County line. Figure 5 (McGowen and others, 1977) confirms that the Lower Dockum Group (including the Santa Rosa Sandstone horizon) is very fine grained. In and near the NLSU, the Lower Dockum Group contains less than 20% sandstone.
- Figure 6 is a schematic northwest to southeast section of the Dewey Lake and Dockum Group redbeds. In this figure, which we generated from gamma log data, the Santa Rosa Sandstone is yellow.

Regional Ground Water Resources

- The BLM determined that the limestone units of the Rustler Formation are saline and are not protected by surface casing on Federal lands in the general area (John Simitz, BLM Roswell, personal communication, 2003).
- In west Texas, the Santa Rosa Sandstone (lower Dockum Group) yields sufficient quantities of ground water for a small community supply wells. The municipalities of Happy, Hereford, and Tulia obtain some or all of their water from the lower Dockum Group (Dutton and Simpkins, 1986)
- The Santa Rosa Sandstone is not employed extensively as a water supply source in New Mexico. The Santa Rosa Sandstone is a secondary source of water for the City of Las Vegas, New Mexico, where the well field is located adjacent to the outcrop (Lazarus and Drakos, 2002).
- Thin, discontinuous sandstones in the Dockum Group and Dewey Lake Redbeds, which may provide water to windmills for several years or a decade or more, often contain relatively poor quality ground water (Dutton and Simpkins, 1986; Hendrickson and Jones, 1952).
- Where present the Ogallala Aquifer supplies water to municipal supply wells, agriculture, and industry. For example, Maljamar and Loco Hills derive their water via pipeline from wells completed in the Ogallala Aquifer east of the area of interest.

Ground Water Quantity and Quality within the NSLU Area

- Sixteen oil and gas wells, drilled with cable tools in the 1960's, explored for useable quantities of ground water in these redbeds in the NSLU. These wells, which are distributed primarily on the northeast side of the unit, did not detect meaningful quantities of water. Also, several wells were drilled specifically for fresh water in the township due south of the unit did not find

any water in any well.(CBS Operating Company, personal communication, 2003).

- Despite the large number of oil and gas wells drilled in and adjacent to the NSLU, no water supply wells draw water from the redbeds within or near the North Square Lake Unit (NSLU). Throughout New Mexico, producers recomplete abandoned oil and gas wells as shallow water wells for the benefit of the surface owner. Figure 7 plots the location of all water supply wells from the Office of the State Engineer (OSE, 2003) database. Note that no wells exist within the NSLU.
- The closest water well is an abandoned windmill located about 3 miles north of the site. This well (Figure 8) probably tapped water associated with the dune sands in this closed depression
- The total dissolved solids (TDS) content of water in the Santa Rosa Sandstone in the area of North Square Lake Unit (NSLU) may exhibit TDS content greater than 5,000 mg/L (Figure 9; Dutton and others, 1986). However, the lower Dockum Group contains brine near Amarillo, Texas (Wilson and Esparza, 2002) and ground water could be of similar quality within the area of interest.
- The volume of anhydrite in the Rustler Formation and the mass of underlying salt permit us to concur with the BLM's conclusion that permeable units below the Dewey Lake Redbeds contain brine and are not suitable for domestic or agricultural use.

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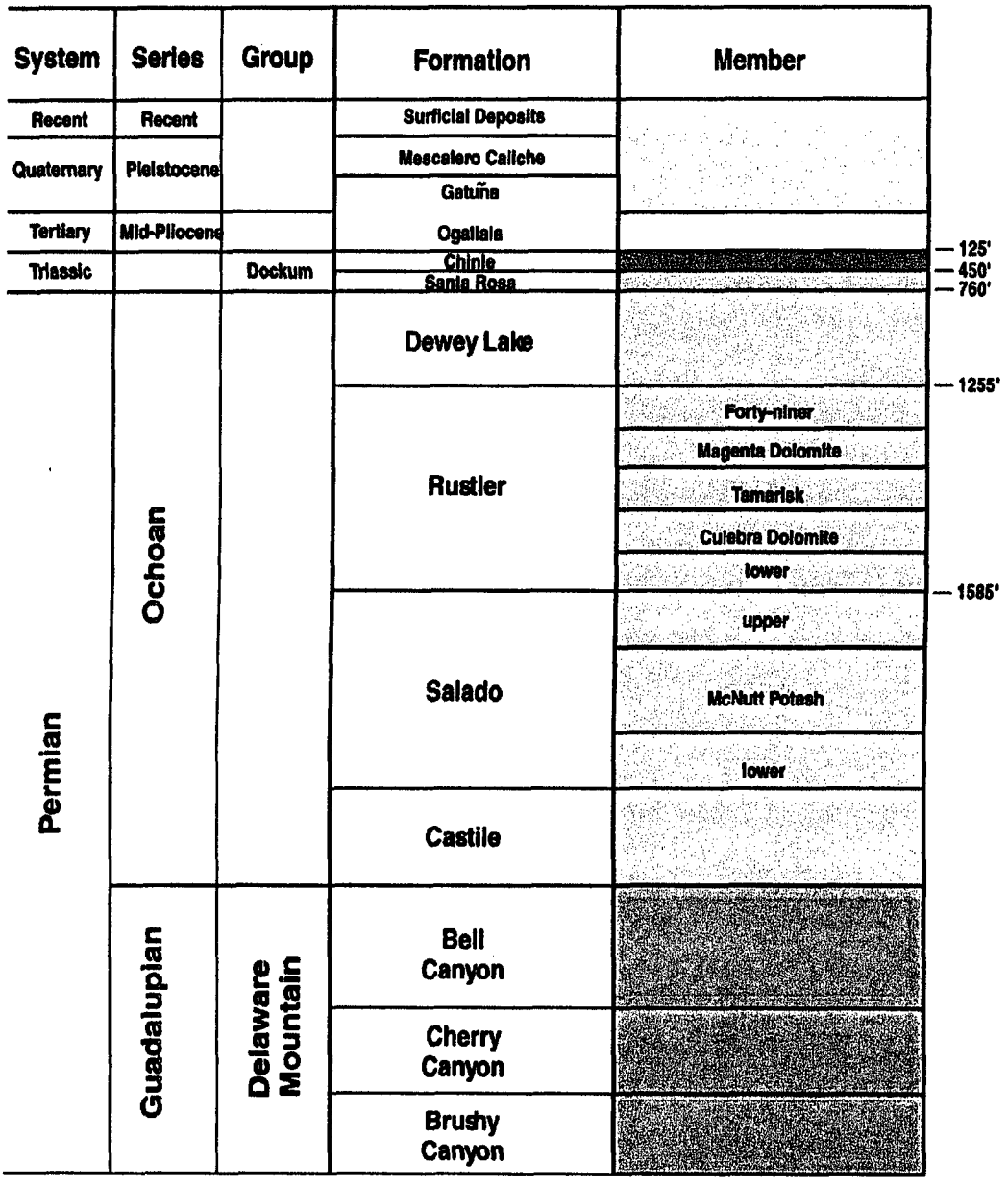
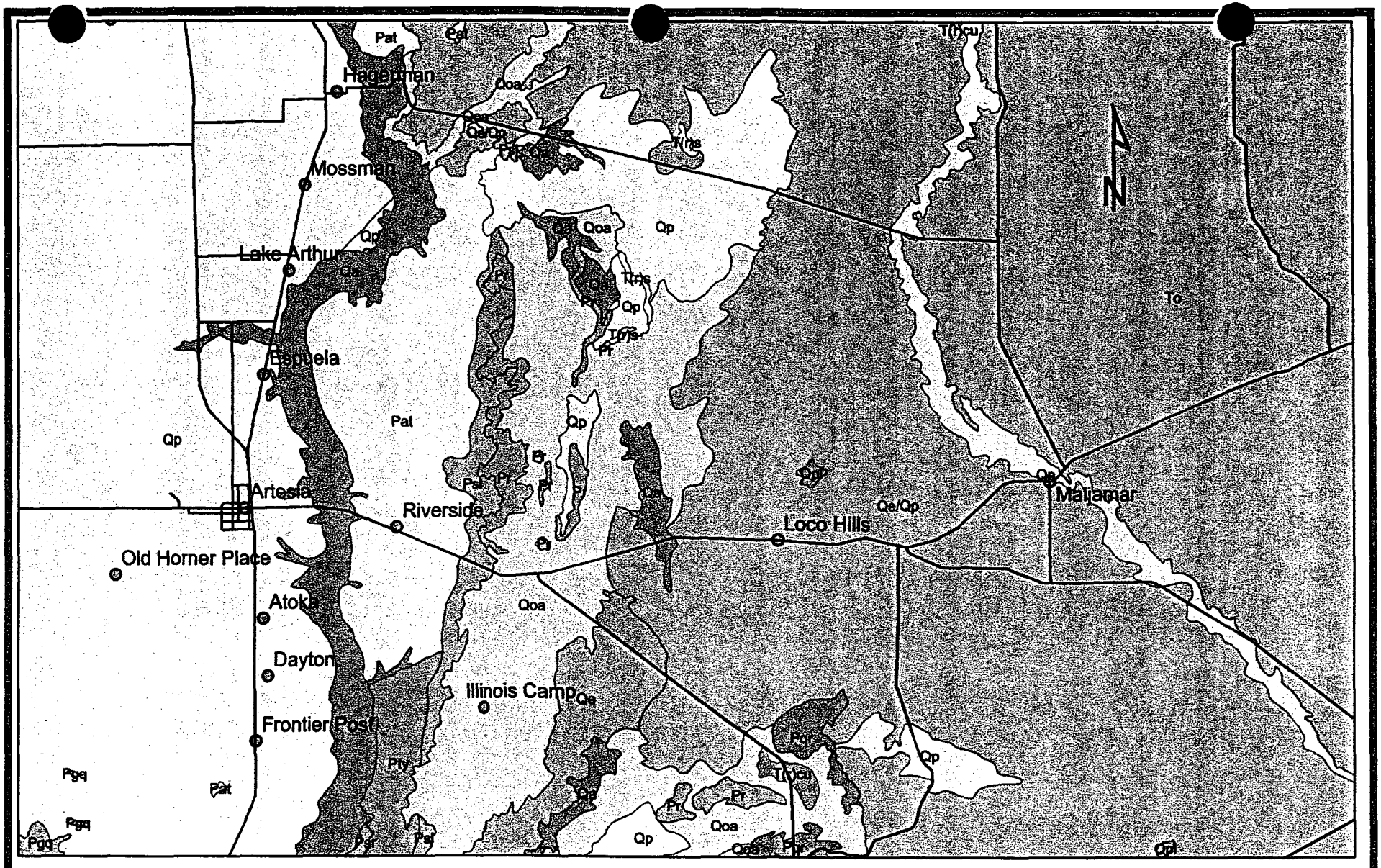
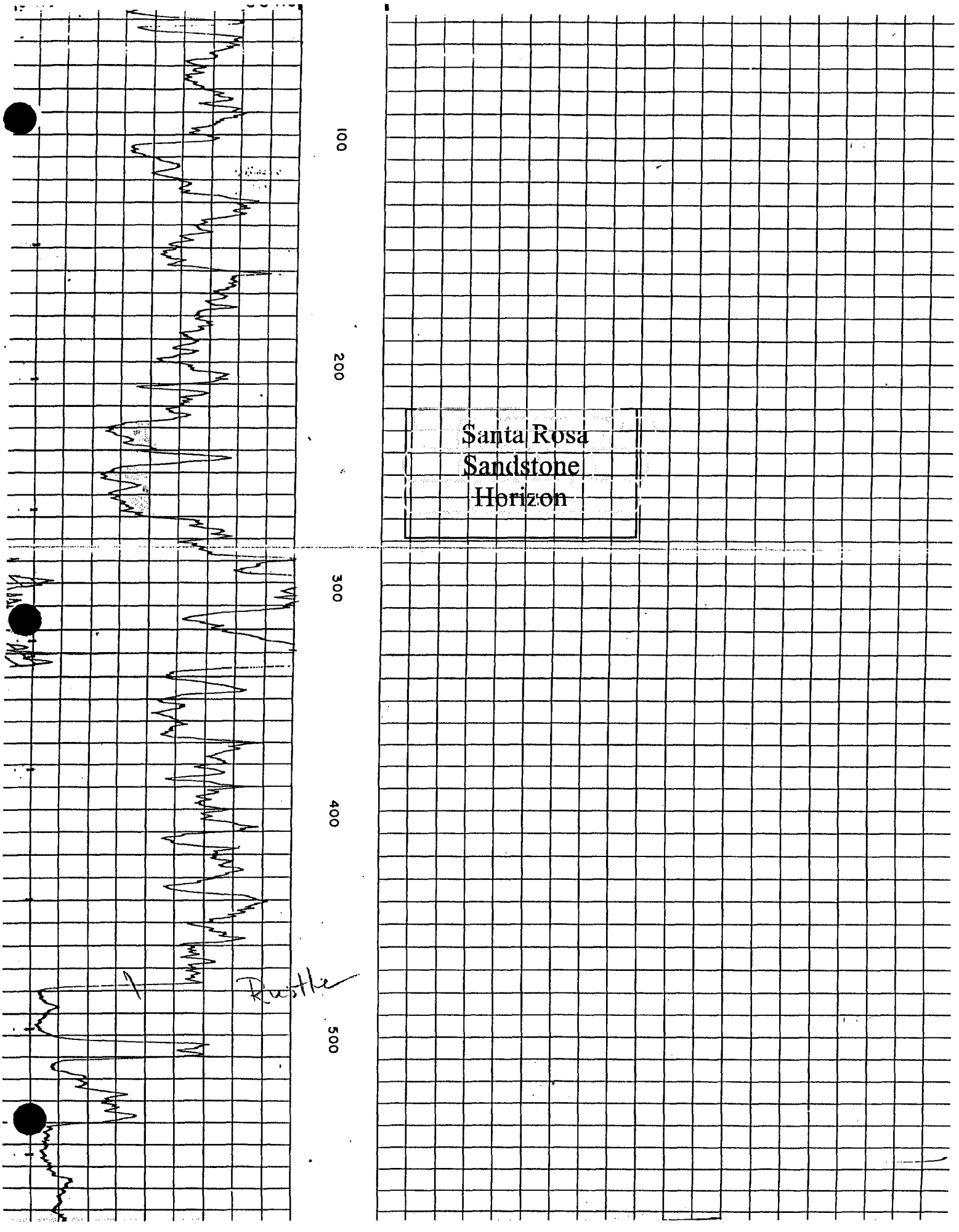
Wilson, L., and Esparza, L.E., 2002, Lake Meredith Salinity Control Project: in Water Issues of Eastern New Mexico, 42nd annual New Mexico Conference, (http://wrri.nmsu.edu/publish/watcon/proc/proc42/wilson.html).

Figure 1. Geologic Column





R.T. Hicks Consultants, LLC 219 Central NW, Suite 266 Albuquerque, NM 87102 Ph: 505.266.5004	Geologic Map (Source: Anderson and others, 1997)	Figure 2
	CBS Operating Company: North Square Lake Unit	August 2003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Santa Rosa
Sandstone
Horizon

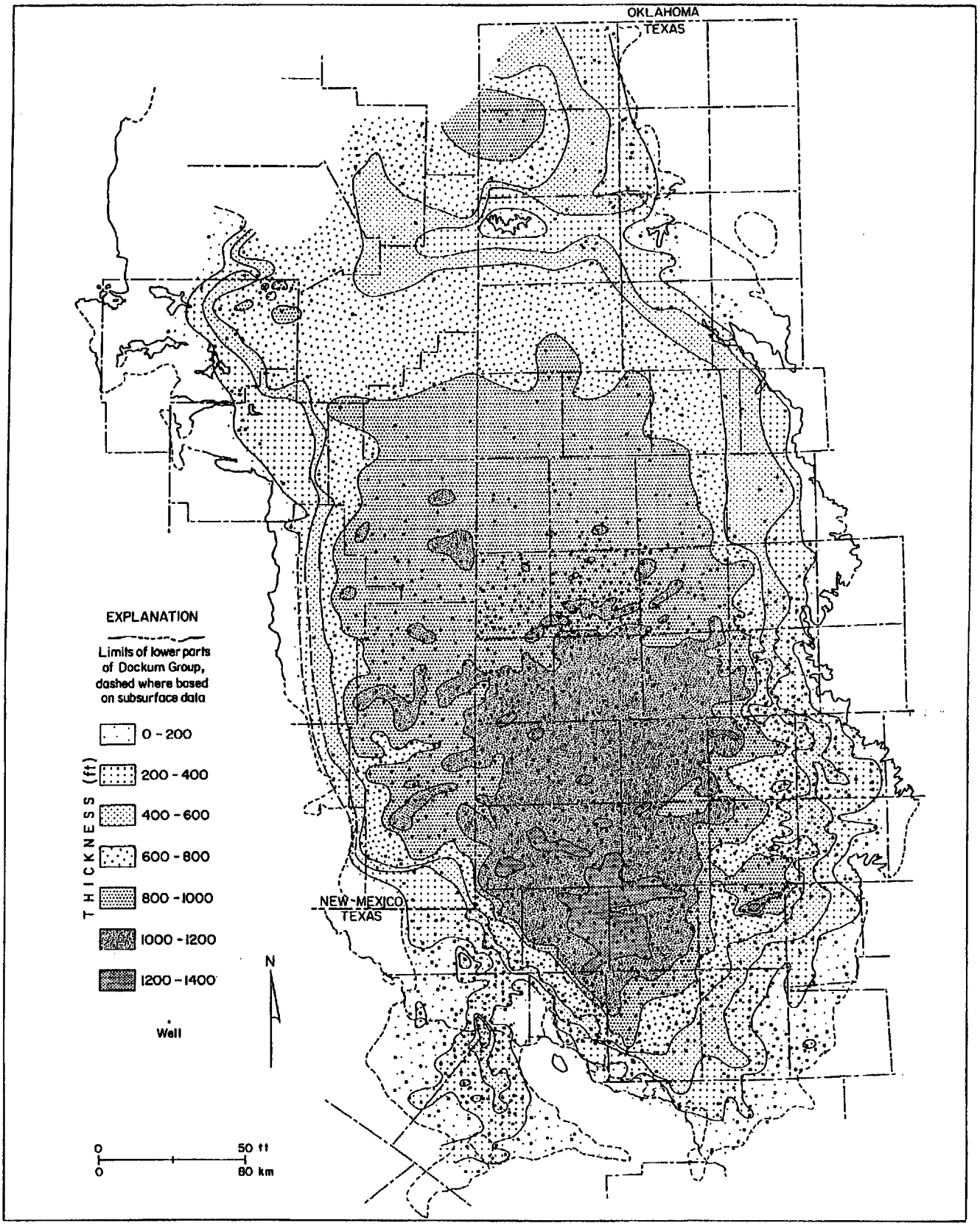


Figure 4: Isopach map of the Lower Dockum Group (McGowen and others, 1977).

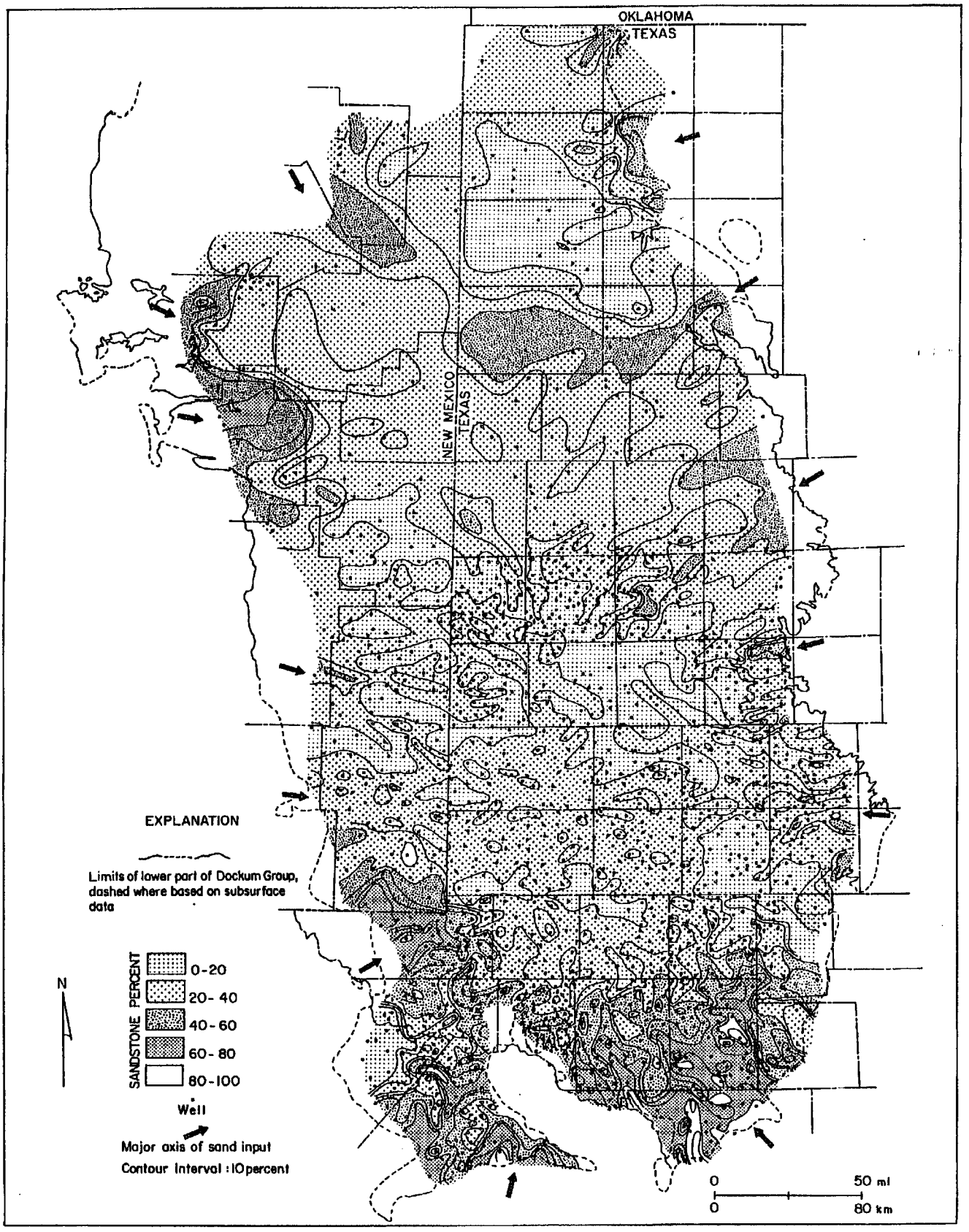
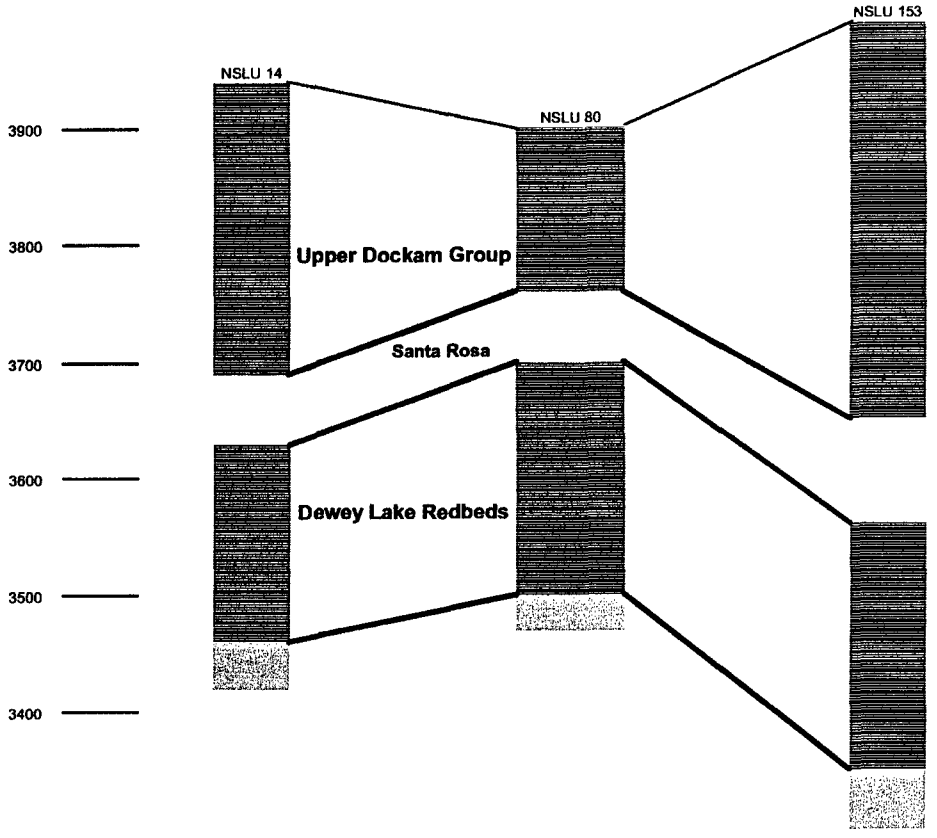
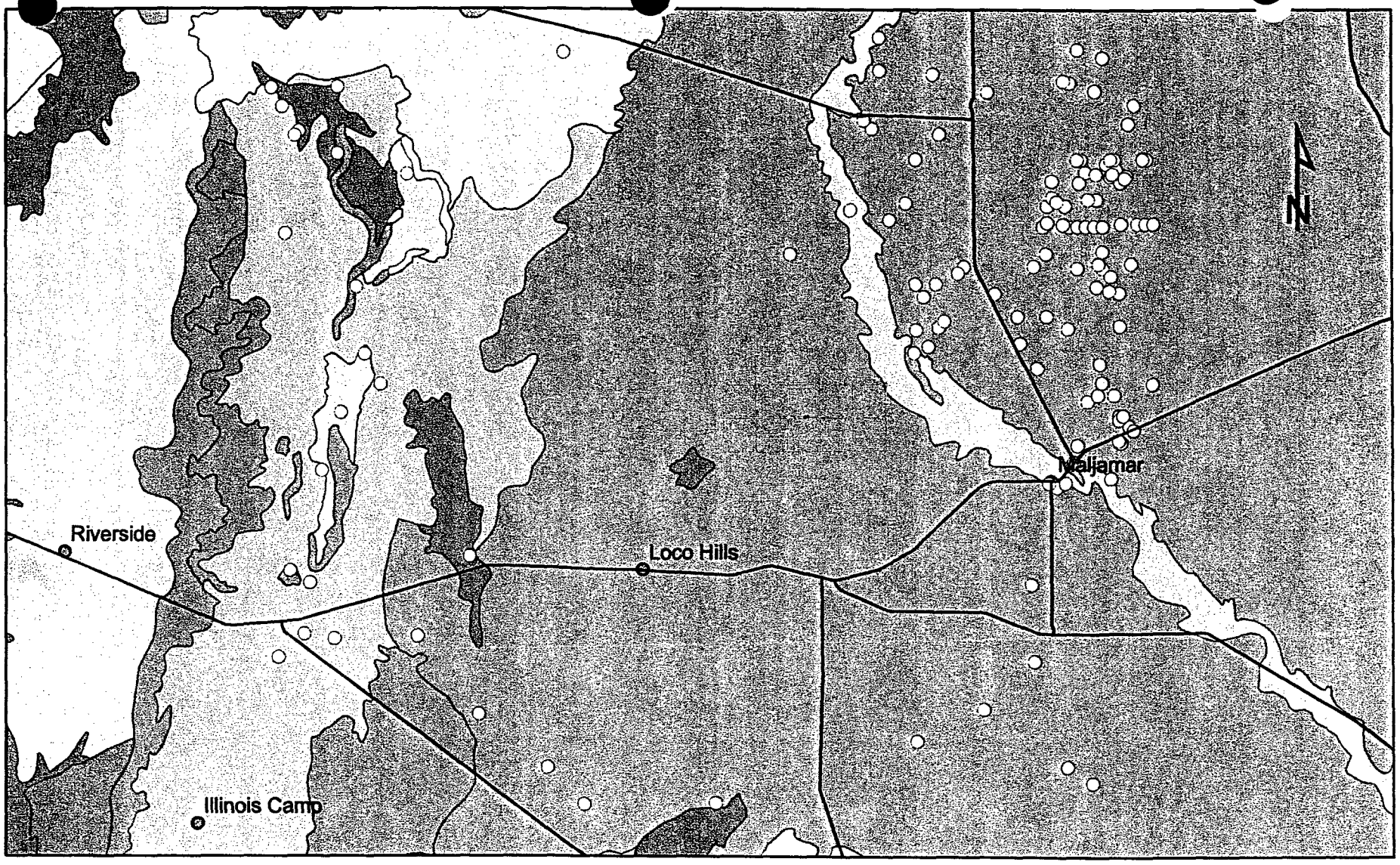


Figure 5: Regional map of percent sandstone in the Lower Dockum Group (McGowen and others, 1977).

Figure 6: Schematic Northwest-Southeast Stratagraphic Cross Section NSLU





R.T. Hicks Consultants, LLC 219 Central NW, Suite 266 Albuquerque, NM 87102 Ph: 505.266.5004	Location of wells from the New Mexico Office of the State Engineer database	Figure 7
	CBS Operating Company: North Square Lake Unit	August 2003

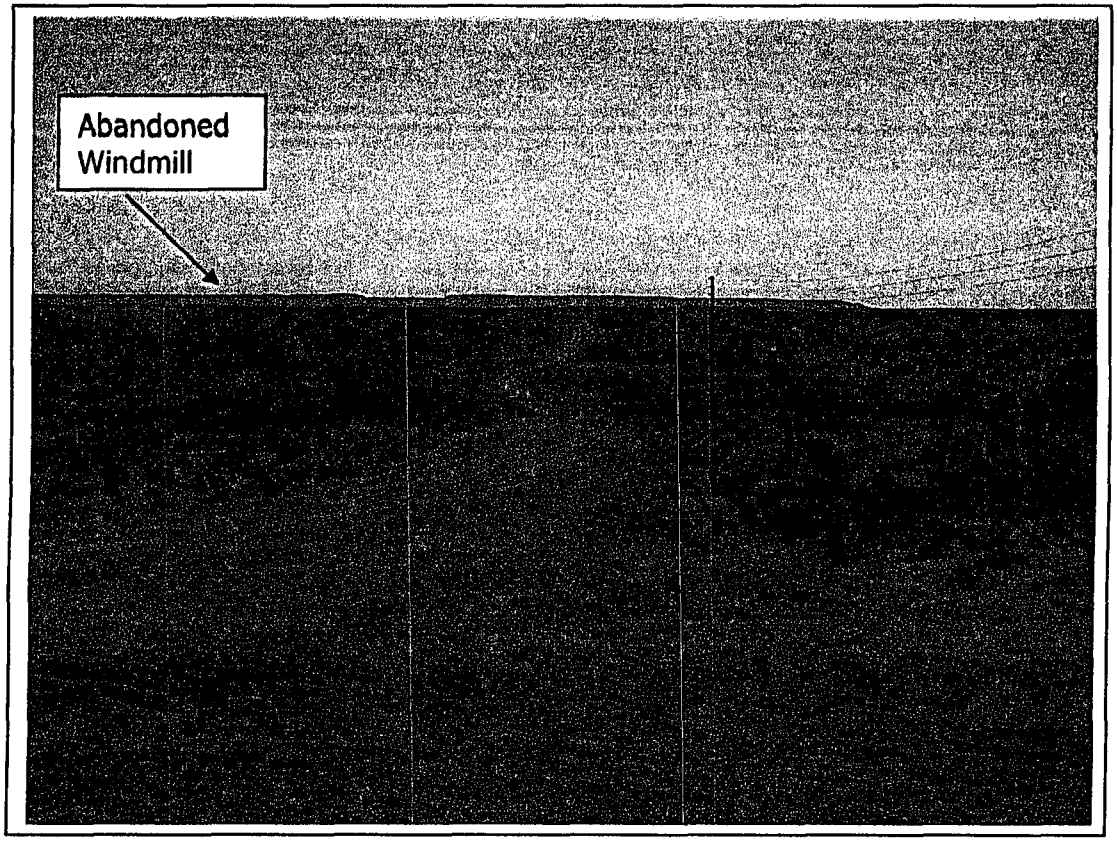


Figure 8: Abandoned Windmill North of NSLU

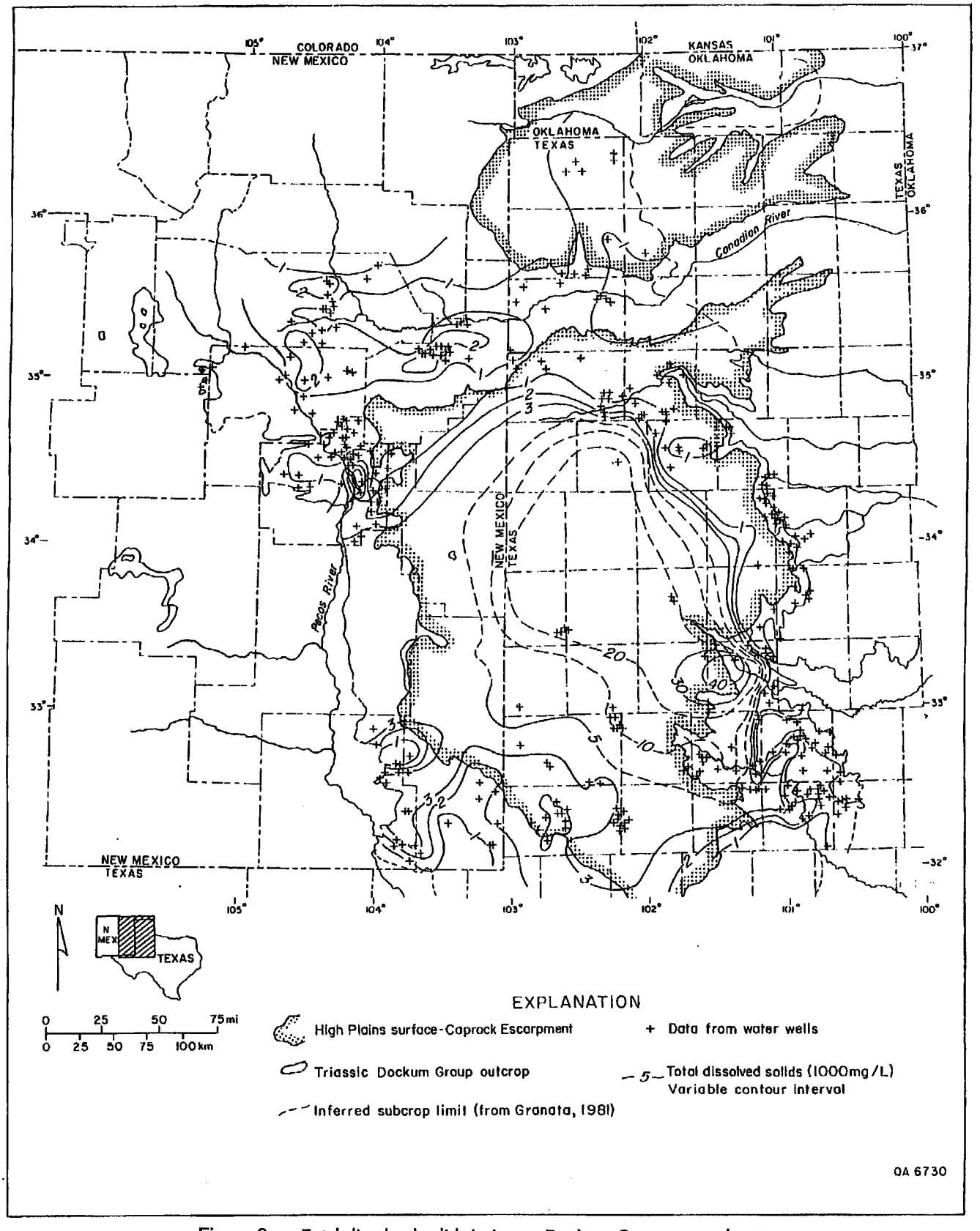


Figure 9: Total dissolved solids in Lower Dockum Group ground water.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

IX. Stimulation in the applied for injection wells will consist of small acid clean up jobs of 15% HCl ranging in volume from 500-1000 gallons per well.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

X. Logs have previously been submitted to the OCD.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

XI. Analysis of the fresh water in the area is attached.

Enviro-Chem, Inc.
WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : Grimr
Well No.: Fresh Water
Lab No. : 161898.001

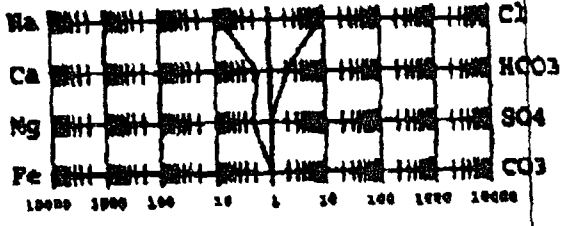
Sample Loc. :
Date Analyzed: 16-October-1998
Date Sampled : 09-October-1998

ANALYSIS

1.	pH		8.460	
2.	Specific Gravity 60/60 F.		1.003	
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.960	
		@ 140 F.	+1.580	

			MG/L	EQ. WT.	*MEQ/L
Dissolved Gasses					
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
Cations					
7.	Calcium	(Ca^{++})	31	/ 20.1 =	1.54
8.	Magnesium	(Mg^{++})	25	/ 12.2 =	2.05
9.	Sodium	(Na^{+}) (Calculated)	177	/ 23.0 =	7.70
10.	Barium	(Ba^{++})	0	/ 68.7 =	0.00
Anions					
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	(CO_3^{--})	19	/ 30.0 =	0.63
13.	Bicarbonate	(HCO_3^{-})	117	/ 61.1 =	1.92
14.	Sulfate	(SO_4^{--})	46	/ 48.8 =	0.92
15.	Chloride	(Cl^{-})	300	/ 35.5 =	8.48
16.	Total Dissolved Solids		695		
17.	Total Iron	(Fe)	2	/ 18.2 =	0.08
18.	Total Hardness As $CaCO_3$		182		
19.	Resistivity @ 75 F. (Calculated)		2.802	/cm.	

LOGARITHMIC WATER PATTERN
*meq/L.



Calcium Sulfate Solubility Profile

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	1.54	125
$CaSO_4$	68.07	0.00	0
$CaCl_2$	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.37	27
$MgSO_4$	60.19	0.92	56
$MgCl_2$	47.62	0.75	36
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	7.70	450

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

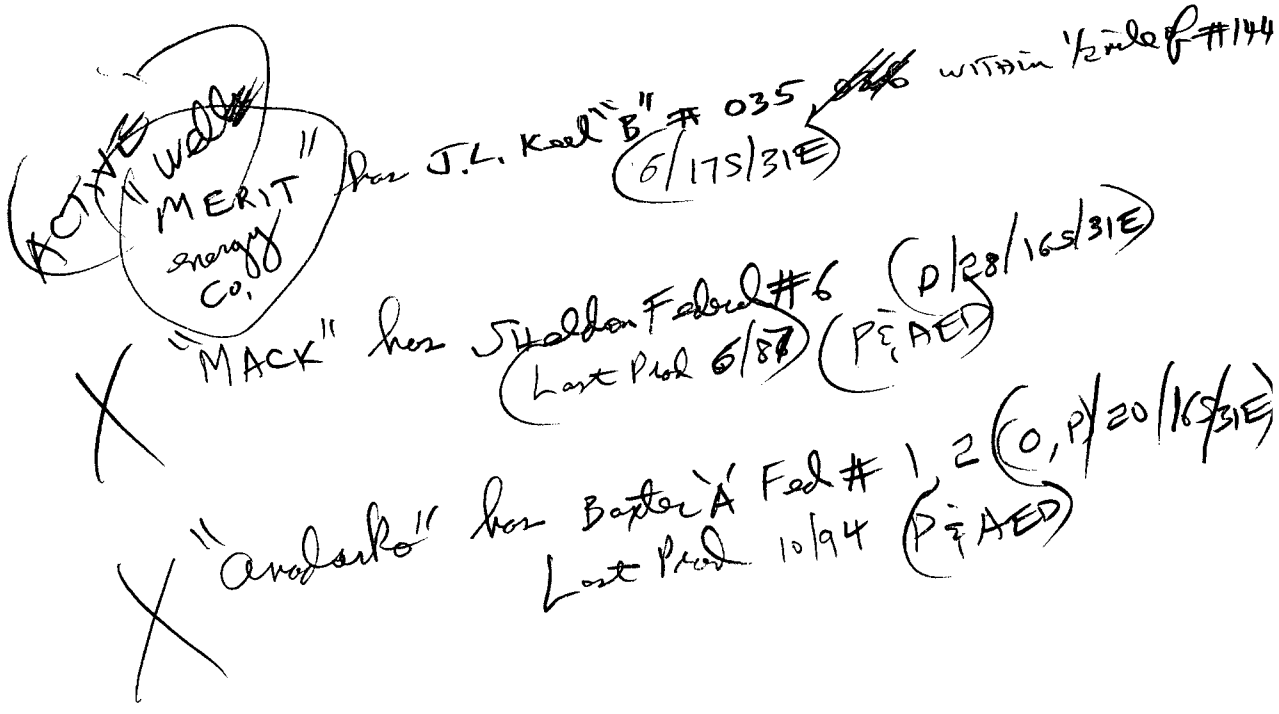
XII. An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any potential underground sources of drinking water.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

XIII. PROOF OF NOTICE

Thompson Petroleum Corp., leasehold operator, has been furnished by certified mail a copy of the C-108 application as they are within the one-half mile radius of North Square Lake Unit Well No. 144.

Copy of Publication and Affidavit of Publication from the Artesia Daily Press, a daily newspaper, is attached. This legal advertisement was published in Eddy County, New Mexico on August 17, 2003.



CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

August 19, 2003

THOMPSON PETROLEUM CORP.
325 North St. Paul, Suite 4300
Dallas, Texas 75201

Dear Mr. Thompson:

Enclosed is CBS Operating Corp.'s C-108 Application to Inject on the North Square Lake Unit. Copies are being furnished to you, as you are a leasehold operator located one-half mile of a proposed injection well within this application.

As required by statue, should you have any objections to the enclosed applications, you must file with the Oil Conservation Division, EMNRD, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 with 15 days of receipt.

Should you have any questions or need additional information, please contact me at 432/685-0878.

Sincerely,

M. A. Sirgo, III
Engineer

MAS/pr

Enclosure

Affidavit of Publication

NO. 18183

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the **Publisher** of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks/days on the same day as follows:

First Publication August 17 2003

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this 19th day of August 2003

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Pul

INJECTION WELLS
CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878
CBS Operating Corp. has filed a Form C-108 Application to Inject with the State of New Mexico Oil Conservation Division.
The Application covers the following pressure maintenance water injection wells located in the North Square Lake Unit, Eddy County, New Mexico.
The wells covered in the application are as follows and located as described:
NSLU WELL NO. 15, SEC. 20 (O) T16S,R313
NSLU WELL NO. 16, SEC. 20 (P) T16S, R31
NSLU WELL NO. 23, SEC. 29 (C) T-16S, R31E
NSLU WELL NO. 24, SEC. 29 (B) T16S, R31E
NSLU WELL NO. 25, SEC. 29 (A) T16S, R31E
NSLU WELL NO. 41, SEC. 29 (F) T16S, R31E
NSLU WELL NO 42, SEC. 29 (G) T16S, R31E
NSLU WELL NO. 43, SEC. 29 (H) T16S, R31E
NSLU WELL NO. 60, SEC. 29 (J) T16S, R31E
NSLU WELL NO. 61, SEC., 29, (I) T16S, R31E
NSLU WELL NO. 124, SEC. 31, (C) T16S, R31E

Legal Notice

NSLU WELL NO. 126, SEC. 31, (G) T16S, R31E
NSLU WELL NO. 144, SEC. 31, (K) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 600 psi. (in no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).
Any interested party must file an objection or request for hearing with the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505 within 15 days of this notice.
Published in the Artesia Daily Press, Artesia, N.M. August 17, 2003.
Legal 18183

CBS OPERATING CORP.

P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

September 2, 2003 VIA FAX 505/476-3462

STATE OF NEW MEXICO
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. William Jones

Re: Affidavit of Notice
CBS Operating Corp.
North Square Lake Unit
C-108 Application
Eddy County, New Mexico

Mr. Jones,

As per your request, please find attached an Affidavit of Notice reflecting an additional public notice run on August 29, 2003 for the referenced C-108 Application. This second notice was posted to correct the address for third party notices to the New Mexico Oil Conservation Division.

If you have any additional questions or comments, please do not hesitate to call.

Sincerely,

M. A. Sirgo, III

MAS/pr

Attachment

Affidavit of Publication

NO. 18200

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly

sworn,says: That he is the **Publisher** of The

Artesia Daily Press, a daily newspaper of general

circulation, published in English at Artesia, said county

and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said

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for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 consecutive weeks/days on the same

day as follows:

First Publication August 29 2003

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this

29th day of August 2003

Barbara Ann Bradley

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Public

LEGAL NOTICE

CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878

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Any interested party must file an objection or request for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days of this notice.

Published in the Artesia Daily Press, Artesia, N.M. August 29, 2003.

Legal 18200

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

FACSIMILE MESSAGE

TO: Mr William Jones 505-476-3462

LOCATION: Santa Fe OCD

FROM: Manny Lujo

DATE: Sept 2 2003

MESSAGE: Original will be mailed today.

NUMBER OF PAGES TO BE TRANSMITTED - INCLUDING TOP SHEET: 3

IF ANY ERROR WHEN TRANSMITTING, PLEASE CALL (915) 685-0878

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

September 2, 2003

VIA FAX 505/476-3462

STATE OF NEW MEXICO
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

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North Square Lake Unit
C-108 Application
Eddy County, New Mexico

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day as follows:

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Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this

29th day of August 2003

Barbara Ann Bascom

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Public

CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878

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NSLU WELL NO. 124, SEC. 31, (C) T16S, R31E
NSLU WELL NO. 126, SEC. 31, (G) T16S, R31E
NSLU WELL NO. 144, SEC. 31, (K) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 900 psi. (In no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).

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Published in the Artesia Daily Press, Artesia, N.M. August 29, 2003.

Legal 18200

LEGAL NOTICE

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

FACSIMILE MESSAGE

TO: William Jones 505-476-3462

LOCATION: OCD Santa Fe

FROM: Manny Sirgo

DATE: Sept 3 2003

MESSAGE: Letter to Merit Energy mailed today.

NUMBER OF PAGES TO BE TRANSMITTED - INCLUDING TOP SHEET: 3

IF ANY ERROR WHEN TRANSMITTING, PLEASE CALL (915) 685-0878

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

September 3, 2003

MERIT ENERGY COMPANY
13727 Noel Road, Suite 500
Dallas, Texas 75240

Dear Sir or Madam:

Enclosed is CBS Operating Corp.'s C-108 Application to Inject on the North Square Lake Unit. Copies are being furnished to you, as you are a leasehold operator located one-half mile of a proposed injection well within this application.

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Should you have any questions or need additional information, please contact me at 432/685-0878.

Sincerely,

M. A. Sirgo, III
Engineer

MAS/pr

Enclosure

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MERIT ENERGY CO
13727 NOEL RD STE 500
DALLAS TX 75240

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7002 2410 0001 5839 8114

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1035

7002 2410 0001 5839 8114

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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Total Postage & Fees	$ 6.03

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2003
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Sent To MERIT ENERGY CO
Street, Apt. No.; or PO Box No. 13727 NOEL RD STE 500
City, State, ZIP+4 DALLAS TX 75240

PS Form 3800, June 2002 See Reverse for Instructions